

The Effect of Nutritious Food Programs for Students and Working Mothers on Household Expenditures and Income in Elementary Schools

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ABSTRACT

This study aims to analyze the effect of the Nutritious Food Program for Students and the Nutritious Food Program for Working Mothers on household expenditure and income in elementary schools in Tamalate District, Makassar City. A quantitative approach was used with the PLS-SEM analysis method, while data were collected through questionnaires distributed to students and parents or guardians involved in the Tamalate SPPG program. The results showed that both programs had a positive and significant impact on household economic conditions. The Nutritious Food Program for Students was proven to have a stronger influence in reducing daily family expenditure, considering that the provision of food at school directly replaced part of the household consumption needs. Meanwhile, the Nutritious Food Program for Working Mothers contributed to increasing family income stability by increasing mothers' energy, productivity, and work ability. The research model was able to explain 59% of the variation in household expenditure and income variables, demonstrating substantial predictive power. These findings confirm that nutrition interventions not only impact health but also serve as an effective economic strategy for low-income families in urban areas, particularly in Tamalate

INTRODUCTION

The availability of nutritious food is a crucial foundation for ensuring child growth and development and adult productivity, particularly in urban areas with more complex economic and social challenges. The World Health Organization (WHO, 2021) confirms that children in urban areas are at high risk of hidden hunger due to a diet that is often full of convenience but low in nutritional value. In this context, nutritious food programs aimed at elementary school students play a strategic role in closing the nutritional gap that households, particularly low- to middle-income families, cannot fully meet.

The importance of nutritious food programs also encompasses the role of working mothers as the family's economic breadwinner and decision-maker in food allocation. UNICEF (2021) reports that working mothers tend to face time constraints in providing healthy food for their families. Therefore, a structured nutritious food program can help maintain the quality of daily consumption for children and other family members. Therefore, school- and community-based nutrition interventions are not only health-oriented but also support the socio-economic aspects of urban families.

Furthermore, changes in urban lifestyles have led to increased reliance on fast food, which tends to be high in fat, sugar, and salt. FAO (2022) notes that large cities in Indonesia are experiencing an increase in unbalanced food consumption, which directly impacts the long-term health of families. Therefore, implementing a nutritious food program for students and working mothers is a strategic intervention that can strengthen the quality of life in urban communities through a simultaneous approach to nutrition, education, and family economics.

Nutritional food programs have a direct impact on household expenditures because they can reduce daily food costs, particularly for school children. A study by the FAO (2022) showed that families receiving nutritional food support through schools or communities experienced expenditure efficiencies of up to 12–18% on staple food items. This is because the program partially meets children's nutritional needs, significantly reducing household spending.

In addition to reducing expenses, nutritious food programs can also boost income by increasing the productivity of family members, especially working mothers. (WHO, 2021) emphasizes that access to nutritious food improves energy and work performance, which in the long term can increase family income stability. For children, adequate nutrition has been shown to improve cognitive abilities, which impact academic achievement (UNICEF, 2021) , thus creating long-term effects that contribute to increasing a family's economic potential.

The relevance of the MBG program to household economic dynamics is also reflected in its resilience to food price fluctuations. In a situation of rising food inflation, the nutritious food program acts as a buffer, helping families maintain healthy consumption patterns without increasing pressure on expenditure structures. This demonstrates that nutrition interventions function not only for health but also as a household economic strategy that directly impacts family well-being.

Tamalate District in Makassar City is an urban area with diverse socioeconomic characteristics, encompassing middle- and low-income groups.

Data from the Central Statistics Agency (BPS, 2023) indicates that some families in the area still face limitations in consistently meeting nutritious food needs due to income fluctuations and the rising cost of living in urban areas. This makes elementary schools a strategic channel for delivering nutrition-based interventions.

Parents' employment status, especially that of working mothers, also plays a significant role in determining family consumption patterns. Many working mothers in Tamalate work in the informal sector, whose incomes are unstable, impacting their ability to provide nutritious food every day. A 2023 report (BPS) noted that 54% of working women in urban Makassar are in informal employment with fluctuating income levels. This situation further underscores the importance of nutritional food programs that can help reduce household expenditures.

Beyond income, household spending patterns in Tamalate indicate that a large portion of expenditure is allocated to food, consistent with the trends of lower-middle-class urban communities in Indonesia. When food allocation reaches a high percentage of total expenditure, families are vulnerable to sacrificing food quality for quantity (FAO, 2022). In this context, nutritious food programs are a crucial tool in maintaining balanced nutrition for students and families, even in times of economic constraints.

Although extensive research on nutritious food programs has been conducted, most have focused on health aspects, children's nutritional status, or cognitive impacts. However, the relationship between school-based nutritious food programs and their impact on family expenditures and income remains understudied, particularly in urban Indonesia. While the WHO and FAO routinely highlight the benefits of nutrition, few studies have examined its implications for family economic stability (WHO, 2021 ; FAO, 2022).

Furthermore, most existing research is conducted at the national or provincial level, while specific studies at the city level, such as Makassar City, and at smaller units like Tamalate District, are still very limited. The lack of school-based data tends to make program designs uniform and fail to consider the microeconomic context of families. This gap makes this research crucial in providing relevant empirical evidence at the regional level.

Unfortunately, research combining two groups of programs – nutritional food programs for students and nutritional food programs for working mothers – is almost non-existent in the Indonesian literature. Yet, these two groups of programs can have a synergistic impact on family economic conditions. Therefore, this study seeks to fill this gap by examining the effects of the two programs simultaneously on household expenditures and income.

Both the nutritious food programs for students and for working mothers have characteristics that can be measured in a structured way through quantitative surveys. Frequency of aid receipt, food quality, perceived benefits, and impact on expenditures can be converted into measurable indicators that enable statistical analysis based on the PLS-SEM model. This quantitative approach aligns with program evaluation methods recommended by UNICEF

and WHO, which emphasize the importance of data-driven empirical evidence (UNICEF, 2021) .

In addition to their measurable nature, both programs have a direct, observable economic impact. The student food program can reduce the burden of daily expenses, while the working mother food program can increase productivity and income stability. Therefore, quantitative analysis is needed to identify the extent of each program's impact on family finances and to compare the strength of their contribution to the dependent variable.

The use of quantitative methods also enabled this study to produce an accurate predictive model of how nutrition interventions affect household well-being. Through PLS-SEM modeling, latent variables such as expenditure efficiency and income can be comprehensively analyzed, including cross-variable relationships and the strength of their effects. For these reasons, both nutritional food programs are feasible and relevant for quantitative testing to produce valid findings that can be implemented by schools and local governments.

To comprehensively explain the research direction, it is necessary to formulate research questions that can capture the relationship between the two nutritious food programs, both aimed at students and working mothers, and the economic conditions of households in Tamalate District. The following research questions were formulated to empirically test the extent to which the two programs impact the structure of family expenditure and income, and to compare the relative contribution of each program in influencing household economic well-being:

- a. Does the Nutritional Meal Program for Students affect Household Expenditure and Income?
- b. Does the Nutritional Food Program for Working Mothers have an impact on Y?

The purpose of this study is to make significant contributions in three main areas. Theoretically, this study aims to enrich the literature on family economics and nutrition interventions by presenting empirical evidence on how nutritious food programs for students and working mothers can affect household expenditure and income dynamics. From a practical perspective, this research is expected to assist schools and local governments in designing more effective and targeted nutrition programs, particularly in urban areas such as Tamalate District. Meanwhile, at the policy level, this study aims to provide data-based information that can serve as a basis for formulating policies related to nutritious food programs, so that decisions taken not only focus on health aspects but also consider their economic impact on family welfare.

LITERATURE REVIEW

Household Consumption Theory is the primary foundation for understanding household consumption behavior, where families seek to maximize utility within conditions of limited income, preferences, and food prices (Samuelson, 1956; Deaton & Muellbauer, 1980). This theory explains that consumption choices, including the selection of nutritious foods, are the result of the interaction between family needs and budget constraints. In the context of nutritional food programs, this theory is relevant because interventions provided by schools or communities can change family spending patterns by reducing the consumption costs of children or working mothers. Thus, nutritional food programs have the potential to change the structure of household decisions regarding food consumption and income allocation.

Support from the Household Economics & Family Resource Allocation theory emphasizes that families allocate not only money but also time and energy to meet consumption needs (Becker, 1965). In urban families, especially those with working mothers, time allocation is a significant constraint in consistently providing nutritious food. Nutritional food programs for students and working mothers can reduce the burden of time and energy expended by families, thereby increasing consumption efficiency. A study (FAO, 2022) shows that institution-based food programs can optimize household resource allocation, especially for low-income groups. This strengthens the argument that nutrition programs not only impact health but also balance family expenditure and productivity.

Regarding intervention mechanisms, the Theory of Nutrition Intervention Programs explains that structured nutrition programs have a direct health impact on children and women by improving the quality and quantity of daily food intake (WHO, 2021). In practice, nutritious food programs for students can fill daily nutritional gaps that households struggle to meet, while food programs for working mothers help maintain energy and health for productive activities (UNICEF, 2021). Both types of programs not only improve nutritional status but also have the potential to influence family economic decisions by reducing food costs and increasing work capacity.

Furthermore, the theory of the Economic Impact of Food Subsidy and Food Programs supports that food assistance or nutrition programs function as in-kind transfers that reduce the burden of household expenditure, especially for low-income families (FAO, 2022; World Bank, 2020). With some consumption needs met by the program, households have greater fiscal space for other needs, thereby increasing economic stability. In addition to reducing expenses, consuming nutritious food contributes to increased physical and cognitive capacity that supports work productivity, especially for working mothers (WHO, 2021). The integration of these overall theories provides a strong basis for analyzing the impact of two nutritional food programs for both students and working mothers on household expenditure and income in this study.

Review of Empirical Studies

Empirical research on nutritious food programs for students shows that school-based nutrition interventions can improve the quality of children's daily diets and reduce the risk of malnutrition, especially in low-income families. A

study by (Adelman et al., 2008) confirmed that *school feeding* programs not only increase calorie and micronutrient intake but also reduce household food expenditures. Similar findings were demonstrated by a study (FAO, 2022), which found that providing nutritious food in schools resulted in direct savings on children's daily needs. In the context of primary education, nutritious food programs have also been shown to improve student attendance and academic performance, thus having a multidimensional impact on families.

Research on nutrition programs for working mothers also shows significant benefits for family health and economic well-being. A study (UNICEF, 2021) found that providing nutritional support to working women increased energy, productivity, and *work performance*, ultimately impacting household income stability. Research by (Maidelwita et al., 2025) also showed that nutritious food consumption is positively correlated with female labor productivity, particularly in urban areas with high workloads. Furthermore, nutritional interventions for working mothers have been shown to help reduce the frequency of fast food purchases, thus contributing to family spending efficiency. Thus, nutritional food programs for working mothers have direct implications for household nutrition, health, and economic aspects.

Meanwhile, studies linking nutrition to family income and expenditure consistently show that access to nutritious food has a multiplier effect on economic well-being. (Hoddinott et al., 2013) found that improving family nutritional quality leads to increased productivity and long-term economic capacity. However, despite numerous studies on nutrition programs at the national level, there is a clear evidence gap in the context of elementary schools in urban areas such as Tamalate District. Research that integrates student nutrition programs and working mothers' nutrition programs and analyzes their impact on household expenditure and income is still very limited in the Indonesian literature. Therefore, this study seeks to fill this gap by focusing on the micro-context of households in an elementary school environment in an urban area.

Conceptual Framework

The conceptual framework in Figure 1 shows the relationship between two independent variables and one dependent variable that are the main focus of this study. The Nutritious Food Program for Students variable (X1) is represented by four indicators (X1.1–X1.4) that reflect the aspects of availability, quality, frequency of implementation, and benefits of the program for elementary school children. Meanwhile, the Nutritious Food Program for Working Mothers variable (X2) is also formed by four indicators (X2.1–X2.4), which include program access, the form of nutritional support provided, perceptions of effectiveness, and its contribution to household consumption management.

These two programs are assumed to have a direct influence on the dependent variable Household Expenditure and Income (Y), which is represented by four main indicators (Y1–Y4) including expenditure structure, family spending efficiency, income stability, and overall economic impact. This conceptual model emphasizes that both school-based nutrition interventions and

nutrition programs for working mothers can influence household economic conditions through changes in consumption patterns and family resource allocation. Thus, the relationship between the Nutritional Food Program for Students on Household Expenditure and Income and the Nutritional Food Program for Working Mothers on Household Expenditure and Income serves as the basis for analysis to examine how both programs contribute to the economic well-being of families in urban areas such as Tamalate District.

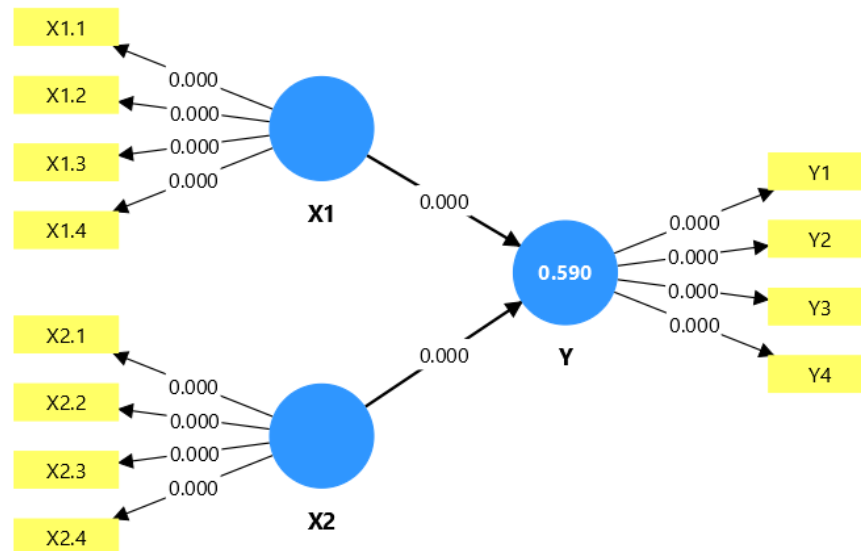


Figure 1. Conceptual framework. Source: Authors illustration, (2025)

Based on the conceptual framework, the research hypothesis is formulated as follows:

- H1: The Nutritional Food Program for Students has a positive effect on Household Expenditure and Income.
- H2: The Nutritious Food Program for Working Mothers has a positive effect on Household Expenditure and Income.

METHODOLOGY

The Study Area

This research study focuses on the Tamalate Nutritional Nutrition Center (SPPG) in Tamalate District, Makassar City, South Sulawesi. This area is an urban area with a relatively high level of economic activity and population density, making it a relevant location for researching nutritional interventions in families with diverse socioeconomic dynamics. The nutritious food program implemented at the Tamalate SPPG has targeted elementary school students from diverse economic backgrounds, providing an ideal context for analyzing the relationship between nutrition programs and family economic conditions.

Furthermore, the elementary school level was chosen because this age group is highly sensitive to nutritional needs, while parents face a relatively large economic burden in providing healthy food every day. Therefore, this study allows researchers to obtain a comprehensive empirical picture of how school-level nutritional meal programs interact with household expenditure and income structures in urban areas like Tamalate.

Sampling Procedure and Sample Size

The sampling procedure in this study used a purposive sampling approach, a technique for determining samples based on specific criteria relevant to the research objectives. The selected respondents consisted of two main groups. First, elementary school students who had received nutritious meals through a program run in the Tamalate District. This group was selected to capture perceptions and indirect experiences related to the program's benefits through parental or guardian support.

Second, the research sample also included parents or guardians of students who work in the Tamalate SPPG kitchen and have children receiving nutritious meals from the program. The involvement of working parents in the program provides a deeper perspective on the economic impact, both in terms of expenditure and household income. The sample size was determined taking into account the needs of PLS-SEM analysis, so the minimum number of respondents followed the 10-times rule, which is ten times the number of the largest indicator in the model.

Data Collection

Data collection was conducted through direct distribution of questionnaires to students and parents or guardians of students who met the research criteria. The questionnaire was designed using a five-point Likert scale to measure respondents' perceptions of the variable indicators X1, X2, and Y. Direct distribution was chosen to ensure a high response rate and provide an opportunity for researchers to provide explanations if there were questions from respondents.

This method also allows for direct verification of respondents' eligibility based on sampling criteria and ensures that the collected data is a valid representation of the study population. Furthermore, face-to-face data collection enhances the reliability of responses because respondents understand the context of the questions more clearly.

Data Analysis

The data analysis in this study used the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach using SmartPLS software. This approach was chosen because it can handle structural models with latent variables, relatively small to moderate sample sizes, and reflective indicators. The analysis was conducted in two main stages: outer model evaluation and inner model evaluation.

In the outer model stage, an assessment is conducted to ensure that the indicators used meet validity and reliability criteria. Tests include indicator loading, Construct Reliability (CR), Average Variance Extracted (AVE), and discriminant validity using the Heterotrait-Monotrait Ratio (HTMT). Indicators are considered valid if they meet the recommended threshold values in the SEM literature.

The second stage, the inner model, is used to test the structural relationships between variables, which includes calculating path coefficients, R^2 values, effect sizes (f^2), and significance testing using bootstrapping techniques. The analysis is then complemented with predictive relevance (Q^2) to evaluate the model's predictive ability against endogenous variables. This combination of analyses provides a comprehensive overview of the effect of the Nutritional Food Program for Students (X1) and the Nutritional Food Program for Working Mothers (X2) on Household Expenditure and Income (Y).

RESULTS AND DISCUSSION

The results of this study are presented based on an analysis conducted using the PLS-SEM approach. First, the characteristics of the respondents describe the profile of elementary school students receiving nutritious meals and their parents or guardians involved in the program. The majority of respondents come from families with lower-middle socioeconomic status, which is directly relevant to the objectives of the nutritious meals program. Information regarding employment status, income level, and family burden indicates that most respondents are in economic conditions that require nutritional intervention support to ease the burden of daily consumption.

Table 1. Outer Model

Variables	X1	X2	Y
X1.1	0.847		
X1.2	0,839		
X1.3	0,846		
X1.4	0,777		
X2.1		0,884	
X2.2		0,834	
X2.3		0,804	
X2.4		0,816	
Y1			0,899
Y2			0.889
Y3			0.880
Y4			0.926

Source: Processed data (2025)

the outer model test show that all indicators in variables X1, X2, and Y have loading factor values above 0.70, so they can be declared convergently valid. The indicator in the Nutritious Food Program for Students variable (X1) has a loading value between 0.777 and 0.847, while the indicator in the Nutritious Food Program for Working Mothers (X2) is in the range of 0.804 and 0.884. The Household Expenditure and Income variable indicator (Y) even shows a very high loading value, namely between 0.880 and 0.926. These values indicate that each indicator is able to reflect the measured construct strongly and consistently, so that the instrument used in the study meets the requirements for convergent validity.

Table 2. R-square

Variables	R-square	R-square adjusted
Y	0.590	0.579

Source: Processed data (2025)

The R-square value of variable Y of 0.590 indicates that the combination of the two programs, the Nutritious Food Program for Students (X1) and the Nutritious Food Program for Working Mothers (X2), is able to explain 59% of the variation in Household Expenditure and Income. This value is classified as

moderate to strong, which means the model has quite good explanatory power in the context of social research. With an adjusted R-square of 0.579, the stability of the model is maintained even though it takes into account the number of predictor variables in the model.

Table 3. F-square

Variables	Y
X1	0.444
X2	0.205

Source: Processed data (2025)

Furthermore, the F-square value indicates the magnitude of the effect of each independent variable on variable Y. The Nutritious Food Program for Students (X1) has an F-square value of 0.444, which is included in the strong effect category. Meanwhile, the Nutritious Food Program for Working Mothers (X2) has an F-square value of 0.205, which is in the medium effect category. This finding indicates that although both programs have a significant influence, the nutritious food program for students has a more dominant influence than the nutritious food program for working mothers in influencing household expenditure and income conditions.

Table 4. Q-square

Variables	Q ² predict	RMSE	MAE
Y	0.564	0.675	0.450

Source: Processed data (2025)

A Q-square value of 0.564 indicates that the model has excellent predictive ability. In PLS-SEM, a Q-square value above 0 indicates predictive relevance, and a value above 0.50 indicates strong predictive power. Thus, this research model is not only able to explain the relationship between variables but also accurately predict the behavior of variable Y based on X1 and X2.

Table 5. Hypothesis Results (Bootstrapping)

Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
X1 -> Y	0.515	0.525	0.080	6,434	0,000
X2 -> Y	0.350	0.344	0.069	5,076	0,000

Source: Processed data (2025)

The results of the hypothesis test through bootstrapping show that both relationship paths in the model are significant. First, the effect of the Nutritious Food Program for Students (X1) on Household Expenditure and Income (Y) has a coefficient value of 0.515, with a t-value of 6.434 and a p-value of 0.000, which means this relationship is very significant. Second, the Nutritious Food Program for Working Mothers (X2) also has a significant effect on variable Y with a

coefficient of 0.350, a t-value of 5.076, and a p-value of 0.000. These results indicate that both nutritious food programs have been proven to provide a positive and significant contribution to the economic conditions of households in Tamalate District, although the strength of their influence is different. X1 has a stronger influence than X2.

Overall, this study demonstrates that the nutritious food program has a significant impact on family expenditures and income. The student program contributes more because it directly reduces family consumption costs, while the working mother program contributes by increasing energy and productivity, which impacts family income stability. The combination of the two programs demonstrates that nutritional interventions serve not only as a health measure but also as an effective household economic strategy in an urban context like Tamalate District.

The results of the study indicate that the Nutritious Food Program for Students (X1) has a strong positive effect on Household Expenditure and Income (Y). The path coefficient value of 0.515 with high significance ($p = 0.000$) indicates that this program makes a substantial contribution in reducing the burden of family food consumption. This finding is in line with Household Consumption Theory, which explains that any reduction in the burden of consumption costs borne by external parties will increase household spending capacity and resource allocation. In this context, the provision of nutritious food for students by schools acts as an in-kind transfer that reduces the need for families to purchase daily food for children. This is in line with the findings of Adelman et al. (2008) and FAO (2022) which noted that school feeding programs consistently reduce family consumption costs and help poor families maintain children's nutritional quality without increasing financial burden.

Furthermore, the Nutritious Food Program for Working Mothers (X2) was also shown to have a positive and significant impact on household expenditure and income, with a coefficient value of 0.350 ($p = 0.000$). Although the effect is not as strong as X1, this relationship still reflects the program's significant contribution. These results align with Becker's (1965) theory of Household Economics and Family Resource Allocation, which emphasizes that the burden of consumption and time management in the household is strongly influenced by the role of working mothers. Nutritional support through this program helps working mothers maintain energy, productivity, and income stability, as reported in research by UNICEF (2021) and Sa & Ruja (2021). By increasing mothers' work capacity, potential family income can increase or at least remain stable despite urban economic pressures.

The difference in contributions between the two programs also provides interesting theoretical insights. The effect size (F-square) for X1 is 0.444, indicating a strong effect, while the F-square for X2 is 0.205, indicating a medium effect. This indicates that the nutritious food program for students has a more direct and measurable economic impact, particularly in terms of daily expenditure savings, compared to the food program for working mothers. The program for students reduces consumption costs directly because the daily meals received replace part of the family's food needs. In contrast, the benefits of the food program for working mothers are more indirect, through improved work

performance and time efficiency, which then impact household income. This phenomenon is consistent with the literature (FAO, 2022) , which shows that child nutrition interventions have a short-term impact on expenditure, while nutrition interventions for working women have a greater impact on productivity and medium-term income.

In the local context of Tamalate District, these results reinforce the fact that urban areas with high income inequality and high living costs rely heavily on school-based interventions. Many families in this area rely on informal employment, which makes income unstable and vulnerable to economic fluctuations (BPS, 2023) . Therefore, the nutritious food program for students has a more dominant effect because it directly targets daily nutritional needs, which constitute the largest component of low-income families' expenses. On the other hand, the nutritious food program for working mothers provides additional support that increases family economic resilience, although its contribution is not as significant as the student program.

Overall, the findings of this study provide empirical evidence that both nutritional food programs, despite their different characteristics and impact mechanisms, make a significant contribution to improving the well-being of urban families. The student program serves as a cost-reducing program, while the working mother program serves as a productivity booster. The combination of the two programs produces a synergistic effect , making nutrition interventions an effective household economic strategy in urban areas like Tamalate. The results of this study also provide a new perspective in the nutrition intervention literature, highlighting the impact not only on health and education but also on household economic stability.

CONCLUSION AND RECOMMENDATION

This study aims to analyze the effect of the Nutritious Food Program for Students (X1) and the Nutritious Food Program for Working Mothers (X2) on Household Expenditure and Income (Y) in the context of elementary schools in Tamalate District, Makassar City. Based on the results of the PLS-SEM analysis, this study concludes that both nutritious food programs have a positive and significant impact on household economic conditions.

First, the Nutritious Food Program for Students (X1) was shown to have the largest impact on variable Y with a path coefficient of 0.515 and an effect size of 0.444. This finding indicates that providing nutritious food for students can directly reduce the burden of daily family expenses, thereby providing greater fiscal space in managing household finances. This direct impact strengthens the position of the student food program as one of the most effective interventions for improving the welfare of low-income families.

Second, the Nutritious Food Program for Working Mothers (X2) also significantly impacts Household Expenditure and Income, with a path coefficient of 0.350 and an effect size of 0.205. Although its effect is smaller than X1, this program still makes a significant contribution by increasing working mothers' productivity and time efficiency in meeting family nutritional needs. This finding

indicates that nutritional interventions for working women not only play a role in health aspects but also strengthen household income stability.

Overall, both research hypotheses were accepted. The nutritious food program, for both students and working mothers, proved to be an effective strategy in encouraging reduced consumption costs and supporting potential increases in family income. The research model also showed an R-square of 0.590, indicating that the two independent variables were able to explain most of the variation in household economic conditions in Tamalate District. Thus, this study confirms that school- and community-based nutrition interventions have significant socio-economic impacts in urban contexts.

Implications

Theoretical Implications

This research contributes theoretically by strengthening Household Consumption Theory and family economic theory, particularly regarding how non-financial interventions such as nutritious food can influence the structure of consumption decisions and household income. These findings add empirical evidence that nutritional support is a relevant factor in family consumption models, while broadening our understanding of how nutritional interventions can be viewed not only as health policies but also as economic policies.

Practical Implications

From a practical perspective, the results of this study provide important recommendations for elementary schools, the Tamalate SPPG kitchen, and the organizers of the nutritious meal program. Given the strong influence of the student program, schools can improve menu quality, ensure program sustainability, and expand outreach to students from vulnerable families. Meanwhile, the meal program for working mothers can be strengthened by increasing food variety, frequency of delivery, and mentoring mechanisms to optimize its benefits on productivity and income. Both programs, when integrated, could be a highly effective intervention in reducing the economic burden on urban families.

Policy Implications

From a policy perspective, this study provides empirical evidence for the Makassar City Government to expand and strengthen school- and community-based nutritious food programs. The finding that nutritious food programs for students have the greatest economic impact underscores the need for long-term policies related to school feeding at the elementary school level. Furthermore, support for working mothers, particularly those in the informal sector, needs to be incorporated into family welfare development strategies in urban areas like Tamalate. The local government can utilize the results of this study to design integrative policies that simultaneously address nutrition, education, and family economic aspects.

Future research is recommended to expand the coverage area, use a longitudinal design to examine long-term impacts, and include mediators such as child nutritional status, food security, or maternal work productivity. This could provide a deeper understanding of the causal mechanisms linking nutritious food programs to household economic well-being.

FUTHER STUDY

This research still has delays, so it is necessary to conduct further research related to the topic The Effect of Nutritious Food Programs for Students and Working Mothers on Household Expenditures and Income in Elementary Schools in order to improve this research and add insight for readers.

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