

Evaluating the Social Orientation of the Integrated Child Development Services Programme

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Examining who the beneficiaries are of the Integrated Child Development Services programme, an aspect that has been neglected, this paper presents econometric estimates regarding the relative strength of personal and household circumstances in determining the likelihood of utilising the programme's services. These estimates suggest that inter-group differences in utilisation rates have less to do with characteristics and much more to do with group identity. The paper also suggests a trade-off between quality and utilisation by hypothesising that the poor quality of services leads upper-caste mothers to exit the ICDS market and seek these services elsewhere.

1 Introduction

Launched in October 1975, India's Integrated Child Development Services (ICDS) programme is its largest national programme – and one of the largest such programmes in the world – for promoting the health and development of mothers and their children. The scheme is targeted at children below the age of six years and their mothers (particularly if they are pregnant and lactating), and the benefits take the form of inter alia supplementary nutrition, immunisation, regular health checks, referral services, education on nutrition and health, and preschool learning. In addition, mothers and children are provided with iron, folic acid, and vitamin A tablets to combat, respectively, iron deficiency, anaemia and xerophthalmia. The scheme – based on the principle that the overall impact of these benefits would be greater if they were provided in an integrated manner, rather than on a piecemeal basis – is administered from *anganwadi* centres (AWCs) by workers and their helpers, who are trained and paid an honorarium (Kapil and Pradhan 1999; ministry of women and child development website).¹

Many aspects of the ICDS have been examined by researchers and, in particular, the delivery of specific services (Ghosh 2006 on feeding practices; Tandon and Gandhi 1992 on immunisation) and the delivery of services in specific parts of the country (Sundaraman 2006 on Chhattisgarh; Nayak and Saxena 2006 on Bihar and Jharkhand; Rajivan 2006 on Tamil Nadu). However, one aspect of the delivery of ICDS that has been neglected in the literature is the issue of who the beneficiaries are. Are they mothers (and their children) from deprived groups who, but for the AWCs, might not have received such services and, indeed, might not have been aware of the importance of such services? Or, are they mothers (and children) from more privileged groups who, even in the absence of AWCs, would recognise the importance of such services and have the resources to acquire them from other sources? In both cases, AWCs would add value to the lives of mothers and children but, in the latter situation, they would do so by displacing existing services.

The evidence on social exclusion in the ICDS programme is at best mixed and has been summarised by Gill (2012). Three studies of exclusionary bias in the delivery of ICDS (Mander and Kumaran 2006; Thorat and Sadana 2009) conclude that locational factors underpinned, and perpetuated, such bias. First, there was a relative lack of AWCs in scheduled caste (SC), scheduled tribe (ST), and Muslim habitations;

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second, even in mixed-caste villages, the village AWC was usually not located in the part where the deprived groups lived. Although the location of AWCs is an ostensibly neutral factor, Mander and Kumaran (2006) in a study of 14 villages across four states (Andhra Pradesh, Chhattisgarh, Jharkhand and Uttar Pradesh) argue,

It is not a mere accident that in none of the surveyed mixed-caste villages was the AWC located in the Dalit or Adivasi hamlet. The decision to locate not just the AWC, but also other valued institutions and services, in the upper caste so-called 'main' village is influenced by the upper caste and class [sic] and politically powerful groups in the village.

However, as FOCUS (2009) shows, ST children in certain sampled districts comprised 27% of the total number of children, but as much as 40% of the total enrolled in the districts' AWCs. So, even though locational factors might militate against inclusivity, the utilisation of ICDS, as measured by enrolment in AWCs, would suggest that while better location could improve inclusivity, this itself is not a problem per se. On the other hand, Mander and Kumaran (2006) claim that in addition to the locational factor,

A large number of eligible children from impoverished and food deprived households did not access ICDS services, including supplementary nutrition for infant and small children ... and that the denial of these services is not random or accidental but is frequently the outcome of active social discrimination, based on caste, gender and disability.

Following from this mixed bag of results, some based on data from specific parts of India, the purpose of this paper is to use all-India data to evaluate the ICDS programme from the perspective of inclusivity. It does this by, first, econometric estimates regarding the relative strength of the personal and household circumstances of persons in determining the likelihood of utilising ICDS; second, estimating the proportion of inter-group differences in utilisation rates that is the result of inter-group differences in personal and household characteristics, and the residual proportion, which is the result of caste/religious identity; and third, suggesting a trade-off between quality and utilisation by hypothesising that the poor quality of ICDS leads the Hindu upper castes to exit the ICDS market and seek these services elsewhere.

The evaluation of the ICDS programme, as summarised above, is particularly important in the light of the Government of India's view, as articulated in its Eleventh Five-Year Plan (2007-12), that growth is not perceived as "sufficiently inclusive for many groups, especially Scheduled Castes, Scheduled Tribes, and Minorities" (Planning Commission 2008). In terms of the government's flagship social welfare programmes, of which the ICDS is one (the others being the Total Sanitation Programme and the National Rural Health Mission), access to services by people from deprived groups is the key to inclusivity. The obverse of inclusion is, of course, exclusion and one of the purposes of this paper is to measure the degree of exclusionary bias in the provision of ICDS, or, in other words, to measure the relative access to ICDS by mothers and children from "deprived" groups, compared to access by those from more "privileged" groups.

The results reported in this paper are based on data provided by the Indian Human Development Survey (IHDS) for 2005, which asked ever married women between the ages of 15 and 49 (hereafter, eligible women) whether they received various types of ICDS (Desai et al 2009). There were 33,482 such women, each from a different household, and these 33,482 households were from a variety of social groups and faced different economic circumstances. In addition to information about the women's households, the IHDS also provided information on the circumstances of the women in terms of inter alia their age, education level, and number of children. It should be emphasised that this paper is an analysis of access to ICDS by women of differing personal and household circumstances. It is not an analysis of their access to health services in general, or about the quality of the health services they accessed, or, indeed, about their (and their children's) health outcomes.

2 Budgetary Background and Access to ICDS

Calculations based on census projections show that there were 17.4 crore children in the age group of 0-6 years during 2006-07. As Table 1 shows, 5.82 crore children in the age group of 0-6 years benefited from the ICDS. Similarly, as per projections during 2008-09, there were 17.7 crore children, of whom 7.22 crore benefited from the ICDS. Though there was an increase in the number of beneficiaries, it still fell short of the children targeted by the programme (Diwakar 2010).

Table 1: Physical and Budgetary Performance of ICDS during Eleventh Plan Period

Indicators	Unit	Eleventh Plan		
		End of Tenth Plan 2006-07	2007-08	2008-09
SNP beneficiaries children	Crore	5.82	6.96	7.22
SNP beneficiaries mother	Crore	1.24	1.47	1.51
Total SNP beneficiaries	Crore	7.06	8.43	8.73
Budgetary performance				
Annual outlay	100 crore	40.87	52.93	63.00
Fund released	100 crore	42.11	51.70	62.95
Budgeted cost per beneficiary				
per day (SNP and general)	Rs	1.59	1.72	1.98
Fund released for SNP	Rs crore	1,519	2,062	2,281
Fund released (SNP per beneficiary				
per day cost for 365 days)	Rs	0.59	0.67	0.72

Source: Calculated using data from the Ministry of Women and Child Development, union budget, and MPR March 2009.

In the Eleventh Plan period, Rs 8,480 crore was allocated annually to ICDS. However, the actual allocation during 2007-08 and 2008-09 was only Rs 5,200 crore and Rs 6,300 crore, respectively. Thus, there was a shortfall of 39% in 2007-08 and 26% in 2008-09. Moreover, of the total amount released, Rs 1,519 crore in 2007-08 (28.7%) and Rs 2,281 crore in 2008-09 (34.9%) was given to the special nutritional programme (SNP) and the rest went for non-food components. In the case of the SNP, 50% of the cost was to be shared by the state government.

As per the norms, the government had to spend Rs 2 per day on children and Rs 2.30 per day on pregnant women and nursing mothers for the SNP till 2008. It was revised to Rs 4 for children and Rs 5 for mothers in 2009.² The fund released for

the SNP by the central government shows that only Rs 0.59 was provided per beneficiary per day in 2006-07 and it increased to Rs 0.72 in 2008-09.³ It clearly shows that there was a huge shortfall in the financial allocation for children as per norms, and this was a major reason for the poor quality of food (Diwakar 2011). Table 2 shows that the expenditure on the ICDS was only 0.8% of the total union budget and 0.12% of the gross domestic product (GDP).

Table 2: Share of ICDS Allocation in GDP and Annual Budget

Expenditure Heads (in Crore)	2005-06	2006-07	2007-08	2008-09
Expenditure on ICDS	3,326	4,210	5,170	6,294
Total union budget	5,08,705	5,81,637	7,09,373	7,50,884
Expenditure as % of annual union budget	0.65	0.72	0.73	0.84
GDP at current price	35,86,744	41,29,173	47,23,400	54,26,277
Expenditure as % of GDP (%)	0.09	0.10	0.11	0.12

Source: Calculated using data from HAQ Centre for Child Development (2009), Ministry of Women and Child Development, and *Economic Survey*.

Against this budgetary background, the IHDS distinguished six different types of ICDS that (eligible) women could have received from AWCs.

(1) Benefits while pregnant or lactating. These included supplementary feeding, prophylaxis against vitamin A deficiency, and control of nutritional anaemia. Also included were the immunisation of pregnant women against tetanus, and nutritional and health education to build their capacity to look after themselves and their children. (2) Immunisation of child/children against six major diseases – polio, diphtheria, pertussis, tetanus, tuberculosis, and measles. (3) Health checks for children, including management of malnutrition, treatment of diarrhoea, deworming, and distribution of medicines. Also included were the antenatal care of expectant women, and postnatal care of nursing mothers. (4) Supplementary feeding support for children for 300 days in a year with a view to narrowing the gap between the nationally recommended calorific intake and that received by children. (5) Monitoring children's growth, with sick or malnourished children and children with disabilities being referred to the primary health centre. (6) Providing children with preschool education. In addition to preparing children for primary school, this service also offers substitute care to young children, thus freeing older siblings, particularly girls, to attend school.

The eligible women in the IHDS were asked whether they had received each of the benefits for (i) their last birth, and (ii) their next to last birth. Since the number of valid responses to these questions was considerably greater in respect of last births, compared to next to last births, it is the answers pertaining to last births that are analysed in this paper.

Table 3 shows that of the 8,755 (eligible) women who gave valid responses to the question "When

you were pregnant and lactating did you receive benefits from the AWC such as immunisation, supplementary food, etc?", only 20.5% answered in the affirmative. Similarly, only 26.2% of 10,877 women said their (last) child had been immunised at the AWC; only 19.7% of 10,783 women said their (last) child's health had been checked at the AWC; only 21.7% of 10,760 women said their (last) child had received food from the AWC; only 21.6% of 10,746 women said their (last) child's growth had been monitored at the AWC; and only 9.2% of 10,704 women said their (last) child had received preschool education at the AWC. So, approximately one in five mothers said they had received services 1-5 above and less than one in 10 said that their child had received preschool education.⁴ These figures are consistent with those from other sources. For example, D Sinha (2006) estimated that only 22% of India's young children were being served by the ICDS programme, though she did not provide details by type of benefit.

Table 3 also shows that the receipt of benefits varied according to social group. ST Hindu women had the highest rate of utilisation (for example, 48% of the children of ST Hindu women were immunised at AWCs), followed by SC and then by ST non-Hindu women (for example, 27.8% of the (last born) children of SC women, and 38.6% of the (last born) children of ST non-Hindu women, were immunised at AWCs). At the other end of the scale, the lowest rates of utilisation were by women who were Muslim (both from the Other Backward Classes (OBCs) and from the upper classes), Brahmin or high-caste Hindus and other social groups such as Christians, Sikhs and Jains.⁵ So, while it was laudable that the highest rates of utilisation of AWC benefits were by SC and ST women, it was worrying that OBC Muslim women exhibited such a low rate of utilisation compared to, say, OBC Hindu women.⁶

A study conducted by the Indian Institute of Dalit Studies (IIDS) in four states – Uttar Pradesh, Madhya Pradesh, Bihar, and West Bengal – covering 895 respondents, corroborates this finding by showing that compared to upper-caste Hindu mothers, ICDS participation was higher among SC and ST mothers but lower among Muslim mothers. According to this study, 69% of Muslim mothers, compared to 78% of Hindu mothers, utilised ICDS provided for children up to three years

Table 3: Anganwadi Benefits Received by Mother and Last Born Child, by Social Group

Benefit Type	Proportion of Mothers in Group Receiving Benefit (%)								
	Brahmin/ High Caste Hindu	SC	ST (Hindu)	ST (Non-Hindu)	Hindu OBC	Muslim OBC	Muslim (Upper Class)	Other Groups	Total
While pregnant/ lactating	16.5 (2,100)	25.0 (2,368)	37.3 (668)	26.6 (229)	22.0 (3,667)	12.6 (754)	9.7 (880)	6.6 (347)	20.5 (8,755)
Child immunised	20.7 (2,060)	27.8 (2,395)	48.0 (757)	38.6 (254)	29.6 (3,555)	17.9 (726)	9.8 (815)	9.5 (315)	26.2 (10,877)
Child's health checked	17.0 (2,038)	21.5 (2,377)	34.5 (741)	20.6 (253)	21.4 (3,529)	13.2 (722)	10.1 (812)	8.4 (311)	19.7 (10,783)
Child's food received	17.5 (2,035)	26.2 (2,376)	38.0 (739)	31.0 (252)	22.8 (3,516)	12.7 (718)	11.1 (813)	4.5 (311)	21.7 (10,760)
Child's growth monitored	18.2 (2,037)	25.0 (2,368)	37.4 (738)	23.7 (253)	23.9 (3,513)	11.1 (715)	10.0 (812)	6.8 (310)	21.6 (10,746)
Early/preschool education received	9.4 (2,031)	9.8 (2,355)	12.4 (735)	11.6 (251)	10.3 (3,501)	5.5 (713)	4.9 (810)	2.3 (308)	9.2 (10,704)

Ever married women between 15 and 49 years of age; benefits refer to last birth child; figures in parentheses refer to the total number of valid responses to the question: "Did you or your child receive this benefit from the anganwadi centre?"

Source: IHDS (2005).

of age and 76% of Muslim mothers, compared to 83% of Hindu mothers, utilised services provided for children in the three to six years age group.

Some of the difficulties that Muslim mothers faced in accessing ICDS also applied to SC and ST mothers. For example, about 38% of Muslim mothers complained that AWC workers avoided visiting their locality, which resulted in a lack of information about services available at the AWC. The Human Development Sector (2004), in a report for the World Bank, reported that the community or caste of the AWC worker affected access – in one case cited, a worker was averse to having SC children come to the AWC because her father-in-law objected to the presence of lower-caste children.

In addition, because of the location of the AWC in parts of villages where the upper castes live (Mander and Kumaran 2006), mothers from vulnerable groups had to travel through unfriendly areas to reach the school. It was one thing to brave this journey for the occasional visit to the AWC – to have the child immunised, to have his/her health checked, or growth monitored – but it was quite another thing to have to suffer this journey twice daily. Consequently, mothers from vulnerable groups opted out of sending their children to AWCs for preschool education.

However, overlaying these difficulties faced by mothers from all the vulnerable groups in accessing ICDS, patriarchal restrictions on the mobility of Muslim women outside the family home if unaccompanied by another household member were a specific reason for the poor utilisation of ICDS by Muslim mothers. Although SC mothers also had difficulty accessing AWC services – through, for example, the reluctance of AWC workers to visit SC hamlets – they did not experience any familial restraints on their mobility outside the home. By going out of the family home (perhaps, for work), SC mothers were able to acquire information for themselves about ICDS without the intermediation of AWC workers. On the other hand, Muslim mothers, who lacked this mobility, were much more reliant on visits by AWC workers for such information and this restricted their access to ICDS.

Table 4 shows that the lowest rate of utilisation of AWC benefits was by well-educated women (matriculation or above)

Table 4: Anganwadi Benefits Received by Mother and Last Born Child, by Education of Mother

Benefit Type	Proportion of Mothers Receiving Benefit by Years of Schooling (%)				
	Zero Years	1-5 Years	6-10 Years	> 10 Years	Total
While pregnant/lactating	21.6 (4,543)	24.0 (1,636)	22.0 (3,274)	10.5 (1,560)	20.5 (11,013)
Child immunised	28.6 (4,579)	31.3 (1,644)	26.2 (3,178)	12.7 (1,476)	26.2 (10,877)
Child's health checked	20.4 (4,535)	23.6 (1,639)	20.7 (3,146)	10.9 (1,463)	19.7 (10,783)
Child's food received	24.0 (4,522)	25.5 (1,634)	21.6 (3,141)	10.7 (1,463)	21.7 (10,760)
Child's growth monitored	22.5 (4,515)	25.7 (1,630)	22.8 (3,140)	11.6 (1,461)	21.6 (10,746)
Early/preschool education received	9.2 (4,494)	11.8 (1,618)	10.0 (3,135)	4.7 (1,457)	9.2 (10,704)

Ever married women between 15 and 49 years of age; benefits refer to last birth child; figures in parentheses refer to the total number of valid responses to the question: "Did you or your child receive this benefit from the AWC?".
Source: IHDS (2005).

with utilisation rates by women with zero years, or 1-5 years, or 6-10 years of schooling being roughly similar. Table 5 shows that women aged 15-20 had the highest utilisation rate, followed by women aged 21-30, and that there is a sharp fall in utilisation rates among older women. Table 6 shows that poorer women (in the lowest two quintiles of household

Table 5: Anganwadi Benefits Received by Mother and Last Born Child, by Age of Mother

Benefit Type	Proportion of Mothers Receiving Benefit by Age Group (%)				
	15-20	21-30	31-40	41-50	Total
While pregnant/lactating	25.9 (911)	23.9 (7,407)	16.4 (2,460)	17.5 (235)	20.5 (11,013)
Child immunised	31.9 (928)	26.8 (7,344)	22.7 (2,373)	19.0 (232)	26.2 (10,877)
Child's health checked	24.5 (929)	20.1 (7,272)	17.1 (2,353)	14.0 (229)	19.7 (10,783)
Child's food received	24.5 (926)	22.3 (7,259)	18.9 (2,348)	19.8 (227)	21.7 (10,760)
Child's growth monitored	25.2 (925)	22.2 (7,249)	18.8 (2,345)	18.1 (227)	21.6 (10,746)
Early/preschool education received	8.1 (913)	9.2 (7,223)	9.9 (2,340)	7.0 (228)	9.2 (10,704)

Ever married women between 15 and 49 years of age; benefits refer to last birth child; figures in parentheses refer to the total number of valid responses to the question: "Did you or your child receive this benefit from the AWC?".
Source: IHDS (2005).

Table 6: Anganwadi Benefits Received by Mother and Last Born Child, by Household Income

Benefit Type	Proportion of Mothers Receiving Benefit by Quintile of Household Income (%)					
	Q1	Q2	Q3	Q4	Q5	Total
While pregnant/lactating	25.3 (1,790)	24.4 (2,189)	21.8 (2,298)	18.6 (2,247)	13.5 (2,301)	20.5 (10,825)
Child immunised	32.6 (1,855)	31.6 (2,198)	26.0 (2,245)	23.3 (2,182)	18.5 (2,223)	26.2 (10,703)
Child's health checked	23.1 (1,838)	23.7 (2,181)	19.4 (2,230)	18.4 (2,167)	14.5 (2,194)	19.7 (10,610)
Child's food received	27.3 (1,837)	27.6 (2,174)	21.7 (2,223)	19.2 (2,163)	13.9 (2,190)	21.7 (10,573)
Child's growth monitored	26.6 (1,829)	27.4 (2,175)	21.5 (2,218)	19.1 (2,160)	14.6 (2,191)	21.7 (10,573)
Early/preschool education received	10.1 (1,818)	11.7 (2,169)	9.5 (2,213)	8.6 (2,152)	6.2 (2,180)	9.2 (10,532)

Ever married women between 15 and 49 years of age; benefits refer to last birth child; figures in parentheses refer to the total number of valid responses to the question: "Did you or your child receive this benefit from the AWC?".
Source: IHDS (2005).

Table 7: Anganwadi Benefits Received by Mother and Last Born Child, by Region

Benefit Type	Proportion of Mothers Receiving Benefit by Quintile of Region (%)					
	Central	South	West	East	North	Total
While pregnant/lactating	12.0 (4,125)	33.8 (2,238)	29.6 (1,555)	15.6 (1,392)	25.9 (917)	21.2 (10,227)
Child immunised	20.0 (4,102)	34.5 (2,043)	39.6 (1,436)	24.7 (1,493)	30.1 (1,049)	26.2 (10,123)
Child's health checked	14.6 (4,062)	27.6 (2,026)	34.7 (1,427)	13.8 (1,483)	21.5 (1,048)	20.7 (10,046)
Child's food received	17.0 (4,049)	29.3 (2,022)	25.3 (1,418)	21.4 (1,485)	29.5 (1,048)	22.6 (10,022)
Child's growth monitored	17.7 (4,043)	26.4 (2,017)	32.5 (1,420)	19.9 (1,481)	25.0 (1,047)	22.7 (10,008)
Early/preschool education received	5.2 (4,034)	16.4 (2,006)	16.2 (1,417)	4.8 (1,476)	10.8 (1,037)	9.5 (9,970)

Ever married women between 15 and 49 years of age; benefits refer to last birth child; figures in parentheses refer to the total number of valid responses to the question: "Did you or your child receive this benefit from the AWC?".
Source: IHDS (2005).

income) had markedly higher rates of utilisation than women from more affluent (quintiles 4 and 5) households. Table 7 shows that the women in the southern, western and northern regions of India had much higher rates of utilisation than women living in the central or eastern regions. Table 8 shows that the utilisation rates of AWC benefits were much higher among rural women, compared to urban ones.

Table 8: Anganwadi Benefits Received by Mother and Last Born Child, by Location

	Proportion of Mothers Receiving Benefit by Location			
	Rural	Urban (Slum)	Urban (Non-slum)	Total
While pregnant/lactating	26.2 (7,142)	9.5 (222)	9.3 (3,461)	20.5 (10,825)
Child immunised	32.7 (7,314)	19.3 (233)	11.6 (3,156)	26.2 (10,703)
Child's health checked	24.4 (7,255)	15.5 (233)	9.0 (3,122)	19.7 (10,610)
Child's food received	27.9 (7,234)	13.4 (232)	8.1 (3,121)	21.8 (10,587)
Child's growth monitored	27.3 (7,222)	15.1 (232)	9.1 (3,119)	21.8 (10,573)
Early/preschool education received	11.3 (7,185)	8.2 (232)	4.4 (3,115)	9.2 (10,532)

Ever married women between 15 and 49 years of age; benefits refer to last birth child; figures in parentheses refer to the total number of valid responses to the question: "Did you or your child receive this benefit from the AWC?". Source: IHDS (2005).

3 Factors Influencing Utilisation of Services

Given that the utilisation rates of ICDS differed between mothers from different caste/religious groups (Table 3), and differed also between mothers of different economic/educational/age-related/location attributes (Tables 4-8), this section estimates the relative strength of the different factors that exercised a significant influence on the utilisation of ICDS. In particular, it enquires whether, after controlling for non-caste/religion factors, there was a significant correlation between mothers' caste/religion and their utilisation rates.

The answers to these questions were provided by estimating logit equations for each of the six ICDS provided through the AWCs – benefits to lactating mothers, children's immunisation, children's health monitoring, children's supplementary feeding, children's growth monitoring, and early education – with the dependent variable for each equation taking the value 1 if the mother utilised that benefit and 0 if she did not.⁷ It should be emphasised that in estimating the logit model, it was not possible, for reasons of multicollinearity, to include all the categories with respect to the variables – the category that was omitted for a variable is referred to as the reference category (for that variable). The explanatory variables for the equations were

- (1) The mother's social group: Christians, Sikhs, and Jains; SCs; STs; OBC Hindu; OBC Muslim; upper-caste Muslim. The reference category was upper-caste Hindu.
- (2) The household income of the mother, as defined by the quintile of total household income, with mothers in households whose income was in the fifth (highest) quintile being the reference category.
- (3) The principal source of the mother's household income – agriculture, labour, or salary, with mothers in households

whose principal source of income was trade comprising the reference category.

(4) The mother's age group: 15-20 years, 21-30 years, and 31-40 years, with mothers aged 41-50 comprising the reference category.

(5) The number of years of schooling of the mother: zero years, 1-5 years, and 6-10 years, with mothers with over 10 years schooling comprising the reference category.

(6) The mother's region of residence: south (Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu); west (Gujarat and Maharashtra); east (Orissa, West Bengal, Assam, and the north-east), north (Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, and Delhi). The central region (Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh, Chhattisgarh, and Jharkhand) was the reference region.

(7) Nature of residential area – urban non-slum, urban slum, and rural, with urban non-slum as the reference category.

A natural question to ask from the logit model is how the probability of utilising a particular service would change in response to a change in the value of one of the variables. These probabilities are termed marginal probabilities. The marginal probability associated with a variable refers to the change in the outcome probability consequent upon a unit change in the value of the variable, the values of the other variables remaining unchanged.⁸ For discrete variables (as, indeed, are all the variables reported above), the unit change in the value of a variable refers to a move from a situation in which the variable takes the value zero to a situation in which the variable takes the value unity, the values of the other variables remaining unchanged.⁹ Therefore, the marginal probability of a SC mother utilising a particular ICDS is:

The probability of utilising the service when all the mothers are SC less

The probability of utilising the service when all of the mothers are from the reference category (upper-caste Hindus), with all the values for the other variables (income, education, etc) held constant at their mean values.

These marginal probabilities are reported in Table 9 (p 57). So, reading across the relevant row of Table 9, remembering that the comparator is mothers from the reference group of upper-caste Hindus, the marginal probabilities for SC mothers were +6 points for lactating mothers; +6 points for immunisation; +4 points for child's health check; +5 points for child's food; +5 points for growth monitoring; and no change for early education. The corresponding figures for ST mothers were higher at +14, +21, +12, +13, and +11 points for, respectively, lactating mothers, immunisation, child's health check, child's food, and child's growth monitoring. Again, the marginal probability associated with early education was zero.

In contrast to the take-up of ICDS by SC and ST mothers, upper-caste Muslim mothers (compared to mothers from the reference group of upper-caste Hindus) were less likely to avail themselves of all ICDS. The marginal probabilities of upper-caste Muslim mothers were -5 points for lactating mothers; -11 points for immunisation; -4 points for child's health checks; -6 points for child's food; -7 points for growth monitoring; and -2 points for early education. Similarly, OBC

Table 9: Marginal Probabilities from Logit Estimates of AWC Benefits: 10,573 Observations

	Lactating Mothers' Benefits			Child Immunised			Child's Health Checked			Food Given for Child			Child's Growth Monitored			Early Education		
	dy/dx	z	P>z%	dy/dx	z	P>z%	dy/dx	z	P>z%	dy/dx	z	P>z%	dy/dx	z	P>z%	dy/dx	z	P>z%
Social group of eligible woman																		
Christians, sikhs, jains and others	-0.09	-5.7	0	-0.09	-3.8	0	-0.07	-3.3	0	-0.13	-8.8	0	-0.10	-5.6	0	-0.05	-7.1	0
Scheduled caste	0.06	4.5	0	0.06	3.8	0	0.04	3.1	0	0.05	3.4	0	0.05	3.4	0	0.00	-0.5	62
Scheduled tribe	0.14	6.8	0	0.21	9.3	0	0.12	5.9	0	0.13	6.4	0	0.11	5.6	0	0.01	0.7	50
Hindu OBC	0.03	2.7	1	0.07	5.4	0	0.03	2.6	0	0.03	2.4	2	0.04	3.2	0	0.00	-0.8	45
Muslim OBC	-0.03	-1.7	8	0.00	-0.1	90	-0.02	-1.0	0	-0.04	-2.6	1	-0.06	-3.8	0	-0.03	-3.6	0
Muslim, upper class	-0.05	-3.4	0	-0.11	-6.8	0	-0.04	-2.4	0	-0.06	-3.8	0	-0.07	-4.7	0	-0.02	-2.6	1
Household income of eligible woman																		
Household income quintile 1	0.03	1.9	6	0.02	1.1	26	0.00	0.2	1	0.03	1.8	7	0.03	1.9	6	0.01	0.9	37
Household income quintile 2	0.03	2.1	3	0.03	1.9	6	0.02	1.4	0	0.04	3.0	0	0.05	3.3	0	0.02	2.5	1
Household income quintile 3	0.03	2.2	3	0.01	0.4	70	0.00	-0.1	1	0.02	1.3	20	0.02	1.3	19	0.01	1.3	18
Household income quintile 4	0.02	1.3	21	0.00	0.1	89	0.00	0.4	1	0.02	1.4	17	0.01	1.0	31	0.01	1.1	27
Main income source of household																		
Agriculture	0.04	3.3	0	0.07	4.5	0	0.05	3.6	0	0.06	3.8	0	0.05	3.6	0	0.02	2.3	2
Labour	0.03	2.2	3	0.01	0.9	36	0.02	1.8	0	0.04	3.3	0	0.04	2.7	1	0.01	1.4	16
Salaried	-0.01	-0.9	35	-0.03	-1.9	6	-0.03	-2.5	0	-0.01	-0.9	37	-0.02	-1.7	9	-0.01	-1.0	34
Age group of eligible woman																		
15-20 years	0.01	0.4	69	0.08	2.0	5	0.06	1.6	0	0.00	0.0	99	0.02	0.6	57	-0.01	-0.8	43
21-30 years	0.00	0.2	88	0.06	2.0	5	0.04	1.4	0	0.01	0.4	69	0.02	0.6	55	0.01	0.3	74
31-40 years	-0.02	-0.8	44	0.04	1.2	24	0.03	1.0	0	-0.01	-0.3	78	0.00	0.1	90	0.03	1.2	23
Education of eligible woman																		
No schooling	0.07	4.5	0	0.12	6.9	0	0.06	3.6	0	0.07	4.1	0	0.04	2.6	1	0.03	3.3	0
1-5 years of schooling	0.10	4.8	0	0.17	7.2	0	0.10	4.8	0	0.10	4.7	0	0.08	4.2	0	0.07	4.1	0
6-10 years of schooling	0.07	4.6	0	0.11	5.7	0	0.06	3.9	0	0.07	4.3	0	0.07	4.2	0	0.04	3.3	0
Region of eligible woman																		
South	0.30	20.4	0	0.24	16.3	0	0.20	13.9	0	0.19	13.3	0	0.14	10.2	0	0.15	12.1	0
West	0.24	14.4	0	0.29	16.4	0	0.26	15.5	0	0.13	8.0	0	0.20	11.9	0	0.14	9.8	0
North	0.23	10.6	0	0.21	10.4	0	0.13	7.2	0	0.19	10.1	0	0.13	7.1	0	0.09	5.7	0
East	0.06	3.8	0	0.09	5.4	0	0.00	0.2	1	0.06	4.1	0	0.04	2.7	1	0.00	-0.3	80
Urban/rural																		
Rural	0.13	16.6	0	0.16	16.5	0	0.12	14.2	0	0.15	18.3	0	0.14	15.9	0	0.05	9.4	0
Urban slum	-0.04	-1.5	15	0.06	1.7	8	0.05	1.4	0	0.06	1.7	9	0.06	1.5	13	0.04	1.6	12

Reference categories – Social group: high-caste Hindus; household income: quintile 5; income by source: trade; education: over 10 years schooling; age: 41-50 years; region: central; location: urban non-slum. Regions by state – South: Andhra Pradesh, Karnataka, Kerala, Tamil Nadu; West: Gujarat, Maharashtra; East: Odisha, West Bengal, Assam, North-East; North: Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi; Central: Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh, Chhattisgarh, Jharkhand.
Source: Estimated using IHDS (2005) data.

Muslim mothers (compared to mothers from the reference group of upper-caste Hindus) were also less likely to avail themselves of some ICDS. The (statistically significant) marginal probabilities of OBC Muslim mothers were -3 points for lactating mothers; -4 points for child's food; -6 points for growth monitoring; and -3 points for early education.

In summary, the results detailed in Table 9 show, after controlling for other factors,¹⁹ the increase in the likelihood of utilising specific ICDS was highest among ST mothers, next highest among SC mothers, next highest among Hindu OBC mothers, next highest among upper-caste Hindu mothers, and lowest among Muslims. So, in terms of reaching mothers from vulnerable groups, the evidence presented here suggests that the ICDS programme is tilted in favour of mothers and children from the STs and the SCs. However, a worrying feature is that the likelihood of utilising ICDS by Muslim mothers was lower than the corresponding likelihood by Hindus. For example, as Table 9 shows, the probabilities of Muslim mothers – upper class or OBC – using all or some of the various ICDS was significantly lower than that for upper-caste Hindu mothers.

Table 9 also shows that mothers whose main source of household income was agriculture or labour were more likely to access all ICDS compared to mothers whose main source of household income was from other sources. Conversely, mothers whose main source of household income was a regular salary were less likely to access ICDS compared to mothers whose main source of household income was from non-salaried sources. Once the source of income had been accounted for, the household income of mothers (with the richest households as the reference category) did not exert a significant effect on their likelihood of accessing ICDS except that (i) the poorest mothers (whose household incomes were in the bottom two quintiles) were more likely to obtain supplementary nutrition for their children from AWCS, relative to mothers from better-off households, and (ii) mothers whose household incomes were in the bottom three quintiles were more likely to access ICDS while they were lactating.

While the age of the mother was not, in general, a significant factor in affecting the likelihood of her accessing ICDS, her level of education was. Compared to mothers with more than 10 years of schooling, mothers with fewer years of schooling

(6-10, 1-5, none) were more likely to access all the ICDS. However, in the latter category, there was hardly any difference between mothers with different levels of schooling (6-10, 1-5, none) in their respective likelihoods of accessing ICDS.

In the context of region, compared to mothers living in the central region (which was the reference region), mothers living in the south had the highest likelihood of accessing ICDS, followed by mothers living in the west and the north. In the context of rural/urban location, compared to mothers in urban areas, rural mothers were much more likely to access ICDS by 13.1 points for lactating mothers; by 15.8 points for immunisation; by 11.8 points for child’s health check; by 15.5 points for child’s food; by 13.9 points for growth monitoring; and by 5.0 points for early education.

3.1 Caste/Religion-Based Probabilities

The basic question that the logit model of income distribution posed was “what is the probability that a mother, with a particular set of characteristics, will, other things being equal, access a particular type of ICDS?” This probability would depend on the mother’s caste/religion and on her non-caste factors. In this section, we set out a methodology for isolating the probability of accessing an ICDS that depends solely on caste/religion and we term these probabilities the caste/religion-based probabilities of accessing ICDS.

To derive these structural probabilities and answer the question, we evaluated the following counterfactual scenarios.

- (1) We first treat all the mothers in the sample as high-caste Hindus (HCH). Suppose that, under this scenario, P_j^{UCH} is the average probability of a mother accessing ICDS $j, j=1, 2, 3, 4, 5, 6$.
- (2) Next, we treat all the mothers in the sample as upper-caste Muslims (HCM). Suppose that, under this scenario, P_j^{UCM} is the average probability of a mother accessing ICDS $j, j=1, 2, 3, 4, 5, 6$.
- (3) Next, we treat all the mothers in the sample as OBC Hindus (OBCH). Suppose that, under this scenario, P_j^{OBCH} is the average probability of a mother accessing ICDS $j, j=1, 2, 3, 4, 5, 6$.
- (4) Next, we treat all the mothers in the sample as OBC Muslims (OBCHM). Suppose that, under this scenario, P_j^{OBCHM} is the average probability of a mother accessing ICDS $j, j=1, 2, 3, 4, 5, 6$.
- (5) Next, we treat all the mothers in the sample as from scs. Suppose that, under this scenario, P_j^{SC} is the average probability of a mother accessing ICDS $j, j=1, 2, 3, 4, 5, 6$.

(6) Next, we treat all the mothers in the sample as from sts. Suppose that, under this scenario, P_j^{ST} is the average probability of a mother accessing ICDS $j, j=1, 2, 3, 4, 5, 6$.

(7) Lastly, we treat all the mothers in the sample as Christians, Sikhs, or Jains (CSJ). Suppose that, under this scenario, P_j^{CSJ} is the average probability of a mother accessing ICDS $j, j=1, 2, 3, 4, 5, 6$.

The differences between the probabilities $P_j^{HCH}, P_j^{HCM}, P_j^{OBCH}, P_j^{OBCHM}, P_j^{SC}, P_j^{ST}$, and P_j^{CSJ} are entirely the result of different sets of coefficients (HCH, HCM, OBCH, OBCHM, SC, ST, and CSJ) being applied to a given set of attributes. These differences may, therefore, be attributed to the unequal responses of mothers – who, except for their caste/religion, are identical in every respect – to various ICDS. Consequently, these probabilities are referred to as caste/religion-based probabilities. They are to be distinguished from the observed proportions of mothers from the different caste/religious groups accessing ICDS. These observed proportions depend on the mothers’ caste/religion and on their non-caste/religion attributes; the caste/religion-based probabilities depend only on the mothers’ caste/religion.

Table 10 shows the structural probabilities for the seven social groups identified in this study. The third row of Table 10 shows that if the entire sample had comprised upper-caste Hindu mothers, the (caste/religion-based) probability of accessing ICDS would have been 18% for lactating mothers, 21% points for immunisation; 17% for child’s health check; 19% for child’s food; 19% for growth monitoring; and 11% for early education.

In contrast, as the fourth row of Table 10 shows, if the entire sample had comprised upper-caste Muslim mothers, the (caste/religion-based) probability of accessing ICDS would have been considerably lower – 13% for lactating mothers, 12% for immunisation; 13% for child’s health check; 14% for child’s food; 12% for growth monitoring; and 18% for early education.

At the other end of the spectrum of structural probabilities, as the eighth row of Table 10 shows, if the entire sample had comprised ST mothers, the (caste/religion-based) probability of accessing ICDS would have been considerably higher – 32% for lactating mothers, 39% for immunisation; 28% for child’s health check; 32% for child’s food; 29% for growth monitoring; and 12% for early education.

Section 2 showed that, judging on the basis of the raw data, the various components of the ICDS programme were tilted in favour of SC and ST mothers. This section delved into

Table 10: Caste/Religion-Based Probabilities (%) of Accessing ICDS by Social Group

Variable	Lactating Mothers			Child Immunised			Child’s Health Checked			Food Given for Child			Child’s Growth Monitored			Early Education		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Upper-caste Hindus	18.2	1.1	51.1	21.2	1.8	59.2	17.0	1.9	53.8	19.2	2.1	47.7	18.8	2.8	49.3	11.2	0.7	43.1
Upper-caste Muslims	13.3	0.7	40.8	11.9	0.9	40.6	13.4	1.4	46.1	13.6	1.4	36.9	12.2	1.6	35.9	7.9	0.5	33.1
OBC Hindus	21.3	1.4	56.7	28.0	2.8	68.7	19.9	2.3	59.1	22.1	2.6	52.6	22.7	3.5	55.7	10.5	0.6	41.2
OBC Muslims	15.5	0.9	45.6	21.0	1.8	58.9	15.4	1.6	50.7	15.1	1.6	40.0	13.1	1.8	38.1	7.0	0.4	30.3
Scheduled castes	24.5	1.7	61.7	26.5	2.5	66.8	21.0	2.5	60.9	23.9	2.9	55.4	23.4	3.7	56.7	10.7	0.7	41.7
Scheduled tribes	31.8	2.6	71.1	39.4	4.9	79.9	27.8	3.7	70.2	31.6	4.4	65.8	29.2	5.0	64.6	12.1	0.8	45.5
Christians, Sikhs, etc	8.7	0.4	29.3	13.1	1.0	43.4	10.6	1.0	39.2	6.0	0.5	18.5	8.7	1.1	27.5	3.1	0.2	15.3

Source: Estimated using IHDS (2005) data.

the non-caste/religion characteristics of mothers – education, household income (amount and main source), age, region of residence, rural/urban location – which, in addition to their social group, determined their likelihood of utilising ICDS. The relevant question that it sought to answer was whether mothers from different caste/religious groups, but with identical non-group characteristics, have different likelihoods of accessing ICDS. As the results of Table 9 and 10 show, after controlling for non-group characteristics, SC and ST mothers were more likely to use ICDS, and Muslim mothers were less likely to use ICDS, compared to the reference group of upper-caste Hindu mothers.

4 Decomposition by Social Group of the Probabilities

From the concluding observations of Section 3 follows a more general question – how much of the mean difference in the utilisation of an ICDS between mothers in the different caste/religious groups is due to differences between them in their (non-group) attributes (attributes contribution)? And how much is due to the fact that the mothers belonged to different groups (caste/religion contribution)? The purpose of this section is to answer these questions with respect to the following binary comparisons – (i) upper-caste Hindu versus SC mothers; (ii) upper-caste Hindu versus Muslim mothers; (iii) upper-caste Hindu versus OBC Hindu mothers.

In the estimation results reported in Table 9, the group effects operated entirely through the intercept terms with the slope coefficients being unaffected by the mothers' social groups. The implication was that the marginal probabilities associated with the variables – say, the effect of education on the utilisation of ICDS – was the same for upper-caste Hindu mothers as it was for SC mothers. This assumption is now relaxed by estimating the six equations, as specified in Table 9, separately for mothers who were upper-caste Hindu, Muslim, SC and OBC Hindu.

After doing so, the difference between the reference group of upper-caste Hindu mothers and mothers from group x (Muslim, SC or OBC Hindu), in their respective mean utilisation rates of a specific ICDS, was decomposed into an “attributes contribution” and a “caste/religion contribution” using the method of Oaxaca (1973) as applied to models of discrete choice (Sinning, Hahn and Bauer 2008). The attributes contribution was computed by asking what the difference between upper-caste Hindu mothers and mothers from group x, in their proportions accessing ICDS, would have been if the difference in attributes between them had been evaluated using a common coefficient vector. The caste/religion contribution was computed as a residual as the observed difference less the attributes contribution – this could be ascribed to the “structural advantage/disadvantage” that mothers from one group enjoyed over those from group x. Note that we do not, and cannot, say where the source of this structural advantage lies. It could result from a tilt by AWCs towards mothers from certain groups and/or it could be the consequence of upper-caste Hindu mothers opting out of using ICDS.

The percentage contributions of attributes and caste/religion to the overall difference in utilisation rates between upper-caste Hindu mothers and mothers from group x are shown in Table 11 for five AWC services.¹¹ This table shows the decompositions obtained by using the upper-caste Hindu coefficient estimates (that is, the estimates obtained when the equation was estimated over the observations pertaining to upper-caste Hindu mothers) as the common coefficient vector.

Table 11 shows that for lactating mothers there was a 5.4 percentage point (pp) gap between upper-caste Hindu and (all) Muslim mothers in their utilisation of ICDS. Of this gap, 13% could be explained by that Hindu and Muslim (non-religious) attributes were different and 87% was due to the difference in religion. However, of the 7 point gap between (upper-caste) Hindu and Muslim mothers in their utilisation of ICDS for immunising their children, 48% could be explained by that Hindu and Muslim attributes were different and 52% was due to the difference in religion. Similarly, of the 7.7 point gap between (upper-caste) Hindu and Muslim mothers in their utilisation of ICDS for monitoring the growth of their children, 29% could be explained by that Hindu and Muslim attributes were different and 71% was due to the difference in religion.

In terms of upper-caste Hindus and SC mothers, Table 11 shows that in respect of lactating mothers there was a -8.6 pp gap between upper-caste Hindu and SC mothers in their utilisation of ICDS. Of this gap, 49% could be explained by that Hindu and

Table 11: Decomposition Results between Upper-Caste Hindu Mothers and Mothers from Other Groups

	Lactating Benefits*	Immuni-sation	Health Check	Supple-mentary Food	Growth Monitored
Upper-caste Hindus versus Muslims					
Inter-group difference					
in average utilisation rates (pp)	5.4	7.0	5.4	5.6	7.7
Attributes contribution** (%)	13	48	40	32	29
Caste/religion contribution*** (%)	87	52	60	68	71
Upper-caste Hindus versus SC					
Inter-group difference					
in average utilisation rates (pp)	-8.6	-7.2	-4.5	-8.9	-6.7
Attributes contribution** (%)	49	3	0	48	13
Caste/religion contribution*** (%)	51	97	100	52	87
Upper-caste Hindus versus OBC Hindu					
Inter-group difference					
in average utilisation rates (pp)	-5.7	-9.2	-4.5	-5.5	-5.8
Attributes contribution** (%)	35	18	23	26	11
Caste/religion contribution*** (%)	65	72	77	74	89

* Decompositions were computed using upper-caste Hindu coefficients;

** difference in average utilisation rates due to inter-group differences in attributes as a percentage of the overall difference;*** difference in average utilisation rates due to differences in caste/religion as a percentage of the overall difference.

Source: Estimated using IHDS (2005) data.

SC (non-caste) attributes were different and 51% was due to the caste difference. Similarly, of the -5.6 pp gap between (upper-caste) Hindu and SC mothers in their utilisation of ICDS for providing supplementary nutrition for their children, 48% could be explained by that upper-caste Hindu and SC attributes were different and 52% was due to the caste difference.

However, of the -7.2 pp gap between (upper-caste) Hindu and SC mothers in their utilisation of ICDS for immunising their children, only 3% could be explained by that upper-caste

Hindu and sc attributes were different and 97% was due to the caste difference. Similarly, of the -4.5 pp gap between (upper-caste) Hindu and sc mothers in their utilisation of ICDS for checking the health of their children, the entire difference was due to the caste difference.

5 Link between Quality of ICDS and Utilisation

As the previous sections showed, the evidence is that the utilisation rate of ICDS was higher for mothers and children from “vulnerable” groups (sc and st) compared to those from relatively “privileged” groups (upper-caste Hindus). If this was purely a supply-side effect, such that these services were directed towards vulnerable groups (and away from privileged groups), then the AWCS could be credited for this “socially responsible” orientation of ICDS. However, if mothers from the privileged group, relative to those from the vulnerable group, spurned ICDS, then the higher utilisation of ICDS by the latter would arise because of demand-side effects. Mothers and children from privileged group would not utilise ICDS – not because they could not, but because they did not wish to do so. This effect could arise if it was generally perceived that the quality of ICDS was poor compared to that of equivalent “market-provided” services. Then, in the face of this general perception of quality difference, it would be persons from the privileged group, with their superior resources, who were more able and willing to buy the higher quality service.

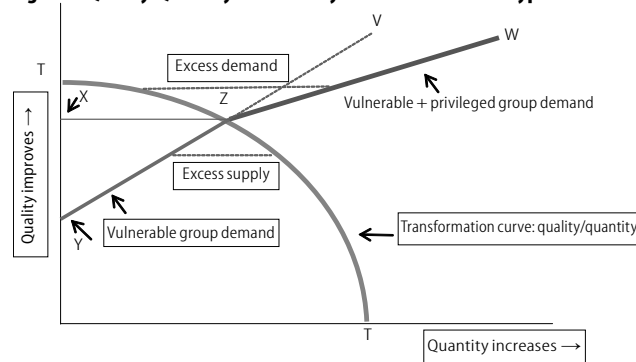
There is a considerable amount of evidence about the poor quality of ICDS, particularly with respect to supplementary feeding and early education. Davey et al (2008), in interviews with 200 users of ICDS at 20 AWCS in Delhi, reported that a majority (53%) of respondents were dissatisfied with the quality of services provided, the highest levels of dissatisfaction being recorded with the location of, and space available in, AWCS (69% of respondents), the poor quality of food distributed (67% of respondents), and irregular preschool education (57% of respondents). Qadiri and Manhas (2009) in a study of 200 parents in the Kashmir Valley found that 71% of parents regarded AWCS as “ill-equipped to provide preschool education. The teachers are not properly trained ... and there is no proper schedule or curriculum.” Dhingra and Sharma (2011) in a random sample of 60 AWCS in Jammu and Kashmir pointed to the lack of adequate facilities “in terms of space (both indoor and outdoor), quality of accommodation, drinking water and toilet facilities, furniture and fixtures and teaching learning material in AWCS”. In a World Bank report, Gagnolati et al (2005) also drew attention to the poor facilities at AWCS – most have no toilet facilities and cooking space is inadequate – and to supply-side inadequacies, “especially issues of access, information, and irregularity of food supply”. Moreover, they point out, in the context of the supplementary nutrition component of the ICDS programme, that “field studies have shown that food is sometimes badly cooked, dry, and salty and should be supplemented by sugar, rice, or vegetables to be more wholesome and palatable to children”.

The idea that faced with a drop in product quality some customers abandon a product for a competing product, while

other customers remain loyal to it (perhaps, at the same time, voicing their discontent) has been analysed by Hirschman (1970). On the basis of his “exit-voice” theory of market behaviour by consumers, the provision of ICDS poses a conundrum. If they are to be directed towards vulnerable mothers and their children, the quality of the services needs to be low for it is low quality that keeps away mothers from privileged groups. On the other hand, any attempt to raise the quality of services will attract mothers from privileged groups and erode the accessibility of vulnerable group mothers.

With fixed resources, ICDS providers have to choose an appropriate mix of quality and quantity of a service – lower service quality means more of the service can be provided, but attempts to raise quality means that service quantity has to be reduced. In Figure 1, below the curve $\pi\pi$ is the trade-off between quality and quantity – the slope of $\pi\pi$ represents the rate at which, at the margin, quality can be transformed into quantity.¹² The points x and y represent the minimum acceptable quality levels to mothers from the privileged and vulnerable groups, respectively. Mothers from privileged groups will not use the service at or below quality x and mothers from vulnerable groups will not use the service at or below quality y .

Figure 1: Quality-Quantity Trade-off by Different Customer Types



The line yzv represents demand for the service by mothers from the vulnerable group. The segment yz of this line also represents market demand since, up to z , demand by mothers from the privileged group is zero. After z , when demand by mothers from the privileged group is positive, market demand is represented by zw – for any quality level, market demand (zw) exceeds demand by mothers from the vulnerable group (zv) by the amount of demand by mothers from the privileged group.

So, for a level of quality between points y and x , there is excess supply – supply by the government exceeds demand by mothers from the vulnerable group. For the quality level represented by the point x , demand equals supply. Lastly, for quality levels in excess of that that at x , there is excess demand – demand by mothers from both groups in sum exceed total supply.

5.1 Universal Utilisation of ICDS

We have suggested that a good ICDS programme would be one in which mothers from privileged groups participate less and mothers from vulnerable and marginalised groups participate

more, consistent with a satisfactory quality of ICDS. While it makes sense to direct limited government resources to needier groups, two questions arise. First, are the resources limited? Or is the bigger problem that most allocated resources do not make it to the village level? Second, it may be that including better-off and more powerful groups in a programme would improve the quality of services for everyone. In this section, we address this question.

The central vigilance committee (CVC) on the public distribution system (PDS) appointed by the Supreme Court has said that the criteria for selection of below the poverty line (BPL) households is inappropriate (Seventh Report 2007). The finding of the CVC shows that there are a large number of inclusion and exclusion errors in the provision of BPL and Antodaya Anna Yojana (AAY) cards. The latest (61st) round of the National Sample Survey Office (NSSO) shows almost a fourth of the poorest families in the country do not have access to any ration card. The other alarming fact is that 16.8% of households in the highest income quintile have BPL cards, while only 49% of households in the lowest income quintile have BPL or AAY cards (ibid).

These facts show that government programmes targeted towards BPL households have inherent problems in directing services towards people in need. Access to subsidised food by the poor after the introduction of the targeted public distribution system (TPDS) has worsened at an all-India level. The TPDS performs poorly not only in terms of its objective of providing services for the poor, but also in terms of programme implementation, and is marked by leakages and corruption. But in states like Tamil Nadu, Andhra Pradesh, Odisha and Chhattisgarh, where the PDS is universal or quasi-universal, it covers poor people in need of subsidised grains (Himanshu 2013).

Further, the literature on the implementation of “universal” programmes shows all poor and needy children are included in the programme (Seventh Report 2007). Mid-day meals (MDMs), which is another universal programme covering all the children going to school from classes 1 to 8, provides an opportunity for children from marginalised section to be included (Harris-White 1994), and, consequently, poor and the marginalised children are ensured one full meal a day. Universality also means that there is pressure from the public to improve the quality of MDMs and governments respond to such pressure. For example, the MDM menu in Tamil Nadu consists of a variety of food (including eggs provided two to three times a week). Even small problems in the programme are reported by the media, placing the government under pressure to offer immediate redress. In the 1990s, attempts to target the PDS in Tamil Nadu met with public resistance and, in consequence, it was made “universal” (Harris-White 2004).

Before 2006, the ICDS programme was only for a limited number of beneficiaries. However, a Supreme Court order dated 13 December 2006 declared that the “universalisation of the ICDS involves extending all ICDS to every child under the age of six, all pregnant women and lactating mothers and all adolescent girls.” Dreze’s (2006) study finds that after the Supreme Court judgment, the number of AWCs increased

without any commensurate importance being given to improvement in the quality of services. Consequently, many of the eligible beneficiaries opted out. There is an urgent need to improve the quality of ICDS along with extending its coverage to make it universal (ibid).¹³

6 Conclusions

The ICDS programme, which addresses the issues of early education, malnutrition, and morbidity, is an imaginative response by the Indian government to the multifaceted challenge of providing for the health and development of children and their mothers. In its implementation, however, the programme embodies several inequalities. Although the ICDS policy stipulates that there should be one AWC per 1,000 persons (and 700 persons in tribal areas), the coverage is much better in wealthier states. As Gagnolati et al (2005) show, ICDS coverage by state rises with per capita net state domestic product (NSDP). Five states with the highest prevalence of underweight children – Bihar, Madhya Pradesh, Odisha, Rajasthan and Uttar Pradesh – have the lowest coverage. At the same time, states such as Manipur, Mizoram and Nagaland, which have a low prevalence of under nutrition, have high ICDS coverage.

The second type of inequality is in the distribution of AWCs within states. In 1998, while only half the villages from the lowest two deciles of wealth distribution had AWCs, the ICDS programme covers 80% of the richest villages in India (Gagnolati et al 2005). The third type of inequality is locational inequality within a village. Mander and Kumaran (2006) have observed that, in mixed-caste villages, the ICDS centre is never located in the SC or ST hamlet.

The fourth type of inequality is based on excluding – or, more accurately, restricting – persons from certain groups from using ICDS. Mander and Kumaran (2006) provide a comprehensive account about the forms that such exclusion/restriction take. To a large extent, this involved the attitude of the service provider. AWC workers might be reluctant to collect children from lower-caste hamlets; or they might be reluctant to enrol children from the lower castes if there is an overall ceiling on enrolment; or lastly, lower-caste parents might be anxious about how their children will be treated at the AWC.

However, notwithstanding the validity and, indeed, importance, of these points, the evidence is that, for whatever reasons, SC and ST mothers were more likely – and Muslim mothers less likely – to use ICDS compared to upper-caste and OBC Hindu mothers. This suggests that there is a complexity of factors underlying the observed outcome in terms of group beneficiaries. First, leavening the accounts of exclusion, there might be enlightened and progressive persons involved in the delivery of ICDS who actively promote the usage of these services by SC and ST mothers. Second, there might be the perception among upper-caste Hindu mothers that the quality of ICDS is poor, in particular, in supplementary nutrition and preschool education. Recognising the importance of these services, they would prefer to obtain them elsewhere. So, while the AWC might, as a symbol of caste power, be located in the “main” village where the upper castes reside, it would be

used relatively lightly by upper-caste mothers. This is Hirschman's (1970) "exit response" to poor quality products.

Unfortunately, Hirschman's other idea of a "voice response" – those that remain in the market express their discontent over poor product quality and, thereby, effect improvement – does not carry much credibility when it comes to ICDS. First, there is a reluctance to even voice discontent. After surveying 14 villages in four states, Mander and Kumaran (2006) remarked on the reluctance of villagers to criticise AWCs, preferring, instead, to deflect blame to themselves. Second, given the nature of the

caste hierarchy in rural India, remaining silent in the face of bureaucratic high-handedness is probably a rational strategy for the lower castes since expression of discontent, rather than resulting in service improvements à la Hirschman (1970), are more likely to result in a denial of service. Third, even if the voice of the deprived was heard, and quality improvements in ICDS resulted, this would lead to the upper classes entering the market for ICDS and, thereby, pushing out those for whom these services were intended. That is the Catch-22 of the ICDS programme.

NOTES

- 1 These amounted to Rs 100 and Rs 150 per month for non-matriculate and matriculate workers and Rs 35 per month for helpers.
- 2 F NO 5-9/2005/ND/Tech (Vol III), Government of India, MWCD, dated 24 February 2009.
- 3 The central government provides funds for both the SNP and non-SNP components. The total amount per beneficiary (both SNP and non-SNP) is Rs 1.59, increased to Rs 1.98. Of the total amount for the SNP component, the central government sanctioned Re 0.59, increased to Re 0.72. The remaining Re 1 went to the non-SNP component. The SNP component is supposed to be shared equally between the state and the central governments.
- 4 This last point is particularly worrying since the government describes preschool education as the "backbone of the ICDS programme". See <http://wcd.nic.in/icds.htm>
- 5 These figures are also consistent with those from other sources. For example, Thorat and Sadana (2009), using National Family Health Survey data, showed that 36% of SC and 50% of ST children received at least one service from an AWC, compared to 30% of OBC and 28% of "other" children.
- 6 For example, 29.6% of the last born children of Hindu OBC mothers, compared to only 17.9% of the last born children of Muslim OBC mothers, were immunised at AWCs.
- 7 The logit equation is $\frac{Pr(\text{utilisation}_j = 1)}{Pr(\text{utilisation}_j = 0)} = \exp \left\{ \sum_{k=1}^K X_{jk} \beta_j \right\} = \exp \{z_j\}$ for M coefficients, $\beta_j, j=1..M$ and for observations on K variables.
- 8 More formally, $Pr(\text{utilisation}_j = 1) = \frac{e^{z_j}}{1 + e^{z_j}}$ and the marginal probability with respect to variable k is: $\frac{\partial Pr(\text{utilisation}_j = 1)}{\partial X_{jk}}$
- 9 In the calculations reported here, the values of the other variables were held at their mean values in the sample.
- 10 These were mother's education, household income, main source of household income, age, region of residence, and rural/urban location.
- 11 There was hardly any difference between the utilisation rates of the two groups for preschool education.
- 12 That is, how much of quality one would have to give up to get an additional unit of quantity.
- 13 Tamil Nadu leads the way in nutrition programmes for children with the first nutrition programme starting in 1956. The quality of ICDS in Tamil Nadu is considered better than in most other states (Rajivan 2006). Similarly, in Andhra Pradesh, forming village-level committees involving different stakeholders to monitor the programme has helped to improve the quality of the ICDS and make it cater to eligible beneficiaries (S Sinha 2006).

REFERENCES

- Davey, A, S Davey and U Datta (2008): "Perception Regarding Quality of Services in Urban ICDS Blocks in Delhi", *Indian Journal of Public Health*, 52 (3): 156-58.
- Desai, S, R Vanneman and National Council of Applied Economic Research (2009): "India Human Development Survey (IHDS), 2005", ICPSR22626-v5, Inter-University Consortium for Political and Social Research, Ann Arbor, MI; DOI: 10.3886/ICPSR22626.
- Thingra, R and I Sharma (2011): "Assessment of Preschool Component of ICDS Scheme in Jammu District", *Global Journal of Human Science*, 11 (6): 13-18.
- Diwakar, G D (2010): "Critical Appraisal of ICDS Programme: Budget and Resource Analysis", *Journal of the Madras School of Social Work*, Special Edition II: 133-46.
- (2011): "Relevance of ICDS Programme in Post-liberalisation Period in Addressing the Malnutrition among 0-6 Years Children: A Case Study of Kancheepuram District, Tamil Nadu" in Sigamani and N U Khan (ed.), *Reinventing Public Management and Development in Emerging Economies*, Advanced Research Series, Macmillan, New Delhi, 55-74.
- Dreze, Jean (2006): "Universalisation with Quality ICDS in a Right Perspective", *Economic & Political Weekly*, Vol 41, No 34: 3706-15.
- FOCUS (2009): *Focus on Children under Six*, Citizens' Initiative for the Rights of Children under Six (CIRCUS), New Delhi.
- Gill, K (2012): "Promoting 'Inclusiveness': A Framework for Assessing India's Flagship Social Welfare Programs", Social Policy Working Paper Series 2, UNICEF, New Delhi.
- Ghosh, S (2006): "Food Dole or Health, Nutrition, and Development Programme", *Economic & Political Weekly*, Vol 41, No 34, pp 3664-66.
- Gragnotati, M, M Shekar, M Das Gupta, C Bredenkamp, Y-K Lee (2005): *India's Undernourished Children: A Call for Reform and Action*, World Bank, Washington DC.
- Harris-White, Barbara (1994): *Child Nutrition and Poverty in South India* (New Delhi: Concept Publishers).
- (2004): "Nutrition and Its Politics in Tamil Nadu", *South Asia Research*, 51-71.
- Himanshu (2013): "Food Security in India", ADB Working Paper Series No 369, Asian Development Bank, Manila.
- Hirschman, A O (1970): *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organisations, and States* (Cambridge, Massachusetts: Harvard University Press).
- Human Development Sector (2004): *Reaching Out to the Child: An Integrated Approach to Child Development*, World Bank, Washington DC.
- Kapil, U and R Pradhan (1999): "Integrated Child Development Services Scheme (ICDS) and Its Impact on the Nutritional Status of Children", *Indian Journal of Public Health*, 43 (1): 21-25.

- Mander, H and K Kumaran (2006): "Social Exclusion in ICDS: A Sociologist Whodunit", available at <ftp://ftp.solutionexchange.net.in/public/food/resource/res15071101.pdf>
- Nayak, N and N C Saxena (2006): "Implementation of ICDS in Bihar and Jharkhand", *Economic & Political Weekly*, Vol 41, No 34, pp 3680-84.
- Oaxaca, R (1973): "Male-Female Wage Differentials in Urban Labor Markets", *International Economic Review*, 14, 693-709.
- Planning Commission (2008): *Eleventh Five Year Plan, 2007-2012: Vol 1 Inclusive Growth* (New Delhi: Oxford University Press).
- Qadiri, F and S Manhas (2009): "Parental Perception towards Preschool Education Imparted at Early Childhood Education Centres", *Studies on Home and Community Science*, 3 (1): 19-24.
- Rajivan, A K (2006): "ICDS with a Difference", *Economic & Political Weekly*, Vol 41, No 34, pp 3685-88.
- Sen, A K (1998): *On Economic Inequality* (Delhi: Oxford University Press).
- Seventh Report (2007): Seventh Report of the Commissioners of the Supreme Court in *PUCL vs UOI and Others*; Writ Petition (Civil) No 196 of 2001, November.
- Sinning, M, M Hahn and T K Bauer (2008): "The Blinder-Oaxaca Decomposition for Non-linear Regression Models", *Stata Journal*, 8: 480-92.
- Sinha, Dipa (2006): "Rethinking ICDS: A Right Based Perspective", *Economic & Political Weekly*, Vol 41, No 34, pp 3689-84.
- Sinha, S (2006): "Infant Survival: A Political Challenge", *Economic & Political Weekly*, Vol 41, No 34, 3657-60.
- Sundaraman, T (2006): "Universalisation of ICDS and Community Health Worker Programmes: Lessons from Chhattisgarh", *Economic & Political Weekly*, Vol 41, No 34: 3674-79.
- Tandon, B N and N Gandhi (1992): "Immunisation Coverage in India for Areas Served by the Integrated Child Development Services Program", *Bulletin of the World Health Organisation*, 70 (4): 461-65.
- Thorat, S and N Sadana (2009): "Discrimination and Children's Nutritional Status in India", *IDS Bulletin*, 40 (4): 25-29.

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