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# How does environmental leadership cause adoption of environmental policy?

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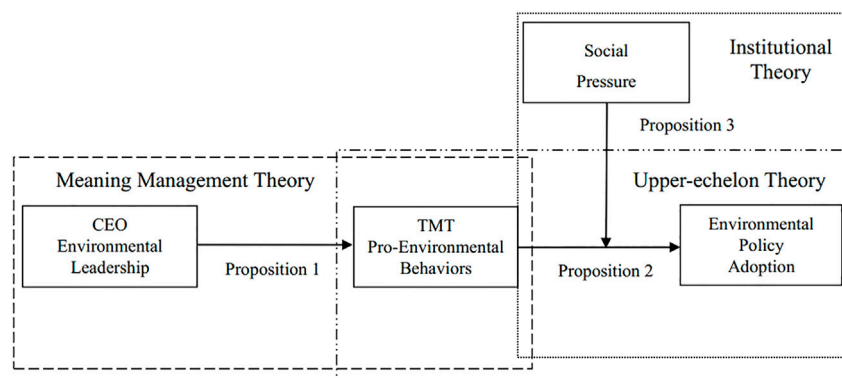
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## Introduction

To gain a greater competitive advantage against other enterprises, contemporary enterprises must not only adopt the environmental policy but also require employees to demonstrate pro-environmental behaviors, which are important sources of sustainable competitive advantage (Wu et al., 2021; Xu et al., 2021; Zhou et al., 2021). Pro-environmental behavior refers to the extent to which individuals engage in environmental protection-related behaviors to improve environmental sustainability (Jia et al., 2021; Li et al., 2020; Zhu et al., 2021). Environmental policy refers to the extent to which companies mitigate the negative impacts of their business activities and operations on the natural environment (Bertolotti and Catellani, 2021; Huang et al., 2022; Maeda et al., 2021). However, previous surveys have always predicted the adoption of environmental policy from an institutional perspective (Blakeney et al., 2020; Chen et al., 2021), which has created the first literature gap. Next, previous surveys have predicted pro-environmental behaviors through three perspectives. The first perspective is to adopt institutional variables to explain pro-environmental behaviors, such as institutional norms (Perry et al., 2021). The second perspective is to adopt personal perceptions to explain pro-environmental behaviors (Handoyo et al., 2021). The third perspective is to adopt the personal ability to explain pro-environmental behaviors, such as state (Uren et al., 2021). Although the above-mentioned surveys have promoted the development of the adoption of environmental policy and pro-environmental behaviors, surveys of antecedents on the two important are still insufficient (Moore and Boldero, 2017; He et al., 2020), which has created the second literature gap. Indeed, the problem of environmental pollution has caused problems such as global warming and air pollution (Farrow et al., 2020), so exploring the psychological mechanisms of pro-environmental behavior and environmental policy should be a big issue.

To fill the above literature gaps, this paper proposes a new mediation model of pro-environmental behaviors with its antecedents, consequences, and moderating factors, to open up a new paradigm for pro-environmental behaviors. In other words, based on the theory of meaning management (Smircich and Morgan, 1982) and the upper-echelon theory



**FIGURE 1**  
Research model of this paper.

(Hambrick, 2016), the environmental leadership of the chief executive officer (CEO) has a positive impact on the pro-environmental behaviors of the top management team (TMT) and then leads to the adoption of environmental policy, which is moderated by social pressure. Upper-echelon theory states that an upper-echelon manager should influence his or her enterprise to adopt a strategy that is consistent with the values preferred by the upper-echelon manager. Meaning management theory states that leaders will engage with meaning management theory to shape followers' behaviors to meet organizational expectations. Many businesses have indeed adopted pro-environmental behaviors and environmental policy to achieve sustainable performance (Robertson and Barling, 2015; Xu et al., 2021), but few studies have explored which organizational management mechanisms can enhance the pro-environmental behaviors and environmental policy. Furthermore, this paper takes social pressure as the boundary condition between the pro-environmental behaviors of the TMT and the adoption of environmental policy, because the TMT faces higher social pressure and should show more intention to adopt environmental policy caused by pro-environmental behaviors based on institutional theory.

## Literature reviewing

This paper states a novel moderating mediation model of pro-environmental behaviors (Figure 1).

- 1) CEO Environmental Leadership and TMT pro-environmental behaviors

This article draws on the theory of meaningful management (Smircich and Morgan, 1982) to connect the environmental leadership of CEOs with the environmental behavior of TMTs. In other words, leaders who transmit organizational

value to followers also shape followers' self-worth to achieve meaningful management (Huang et al., 2021; Huang et al., 2022). The CEO's environmental leadership may transmit the values of environmental concerns to the TMT, and the CEO's environmental leadership will also shape the TMT's behaviors to be consistent with environmental concerns, similar to the content of pro-environmental behaviors.

**Proposition 1.** CEO Environmental Leadership will increase TMT pro-environmental behaviors

- 2) TMT pro-environmental behaviors and environmental policy adoption

This paper draws on upper-echelon theory (Hambrick, 2016) to connect TMT's environmental behavior with environmental policy adoption. The theory states that the values of upper management will influence the strategic style adopted by the enterprises. The pro-environmental behaviors of TMT mean that TMT has a high environmental value, which will influence the enterprise to adopt the environmental policy. In addition, TMT has the power to allocate resources to different activities (Chen et al., 2016), so TMT must have the power to allocate resources to environmental policy adoption, thus clarifying the antecedent role of TMT's pro-environmental behavior on the adoption of environmental policy.

**Proposition 2.** TMT pro-environmental behaviors will increase environmental policy adoption.

- 3) The moderating role of social pressure

In the field of environmental management, social pressures play a key role in influencing corporate strategies, as companies must develop strategies that meet stakeholder expectations based on institutional theory (Scott and Richard, 2004; Shahzad et al.,

2022; Wang et al., 2022). Institutional theory means that there are many social orders and cooperative expectations that guide and regulate the behavior of individuals, and these mechanisms will generate pressure for all members to have a common pattern or standard of behavior to follow. Social pressure refers to the degree to which public and government pressures force companies to pay attention to environmentalism (Ličen et al., 2016; Lv et al., 2022; Zhou et al., 2021). Compared with TMTs with lower social pressures, TMTs with higher social pressures may force TMTs to have higher incentives to influence firms to adopt environmental policies caused by pro-environmental behaviors.

**Proposition 3.** Social pressure will moderate the relationship between TMT pro-environmental behaviors and environmental policy adoption.

## Discussion

Based on meaning management theory and upper echelons theory, the present paper provides a theoretically combined perspective to explain a CEO-TMT linkage, and the combined perspective also guides future research to include the CEO-TMT linkage in the pro-environmental behaviors field.

To assist enterprises to implement pro-environmental behaviors and environmental policy adoption, these enterprises must incorporate environmental leadership into their education and training, because it can increase pro-environmental behaviors and environmental policy adoption.

To establish a novel moderating mediation model of pro-environmental behavior, this paper uses meaning management theory and upper-echelon theory to describe why CEO environmental leadership positively affects environmental policy adoption through the mediating role of TMT pro-environmental behavior, and this relationship is moderated by social pressure. Previous surveys have not explored this avenue to address the literature gap, and this paper fills the gap with a novel moderating mediation model of pro-environmental behaviors, thereby making an incremental contribution to sustainable development.

## References

- Bertolotti, M., and Catellani, P. (2021). Going green, but staying in the black: How framing impacts the agreement with messages on the economic consequences of environmental policies. *Front. Psychol.* 12, 624001. doi:10.3389/fpsyg.2021.624001
- Blakeney, M., Krishnankutty, J., Raju, R. K., and Siddique, K. H. M. (2020). Agricultural innovation and the protection of traditional rice varieties: Kerala a case study. *Front. Sustain. Food Syst.* 3, 116. doi:10.3389/fsufs.2019.00116
- Chen, B., Ren, M., and Chen, L. (2021). Impact analysis of large-scale environmental spot inspection policy on green innovation: Evidence from China. *Front. Environ. Sci.* 9, 676413. doi:10.3389/fenvs.2021.676413
- Chen, Y., Tang, G., Cooke, F. L., and Jin, J. (2016). How does executive strategic resource management link to organizational ambidexterity? An empirical examination of manufacturing firms in China. *Hum. Resour. Manage.* 55, 919–943.
- Farrow, S., Miller, K. A., and Myllyvirta, L. (2020) Toxic air: The price of fossil fuels greenspace (Available from: <https://www.greenpeace.org/static/planet4-southeastasia-stateless/2020/02/21b480fa-toxic-air-report-110220.pdf>)
- Hambrick, D. C. (2016). “Upper echelons theory,” in *The palgrave encyclopedia of strategic management*. Editors M. Augier and D. J. Teece (New York, NY: Palgrave Macmillan), 1–5.
- Handoyo, B., Astina, I. K., and Mkumbachi, R. L. (2021). Students’ environmental awareness and pro-environmental behaviour: Preliminary study of geography students at state University of Malang. *IOP Conf. Ser. Earth Environ. Sci.* 683, 012049. doi:10.1088/1755-1315/683/1/012049
- He, J., Lei, Y., Fu, X., Lin, C-H., and Chang, C-H. (2020). How can manufacturers promote green innovation in food supply chain? Cost sharing strategy for supplier motivation. *Front. Psychol.* 11, 574832. doi:10.3389/fpsyg.2020.574832

Based on meaning management theory and upper-echelon theory, this paper provides a theoretically integrated perspective for explaining CEO-TMT linkage and also guides future research to incorporate CEO-TMT linkage into the field of pro-environmental behaviors.

To help enterprises implement pro-environmental behaviors and environmental policy adoption, these enterprises must incorporate environmental leadership into their education and training, as it can increase pro-environmental behaviors and environmental policy adoption.

## Author contributions

T-WC contribution: Conceptualization and Writing—original draft. K-HC and corresponding author contribution: Project administration, Supervision, and Writing—revised draft. Y-SL contribution: Literature collection, Idea Generation, Writing, review and editing—revised draft. S-JY contribution: Literature collection, Idea Generation, and Writing, review and editing—revised draft.

## Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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- Huang, S. Y. B., Huang, C.-H., and Chang, T.-W. (2022). A new concept of work engagement theory in cognitive engagement, emotional engagement, and physical engagement. *Front. Psychol.* 12, 663440. doi:10.3389/fpsyg.2021.663440
- Huang, S. Y. B., Li, M.-W., and Chang, T.-W. (2021). Transformational leadership, ethical leadership, and participative leadership in predicting counterproductive work behaviors: Evidence from financial technology firms. *Front. Psychol.* 12, 658727. doi:10.3389/fpsyg.2021.658727
- Jia, Y., Tian, J., and Liu, H. (2021). The roles of mental construal level theory in the promotion of university students' pro-environmental behaviors. *Front. Psychol.* 12, 735837. doi:10.3389/fpsyg.2021.735837
- Li, Z., Xue, J., Li, R., Chen, H., and Wang, T. (2020). Environmentally specific transformational leadership and employee's pro-environmental behavior: The mediating roles of environmental passion and autonomous motivation. *Front. Psychol.* 11, 1408. doi:10.3389/fpsyg.2020.01408
- Ličen, M., Hartmann, F., Repovš, G., and Slapničar, S. (2016). The impact of social pressure and monetary incentive on cognitive control. *Front. Psychol.* 7, 93. doi:10.3389/fpsyg.2016.00093
- Lv, Y., Ma, C., Wu, M., Li, X., and Hao, X. (2022). Assessment of preschool's inclusive participation in social responsibility program under institutional pressure: Evidence from China. *Front. Psychol.* 13, 810719. doi:10.3389/fpsyg.2022.810719
- Maeda, E. E., Haapasari, P., Helle, I., Lehtikoinen, A., Voinov, A., Kuikka, S., et al. (2021). Black boxes and the role of modeling in environmental policy making. *Front. Environ. Sci.* 9, 629336. doi:10.3389/fenvs.2021.629336
- Moore, H. E., and Boldero, J. (2017). Designing interventions that last: A classification of environmental behaviors in relation to the activities, costs, and effort involved for adoption and maintenance. *Front. Psychol.* 8, 1874. doi:10.3389/fpsyg.2017.01874
- Perry, G. L., Richardson, S. J., Harré, N., Hodges, D., Lyver, P. O., Maseyk, F. J., et al. (2021). Evaluating the role of social norms in fostering pro-environmental behaviors. *Front. Environ. Sci.* 9, 620125. doi:10.3389/fenvs.2021.620125
- Robertson, J. L., and Barling, J. (2015). "The role of leadership in promoting workplace pro-environmental behaviors," in *The psychology of green organizations*, Editors J. L. Robertson and J. Barling (New York, NY: Oxford University Press).
- Scott, W. R. (2004). "Institutional theory," in *Encyclopedia of social theory*. Editor Ritzer George (Thousand Oaks, CA: Sage), 408–414.
- Shahzad, F., Du, J., Khan, I., and Wang, J. (2022). Decoupling institutional pressure on green supply chain management efforts to boost organizational performance: Moderating impact of big data analytics capabilities. *Front. Environ. Sci.* 10, 911392. doi:10.3389/fenvs.2022.911392
- Smircich, L., and Morgan, G. (1982). Leadership: The management of meaning. *J. Appl. Behav. Sci.* 18, 257–273. doi:10.1177/002188638201800303
- Uren, H. V., Roberts, L. D., Dzidic, P. L., and Leviston, Z. (2021). High-status pro-environmental behaviors: Costly, effortful, and visible environ. *Behav* 53, 5 455–484.
- Wang, H., Lu, X., Hu, C., and Wang, H. (2022). Institutional pressures and servitization paradox: The moderating effect of organizational identity orientations. *Front. Psychol.* 13, 901732. doi:10.3389/fpsyg.2022.901732
- Wu, J., Zhang, W., Peng, C., Li, J., Zhang, S., Cai, W., et al. (2021). The trickle-down effect of leaders' VWGB on employees' pro-environmental behaviors: A moderated mediation model. *Front. Psychol.* 12, 623687. doi:10.3389/fpsyg.2021.623687
- Xu, F., Ji, Q., and Yang, M. (2021). The pitfall of selective environmental information disclosure on stock price crash risk: Evidence from polluting listed companies in China. *Front. Environ. Sci.* 9, 622345. doi:10.3389/fenvs.2021.622345
- Zhou, J., Sawyer, L., and Safi, A. (2021). Institutional pressure and green product success: The role of green transformational leadership, green innovation, and green brand image. *Front. Psychol.* 12, 704855. doi:10.3389/fpsyg.2021.704855
- Zhu, Y., Wang, Y., and Liu, Z. (2021). How does social interaction affect pro-environmental behaviors in China? The mediation role of conformity. *Front. Environ. Sci.* 9, 690361. doi:10.3389/fenvs.2021.690361