BMF CP70: Exploring the climate change-related factors constraining stakeholders' willingness to protect the ocean

Phuong-Tri Nguyen (a), **Minh-Phuong Thi Duong** (b)

(a) Securities Research and Training Center, State Security Commission, Ho Chi Minh City 700000, Vietnam
(b) Faculty of Social Sciences and Humanities, Ton Duc Thang University, Ho Chi Minh City 700000, Vietnam

March 3, 2024

"The age of technology has arrived, and Kingfisher has decided it's time for something new: Technological Innovation. Innovation can help Kingfisher conserve energy while maintaining a sense of tranquility, which is suitable for an increasingly advanced age with diminishing physical strength.
[…]
Pressing the buttons has gradually become somewhat of a new technological ritual."

—In "Innovation", *The Kingfisher Story Collection* [1]

1. Project description

1.1. Main objectives

The current study is conducted to examine the following research questions:

- Do perceptions that mitigate climate change risk (e.g., developing technology to help address climate change) reduce stakeholders' willingness to protect the ocean?
- Do perceptions of the costs associated with combating climate change (e.g., the belief that responding to climate change will harm economies and societies that are already actively addressing the issue) reduce stakeholders' willingness to protect the ocean?

The findings from this study are expected to provide insights into how perceptions of climate change mitigation and cost beliefs influence stakeholders' willingness to protect the ocean. This information can inform targeted strategies for policymakers and conservationists to enhance support for marine protection and build the eco-surplus culture in the face of climate change challenges [2-4].

1.2. Materials

The Mindsponge theory will be used for conceptual development, and Bayesian Mindsponge Framework (BMF) analytics will be used for statistical analysis on a dataset of 709 people from 42 countries [5-8]. The Bayesvl R package, aided by the Markov chain Monte Carlo (MCMC) algorithm, will be employed for statistical analyses [7]. For more information on BMF analytics, portal users can refer to the following book [8]. For the sake of research transparency and reducing research and reproducibility costs, we have stored all data and computer code on OSF.

1.3. Main findings

The preliminary analysis indicates that *TooMuchSocialEffort*, *TechasEnvironSolution*, and *NegativeImpactonEconomy* consistently exert a negative impact on *ProtectOceans*, as observed through their coefficients consistently falling on the negative side. This provides a reliable indication of these factors adversely influencing the willingness to protect oceans (see Figure 1).
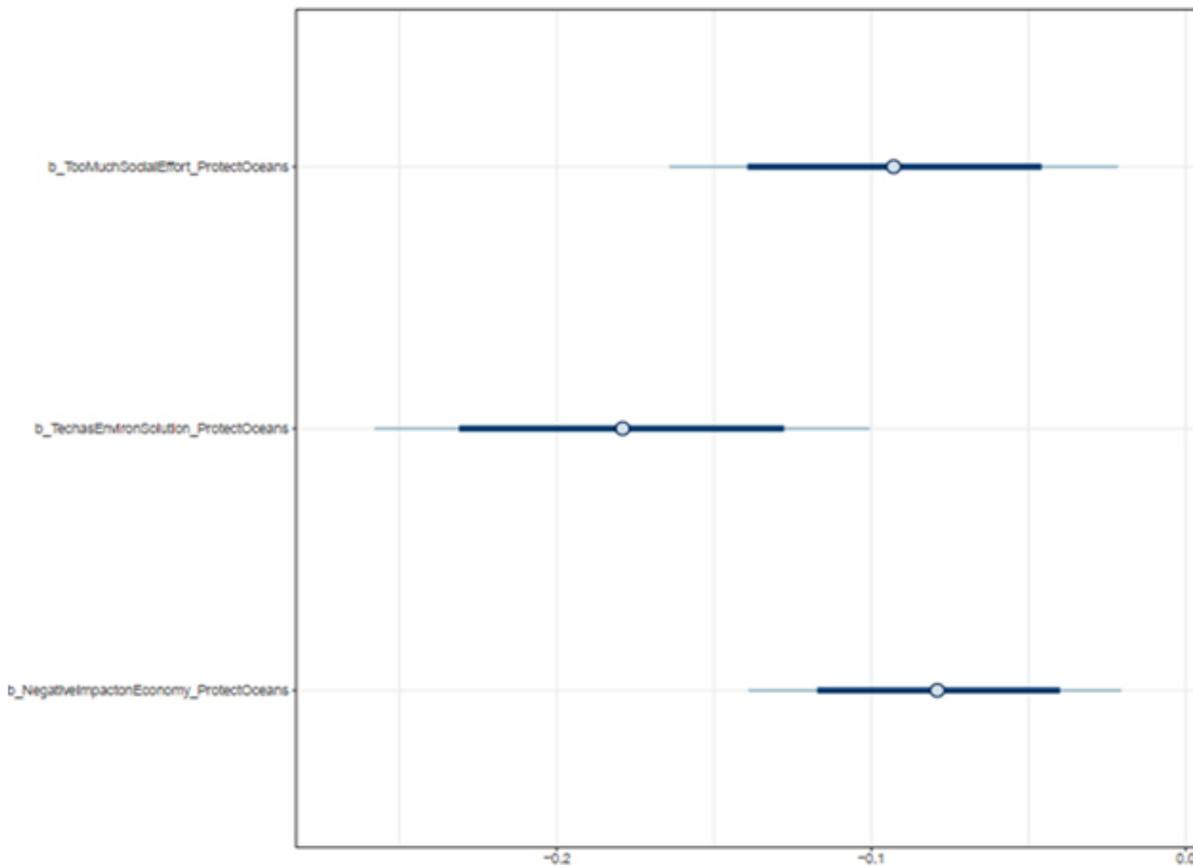
Figure 1: Estimated coefficients

2. Collaboration procedure

This BMF project is NOT open for registration.

Project coordinators: ***Phuong-Tri Nguyen*** and ***Minh-Phuong Thi Duong***.

AISDL mentor for this project: Minh-Hoang Nguyen.

Other members who have joined this project: Quan-Hoang Vuong, Viet-Phuong La, Hoang-Minh Dinh.

The research project strictly adheres to scientific integrity standards, including authorship rights and obligations [9], without incurring an economic burden at participants' expenses [10].

References

[1] Vuong QH. (2022). *The Kingfisher Story Collection*. https://www.amazon.com/dp/B0BG2NNHY6

[2] Agnello G, et al. (2022). Understanding citizen scientists' willingness to invest in, and advocate for, conservation. *Biological Conservation*, 265, 109422. https://www.sciencedirect.com/science/article/abs/pii/S0006320721004742

[3] Nguyen MH., Jones TE. (2022). Building eco-surplus culture among urban residents as a novel strategy to improve finance for conservation in protected areas. *Humanities & Social Sciences Communications*, 9, 426. https://www.nature.com/articles/s41599-022-01441-9

[4] Vuong QH, *et al.* (2020). Identifying the moral–practical gaps in corporate social responsibility missions of Vietnamese firms: An event-based analysis of sustainability feasibility. *Corporate Social Responsibility and Environmental Management*, 28(1), 30-41. https://onlinelibrary.wiley.com/doi/abs/10.1002/csr.2029

[5] Nguyen MH, La VP, Le TT, Vuong QH. (2022). Introduction to Bayesian Mindsponge Framework analytics: An innovative method for social and psychological research. *MethodsX*, 9, 101808. https://linkinghub.elsevier.com/retrieve/pii/S2215016122001881

[6] Vuong QH. (2023). *Mindsponge theory*. Walter de Gruyter GmbH. https://www.amazon.com/dp/B0C3WHZ2B3

[7] Vuong QH, Napier NK. (2015). Acculturation and global mindsponge: An emerging market perspective. *International Journal of Intercultural Relations*, 49, 354-367. https://www.sciencedirect.com/science/article/abs/pii/S0147176715000826

[8] Fonseca C, et al. (2023). Survey data of public awareness on climate change and the value of marine and coastal ecosystems. Data in Brief, 47, 108924. https://www.sciencedirect.com/science/article/pii/S2352340923000422

[9] La VP, Vuong QH. (2019). bayesvl: Visually Learning the Graphical Structure of Bayesian Networks and Performing MCMC with 'Stan'. *The Comprehensive R Archive Network*. https://cran.r-project.org/web/packages/bayesvl/index.html

[10] Vuong QH, Nguyen MH, La VP. (2022). *The mindsponge and BMF analytics for innovative thinking in social sciences and humanities*. Walter de Gruyter GmbH. https://www.amazon.com/dp/B0C4ZK3M74

[11] Vuong QH. (2020). Reform retractions to make them more transparent. *Nature*, 582, 149. https://www.nature.com/articles/d41586-020-01694-x

[12] Vuong QH. (2018). The (ir)rational consideration of the cost of science in transition economies. *Nature Human Behaviour*, 2, 5. https://www.nature.com/articles/s41562-017-0281-4