

Assessment of Readiness for Implementing a School Lunch Program among Primary School Children

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ABSTRACT

Background: Elementary school children are in a period of rapid growth and development, which requires adequate nutritional intake. Unfortunately, many school-age children skip lunch or consume meals that lack nutritional value. School lunch programs have been proven to improve nutritional status, learning concentration, and student attendance. In Indonesia, school lunch programs have not been implemented evenly, particularly in public schools. The Special Region of Yogyakarta (DIY) has the potential to serve as a model area for the implementation of such programs; however, a readiness assessment is required beforehand, considering the perspectives of schools.

Methods: This study employed a descriptive quantitative approach using a survey method. Samples were taken from several public elementary schools located in urban and semi-urban areas of the Special Region of Yogyakarta (DIY). Data was collected through questionnaires distributed to school principals and key decision-makers within the school environment. The data were analyzed descriptively to identify trends, logistical readiness, and stakeholder support. This study obtained ethical approval from the Research Ethics Committee of Universitas Ahmad Dahlan with the approval code 012408284, issued on September 6, 2024.

Result: Based on the survey results, it was found that school readiness in terms of infrastructure still faces several challenges. Though the school stated overall readiness, this school lunch program gives benefits such as food behavior change, increasing nutritional status, increasing student performance, and school reputation.

Conclusion: Most elementary and Islamic elementary schools (MI) in Yogyakarta reported that they are not yet fully prepared to implement the school lunch program. However, they expressed willingness to participate if supported by the local government and provided with clear technical implementation guidelines. An initial intervention in the form of a pilot project is necessary to evaluate the program's effectiveness and to make necessary operational adjustments.

I. Introduction

Elementary school and madrasah ibtidaiyah students represent the future generation of the nation, undergoing gradual growth and development. Emotionally, children at this stage tend to prefer group activities, enjoy making friends, and are fond of playing and engaging in physical activities (Meitha et al., 2022). Children of primary school age require adequate and appropriate nutritional intake to remain active and healthy during learning and extracurricular activities (Talakua et al., 2024). Adequate nutrition is essential for supporting their physical growth and development toward adolescence. In

contrast, inadequate nutrition can impair immune function, increasing the risk of illness and absenteeism from school (Asmin et al., 2021). Efforts to improve the nutritional status of students can be carried out in schools by health personnel and teaching staff. The Indonesian government has issued a joint regulation involving four ministries the Ministry of Health, the Ministry of Education and Culture, the Ministry of Religious Affairs, and the Ministry of Home Affairs on school health promotion policies (Karomah et al., 2024). One of the programs that can be implemented in schools is communal eating, which has been successfully applied in several countries, including Sweden, Estonia, the United States, South Korea, and Japan. The primary goal of this program is to improve children's health through better nutritional status (Nida & Sari, 2023).

The free school lunch program is one such initiative that has been introduced in Indonesia. However, as of 2016, only approximately 0.16% of schools had implemented the program (Rimbawan et al., 2023). Several studies in various countries have evaluated the effectiveness of school lunch programs. For example, (Underwood et al., 2024) reported that 97% of students believed the meals served were healthier, and 93% indicated that the program improved their access to nutritious food. Similarly, (Panchalingam et al., 2024) found that a nationwide school lunch program positively influenced students' daily eating patterns, particularly in increasing the consumption of local foods, vegetables, and fruits.

In Indonesia, many schools have also implemented school lunch programs, which have had notable impacts. In addition to improving students' dietary patterns, these programs contribute to character education and discipline (Fitria & Nurpinesti, 2022). A study by (Maharani et al., 2024) noted that the school lunch initiative launched by the Indonesian government holds significant potential for broader social and economic benefits. However, successful implementation requires strong support from relevant stakeholders.

This study aimed to analyze the readiness of school particularly public elementary schools and their equivalents for the implementation of the National Free School Lunch Program, and to explore the challenges and needs faced by schools in preparing for the program's execution. This study employs a mixed-methods design, incorporating both quantitative and qualitative approaches. Quantitative respondents include elementary or madrasah ibtidaiyah students in the Special Region of Yogyakarta, selected purposively based on established inclusion and exclusion criteria.

II. METHODS

This study employed a quantitative observational design with a cross-sectional approach targeting elementary schools. The research aimed to analyze school readiness in implementing the national free school lunch program by assessing the availability of supporting facilities (such as canteens or proper eating areas), and the preparedness of teachers and school personnel. The population of this study consisted of all elementary and Islamic elementary schools (madrasah ibtidaiyah) in the Special Region of Yogyakarta, totaling 1,420 schools. The sample size was determined using the Slovin formula, resulting in a sample of 99 schools. To account for potential non-response or dropout from participants, an additional 10% was added, resulting in a final sample size of approximately 109.8 schools. Quantitative data were collected using a questionnaire designed to assess school readiness for the implementation of the free school lunch program. The questionnaire included questions related to the availability of support facilities, such as canteens or designated eating areas. The data obtained from the questionnaires were analyzed using univariate, bivariate, and multivariate analyses. Univariate analysis was conducted to describe the frequency distribution of each research variable. Bivariate analysis employed the chi-square test, while multivariate analysis was performed using logistic regression. This study received ethical approval from the Research Ethics Committee of Universitas Ahmad Dahlan with approval code 012408284, issued on September 6, 2024

III. RESULT

1.1 Characteristics of respondents

The respondents in this study consisted of school principals, teachers, and policy decision-makers from various schools, including public elementary schools, Islamic elementary schools (*madrasah ibtidaiyah*), and private elementary schools located in the Special Region of Yogyakarta Province. Table 1.1 presents the characteristics of the respondents.

Tabel 1. Characteristics of respondents

Respondent Characteristics	Total (n: 152)
Type of School	
Public Elementary School	28 (18.4)
Private Elementary School	124 (81.6)
School Location	
Gunung Kidul	54 (35.5)
Bantul	45 (29.6)
Kulon Progo	25 (16.4)
Sleman	23 (15.1)
Yogyakarta City	5 (3.3)
Respondent Profile	
Headmaster	128 (84.2)
Teacher	19 (12.5)
Administrative staff	5 (3.3)
Gender	
Man	76 (50)
Women	76 (50)
Age	
Average age (min-max)	45 (22-66)

The majority of respondents were from private elementary schools, accounting for 124 individuals (81.6%). The survey was conducted online and distributed to elementary schools across four regencies and one city within the Special Region of Yogyakarta Province. The highest number of responses came from Gunungkidul Regency, with 54 respondents (35.5%). Most of the questionnaires were completed by school principals, representing 128 respondents (84.2%).

The school principal plays a central role as a policymaker within educational institutions. Policies implemented by principals are based on official guidelines and regulatory frameworks aimed at improving educational quality (Nurhayati & Langlang Handayani, 2020). The success of school management and policy implementation is highly influenced by the leadership of the principal. One such recent policy introduced in the education sector is the Free School Lunch Program, launched by the President of the Republic of Indonesia. This program is expected to improve students' health and nutritional status (Eliza et al., 2024; Hidayah, 2017).

1.2 School Readiness for the School Lunch Program

The readiness of schools to implement the school lunch program varied significantly. Some schools reported being prepared, while others indicated that they were not yet ready. Figure 1 shows the distribution of school readiness.

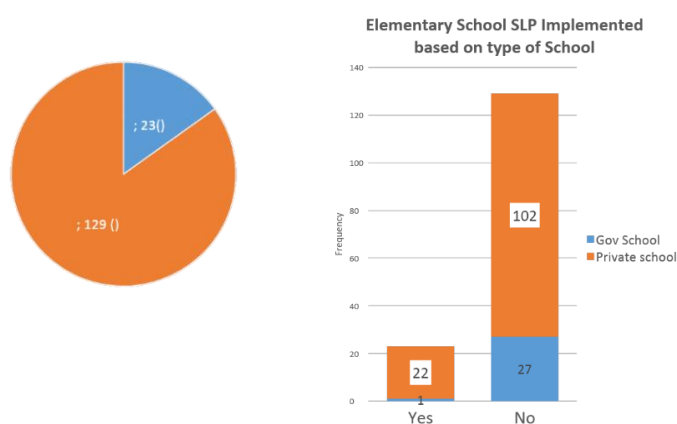


Figure 1. School Readiness for the School Lunch Program

According to Figure 1, 129 schools (comprising 27 public and 102 private schools) reported being not ready to implement the school lunch program. The main barriers identified included lack of food service personnel, absence of a structured meal plan for students, limited funding sources, and inadequate infrastructure to support program operations.

1.3 School Experiences with the Lunch Program

Among the surveyed schools, 23 had already implemented a school lunch program. The survey explored several aspects, including funding sources, responsible parties, human resources, meal budgets, and meal composition. These findings are summarized in Table 1.2

Table 1.2 School Experiences with the Lunch Program

Readiness Factors	Total (n: 23)
Funding Source	
Parent Committee	9 (29.1%)
External (non-tuition)	6 (26.1%)
Included in Tuition	5 (21.7%)
Other	3 (13.0%)
Human Resources	
School Principal	11 (47.8%)
Parents	11 (47.8%)
Teachers	9 (39.1%)
Canteen Operators	7 (30.4%)
School Committee	6 (26.1%)
Nutritionists	0
Program Management	
Managed by School	11 (47.8%)
Outsourced Catering	7 (30.4%)
Joint Management (50:50)	5 (21.7%)
Budget/pax	
< Rp 10.000	15 (65.2%)
Rp 10.000-15.000	6 (26.1%)
Rp > 15.000	2 (8.7%)
Meal Composition	
Rice, animal & plant protein, vegetables	21.7%
Rice, plant protein, vegetables	8.7%
Fruit, milk, and snacks	69.6%

Based on the results, most schools relied on funding from the parent committee (29.1%). The program was typically supported by school principals and parents (47.8%) and managed internally by the school (47.8%). Most schools allocated less than IDR 10,000 per student for meals (65.2%), with the most common meal components being fruit, milk, or local snacks (69.6%). Additionally, approximately 70% of schools reported that they did not have specific dietary accommodation for overweight students or those with food allergies.

1.4 Infrastructure Readiness for the School Lunch Program

The implementation of a school lunch program requires adequate infrastructure. Table 1.3 outlines the schools' infrastructural readiness based on the survey.

Table 1.3 Infrastructure Readiness for the School Lunch Program

Infrastructure Component	Findings
Meal Preparation	56% of schools lack adequate kitchen facilities
Storage Facilities	52% of schools use shared rooms (e.g., teacher's offices)
Food Distribution Facilities	39% distribute meals using plastic containers instead of food trolleys
Meal Serving Facilities	52.2% serve meals in disposable cardboard lunch boxes

The findings highlight that many schools face challenges related to infrastructure, particularly in food preparation areas (lack of kitchen facilities), storage (shared spaces with staff), food distribution (use of containers instead of dedicated trolleys), and meal presentation (use of cardboard boxes).

1.5 Operational Experience of Schools Implementing the Program

Schools that had already implemented the program were also surveyed about their operational procedures, from menu planning to food distribution. The summarized results are shown in Table 1.4.

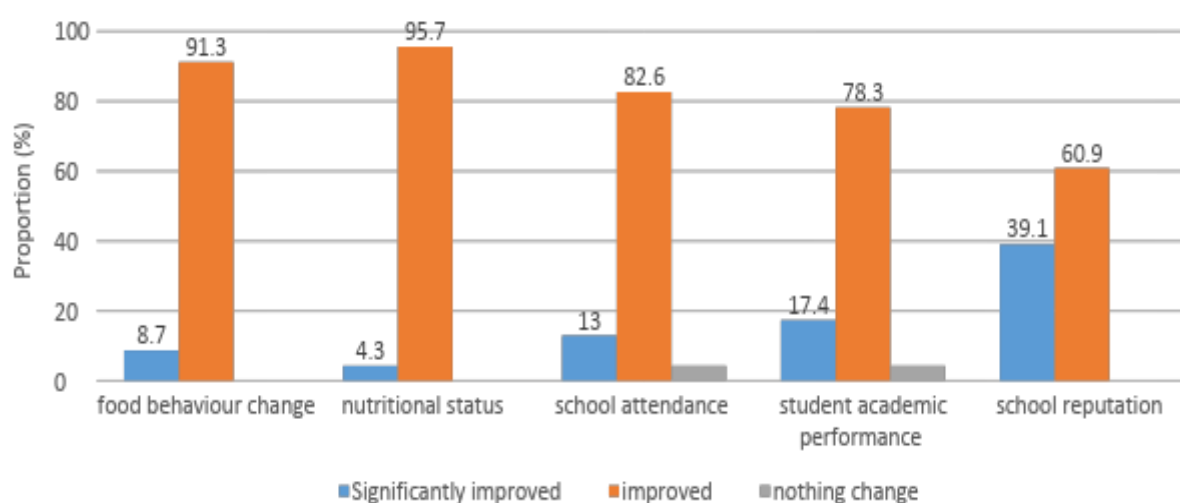
Table 1.4 School Operational Experience

Operational Experience	Findings
Menu Planning	43.5% relied on catering services to plan menus, which the school reviewed
Preparation Time	52.2% required more than 2 hours for preparation; 52.2% required 1–2 hours prior to distribution
Distribution Method	52.2% used centralized distribution; students queued to receive meals

The data suggests that 43.5% of schools entrusted menu planning to external caterers, with the school only reviewing proposed menus. This reliance on caterers reflects the belief that caterers are more experienced in managing meals for large groups. Most schools used a centralized distribution system, which extended the lunch distribution time due to students having to queue for their meals.

1.6 School Perceptions of the School Lunch Program

To assess the perceived impact of the program, a perception survey was conducted. The results are illustrated in Figure 2.

**Figure 2 School Perceptions of the Program's Impact**

According to the figure, 91.3% of schools believed the school lunch program could improve students' eating habits. This perception is linked to the fact that meals provided are aligned with balanced

nutrition guidelines. Additionally, 95.7% of schools agreed that the program positively impacts students' nutritional status. Furthermore, 82.6% of schools noted improved student attendance, and 78.3% reported better academic performance. Interestingly, 60.9% of schools also perceived the program as enhancing the school's public image.

1.7 Overall Readiness to Implement School Lunch Program

Based on the survey conducted in several schools, the overall readiness for implementing the school lunch program is presented in Figure 3.

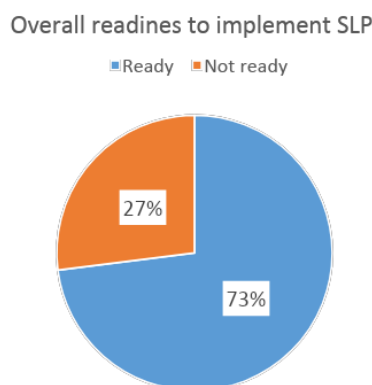


Figure 3 Overall Readiness to Implement SLP

The findings of this study indicate a generally positive level of readiness among schools to implement the national school lunch program. Despite existing infrastructure limitations and variability in resources, most schools expressed willingness and preparedness to initiate the program. This reflects a strong institutional commitment to improving students' nutritional status and overall well-being through school-based interventions.

IV. DISCUSSION

Based on the results of the study, it indicates a generally positive level of readiness among schools to implement the national school lunch program. Despite existing infrastructure limitations and variability in resources, most schools expressed willingness and preparedness to initiate the program. This reflects a strong institutional commitment to improving students' nutritional status and overall well-being through school-based interventions.

The high percentage of reported readiness may be attributed to increasing awareness of the importance of school feeding programs in supporting children's growth, learning outcomes, and attendance. As shown in earlier findings, school principals play a key role in decision-making and operational support, which likely influences the institution's ability to respond proactively to national initiatives. The school principal serves as the leader within an educational institution and holds a key role as a policymaker. Policies formulated by school principals are guided by established frameworks and regulations aimed at improving the quality of education (Nurhayati & , Langlang Handayani, 2020). In an educational setting, the effectiveness of school management is largely determined by the leadership of the principal. One of the recent policies introduced in the education sector is the free school lunch program. This initiative, launched by the President of the Republic of Indonesia, is expected to improve students' health and nutritional status (Eliza et al., 2024; Hidayah, 2017).

Furthermore, as shown in Figure 1, a total of 129 schools (consisting of 27 public and 102 private schools) reported that they were not yet ready to implement the school lunch program. This lack of readiness was attributed to several factors, including the absence of trained personnel, unprepared meal planning for students, limited funding sources, and inadequate infrastructure to support the program's operations. Implementing such a program requires preparedness across multiple levels of school management. In addition, support from students, parents, and the broader community is essential to ensure the successful execution of the school lunch initiative. Parents play a particularly important role,

such as encouraging their children to finish the meals provided at school and enhancing their nutritional knowledge to support healthy eating habits at home and school (Lina et al., 2024).

The school lunch program also benefits the students. Based on survey in 2022, showed that Indonesia was the second highest country in term food insecurity among the secondary school. This Survey also found that many children lack of money, in spite of they missing the meals (Watkins et al., 2024). There for, this school lunch program could be as problem solver for the student. In line in this studi, Figure 2 also showed that school lunch program can change food behavior for the student, and nutritional status. Our findings also in line with other study, that school lunch program also can be promoting health and preventing from degenerative disease (Kiss et al., 2024). Through the menu provided in the school lunch program, student also learning about healthy food.

Furthermore, this study found that schools are overall readiness in school lunch program (Figure 3). This found in line that some study showed that in 2015 the Indonesian Government initiated school feeding program by providing cooked dish 400-500 kcal energy (Sekiyama et al., 2018). This result showed that schools understand the provision in school lunch program, in spite of they still need more preparation for this program.

V. CONCLUSION

Most elementary and Islamic elementary schools (MI) in Yogyakarta reported that they are not yet fully prepared to implement the school lunch program. However, they expressed willingness to participate if supported by the local government and provided with clear technical implementation guidelines. An initial intervention in the form of a pilot project is necessary to evaluate the program's effectiveness and to make necessary operational adjustments.

VI. ACKNOWLEDGMENTS :

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VII. CONFLICTS OF INTEREST

No conflict of interest was found during the research

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