



ORIGINAL RESEARCH PAPER

Economics

IMPACT OF MID DAY MEAL SCHEME IN IMPROVING LACUNAE IN ATTENDANCE AND EDUCATIONAL ATTAINMENT

KEY WORDS:

Dr.Satish kumar

Assistant Professor, Department of Economics, Indira Gandhi University, Meerpur, Rewari

ABSTRACT

Mid-Day Meal scheme was launched by the Government of India with the aim to boost in elementary education and improve the performance of children belonging to poor sections of the society. In this paper we want to study the impact of mid-day meal scheme in improving lacunae in attendance and educational attainment. primary data has been collected from a village near gurugram. 100 children and parents were questioned on aspects like attendance and marks scored by the child. We want to see if there is a significant relationship between the two variables. A priori we expect a positive relationship between the performance of the child and his presence in the class.

Introduction

Mid day meal scheme is a nationwide scheme started by government of India to provide school meal and to upgrade the healthy and nutrient rich standards of school going children. This scheme provides lunches without any cost to the students in primary and upper primary sections during school hours of government and government aided education institutions.

Presently this scheme is serving crores of children and lakhs of educational institutions and has emerged as a largest meal scheme all over the world. This scheme has emerged as an ambitious scheme to provide the food to the school students and improving health and education of the poor children. This facility is provided to schools that have an open admission policy for primary section each meal provides 12 grams of protein and 450 calories energy and for secondary section each meal provides 20 grams of protein and 700 calories energy.

The "right to food" and "right to education" are among the key fundamental rights of every citizen of India. The **Secretariat, Right to Food Campaign (2008)** under the heading "SUPREME COURT ORDERS ON THE RIGHT TO FOOD, A Tool for Action, August 2008" showcases desirable Articles of the Indian Constitution and the opinions of the National Human Rights Commission (NHRC) given in the proceedings of the hearing held on January 17, 2003. The same is reproduced below: -

"Article 21 of the Constitution of India guarantees a fundamental right to life and personal liberty. The expression 'life' in this Article has been judicially interpreted to mean a life with human dignity and not mere survival or animal existence. In the light of this, the state is obliged to provide for all those minimum requirements which must be satisfied in order to enable a person to live with human dignity, such as education, health care, just and human conditions of work, protection against exploitation, etc. In the view of the commission, the Right to food is inherent to a life with dignity."

Many studies and researches have brought out that there is straight relationship between school performance and nutritional level of the child. Research also explains that providing students with avenues to charge up with nutritious snacks and burn off some art of energy with physical activity can help them maximize their instructional time by raising and improving attentiveness and focus and decreasing discipline issues. Such Opportunities for healthy snacks and physical activity during the school day can help students to become more attentive during classes. Healthy eating habits, including active participation in school breakfast programs, are related with higher academic test scores, improved daily attendance, and better classroom behavior (Miller Patti, 2011). Malnutrition at any phase of childhood affects schooling. Both underweight and micronutrient deficiencies – stagnates educational attainment efficiency and, thus, the lifelong earnings potential of the child. Some of the paths by which under nutrition affects educational results include a decreased ability to learn (as a result of early cognitive deficits or lowered current attention spans) and fewer total years of schooling (Gragnotati *et al.*, 2005).

Review of Literature

Jagannath Mohanty (2002), *Primary and Elementary Education, Policy and Programmes, Growth and Development, Organization and Management, Sociological and Psychological Aspects and Democracy and Education*. In this write-up, he explained the significance of primary education, Rights of the children etc. According to writer, Primary or basic education has been the most important concern of all nations, since it is the base floor of the whole superstructure of education and is directly linked to the democracy. In the case of development of primary education, writer further adds that, its universalization has been taken as a global challenge, and the Issues are still catastrophic. So the national promise and the concern of the States serve as an important role to find solution of the problem as soon as possible with strengthful political attitude.

Abigail Burgess and ValdaW. Bunker (2002) they studied 90 primary school Portsmouth area of UK. They observed in their work the physical growth due to mid day meal. it was revealed in the study the amount of macro-nutrient in the diet increased substantially.

Prakash Khanal (2002) he worked on the effects on Nepal deworming programme. he observed that PSNFP(primary school nutritious food programme) had a positive effect on status of students health, worm infection fell by 30%. in many cases of anaemia decreased and there was a notable growth in the number of girls attendance.

Khor (2003-04) noticed that the Malaysian children lack in the occurrence of undernourishment and micronutrient deficiency issues. Low body weight as per their age and stunting in kids from urban elementary school is generally lower than 10%. on the other hand, the magnitude is significantly far above the ground about 20 to 50%) in students from rural areas and less income household in urban areas schools. In young children different types of deficiencies have been found such as a sub-clinical form of vitamin A deficiency, Protein Energy Malnutrition (PEM), iron deficiency anaemia (ida).

Pottertion and Dawjee (2004) found that 22.41% schools receives food deliveries everyday, 6.89%) once a week, 8.62%) twice a week, 16.37%) receives three times a week, 24.13%) once a month and only 8.62% sometimes for school feeding meals. Some of the schools indicated that the amount of food given to children was not enough for the learners. The study also showed that the quality of food received was not always good. Furthermore, a few of the respondents complained about the lack of space in schools to store the food that was purchased in bulk and the lack of proper kitchen space to prepare food.

C. P. S. Chauhan (2004), *Modern Indian Education Policies, Progress and Problem*, where he got that,

- We are giving less on education sector than what it actually demands. Most of our futuristic development actions for education are not exactly for need of necessary funds.

Whenever a financial backout is experienced, it is always from education sector.

- Whenever we realise that any particular sector of education, suppose primary education Sector requires increasing funds; this need is met at the cost of some Critical sector, say higher or technical education sector.

A. Pratap (2004), in her article *Strike Against Hunger*, had laid emphasis on the advantages of the mid-day Meal programme like,

- Classroom hunger had decreased abruptly.
- Rural children walked to school with no food consumption as they found that mid-day meal in school enhanced their concentration.
- School admissions and regular attendance had rolled up mostly among girls.
- After-meal attendance had risen
- Caste and class barriers were stepping down for a whole community of Indian children.

Objectives of the current research

To study that mid day meal scheme improved the academic performance of student through attendance who are availing the benefits of the mid day meal scheme.

Hypothesis of the study

Ho: attendance has no significant effect on marks.
Ha: attendance has significant effect on marks.

Tools & Technique:

Linear Regression: Regression analysis is concerned with the study of the dependence of one variable, the dependent variable, on one or more other variables, the explanatory variables, with a view to estimating and predicting the (population) mean, average value of the former in terms of the known or fixed (in repeated sampling) values of the latter. For this purpose we are using sample of 100 students.

Following assumptions have been made in regard to our data set.
(1) Regression model is linear in parameters i.e it is of the form

$$Y_i = \beta_1 + \beta_2 X_i + U_i$$

- (2) Attendance is uncorrelated with the disturbance term u.
- (3) Expected mean of the disturbance term is zero, given the value X_i

$$E(u | X_i) = 0$$

(4) Variance of each u_i is constant or homoscedastic (homo means equal & scedastic means variance)

$$Var(u_i) = \sigma^2$$

- (5) There is no autocorrelation.
COV (u_i, u_j) = 0 i ≠ j
- (6) There is no specification bias or specification error.
- (7) U_i 's are distributed normally with mean zero and variance σ^2

ANOVA: The test of hypothesis is also done by using technique known as analysis of variance (Anova).

$$TSS = ESS + RSS$$

A study of these components of **TSS** is known as analysis of variance (Anova) through the regression view point.

Table 1.1 ANOVA Test ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	10141.401	1	10141.401	345.377	.000 ^b
Residual	2877.599	98	29.363		
Total	13019.000	99			

a. **Dependent Variable:** present year marks

b. Predictors: (Constant), average attendance in a month

$$F = \frac{ESS / DEGREES OF FREEDOM}{RSS / DEGREES OF FREEDOM}$$

ESS = Explain sum of square
RSS = Residual sum of square
ESS = 10141.401
RSS = 2877.599

$$F = \frac{10141.401}{2877.599}$$

$F = 345.377 \sim F_{1, 98}$
Null hypothesis $H_0: \beta_2 = 0$
Alternative hypothesis $H_a: \beta_2 \neq 0$
The computed F value has very low P value thus we reject null hypothesis (that the impact of attendance on percentage of marks is 0.)

Table 1.2: Model Summary Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.883 ^a	.779	.777	5.41879

a. Predictors: (Constant), average attendance in a month

2.1 THE GOODNESS OF FIT : R²

On the basis of **t test** both the estimated intercept & slope coefficients are individually statistically significant. we know want to check the **goodness of fit of sample regression line** using **R²** is explained by the explanatory variable.

$$r^2 = \frac{ESS}{TSS}$$

In our case $r^2 = .779$ i.e 77.9% of variations in the percentage of marks is explained by attendance. In this case r^2 is quite high which tells that marks are well explained by attendance. The r^2 term is equal to .779, indicating that 77.9% of variability in the response is explained by the explanatory variable.

Table 1.3: Coefficient' Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	36.322	1.845		19.686	.000
	previous year attendance	2.134	.115	.883	18.584	.000

a. **Dependent Variable:** present year marks

2.2 Linear Regression: percentage of marks on attendance

Here we are assuming marks (expressed in percentage % terms) on attendance (expressed in number of days). here we want to find out how percentage of marks changes on average days to 1 unit (days) change in attendance.

2.3 Estimating The Population Regression Line

Population Regression line would be

$$\text{Marks} = \beta_1 + \beta_2 \times \text{attendance} + u_i$$

Where, estimated population regression line would be

$$\widehat{\text{Marks}} = 36.322 + 2.134 \times \text{Attendance}$$

Standard error = (1.845) (.115)
t = (19.686) (18.584)
P = (.000) (.000)

INTERPRETATION

$\beta_1 \rightarrow$ Intercept

The intercept term usually does not have any economic significance but here it can be said that when attendance is zero, the percent of marks is 36.322% on average. The value is highly significant even at lowest level of significance as the p value is quite small.

$\beta_2 \rightarrow$ The slope coefficient of 2.134 means that if attendance is increased by 1 unit, percentage of marks on average is increased by 2.134.

Testing the Significance of β_2

It is evident from the estimated regression line that marks obtained & attendance have a positive relation (due to sign of β_2) but we want to test whether this relationship holds for the population as well.

We use t statistics for the same which is computed as

$$t = \frac{\hat{\beta}_2 - \beta_2}{s.e(\hat{\beta}_2)} \quad \text{with } n-2 \text{ (degree of freedom)}$$

$H_0 : = \beta_2 = 0$

$H_a : = \beta_2 > 0$ (assuming that there can't be a negative relation between attendance & marks)

t computed = 18.584 assuming null to be true.

A p- value of as small as .000 suggests that there is highly significantly & we reject null in favour of the alternative to state that there surely exists a positive relation between marks & attendance.

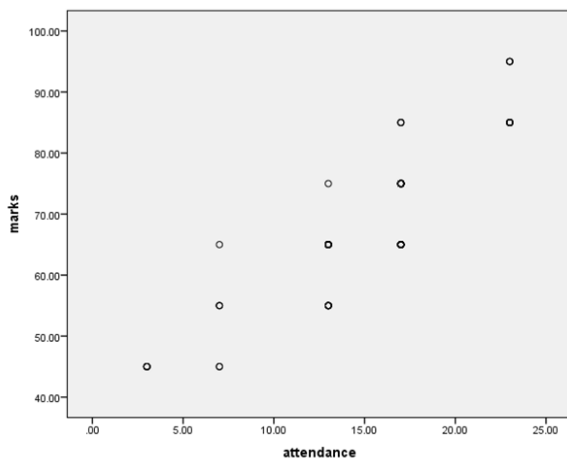


Figure 3.1: The above scatter plot shows the relationship between attendance of the students & marks scored by the students. For this purpose we are taking average attendance on x- axis and marks of the students on y –axis that shows the positive relation.

Conclusion

In the above study we have found out that increasing presence of the students in the class room helps in improving their performance. We have seen as attendance increases by 1 day on average % marks increases by 2.134 and high R square value of .779. We have found that slope coefficient is statistically significant. Thus we have established through empirical analysis that mid-day meal scheme has indeed played a vital role in boosting students academic performance at elementary level.

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