Fertility decline and worsening gender bias in India: Is Kerala no longer an exception?

By: S. Irudaya Raja, S. Sudha, and P. Mohanachandran

This is the peer reviewed version of the following article:

Irudaya Rajan, S., Sudha S., & Mohanachandran, P. (2000). Fertility decline and worsening gender bias in India: Is Kerala no longer an exception? *Development and Change, 31*, 1085-1092. https://doi.org/10.1111/1467-7660.00190

which has been published in final form at https://doi.org/10.1111/1467-7660.00190. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions.

Abstract:

In this brief note, we examine the notion that Kerala state in Southern India remains a (comparative) bastion of female equality, as evidenced by 'normal' sex ratios at birth and by child survival while fertility declines. Recent studies show that much of India seems to be moving toward increased male bias during fertility and mortality decline and socio-economic development. Does Kerala remain an exception to this trend?

Keywords: Kerala | India | gender bias | demographics

Article:

In this brief note, we examine the notion that Kerala state in Southern India remains a (comparative) bastion of female equality, as evidenced by 'normal' sex ratios at birth and by child survival while fertility declines. Recent studies show that much of India seems to be moving toward increased male bias during fertility and mortality decline and socio-economic development. Does Kerala remain an exception to this trend?

Development, Fertility Decline, and Increased Gender Bias

Discrimination against girls and women in India is well known and much research has documented the resulting excess female child mortality (see, for example, Das Gupta, 1987; Dyson, 1988). Some suggest that since bias against females most affects later-born girls within a family, with a trend of declining fertility and fewer children born per woman, one would expect improved female survival and a reduction in the gender gap in child mortality. Indian data do not support this suggestion. Instead, it appears that although fertility has declined and child mortality for both sexes has decreased, female disadvantage persists and may have become more widespread, even reaching the hitherto more egalitarian South.

Three recent pieces of research, using evidence from a variety of sources, report that discrimination against girls has increased in India during development and fertility- and mortality-decline. Das Gupta and Mari Bhat (1997) analyse juvenile sex ratios (0–4 years), mortality sex ratios, and fertility decline in the period 1981 to 1991. They conclude that parents are not substituting prenatal for postnatal discrimination against unwanted girls but are combining these two strategies. Basu (1999) examines fertility decline and gender imbalance in North and South India and concludes that the southern state of Tamil Nadu is moving toward a North Indian pattern of female disadvantage in survivorship. Sudha and Irudaya Rajan (1999) estimate period sex ratios at birth for 1981–91, and examine sex ratios of child mortality risk. They argue that social and economic development worsened the situation of women in India and increased preference for male children. This is reflected in the increased masculinity of sex ratios at birth (indicating sex selective abortion), resurgent female infanticide, and persistent excess female child mortality. All these studies conclude that male bias seems to be intensifying and penetrating into South India. While most studies point to Tamil Nadu to illustrate this trend, they suggest that Kerala remains an exception, that is, it remains egalitarian.

Kerala: Unique, or Moving Toward the National Pattern?

In most demographic literature, Kerala stands out as a positive example. The experience of this state demonstrates that fertility and mortality decline can occur without substantial economic development, and that good health outcomes can be achieved at low cost. While the per capita gross national product of this state is only about US$ 275 a year, Kerala has a life expectancy of 69 years for men and 74 years for women, an infant mortality rate of 13/1000 live births, and a total fertility rate of 1.7 children per woman. This is substantially better than elsewhere in India and is comparable to more developed nations (Thankappan and Valiathan, 1998). Kerala is also considered exemplary for the high status of women. Female literacy rates here far surpass the rest of India (close to 90 per cent). Historic reasons are usually given for women's high status in Kerala, including the now-dismantled matrilineal inheritance system practised by many groups in the state, and a tradition of women's education and work participation (see, for example, Nayar, 1989). Kerala has also long been noted to be the only state in India with a 'normal' (i.e. female-dominant) population sex ratio. Thus, while researchers note with concern the demographic trends indicating growing gender bias in India, they cling to the hope that Kerala remains an exception and can point the way for the rest of the country.

For example, Basu's recent paper (1999) entitled 'Fertility Decline and Increasing Gender Imbalance in India, including a Possible South Indian Turnaround', concludes that:

> There is an optimistic lesson to be learnt from the Kerala example. Here, *fertility has come down drastically without an adverse change in the sex ratio of the population*. What is not clear is whether Kerala is so unique as to be non-replicable or whether the Kerala experience represents a fourth fertility regime—one of low fertility and low sex preference—which will logically follow the first three regimes in the rest of the country as well. (Basu, 1999: 261, emphasis added)

Although we agree with the broad conclusions of Basu's paper, we doubt the notion that Kerala is a unique exception to the increasing gender bias emerging in the rest of India during fertility decline. We question whether Kerala constitutes a separate demographic regime with low son preference. We think that Kerala may be in the midst of social change associated with increased male bias. We raise the possibility that female child mortality disadvantage may therefore be emerging in Kerala. The senior author of this note has studied Kerala's demography for more than a decade[1] and questions the widespread perception of Kerala as a wholly positive example in development, population and gender trends.

In a widely-cited study, Dyson and Moore (1983) note that the economic, educational, and kinship status of women is higher in South India compared to the North, that the South also has lower fertility and mortality rates and more 'normal' sex ratios. Now this scenario is fast disappearing. Much of South India is shifting to the dowry custom, and Tamil Nadu and Karnataka already show signs of excess female child mortality (Sudha and Irudaya Rajan, 1999). What is the latest situation for Kerala?

Recent Demographic Trends in Kerala

Let us illustrate with data on recent trends in the juvenile sex ratio and sex ratio of child mortality in Kerala. In Table 2 of her recent work, Basu (1999: 239) demonstrates that the sex ratio of child mortality probability (q5) shows female advantage in South India compared to North India. Specifically, Kerala has a ratio of 1.12 (m/f). This information, though true, is based on the 1981 census as stated in the table heading. The estimates from the 1991 census tell a different story. The Registrar General of India (1998) has published district level infant and child mortality estimates by all districts of India for 1991 with comparable figures for the 1981 census. We show the 1991 data on sex ratios of child mortality for the fourteen districts of Kerala to contrast with the 1981 data (Table 1).

As we see, twelve of the fourteen districts have a smaller ratio in 1991 than in 1981, the exceptions being the districts of Wayanad and Kozhikode. In fact, five districts in Kerala in 1991 indicate excess female child mortality as typical of North India in 1981. If this is the emerging scenario in Kerala as observed in the 1991 census, can we continue to say that Kerala is an exception to the nation-wide trend of worsening gender bias?

We next examine changes in the sex ratio among children aged 0–4 in Kerala between 1981 and 1991 (Table 2). For the last few years, tabulations of cohorts of the population aged 0–6 by sex in the 1991 Census have been available on computer diskette from the Office of the Registrar General of India, though the Social and Cultural Tables for Kerala are still not available in published form. This enables a further comparison between the 1981 and 1991 censuses, to query whether Basu's conclusion about Kerala is borne out for 1991 (Basu, 1999: 244, Table 5).

[1] His publications on the subject include: Irudaya Rajan (1989); Irudaya Rajan and Mohanachandran (1999); Irudaya Rajan and Zachariah (1998); Irudaya Rajan, Ramanathan and Mishra (1996); Mari Bhat and Irudaya Rajan (1990); Zachariah and Irudaya Rajan (1997); Zachariah, Mathew and Irudaya Rajan (1999, 2000).

Table 1. Sex Differentials in Child Mortality by Districts of Kerala: The 1981 and 1991 Censuses

	M/F sex ratio of Q5		Change	
District	**1981**	**1991**	**1981–1991**	
Kasaragod	1.14	1.04	–	
Kannur	1.14	0.98	–	*
Wayanad	1.09	1.30	+	
Kozhikode	1.12	1.24	+	
Malappuram	1.06	0.98	–	*
Palakkad	1.10	0.91	–	*
Thrissur	1.14	1.04	–	
Ernakulam	1.010	1.04	–	
Idukki	1.10	1.00	–	
Kottayam	1.13	1.04	–	
Alappuzha	1.08	0.91	–	*
Pathanamthitta	1.08	0.71	–	*
Kollam	1.12	1.04	–	
Thiruvananthapuram	1.09	1.08	–	

Notes:
– sign indicates deterioration of survival for females vs. males.
+ sign indicates improvement in the same.
* North Indian female mortality disadvantage pattern. The biological norm is female advantage (= male disadvantage).
Source: Estimated from Registrar General of India (1998).

Table 2. Sex Ratio among Children 0–4 for the Districts of Kerala: The 1981 and 1991 Censuses

	Sex ratio of 0–4		Change
District	**1981**	**1991**	**1981–1991**
Kasaragod	n.a	109	n.a
Kannur	102	103	+1
Wayanad	102	105	+3
Kozhikode	103	103	No change
Malappuram	103	105	+2
Palakkad	101	102	+1
Thrissur	104	106	+2
Ernakulam	104	105	+1
Idukki	101	106	+5
Kottayam	101	111	+10
Alappuzha	101	106	+5
Pathanamthitta	n.a	105	n.a
Kollam	102	107	+5
Thiruvananthapuram	102	104	+2

Notes:
+ sign indicates deterioration.
Source: Estimated by the authors from the unpublished 1991 census.

Although Basu's Table 5 showed a one-point increase in the juvenile sex ratio in Kerala between 1981 and 1991, this finding was not further explored. Upon closer examination we see that most districts in Kerala show an increase in the sex ratio among children 0–4. This suggests either excess female child mortality (postnatal discrimination) or sex selective abortion (prenatal discrimination), or some combination of the two.

We explore the situation by examining the sex ratio among children aged 0 and 1 (taken together to avoid the effects of any age misreporting) reported in the 1991 census. The Registrar General of India made a special tabulation of boys and girls at ages 0 and 1 for all districts of India following our first attempt on this subject (Sudha and Irudaya Rajan, 1999). In our prior work, we took the counts of children aged 0 and 1 and the q2 mortality rate, and estimated the sex ratio at birth by the 'reverse survival' technique. In this paper, we present district-level estimated sex ratios at birth (SRB) for Kerala, 1981 and 1991.

Table 3 shows that in 1991, two districts of Kerala (Kottayam and Kollam) had very masculine infancy sex ratios (total), greater than 108. Examining urban areas, we see that six districts had very masculine infancy sex ratios, suggesting that rural areas have less skewed ratios. We also have information for the first time from the Sample Registration System on the infant mortality rates by sex for states of India (SRS Bulletin, 1999). Though not broken down by district, we see that in Kerala, the 1997 infant mortality rate for males and females are 11.5 and 12.9 respectively, that is, the female death rate is greater than the male rate. This, combined with our observations in Table 1, suggests that female children in Kerala may have begun to experience mortality disadvantage from infancy onward.

Table 3.

	Observed 1991 sex ratio 0–1		Estimated SRB	
District	**Total**	**Urban**	**1981**	**1991**
Kasaragod	108	119	n.a.	109
Kannur	108	110	103	103
Wayanad	106	105	103	109
Kozhikode	102	104	104	105
Malappuram	106	102	104	105
Palakkad	102	109	102	102
Thrissur	108	100	105	106
Ernakulam	102	103	105	105
Idukki	104	n.a	102	106
Kottayam	113	109	106	111
Alappuzha	105	109	102	105
Pathanamthitta	104	107	n.a.	104
Kollam	111	111	103	107
Thiruvananthapuram	105	105	103	105

Note: Estimated by the authors from the special tabulations.

Table 3 also shows that the estimated sex ratio at birth increased in all but two districts from 1981 to 1991. In 1991, while the same two districts (Kannur and Palakkad) showed a male deficit sex ratio (below 104), four districts (Kasaragod, Wayanad, Kottayam and Kollam) showed very masculine ratios (107 or above).

Unlike in some other states of India, sex selective abortion and female infanticide have not been widely reported in Kerala. However, given the ratios observed in Tables 1, 2, and 3, academics and activists must explore all likely mechanisms for excess female infant/child mortality, masculine juvenile sex ratios and SRB in this state. Data on the sex ratio at birth must be collected.

In general, the Kerala data suggest that fertility decline has been accompanied by the rise of female disadvantage in infant/child mortality. We acknowledge that district-level estimates, which are based on smaller numbers, would be more robust if calculated by aggregating and smoothing figures from three or four consecutive years. We therefore stress that relevant data should be collected and released in a timely manner by the State and Central Government statistical authorities.

Changes in Women's Status in Kerala

We also emphasize that future research must not take the relatively high status of women in Kerala as a given, or as a static cultural feature not affected by socio-economic change. Although Kerala still leads the nation in positive indicators such as female literacy, many scholars have drawn attention to the ways in which women's status in Kerala has declined since the middle of this century (see, for example, Gulati et al., 1997; Saradamoni, 1994, 1999). Specifically, the two main factors associated with worsening female demographic disadvantage in the rest of India — namely the rise of the dowry custom and the marginalization of women from paid employment — are now seen in Kerala.

Women's paid employment has shown a downward trend in the period 1951–81, especially since paddy cultivation declined and many other female labour intensive industries relocated out of the state. By 1991, the work participation rates of main and marginal workers increased for men and declined for women (Gulati et al., 1997). The deep penetration of the dowry custom and the patrilineal nuclear family in a state where substantial groups used to follow matrilineal inheritance and matrilocal residence is a revealing trend, as women's (as a group) relation to property and position within the household have fundamentally changed. Little research attention has been paid to these trends. High female education, though a fundamental necessity and a human right, has not led to the emancipation of women in Kerala but to social conformity and dependence (Saradamoni, 1994, 1999). Thus, while the 'Kerala model of development' (good demographic, health, and social indicators achieved at low cost and with low per capita income) is held up as an example for other states to emulate, less notice has been taken of the downward shift in women's status.

We do not want to detract from the substantial achievements of Kerala state, or to paint a pessimistic picture of women's future. Keralites can be justly proud of features not common elsewhere in India: not only high literacy, low fertility, and good health indicators, but also greater accountability of elected officials and public servants, the relatively good functioning of primary health care facilities, a deep commitment to education, and a high degree of public awareness that keeps the system functioning.

Will Kerala join the rest of the nation in female demographic disadvantage? We are not yet in a position to make this prediction. We lack sufficient large-scale statistical studies and in-depth small-scale research on this topic. Our purpose in writing this note is to draw attention to recent gender gaps in demographic indicators and to declining women's status in Kerala, to warn against complacency on this score, and to call for more research on these topics. We hope, however, that the positive aspects of Kerala society will outweigh these trends and indeed lead to

a unique demographic regime of low fertility and low son preference that will serve as an example to the rest of India.

REFERENCES

Basu, A. M. (1999) 'Fertility Decline and Increasing Gender Imbalance in India, including a Possible South Indian Turnaround', Development and Change 30(2): 237–63.

Das Gupta, M. (1987) 'Selective Discrimination against Female Children in Rural Punjab, India', Population and Development Review 13(2): 77–100.

Das Gupta, M. and P. N. Mari Bhat (1997) 'Fertility Decline and Increased Manifestation of Sex Bias in India', Population Studies 51(2): 307–15.

Dyson, T. (1988) 'Excess Female Mortality in India: Uncertain Evidence on a Narrowing Differential', in K. Srinivasan and S. Mukherji (eds) Dynamics of Population and Family Welfare, pp. 138–64. Bombay: Himalaya Publishers.

Dyson, T. and M. Moore (1983) 'On Kinship Structure, Female Autonomy and Demographic Behaviour in India', Population and Development Review 9(1): 35–60.

Gulati, L., S. Irudaya Rajan and A. Ramalingam (1997) 'Women and Work in Kerala: A Comparison of the 1981 and 1991 Censuses', Indian Journal of Gender Studies 4(2): 231–52.

Irudaya Rajan, S. (1989) 'Ageing in Kerala: One More Population Problem?', Asia Pacific Population Journal 4(2): 19–48.

Irudaya Rajan, S. and P. Mohanachandran (1999) 'Estimating Infant Mortality in Kerala', Economic and Political Weekly XXXIV(12): 713–17.

Irudaya Rajan, S. and K. C. Zachariah (1998) 'Long Term Implications of Low Fertility in Kerala, India', Asia Pacific Population Journal 13(3): 41–66.

Irudaya Rajan, S., Mala Ramanathan and U. S. Mishra (1996) 'Female Autonomy and Reproductive Behaviour in Kerala: New Evidence from the Recent Kerala Fertility Survey', in Roger Jeffery and Alaka M. Basu (eds) Girls' Schooling, Women's Autonomy and Fertility Change in South Asia, pp. 269–87. New Delhi: Sage Publications.

Mari Bhat, P. N. and S. Irudaya Rajan (1990) 'Demographic Transition in Kerala Revisited', Economic and Political Weekly XXV (35 and 36): 1957–80.

Nayar, P. K. (1989) 'Kerala Women in Historical and Contemporary Perspective, in K. Mahadevan (ed.) Women and Population Dynamics: Perspectives from Asian Countries, pp. 205–220. New Delhi: Sage Publications.

Registrar General of India (1998) 'District Level Estimates of Fertility and Child Mortality for 1991 and Their Interrelations with Other Variables'. Occasional Paper No 1. New Delhi: Ministry of Home Affairs.

Saradamoni, K. (1994) 'Women, Kerala, and some Development Issues', Economic and Political Weekly 29(9): 501–9.

Saradamoni, K. (1999) Matriliny Transformed: Family, Law and Ideology in Twentieth Century Travancore. New Delhi: Sage Publications.

SRS Bulletin (1999) Volume 33, No 1 (April).

Sudha, S. and S. Irudaya Rajan (1999) 'Female Demographic Disadvantage in India 1981–1991: Sex Selective Abortions and Female Infanticide', Development and Change 30(3): 585–618 (Special Issue on 'Gendered Poverty and Well-being').

Thankappan and Valiathan (1998) 'Country Profile: India. Health at Low Cost – The Kerala Model', Lancet 351(9111): 1274–5 (25 April).

Zachariah, K. C. and S. Irudaya Rajan (eds) (1997) Kerala's Demographic Transition: Determinants and Consequences. New Delhi, Thousand Oaks, London: Sage Publications.

Zachariah, K. C., E. T. Mathew and S. Irudaya Rajan (1999) 'Impact of Migration on Kerala's Economy and Society'. Working Paper No 297. Thiruvananthapuram: Centre for Development Studies.

Zachariah, K. C., E. T. Mathew and S. Irudaya Rajan (2000) 'Socio-Economic and Demographic Consequences of Migration in Kerala'. Working Paper No 303. Thiruvananthapuram: Centre for Development Studies.