

HOW HUMBLE LEADERSHIP STYLE PROMOTES TEAM EXPLORATORY LEARNING: THE ROLE OF TEAM LEARNING CLIMATE AND TEAM PROJECT DIFFICULTY

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ABSTRACT: It is widely acknowledged within scholarly discourse that humility stands as a commendable virtue, with its manifestation in leadership contexts yielding positive outcomes for the collective endeavours of teams. This research employs the questionnaire survey methodology to delve into the nuanced mechanisms through which humble leadership influences team exploratory learning, drawing insights from Social Learning Theory. Additionally, it scrutinizes the mediating role of team learning climate and the moderating influence of team goal difficulty. The findings underscore that humble leadership significantly fosters team exploratory learning by cultivating a conducive team learning climate. Moreover, under conditions of heightened team goal difficulty, the mediating effect becomes more pronounced. As a corollary, recommendations for business practices are posited: leaders are encouraged to demonstrate humility judiciously; organizations are urged to cultivate cultures conducive to open communication and continual learning; mechanisms for knowledge sharing and collaborative endeavours should be actively promoted within organizations; and leaders should proactively furnish employees with positive feedback and incentives to bolster their engagement and contributions.

Keywords: Humble Leadership, Leader Humility, Team Learning Climate, Team Goal Difficulty, Team Exploratory Learning.

1. Introduction

Humility is intrinsic to numerous religious and philosophical traditions. Aristotle views it as awe-inspiring, while Kant regards it as essential for individuals to attain self-awareness (Grenberg, 2005). Academic investigations have revealed a positive correlation between humility and proclivity towards assisting others (LaBouff et al., 2012), generosity (Exline & Hill, 2012) and tolerance (Exline et al., 2008). In contemporary scholarship, there has been a growing focus and endorsement of the concept of humble leadership in recent years (Ou et al., 2014) and industry (Cable, 2018). For example, Owens, Johnson, and Mitchell (2013) indicates that the manifestation of leader humility exerts influence on diverse outcomes, encompassing job performance, learning goal orientation, and follower turnover rates. Ma et al. (2020) suggest that in instances where leaders exhibit humility, followers are inclined to perceive the acquisition of a psychological resource, thereby fostering a propensity for bold and articulate expression. Furthermore, within the context of the knowledge economy era, knowledge emerges as a pivotal asset for enterprises in the generation of value and the establishment of sustainable competitive advantages (Papa et al., 2020), and learning within organizational contexts assumes a crucial role in shaping and influencing the knowledge management process (Castaneda, Manrique, & Cuellar, 2018). Within organizational settings, various tiers of learning exist, with a predominant emphasis on learning taking place predominantly within teams (Edmondson & Nembhard, 2009). This article employs

the humble leadership style as an independent variable to investigate its impact mechanism on team exploratory learning within the context of team learning.

The team learning climate is indicative of the degree to which team members are incentivized to apply acquired knowledge from one occupational setting to another (Banerjee, Gupta, & Bates, 2017). Additionally, it assumes a significant role within the team, as the team learning atmosphere has the potential to enhance employees' attitudes and performance (Ellinger et al., 2002), facilitate employees with avenues for dialogue, feedback, and alignment with the organizational vision, fostering a heightened connection between their work and the overarching organizational objectives (Burke, Holman, & Birdi, 2006). This study investigates the mediating role of team learning climate between humble leadership style and team exploratory learning. Additionally, team project difficulty can influence daily team operations. Kozlowski et al. (1999) postulate that challenging team projects may impede the team's capacity for adaptive adjustments to the task. This study incorporates team project difficulty as a moderating variable to scrutinize its influence on the association between humble leadership and the team learning climate.

This study employs a questionnaire survey as the research method to substantiate the model wherein humble leadership style fosters team exploratory learning through the mediation of team learning atmosphere, grounded in social learning theory. Notably, team project difficulty is

introduced as a moderating variable in this model. The research significance lies in two primary facets: firstly, it establishes a theoretical linkage between humble leadership and team learning behaviour, elucidating the specific mechanisms through which humble leadership style influences team exploratory learning under the framework of social learning theory. Secondly, the investigation delves into the variations in the mechanism through which humble leadership affects team learning climate when confronted with discrepancies in team project difficulty, underscoring the substantial impact of team project difficulty as a situational variable on team dynamics.

2. Literature Review and Research Hypotheses Humble Leadership Style and Team Exploratory Learning

The humble leadership style is characterized as a form of leadership that acknowledges personal limitations and imperfections, values the strengths and contributions of subordinates, and maintains receptivity to novel information (Liu, 2016). At the team level, scholarly investigations have demonstrated that humble leadership exerts influence on a diverse array of outcomes. For example, Owens and Hekman (2016) demonstrated that the humility of a leader has the capacity to influence the collective humility within the team, and Rego et al. (2019) established that the adoption of a humble leadership style enhances the psychological capital of the team, with noteworthy emphasis on team learning behaviour. Team learning behaviour encompasses the collaborative process wherein team members identify errors, address problems, engage in experimental exploration of new knowledge, and consolidate insights through reflective communication (Abrantes et al., 2018). Team learning encompasses a spectrum of behaviours, including information seeking, literature review, inquiry, solicitation of feedback, exploration, and experimentation (Gibson & Vermeulen, 2003). Prior studies have demonstrated the significant influence of leadership behaviour on team learning (Bucic, Robinson, & Ramburuth, 2010). Drawing upon social learning theory and the conceptualization of humble leadership behaviour, it is posited that humble leadership has the potential to facilitate team learning behaviour. Oc et al. (2015) qualitative interviews revealed that humble leaders, possessing self-awareness and corrective capacity for their mistakes, foster a team environment where members objectively confront errors and glean lessons from failures when emulating the leader. Additionally, past research has substantiated the positive influence of humble leaders on team psychological safety (Wang, Liu, & Zhu, 2018). Consequently, the behavioural traits of a humble leader contribute to the establishment

of a secure learning environment, thereby mitigating obstacles to learning. Owens and Hekman (2012) identified within the construct of humble leadership is the dimension involving the recognition and appreciation of the strengths and contributions of others. This behavioural learning process cultivates an environment wherein team members are attuned to the strengths and merits of their peers, fostering a greater propensity for inquiries and learning from one another. Furthermore, the tenets of social learning theory underscore the significance of positive feedback in reinforcing and replicating imitated behaviours (Bandura & Walters, 1977). Humble leaders contribute to the reinforcement of learning through both direct acknowledgment and indirect promotion of positive feedback among team members. Commendations and recognition from influential figures elicit positive emotions, exerting a reinforcing impact on individuals (Wang et al., 2015). Encouragement of team learning behaviours is facilitated when there exists an anticipation of positive feedback from both leaders and peers within the team. Exploratory learning, in this context, pertains to educational activities aimed at cultivating novel capabilities (Kostopoulos & Bozionelos, 2011). We posit that team exploratory learning, considered as a subset within the broader domain of team learning, is subject to influence by the humble leadership style. Drawing upon the aforementioned analysis, we formulate the following hypotheses:

H1: Humility leadership style is positively related to team exploratory learning.

The Mediating Role of Team Learning Atmosphere

Several investigations demonstrate that the adoption of a humble leadership style fosters a positive organizational atmosphere. Aarons et al. (2017) evidenced by research findings, leaders characterized by greater humility tend to facilitate goal attainment through interactions with followers, consequently establishing an organizational climate founded upon participation. Ou et al. (2014) commencing from the perspective of social processing theory, it is posited that a CEO characterized by increased humility is poised to engender a more influential organizational atmosphere. Cortes-Mejia, Cortes, and Herrmann (2022) identified that increased humility in CEOs contributes to the development of an ethical climate by partially delegating strategic decision-making authority. Notably, team learning climate, defined by collective support for exploration, innovation, and risk-taking, is posited as a product of humble leadership, aligning with prior research indicating the capacity of humble leaders to enhance employees' learning

orientation. Leaders characterized by humility exhibit receptivity to suggestions and a willingness to learn from others. In accordance with social learning theory, team members model the openness demonstrated by humble leaders. Such openness fosters heightened communication among team members, thereby cultivating an environment conducive to the exchange of knowledge (Chen et al., 2021), ultimately establishing a conducive learning climate for the team, we contend that a team learning atmosphere plays a pivotal role in facilitating team exploratory learning. Primarily, the team learning atmosphere engenders positive outcomes, including heightened employee work engagement, ultimately enhancing extra-role performance (Eldor & Harpaz, 2016). Additionally, it contributes to enhanced employee service performance and increased levels of customer satisfaction (Peng et al., 2022). Moreover, following the enhancement of the team learning atmosphere, team members exhibit a heightened inclination to engage in learning-focused communication and discourse surrounding novel perspectives. Empirical studies have indicated that frequent communication and an open atmosphere significantly contribute to the cultivation of team learning behaviour (Gibson & Vermeulen, 2003). The team learning atmosphere is additionally correlated with an augmentation in employees' proclivity to explore (Maruping & Magni, 2012), consequently fostering exploratory learning within the team. Drawing upon the foregoing analysis, we posit the following hypotheses:

H2: Humility leadership style positively affects team exploratory learning by improving team learning atmosphere, and team learning atmosphere plays a mediating role.

Effect of Team Project Difficulty

Shalley and Oldham (1985) define challenging projects as objectives characterized by a relatively diminished likelihood of accomplishment. The significance of project difficulty lies in the fact that individuals modulate their efforts commensurate with the task's level of difficulty (Latham & Locke, 1991). Challenging projects may lead to adverse outcomes, diminishing the probability of successful task completion and increasing the likelihood of negative performance feedback for employees (Ma et al., 2021). Elevated project difficulty inversely correlates with employees' autonomy and self-control capabilities, with concomitant distortions in their comprehension of the high-performance work system at the team level (Jensen, Patel, & Messersmith, 2013). Wright et al. (1993) discovered a negative correlation between project difficulty and engagement in extra-role behaviour. LePine

(2005) contended that challenging team projects pose challenges in dynamic environments by heightening focus on performance outcomes, potentially impeding adaptive production strategies. Project difficulty may trigger the activation of the control-emphasis aspect within the team's high-performance work system, thereby attenuating the overarching positive impact of the high-performance work system on fostering employees' efficacy perceptions (Ehrnrooth & Björkman, 2012). Research has also found a negative moderating effect of team project difficulty. Ma et al. (2021) discovered that heightened project difficulty weakens the association between high-performance work systems and team-level self-efficacy. The proposition posits that in challenging projects, heightened focus on task completion increases performance pressure, diminishing psychological security and positive emotions, fostering constant comparison with potentially unattainable performance standards (Elsbach & Hargadon, 2006), resulting in the oversight of learning processes or encountering challenges in incorporating learning, ultimately impeding the development of a conducive team learning atmosphere.

Drawing upon the analysis and hypotheses H1 and H2, we posit the subsequent hypotheses:

H3: Team project difficulty plays a moderating role in the model, and the interaction between humble leadership style and team project difficulty affects team learning atmosphere. Specifically, when the team project difficulty is low, humility leadership style is positively related to team learning climate.

H4: Team project difficulty moderates the mediating effect of humble leadership style on team exploratory learning through team learning climate. Specifically, when the team's project difficulty is low, the team leader's humble leadership style will improve the team's exploratory learning by shaping the team's learning atmosphere.

In accordance with the foregoing analysis, we formulated a model delineating the influence mechanism of the humble leadership style on team exploratory learning. Significantly, we underscored the mediating influence of the team learning climate and the moderating impact of team project difficulty, as illustrated in Figure 1.

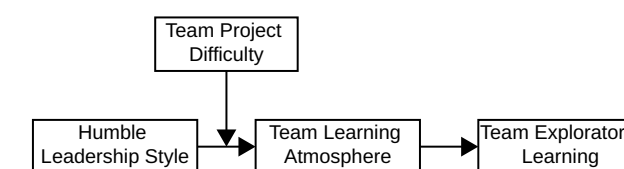


Figure 1: Research Model.

3. Research Methods
Research Process and Sample Description

This study employed a questionnaire survey, gathering data from 121 teams in the IT technology service industry. The rationale for selecting this sample includes: 1) The IT industry's rapid development and continuous knowledge updating necessitate a conducive learning atmosphere; 2) IT technical workers often confront high-pressure and complex working environments, offering a tangible evaluation of project difficulty; 3) The sampled companies provide technical services in team structures, ensuring relative stability.

To mitigate common method bias, this study employed multi-source and multi-time data collection techniques, incorporating superior-subordinate and team-customer matching. Questionnaires were individually administered to leaders, subordinates, and customers served by the team from Party A. Drawing on the practice of Li et al. (2021). This study employed a three-phase questionnaire survey with a biweekly interval between each administration. During the initial phase (T1), leaders and subordinates provided demographic information, while subordinates evaluated leaders' humble leadership styles and Party A customers assessed project difficulty. Subsequently, in T2, subordinates appraised the team learning atmosphere, focusing on appreciation and error avoidance dimensions. In the final phase (T3), team leaders evaluated team exploratory learning. In T1, retrieval rates were 97.52% for 121 leadership, 95.03% for 382 subordinates, and 97.52% for 121 Party A customer questionnaires. In T2, all 365 subordinate questionnaires were collected, and in T3, all 118 leadership questionnaires were successfully retrieved.

Across the three rounds of questionnaire surveys, we obtained a total of 118 matched leadership questionnaires (response rate: 97.52%) and 365 subordinate questionnaires (response rate: 95.55%). After excluding incomplete responses and incomplete participation across the three rounds, 104 sets of valid team questionnaires were retained (104 leader questionnaires and 294 subordinate questionnaires). Among the leadership samples, 79.81% were male, 20.19% were female, with an average age of 33.48 years (SD=6.01), and 61.54% held a bachelor's degree or above. Among the subordinate samples, 79.59% were male, 20.41% were female, with an average age of 29.21 years (SD=5.32), and 53.06% held a bachelor's degree or above. The leaders and team members had worked together for an average of approximately 53 months (Mean=52.75, SD=59.86), with an average team size of about 4 people (Mean=4.18, SD=0.86).

Measuring Tools

To ensure scale reliability and validity while mitigating semantic ambiguity that may compromise questionnaire quality, established scales from both domestic and international literature were incorporated in this study. For foreign scales, a standard translation and back-translation procedure was employed, followed by expert reviews, revisions, and feedback solicitation from managers in relevant companies to ascertain contextual applicability and content appropriateness. The questionnaire implemented in this study utilized a 7-point Likert scale, where responses ranged from 1 to 7, indicating the spectrum from "strongly disagree" to "strongly agree."

Team exploratory learning was assessed utilizing a 5-item scale devised by Jansen et al. (2016). An exemplar item from the scale is, "Members of our group find new ideas and solutions to complex problems." The scale employs a 7-point Likert scale for measurement, where 1 represents "strongly disagree," and 7 signifies "strongly agree." The internal consistency coefficient for this scale in the present study was determined to be 0.93.

The humble leadership style was quantified utilizing the 9-item scale formulated by Owens et al. (2013). An exemplar item from the scale is "My leader is willing to learn from others." The scale employs a 7-point Likert scale, where 1 indicates "strongly disagree," and 7 indicates "strongly agree." The internal consistency coefficient for this scale in the current study was determined to be 0.95. To assess the appropriateness of aggregating this variable at the team level, the Intraclass Correlation Coefficients (ICC1 and ICC2) and item average rwg were computed to examine intra-group consistency and inter-group differences. The results revealed ICC1= 0.30, ICC2= 0.54, rwg(j) = 1.00, suggesting high consistency in subordinate ratings of humble leadership style within teams, with notable differences between groups. Consequently, this measure is deemed suitable for aggregation to the team level.

Team Learning Atmosphere: The scale developed by Nikolova et al. (2014). The team learning atmosphere, comprising two dimensions—appreciative learning atmosphere and error avoidance learning atmosphere, encompasses 3 items each. Sample items include "In our group, people are rewarded for improving their skills professionally" and "In our group, people are not afraid to admit mistakes." Measurement is carried out on a 7-point Likert scale, where 1 denotes "strongly disagree," and 7 signifies "strongly agree." The internal

consistency coefficient for this scale in the present study was established at 0.90. An aggregation test was also conducted, revealing aggregation results of ICC1 = 0.31, ICC2 = 0.56, and rwg(j) = 0.78. These outcomes substantiate the appropriateness of aggregating this measurement at the team level.

Team Project Difficulty: The 3 -item scale compiled by Fang, Evans, and Zou (2005). Exemplar items comprise statements such as "It is not easy to do well in this group's projects." Measurement is conducted using a 7-point Likert scale, wherein 1 signifies "strongly disagree," and 7 denotes "strongly agree." The internal consistency coefficient for this scale in the current study was determined to be 0.85.

In this investigation, we managed for leaders' demographic attributes, encompassing gender (0=female, 1=male) and age (in years). We hypothesize that leader demographic variables exert an influence on the team learning climate, as prior research has indicated that a leader's decision-making inclinations can be influenced by gender (Cavazotte, Moreno, & Hickmann, 2012), and age is anticipated to impact the leader's accumulation of knowledge and experience, consequently influencing their managerial decision-making (Barbuto et al., 2007). Prior research indicates that the duration of team members working together influences mutual understanding, trust, communication, knowledge sharing, and experience exchange within the team, consequently impacting the team's innovative thinking (Boss et al., 2023). Moreover, empirical evidence has demonstrated that team size exerts an impact on internal communication within the team (Ancona & Caldwell, 1992) and augment the team's knowledge reservoirs. Team size (quantified by the number of team members) was also held constant in accordance

with the methodology of the study Leblanc, Rousseau, and Harvey (2022).

Analysis Methods

Our investigation operates at the team level, employing Mplus 8.3 and Stata 17.0 for analytical purposes. The coefficients for each path, along with direct and indirect effects, were computed under specified assumptions, thereby substantiating the path relationships among model variables. To facilitate interpretability of the regression results, humility leadership style and team project difficulty were centred in the regression model

4. Research Results
Descriptive Statistical Analysis

Table 1 presents the means, standard deviations, and correlation coefficients for the research variables. Initial descriptive statistical analysis reveals a negative correlation between team exploratory learning and team working time (r= -0.21, p < 0.05), indicating that teams with shorter working durations exhibit a greater inclination toward engaging in exploratory learning. This association may be attributed to the tendency for prolonged collaboration within a team to foster inertial thinking, directing focus primarily towards task completion rather than the exploration of novel methods and ideas. Additionally, a significant positive correlation is observed between humility leadership style and team learning atmosphere (r = 0.21, p < 0.05), aligning with prior research. This correlation underscores that humble leaders, characterized by attentiveness to team members' ideas, respect for their contributions, and the provision of positive feedback and encouragement, contribute to the establishment of a positive and open team culture. Such a culture encourages knowledge and experience sharing among team members, fostering a collaborative environment of mutual learning and support.

Table 1: Variable Means, Standard Deviations and Correlation Coefficients.

Variable	M	SD	1	2	3	4	5	6	7
1. Leadership gender	0.80	0.41							
2. Leadership age	33 0. 48	6 0. 01	- 0. 0 2						
3.Team time together	52 0. 78	59 0. 85	- 0. 02	0. 3 4**					
4.Team size	4 0. 18	0.86	0.08	0.25*	- 0. 05				
5.Humble leadership style	5 0. 29	0.77	- 0.14	0.03	0.07	- 0. 0 1			
6.Team learning atmosphere	5 0. 44	0.70	- 0.10	0.14	- 0. 02	0. 0 8	0.21*		
7. Team exploratory learning	5 0. 85	0.81	- 0. 0 1	- 0.12	- 0.21*	0. 0 5	0.02	0.25*	
8. Difficulty of team projects	4 0. 97	1 0. 52	0. 1 1	- 0. 05	- 0. 1 5	0. 1 2	- 0. 06	0. 1 4	0.04
Note: ** * represents p < 0.01 , ** represents p< 0.05 , * represents p < 0.1. N=104.									

Hypothesis Testing

This study primarily employs hierarchical regression

analysis for hypothesis testing, and the corresponding results are presented in Table 2. The analysis reveals

that the influence of humble leadership style on team exploratory learning is not statistically significant ($\beta = 0.04$, $p > 0.10$), leading to the non-verification of Hypothesis 1. In Model 2, it is demonstrated that humble leadership style significantly and positively impacts team learning climate ($\beta = 0.18$, $p < 0.05$). Furthermore, in Model 7, team learning climate exhibits a significant positive effect on team exploratory learning ($\beta = 0.30$, $p < 0.05$). Importantly, the influence of

humble leadership style on team exploratory learning becomes statistically insignificant at this juncture ($\beta = -0.02$, $p > 0.05$). Consequently, the presence of the mediating role of team learning climate is established. Substantiating this finding, the Bootstrap test reveals a significant mediating effect (mediating effect value: 0.05, 95% confidence interval [0.00, 0.15] does not include 0), thereby supporting Hypothesis 2.

Table 2: Hierarchical Regression Results.

	Team Learning Atmosphere				Team Exploration Learning		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Control Variables							
leadership gender	- 0.17	- 0.12	- 0.15	- 0.15	- 0.05	- 0.04	0.00
leadership age	0.02	0.02	0.02	0.02	- 0.01	- 0.01	- 0.02
team time	- 0.00	- 0.00	- 0.00	- 0.00	- 0.00	- 0.00	- 0.00
Team size	0.04	0.04	0.03	0.04	0.06	0.06	0.05
Independent Variables							
humility leadership style		0.18 *	0.19 *	0.16		0.04	- 0.02
Moderator							
Team project difficulty			0.07	0.09			
Interaction Terms							
Humble leadership style × Team project difficulty				- 0.13 *			
Mediating Variables							
Team learning atmosphere							0.30 *
Adjustment	- 0.00	0.03	0.04	0.09	0.01	0.00	0.06
F value	0.92	1 0.57	1 0.75	2 0.54*	1 0.33	1 0.08	2 0.07

Note: ** * represents $p < 0.01$, ** represents $p < 0.05$, * represents $p < 0.1$. N= 104.

Table 3: Analysis of Total Effect, Direct Effect and Mediating Effect.

	Effect Size	Standard Error	95%CI Lower Limit	95% CI Upper Limit
Total Effect	0.04	0.11	- 0.18	0.24
Direct Effect	- 0.01	0.04	- 0.22	0.17
Indirect Effect	0.05	0.10	0.00	0.15

Table 2 illustrates that the interaction term between humble leadership style and team project difficulty demonstrates a significantly negative association with team learning climate ($\beta = -0.13$, $p < 0.05$), affirming the presence of a moderating effect. Additionally, a simple slope test was conducted and the moderating effect graphically depicted in Figure 2. The findings reveal that when team project difficulty is high (+1SD), the relationship between humble leadership style and team learning climate is not statistically significant ($t = -0.36$, 95% CI = [-0.30, 0.18], $p > 0.05$). Conversely, when the difficulty of the team project is low (-1SD), humble leadership style exhibits a significantly positive relationship with the team learning atmosphere ($t = 3.59$, 95% CI = [-0.15, 0.55], $p < 0.01$). Thus, Hypothesis 3 receives support.

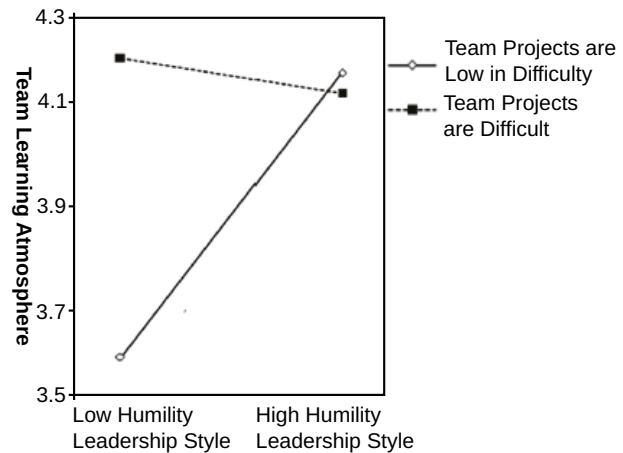


Figure 2: Moderation Effect Diagram.

The results of the moderated mediation effect test are detailed in Table 4. Notably, team project difficulty

exhibits a moderating influence on the indirect effect of humble leadership style on team exploratory learning through team learning climate (effect: -0.04, 95% confidence interval [CI] excludes 0, [-0.09, -0.01]). Specifically, in instances of high team project difficulty (+1SD), the indirect effect of humble leadership style on team exploratory learning is non-significant (indirect effect = -0.01, 95% CI includes 0, [-0.10, 0.06]).

Conversely, when project difficulty is low (-1SD), the indirect effect of humble leadership style on team exploratory learning is positive and significant (indirect effect: 0.11, 95% CI [0.02, 0.23]). Furthermore, a notable disparity in the indirect effect at high and low difficulty levels is observed (difference: 0.12, 95% CI [0.03, 0.28]). These findings provide support for Hypothesis 4.

Table 4: Mediating Role of Regulation.

Team Task Difficulty	Effect	Standard Error	95% Confidence Interval
Low	0.11	0.05	[0.02,0.23]
high	- 0.01	0.04	[-0.10,0.06]

5. Conclusion and Enlightenment
Conclusion

This study delves into the mechanism through which humble leadership style fosters exploratory learning within teams, drawing insights from social learning theory. Despite the absence of a statistically significant direct effect between humble leadership style and team exploratory learning in the data, the research reveals that humble leadership style effectively stimulates team exploratory learning by enhancing team learning climate as a mediating mechanism. Notably, the moderating impact of team project difficulty on the mediating role of team learning climate between humble leadership style and team exploratory learning is elucidated, with a more pronounced mediating effect observed when team project difficulty is low. These findings contribute to the extant literature on humble leadership style by establishing connections between humble leadership, team learning climate, and team exploratory learning, while also exploring the situational moderation provided by team project difficulty. The practical implications derived from this study offer valuable insights for business management.

Enlightenment

1. Leaders should exhibit timely humility, fostering an environment where employees feel respected, valued, and recognized for their opinions and contributions. This cultivates dedication and active engagement towards organizational goals. Leaders should acknowledge their own shortcomings, embrace a humble mindset, and promote a culture of continuous learning. Encouraging employees to share expertise, opinions, and suggestions enhances their sense of recognition, trust, and active participation. Demonstrating humility contributes to improving employees' psychological safety, fostering a team learning atmosphere, and

motivating autonomous learning, ultimately enhancing skill levels and performance.

2. Cultivate a culture of communication and learning: Leaders should foster an open environment, encouraging active team communication and opinion-sharing. By listening to team members, showing gratitude, and respecting contributions, leaders boost participation and a sense of belonging. Organizations should promote a learning culture, with leaders modelling and emphasizing learning importance. Providing learning support and resources enhances employee engagement in exploratory learning behaviours.

3. Encourage knowledge sharing and collaboration: Leaders ought to facilitate team members in sharing their expertise and experience, fostering collaboration within the team. The exchange of knowledge and experiences among team members enhances collective learning and innovation capabilities. Leaders can establish knowledge-sharing platforms or organize regular team meetings to encourage communication and cooperation. Emphasizing cooperation and communication among team members not only supports mutual learning but also stimulates team collaboration and creativity. This environment promotes team exploratory learning, contributing to enhanced organizational learning and innovation capabilities, ultimately leading to long-term organizational success.

4. Give employees positive feedback and rewards: Leadership should foster a culture where team members are motivated to experiment with novel ideas and approaches, backed by support mechanisms that enable learning and growth from failures. Providing resources and opportunities for innovative exploration contributes to the organization's ongoing progress and development. Positive feedback and incentives, such as learning assessments

and rewards, enhance team members' sense of value and motivation to learn and explore. Establishing mechanisms like award incentives, promotion criteria, or other forms of recognition can actively encourage employees to engage in learning and attain notable achievements.

Limitations and Future Research Directions

This study solely relies on a questionnaire survey method, despite incorporating multi-source and multi-time data collection approaches, which may limit its validity. Future research should employ multiple methods to enhance both internal and external validity. Additionally, while the study focuses on team exploratory learning, it neglects team developmental learning, warranting further investigation into the impact of humble leadership on this aspect. Furthermore, while the study examines the moderating effect of team project difficulty, other situational characteristics between leadership dialectical thinking and team performance remain unexplored. Future research should consider these additional situational variables to enrich understanding and potentially uncover differences in results.

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