

# BMF CP73: Policy Analysis in School Meals Program

*Ni Putu Wulan Purnama Sari*

Faculty of Nursing, Widya Mandala Surabaya Catholic University

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“Kingfisher’s 3-day hunger caused him to lose control and swallow the Taboo Fish in no time.”

–In “Taboo Fish”; [The Kingfisher Story Collection](#).

[COLLABORATIVE PROJECT]

## 1. Project Description

### 1.1. Background

Food fortification refers to the process of adding nutrients to foods during their production. This traditional approach to fortification contrasts with biofortification, which uses genetic engineering to enhance nutrient content. Food fortification is a cost-effective strategy with well-documented health, economic, and social benefits. It is particularly useful for addressing deficiencies in one or more micronutrients. Despite ongoing debates about its performance and safety at both global and national levels, food fortification significantly reduces nutritional deficiencies and provides economic benefits to societies and economies [1].

Globally, school meal programs are not uniformly implemented. Some countries lack such programs entirely, while others face challenges throughout the supply chain and food service processes. Implementing school meal programs requires guidance and support from a range of policies, including national and local school policies. This study aims to

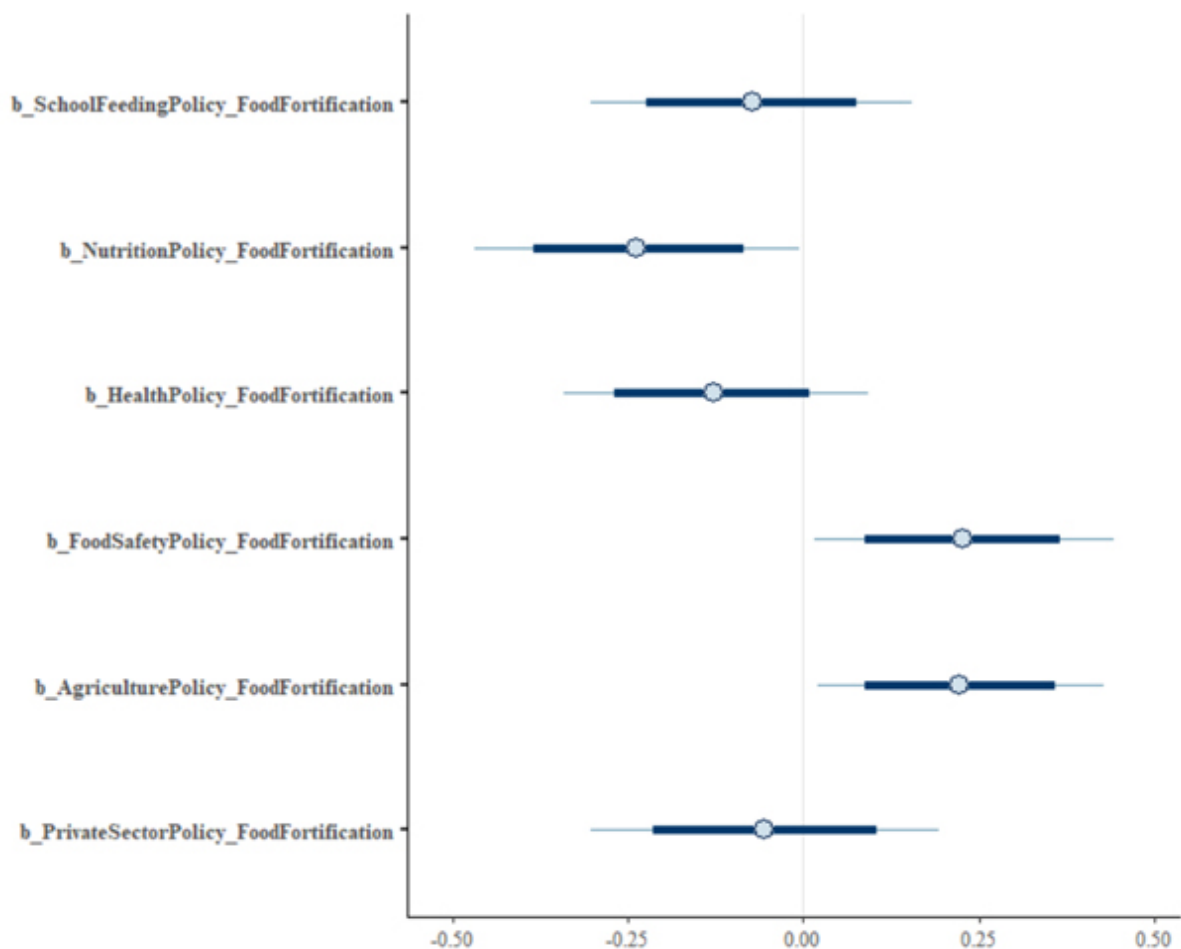
analyze how various national policies—such as those related to school feeding, nutrition, health, food safety, agriculture, and the private sector—affect the implementation of in-school food fortification. Enhancing and strengthening these policies could improve food fortification practices in school kitchens, thereby addressing the problem of “hidden hunger” among students through school meal programs.

## ***1.2. Materials***

The granular interaction thinking of mindsponge theory [2] was used in study conceptualization, and Bayesian Mindsponge Framework (BMF) analytics was employed in statistical analysis on a dataset of 126 Ministry officers who managed large-scale school meal programs in 126 countries. This dataset originated from the 2021 Global Surveys, which can be accessed publicly at the GCNF Global Survey of School Meal Programs database [3]. The bayesvl package, aided by the Markov chain Monte Carlo (MCMC) algorithm, was employed in statistical analysis [4]. For more information on BMF analytics, portal users can refer to the following documents [5]. Data and code snippets of this initial analysis were deposited at <https://zenodo.org/uploads/12742823>.

## ***1.3. Main Findings***

The preliminary analysis showed that food safety policy and agriculture policy affected the in-school food fortification practices significantly, while school feeding policy and private sector policy had ambiguous effects on these practices. Nutrition policy and health policy had a negative impact on food fortification among countries implementing school meal programs (see Figure 1).



**Figure 1:** Estimated coefficients

## 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 on your name, affiliation, and desired role in the project below this post.
3. Patiently wait for the AISDL mentor to give the formal agreement on the project.

If you have further inquiries, please get in touch with 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.

Project coordinator: ***Ni Putu Wulan Purnama Sari***.

The AISDL mentor for this project is Minh-Hoang Nguyen.

Other members who have joined this project: Quan-Hoang Vuong.

The research project strictly adheres to scientific integrity standards, including authorship rights and obligations, without incurring an economic burden at participants' expenses. Our philosophy embraces the fostering of humanistic values in conducting empirical investigations for sustainable and feasible solutions to real-world problems [8].

## References

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[2] Vuong QH, Nguyen MH. (2024). *Better Economics for the Earth: A Lesson from Quantum and Information Theories*. AISDL. <https://www.amazon.com/dp/B0D98L5K44/>

[3] Global Child Nutrition Foundation (GCNF). 2022. Global Survey of School Meal Programs database. GCNF: Seattle. [Accessed at https://gcnf.org/global-reports/](https://gcnf.org/global-reports/)

[4] 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>

[5] Nguyen MH, et al. (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>

