

An Analytical Study on Student Satisfaction with The Mid-Day Meal Programme in Schools

Dr. Sindhu K.P.*

*Assistant Professor Department of Commerce N.S.S. Arts and Science College Kappur
Parakkulam Palakkad, Kerala, India-679551 Affiliated to University of Calicut
Email: sindhukartha.kp36@gmail.com/ drsindhukp@nssparakkulam.ac.in, Mobile: 9745677178

ABSTRACT:

The Mid-Day Meal (MDM) Programme is a flagship initiative by the Government of India aimed at enhancing nutritional levels among school-going children while promoting school attendance and retention. This study investigates student satisfaction with the MDM Programme across 150 school students from government and aided schools in Tamil Nadu. A structured questionnaire was administered to gather data on meal quality, hygiene, variety, punctuality, and quantity. Statistical tools like mean scores, standard deviation, and chi-square test were employed to analyse the data. The results indicate that while students appreciate the free provision of meals, concerns remain about food variety, taste, and hygiene standards. The study concludes with recommendations to improve service delivery and policy implementation.

KEYWORDS: Mid-Day Meal Programme, student satisfaction, school nutrition, government schools, programme evaluation

I. INTRODUCTION

The Mid-Day Meal Scheme, launched by the Government of India in 1995 under the National Programme of Nutritional Support to Primary Education (NP-NSPE), has emerged as the world's largest school lunch programme. It was formulated to combat classroom hunger, improve children's nutritional status, and enhance access to education among disadvantaged sections of society. By providing one nutritious meal per school day to children in government and government-aided schools, the scheme aims to boost school enrolment, improve attendance, reduce dropout rates, and support better learning outcomes.

Over the years, the programme has expanded in scope and coverage, reaching millions of children across the country. It has also played a critical role in encouraging social equity by promoting the participation of children from various castes and communities in a shared meal environment. Despite these successes, challenges such as inconsistencies in food quality, unhygienic preparation conditions, and lack of dietary variety persist in different regions. Moreover, operational inefficiencies, delayed food supplies, and inadequate infrastructure continue to undermine the intended benefits of the scheme.

Most significantly, while the scheme has been evaluated in terms of enrolment statistics, nutritional benchmarks, and administrative performance, relatively little attention has been paid to the level of satisfaction among the primary stakeholders—students. Satisfaction is a critical indicator that reflects how well the scheme is meeting its goals from the beneficiaries' point of view. It encompasses multiple dimensions including the taste and variety of food, cleanliness of the kitchen and utensils, regularity of meal service, and the perceived dignity or stigma attached to participation.

Understanding student satisfaction is particularly vital in light of recent reports highlighting both successful implementations and concerning lapses in quality across various states. In **Kerala**, a state celebrated for its achievements in literacy, public health, and decentralized planning, the Mid-Day Meal Programme plays a significant role in ensuring food security and educational continuity among

school children. However, variations in quality and implementation efficiency exist across different districts and schools. This necessitates a closer examination of the programme from the students' perspective.

This study, therefore, seeks to assess the level of satisfaction among school-going children in Kerala with respect to various components of the Mid-Day Meal Scheme. Through a structured empirical investigation involving 150 students from government and aided schools, this research aims to provide meaningful insights into how the scheme is functioning at the ground level and what reforms are necessary to enhance its effectiveness and acceptability among young beneficiaries.

II. SIGNIFICANCE OF THE STUDY

The Mid-Day Meal (MDM) Programme is one of the most ambitious social welfare initiatives undertaken by the Government of India to address malnutrition, promote education, and improve the well-being of school-going children. While its nutritional and academic impacts have been widely studied, the level of satisfaction among the students—who are the direct recipients of the scheme—has received limited academic attention. This study seeks to address that gap by systematically analyzing student satisfaction with various aspects of the programme such as food quality, hygiene, punctuality, and adequacy.

Understanding student satisfaction is essential for evaluating the real-time effectiveness of the scheme and for identifying operational bottlenecks. Feedback from students offers valuable grassroots insights that go beyond administrative statistics and nutritional data, providing a more holistic evaluation of the programme's impact. A satisfied student is more likely to attend school regularly and participate actively, which in turn enhances educational outcomes and social inclusion.

Furthermore, in the context of Kerala—a state renowned for its high literacy rate, strong public health system, and inclusive development model—this study acquires special relevance. Kerala has been proactive in implementing welfare schemes, including the MDM programme, yet regional disparities and infrastructural constraints persist in some areas. This research provides Kerala-specific insights that can inform localized improvements and best practices. The findings may also serve as a benchmark for comparative studies with other Indian states and help shape more inclusive, student-focused, and sustainable policy interventions in the future.

III. LITERATURE REVIEW

The Mid-Day Meal Scheme (MDMS), introduced nationally in 1995, has been a subject of significant academic interest due to its multidimensional impact on school children across India. Early evaluations of the programme emphasized its potential to alleviate classroom hunger, improve nutritional intake, and promote school attendance, particularly among children from low-income families (Drèze & Goyal, 2003; Mehrotra, 2006).

Afridi (2010) found that the MDMS positively influenced nutrient intake and learning outcomes, especially among primary school students in rural areas. Moreover, Singh, Garg, and Nath (2014) reported improved school enrolment and reduced dropout rates as secondary benefits of the scheme. These findings underscore the programme's critical role in bridging educational and nutritional disparities.

In the context of Kerala, the scheme has been implemented relatively effectively due to the state's commitment to social welfare and decentralized governance (Ramachandran, 2014). However, issues related to infrastructure, food variety, and hygiene have also been reported. A study by George and Kuruvilla (2018) highlighted disparities in implementation between urban and rural schools, noting that many students expressed concerns about food repetition and cleanliness, despite appreciating the nutritional value and regularity of meals.

Student satisfaction, though an important dimension of programme evaluation, has received limited scholarly attention. Most studies have focused on outcomes such as calorie intake, learning achievement, and school attendance, rather than subjective perceptions of meal quality and experience (Jain & Shah, 2015). Rao (2016) emphasized that satisfaction with meal quality—especially taste, quantity, punctuality, and hygienic serving conditions—is a crucial factor in assessing the success and sustainability of the MDMS.

Kerala's Parent Teacher Associations (PTAs) and local bodies play an instrumental role in monitoring the programme (Kumar, 2019). However, despite mechanisms for community oversight, implementation inconsistencies continue to affect student perceptions. Nair (2020) observed that while most students were satisfied with meal quantity, dissatisfaction arose from repetitive menus and occasional lapses in cleanliness.

Existing literature identifies the need to shift the focus from top-down administrative evaluations to participatory approaches that capture students' lived experiences with the MDM programme. This study aims to fill this gap by analyzing student satisfaction across various components of the scheme in selected government and aided schools in Kerala.

IV. OBJECTIVES OF THE STUDY

The primary objective of this study is to assess the level of student satisfaction with the Mid-Day Meal Programme in selected government and aided schools in Kerala. The specific objectives are:

1. To evaluate students' satisfaction regarding the quality of the mid-day meals served, including taste, nutritional value, and variety.
2. To assess students' perceptions of the hygiene and cleanliness maintained in meal preparation and serving.
3. To examine the timeliness and regularity of meal provision during school days.
4. To analyze the influence of demographic factors (such as age, gender, and school type) on student satisfaction levels.
5. To identify key areas of improvement suggested by students to enhance the Mid-Day Meal Programme's effectiveness.

V. HYPOTHESIS

Based on the objectives, the following hypotheses will be tested:

H1: There is a significant level of overall student satisfaction with the Mid-Day Meal Programme in Kerala schools.

H2: Student satisfaction varies significantly with respect to the quality (taste, nutrition, and variety) of the mid-day meal.

H3: Hygiene and cleanliness levels significantly affect students' satisfaction with the Mid-Day Meal Programme.

H4: There is a significant difference in satisfaction levels between students of government schools and aided schools.

H5: The regularity and punctuality of meal service significantly influence student satisfaction.

H6: Demographic factors such as age and gender have a significant impact on student satisfaction levels.

VI. RESEARCH METHODOLOGY

This descriptive study surveyed 150 students from government and aided schools in Kerala using a structured questionnaire measuring satisfaction with the Mid-Day Meal Programme across dimensions such as meal quality, hygiene, timeliness, and overall satisfaction. A multistage sampling method was adopted: initially, five districts—Thiruvananthapuram, Ernakulam, Kozhikode, Thrissur,

and Malappuram—were purposively selected to capture Kerala’s geographic diversity, varying socio-economic conditions, and cultural differences. From each district, three schools (a mix of government and aided) were randomly selected. Finally, within each school, 10 students were randomly sampled, totaling 150 respondents (5 districts \times 3 schools \times 10 students). This selection ensures broader representation and improves the generalizability of findings compared to fewer districts. Data were collected using a 5-point Likert scale and analyzed with SPSS. Descriptive statistics summarized satisfaction levels, while inferential analyses included independent samples t-tests, chi-square tests, and one-way ANOVA for group comparisons. Pearson correlation and regression analyses assessed the influence of hygiene and meal regularity on overall satisfaction, providing a comprehensive evaluation of factors shaping student perceptions.

VII. ANALYSIS AND DISCUSSIONS

1. Demographic Profile of Respondents

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	78	52.0
	Female	72	48.0
Age Group	6–8 years	45	30.0
	9–11 years	70	46.7
	12–14 years	35	23.3
School Type	Government	90	60.0
	Aided	60	40.0

Source: Primary Data

The study sample consisted of 150 students from five selected districts in Kerala, with a balanced gender distribution of 52% male and 48% female students. The age groups ranged from 6 to 14 years, with most students (46.7%) falling in the 9–11 years bracket. Government school students constituted 60% of the sample, and aided school students made up the remaining 40%. This demographic diversity ensures the findings are representative of various student groups, allowing for comprehensive insights into satisfaction levels across different categories.

2. Overall Satisfaction with the Mid-Day Meal Programme

Satisfaction Level	Frequency	Percentage (%)
Strongly Satisfied	30	20.0
Satisfied	65	43.3
Neutral	25	16.7
Dissatisfied	20	13.3
Strongly Dissatisfied	10	6.7

Source: Primary Data

The data showed that a significant majority (63.3%) of students were either satisfied or strongly satisfied with the Mid-Day Meal Programme. This reflects the programme’s positive reception among beneficiaries in Kerala, affirming its success in addressing hunger and nutritional needs during school hours. However, the presence of a notable minority (20%) who were neutral or dissatisfied indicates areas where the programme may not fully meet student expectations or needs. The findings align with

similar studies (e.g., Kumar & Mishra, 2019) that recognize the programme's strengths while highlighting the need for continuous improvement.

3. Satisfaction with Meal Quality: Taste, Variety, Nutritional Value

Meal Aspect	Mean Score (out of 5)	Standard Deviation
Taste	3.45	0.82
Variety	3.10	0.95
Nutritional Value	3.55	0.75
Hygiene	3.20	0.90
Timeliness	4.00	0.65

Source: Primary Data

Mean scores for meal quality aspects revealed that students were moderately satisfied with taste (3.45/5) and nutritional value (3.55/5). However, meal variety scored the lowest (3.10/5), indicating limited diversity in the menu. This suggests that while meals are generally acceptable, students desire more variety to reduce monotony and enhance overall meal experience. Nutritional adequacy is crucial, given the programme's goal to supplement children's daily dietary requirements (Government of India, 2020). Improving variety could further encourage meal consumption and improve nutritional outcomes.

Hygiene received a relatively low mean score (3.20), pointing to concerns over food preparation and serving conditions. Given the direct impact of hygiene on health, these findings are significant. Ensuring clean cooking environments, safe food handling, and proper storage must be priorities to prevent health risks such as foodborne illnesses (Singh et al., 2018). In contrast, timeliness scored the highest (4.00), reflecting efficient meal delivery and serving processes. Timely provision is essential to maintain students' energy levels for afternoon classes and prevent hunger-related distractions.

4. Comparison of Satisfaction Between Government and Aided Schools

Table: Independent Samples t-Test – Overall Satisfaction

Meal Aspect	Govt. Schools Mean	Aided Schools Mean	t-value	p-value	Significance
Overall Satisfaction	3.55	3.15	2.85	0.005	Significant

Source: Primary Data

The independent samples t-test was conducted to determine whether there was a statistically significant difference in overall satisfaction levels between students studying in government schools and those in aided schools. The results reveal a mean satisfaction score of 3.55 among students from government schools and 3.15 among those from aided schools.

The t-value of 2.85 with a p-value of 0.005 indicates that the difference in mean satisfaction levels is statistically significant at the 1% level ($p < 0.01$). This finding suggests that students in government schools are significantly more satisfied with the Mid-Day Meal Programme than their counterparts in aided schools.

This variation in satisfaction may be attributed to differences in programme implementation, monitoring efficiency, infrastructure, or kitchen hygiene practices. Government schools often have dedicated midday meal kitchens and may benefit from stronger administrative oversight, while aided schools might experience gaps in delivery due to varying management practices.

This result highlights the need for policy attention towards aided schools to bring parity in the quality and effectiveness of meal delivery. Measures such as uniform guidelines, stricter inspections, and

capacity-building among school-level implementers in aided institutions could help bridge the satisfaction gap and ensure that the programme benefits all students equally.

5. Association between Gender and Satisfaction (Chi-square test)

Gender	Satisfied/Strongly Satisfied	Neutral/Dissatisfied	Total
Male	53	25	78
Female	42	30	72

$$\chi^2 = 1.02, p = 0.31 \text{ (Not significant)}$$

A Chi-square test was performed to examine the association between gender and the level of satisfaction with the Mid-Day Meal Programme. The test result yielded a Chi-square statistic of 1.02 and a p-value of 0.31, which is greater than the conventional significance threshold of 0.05. This means that there is no statistically significant relationship between a student's gender and their satisfaction level with the meals provided under the programme.

In practical terms, the Mid-Day Meal Programme appears to be equally received by both male and female students, with no substantial difference in their satisfaction. While 68% of male students and 58% of female students reported being either satisfied or strongly satisfied, this difference is not statistically meaningful.

This result is important from a gender equity perspective, indicating that the programme, at least in the districts studied, does not favor or disadvantage either gender in terms of food quality, access, or service experience. It suggests a gender-neutral implementation of the scheme, aligning with the broader goals of equitable nutrition and inclusive education promoted by the Government of India and the Kerala state government.

However, the findings also reinforce the importance of maintaining consistent standards for all students, irrespective of gender, to uphold the integrity and inclusiveness of the scheme across the board.

Table 6: Correlation and Regression Analysis for Hygiene and Timeliness on Overall Satisfaction

Predictor	Pearson Correlation (r)	Regression Coefficient (β)	p-value
Hygiene	0.48**	0.32	0.000*
Timeliness	0.62**	0.45	0.000*

This table presents both the Pearson correlation coefficients and the regression coefficients for the variables *Hygiene* and *Timeliness* as predictors of overall student satisfaction with the Mid-Day Meal Programme.

1. Correlation Analysis

The Pearson correlation coefficient measures the strength and direction of the linear relationship between each predictor and overall satisfaction:

- Hygiene ($r = 0.48$): This indicates a moderate positive correlation between hygiene standards and student satisfaction. As hygiene improves, students' satisfaction levels tend to increase. This aligns with the expectation that students are sensitive to the cleanliness of food preparation and serving practices.

- Timeliness ($r = 0.62$): This shows a strong positive correlation between timeliness of meal service and overall satisfaction. It implies that prompt and consistent meal delivery contributes significantly to a positive student experience.

Both correlation values are statistically highly significant ($p < 0.01$), indicating that the observed relationships are unlikely due to chance.

2. Regression Analysis

The regression coefficients (β) indicate the predictive power of hygiene and timeliness on overall satisfaction when both variables are considered simultaneously in a linear regression model:

- Hygiene ($\beta = 0.32$): When controlling for other variables, hygiene has a positive but comparatively smaller impact on satisfaction. For every one-unit increase in perceived hygiene, the satisfaction score increases by 0.32 units.
- Timeliness ($\beta = 0.45$): Timeliness has a larger positive effect on satisfaction. For every one-unit improvement in timeliness, satisfaction increases by 0.45 units—suggesting it is the stronger predictor between the two.

The p-values for both predictors are 0.000, which means the regression relationships are highly statistically significant. These results underscore that both hygiene and timeliness are crucial quality indicators for enhancing student satisfaction, but timeliness has a relatively greater influence in the model.

Implications

- School administrators and programme implementers should prioritize timely serving of meals without compromising hygiene.
- Improving kitchen infrastructure, training staff on hygiene, and systematic scheduling can enhance student satisfaction and overall effectiveness of the scheme.
- These findings provide quantitative evidence to guide policy improvements and resource allocation within the Mid-Day Meal Programme in Kerala.

VIII. FINDINGS

Based on the responses of 150 students across five districts in Kerala, the study reveals that the Mid-Day Meal Programme is generally well-received, with over 63% of students expressing satisfaction or high satisfaction with the initiative. The programme appears to be particularly effective in government schools, where students reported significantly higher satisfaction levels compared to their counterparts in aided schools, as evidenced by the t-test results ($p = 0.005$). This may reflect differences in infrastructure, monitoring, or resource allocation between the two types of institutions. Importantly, the chi-square test confirmed that gender does not significantly influence satisfaction, indicating that the scheme is implemented in a gender-neutral manner. While students appreciated the timeliness and consistency of meal delivery—timeliness received the highest mean score of 4.00—there were notable concerns regarding meal variety and hygiene, which scored relatively lower. Correlation and regression analyses further reinforced that both hygiene ($r = 0.48$, $\beta = 0.32$) and timeliness ($r = 0.62$, $\beta = 0.45$) are statistically significant predictors of overall satisfaction, with timeliness emerging as the more influential factor. These findings highlight the need for continuous improvements in hygiene practices and menu diversity, while maintaining the timely and equitable delivery of meals. Overall, the study emphasizes that while the core objectives of the scheme are being met, further refinements in quality and implementation can enhance student satisfaction and the overall impact of the programme.

IX. CONCLUSION

The Mid-Day Meal Programme in Kerala continues to play a pivotal role in promoting child nutrition, educational participation, and social equity among school children. This study, based on a sample of 150 students across five districts, highlights a generally positive perception of the programme, with a majority expressing satisfaction, particularly in government schools. The absence of a gender-based difference in satisfaction underscores the inclusive and equitable nature of the scheme's implementation. However, the study also reveals critical areas for improvement—especially in terms of hygiene and meal variety—that significantly influence student satisfaction. Regression analysis confirms that timeliness and hygiene are strong predictors of overall satisfaction, with timeliness having the most substantial impact. These insights suggest that while the programme is largely successful in achieving its core objectives, targeted enhancements in quality control, infrastructure, and menu planning can make it more student-centric and effective. Policymakers and implementers should focus on consistent monitoring and feedback mechanisms to address regional disparities and elevate the nutritional and experiential value of school meals. Ultimately, strengthening these dimensions will help ensure that the Mid-Day Meal Programme not only feeds students but also fosters a healthier, more inclusive learning environment.

X. REFERENCES

1. Afridi, F. (2010). Child welfare programs and child nutrition: Evidence from a mandated school meal program in India. *Journal of Development Economics*, 92(2), 152–165. <https://doi.org/10.1016/j.jdeveco.2009.02.002>
2. Ahuja, R., & Bharadwaj, P. (2015). Impact of mid-day meals on educational outcomes in India. *IZA Journal of Labor Economics*, 4(1), 1–20. <https://doi.org/10.1186/s40172-015-0030-0>
3. Banerjee, A., & Duflo, E. (2011). *Poor economics: A radical rethinking of the way to fight global poverty*. PublicAffairs.
4. Chakraborty, T., & Jayaraman, R. (2016). School feeding and learning achievement: Evidence from India's mid-day meal program. *International Journal of Educational Development*, 49, 95–106. <https://doi.org/10.1016/j.ijedudev.2016.02.008>
5. De, A., Noronha, C., Samson, M., & Juneja, N. (2005). *Towards more effective use of resources in school education: A study of five states*. New Delhi: National Institute of Educational Planning and Administration (NIEPA).
6. Drèze, J., & Goyal, A. (2003). Future of mid-day meals. *Economic and Political Weekly*, 38(44), 4673–4683.
7. George, L., & Kuruvilla, M. (2018). Implementation and perceptions of the Mid-Day Meal Scheme: A case study of government schools in Kerala. *Journal of Educational Planning and Administration*, 32(2), 135–148.
8. Gopalan, C., & Chatterjee, M. (2010). *Nutrition education and training for mid-day meal workers*. Nutrition Foundation of India.
9. Jain, R., & Shah, A. (2015). Impact of mid-day meal on school children: A case study of Ahmedabad. *Indian Journal of Public Health Research & Development*, 6(4), 98–104.
10. Khera, R. (2006). Mid-day meals in primary schools: Achievements and challenges. *Economic and Political Weekly*, 41(46), 4742–4750.
11. Kumar, R. (2019). Role of local bodies and school management committees in effective implementation of Mid-Day Meal Programme. *International Journal of Management and Social Sciences Research*, 8(1), 11–17.
12. Mehrotra, S. (2006). Reforming elementary education in India: A menu of options. *International Journal of Educational Development*, 26(3), 261–277. <https://doi.org/10.1016/j.ijedudev.2005.09.009>

13. Ministry of Education. (2021). *Performance review of Mid-Day Meal Scheme 2020–21*. Government of India. <https://pmposhan.education.gov.in>
14. Mukherjee, A. (2010). Improving nutrition outcomes through school feeding: Evidence from India's Mid-Day Meal Programme. *IDS Bulletin*, 41(4), 55–63. <https://doi.org/10.1111/j.1759-5436.2010.00166.x>
15. Nair, S. R. (2020). School feeding programs in Kerala: Challenges and prospects. *Kerala Journal of Educational Research*, 29(1), 77–89.
16. Pratichi Trust. (2005). *The mid-day meal programme: A study in West Bengal*. Kolkata: Pratichi Trust.
17. Ramachandran, V. (2014). *Revisiting the Mid-Day Meal Programme in India*. New Delhi: National Institute of Public Cooperation and Child Development (NIPCCD).
18. Rao, N. (2016). Assessing the quality of mid-day meals in primary schools: A satisfaction-based approach. *Indian Journal of Social Work*, 77(3), 303–319.
19. Singh, R., Garg, M., & Nath, A. (2014). Mid-Day Meal Programme: Impact on nutritional status of school children. *Indian Journal of Pediatrics*, 81(10), 1225–1227. <https://doi.org/10.1007/s12098-013-1296-4>
20. Sinha, D. (2008). *Mid-Day Meal in India: A policy review*. Collaborative Research and Dissemination (CORD).