

Halal Value Chain of the Free Nutritious Meal Program for Sustainable Education and Health

Nikmatul Masruroh¹, Indira Reza Pramesty², Emarotus Sholeha³, Husnawiyah⁴, Siti Aminah⁵

^{1,2,3,4,5}Kiai Haji Achmad Siddiq State Islamic University of Jember

Abstract. Purpose– This study aims to: (1) describe the relevance of the Free Nutritious Meal Program to sustainable education and health; and (2) analyze the halal value chain in the production and serving processes of meals under the Free Nutritious Meal Program (MBG). **Design/methodology/approach**– This study employs a qualitative approach, as it seeks to explore issues arising from the implementation of the Free Nutritious Meal Program. The research design adopted is phenomenological, involving direct observation of the meal production sites, and interviews with all stakeholders including consumers, producers, suppliers, teachers, and related parties involved in the MBG program. Documentation was also conducted to strengthen the observational and interview data, as well as to validate findings using relevant supporting files. The data were analyzed phenomenologically, and their validity was verified through source triangulation. **Findings**– (1) The Free Nutritious Meal Program has not yet demonstrated relevance to the goals of sustainable education and health promotion. The program tends to disrupt teaching and learning processes and fails to meet health standardization requirements. (2) There has been no systematic halal evaluation or audit conducted by the government concerning the production process of MBG meals. Thus, the halal value chain remains limited to operational licensing, without encompassing the entire upstream-to-downstream process. **Implications**– Theoretically, this research contributes to the development of halal food studies in line with the mandate of national legislation. Practically, the findings provide valuable insights for policymakers to continuously evaluate and improve the Free Nutritious Meal Program. **Originality/value**– The novelty of this study lies in its analysis of the halal value chain within the Free Nutritious Meal Program, an aspect that has not been comprehensively explored in previous research.

Key words: Free Nutritious Meal Program, halal value chain, sustainable teaching and learning, sustainable healthy

1 Introduction

Stunting and nutrition are crucial issues in Indonesia, as the national stunting rate is projected to decline by 19.8% by 2024 (Zatamal et al., 2024). According to the Indonesian Food and Nutrition Association (SSGI), this figure demonstrates the government's commitment to improving public nutrition through established programs (Ndagijimana et al., 2024). One of its flagship programs is the Free Nutritious Meal Program (MBG). Prioritizing students from elementary to high school, the program has been implemented in stages since 2025. It is expected to improve the nutrition of the nation's next generation (Crilley et al., 2022).

Unfortunately, however, controversial facts about this program have begun to emerge, along with the fact that MBG has also caused problems. For example, the recent issue of MBG-related food poisoning has become a hot topic (Ilmu & Wira Pambudi, 2024). While the food served in MBG is checked for nutritional content and the variety of meals is consistently varied to ensure students' nutritional needs are met, this hasn't been enough to address the stunting problem, as several locations have experienced food poisoning after consuming MBG (Arifin et al., 2025). This fact demonstrates that the food preparation process must follow standard operating procedures (SOP) and establish halal product standards.

The MBG guidelines for educational units provide detailed guidelines on how to implement MBG in educational institutions. These guidelines aim to: (1) improve student health and nutritional intake; (2) increase student motivation and academic achievement; (3) reduce school dropout rates/increase school participation rates; (4) increase knowledge about balanced nutrition; and (5) instill healthy eating/balanced nutrition habits. These goals can be achieved if standard operating procedures (SOP) are implemented and standards are properly implemented (Ekahidayatullah & Uyun, 2024). However, in reality, some regions are forcing the implementation of MBG despite inadequate preparation, leading to several problems. This is despite the mandate of the law stating that there must be a guarantee of continuity of education and health for students. Therefore, MBG is not merely a form of support, but also a form of government accountability in realizing the SDGs through sustainable education and health. Therefore, this program aligns with the government's commitment to providing halal food through

¹ Corresponding author: nikmatul.masruroh82@gmail.com

the BPJPH (Indonesian Food and Drug Authority). In serving MBG, in addition to nutritional content checks, halal certification must also be met. This is because, if there are facts of poisoning, such as the recent ones, they can be prevented by ensuring product traceability. The halal value chain for the food served must be present at MBG to achieve the goal of sustainable health. In the halal value chain, products are checked for halalness not only when served, but also from the raw materials, production process, packaging, presentation, and distribution to students. All must have halal value, because recently it was also reported that MBG food outlets still contain pork. This is certainly dangerous, not only for students' health but also for the sustainability of the education of the nation's next generation.

In fact, halal standardization has been applied to MBG but not optimally, meaning that what is applied is only raw materials, all of which must have halal certification, but for the process, packaging and distribution there is no halal check. So, when the process is not halal certified, there are incidents of food being cooked at 03.00 am and only given to students at 10.00 or 11.00 am, this causes the food to become stale and unfit for consumption. At this stage, the critical point of MBG must be considered. In this study, the author wants to explore further the halal value chain assessment process in MBG, so that it can later fulfill the SDGs ideals to be achieved in 2035 and the golden generation of Indonesia in 2045. This study has the following objectives: 1) describe the relevance of the Free Nutritious Meal Program to sustainable education and health; and (2) analyze the halal value chain in the production and serving processes of meals under the Free Nutritious Meal Program (MBG).

These objectives are relevant to sustainable education and health, which are the goals that must be achieved in fulfilling the SDGs 2035. Based on these objectives, further exploration is carried out regarding the relevance of MBG to sustainable education and health, as well as the halal value chain in each process of MBG. This objective is novel in that it includes a halal value chain analysis that has not been used in previous research. Therefore, this research is relevant to continue as a form of information and public knowledge regarding the halal value of MBG, so that the public does not have concerns about the food consumed by students.

2 Literature Review

Many previous researchers have conducted research on MBG, but none have examined the halal value chain of the MBG produced. For example, a study conducted by Rif'iy Qomarullah et.al in 2025 discussed the impact of MBG on the sustainability of health and education. While both studies share similarities in terms of achieving SDGs in education and health, Rif'iy Qomarullah et.al study did not address the halal value of MBG products (Qomarullah et al., 2025). Therefore, these two studies have different loci. A similar study was also conducted by Siti Fatimah et.al in 2024, discussing the free meal policy in Eastern Indonesia, which could be a solution to the food security crisis. Fatimah et.al's study used the same qualitative approach as this study, but substantially differed in terms of sustainable education and the halal value chain of products. Research on MBG was also conducted using document analysis by Albaburrahim et.al. in 2025 with a discussion of the free nutritious meal program through a critical analysis of educational transformation to welcome the golden generation of 2045. In the context of sustainable education, these two studies have similarities, but their approaches and objectives are different. Albaburrahim et. al's research provides a more critical analysis of the MBG program that is relevant to educational transformation, but this study focuses more on MBG that is relevant to sustainable education and health, as well as the halal product value chain (Albaburrahim et al., 2025).

Based on several previous studies, this study clearly demonstrates its novelty in terms of the halal value chain analysis used. The halal value chain at MBG has not been studied by previous researchers, thus providing clear novelty and distinction. Therefore, this research is further strengthened by the following theoretical analysis:

2.1 Halal Value Chain

The halal value chain is the concept of tracking halal products from upstream to downstream, meaning from farm to fork (Vanany et al., 2019). This tracking includes raw materials, production methods, packaging, distribution, transportation, and presentation to consumers (Loussaief et al., 2024). Food ingredients are important to consider for both plant and animal products (Zuhudi & Dolah, 2021). Therefore, to eliminate consumer doubts, companies must evaluate their products and apply for halal certification. Besides raw materials, labeling, packaging, and coatings are equally important aspects of the halal product process (Tarannum et al., 2024).

2.2 Labeling

Labels are intended for consumer use and must be descriptive, clear, and meaningful. Products with halal packaging must include the product's brand name, minimum matrix content information of the ingredients, a code representing batch information, manufacturer and expiration date, and most importantly, the halal logo from a recognized certification authority (Soon & Wallace, 2017). Ingredient labels typically do not include the origin

of the ingredients, as processing aids, agents, carriers, and raw material sources are not labeled (Potter et al., 2023). This creates problems for Muslim consumers. For example, in Europe, chocolate companies use 5% vegetable or animal fat in products labeled as pure chocolate. If these products are to gain consumer trust, they must obtain halal certification and display a halal label on the packaging. Halal certification on the product, the appropriate halal mark, and the logo on the product are the only ways consumers can be sure of a product's halal status. Reading the product label is usually not enough to determine whether a processed food product is acceptable (Talib et al., 2010). If a company wants to attract additional consumers, such as Muslims, Jews, and vegetarians, it must include labels that show the source of ingredients, which can be obtained from both animal and plant sources. This will increase consumer purchasing interest. Language is also important to increase consumer interest in the products offered. For example, in the US, bilingual products are required for products entering the country to facilitate understanding of the composition of the raw materials used (Mohammed et al., 2008). Labels serve as markers for goods circulating in the market. If they are labeled "kosher," they are intended for Jewish consumers, and if they are labeled "halal," they are intended for Muslims. However, this does not rule out the possibility that non-Muslims also consume these products because products labeled halal are considered safer than those without labels.

2.3 Packaging

In North America, halal food products are generally produced in facilities that also produce non-halal products. Some workers are non-Muslims who are unfamiliar with halal products, or even unfamiliar with them (Minkus-McKenna, 2007). This fact has led business owners to collaborate with certification bodies to establish operational standards to accommodate halal production requirements, namely: a) Storing halal products in a separate room, b) Scheduling production to avoid cross-contamination, c) Not diverting workers from areas properly identified as halal production, d) Ensuring that workers do not bring personal food into production areas, and e) Washing their hands before entering the facility, etc. These facts in America demonstrate that obtaining halal certification requires preparation and caution. The American story above demonstrates that, despite being a non-Muslim country, the commitment to producing safe and high-quality food is evident. The packaging process must also ensure that the packaging is free from prohibited elements. For example, cans and plastic must be sterilized before being used to store goods. Cans, plastic, metal, and steel can all be contaminated with pork or pork fat, making the halal certification process crucial for the product's longevity.

2.4 Coating

Labeling packaging and packaging are the final stages of the halal food production process. Coating is also one of the final stages in the halal food production process. Coating is a layer applied to food to preserve or soften it. For example, in the UK, coating is used to maintain moisture in food (Labuza and Contreras-Medellin, 1981). Currently, coating is used in sausage products, chocolate coatings for nuts and fruits, and wax coatings for fruits and vegetables. Coatings used in food must also be derived from halal raw materials. Including the source of these raw materials is essential to educate the public about the use of additives in food. Innovations by entrepreneurs with food technology mean that even plant-based foods have the potential to become non-halal. Understanding the halal value chain is crucial before consuming food (Tieman et al., 2012). Based on this, in determining value at each stage, researchers refer to Michael E. Porter's theory on the product value chain. This theory states that a product's value chain lies in products that have differentiation. Products that have differentiation will produce products that have value at each stage. The following is an illustration of differentiation that contains differentiated value.

2.5 Sustainable Education and Health

Sustainable education and health are the goals of the SDGs. Quality education means creating quality and sustainable education for the nation's children, while sustainable health is demonstrated by goals two and three, namely zero hunger and good health and well-being. The concept of sustainable education must go hand in hand with the concept of sustainable health, as health can determine human productivity in learning. The SDGs, through their objectives, have provided special categories for sustainable education and health to help achieve the goal of realizing a golden generation (Nogueiroa & Saraivab, 2025). The concept of Education for Sustainable Development (ESD) emphasizes developing students' cognitive, affective, and psychomotor competencies. Supporting this requires health care for educational sustainability. Health care stems from meeting nutritional needs, which requires achieving zero hunger in the community. If people remain hungry, sustainable nutritional needs cannot be met. This will impact sustainable education (Juneja & Sinha, 2023).

If students' nutritional needs are met, their concentration improves, their comprehension improves, and they are highly motivated to learn. Balanced nutrition, clean water, sanitation, and a healthy environment can

improve students' concentration and enthusiasm for learning. If health is compromised, the teaching and learning process is also disrupted, leading to unequal learning opportunities. Conversely, education is the foundation for sustainable health. Education shapes knowledge, attitudes, and healthy behaviors in the long term. Education will produce a health- and environmentally conscious generation, thus impacting the Human Development Index by reducing poverty and creating a productive, competitive, and resilient society.

2.6 Free Nutritious Meals

Free Nutritious Meals, or MBG for short, is one of President Prabowo's flagship programs. This program embodies SDGs goals two, three, and four: zero hunger, good health and wellbeing, and quality education. Through this program, it is hoped that the goals of achieving sustainable education and health outcomes will be achieved. This program is designed to address crucial nutrition issues, such as stunting, and to stimulate the regional economy. Therefore, this program involves many parties, such as user partners (schools, integrated health posts, and others), food producers, distributors, employees, and MBG managers. In the implementation of MBG, food is provided collectively in a single kitchen managed by the National Nutrition Agency (BGN).

This program requires food standardization, which is checked for nutritional content by the National Agency for National Food Security (BGN), and also includes a comprehensive supply chain from upstream to downstream. The program has at least three main objectives: First, improving nutrition and health, addressing stunting, and stimulating the local economy. Second; the raw materials provided must be sourced locally to ensure market balance for farmers, livestock breeders, and MSMEs in the surrounding areas. The MBG program is expected to stimulate the regional economy (Toshaliyeva, 2023)

As mentioned above, the implementing agency for the MBG program is the National Land Agency (BGN). BGN is responsible for ensuring the program runs according to established quality, hygiene, and nutrition standards. In its implementation, BGN collaborates with partnerships that have the following functions: first, standard setting, which involves formulating menus, portion sizes, and nutritional quality standards that partners must meet. Second, verification and supervision, which involves selecting, verifying, and periodically auditing potential partners' operational feasibility and legality. Third, a digital system, which involves providing a digital platform (mitra.bgn.go.id) as a central point for information, registration, location submission, and reporting. BGN oversees not only bureaucratic matters but also quality standards, transparency, and nutritional commitments.

Based on the theoretical study above, the following is the theoretical framework of this research:

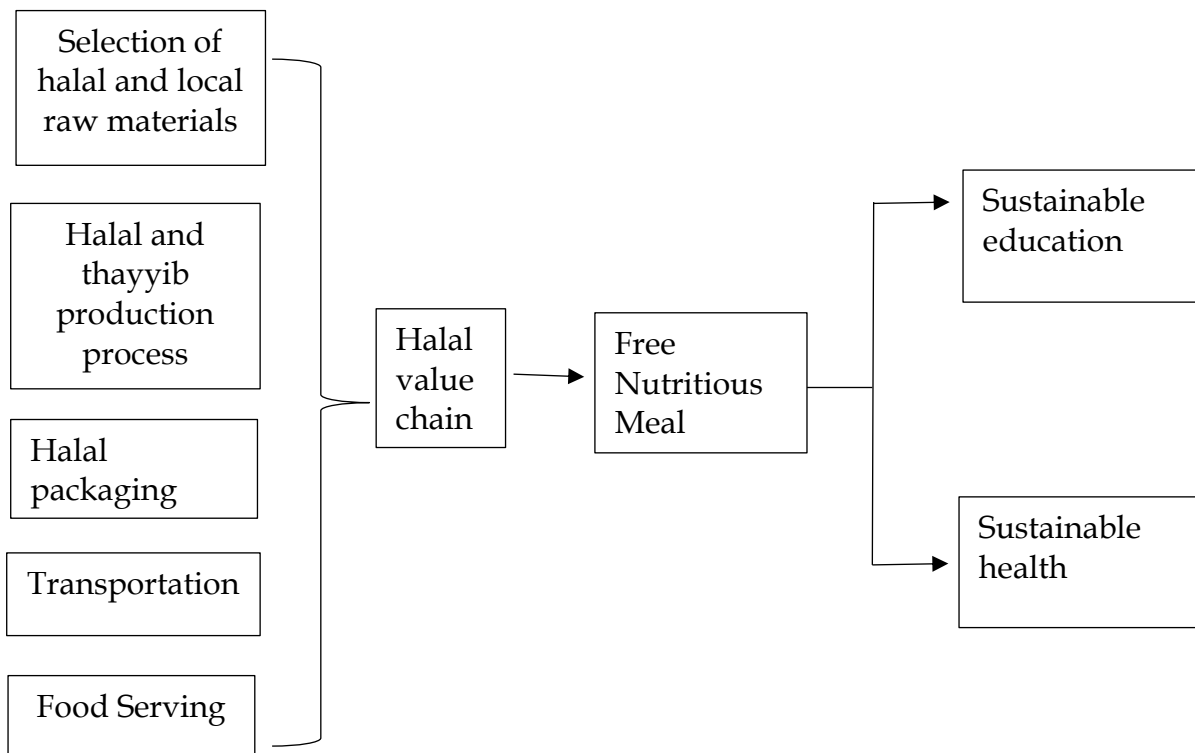


Figure 1.1

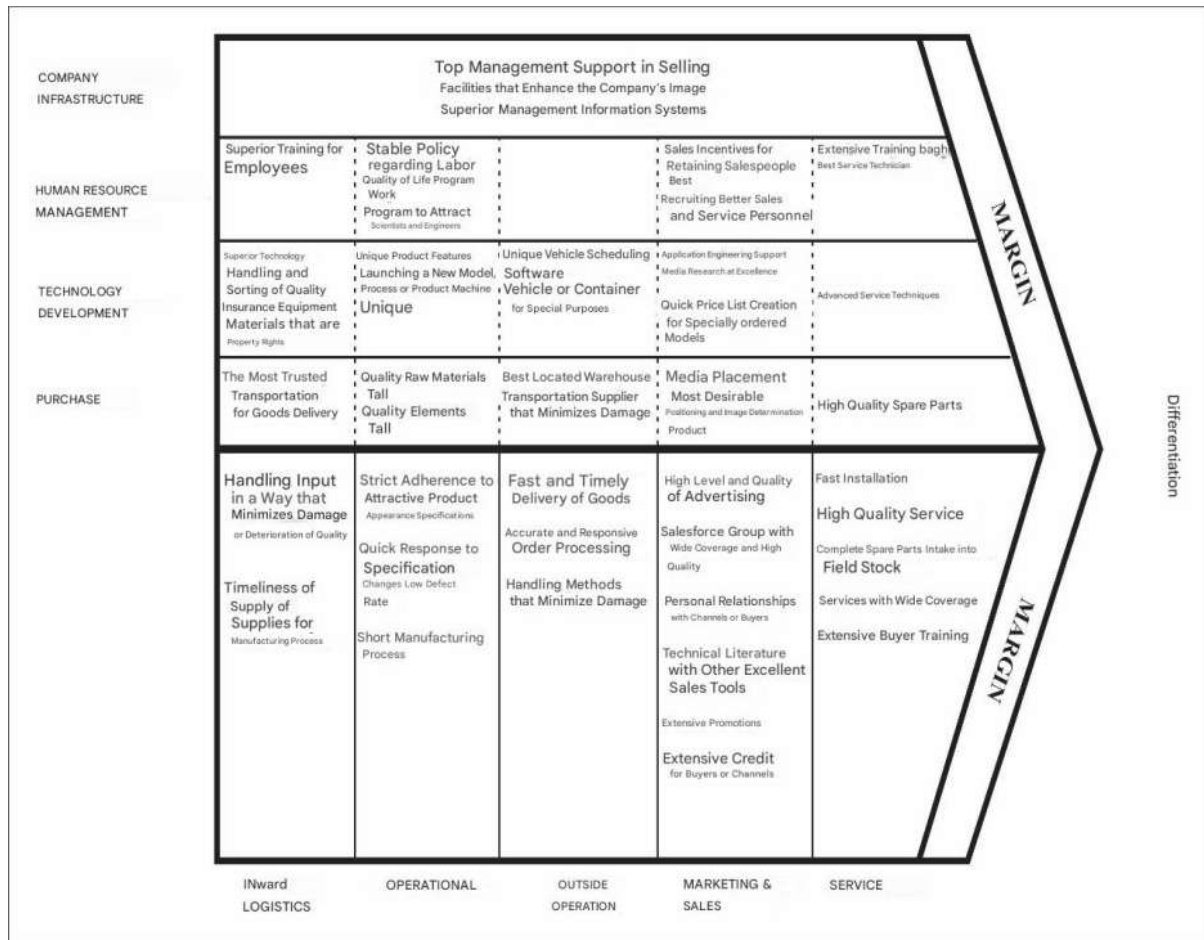


Figure 1.2

3 Methods

This study focuses on the MBG program currently being implemented in Indonesia. It focuses on the halal value chain of MBG products, examining the halal status of products from upstream to downstream, aimed at contributing to sustainable education and health. A qualitative approach was employed to explore data related to MBG. It was explore the implementation of MBG in the field and uncovers the existing halal standardization phenomena. The research used phenomenology. Phenomenology was chosen because the implementation of MBG still faces challenges and is not yet optimal, making MBG a new phenomenon in society. The various conflicts and interests that characterize the implementation of MBG make this event a phenomenon that must be uncovered as material for providing recommendations for future policies.

The MBG location studied was in Jember Regency, with data collected through observation, interviews, and documentation. Participants were individuals who contributed to the MBG program and students who experienced the MBG's presence. The collected data was then analyzed using phenomenological analysis and Michael E. Porter's value chain analysis. Based on this analysis, when a product possesses value at every stage, it will be differentiated. If the product is differentiated, it will create product superiority. This means that its quality is unquestionable because it is guaranteed to be present in each value. The data was validated using various sources and through extended field observations. In this process, in-depth data collection and sharp analysis can produce recommendations for the sustainability of the MBG program.

4 Results

Research conducted over the past few months has yielded the following research results:

4.1 The Relevance of the MBG Program to Sustainable Education and Health

Theoretically, it has been discussed that MBG is related to SDGs goals number 2, 3 and 4. Continuing education is an important issue that is connected to the existence of the MBG program, so in its implementation, if carried

out ideally, it will produce inclusive and equal access to education, high-quality learning, the development of competitive and character-based individuals, and social, economic, and environmental sustainability (Ulfah, Handayani, & Utara, 2025). The existence of sustainable education is linked to a supportive ecosystem that ensures the continuity of learning, especially for children from vulnerable families and those with disabilities. Therefore, nutritional factors are a critical determinant of learning success (Mancas & Braguța, 2025).

However, in practice, it's not as ideal as the concept agreed upon above. On average, schools still receive free nutritious meals only once. However, public schools are still prioritized. In this case, not all students receive the MBG, as each school is only allocated 200 students. Therefore, the school determines which students will receive the MBG. The MBG distribution takes place during the lunch break, when students need lunch. The MBG program is welcomed by students, but not by teachers, who, due to this program, have a new role: being responsible for implementing the MBG program at school. Teachers distribute the MBG to students, and any lost or damaged food containers must be replaced (Fatimah, Rasyid, Anirwan, Qamal, & Arwakon, 2024).

This has become a phenomenon, not only in Jember Regency but in almost all regencies, meaning the implementation of the MBG program has drawn controversy. Furthermore, issues regarding the food menu have also become a topic of discussion, as have the stale food that reaches students. This means, given these facts, the MBG's objectives have not been achieved, as it was a one-time implementation and used solely for content material to avoid obligations to the government (Amril & Sazali, 2025).

This fact demonstrates that MBG is not yet relevant to the SDGs' goal of improving quality education. This program is discontinuous and appears to be temporary. Therefore, there is no connection between MBG and sustainable education due to its discontinuity (Rozi, Mukarromah, & Jadid, 2025).

Likewise, with regard to sustainable health, the nutritional value of a single meal means that the presence of MBG has no impact on health. While ideally, MBG has a positive impact on health, if it is only provided once, it has no relevance to students' health. Although students may feel happy, because it is only provided once, there is no impact on sustainable health. Therefore, the findings from this sub-section are: the Free Nutritious Meal Program has not yet demonstrated relevance to the goals of sustainable education and health promotion. The program tends to disrupt teaching and learning processes and fails to meet health standardization requirements.

4.2 Halal Value Chain in MBG Implementation MBG SOP

In its ongoing efforts to ensure food safety and quality in Nutrition Fulfillment Service Units, the Deputy for Governance Systems of the National Nutrition Agency proudly launched the Compilation of Standard Operating Procedures (SOP) for Sanitation and Food Safety. This Standard Operating Procedure (SOP) is a comprehensive guide that covers various important aspects of the chain of preparing and serving nutritious food. This compilation of SOPs details standard procedures for various key activities, including: sanitation of facilities and rooms, sanitation of equipment, preparation of food ingredients, food processing, storage of cooked food and food samples, work safety in service areas, hygiene and health checks of personnel, maintenance of equipment and buildings, control of insects, rodents, and pets, and actions in the event of food poisoning.

The preparation of this SOP is part of the Food Safety Certification Scheme at the National Nutrition Agency's Nutrition Fulfillment Service Unit. This SOP was prepared with the following objectives: *first*, ensuring that food processing procedures are carried out in accordance with food safety standards so as to maintain nutritional value, appearance, taste, texture, odor, and serve food that is safe and healthy for consumption. *Second*; those responsible for the activity: all cooking staff and those responsible for SPPG. Third, procedures: in this procedure there are several steps including:

Before starting food processing:

- a) Before starting work, ensure that employees have implemented personnel hygiene in accordance with the Employee Hygiene SOP (SPO/SPPG/01/2025) and are using complete and correct PPE.
- b) Employees must ensure that the work area and work surface are clean.
- c) Prepare cooking utensils and ensure they are clean. If they are dirty, replace them immediately with clean ones and ask the cleaning staff to clean or rewash the utensils.
- d) Ensure cooking equipment is in working order. Report any damage to the SPPG manager for immediate replacement or repair.
- e) Ensure there is no dirty packaging or raw materials in the processing/cooking area. Dispose of dirty packaging or raw materials in the appropriate receptacle.

During food production:

1. Before cooking, make sure the raw materials used are not damaged or rotten.
2. Cooking/processing staff cook according to the cooking priority order, prioritizing cooking long-lasting foods such as dry fried foods and ending with wet or easily damaged foods.

To implement the SOP above, there are planning steps made according to the principles: fulfill nutritional needs

according to age group, adjust to the funds provided, provide comfort with food dishes that are already known and come from local food sources, help form healthy eating habits (introduce a variety of food sources early), use safe food sources and food production environments with good sanitation and hygiene, identify targets who have allergies, intolerances, or phobias to certain foods and provide other food alternatives for these targets, consider children's likes and dislikes of the food and menu provided by evaluating the acceptance of the menu using simple methods, such as weighing the volume of leftover food per target group, paying attention to the suitability of the portioning of food served with the menu plan that has been made using standardized household equipment based on the target group, using mandatory fortified food ingredients such as wheat flour, packaged palm oil, iodized salt, and if available fortified rice, determination of food ingredients and menus that will be implemented per service unit per menu cycle or 1 month needs to be coordinated between nutrition workers of service units in one area to prevent food shortages.

Table 1. Nutritional Standards in MBG

Consisting of a complete menu with reference to the principles of balanced nutrition and intended to replace one of the main meal times, namely breakfast or lunch.
Contributes 20-25% of daily energy sufficiency for toddlers, PAUD/TK/RA students and equivalent and SD/MI students grades 1-3 and Islamic boarding school students
Contributes 30-35% of daily energy sufficiency for pregnant and breastfeeding mothers, elementary school/Islamic elementary school students grades 4-6 and Islamic boarding school students, junior high school/Islamic junior high school students and Islamic boarding school students, senior high school/Islamic senior high school students and Islamic boarding school students.
The calculation of protein adequacy is 10-15% of energy adequacy
The calculation of adequate fat intake is 20-30% of adequate energy intake.
The calculation of carbohydrate adequacy is 55-65% of energy adequacy
The recommended time for providing food is before 9 am for toddlers, PAUD/TK/RA students and SD/MI students in grades 1-3 and Islamic boarding schools, and after 11 am for pregnant and breastfeeding mothers, SD/MI students in grades 4-6 and Islamic boarding schools, SMP/MTS students and Islamic boarding schools, SMA/MA students and Islamic boarding schools. This is so that the provision of food can be according to its intended purpose, namely as a substitute food, not as additional food. Providing food between two main meal times (e.g. 10 am) due to certain conditions at the time of implementation, should be accompanied by education to the target group to balance their breakfast and lunch portions independently so as not to be excessive and risk causing overnutrition problems.
Milk can be given to students of PAUD/TK/RA, SD/MI, SMP/MTS, SMA/MA or equivalent, and Islamic boarding school students as a snack or additional food with special provisions contained in the provision of milk.
In its implementation, the preparation of the MBG is a series of steps, including:

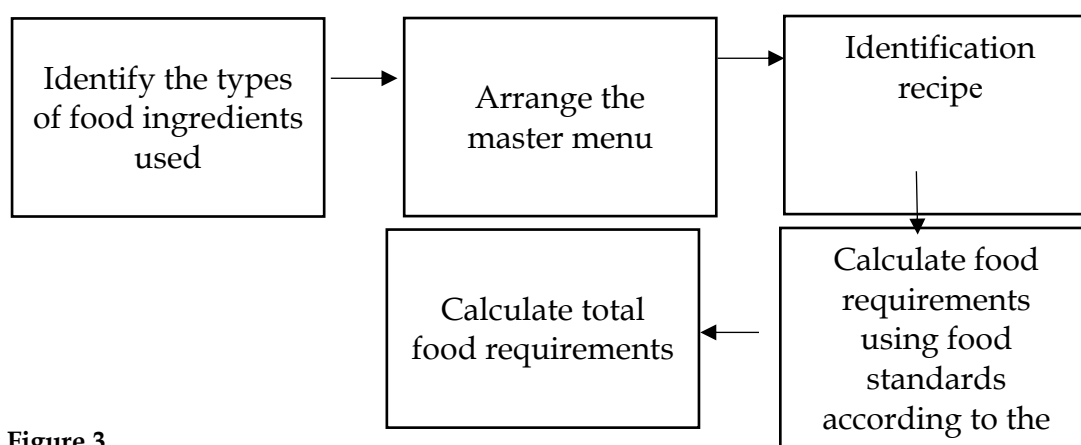


Figure 3.

In preparing the Free Nutritious Meal menu, each Service Unit must follow the nutritional and food standards according to the target group stated in the Nutrition and Food Standards Book for the Free Nutritious Meal Program. However, for the stages of identifying the type and frequency of food ingredients to be used to identify and rotate recipes, calculating food needs, and budgeting are adjusted to the conditions of each Service Unit while still paying attention to the principles of Free Nutritious Meal menu planning. The menu that will be implemented in one cycle should be the same for all target groups to facilitate operational food processing.

In practice, halal certification is still only applied to finished products; halal certification has not been checked at every stage. This is evident in the absence of a halal supervisor in the MBG implementation, which means that product value chain analysis cannot be performed. Food halal certification cannot be checked because there is no halal standardization within the MBG. Therefore, the findings of this study are: There has been no

systematic halal evaluation or audit conducted by the government concerning the production process of MBG meals. Thus, the halal value chain remains limited to operational licensing, without encompassing the entire upstream-to-downstream process.

5 Discussions

In MBG food there are several pillars, namely

- **Pillars of a balanced nutritional menu**
To create a credible Free Nutritious Meals (MBG) program, nutritional aspects are a key pillar. Menus must be prepared by nutritionists who understand the energy needs of schoolchildren based on the Balanced Nutrition Guidelines. This is crucial because school-age children require a balanced intake of energy, protein, vitamins, and minerals for optimal growth and development. Furthermore, menu rotation is mandatory on a regular basis. This rotation not only prevents children from getting bored with eating the same food every day but also ensures that all essential nutrients are met. With this pattern, MBG can truly become a program that is not just about "eating to fill your stomach," but also about "eating healthily and nutritiously."
- **Pillars of food security**
In addition to implementing SOPs for hygiene, clean water use, and cold chain management, food safety aspects in MBG must also be guaranteed through a Hygiene and Sanitation Certification (SLHS). This certification serves as proof that the kitchen or food processing facility has met government-set hygiene and sanitation standards. The SLHS is not simply an administrative document; it ensures that the entire process, from raw material receipt, storage, processing, and serving, is carried out hygienically and safely for children's health. While routine audits and microbiological sampling are still necessary, the SLHS provides a legal and technical basis for both the government and MBG providers to ensure food safety. This certification significantly minimizes the risk of contamination by bacteria, viruses, or hazardous materials, thus preventing past mass poisoning cases.
- **Pillars of halal and thayyib**
Equally important, halal and thayyib aspects must be the foundation of MBG implementation. Halal ensures that all raw materials used have been officially certified by an authorized institution, while thayyib ensures that the ingredients are of good quality, safe, and suitable for consumption. To ensure this, each MBG kitchen should have a halal supervisor. Their duties include checking the halal certification of raw materials, overseeing storage methods, and ensuring that the processing process complies with sharia and hygiene standards. With this combination, MBG not only serves nutritious food but also ensures that it is safe and compliant with religious values.

In technical implementation, the presence of a nutritionist and a halal supervisor is key to success. The nutritionist is responsible for developing menus tailored to children's energy needs and adjusting variations to achieve balanced nutrition. Meanwhile, the halal supervisor ensures that all stages of food procurement, storage, and serving comply with halal and thayyib standards. The presence of these two professionals will strengthen the program's credibility and increase public trust. Without them, MBG has the potential to become merely a ceremonial program without any real health or religious impact.

To prevent recurring cases of food poisoning and gaps in halal certification, the government needs to take strategic steps. *First*, the supervision budget must be expanded, not only to purchase food ingredients, but also to fund nutritionists, halal supervisors, and testing laboratories. *Second*, a unified national MBG guideline should be developed that binds all service providers. This guideline should comprehensively incorporate balanced nutrition, food safety, and halal certification standards. *Third*, professional staff in the field need to be formally involved. Each district/city should have at least a team consisting of a nutritionist and a halal supervisor assigned to oversee MBG kitchens. *Fourth*, public transparency must be established. The public has the right to know the menu served, the nutritional content of each portion, the halal status of the food ingredients, and the results of food safety audits. An open system will increase public trust and provide a form of social oversight of the program. Integrating balanced nutrition, food safety, and the principles of halal and thayyib into MBG is a crucial step to ensure the program is truly beneficial. Children will not only receive nutritious food, but also be safe from the threat of disease and in accordance with religious principles. With the support of nutritionists, halal supervisors, integrated regulations, and public transparency, MBG has the potential to become a national program that not only reduces stunting rates but also builds a healthy, intelligent, and moral generation.

5.1 Food Serving Process in the MBG Program

The National Nutrition Agency's Free Nutritious Food (MBG) program is one of the government's strategic efforts to improve the nutritional status of Indonesian children while simultaneously supporting the quality of education. In its implementation, food presentation is a crucial aspect of the program's value chain, from the selection of raw

materials to the actual consumption of the food by the beneficiaries. Proper presentation determines not only the nutritional quality of the food but also the overall success of the program.

5.2 Menu Preparation and Portions

Food preparation begins with menu planning and determining appropriate portion sizes. DESSDSMenus are structured based on energy and nutrient needs for the target age group, such as preschool/kindergarten/Islamic elementary school (PAUD/TK/RA), elementary school/Islamic elementary school (SD/MI), and Islamic boarding school students. Portions of each food component (carbohydrates, protein, vegetables, and fruit) are balanced. Ingredients are selected with consideration for freshness, safety, and government-set quality standards. This step is crucial because a well-chosen menu ensures optimal nutritional intake for children. The quality of the ingredients significantly impacts the final presentation, making this stage the foundation for the success of the MBG program.

5.3 Processing and Production

Once the menu and ingredients are ready, the next stage is processing. The processing process is carried out with strict food hygiene and sanitation principles, including washing ingredients, cutting, and cooking according to standard procedures. The time between processing and serving is also kept as short as possible to maintain the food's temperature, flavor, and nutritional content. If necessary, food is packaged in special containers before distribution. Proper processing ensures food safety, prevents contamination, and maintains nutritional value. Furthermore, proper packaging ensures food quality until it reaches the recipients.

5.4 Distribution and Serving on Site

The prepared food is delivered to service units such as schools, Islamic boarding schools, or other educational institutions. At the location, the serving area is well-prepared—dining tables, clean cutlery, and handwashing facilities. Servings are made according to meal schedules, such as during break times, so that children can consume the food in optimal conditions. This stage is crucial because delays or poor distribution conditions can reduce the quality of the food. A clean and organized serving area also increases the comfort of beneficiaries, making them more likely to consume the food provided.

5.5 Serving Conditions

Presentation is done with attention to aesthetics, cleanliness, and food temperature. Side dishes, vegetables, and fruit are arranged attractively and hygienically, with clean cutlery and a well-maintained serving area. The neat arrangement makes it easy for children to access all the components of the meal, ensuring complete nutritional intake. These aspects of appearance and convenience are often the determining factors in whether children actually consume the food. Good presentation can increase appetite and encourage acceptance of the program.

5.6 Monitoring and Evaluation of Presentation Preserving

The final stage is monitoring and evaluation. This process includes recording the number of beneficiaries consuming the food, the condition of the food upon arrival, and the level of acceptance by the children. Inspections of the cleanliness of cutlery and serving areas are also conducted, as well as an evaluation of food waste. If obstacles, such as late distribution or low menu acceptance, are identified, improvements are made immediately. Monitoring ensures consistent program implementation and prevents a decline in the quality of food served over time. This evaluation also serves as the basis for decision-making to improve the effectiveness of the MBG program. So based on this, theoretically, this research contributes to the development of halal food studies in line with the mandate of national legislation. Practically, the findings provide valuable insights for policymakers to continuously evaluate and improve the Free Nutritious Meal Program.

6 Conclusion

Based on the research conducted, it can be concluded that the MBG is not yet relevant to the goals of sustainable education and health. Furthermore, the halal value chain within the MBG has not been implemented, as evidenced by the absence of halal supervisors at each MBG activity. Furthermore, the halal value chain requires halal production from raw material procurement to the product reaching consumers. This requirement has not been met in the implementation of the MBG, as there are no halal standards used by MBG implementers.

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