



Perceived program implementation and learning conditions as predictors of nutrition policy legitimacy

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ABSTRACT

Background: Launched in 2025 as a flagship policy of Indonesia's new administration, the Free Nutritious Meal Program (*Makan Bergizi Gratis*/MBG) is theoretically positioned to improve child health and educational outcomes while also serving as a political instrument of governmental legitimation yet quantitative research simultaneously examining how implementation perceptions, student learning conditions, and policy legitimacy and their relation remains scarce, a gap this study addresses. **Methods:** This study employed a quantitative approach with an ex post facto design. Data were collected from 117 students across schools implementing the MBG program, selected through purposive sampling. The instrument measuring perceptions of MBG implementation, student learning conditions, and public policy legitimacy, using a 5-point Likert scale. **Findings:** The regression model demonstrated strong explanatory power ($R^2 = 0.603$; $F = 86.497$; $p < 0.001$). Student learning conditions emerged as the strongest positive predictor ($\beta = 0.852$; $t = 12.330$; $p < 0.001$). Paradoxically, perceptions of MBG implementation were negatively correlated with legitimacy ($\beta = -0.172$; $t = -2.496$; $p = 0.014$). The simultaneous test indicates that both variables significantly influence policy legitimacy. These findings demonstrates that legitimacy is built upon tangible impacts and implementation effectiveness. **Conclusion:** The MBG program's legitimacy hinges on real implementation quality, not just its positive effects on learning since poor food quality, timeliness, cleanliness, and consistency erode public support and show it must be judged by outcomes, not political spectacle. These implementation indicators still offer concrete guidance for school nutrition quality control, even without direct measures of dietary intake or nutritional status. **Novelty/Originality of this article:** This study provides the first quantitative empirical evidence on the relationship between MBG implementation perceptions and policy legitimacy, integrating four theoretical frameworks: Human Capital Theory, Output Legitimacy Theory, Cognitive Dissonance Theory, and Institutional Trust Theory, to explain the dynamics of school nutrition policy legitimacy.

KEYWORDS: educational transformation; free nutritious meal program; policy legitimacy; student learning conditions.

1. Introduction

The Free Nutritious Meal Program (Program Makan Bergizi Gratis, or MBG) is one of the most ambitious public policies initiated by the Indonesian government in 2025. Designed to provide free, nutritious food to students across all levels of primary and secondary education, the program aims to meet learners' daily nutritional needs while enhancing household food security (Arifin et al., 2025; Samosir et al., 2026; KS et al., 2025). Theoretically, school-based nutritional interventions have substantial potential to improve

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child health indicators—such as reducing malnutrition and stunting—which, in turn, affect students' learning capacity and cognitive development (Qomarrullah et al., 2025). A recent systematic review of universal free school meal programs similarly concludes that the nutritional benefit of such interventions is highly contingent on the consistency and quality of food service delivery rather than on the existence of the policy alone (Spill et al., 2024), underscoring why perceived implementation quality—food quality, timeliness, cleanliness, and consistency—is the most policy-relevant nutrition outcome examinable in a program newly launched in 2025, when anthropometric or dietary-intake data are not yet available. However, behind this grand narrative, the MBG also carries political dimensions that cannot be overlooked. Launched as part of a campaign pledge and positioned as a flagship program of the new administration, the MBG functions not only as a public policy issue but also as an instrument of political legitimation (Masruri & Nugraha, 2026).

A fundamental question thus arises: is the MBG genuinely designed to improve the quality of education, or does it primarily serve as a political instrument to bolster governmental legitimacy? This question becomes increasingly pertinent given that the program's budget amounts to tens of trillions of Rupiah—a figure that could potentially affect overall budget allocation within the education sector. Should the MBG budget be drawn from an already limited education fund, the program could become a double-edged sword: promising improved student nutrition while compromising other educational components, such as teacher training, infrastructure development, or school operational assistance.

The relationship between nutritional status and children's educational outcomes continues to be reinforced by empirical evidence. Mahmud et al. (2024) found that school meal programs have a significant effect on students' nutritional status and learning concentration. A systematic review conducted in Asia also reported that school lunch programs contributed to improved academic achievement and reduced micronutrient deficiencies (Utami et al., 2024). Research in Indonesia indicates that the MBG is associated with enhanced student concentration, attendance, and motivation to learn, although implementation challenges—such as cross-sectoral coordination and food quality—remain evident (Mowilos et al., 2025; Akmalia et al., 2025).

Nevertheless, these early studies still leave critical questions unanswered. The majority are qualitative or descriptive in nature, and few have quantitatively examined the simultaneous relationships among program implementation, educational impact, and policy legitimacy (Hansson & Polk, 2018; Hendren et al., 2023; Natow, 2022; Misra & Stensaker, 2024). Furthermore, no research has specifically investigated whether the MBG genuinely contributes to educational transformation—that is, a fundamental shift in how we understand the relationship between students' physical well-being and the quality of education—or instead functions more as a political tool that diverts attention from deeper-seated structural educational issues.

In addition to its impact on student learning conditions, the MBG cannot be separated from the dimension of policy legitimacy. Public policy legitimacy—defined as public acceptance and support for government policies—constitutes a crucial variable in assessing the success of public programs. Welfare policies such as the MBG, which have a direct effect on communities, can strengthen public trust when citizens perceive that the program successfully fulfils their basic needs (Scharpf, 1999; Beetham, 1991). Masruri & Nugraha (2026) assert that the MBG not only affects nutrition and education but is also interpreted as a political instrument that constructs an image of governmental legitimacy. However, legitimacy built upon grand narratives without quality implementation can prove counterproductive—when public expectations are not met, cognitive dissonance arises, thereby diminishing public support (Festinger, 1962).

Furthermore, the MBG carries implications for the direction and focus of national education policy. With an extraordinarily large budget allocation, the program has the potential to fundamentally alter educational policy priorities. The question remains: does this program serve as a catalyst for educational transformation—shifting the paradigm from mere instruction to supporting students' holistic well-being—or does it instead result

in diminished attention to other educational components? If the MBG budget is drawn from an already limited education sector, the program may ultimately threaten the overall quality of education.

Based on the foregoing discussion, several research gaps can be identified: (a) a scarcity of quantitative studies examining the simultaneous relationships among perceptions of implementation, learning conditions, and policy legitimacy; (b) the absence of integrated policy legitimacy as a dependent variable; (c) the lack of empirical testing of student learning conditions as a predictor of legitimacy; and (d) the limited availability of critical perspectives on the MBG as either a political instrument or an educational transformation mechanism.

This study seeks to address these gaps by empirically examining the influence of perceptions of MBG program implementation (X_1) and student learning conditions (X_2) on public policy legitimacy (Y), using a quantitative approach with multiple linear regression. This research contributes to the literature on public policy, school nutrition, and education in Indonesia by providing measurable and critical empirical evidence. The objectives of this study are: (a) to analyze the effect of perceptions of MBG implementation on public policy legitimacy; (b) to analyze the effect of student learning conditions on public policy legitimacy; (c) to analyze the simultaneous effect of both variables on public policy legitimacy; and (d) to provide a critical perspective on whether the MBG functions as an instrument of educational transformation or as a tool of political legitimization, as well as its implications for the direction of national education policy.

Theoretically, this study is grounded in the integration of four major frameworks. Human Capital Theory (Becker, 1964) posits that the fulfilment of basic needs, such as nutrition, constitutes a fundamental investment in the development of cognitive capacity and individual productivity. Output Legitimacy Theory (Scharpf, 1999; Beetham, 1991) maintains that public support for policies increases when they are perceived as effective and beneficial. Cognitive Dissonance Theory (Festinger, 1962) explains that discrepancies between expectations and reality produce psychological discomfort, ultimately leading to diminished support. Institutional Trust Theory asserts that positive experiences with public services enhance trust and support for government policies. These four frameworks are integrated to explain the mechanisms underlying the relationship among perceptions of MBG implementation, student learning conditions, and public policy legitimacy in Indonesia.

2. Methods

2.1 Research design, population, sample, and sampling technique

This study employs a quantitative approach with an ex post facto or causal-comparative design. This design was selected because the research aims to examine the influence of independent variables on a dependent variable based on naturally occurring data, without any manipulation of variables (Creswell, 2017). The research population consists of all students in schools that implement the Free Nutritious Meal Program (MBG). The sample was determined using purposive sampling technique based on the following criteria: (1) students actively enrolled in schools implementing the MBG, (2) having participated in the program for at least three months, and (3) willing to complete the questionnaire in its entirety. Based on these criteria, 117 respondents were obtained—a sufficient sample size for multiple linear regression analysis (Hair et al., 2014).

2.2 Variables and indicators

This study employs two independent variables and one dependent variable. The first independent variable is perceptions of MBG program implementation (X_1), which is measured through five indicators: food quality, timeliness of distribution, food cleanliness and safety, consistency of implementation, and perceived program benefits by students. The

second independent variable is student learning conditions (X_2), measured through indicators of learning concentration, energy and stamina in the classroom, learning motivation, active participation in learning, and school attendance. The dependent variable is public policy legitimacy (Y), measured through indicators of whether the policy is perceived as appropriate and beneficial, support for program sustainability, trust in government policies, and the perception that the program is worth maintaining. All indicators were operationalized into 30 statement items using a 5-point Likert scale (Xie et al., 2026; Mulyati et al., 2025; Dafi & Solihat, 2023).

2.3 Research instrument and data collection

The instrument consists of a questionnaire with 30 statement items divided into three sections: 10 items for X_1 (Q1–Q10), 10 items for X_2 (Q11–Q20), and 10 items for Y (Q21–Q30). Validity testing using Pearson Product-Moment correlation with an r -table value of 0.195 indicated that all items were valid, with r -calculated values ranging from 0.590 to 0.864. Reliability testing yielded a Cronbach's Alpha value of 0.960, indicating a very high level of reliability (Nunnally & Bernstein, 1994). Data collection was conducted through direct distribution of questionnaires to students in the schools that served as research locations. The procedure included coordination with school authorities, provision of explanations regarding the research objectives and completion instructions, as well as verification of questionnaire completeness. All 117 collected questionnaires were declared complete and suitable for analysis (response rate of 100%).

2.4 Data analysis and research hypotheses

Data analysis was conducted through three stages. First, descriptive statistics were employed to provide a general overview of the research data (minimum, maximum, mean, and standard deviation values). Second, classical assumption tests were performed, including normality testing (Kolmogorov-Smirnov), multicollinearity testing (tolerance values and Variance Inflation Factor (VIF)), and heteroscedasticity testing (through scatterplot analysis). Third, hypothesis testing was conducted using multiple linear regression analysis with simultaneous testing (F-test), partial testing (t-test), and the coefficient of determination (R^2) to measure the extent to which the independent variables explain the variation in the dependent variable (Afrinda & Dzikrullah, 2023). All analyses were performed using SPSS software. The research hypotheses proposed are as follows:

H_1 : Perceptions of MBG implementation (X_1) have a significant effect on public policy legitimacy (Y).

H_2 : Student learning conditions (X_2) have a positive and significant effect on public policy legitimacy (Y).

H_3 : X_1 and X_2 simultaneously have a significant effect on Y .

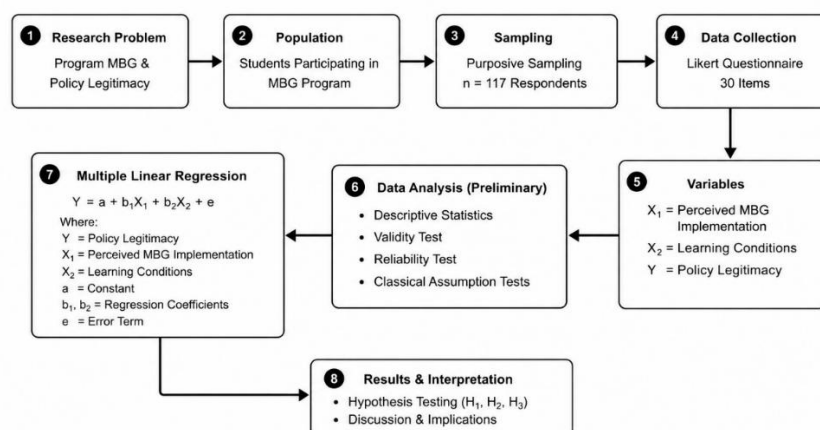


Fig. 1. Research framework and analytical procedure

3. Results and Discussion

3.1 Results

3.1.1 Descriptive statistics

Based on Table 1, the descriptive statistics indicate that respondents generally reported positive perceptions toward the implementation of the Free Nutritious Meal Program (MBG), as reflected by the mean score of 34.03 (SD = 6.730). Meanwhile, the mean scores for Students' Learning Conditions (M = 28.68; SD = 7.987) and Public Policy Legitimacy (M = 28.68; SD = 9.652) suggest moderate levels of perceived learning improvement and policy legitimacy. The observed standard deviation values indicate that respondents' answers varied across all variables, reflecting differences in individual experiences and evaluations of the MBG program.

Table 1. Descriptive statistics

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation
Perceived MBG	117	10	50	34.03	6.730
Learning Conditions	117	10	48	28.68	7.987
Public Policy Legitimacy	117	10	50	28.68	9.652
Valid N (listwise)	117				

3.1.2 Validity and reliability test

In Table 2, the validity test results indicate that all items on the Perceived Free Nutritious Meal Program Implementation variable possess item-total correlation coefficients ranging from 0.590 to 0.760, which exceed the r-table value of 0.195. Accordingly, all items are declared valid and suitable for use in this study

Table 2. Results of the instrument validity test for perceived MBG implementation (x_1)

Question	R value	Notes
Q1: The Free Nutritious Meal Program provides food of good quality	0.672	Valid
Q2: The food provided through this program meets students' nutritional needs	0.694	Valid
Q3: The Free Nutritious Meal Program is implemented regularly and according to schedule.	0.721	Valid
Q4: This program is easily accessible to students in my school.	0.716	Valid
Q5: This program reaches most students in my school	0.706	Valid
Q6: The implementation of the Free Nutritious Meal Program is often disrupted	0.590	Valid
Q7: The food provided through this program is not suitable for consumption	0.728	Valid
Q8: This program is not implemented consistently in my school	0.697	Valid
Q9: This program is difficult for students in need to access	0.760	Valid
Q10: This program does not reach most students in my school	0.670	Valid

In Table 3, the validity test results indicate that all items on the Students' Learning Conditions variable possess item-total correlation coefficients (r-calculated) ranging from 0.656 to 0.831. All r-calculated values exceed the r-table value of 0.195 at the 5% significance level. Accordingly, all statement items on the Students' Learning Conditions variable are declared valid and suitable for use as research instruments.

Table 3. Results of the instrument validity test for students' learning conditions (x_2)

Question	R value	Notes
Q11: Students find it easier to concentrate during lessons	0.796	Valid
Q12: This program increases students' motivation to learn	0.831	Valid

Q13: Students become more active in classroom learning activities	0.797	Valid
Q14: Student attendance has improved since the implementation of this program	0.732	Valid
Q15: Students are better prepared to participate in classroom lessons	0.817	Valid
Q16: Students still find it difficult to concentrate during lessons despite this program	0.656	Valid
Q17: This program has no effect on students' motivation to learn	0.706	Valid
Q18: Students do not become more active in learning activities because of this program	0.787	Valid
Q19: This program does not affect student attendance	0.663	Valid
Q20: Students are still unprepared to participate in lessons despite this program	0.772	Valid

In Table 4, the validity test results indicate that all items on the Public Policy Legitimacy variable possess item-total correlation coefficients (r-calculated) ranging from 0.771 to 0.864. All r-calculated values exceed the r-table value of 0.195 at the 5% significance level. Accordingly, all statement items on the Public Policy Legitimacy variable are declared valid and suitable for use as research instruments.

Table 4. Validity test results for the public policy legitimacy variable (y)

Question	R value	Notes
Q21: This program increases my trust in the government	0.850	Valid
Q22: This program demonstrates that the government cares about the welfare of the community	0.792	Valid
Q23: I support the continuation of the Free Nutritious Meal Program	0.858	Valid
Q24: This program creates a positive image of the government	0.833	Valid
Q25: This program is an appropriate policy for society	0.864	Valid
Q26: This program does not increase my trust in the government	0.831	Valid
Q27: The government does not demonstrate concern for the community through this program	0.812	Valid
Q28: I do not support the continuation of this program	0.850	Valid
Q29: This program does not create a positive image of the government	0.780	Valid
Q30: This program is not an appropriate policy for society	0.771	Valid

Conclusion of Validity Test Interpretation: Based on the validity test results, all statement items on the variables of Perceived Free Nutritious Meal Program Implementation (X_1), Students' Learning Conditions (X_2), and Public Policy Legitimacy (Y) possess r-calculated values greater than the r-table value of 0.195. Accordingly, all 30 statement items are declared valid and may be used in the data collection process and subsequent analysis.

Table 5. Summary of instrument validity test results

Variable	Number of Items	Range of r-calculated	r-table	Conclusion
X_1 = Perceived Free Nutritious Meal Program Implementation	10	0.590–0.760	0.195	All valid
X_2 = Students' Learning Conditions	10	0.656–0.831	0.195	All valid
Y = Public Policy Legitimacy	10	0.771–0.864	0.195	All valid

The reliability test results indicate that the research instrument, consisting of 30 statement items, obtained a Cronbach's Alpha value of 0.960. This value exceeds the recommended minimum threshold of 0.70, thereby indicating that the research instrument possesses a very high level of reliability. Accordingly, all statement items demonstrate good internal consistency and are suitable for use as a data collection tool.

3.1.3 Classical assumption tests

3.1.3.1 Normality test

The normality test was conducted to determine whether the residuals in the regression model are normally distributed. The results of the One-Sample Kolmogorov-Smirnov Test indicated an Asymp. Sig. (2-tailed) value of 0.091. This value exceeds the established significance level of 0.05. This finding indicates that the residuals in the regression model follow a normal distribution. Accordingly, the normality assumption in this study has been fulfilled, and the regression model is therefore suitable for further analysis.

Table 6. Kolmogorov-smirnov normality test

One-Sample Kolmogorov-Smirnov Test		
Test Component	Measure	Unstandardized Residual
N		117
Normal Parameters ^{a,b}	Mean	0.000000
	Std. Deviation	5.87509459
	Absolute	0.076
Most Extreme Differences	Positive	0.029
	Negative	-0.076
Test Statistic		0.076
Asymp. Sig. (2-tailed) ^c		0.091
Monte Carlo Sig. (2-tailed) ^d	Sig.	0.091
	99% Confidence Lower Bound	0.083
	Interval Upper Bound	0.098

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 624387341.

Based on the histogram of standardized residuals presented in Figure 2, the data distribution forms a pattern that approximates a normal (bell-shaped) curve and is centered around zero. The residual distribution appears relatively symmetrical and does not exhibit any significant deviation from a normal distribution pattern. Therefore, it can be concluded that the residuals of the regression model are normally distributed, and thus the normality assumption has been satisfied.

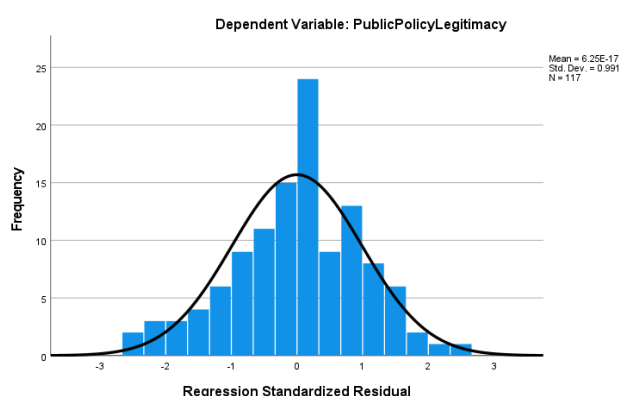


Fig. 2. Histogram of standardized residual

Furthermore, in Figure 3, the Normal P-P Plot of Regression Standardized Residual indicates that the residual points are dispersed around the diagonal line and follow its direction. This pattern suggests that the residual distribution approximates a normal distribution. Accordingly, the normality assumption in the regression model can be declared as satisfied.

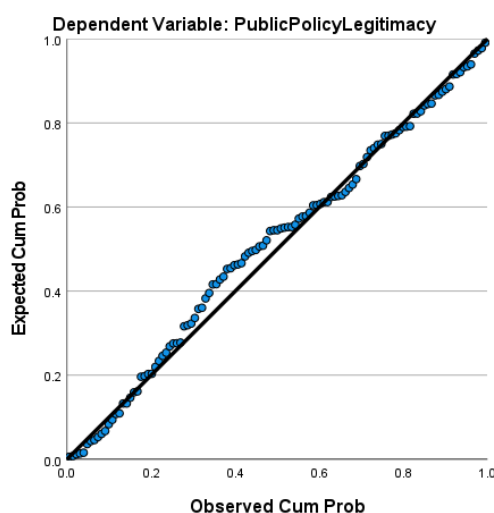


Fig. 3. Normal P-Plot of regression standardized residual

3.1.3.2 Multicollinearity test

The multicollinearity test results indicate that the variables Perceived Free Nutritious Meal Program Implementation (X_1) and Students' Learning Conditions (X_2) each have a tolerance of 0.730 and a VIF of 1.370. The tolerance values, which are greater than 0.10, and the VIF values, which are less than 10, indicate no multicollinearity among the independent variables. Accordingly, the regression model satisfies the multicollinearity assumption and is suitable for further analysis.

Table 7. Multicollinearity test results

Coefficients ^a							
Model	Unstandardized coefficients		Standardized coefficients	T	Sig.	Collinearity statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	5.672	2.583		2.196	0.030		
Perceived MBG	-0.196	0.079	-0.172	-2.496	0.014	0.730	1.370
Learning Conditions	1.028	0.083	0.852	12.330	0.000	0.730	1.370

A. Dependent Variable: publicpolicylegitimacy

3.1.3.3 Heteroscedasticity test

Based on the scatterplot presented in Figure 4, the residual points are randomly scattered above and below the zero line on the Y-axis and do not form any discernible pattern. This random distribution of points indicates that the variance of residuals tends to be constant across all predicted values. Therefore, it can be concluded that the regression model does not exhibit symptoms of heteroscedasticity.

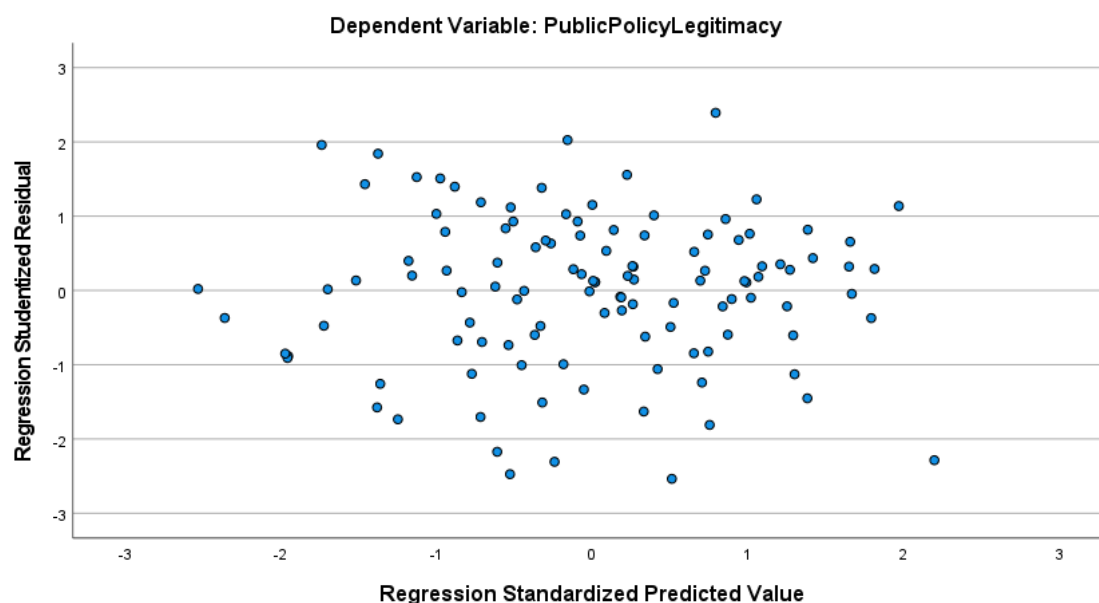


Fig. 4. Scatterplot Heteroscedasticity

3.1.4 Hypothesis testing

3.1.4.1 Model summary

Based on the results of the multiple linear regression analysis, an R value of 0.776 was obtained. This value indicates that the relationship between the variables Perceived Free Nutritious Meal Program Implementation (PerceiveMBG) and Students' Learning Conditions with Public Policy Legitimacy is classified as strong. The R Square value of 0.603 indicates that 60.3% of the variation in Public Policy Legitimacy can be explained by the variables Perceived Free Nutritious Meal Program Implementation and Students' Learning Conditions. Meanwhile, the remaining 39.7% is explained by other factors outside the research model that were not examined. Furthermore, the Adjusted R Square value of 0.596 indicates that after adjustment for the number of independent variables in the model, 59.6% of the variation in Public Policy Legitimacy can be explained by the two independent variables, while the remainder is influenced by other factors beyond the scope of this study. The Std. Error of the Estimate value of 5.926 indicates the prediction error level of the regression model. The smaller this value, the better the model's ability to predict the dependent variable.

Table 8. Model Summary

Model summary ^b			
R	R Square	Adjusted R Square	Std. Error of the Estimate
0.776 ^a	0.603	0.596	5.926

a. Predictors: (Constant), LearningConditions, PerceiveMBG

b. Dependent Variable: PublicPolicyLegitimacy

3.1.4.2 Simultaneous test (Uji F)

Based on the results of the simultaneous test (F-test) presented in the ANOVA table, an F-calculated value of 86.497 was obtained with a significance level of 0.000. This significance value is smaller than the established significance level of 0.05 ($0.000 < 0.05$). Furthermore, the F-calculated value (86.497) is also greater than the F-table value (3.08) at $df_1 = 2$ and $df_2 = 114$. These results indicate that the variables Perceived Free Nutritious Meal Program Implementation (PerceiveMBG) and Students' Learning Conditions simultaneously have a significant effect on Public Policy Legitimacy. Accordingly, the

regression model employed in this study is appropriate and capable of explaining the relationship between the independent variables and the dependent variable.

Table 9. ANOVA results (F-Test)

ANOVA ^a					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	6075.922	2	3037.961	86.497	0.000 ^b
Residual	4003.941	114	35.122		
Total	10079.863	116			

a. Dependent Variable: PublicPolicyLegitimacy

b. Predictors: (Constant), LearningConditions, PerceiveMBG

3.1.4.3 Partial test (Uji t) and regression equation

Table 10. Regression coefficients and t-test results

Coefficients ^a							
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	5.672	2.583		2.196	0.030		
Perceive MBG	-0.196	0.079	-0.172	-2.496	0.014	0.730	1.37
Learning Conditions	1.028	0.083	0.852	12.330	0.000	0.730	1.37

a. Dependent Variable: PublicPolicyLegitimacy

Multiple linear regression equation based on the unstandardized coefficients (b) column:

$$Y = 5.672 - 0.196X_1 + 1.028X_2 \quad (\text{Eq. 1})$$

or:

$$\text{Public Policy Legitimacy} = 5.672 - 0.196(\text{PerceivedMBG}) + 1.028(\text{Learning Conditions})$$

The constant value of 5.672 indicates that if the variables Perceived Free Nutritious Meal Program Implementation and Students' Learning Conditions are zero, the estimated value of Public Policy Legitimacy would be 5.672. The regression coefficient for Perceived Free Nutritious Meal Program Implementation of -0.196 indicates that for every one-unit increase in this variable, Public Policy Legitimacy decreases by 0.196 units, assuming other variables are held constant. The regression coefficient for Students' Learning Conditions of 1.028 indicates that for every one-unit increase in this variable, Public Policy Legitimacy increases by 1.028 units, holding other variables constant.

H_1 = Perceived Free Nutritious Meal Program Implementation has an effect on Public Policy Legitimacy. Given: t-calculated = -2.496, t-table = 1.981, Sig. = 0.014. Since $2.496 > 1.981$ and $0.014 < 0.05$, H_1 is accepted. The partial test results indicate that the variable Perceived Free Nutritious Meal Program Implementation has a calculated t-value of -2.496 and a significance value of 0.014. Because the significance value is less than 0.05 and the absolute t-calculated value is greater than the t-table value ($2.496 > 1.981$), Perceived Free Nutritious Meal Program Implementation has a significant effect on Public Policy Legitimacy. H_1 : The partial test results indicate that the variable Perceived Free Nutritious Meal Program Implementation has a t-calculated value of -2.496 with a significance value of 0.014. The significance value being less than 0.05 indicates that this variable has a significant effect on Public Policy Legitimacy. Therefore, H_1 is accepted. However, the negative regression coefficient (-0.196) indicates that the effect is negative.

H_2 = Students' Learning Conditions has an effect on Public Policy Legitimacy. Given: t-calculated = 12.330, t-table = 1.981, Sig. = 0.000. Since $12.330 > 1.981$ and $0.000 < 0.05$, H_2

is accepted. The partial test results indicate that the variable Students' Learning Conditions has a calculated t-value of 12.330 and a significance value of 0.000. Because the significance value is less than 0.05 and the t-calculated value is greater than the t-table value ($12.330 > 1.981$), Students' Learning Conditions has a positive and significant effect on Public Policy Legitimacy. H_2 : The partial test results indicate that the variable Students' Learning Conditions has a t-calculated value of 12.330 with a significance value of 0.000. This value is less than 0.05 and the t-calculated value is greater than the t-table value. Therefore, Students' Learning Conditions has a positive and significant effect on Public Policy Legitimacy, and thus H_2 is accepted.

H_3 : The simultaneous test results indicate that the F-calculated value is 86.497 with a significance value of 0.000. The F-calculated value is greater than the F-table value and the significance value is less than 0.05. Accordingly, Perceived Free Nutritious Meal Program Implementation and Students' Learning Conditions simultaneously have a significant effect on Public Policy Legitimacy, and thus H_3 is accepted.

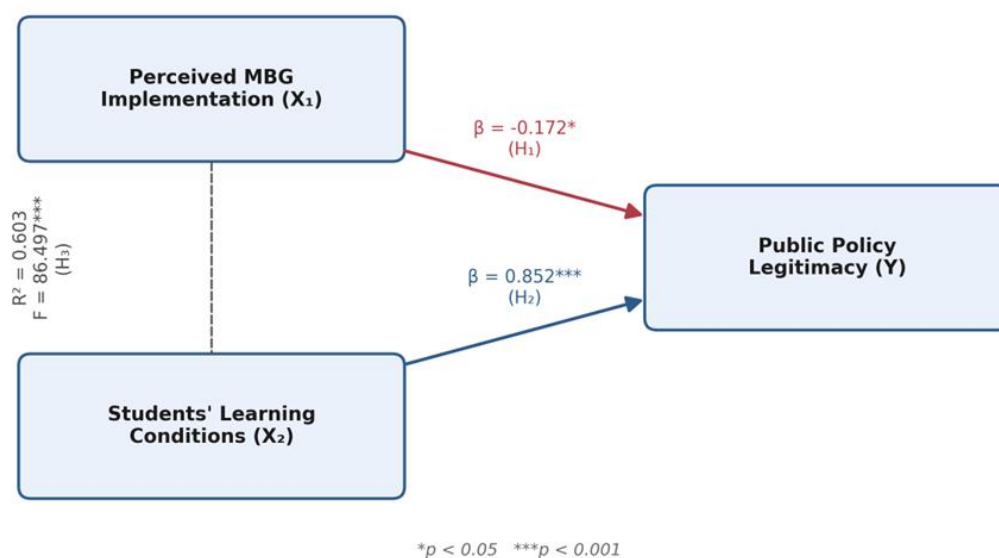


Fig. 5. Path diagram of the regression model linking Perceived MBG Implementation (X_1) and Students' Learning Conditions (X_2) to Public Policy Legitimacy (Y), showing standardized coefficients, significance, and overall model fit

3.2 Discussion

The findings of this study reveal an intriguing paradox in the implementation of the Free Nutritious Meal Program (MBG) in Indonesia. On one hand, the program has been shown to effectively improve student learning conditions, which in turn strengthens policy legitimacy ($\beta = 0.852$; $t = 12.330$; $p < 0.001$). On the other hand, students' perceptions of program implementation are negatively correlated with policy legitimacy ($\beta = -0.172$; $t = -2.496$; $p = 0.014$). These findings raise a critical question: does the MBG truly serve as an instrument of educational transformation, or does it function more as a tool of political legitimization?

3.2.1 The effect of perceived mbg implementation on policy legitimacy: When expectations meet reality

The first finding that warrants serious attention is the negative effect of perceptions of MBG implementation on policy legitimacy ($\beta = -0.172$; $t = -2.496$; $p = 0.014$). Intuitively, one

might expect that positive perceptions of program implementation would enhance legitimacy. However, the reality is quite the opposite: the higher the students' perceptions of program implementation (food quality, timeliness, cleanliness, consistency, and benefits), the lower the legitimacy they attribute to the policy. From a school-nutrition standpoint, this pattern is consistent with evidence that the nutritional value of free meal programs is realized only when food quality, hygiene, and delivery consistency meet a minimum service threshold; when any of these nutrition-service dimensions is perceived as deficient, beneficiaries discount the program's nutritional credibility regardless of its existence (Spill et al., 2024). This suggests that, for MBG, food safety and menu consistency function less as peripheral logistics and more as the operational core of whether the program is experienced as a genuine nutrition intervention.

This counterintuitive phenomenon can be explained through the lens of Cognitive Dissonance Theory (Festinger, 1957). The MBG program has been promoted through a grand narrative focused on improving nutrition and educational quality—one amplified via political communication channels and framed as a flagship government initiative. Yet when students, as direct beneficiaries, witness an implementation reality that does not fully align with those grand promises—such as inadequate food quality, inconsistent distribution, or questionable cleanliness—psychological discomfort arises. This dissonance between the lofty political narrative and the grounded reality of daily experience diminishes their assessment of policy legitimacy. Recent scholarship reinforces this mechanism: studies have shown that when policy narratives are misaligned with the lived experiences of target populations, particularly regarding perceptions of fairness and effectiveness, the resulting disjuncture can undermine rather than bolster support (Artiga Gonzalez et al., 2024). As Artiga Gonzalez et al. (2024) demonstrate, cognitive dissonance arising from political participation can causally lead individuals to change their preferences, but, crucially, this effect is highly dependent on perceived outcomes: when expectations are unmet, dissonance intensifies and can lead to negative reassessments. Similarly, Smith (2023) found that when policy mandates conflict with the beliefs and direct experiences of implementers and beneficiaries, cognitive dissonance arises, often resulting in resistance and negative perceptions of the policy itself. In the context of MBG, the gap between the government's promise of transformative nutrition and education and the students' direct experience of suboptimal implementation appears to generate this dissonance, which then negatively colours their evaluation of the policy's legitimacy.

Furthermore, this finding reinforces Output Legitimacy Theory (Scharpf, 1999; Beetham, 1991), which posits that policy legitimacy is not derived from good intentions or political promises alone, but rather from the perceived effectiveness of implementation as experienced directly by beneficiaries. Scharpf's foundational argument distinguishes output legitimacy—based on effective problem-solving and tangible results—from input legitimacy, which rests on procedural participation and political representation. Contemporary applications of output legitimacy theory suggest that citizens evaluate policies primarily through the lens of whether they effectively address concrete needs and deliver visible benefits; where implementation fails to meet these criteria, legitimacy erodes regardless of the political capital invested in the policy's symbolic framing (Mazepus et al., 2022; Wallner, 2008). Mazepus et al. (2022) found that governmental responses perceived as effective in providing material benefits and distributing them fairly significantly enhance perceived legitimacy, while responses that fail on these dimensions undermine it. Indeed, recent research on public perceptions of policy legitimacy underscores that "if the corresponding attribution of responsibility and the respective perception is missing, the actual output of the actor... will remain neutral concerning legitimisation and it cannot—for this reason alone—have either a legitimising or a delegitimising effect" (Mazepus et al., 2022). This suggests that when implementation quality is perceived as substandard, the negative assessment directly diminishes legitimacy, regardless of how political actors narratively construct the policy.

In the Indonesian context, this finding suggests that the MBG program risks becoming a political boomerang if its implementation is not properly managed. Survey data from 2025 reveals that while the MBG enjoys broad public awareness, approval remains fragile; nearly 40% of Indonesians express dissatisfaction, and when dissatisfaction exceeds 30%, it signals a serious policy problem, indicating that people agree with the idea of the free meal program but are disappointed with how it is being delivered (Jakarta Globe, 2026). The program's implementation challenges, including reports of over 4,000 food poisoning cases in its first eight months, have been well-documented (Institute for Development of Economic and Finance (INDEF, 2025). When students and parents compare campaign promises with on-the-ground realities—and find the latter wanting—policy legitimacy may actually decline. When thousands of students experience food poisoning incidents, and their complaints are met with slow or inadequate responses, the lesson learned is not simply about weak quality control; rather, it signals a failure in the state's protective function, a dynamic that directly undermines what political scientists term "political efficacy" (INDEF, 2025). This aligns with the concerns raised by Masruri & Nugraha (2026) that the MBG not only exerts substantive effects on nutrition and education but is also interpreted as a political instrument that combines symbolic and structural dimensions in constructing an image of governmental legitimacy. Research on the political economy of MBG confirms that sustaining legitimacy amid implementation problems and rising fiscal pressures is a significant challenge (ISEAS-Yusof Ishak Institute, 2025).

The broader implication is sobering: large-scale welfare programs like MBG, while potentially transformative, carry inherent risks when their symbolic promises outpace their practical delivery. The negative relationship between implementation perceptions and legitimacy identified in this study serves as an early warning signal. It suggests that the very mechanism through which the government seeks to build popular support—the daily distribution of meals—may, if poorly executed, produce the opposite effect. Rather than consolidating legitimacy, the program may generate a persistent sense of unmet expectations and institutional failure that could, over time, reshape how young citizens perceive and engage with the state (ISEAS-Yusof Ishak Institute, 2025). In an era where social media amplifies public grievances and viral outrage increasingly shapes political accountability (Jakarta Globe, 2026), the reputational stakes of implementation failures are higher than ever. The findings of this study, therefore, are not merely academic; they highlight a critical juncture for the MBG program, where the government's ability to bridge the gap between its political narrative and the daily realities of implementation will determine whether the program becomes a source of lasting legitimacy or a catalyst for public disillusionment.

3.2.2 The effect of learning conditions on policy legitimacy: The real driver of educational transformation

In contrast to the negative effect of X_1 , student learning conditions (X_2) proved to be the strongest predictor of policy legitimacy ($\beta = 0.852$; $t = 12.330$; $p < 0.001$). The regression coefficient of 1.028 indicates that for every one-unit increase in student learning conditions, policy legitimacy increases by more than one unit. This is a finding of substantial substantive significance. Why are learning conditions so dominant? The answer lies in the tangible impact that students experience in their daily lives. When students perceive improvements in concentration, energy, motivation, active participation, and school attendance resulting from the MBG program, they rate the policy positively. Legitimacy is not built upon promises or narratives, but rather upon the lived experience of beneficiaries.

This finding reinforces Human Capital Theory (Becker, 1964), which asserts that the fulfilment of basic needs such as nutrition constitutes a fundamental investment in the development of cognitive capacity and individual productivity. Adequate nutrition is a prerequisite for optimal brain development and learning during the school years (Aboyo, 2024; Hargreaves et al., 2022; Precious et al., 2023). When students directly experience

these benefits, they naturally tend to support the policies that enable such outcomes. Furthermore, this finding also supports Institutional Trust Theory. Positive experiences with public services—in this case, improvements in learning conditions—enhance trust and support for government policies. This represents a bottom-up mechanism of legitimation: legitimacy is built upon tangible impact, not upon top-down narratives. The critical implication is that if the government wishes to maintain the legitimacy of the MBG policy, the primary focus must be on educational outcomes, rather than on launch ceremonies or political narratives. The MBG program should be evaluated based on the extent to which it improves student learning conditions, for this is what ultimately determines public acceptance.

3.2.3 The simultaneous effect: MBG as an educational transformation or political instrument

The simultaneous test results indicate that X_1 and X_2 together explain 60.3% of the variation in policy legitimacy ($R^2 = 0.603$; $F = 86.497$; $p = 0.000$). This figure is remarkably high for social science research, suggesting that policy legitimacy is largely determined by two factors: program implementation and educational impact. However, this finding raises an even more significant question: Is the MBG genuinely designed for educational transformation, or does it serve more as a political instrument?

Perspective 1: MBG as educational transformation

From an educational standpoint, the MBG has substantial potential to catalyse the transformation of the national education system. This program raises awareness that education cannot be separated from students' physical well-being. Historically, education policy in Indonesia has tended to focus on curriculum, teacher development, and infrastructure—while student nutrition has often been overlooked. The MBG shifts this paradigm. By providing nutritious food in schools, the program acknowledges that hungry students cannot learn optimally. This represents a fundamental shift in educational policy approach: from merely teaching to supporting holistic student well-being. The findings of this study support this perspective: student learning conditions proved to be the strongest predictor of policy legitimacy. This implies that when the MBG successfully improves learning conditions, it gains legitimacy. This is a signal that the public—in this case, students—support policies that genuinely improve the quality of their education.

Perspective 2: MBG as political instrument

However, there is another side that cannot be ignored. The MBG program was born from a campaign promise and has become one of the flagship programs of the new administration. Its extraordinarily large budget—amounting to tens of trillions of rupiah—raises questions about policy priorities. A matter of serious concern is the program's impact on overall education budget allocation. If the MBG budget is drawn from an already constrained education sector—for instance, by reducing allocations for teacher training, school infrastructure improvements, or school operational assistance—then the program could ultimately become a boomerang for national education. This study provides preliminary indications of such a phenomenon. The finding that perceptions of MBG implementation are negatively correlated with legitimacy can be read as a warning signal. If students and the public begin to question the program's quality and consistency—while simultaneously witnessing the erosion of other education budgets—then policy legitimacy will be increasingly threatened. In other words, the MBG could prove to be a double-edged sword. On the one hand, it has the potential to improve the quality of student learning. On the other hand, it could divert attention and resources away from other structural educational issues. If this program serves merely as a political spectacle without a tangible educational impact, its legitimacy will not endure.

3.2.4 MBG and the future of Indonesian education policy: A critical reflection

The findings of this study carry important implications for the future direction of national education policy. First, the MBG program must be positioned as an integral component of education policy, rather than merely a social or political initiative. This implies that program evaluation should be grounded in educational indicators, such as learning conditions, academic achievement, and dropout rates, rather than solely on health or political indicators. Second, the government needs to be transparent regarding budget allocation. The public must be assured that the MBG program does not reduce the portion of the budget allocated to other equally critical educational components, such as teacher quality, infrastructure, and curriculum. Without such transparency, policy legitimacy will continue to erode. Third, this study highlights the need for formal mediation testing (Baron & Kenny, 1986; Hayes, 2015) to confirm whether student learning conditions truly function as a mediator between program implementation and policy legitimacy. The observed pattern of relationships, in which X_1 exerts a negative effect while X_2 exerts a positive effect, suggests that learning conditions may mediate this relationship. That is to say, although perceptions of implementation directly reduce legitimacy, its positive impact on learning conditions may effectively salvage policy legitimacy.

3.2.5 Nutritional dimensions of the MBG program: Food quality, safety, acceptability, dietary diversity, protein adequacy, and micronutrients

Beyond its function as an instrument for building legitimacy, the Free Nutritious Meal Program (MBG) must ultimately be assessed against established benchmarks for school-based nutrition interventions. The success of MBG implementation is not measured solely by the distribution of food to students, but also by the extent to which the meals provided meet nutritional quality standards, food safety requirements, and dietary needs that support child growth and development. Therefore, program evaluation must be conducted comprehensively across multiple interrelated dimensions, including food quality, food safety, acceptability, dietary diversity, as well as protein adequacy and micronutrient adequacy. These five dimensions provide a holistic picture of MBG program quality—from the quality and safety of food, to students' acceptance of menus, to the program's capacity to meet macro- and micronutrient requirements. By employing these indicators, the discussion of MBG implementation focuses not only on food distribution logistics but also on program effectiveness in achieving improved nutritional status, health, and learning outcomes. While the current study did not directly measure dietary outcomes, the implementation indicators captured through the questionnaire—encompassing food quality, timeliness, hygiene, consistency, and perceived benefits—directly correspond to operational parameters that nutritional science identifies as prerequisites for effective dietary impact. This section examines each of these dimensions and their implications for the program's nutritional contribution.

Food quality and safety constitute the foundational prerequisites for any school feeding initiative. In this study, food quality is a primary aspect because it reflects the program's ability to provide food that meets nutritional needs through a balance of nutrients, diversity of food groups, and menu quality. High-quality food contributes to energy sufficiency, growth, health, and learning capacity. Thus, school meal menus must be evaluated based on nutritional adequacy, dietary diversity, and menu balance, as these three factors play a critical role in improving students' nutritional status (Kanté et al., 2026). International evidence consistently demonstrates that school meal programs maintaining rigorous food safety and hygiene standards are associated with increased enrollment, reduced absenteeism, and improved cognitive performance (Grantham-McGregor et al., 2007; Kristjansson et al., 2016). Conversely, food safety failures—such as the more than 4,000 food poisoning incidents linked to MBG during its first eight months of operation (INDEF, 2025)—directly undermine beneficiary trust and willingness to consume provided meals,

thereby nullifying any potential nutritional benefit. Food safety must be safeguarded from raw material procurement, processing, storage, transportation, to meal distribution to prevent biological, chemical, or physical contamination that could lead to foodborne diseases. The success of school meal programs depends not only on nutritional adequacy but also on the system's ability to control food safety risks through hygiene practices, sanitation, and effective supervision mechanisms (Surendra et al., 2026). The negative relationship observed in this study between perceived implementation quality and policy legitimacy ($\beta = -0.172$, $p = 0.014$) aligns with this mechanism: when hygiene and consistency are perceived as inadequate, students disengage from the program both cognitively and nutritionally. Food safety lapses thus function not merely as logistical failures but as nutritional failures, since meals that are not safely consumed confer no dietary benefit.

Food acceptability—the degree to which students find meals palatable, culturally appropriate, and satisfying—represents a critical yet frequently underestimated determinant of nutritional impact. Meals that meet nutritional standards may not confer optimal benefits if they are not consumed. High acceptability, reflected in taste, aroma, texture, appearance, and low plate waste, increases actual nutrient intake. Acceptability is a vital indicator in evaluating school meal programs because it directly relates to program effectiveness in improving students' dietary intake (Amorim et al., 2020). In the Indonesian context, local food preferences, flavor profiles, and meal compositions vary considerably across regions, rendering acceptability a particularly salient challenge for a nationally standardized program such as MBG. The perceived benefits dimension of the X_1 instrument in this study partially captures acceptability: when students do not perceive meals as beneficial, they are less likely to consume them in full. Therefore, MBG menu planning must consider student preferences without compromising nutritional quality. Future iterations of MBG should incorporate participatory menu planning that engages students and school communities to enhance acceptability, which itself constitutes a prerequisite for realizing the program's nutritional objectives.

Dietary diversity serves as a composite indicator of nutritional quality, reflecting the range of food groups consumed over a reference period. The Food and Agriculture Organization (FAO) and The World Health Organization (WHO) recommends a minimum dietary diversity score of five or more food groups per day for school-age children to ensure adequate macro- and micronutrient intake (FAO/WHO, 2019). Provision of menus comprising carbohydrate sources, animal and plant-based proteins, vegetables, fruits, and micronutrient-rich foods increases the likelihood of meeting essential nutrient requirements. Dietary diversity is significantly associated with reduced risk of undernutrition among school-age children (Zeinalabedini et al., 2023). School feeding programs have proven effective in improving dietary diversity when menus are deliberately designed to incorporate vegetables, legumes, animal-source foods, and fruits alongside staple carbohydrates (Gelli et al., 2016). While the MBG program's official menu guidelines specify inclusion of multiple food groups, whether these guidelines are consistently implemented at the point of delivery remains unverified in the current evidence base. The consistency dimension of the X_1 instrument is directly relevant here: low perceived consistency implies that the multi-food-group composition of meals varies unpredictably, which would suppress dietary diversity scores at the population level. Therefore, menu variation in MBG aims not only to avoid consumption monotony but also serves as a strategy to improve overall dietary quality. Policy monitoring systems should incorporate periodic dietary diversity assessments as routine program evaluations, rather than relying solely on menu guidelines.

Protein adequacy is particularly critical for Indonesian school-age children, given the substantial national burden of stunting (24.4% in 2023, according to SSGI data cited in BPS, 2024). Protein is essential for tissue formation, growth, and immune function, while micronutrients such as iron, zinc, vitamin A, vitamin D, folate, and iodine play crucial roles in cognitive development, immunity, and prevention of various forms of malnutrition.

School feeding programs represent a strategic vehicle for addressing protein gaps because they provide a predictable, supervised source of animal-source protein—eggs, fish, or chicken—for children whose home diets may be protein-deficient. The MBG menu framework specifies inclusion of protein sources at each meal; however, whether the quantity provided meets the Recommended Dietary Allowance (RDA) for protein for Indonesian school-age children (approximately 49–72 g/day depending on age and sex, per Permenkes No. 28/2019) cannot be verified from perception-based data alone. In practice, menu standardization without portion control monitoring may result in protein provision falling short of the RDA. Therefore, MBG menu formulation must ensure that meals not only meet energy requirements but also supply protein and micronutrients according to age-group-based nutritional recommendations. Future research should combine the perception-based approach of the present study with weighed dietary records or 24-hour dietary recalls to quantify the protein contribution of MBG meals as a proportion of daily requirements.

Micronutrient adequacy constitutes the final and perhaps most policy-sensitive dimension. Indonesian school-age children face a double burden: iron deficiency anemia affects approximately 26% of adolescent girls (Riskesdas, 2018), while zinc, vitamin A, and iodine deficiencies continue to be documented in national surveys. School feeding programs enriched with micronutrient-dense foods or fortified with iron, zinc, and vitamin A have demonstrated significant reductions in anemia prevalence and improvements in cognitive performance in randomized controlled trials conducted in low- and middle-income country settings comparable to Indonesia (Grantham-McGregor et al., 2007; Kristjansson et al., 2016). The food quality and composition dimensions of MBG implementation are directly relevant to micronutrient delivery: a high-quality meal incorporating dark-green leafy vegetables, eggs, and fortified staples will substantially outperform a meal of equal caloric content lacking these micronutrient-dense components. The present study's perception-based instrument cannot capture this difference quantitatively; however, the finding that positive perceptions of food quality are paradoxically associated with lower legitimacy signals that current food quality may be falling short of beneficiaries' expectations, which itself implies a micronutrient gap. Official MBG monitoring should therefore incorporate periodic micronutrient biomarker assessments (serum ferritin, hemoglobin, and retinol) alongside perception surveys to build an evidence base for menu improvement.

Taken together, these five nutritional dimensions—food quality, food safety, acceptability, dietary diversity, and protein and micronutrient adequacy—constitute the nutritional architecture upon which MBG's legitimacy must ultimately be built. The present study's findings suggest that perceptions of implementation shortfalls in quality, hygiene, and consistency are already eroding public confidence. This implies that improving these operational dimensions would not only address the program's legitimacy deficit but simultaneously advance its core nutritional mandate. In short, legitimacy and nutritional effectiveness are not separate goals for MBG: they represent two facets of the same operational standard.

3.3 Theoretical, practical implications, limitations and future research

This study offers several theoretical contributions. It synthesizes Human Capital Theory, Output Legitimacy Theory, and Cognitive Dissonance Theory within a single analytical framework to explain the legitimation dynamics of school-based nutrition interventions. In doing so, it also extends the application of Institutional Trust Theory into an underexplored policy domain. Moreover, the unexpected negative relationship identified between implementation perceptions and policy legitimacy invites further inquiry into the mediating pathways through which student learning conditions may operate, thereby potentially refining current understandings of how policy support is formed.

From a practical standpoint, the findings point to several actionable measures. Implementing authorities at both national and local levels should prioritize execution

quality, as suboptimal delivery appears to undermine public acceptance. Evaluative efforts ought to shift their focus beyond procedural compliance toward measurable educational outcomes, particularly those related to student learning experiences, given their prominence as a legitimacy predictor. Socialization strategies should move beyond aspirational narratives and incorporate realistic implementation disclosures to prevent expectancy violations that could generate cognitive dissonance among recipients. Fiscal prudence is equally essential; the program's budgetary demands must not compromise allocations for other foundational educational inputs, including teacher development, school infrastructure, and operational support.

Several limitations warrant acknowledgement. The respondent pool was confined to students, excluding teachers, parents, and administrators whose perspectives might enrich the analysis. The cross-sectional nature of the data restricts causal interpretation, and while the observed correlational patterns suggest a possible mediating role for learning conditions, this proposition remains to be formally tested in subsequent investigations. The purposive sample of 117 students was drawn from schools already implementing MBG, the findings may be subject to self-selection and social-desirability response bias and may not generalize to schools with different implementation contexts; the absence of directly measured nutritional indicators (e.g., dietary intake or anthropometric status) also means that the implementation-perception findings should be interpreted as proxies for, rather than direct evidence of, nutritional impact. For future research, it is recommended to: (1) involve diverse stakeholders (teachers, parents, program managers) to obtain a more holistic perspective; (2) employ longitudinal designs to capture the dynamics of policy legitimacy over time; (3) formally test the mediating role of student learning conditions using the Baron & Kenny (1986) approach or Hayes' (2013) framework; and (4) conduct comparative studies across regions to examine how local contexts influence the relationships among MBG implementation, learning conditions, and policy legitimacy.

4. Conclusions

This study reveals that the legitimacy of the Free Nutritious Meal Program (MBG) is chiefly shaped by two factors—student learning conditions and perceptions of implementation—which together account for 60.3% of its variance. Notably, improvements in student focus, vitality, drive, classroom engagement, and attendance emerge as the strongest positive predictor of policy acceptance, suggesting that firsthand experiential benefits drive support far more effectively than official rhetoric. Conversely, the negative relationship between implementation perceptions and legitimacy indicates that symbolic political narratives cannot compensate for operational shortcomings when public expectations are unmet. These insights corroborate Output Legitimacy and Cognitive Dissonance frameworks while exposing a core tension: although MBG holds promise as a catalyst for reorienting education toward holistic student welfare, its substantial fiscal demands and weak delivery risk reducing it to a tool for political validation rather than sustainable educational enhancement.

Accordingly, the study advises the government to ensure robust execution, assess success through educational outcomes rather than political storytelling, and safeguard balanced budgetary allocations so that other vital educational sectors are not undermined. Future inquiries are encouraged to formally examine the mediating function of learning conditions and to incorporate diverse stakeholder perspectives for a fuller understanding. From a nutrition-policy standpoint specifically, these results indicate that strengthening MBG's contribution to student well-being requires treating food quality assurance, menu consistency, and hygiene/safety standards as binding service-level requirements rather than discretionary operational details, since it is precisely these nutrition-service dimensions—rather than the program's existence per se—that shape public confidence. Future studies are therefore encouraged to pair perception-based measures with direct nutritional indicators (e.g., dietary diversity, energy and protein adequacy, and nutritional

status) to verify whether perceived implementation quality translates into measurable nutritional outcomes.

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Author Contribution

Conceptualization, J.; methodology, J. and F.A.R.; software, F.A.R.; validation, J., F.A.R. and M.H.D.N.; formal analysis, F.A.R. and J.; investigation, F.A.R.; resources, J.; data curation, F.A.R.; writing—original draft preparation, J. and M.H.D.N.; writing—review and editing, F.A.R. and J.; visualization, J. and F.A.R.; project administration, F.A.R.; funding acquisition, not applicable.

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Ethical review and approval were waived for this study because the research involved only anonymous surveys with no sensitive personal data collection and posed no risk to participants.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflict of interest.

Declaration of Generative AI Use

During the preparation of this work, the author(s) used Grammarly to assist in improving grammar, clarity, and academic tone of the manuscript; after using this tool, the author reviewed and edited the content as needed and take full responsibility for the content of the publication.

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