

THE DETERMINANTS OF UTILIZING ICDS IN LAKHIMPUR DISTRICT OF ASSAM, INDIA

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INTRODUCTION:

Nutrition is a fundamental pillar of human life. Children are the backbone of a nation. Good nutrition is the key element for survival, health and development for present and future generations which guarantee the sustainable development. Therefore improving child health and nutrition is not only a moral imperative but also a rational long term investment for sustained development. Realizing the importance of holistic child development India has launched the Integrated Child Development Services (ICDS) in 1975 which now become world's largest early childhood development programme. The program has significantly extended from 4891AWCs in 1975 to 1.3 million AWCs presently operating in India with strong support from World Bank, UNICEF etc. (NITI Aayog 2015). In Assam, the total number of AWCs are 62,153 under 231 projects and the total child beneficiaries for SNP are 3310885 and for PSE are 1801441 in December 2014 (MOWCD 2014-15). The prime goal of these services is to interrupt "the vicious cycle of malnutrition, morbidity and mortality of children and mothers". Some other objectives are to control the intergenerational transmission of malnutrition through changing in behavior regarding health and hygiene, dietary care, education etc. (Planning Commission 2011). The programme is designed through integrated package of services such as supplementary nutrition, pre-school non-formal education, nutrition & health awareness, immunization, medical check-ups, referral services. But after 40 years of operation, the ICDS, India cannot survive from the malnutrition problem significantly. In India, moderately malnourished and severely malnourished children are 17% and 4.2% respectively (Programme Evaluation Organization, NITI AAYOG 2015). In Assam under-5 mortality rate is 87/ 1000 live births in 2009 as compared to all India figure of 64/ 1000 (Annual Health Survey 2011-12). According to NFHS-4 the underweight rate of children under 5 years of age in India is 35.7% which was 42.5% in accordance to NFHS-3. In Assam, the child health is immense low as the infant mortality rate is 48 and underweight rate is 29.8% recorded by NFHS-4 (2015-16) which was 66 and 40.4% in accordance to NFHS-3. Hence India as well as Assam is far away from achieving the Millennium Development Goal of eradicating malnutrition in India even after implementation of direct nutritional scheme ICDS. Different studies have observed its extent of failure and found the underlying causes of failure. The studies have not observed significant impact of services of ICDS on eradication of malnutrition of children (Majumdar et.al 2001, Bhutta et.al 2013). There is no strong evidence that ICDS has positive impact on health outcomes (Planning Commission 2011).

Objective: Although the ICDS programme appears to be well-designed there are several mismatches between the programme's design and its actual implementation that prevents it from realizing its potential. Under this circumstance the present study attempts to study the various determinants that affect on utilization of ICDS. The prime objective of the study is to find out the various determinants of utilization of ICDS in Assam.

Different studies have been developed regarding the efficacy of ICDS. It is estimated that attendance is associated with age, gender, caste, household wealth and location. Almost all states the attendance rates of scheduled caste and scheduled tribe children are in line with or slightly better than that of other castes (The World Bank 2004). Another study has found that the majority of ICDS buildings are short of basic facilities. The mothers have faced the problem to send their children to ICDS centres as most of them are unable accompany their children. Some Parents are interested in sending their children to private crèches and schools because they are of the view that 'private' meant quality, and it is also a symbol of their status (Ameya Et Al. 2005). It is observed in another study that AWCs are themselves not functioning regularly particularly in Dhubri, Dibrugarh, Kamrup and East Khasi Hills in Assam. So it would not be fair to expect the parents to be enthusiastic about sending their children to the Centre. AWCs are considered more as food distribution centers (Final Report on ICDS performance 2008).

She has found in her studies that as the standard of living increases the tendency to register in ICDS center will decline. She further found that the key reasons for not attending the program are the lack of awareness and seriousness about the needs of the program. She has found that at lower levels of education, mother's education is positively associated with the attendance behavior in ICDS center. But more educated mothers who have completed higher secondary education implying negative association with attendance behavior of their children in AWC. She has further found that SC and ST have higher tendency to attend as compared

to general class. Education of parents is affecting the probability of registration. Educated parents tend to have lower rates (Deepali Sharma 2014).

Research Methodology:

The research work depends on both primary and secondary data. For collecting the primary data the researcher selects a sample size from Lakhimpur district of Assam by adopting the multistage random sampling and systematic sampling. In multistage sampling, in first stage, Lakhimpur district of Assam is selected as it was taken as model district for launching The ICDS in 1975. In second stage, among 9 development blocks of the district the Boginadi block is selected randomly. In third stage, Na-Kadamgaon Panchayat is selected randomly. In fourth stage, AWCs are selected from the panchayat. Since the total number of AWC in the block is 208, therefore the 10% of the total number of AWC i.e. 20 is taken as sample size for the study. The 20 AWCs are selected randomly in such a manner that it covers mother and children of all section of caste, religion and economic condition of the area. In fifth stage, the sample households are selected. The researcher has found the total number of children is 1217 as per record provided by 20 AWC. Therefore to observe the socio economic condition of the households the researcher has selected 10% of total children i.e. 120 (for convenience) by applying systematic sampling and purposive sampling. The sample household size is also 120. One child from each household is taken as sample. The researcher has selected the beneficiary households by applying systematic sampling. In each selected AWC the researcher selects the beneficiary households at an interval of every 10 beneficiary households. The researcher has selected the households who are registered but not attended the AWC in last two months by applying purposive sampling. They are considered as sample children who are not attending in AWC. The researcher has collected data from AWW and beneficiaries mother by adopting direct investigation method on the basis of well-structured questionnaires. The information about monitoring and administration is taken from the supervisor and ICDS officials through proper discussion.

Data Analysing Technique:

The collected data are arranged scientifically in a tabular form. For better explanation about the determinants of utilizing the ICDS the binary logistic regression model is applied. The logistic models controls for relevant socioeconomic variables like maternal education, household standard of living, social background of household such as caste which have the probability of affecting on attendance in AWC. In the binary logistic method we have used the co-efficient to explain the likelihood of being attendance associated with different characteristics. The meaningful explanation is developed on the basis of p value. For analyzing the determinants of utilization of ICDS the attendance is considered as dependent variable, age and sex of child, mother's education, caste, living condition and quality of ICDS are considered as independent variable. For estimating the use of ICDS services, a linear model that relates one of the outcome variables to a set of explanatory variables plus error terms is $Y = \beta_1 X_i + \beta_2 C_i + \beta_3 Z_i + \beta_4 Q_i + e_i$

Where the dependent variable is attendance for the i_{th} respondent ($i = 1, 2, \dots, N$). X indicates the child specific characteristics such as age and sex of the child, C indicates mother education, Z for the socio-economic characteristics such as caste and living condition and Q represents quality of ICDS. In all cases the outcome variable is dichotomous which means that linear regression methods are not appropriate.

The logit (L) is the log of the odds ratio and can be expressed as follows: $L = \ln [\Pr(Y=1)/\Pr(Y=0)] = X\beta$

Where β is a vector of parameters for X explanatory variables. The left hand side of the equation represents the log odds of the outcome associated with the explanatory variables in question. The logit model is used to estimate the probability of attendance using the following econometric specification:

$$\text{Logit}(Y_{ij}) = \beta_1 X_{ij} + \beta_2 C_{ij} + \beta_3 Z_{ij} + \beta_4 Q_{ij} + e_i$$

The analysis is performed using STRATA software.

The quality of ICDS as well as AWC is assessed on the basis of index value computed from the composite index constructed by using infrastructure index and Quality of AWW Index by applying the formula of UNDP Human Development Index. The variables considered for infrastructure Index are ICDS owned building, sufficient space, weight machine, PSE kits, Medical kits, play material, storage facility, sitting arrangement, utensil, toilet and drinking water facility. For AWW quality Index the variables are education level of AWW, Training of Aww, NHE, SNP, Immunization, record keeping, growth chart preparation, meeting arrangement, House to House visit by AWW, Visited by supervisor, visited by ANM.

Profile of the area:

Lakhimpur district is one of the oldest districts of Assam. According to 2011 census the total population of the district is 10.42 lakhs. Among them 15.6 thousands are children under 6 years. Boginadi block is situated in the east of the Headquarter of Lakhimpur district. The block consists of three gaon-panchayats. The people of the area is of different communities such as mishing, nepali, kachari, tea tribes, sc, minorities, general etc. Most of the people depend on agriculture for their livelihood.

Result and Discussion:

The ICDS was launched in the block in 1982. The total number of AWC is 208 and only three supervisors are there for monitoring the AWC. The performance of ICDS of the block as a whole is not satisfactory. Since the road connectivity to the remote area is very poor, therefore AWW, the ICDS officer, supervisor and medical officer has faced lots of problems for which service delivery is not satisfactory. Moreover political pressure will affect the smooth functioning of the ICDS. The sample study area consist of 20 AWC which cover 26 villages and different types of communities such as general, OBC, tribal people of Mishong, Kachari, tea tribes and minorities. The total population covered by 20 AWC is 16841 of which 8614 are male and 8227 are female. The children 6m-3y are 466 of which 257 are male and 209 are female. The children 3y-6y are 751 and among them 405 are male and 346 are female. The children are divided on the basis of different caste for convenience of the study. Accordingly the general including OBC children are 326, Mishong & Kachari are 289, Minority are 372, SC are 100 and Tea tribes is 130.

Status of AWC:

The status of the AWC depends on the infrastructural facilities, Quality of the AWW, Service delivery and monitoring. These are discussed as follows-

Infrastructure of AWC:

Building of AWC: The infrastructural facilities are not so good in the area. Among the 20 AWC 5 has no building. One AWW has arranged the building facilities in her own premises, 2 AWW arrange the day to day activities at Namghar and 3 AWW arrange nearby Primary School during the morning hour from 7 to 8-45. The area of building is not adequate for cooking meal, teaching and playing simultaneously. All AWW have claimed the requirement of separate Kitchen room.

Drinking Water & Toilet: No drinking water facilities are there. Only three AWC use the drinking water from the LP School and others use the water from the house of local people. Hence cooking meal becomes a hard work for the helper in absence of drinking water. No toilet facilities are there.

Weighting Machine: The machine is available, but defective in all the centers except one. Therefore the AWW has to weight at nearby Health Centre. Some of them weight the children after three months, but fill up the growth chart monthly. This growth chart is prepared on the basis of assumption.

Utensils: Utensils are available, but not qualitative. The cooking vessel is very poor condition and therefore 25% Of AWW has purchased the cooking vessel from her salary. There are no storage facilities.

Medical Kits, Playing and Pre-School Kits: The playing and Pre-School kits are available. Although medical kits are available, it is not sufficient. Only paracetamol, deworming, and some antifungal powder are provided. No fast aid is given in medical kits. 40% AWW claimed that fast aid is required in medical kits.

Quality of AWW:

The quality of AWW is measured on the basis of Education, nutritional knowledge, training, record keeping, growth chart preparing, SNP, NHE programme, meeting arrangement, visiting the beneficiaries houses and Immunization.

In the study it is found that the 18 AWW are matriculate and two are higher secondary passed. Only five have knowledge about the nutritional norms. All the AWW has taken job training of one month and only two has taken refresher course of 7 days on medical kits. All can properly maintain the growth chart. But NHE programme is not in right direction as the 90% cannot arrange the class once in a week due to non-attendance of mother. The SNP has smoothly conducted when the food is available. Of course 25% AWW especially in minority area informs that the distribution of nutritional food become uncontrollable as the attendance is more during the distribution time. All the AWW inform that Village Health Nutritional Day (VHND), Nutritional Health Education (NHED), Early Child Education (ECE) and circle meeting must be arranged monthly. Immunization programme is conducted with the help of ANM properly. But visiting to house to house be difficult task for them. Only 3 AWW report that they visit the beneficiaries' house every 15 days. Thus it depicts that the quality of AWW is almost good in the area.

Visiting of officials in AWC: Timely visiting is one of the injecting elements for proper functioning of AWC. The study shows that 75% of AWC is visited by Supervisor monthly and 25% AWC is visited once in two months. All AWW inform that ANM visits monthly. 40% of AWW inform that CDPO visits once in four months and 60% of AWW inform that CDPO visits once in six months.

According to composite index value of quality of AWC, 70% AWC are low category, 25% are medium category and only 5% are very high category in the sample area.

Living Condition:

The living condition of sample households depend on the monthly average income, sanitation, drinking water, electricity, gas, house etc. The living condition is determined on the basis of composite index constructed on the following variables by applying UNDP Human Development Index.

Table 1: The living condition of sample households

caste	High income	Low income	electricity	No electricity	Pucca house	Cutcha house	Gas	No gas	Good water	Bad water	Good sanitation	Bad sanitation	High living	Low living
general	18	14	17	15	18	14	13	19	18	14	12	20	16	16
teatribes	0	13	2	11	13	13	0	13	1	12	2	11	1	12
Plain tribes	14	14	15	13	12	16	10	18	12	16	10	18	12	16
SC	4	6	4	6	3	7	2	8	2	8	1	9	3	7
Minority	9	28	12	25	12	25	9	28	15	22	9	28	11	26

Source: Field Survey

From the above table it is clear that the 43 number of children are in a good living condition 77 remain in a bad living condition.

Determinants of utilizing ICDS:

The following table reflects the various determinants of utilizing the ICDS.

Table2 : various factors that affect on attending AWC

Factors	Classification	Total 120	Attending 75	Percentage (62%)	Not Attending 45	Percentage (38%)
Age of the child	36m-48m	55	37	67.2	18	32.8
	49m-60m	41	28	68.2	13	31.8
	61m-71m	24	10	41.6	14	58.4
Sex	Male	65	43	66.1	22	33.9
	Female	55	32	58.2	20	61.8
Living Condition	High living	43	20	37.7	23	62.3
	Low living	77	53	68.8	24	31.2
Caste	Minority	37	27	73	10	37
	General	32	15	48	17	52
	Tea tribe	13	8	61.5	5	38.5
	Plain tribe(ST)	28	19	67.8	9	32.2
	SC	10	6	60	4	40
Mother Education	Illeterate	49	32	65.3	17	34.7
	Primary	26	20	76.9	6	23.1
	Middle	25	16	64	9	36
	High and above	20	7	35	13	65
ICDS Quality	High Quality	40	30	75	10	25
	Low Quality	80	45	56.3	35	43.7

Source: Field Survey

The above table reflects the various factors affect on attending Anganwadi Centre (AWC).

Child specific Characteristics: We study the child specific characteristics by examining the variation of attending behavior in accordance to variation in age and sex of the child. From the table it shows that as child age increases up to 5 years the rate of attendance is increasing. But after completion of the 5 years the attendance rate is declining. Because most of the students choose

to attend the primary school after the completion of 5 years. The attendance behavior is marginally changed in accordance to difference in sex.

Socio-economic Condition: The study also examines the background characteristics of the child by considering socio-economic condition of the sample households. The table represents that there are significant different in attendance of the child in response to difference in living condition. The rate of the attendance of the child of low living condition households is higher than high living condition. It is because most of high living households prefer to send their child to better institution.

Caste is considered as social factor which may affect on the attendance in AWC. From the table it is evident that there is partial variation in attendance due to difference in caste. The children belonging to Minority class have the higher rate of attendance than other caste .On the other hand the children belonging to general class have lower attendance. Some of the parents of general caste have felt that ICDS is not beneficial for them. Therefore they are reluctant to send their child to AWC.

Mother Education: The table shows that mother education has significant impact on attendance. The children whose mothers have primary education have higher rate of attendance. But the children whose mothers have higher education have lower rate of attendance. Because, the mothers having higher education prefer to send their child to better institution instead of AWC.

Quality of ICDS: The table depicts that the attendance behavior is varied in accordance to difference in quality of ICDS. The children belongs to the area under high quality of ICDS have higher rate of attendance than the low quality of ICDS.

Findings of the model:

The logit model used for the study has some significant outcomes which are discussed with the help of following table.

Table3: Results of the model

Independent variables	Attendance(Dependent variable)	Co-ef	St.error	Z	p> Z
Age	49m-60m	-.06309	.4439	-.14	.887
	61m-71m	-1.871802	.556	-3.36	.001
Sex	male	.822381	.386503	.21	.832
Living Condition	High living condition	-.7788879	.39026	-2	.046
Caste	Minority	.6400998	.6463	.99	.322
	General	-.3176153	.6412	-.50	.620
	Tea tribe	-.0746328	.7679	-.10	.923
	Plain tribe(ST)	.2736738	.68406	.40	.689
Mother Education	Illeterate	.94908	.5377	1.76	.078
	Primary(1-5)	1.5404	.6393	2.41	.016
	Middle	.8630	.6066	1.42	.155
ICDS Quality	High Quality	.84729	.4291002	1.97	.048

Source: Field Survey

Age: From the table it is clear that the negative sign of the coefficient indicates that the probability of attending is declined as the age of the child increases. The age group of 61m-71m children are statistically more significant variables. As the children completed 5 years the probability of attending in AWC is significantly decreasing. The sample households of this group perhaps expect that primary school is better than AWC.

Sex: Sex has no statistically visible impact on attending AWC.

Living Condition: Living condition has significant impact on attending AWC. The negative sign of coefficient reflects that the probability of attending in AWC is declined as the living condition is high which is significant at 4% level. The high living condition households perhaps prefer to send their child to better institution.

Caste: Caste has no statistically significant impact on attending AWC.

Mother Education: Mother education has significant impact on attending AWC. The probability of attending in AWC is statistically more significant at 1% level whose mothers have primary level of education. Regarding illiterate mothers the probability of attending the child in AWC is statistically significant at 7% level. It depicts that the probability of attending in AWC is high whose mothers have primary education level. But probability of attending in AWC is very low as the mother education level increases primary onwards.

ICDS Quality: ICDS Quality is also statistically significant variable which affect on attending AWC. Higher the quality of ICDS, higher is the probability of attending AWC which is significant at about 4% level.

Reasons of not attending in AWC:

The following table reflects the various reasons of not attending in AWC. Since the total not attending children are 45, therefore to know the reasons researcher select the sample of 45 household whose children are not attended in AWC.

Table 4: Reasons of not attending

Low quality of AWC	Not aware about ICDS	Other school	Not beneficial
20 (44.4%)	6 (13.3%)	10 (22.2%)	9 (20%)

Source: Field Survey

From the table 4 it is clear that out of total not attending children 45, 44.4% households report that children are not attended in AWC due to low quality of AWC. 20% households consider AWC is not beneficial for their children. 13.3% households are not aware about the services of ICDS. Other 22.2% households send their children to better institution.

Discussion:

From the above discussion it is clear that standard of living, mothers’ education and quality of ICDS are major determinants of utilization of ICDS. The attendance in AWC is more among the poorer children than the children belong to higher standard of living. Similar observation is detected in another study. The study has observed that Children of poorer households have higher tendency to avail services of ICDS rather than the children of richer section (Ghosh 2011). The educated mothers with primary level have strong influence on attendance behavior of ICDS than the illiterate mothers. Another study also reflects that illiterate mothers have less influence on attending behavior of children in ICDS than educated mothers (Ghosh 2011). The present study has found that the attendance rate of children in ICDS is higher in high quality of ICDS. The other study has observed that participation of mothers as well as children in ICDS can be improved through improving quality of ICDS (Sivanesan et al 2016).

Conclusion: From the study it may be concluded that the Quality of ICDS is very poor. Although some other factors like living condition of the household, mother education are major determinants of utilizing ICDS, yet quality of ICDS means AWC is a vital determinant of utilization of ICDS. If government and different stakeholders give more emphasize on overall development of ICDS and fit it as an actual child development centre, then obviously the attendance rate may increase. The reverse affect of high living condition, higher educated mother on attending AWC may change if quality of ICDS is improved.

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