BMF CP75: Addressing the hidden hunger among children through micronutrient supplementation

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"On the second day, Kingfisher weakened and could not stand without shaking. He tried to eat some vegetables, but they just tasted so bland."

—In "No-Fish Dietary"; *The Kingfisher Story Collection*

1. Project Description

1.1. Background

Investing in children's nutrition can significantly enhance their survival, health, development, and school achievement. The world is currently facing an unprecedented crisis where overnutrition (overweight and obesity), undernutrition (stunting, wasting, and underweight), and micronutrient deficiencies (often referred to as hidden hunger) coexist within the same populations [1]. This triple burden of malnutrition presents a major global public health challenge. Deficiencies in essential micronutrients such as vitamin A, zinc, iron, folate, and iodine during childhood are associated with intellectual impairment, poor growth, perinatal complications, degenerative diseases related to aging, and increased child morbidity and mortality [2].

To combat hidden hunger and malnutrition, support educational attainment, and promote overall child development, many countries have implemented school meals programs. Strong policy guidelines at the national level are essential for the success of these programs. These policies encompass areas such as school feeding, nutrition, health, food safety, agriculture, and collaboration with the private sector. They play a crucial role in practices like adding nutritional supplements or micronutrient powders to foods prepared in school kitchens. This study aims to analyze how national policies impact the implementation of in-

school micronutrient supplementation. Enhancing and strengthening these policies could improve micronutrient supplementation programs and effectively address hidden hunger among children.

1.2. Materials

The granular interaction thinking of mindsponge theory [3] was used in the study for conceptualization, and Bayesian Mindsponge Framework (BMF) analytics was employed for 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 [4]. The bayesvl package, aided by the Markov chain Monte Carlo (MCMC) algorithm, was employed in statistical analysis [5]. For more information on BMF analytics, portal users can refer to the following documents [6]. Data and code snippets of this initial analysis were deposited at https://zenodo.org/uploads/12742823.

1.3. Main Findings

The preliminary analysis revealed that school feeding policies significantly influenced in-school micronutrient supplementation practices. In contrast, health, food safety, agriculture, and private sector policies had ambiguous effects on these practices. Surprisingly, the nutrition policy had a negative impact on in-school micronutrient supplementation. (see Figure 1).

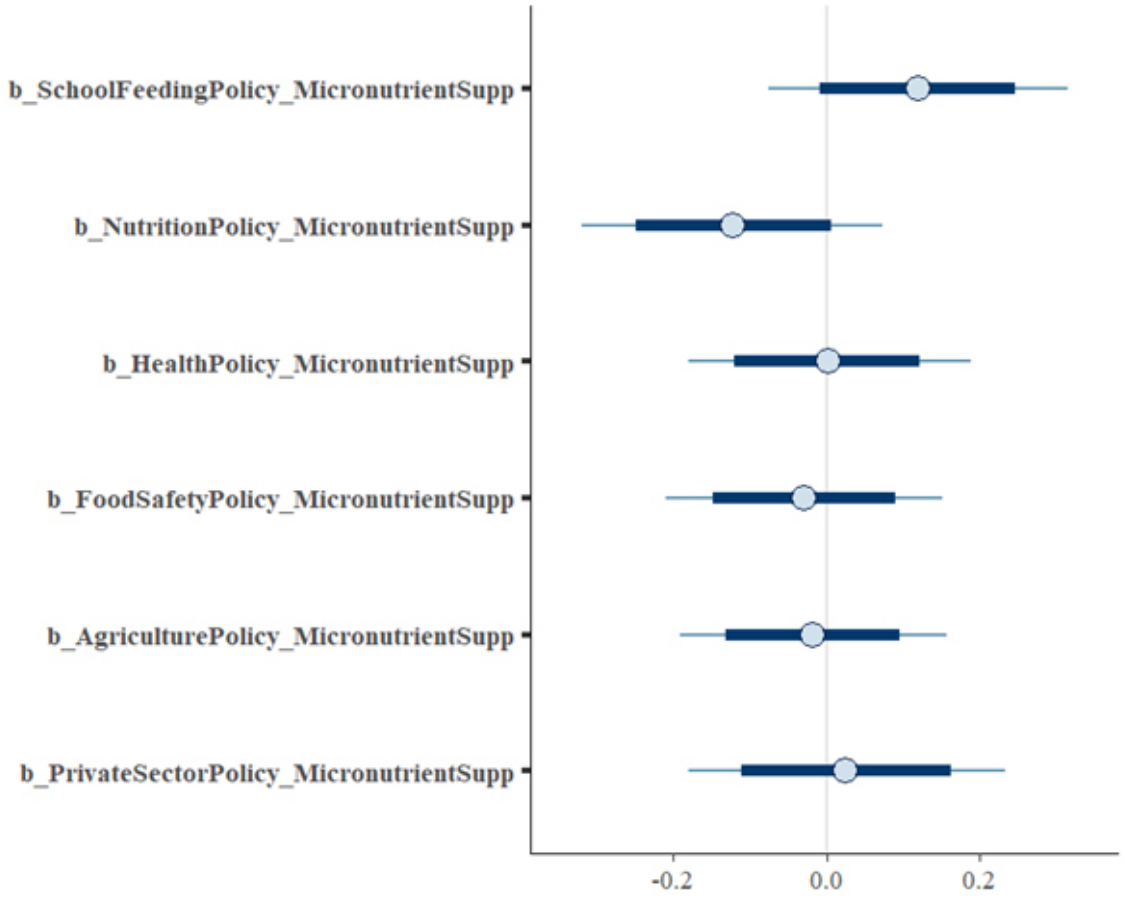

Figure 1: Estimated coefficients

2. Collaboration procedure

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

Create an account on the website (preferably using an institution email).

1. Comment on your name, affiliation, and desired role in the project below this post.
2. 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

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.

References

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