

Going beyond the Numbers: A Narrative Literature Review of Child Sex Ratio in India

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Abstract

Declining child sex ratio (CSR) is an important demographic feature in South Asian countries, particularly in India. In recent decades the situation has become alarming. Literature on changing CSR in India has traversed through various narratives. Straight forward explanations to decline in CSR have been elusive. Diverse disciplines have highlighted different aspects of CSR. For instance, while demographers focus on spatial and temporal aspects, sociologists emphasised women's status and autonomy, economists underline the economic value of children. This paper examines the narratives from the existing literature to help clarify the issues that shape the changes in CSR. The purpose of this paper is to review and thematise the relevant literature. For this the relevant literature was chronologically arranged to temporally map the scholarship and debates. Apart from underlining the significance of examining the influence of social factors in CSR, the study found that over time, the role of technology and policy surrounding it started occupying more and more space in the landscape. This conceptual clarity and new insights form the scope for the future research and further studies.

Keywords: Child sex ratio, son preference, gender discrimination, daughter deficit, India.

I. Introduction

Declining child sex ratio (CSR) in 0-6 years is an important demographic feature in South Asian countries, particularly in India. Compared with many regions in the world, in India the trend of increasingly masculine sex ratios had continued persistently throughout this century (Bose, 2001). A similar trend has been noticed in CSR (0-6 years), which had become alarming in the 2011 Census, both at the national and sub national levels. The Census of 2001 marks the first time when the CSR (927) fell below the overall sex ratio (933) at national level. This was also the period coinciding with the widespread proliferation of medical technologies for sex determination and sex selective abortions.

The fact that concerns regarding gender equality drew attention from various quarters such as the World Bank and Millennium Development Goals (MDGs). Nearly five objectives of MDGs involved issues concerning gender equality indicating the significance that gender equality in population received. Gender equality is not only intrinsic but also instrumental and has a major role in the development process. The CSR is one of the best indicators of gender equality and the increasing imbalance in it is a stark reminder of the existence of gender bias in the society.

Purpose and relevance

Understanding the nuances of varied factors that contribute to skewed CSR has assumed heightened importance. This has particularly been true in the light of the increase in the misuse of new reproductive technologies since the 1980s (Singh, 2010). The issue received wide attention among various stakeholders, particularly after the phenomenal work on 'Missing women' by Sen (1990). There is a plenty of literature on declining CSRs in India since then.

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The focus of this study is to examine the linkages between changes in macroeconomic development and women's status in order to understand the nature, pattern, trend and reasons for the declining child sex ratio. Such an analysis would throw light on the local context which may shape the gender imbalance in that area. The paper proceeds as follows. In the next section, the study's methodology is discussed and then the various themes that emerge from the articles examined in this study. Themes such as diagonal divide, macro-economic changes, son preference attitudes, legal and policy factors and misuse of technologies are discussed. Finally, challenges for future research are identified.

II. Methodology

The articles in this study were identified from google search using the key phrases "child sex ratio", "changes in child sex ratio", and "gender discrimination". This search resulted in a broad set of articles which were filtered according to their relevance to the author's study focus. The articles in this collection came from a variety of disciplines such as Demography, Economics, Anthropology, Sociology and Gender Studies. It included a number of journals such as *Population and Development Review*, *Economic and Political Weekly*, *Population Studies*, *Demography* and *Journal of South Asian Development*. Commentaries, quantitative studies, reviews, book chapters and ethnographic works are among the types of articles included here.

This study conducted multiple rounds of iterative analysis of existing research, updating the set of articles multiple times over the course of the author's doctoral research. Because there is no dearth of systematic literature reviews on the topic of CSR, the author chose to conduct a targeted thematic analysis centred on a few key themes. These themes mainly include gender discrimination and associated factors that shape CSR, indicators that enabled women's status and macro-economic changes that influence gender bias.

III. What do demographers say?

The following issues were the focus of the demographic studies on declining CSR: (a) trends, levels, patterns, nature and regional variations in CSR including the concept of 'diagonal divide' and its refutation; (b) emergence of new epicentres, hot and cold spots; (c) link between fertility decline and trends in CSR; (d) demographic disadvantages of girls and its spread to hitherto egalitarian regions including the southern states; (e) shifts in pattern, nature and mechanisms of daughter of elimination, and (f) the link between nature of shifts in CSR and socio-economic factors, among others.

In India although changes in the population sex ratio have been uneven with intermittent improvement and decline, CSR has been displaying a consistent and secular decline from 1950s (Singh, 2010; UNFPA, 2014). In the 1991 Census, the population sex ratio stood at 927 females per thousand men. This was the lowest point reached by the population sex ratio of the country. Then onwards, there has been a marginal increase in the population sex ratio from 927 to 933 (an increase of 6 points) during the 1991 and 2001 inter-census period and a moderate increase of 10 points from 933 to 940 in the 2001 to 2011 inter-census period.

The same periods had seen declines of 18 points (from 945 to 927 during 1991-2001) and 13 points (927 to 914 during 2001-2011) in the CSR. The quantum of decline in CSR in India over the past four decades starting from 1981 has been alarming. The inter-census period between 1991 and 2001 saw the steepest fall in CSR. At the national level, 2001 marked that year when for the first time CSR fell to a level lower than the overall sex ratio. While demographic literature suggests 952 as the desirable figure, considered as the natural or normal sex ratio (UNFPA, 2020), 2011 Census figure for CSR at 914 was the lowest and farthest from this desirable figure (Srinivasan & Bedi, 2008).

The Census data has provided detailed mappings of variations in sex-ratios, both across regions and across social groups. Scholars like Guilmoto have suggested that state averages for sex ratios would hide local and inter-district variations and pointed to linkages between disparities in sex-ratios and socio-economic factors (2008a). In their study, Guilmoto and Rajan (2005) highlighted the spatial and social variations in the downward trend of CSR, suggesting that discrimination was related to socio-economic factors. Strikingly, they noted that in some areas, for instance, Kerala, West Bengal and the North-Eastern states, the levels of CSR appear unaffected by sex discrimination.

Trends and spatial pattern of child sex ratio

The disturbing demographic trend of declining sex ratio was captured powerfully as ‘missing women’ by Sen (1990) in his seminal work. The term ‘missing women’ sets the tone for considering the situation of declining CSR to be alarming. He argued that inequality and gender norms are major reasons for the neglect of female children. There have been stark regional variations in CSR since the colonial period. The Census data has provided the mapping of these variations both across regions and social groups. States in the north and north-western regions in the country like Punjab, Haryana, Gujarat and Rajasthan are known to have shown severe discrimination against girl children and have a low child sex ratio when compared with southern and eastern regions which have shown relatively better gender equality and better CSR. Southern regions of India have had good gender-equal indicators in particular. The egalitarian context is indicated by a significant fall of infant and child mortality for both boys and girls, the decline in fertility, relatively high female literacy, higher work participation of women, higher autonomy, and more informed and significant decision-making powers for women compared with the states in North India.

Diagonal divide

The spatial pattern of sex ratio that north and north-western region of the country with lower sex ratio and south and eastern region with a better child sex ratio had is referred to as ‘diagonal divide’ in the context of regional variations in CSR. Scholars like Visaria (1974), Dyson and Moore (1983) and Miller (1989) had emphasized this notion of ‘diagonal divide’ in gender imbalance in CSR.

Since 1991 this pattern of the north-south divide or the diagonal divide in gender imbalance in the CSR was giving way and this breach was more pronounced in the 2001 Census (Agnihotri, 2003). Bedi and Srinivasan (2009a) accounted for an excess female mortality in Tamil Nadu in terms of an unusual increase in female infanticide. In other words, gender bias had spread to areas known for gender equality reflecting in worsening of population sex ratio, while fertility continued to decline there. Hence, the conventional way of representing the national CSR pattern in terms of diagonally divided spatial pattern was no longer found to be valid (Bedi & Srinivasan 2009; Bedi & Srinivasan 2009a). While attempting to explore the contributing factors for inter-district variation in CSR, insights like the emergence of new epicentre (Agnihotri, 2003) with respect to masculine CSR and breach of the diagonal divide (Agnihotri, 2003; Bedi & Srinivasan, 2009a) are important contributions that have to be acknowledged.

To understand the spatial pattern, the concept of ‘epicentres’ of ‘daughter deficit’ was introduced in the demographic literature to explain ‘hot spots’ (with high deficits) and ‘cold spots’ (with more female-favourable CSR) (Kuzhiparambil & Rajani, 2012). Bedi and Srinivasan (2009a) studying Dharmapuri district in Tamil Nadu note a cluster of five districts as the epicentre for daughter deficit which largely contributed through post-natal daughter elimination even though by then female foeticide had become more common in other part of the country. Female disadvantage in birth and death had spread much wider to others parts of the country since then reflected through an increased masculinity of sex ratios at birth, resurgent female infanticide and persistent excess female child mortality beyond the areas traditionally known for the girl child deficit. Sudha and Rajan (2003), for instance, noted that the masculine sex ratios at birth earlier more in urban areas of the north-west in the 1981 Census had spread to urban areas of many northern states in 1991. The gender

imbalance in child population had penetrated in the hitherto egalitarian south. Even a progressive and socially developed state like Kerala was no longer an exception to this trend (Rajan & Sudha, 2000). Basu (1989) had described this as the convergence of gender inequality in Tamil Nadu and Rajan and Sudha (2000) noted it as a spread of demographic disadvantage for girl children's survival.

Fertility decline

Das Gupta and Bhat (1997) elaborate the 'parity' and 'intensification' effects'. 'Parity effect' denotes "... excess mortality of girls (was) concentrated in higher parities. Therefore, as fertility declines and the proportion of births of higher parity decreases, the excess mortality of girls will also fall" (p. 307). Intensification effect is explained by demographers as more pronounced mortality of girls at a given parity. This is because parents discriminated at each parity, as total fertility has fallen. These observations came from studies done in China and South Korea (Hull 1990, Zeng Yi et al, cited in Das Gupta & Bhat, 1997). Thus, the linkages between fertility decline, gender bias and son preference are complex and need to be explored thoroughly to identify contributing factors for sex ratio imbalances in different regions.

Since 1985 there has been a steady decline in fertility in South India and "... contrary to the assumption that fertility declines in this region hinge on improvements in the status of women, declining fertility seems to be going hand in hand with worsening population sex ratios" (Basu, 1989). The evidence for a causal connection between fertility decline and increasing gender imbalance was attempted to be established by looking at differences in fertility and in gender inequalities between North and South India. It was shown that in the past, there was difference both in the fertility decline (i.e., the pace of decline was different in north and south) and in gender inequalities. But over a period, difference in the gender inequality narrowed across north and south which was reflected in increasing gender imbalances in the southern states, particularly in Tamil Nadu, which was termed in demographic literature as 'Northernisation of sex ratios'.

Studies have shown that much of India seems to be moving towards increased male bias during fertility and mortality declines and socio-economic development. This is reflected in the increased masculinity of sex ratios at birth, resurgent female infanticide and persistent excess female child mortality. Tamil Nadu, which has been in the forefront of the country's fertility decline, is nevertheless moving towards a North Indian pattern in many aspects of women's status. As for southern states, gender inequality is a new phenomenon unlike in the north.

"The main problem seems to be that pressures to lower fertility are occurring independently of a change in underlying son preferences and falls in fertility are being aided by technologies which allow one to manipulate not just the sex composition of living children, but also that of children as yet unborn" (Basu, 1989). "While most studies point to Tamil Nadu to illustrate this trend ... [and] suggest that Kerala remains an exception", however, data from Kerala "suggest that [here too] fertility decline has been accompanied by the rise of female disadvantage in infant/child mortality" (Rajan, 2000). These studies point that during the phase of declining fertility, there was a coincidental increase in sex ratio imbalance, particularly in 0-6 years age group. However, this linkage of skewed sex ratio to fertility decline was negated as some studies cited that there was no evidence for correlation among regions having low fertility and those where the sex ratio is increasing (Guilmoto, 2008) further substantiating the fact that sex ratio imbalance is more manipulated by the spread and misuse of technologies (sex determination tests followed by sex selective abortions). Families that strongly want at least one son are less likely to obtain him by chance at low fertility. This could increase their use of sex-selective abortion. Studies that focus on relationship between desired fertility and sex ratio particularly in India had pointed out that the desired sex ratio increases sharply as fertility falls and that fertility decline explains one-third to one half of India's recent sex ratio increase (Jayachandran, 2017).

Changes and trends in macro processes like fertility decline, socio-economic development and population policies are analysed to understand their effect on women's status and their consequent

effect on CSR. Reasons such as female feticide, female infanticide and sex differential in child mortality due to neglect and discrimination were attributed for the rapid decline in CSR. Female infanticide was a part of anti-female bias that existed since colonial period (Guilmoto, 2008a).

IV. Perceived economic value of children and its influence on CSR

In most literature on CSR, economic prosperity and marginalisation was the central theme around which the arguments were built. Here, it means mainly economic prosperity accruing through sons and economic marginalisation of women. Studies had emphasised economic benefits of children and role of economic independence of women in influencing the change in CSR. Economists emphasised the economic benefits of children, particularly with respect to old age care. They have also highlighted the economic contribution of women and how it enables her self-worth within the household. According to Sen, 'status and power' of women in the family was related to her economic independence. Property rights and employment opportunities outside home for women influence her economic independence and her negotiating power in the family. Significant economic contribution of women to the family has a demonstrative effect in changing the perception of parents towards girls and women as a source of security.

Despite significant economic contribution of women to the family, continuous decline in CSR indicates that there are inherent social factors that are making aversion and discrimination towards daughters. Despite high labour force participation in Punjab and Haryana, consistent decline in CSR in these states, persons' position in the society is not by their economic contribution, but by how much they own and are able to do decision-making (Das Gupta, 1987). Studies have also mentioned the geographical variations in opportunities for women's work participation and attributed that to the different types of crop cultivation and the use of different agricultural technology. Bardhan (1974) highlighted the north-south divide in gender differentials and discriminatory treatment of girl children, relating it to differential economic valuation of women in North and South India linked to wheat and paddy cultivation respectively (cited in Sarap et al., 2013). Another study attributed differences in the economic value of women in different societies to differences in agricultural technology practised in the respective states (Boserup, 1970).

Economic analysis of children also led to the understanding of 'landholding patriarchy' hypothesis. It had its cultural correlates in the form strengthening diverse sets of values around sons and daughters respectively: girl children perceived as an economic liability while a son is preferred for his economic role, inheriting/retaining property and providing old-age care. This also implied that cultural norms increasing bias against girl children will be different in different groups, depending on the extent of land-holding and availability of gainful employment/productive work for women (Arokiasamy & Goli, 2012; Nandi, 2014).

V. Sociological and anthropological factors influencing CSR

Sociological and anthropological works on family formation and fertility change capture the social changes that led to the development of non-farm activities, opportunities for women to get engaged in productive labour and resulting changes in fertility choices that would be less biased against women. Here again the focus has mostly been on 'women's work' however and various aspects of 'women's work' have been studied. They hold that opportunities for work alone do not enhance women's work participation. They highlighted other factors that shape the 'devaluation of women and their work'. Sociological studies pointed out the barriers to women's work participation, under recognition of their work, wage differences, nature of work, limited opportunities and their linkages with gender imbalance.

North-South divide in health status of female children based on different agro-systems in use and the requirement of work participation of women was explained in the study by Bardhan (1984). In dry regions in North India, wheat is cultivated which requires less female labour force participation, whereas in the wet regions in South India, paddy is cultivated that requires more female

labour force participation. This difference in the requirement for female labour due to the different agro-system propagated the bias towards male children and discrimination against girl children. Similarly, 'work is worship' was the emphasis in Miller's work (1981) meaning more work participation leads to less gender bias. However, this correlation of more work participation of women with less gender inequality or with less gender bias was refuted. Punjab and Haryana have seen higher participation of female labour force, yet these states have very low child sex ratio. A person's position in the society is not by his economic contribution but by how much he owns and is able to do decision-making (Das Gupta, 1987).

VI. Relationship between macro-economic changes and society and their impact on CSR

Based on a district level analysis of CSRs from 1981 to 2011, Diamond-Smith in a recent paper (2015) suggests that "... self-corrective forces are at work on imbalanced sex ratios in India" (p.1). Sex ratios do not appear to continue falling forever. In a sub-set of districts with steepest fall, after reaching a low, the fall gets decelerated and begins to equalise. While this may sound positive, it also suggests further exploration in to the possibility of all states falling low before beginning to equalise which essentially means many more years before the country as a whole or a specific state decelerates and reverses. Policy and research should, therefore, focus on "... raising the threshold at which states decelerate and reverse" which "... could potentially save the lives of millions of girls and reduce sex-selective abortions" (pp. 13-14).

Macroeconomic changes leading to social changes in the local context, in turn, leading to changes in gender relations were also captured by Srinivasan (2011). Increased changes in income and wealth due to unequal access to irrigated land and green revolution and canal irrigation led to changes in kinship arrangements (from isogamy to hypergamy marriage practices) led to the emergence of dowry practice which fuelled daughter aversion.

Sociological and gender studies view critically the patriarchy as the root cause for differential values attached to sons and daughters. Patriarchal system hails male supremacy and male privileges by oppressing and neglecting women. Hence, in all walks of life from childhood to adulthood boys and men are favoured and women are discriminated against. This led to a difference in the perception of parents that sons are source of economic prosperity and security and women are an economic liability. Patriarchal value system enforces male supremacy, while socio-cultural reasons reinforce preference for sons. Devaluation of daughters and misuse of technology have been attributed are held largely responsible for the skewed CSR in favour of male children (Guilmoto, 2008a). A consistent and steep decline in CSR in favour of males reflects underlying social and economic processes. Cultural practices of the society strengthen patriarchal values and consequent subjugation of women and particularly discriminatory attitude towards girl children. An abnormally large deficit of females in the population is a manifestation of this phenomenon (Hassan, 2008).

Declining sex ratio stands at the interface of concepts like patriarchy, economic development, advancement and misuse of technology, and gender sensitive policies. Economic development, urbanisation, improvements in educational levels, innovations in technology and even policies claimed to be pro-women have had uneven and ambiguous relationship with this trend of declining CSR.

Changes in macroeconomic situations, which led to changes in marriage practices and spread of dowry system accentuating economic vulnerability of women were the highlights of sociological studies. Whether it is women's work or issue of dowry, debates are around the issue of women's economic independence and marginalisation. In trying to explain a greater degree of neglect of girl child in North India, many scholars highlight the role of the dowry system and marriage expenses. Marriage in north was accompanied with a huge amount of dowry payment made by the bride's family to the groom's family (Gupta, 1987, cited in Sarap et al., 2013). The study of Smith and others (2008) in Tamil Nadu villages observed that proliferation of dowry played an important role in fertility-related decisions. In other words, daughter aversion fuelled primarily by dowry has a

stronger role than even son-preference attitude in shaping fertility choices. Increase in the value of dowry payment and proliferation of this practice even among those communities that did not have this institution earlier too plays an important role in fertility related decision-making against the daughters (Diamond Smith et al., 2008). Sudha and Rajan (1999) highlighted increasing dowry and declining productive employment opportunities outside home as leading to female demographic disadvantage in Kerala.

Larsen and Kaur (2013) discussed whether shortage of brides due to sex ratio imbalance would bring changes in societal practices such as inheritance patterns, dowry and restrictions in women's mobility, permitting daughters to offer old age care to parents and social approval of uxorilocal residence. They also explored whether these changes in societal practices would dilute patriarchal norms, result in reduced son preference and improve CSR. Demographic literature has shown son preference as a common attitude in various socio-economic classes, particularly in South and South-East Asian countries where families express a preference for having sons and equally a strong opinion on daughters being not indispensable. Propertied classes have son preference considering inheritance of their wealth and family lineage, while poor families want to 'dispose-off' their daughters by marrying them at young age. In a nutshell, son preference is at least partly a cultural phenomenon in South Asian countries including India (Guilmoto, 2008a).

VII. Son preference attitudes

Fall in CSR was attempted to be understood within the broader context of low status of women reflected in an interlocked set of economic factors and cultural practices. Sex ratio is generally tilted towards male children at birth. During infancy this imbalance is balanced by excess mortality of male children due to their inherent higher susceptibility to diseases compared with female children. However, by the time children reach the age of two, this physiological advantage of girl children gets overturned due to socially mediated discrimination in the form of female foeticide, female infanticide or neglect of girl children resulting in excess mortality of female children (Agnihotri, 1996). Guilmoto (2008a) noted that in India female infanticide had existed since colonial period.

The root cause of discrimination against girl children lies in the attitude of son preference prevalent in many communities in India. The patriarchal system confers greater privileges for men in almost all spheres, tends to neglect the needs and concerns of women and discriminates against women by suppressing their interests. One of the main traits of a patriarchal society is gendered socialization of its members from young age. As a part of this socialisation, sons are perceived as the only possible providers of old age care, can carry forward the family lineage and hence perceived as honour and pride of the family. The differential role assigned to men and the privilege held by them vis-à-vis women make sons to be perceived as superior. Consequently, their dominance over women leads to lower social value for women. This is the kind of discriminatory social context in which many girl children grow up.

In the patriarchal system, daughters are perceived as an economic burden due to the increasing investments on them, particularly on their marriage. Parents perceive daughters as 'double loss' both materially and emotionally because, in patrilocality¹ practice, daughters leave their natal home after marriage and become an asset to their marital household. Parents perceive daughters as investments with no returns and hence as economic burdens to the natal family. In addition to this, strong patriarchal norms which reinforce male supremacy and control over women act as impediments in many dimensions of women's life. For instance, traditionally women from higher castes were not allowed to work outside their home, so there used to be a practice of 'exchange of dowry' from bride's family to groom's family in order to compensate the economic burden of men who marries her. Women's contribution in terms of farm labour or domestic work is not socially recognised as productive work. Among poor families where women are also breadwinners, the practice of dowry was minimum till recently. However, the practise of hypergamy (women marrying into a family of

¹ Refers to the practice of a girl leaving her natal home to move into her marital home after the marriage.

higher socio-economic status) has led to the spread of dowry to other communities as well (Brook, 2012). Women's safety and security is an additional concern for parents. These vulnerabilities influence parents' perspectives towards daughters, making them avoid or discriminate against girl children.

Women's education has been found to be positively correlated with reduced gender bias, levels of children's education, general economic growth and reduced infant mortality and fertility. Denial of property and inheritance rights and participation by women in labour force positioned women as economically dependent. Although the advances in socio-economic development may narrow gender gap as for access to material resources and opportunities, women are always undervalued when it comes to intergenerational economic transfer (Kaur, 2007).

Studies approaching the issue of child sex ratio from the side of cultural practices focused on kinship structure and marriage practices. Dyson and Moore (1983) discussed differences in marriage rules in North and South India. They pointed to the practice of village exogamy and restrictions in close-kin marriages in the north and a preference for close-kin marriages in the south as an important factor that provides relatively better status and autonomy to women in the south compared to their counterparts in the north. Preference for village exogamy placed a married woman in the north in a completely strange family environment after her marriage with no support from her natal family in proximity. In the south, with no taboo for marrying within a village and a preference for close-kin marriages, married women continued to receive and provide support to her natal family. This was argued to make a significant difference in relative socio-economic values attached to girls and boys in the north and south. That is to say, difference in marriage practices and kinship systems play a major role in regional disparity for female autonomy across northern and southern regions in India (Dyson & Moore, 1983; Raheja & Gold, 1994).

A variety of cultural and economic factors were found to interact to make girls less valuable leading to an increased preference for sons in order to conserve limited household resources (Das Gupta, 2005). A belief that 'family stability' and 'old age security' can only be provided by sons and that only sons can do funeral rites underlie the attitude of son-preference (Kaur, 2007). A number of studies have looked into immediate and background factors that influence a household's decision on sex selective abortions. Agarwal (2012) analysing NFHS data found that a woman's desire to limit family size with preferred sex composition of children, her autonomy, socio-economic factors and the socio-cultural context had emerged as strong factors for son preference attitude which largely determined her experience of induced abortion in India. Jha et al. (2011) corroborated the finding that sex selection increases for pregnancies that follow the first born girl child. Srinivasan and Bedi (2008) in their study in Tamil Nadu, on the other hand, observed that the daughter elimination increases with high order births. Along the same line, a hospital based study too indicated a strong association between increasing sex selective abortions and population control strategies (Varghese, 2008). In rural areas, economically better off households and non-marginalized castes were more inclined towards sex selective abortions (Chakrabarti & Chaudhuri, 2011).

Based on NFHS 4 data Yadav and others (2020) argue that in India "son preference has pronounced effects on the sex composition of children ever born at the family/micro level". Son preference was 56 per cent lower among "women who had attained highest education levels" and "women in the northern region preferred the boy child more than those in the southern and western regions". They underline the argument that the "problem of skewed sex ratio is a result of an entire spectrum of gender issues in the society" stemming from "cultural values, religious practices and a strong patriarchal social structure.... More gender sensitive policies" and "culturally sensitive interventions" are the need of the hour to address the issue of skewed child sex ratio (pp. 1144-45).

A study by John (2018) investigates into the urban context in the back drop of social and economic changes and their implications on child sex ratio and relative status of sons vis-à-vis daughters. It was done in Rohtak and Jhajjar in Haryana, and Shirur and Beed in Maharashtra. The author gives insights that capture the contemporary situation with respect to the role of employment,

marriage and education on one another and their impact on son preference or daughter aversion. It highlights that with the changing economy and the nature of employment, the expectations from sons and daughters have shifted. While clandestine sex-selection is still in vogue and hardly anyone speaks of property rights for daughters, "... patrilocality did not appear as a strong norm in practice with more than half the families surveyed being nuclear and little was said about the ritual necessity of sons." Not many "... articulated conventional notions of biological gender in the form of strong sons and weak daughters." With changing employment scenario, particularly with vanishing "the government jobs", the idea of a successfully settled son providing stability and security is becoming an elusive reality not only for poor families but even for better placed families. On the other hand, daughters are increasingly being seen as a source of support even after their marriage.

VIII. Social consequences of declining CSR

Decades of poor and still worsening CSR in a society have serious demographic and social consequences. A direct consequence is the shortage of brides for marriage which has cascading effect on a number of other aspects. People respond to such contingencies in a manner that its disadvantages get transferred to relatively vulnerable groups, particularly women from poor sections. Shortage of brides for marriage leads to a situation wherein some men end up not getting married, what is known in demographic literature as "marriage squeeze" more specifically 'male marriage squeeze'. While this is the extreme outcome of daughter deficit as far as men's marriage is concerned, in practice households and men specifically resort to a number of mechanisms or "adaptive processes" to circumvent this situation (Kaur, 2013).

Kaur (2013) notes that adoptive processes deployed by households and communities included delayed marriage by men and marrying women from wider age cohorts, and hence a widened age difference between spouses, increased rates of remarriage among divorced or widowed women and 'bride import' or what has been called as 'marriage migration' of women. 'Bride import' usually happens from relatively poorer regions to better off regions (Mukherji, 2013). For instance, in Haryana, a region known for a very poor sex ratio, male marriage squeeze was discouraged as the practice of marrying from the neighbouring states has been a practice for a long time. Within the better off regions too, relatively poorer men who may remain unmarried or face delayed marriage. A few more adaptive mechanisms included broadening the groups from which brides were taken in terms of caste and communities. People are also ready to give up norms around caste endogamy, and marriage alliances become culturally more heterogeneous (Ahlawat, 2009).

In 1983, Dharma Kumar argued that after sex ratio decline, there is likelihood for a reversal in the trend of gender bias leading to an elevation in women's status. However, empirical studies have pointed to a complete opposite outcome stemming from high degrees of bride deficit. When marriageable women are less in number, there is a possibility of increased violence against women as men want to exercise greater control over women within marriage. The economic expectation of scarcity elevating the value does not work uniformly in this situation. Negative consequences may well outweigh possible positive consequences (Dube, 1983; Viswanath, 1983, cited in Kaur 2013). For instance, bride import may impose a demand on such women married to move into a completely new cultural environment (Ahlawat, 2009). Women are often married from poor families with severe vulnerabilities. Once married, they are placed in a situation with almost no negotiating power (Bhat & Halli, 1999). If such alliances involve payment of bride-price to a girl's family, her status may be further lowered.

Skewed CSR may also result in some unintended consequences such as loosening up of caste boundaries for marriage, increase in inter-caste and inter-religious marriages, acceptance of uxorilocal residence, recognition of daughters' role in providing economic support, old age care to parents and even a possible shift in property inheritance through a daughter's line (Larsen, 2013). These trends have to be examined to assess their consequences. The foregoing pages have captured insights from demographic and social science literature on trends and distribution of child sex ratio, factors shaping such trends and distribution under three inter-related themes, viz., (i) trends and

spatial patterns of CSR, (ii) cultural and social context of fall in CSR, and (iii) implications of declining CSR.

IX. Advent and misuse of technologies

The advent and spread of medical technologies for sex determination played a major role in shaping the CSR. The use of this technology for sex determination was often followed by sex selective abortions if the foetus was female. It has also been observed that the practice of sex-determination has become pervasive in a short period of time because these services were cheap and widely accessible (Patel, 2007 cited in Nagpal, 2013). Population control strategies which pressed for a small family norm coupled with easy availability of medical technologies accounted for the rapid decline in sex ratios at birth (Sen, 1990). Widespread misuse of technology for sex determination followed by sex-selective abortions and son preference were major determinants of daughter discrimination (Bedi & Srinivasan, 2009a) in many states. When the choices for a desired number of children are limited, parents prefer sons over daughters in the entrenched patriarchal system. This is substantiated by established associations of low fertility with low sex ratios (Bhat & Zavier 2003; Yadav et al., 2019; Mohanty & Rajbhar, 2014).

Steeper decline in CSR in urban areas both in the north and south was largely attributed to the advent and diffusion of New Reproductive Technologies (NRT), particularly the pre-natal diagnostics used for sex-determination and possibly followed by sex-selective abortion. Demographers noted that the spread of NRTs changed the nature and mechanism employed for female child elimination from primarily post-birth elimination to pre-birth elimination (Guilmoto, 2009; Bhatt & Zavier, 2003). Chauduri (2012) noted that soon the effect of pre-natal diagnostic technology had begun to change the nature of girl child elimination in the rural areas too, showing a shift from post-birth to pre-birth elimination. This study estimated over 58 million missing infant girls between 1950 and 2010 of which only 28 per cent were contributed by pre-birth elimination and the rest by post-birth elimination. But in the recent decades this trend has reversed with pre-natal elimination contributing a greater proportion to overall daughter deficit. Perwez and others (2012) put forward an important household level demographic trend stemming from sex-selective abortion. Influenced by small family norm, the attitude of son-preference and easy access to pre-natal sex-selection technology, couples decide to stop producing children after one or two sons which has come to be referred to as 'stopping behaviour'. They also argue that families going for sex selective abortions have already contributed more girls and hence sex selective abortion is unlikely to distort the CSR.

X. Role of law and policy in addressing declining CSR

Nagpal (2013) argues that precipitating factors such as patriarchal cultural practices and kinship systems cannot be seen in isolation but have to be examined in tandem with "institutional structures and policies that maintain the status quo". The issue of sex-selective abortion is "inextricably linked to state population control policies, the unregulated use of medical reproductive technology and the limitations of a legal approach, in solving the problem" (p.31). Likewise, Nanda and Ray (2020) writing on the implementation of *Beti Bachao Beti Padhao* scheme in Haryana and Uttar Pradesh conclude that "policy discourse impacts and brings about a shaping of societal attitude and mind-sets" towards gender discrimination and protection of girl children. "There are however many other factors at play including social, political, economic and cultural issues which need to be studied in tandem" (p. 749).

A review paper by Kumar and Sinha (2020) looks into experiences of countries on implementing direct interventions such as regulating the use of prenatal sex selection technology, conditional cash transfer to address low sex-ratio at birth, low value of girl-children or higher mortality among girl children from a number of countries including India, Republic of Korea and China. The studies bring out interesting observations across these countries, questioning the taken for assumptions popularly held in demographic literature. They conclude that there is no conclusive

evidence to show that these direct interventions are effective in reducing the higher mortality risk for girls. In fact, an intervention like banning of sex-selection technology may inadvertently worsen the status of the girl children or women. Likewise, financial incentives to families with girls in the form of conditional case transfers offer only short-term benefits at the most. Reviews of Girl Child Promotion Schemes across India have pointed the hassles in registration processes and lack of monitoring mechanisms and grievance redressal mechanisms which would enable one to understand the impact of such schemes (Sekher, 2012). Similarly, another study in Tamil Nadu had critically looked at the Girl Child Promotion Schemes and observed the limited awareness, meagre financial reward in the initial period and problems in eligibility criteria. (Srinivasan & Bedi, 2011).

Studies also show that sustaining or replicating these successful programmes of direct intervention is difficult and may involve controversial or unethical components. They may also alienate key stakeholders in countering sex imbalances, or push individuals to seek unsafe abortions to circumvent the law. At the same time the affluent classes may travel overseas for sex-determination. Strict enforcement of such a ban may also prevent medical practitioners from providing services that are legal such as ANC and safe abortions. In the absence of any intervention that improves the intrinsic value of girl children, banning sex-selection will only worsen women's outcome.

XI. Challenges in the implementation of PCPNDT Act

Nagpal in her review (2013) points to inherent disconnect between legal framework and feminist ideals with regard to sex selection, sex-selective abortions and consequently protection and promotion of girl children's life. Citing works of Ganatra (2008) and Sarkaria (2009), she enlists a number factors responsible for poor implementation of legal provisions of PCPNDT Act: (a) penalties that are in place to prevent the misuse of sex-determination technologies are not preventing doctors from communicating the sex of the foetus to parents; (b) Ultrasound scanning has become of a part of almost all pregnancies which makes it difficult to differentiate between legal and illegal use of this technology; (c) Ultrasound scanning for sex determination and abortion are not done in two different locations which makes it difficult to establish the link between the two procedures; and (d) One encounters judicial inertia when dealing with cases related to sex-determination and sex-selective abortion. There have been about 400 cases registered since 1994 but only a handful of cases resulted in convictions. As a result, criminalisation of practices resulted in the proliferation of private clinics instead of reducing the frequency of sex-selection. Such clinics have made the sex-determination and sex-selective abortion services cheap, easily accessible and often unsafe (Nagpal, 2013). The need for effective implementation of PCPNDT Act and the significance of formulation of advocacy strategies in the policy intervention were emphasised in studies that focused on challenges in the implementation of PCPNDT Act (Visaria, 2008).

XII. Conclusion

This article has brought together various strands of literature on CSR from disciplines including demography, economics, anthropology, sociology and gender studies. The purpose of this exercise was to examine the linkages between changes in macroeconomic development and women's status in order to understand declining CSR. This review highlights the limitations of hyper-focusing on individual aspects such as technology and policy, and in turn advocates for a strong interdisciplinary perspective that pays attention to various socio-cultural contexts that play a role in shaping gender attitudes and, in turn, CSR. In doing so, this study not only ties debates together but also juxtaposes contradictory studies in order to emphasise the gaps and limitations of specific discussions. For instance, most of the economic studies emphasised the fact that increased work participation of women may lead to more gender equality and, in turn, result in a better CSR. However, Punjab and Haryana have a low CSR despite high female work participation indicating devaluation of women as a cultural practice. Like this, many other contradictions in the linkages are delineated in the narratives.

This article aims to serve as a primer for new research scholars looking to study the trends in CSR. This study has aimed to do this by providing a broad narration of the landscape of existing literature in the field. Future studies in this area could focus on conducting in-depth unpacking of individual linkages between macro-economic development and women's status, and the local specificities of policies successfully addressing declining CSR.

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