BMF CP80: USDA funding and supplies purchasing for wider feeding modalities in school meal programs

Ni Putu Wulan Purnama Sari

Faculty of Nursing, Widya Mandala Surabaya Catholic University, East Java, Indonesia

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"Not to mention these people buy new food every week, discarding old stuff. What is there to worry about feeding the Sparrows!?"

—In "Food"; *The Kingfisher Story Collection*

[**COLLABORATIVE PROJECT**]

1. Project Description

1.1. Background

School meal programs vary significantly across countries, with diverse feeding modalities shaped not only by national commitments to combating food insecurity among school-aged children but also by the availability of resources from national and international bodies. Financially, the United States of America (USA) plays a consistent role in supporting these programs by providing funding to participating countries. However, access to this funding often comes with various conditions attached to donations, grants, loans, or loan guarantee programs. The U.S. Department of Agriculture (USDA) oversees these funding sources for international school meal programs.

The USDA's McGovern-Dole International Food for Education and Child Nutrition Program, managed by the Foreign Agricultural Service, aims to support education, child

development, and food security in low-income, food-deficit countries. This program provides U.S. agricultural commodities, along with financial and technical assistance, to support not only school feeding but also maternal and child nutrition projects. A key objective of the McGovern-Dole Program related to school feeding is to reduce hunger and improve literacy and primary education, particularly for girls. By providing school meals, teacher training, and related support, McGovern-Dole projects contribute to increased school enrollment and enhanced academic performance.

Countries can procure food supplies for their school meal programs through various methods, including domestic in-kind contributions or foreign purchases. Previous research has shown that sourcing supplies through in-kind donations from neighboring or distant countries can have a significantly negative impact on the feeding modalities of school meal programs. In contrast, the effects of domestic and foreign purchases on feeding modalities remain ambiguous and warrant further investigation. This study aims to examine the moderating effect of USDA funding on the relationship between purchasing methods and feeding modalities in countries implementing school meal programs. The findings may highlight the importance of USDA funding for countries with limited external resources, thereby enhancing their purchasing power for food supplies

1.2. Materials

The granular interaction thinking of mindsponge theory [3,4] 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 [5]. The bayesvl package, aided by the Markov chain Monte Carlo (MCMC) algorithm, was employed in statistical analysis [6]. For more information on BMF analytics, portal users can refer to the following documents [7]. Data and code snippets of this initial analysis were deposited at https://zenodo.org/records/13354411.

1.3. Main Findings

The preliminary analysis revealed some intriguing trends (see Figure 1). The findings indicated that USDA funding has the potential to positively moderate the relationship between foreign purchases of supplies and the feeding modalities of school meal programs. However, the direct impact of foreign purchases on feeding modalities remains unclear. Conversely, while USDA funding was found to have a significant negative impact on the relationship between domestic supply purchases and feeding modalities, it is these

domestic purchases that show potential for positively influencing feeding modalities. These results highlight the importance of supporting the World Bank and World Food Programme's recommendation to rely more on local resources and capacities for developing long-term, sustainable school meal programs [8]. Additionally, the findings suggest a need to further explore the impact of foreign supply purchases on feeding modalities and to develop strategic plans for leveraging USDA funding to enhance domestic supply purchases.
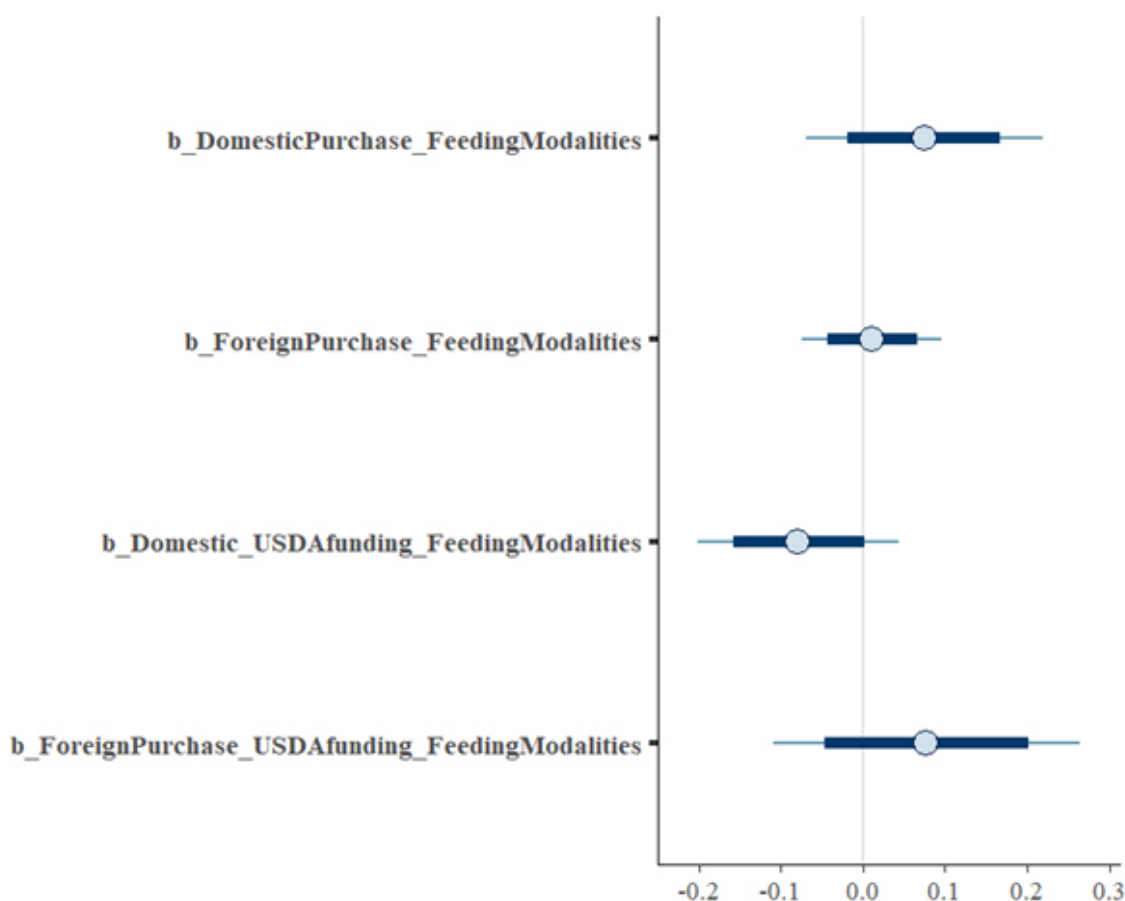

Figure 1: Estimated coefficients

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

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/mentor: **Ni Putu Wulan Purnama Sari**.

Other members who have joined this project: Minh-Hoang Nguyen and 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

[1] USDA Foreign Agricultural Service. (2024). McGovern-Dole Food for Education Program. https://fas.usda.gov/programs/mcgovern-dole-food-education-program

[2] Sari NPWP. (2024). BMF CP79: Supply Sources and Feeding Modalities in School Meal Programs. https://mindsponge.info/posts/333

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

[4] Vuong QH, Nguyen MH. (2024). Further on informational quanta, interactions, and entropy under the granular view of value formation. https://philarchive.org/rec/VUOARN

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

[6] 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

[7] 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/8367405102/

[8] Kretschmer A, Spinler S, Van Wassenhove LN. (2014). A school feeding supply chain framework: critical factors for sustainable program design. *Production and Operations Management*, **23**(6), 990–1001. https://doi.org/10.1111/poms.12109

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