

# BMF CP95: Temperature and population density as predictors of embeddedness and hierarchy cultural values

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“Lately, it had been raining a lot, the plants were lush, and the ponds were full of fish and shrimp. Birds from everywhere flocked to live here. The population of the Bird Village increased sharply. The Bird Village’s prosperity created the need for a Village Chief.”

–In “Kindness Policy”; [Wild Wise Weird](#) (2024)

[COLLABORATIVE PROJECT]

## 1. Project description

### 1.1. Main objectives

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

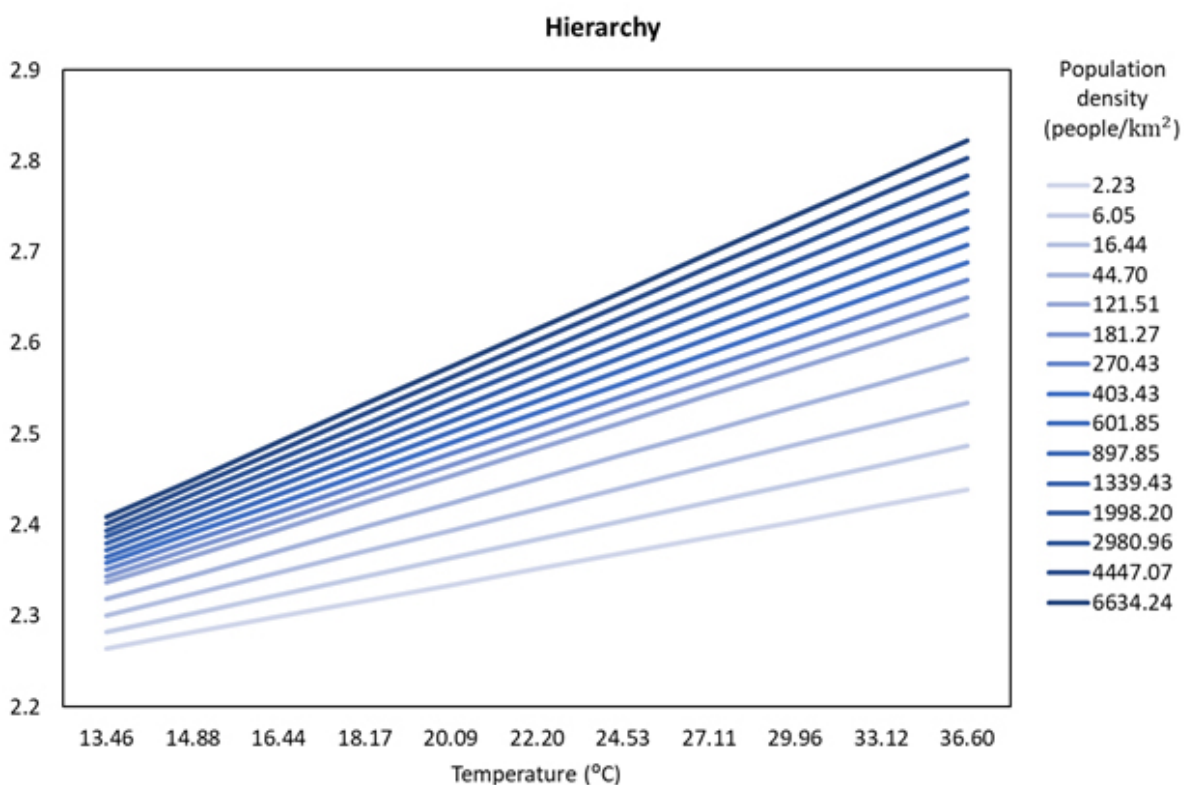
- How are the temperature and population density associated with the countries’ cultural values of embeddedness and hierarchy cultural values?

### 1.2. Materials

The granular interaction thinking of mindsponge theory will be used for the conceptual development of this study, while Bayesian Mindsponge Framework (BMF) analytics will be used for statistical analysis [1-4]. The dataset comprises the ecological and cultural characteristics of 220 countries during the 1901-2019 period [5]. Statistical analyses will be conducted using the bayesvl R package, which utilizes the Markov chain Monte Carlo (MCMC) algorithm for estimation [6]. For the sake of research transparency and reducing research and reproducibility costs, we have stored all data and computer code on Zenodo: <https://zenodo.org/records/13854660>.

### 1.3. Main findings

The preliminary analysis shows that countries that have higher temperatures and population density tend to have a higher value of hierarchy. The effect of population density on hierarchy increases as the temperature rises (see Figure 1). The results provide supportive evidence for the hypotheses regarding the relationship between cultural additivity, the availability of resources, and the additivity limitations [7,8].



**Figure 1:** The estimated hierarchy of cultural value

## 2. Collaboration procedure

Portal users should follow these steps for registering to participate in this research project:

1. Create an account on the website (preferably using an institution email).
2. Comment your name, affiliation, and your desired role in the project below this post.
3. Patiently wait for the formal agreement on the project from the AISDL mentor.

If you have further inquiries, please contact us at [aisdl\\_team@mindsponge.info](mailto:aisdl_team@mindsponge.info)

If you have been invited to join the project by an AISDL member, you are still encouraged to follow the above formal steps.

All the resources for conducting and writing the research manuscript will be distributed upon project participation.

AISDL mentor for this project: **Minh-Hoang Nguyen**

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

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

## References

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