

Tackling Female Infanticide and Sex Selection in Tamil Nadu: A Failure?

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This response to “Declining Child Sex Ratio and Sex Selection in India: A Demographic Epiphany” (EPW, 18 August 2012) argues that contrary to the assertion in that article, state and non-governmental organisation interventions seem to have played an important role in reversing the decline in the 0-6 sex ratio in Tamil Nadu.

This note is motivated by the article, “Declining Child Sex Ratio and Sex Selection in India: A Demographic Epiphany” by Perwez, Jeffery and Jeffery (2012). While other authors (Jean Dreze and Anand Shrivastava, EPW, 22 September 2012) have commented on the authors’ thesis that factors other than sex selection may be responsible for the decline in the child sex ratio (CSR), the focus of this note is on the last two sentences of the paper. In these sentences, the authors suggest that data sets on a specific family type and its actions are needed in order to understand the decline in the CSR. They go on to note that, “The failure of Tamil Nadu government in tackling female infanticide and sex-selective abortion is a clear reminder on this” (p 76). The paper provides no basis for their assertion. Indeed, available evidence suggests the contrary.

In a series of papers (for instance, see Srinivasan and Bedi 2011), we have analysed patterns in infant mortality rates (IMR), sex ratios at birth (SRB) and child (0-6) sex ratio in Tamil Nadu as well as the various interventions launched by the state government and non-governmental organisations (NGOs) since 1992, the changing intensity of these interventions over time and across districts. Briefly, between 1961 and 2001, the 0-6 sex ratio in Tamil Nadu fell from 985 to 942, with the decline being much sharper in rural areas. At the district level, the decline has been particularly pronounced in Salem, Dharmapuri and Madurai (see also Vella and Oliveau 2005).

Following the Census 2001 finding that the 0-6 sex ratio in Tamil Nadu had declined from 948 in 1991 to 942, the

Government of Tamil Nadu reintroduced a set of interventions it had launched in the early 1990s to tackle female infanticide. These interventions, namely the Cradle Baby Scheme (CBS), the Girl Child Protection Scheme (GCPs) and other legal actions were modified, strengthened and scaled up to cover the entire state to tackle female infanticide, neglect and sex selection. This was in addition to NGO efforts in specific districts.

Based on the post-2001 intensity of government and NGO interventions, districts may be classified into a set of five heavily treated districts (Dharmapuri, Madurai, Namakkal, Salem and Theni), in the sense that these districts were targeted by three government (CBS, GCPs, and legal action) and NGO interventions. Other districts were either lightly treated (access mainly to government schemes such as CBS, GCPs and legal action but not targeted by NGO interventions) or minimally treated (access to the CBS, and GCPs but no legal action and no NGO interventions).

Assessing Intervention

In order to assess the effects of interventions, in our papers, we use a range of data sources to analyse changes in male-female differences in infant mortality, changes in SRB and changes in the CSR before and after the intensification of interventions, that is, before and after 2001 and across the districts, that is, comparing heavily treated districts with other districts. While details are available in these papers, three points are worth noting:

First, based on the vital event surveys (VES), conducted by the state government, we find that between 1999 and 2003, there is a sharp decline in male-female differences in infant mortality, especially in rural Tamil Nadu (Table 1, p 81). The same pattern of decline is visible in data available from the Sample Registration Surveys (SRS) (Table 2, p 81), although the absolute levels differ. A detailed intra-state analysis of the VES data clearly shows that the decline may be attributed to the heavily treated districts, particularly Salem and

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Dharmapuri (Table 2, and Srinivasan and Bedi 2011).

Second, since the focus was mainly on tackling female infanticide, it is possible

that the decline in male-female differences in infant mortality may have been accompanied by a decline in the SRB. As shown in Table 3, there is no evidence

Table 1: IMRs and Post-birth Daughter Deficit Rates in Tamil Nadu

Year	IMR				IMR				IMR			
	Tamil Nadu				Urban Tamil Nadu				Rural Tamil Nadu			
	Male	Female	Expected Female	Deficit	Male	Female	Expected Female	Deficit	Male	Female	Expected Female	Deficit
1996	31.7	33.9	25.4	8.5	18.1	14.2	14.5	0.3	37.4	42.1	29.9	12.2
p-value ^a				(0.000)				(0.854)				(0.000)
1997	36.5	39.2	29.2	10	20.8	16.5	16.6	0.1	43.4	49.1	34.7	14.4
p-value ^a				(0.000)				(0.927)				(0.000)
1998	38.4	43.1	30.7	12.4	24.2	19.9	19.3	0.6	44.4	53.2	35.5	17.7
p-value ^a				(0.000)				(0.620)				(0.000)
1999	36.6	40.8	29.3	11.5	28.6	24.7	22.9	1.79	39.8	47.5	31.9	15.6
p-value ^a				(0.000)				(0.177)				(0.000)
2003	29.7	29.2	23.7	5.4	23.7	21	19	2.02	32.1	32.5	25.7	6.9
p-value ^a				(0.000)				(0.111)				(0.000)

IMR is defined as the number of infant deaths (age 0-365 days) per 1,000 live births. Figures are based on the VES. Deficit rate (post-birth daughter deficit per 1,000 live female births) is defined as the gap between the estimated female IMR and the expected female IMR (0.8* male IMR).

^aH₀: Female IMR is equal to the expected female IMR or the post-birth daughter deficit rate is equal to zero.

Table 2: IMRs Based on the SRS

Year	IMR				IMR				IMR			
	Tamil Nadu				Rural Tamil Nadu				Urban Tamil Nadu			
	Male	Female	Expected Female	Deficit	Male	Female	Expected Female	Deficit	Male	Female	Expected Female	Deficit
1997	48	57.3	38.4	18.9	33.9	47	27.1	19.9	54.5	62.3	43.6	18.7
1998	48.3	58.1	38.6	19.46	40	39.5	32	7.5	52.1	65.9	41.7	24.2
1999	50.3	54.5	40.2	14.26	33.8	45.71	27.0	18.1	57.5	58.8	46	12.8
2000	48.5	53.7	38.8	14.9	39.7	37.1	31.8	5.3	52.6	60.7	42.1	18.6
2001	45	54	36	18	33	38	26.4	11.6	50	61	40	21
2002	46	43	36.8	6.2	—	—	—	—	—	—	—	—
2003	44	41	35.2	5.8	32	31	25.6	5.4	50	46	40	6

IMR is defined as the number of infant deaths (age 0-365 days) per 1,000 live births. Figures are from the SRS, various bulletins, office of the Registrar General of India. Deficit rate (post-birth daughter deficit per 1,000 live female births) is defined as the gap between the estimated female IMR and the expected female IMR (0.8* male IMR).

Table 3: SRB in Tamil Nadu

Year/Statistic	SRB		SRB		SRB	
	Tamil Nadu		Urban Tamil Nadu		Rural Tamil Nadu	
1996	925		928		924	
(95% C I)	(916-934)		(912-945)		(913-934)	
Female births/male births	77,894/84,221		23,027/24,817		54,867/59,404	
1997	947		937		951	
(95% C I)	(938-955)		(922-953)		(940-961)	
Female births/male births	86,272/91,143		26,179/27,930		60,093/63,213	
1998	937		951		930	
(95% C I)	(928-945)		(935-968)		(920-941)	
Female births/male births	84,409/90,127		25,636/26,943		58,773/63,184	
1999	933		955		924	
(95% C I)	(924-942)		(940-972)		(914-934)	
Female births/male births	87,137/93,402		25,538/26,716		61,599/66,686	
2001 ^a	935		960		919	
Female births/male births	4,32,923/4,62,842		1,77,230/1,84,609		2,55,693/2,78,233	
2003	944		954		940	
(95% C I)	(935-953)		(937-971)		(929-951)	
Female births/male births	83,255/88,172		24,290/25,466		58,965/62,706	

The sex ratio at birth is defined as the number of female live births per 1,000 male live births. Figures are based on the VES except for 2001. CI stands for confidence interval.

^a Based on data from Census 2001.

Table 4: District-Specific Changes in 0-6 Sex Ratio in 2001 and 2011, Tamil Nadu

	0-6 Sex Ratio 2011 (1)	0-6 Sex Ratio 2001 (2)	Change in 0-6 Sex Ratio 2001 to 2011 (3)
Tamil Nadu	946	942	4
Ariyalur	892	949	-57
Chennai	964	972	-8
Coimbatore	963	968	-5
Cuddalore	895	957	-62
Dharmapuri	911	826	85
Dindigul	942	930	12
Erode	956	935	21
Kancheepuram	967	961	6
Kanyakumari	961	968	-7
Karur	946	930	16
Krishnagiri	924	905	19
Madurai	939	926	13
Nagapattinam	961	963	-2
Namakkal	913	889	24
Nilgiris	982	979	3
Perambalur	913	937	-24
Pudukkottai	959	955	4
Ramanathapuram	967	964	3
Salem	917	851	66
Sivaganga	961	952	9
Thanjavur	957	959	-2
Theni	937	891	46
Thirunelveli	964	957	7
Thiruvallur	954	957	-3
Thiruvannamalai	932	948	-16
Thiruvarur	962	970	-8
Thuthukkudi	970	953	17
Tiruchirappalli	952	955	-3
Tiruppur	951	954	-3
Vellore	944	943	1
Viluppuram	938	961	-23
Virudhunagar	962	958	4

Figures are based on Census 2001 and Census 2011 data. Text in Bold indicates heavily treated districts.

of a decline in SRB between 1999 and 2003. The table also shows that the SRB based on the VES data in the other years is not statistically significantly different from the SRB-based on Census 2001.

Third, to update our analysis, which is based mainly on VES data collected between 1996 and 2003, we examined changes in the CSR, using Census 2001 and Census 2011 data. These data show that while 27 of the 35 states/union territories (UTs) exhibit a decline in this ratio, Tamil Nadu is among the exceptions. In Tamil Nadu, for the first time since 1961, the 0-6 ratio has increased from 942 in 2001 to 946 in 2011. While the change may seem small, a district-level analysis of the source of

the increase, coupled with the knowledge of the various post-2001 interventions reveals a clear picture (Table 4, p 81). The sharpest increases in the CSR emanate from the heavily treated districts. For instance, Dharmapuri experienced an 85-point increase, followed by Salem, Theni and Namakkal with increases of 66, 46 and 24 points respectively. (For a more detailed analysis, see Srinivasan and Bedi forthcoming).

Taken together, the points made above lead to the conclusion that the increase in the CSR experienced in Tamil Nadu between 2001 and 2011 may be attributed mainly to a decline in gender differences in infant mortality accompanied by a stable sex ratio at birth. In geographic terms, it can be credited to the five heavily treated districts. Far from being a failure, the interventions

pursued by the state and NGOs are likely to have played an important role in reversing the decline in the 0-6 sex ratio in Tamil Nadu.¹

A few words of clarification: it is not our objective to defend the Government of Tamil Nadu or NGOs and their efforts, and indeed we have commented extensively on the various interventions, their strengths and limitations (Srinivasan and Bedi 2011). Whatever may be our reservations about these schemes, based on the evidence, it is hard to dismiss the salubrious link between the interventions and changes in the child sex ratio.

NOTE

- ¹ Narayana (2008) also argues in favour of a policy-induced decline in gender differences in infant mortality in Tamil Nadu.

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