Chapter 2

REVIEW OF LITERATURE
2.1. Introduction

Before one goes into the detailed analysis of the present work, it would be useful to examine the specific findings of the studies relating to sex ratio. This will not only help to find out the underlying factors responsible for the current trend of sex ratio in India but also prepare the background for the analysis to follow.

The discussion relating to declining sex ratio in India has not been new among demographers, researchers, government and women organisations. There has been considerable debate on this subject right from first census report. At that time, it was generally assumed that under enumeration of females was the reason for low sex ratio and it was generally believed that India also had a sex ratio comparable with European population. But with the declining trend in sex ratio after 1901 census, the hypothesis of under enumeration could not be advanced any further. It was attributed to higher mortality. The pattern of change displayed by sex ratio prevailing in different parts of India is becoming more and more curious as time goes by. A substantial fall of child sex ratio between 1991 and 2001 at India level has destroyed any complacency in overall sex ratio during the same decade. Few are now optimistic about its future course and about improvements in women's overall position in the coming years. The shortfall in the number of female population at a time when life expectancy of Indian women are rising faster than that of men has complicated the picture further. Triggered off by all these disturbing facts, there is an increasing interest in examining the factors that have been responsible for declining sex ratio in India. The central concern of the present work which is an investigation into the behavioural pattern of sex ratio in India recorded by successive censuses until the latest census of the present century reveals the consensus among demographers about deficit of females to higher female death rates. We will see below that work done on Indian sex ratio till date have made possible the firm rejection of other possible causes of low female proportion in the
population – causes such as persistent undercount of females, migration or purely biological or genetic factors. This paves the way for focussing upon the main concern, the women in India are subjected to greater risks of mortality to disadvantages in life that accentuate their heightened risk of death.

However, different strands of enquiry like differential mortality, pattern of sex ratio at birth, effects of development on sex ratio, changes in sex ratio pattern by social categories, demographic transition and sex ratio, regional variation in India and kinship system etc. have been pursued in the present study which has been marked by literature of their own. Weaving them together will definitely improve the current understanding of the problem and generate new insights. In this chapter, an attempt is made to understand different milestones that have marked the debate on sex ratio variations and low values of sex ratio over the years. The work so far reviewed can be grouped under two categories. In the first category, we exclusively deal with review of work done so far on sex ratio or work that touches specifically on question of the proportion of the sexes in the population. The second category of studies based on empirical data deal with those works which substantiate the fact that women in general suffer from discrimination with regard to mortality, health care, nutrition and education.

2.2. Genesis of Sex Ratio

Not less than 27 well known studies have been reviewed under the first category. In the context of the above discussion, it is necessary on our part, firstly to review the literature dealing with differential mortality by sex and other components of sex ratio will be dealt subsequently. As regards the first aspect, the most comprehensive work on Indian sex ratio is that of Visaria which is acclaimed as landmark in this particular subject.
2.2.1. Sex Differential Mortality and Sex Ratio

Pravin M. Visaria in his work 'The Sex Ratio of the Population of India' which is regarded as most comprehensive and systematic analysis of India's Sex ratio, investigates the possible reasons for the persistently low sex ratio in India. Sex Ratio which is defined in the present study as the number of males per thousand females has always been unfavourable to females since the beginning of the twentieth century. The author analyses the existing theories for sex ratio imbalances like internal and international migration, sex selective under enumeration and abnormally high masculinity at birth. He makes use of census data, NSS data and project data for the period 1901-61.

After weighting available evidence, the author firmly refutes the validity of all the possible causes for sex ratio imbalances in India. Firstly, though the regional variations in the sex ratios of enumerated populations in the sub continent may be partly explained by migration "yet the excess of males exists in India and the subcontinent as a whole and its high magnitude in the Northern and the North Western regions of the subcontinent is not primarily or mainly a result of sex selective mobility to those areas".

Secondly, for the possible explanation of omission of females from censuses, the author postulates that the under count of females is not a very important factor for the excess of males in the subcontinent though he does not rule out the possibility of slight under enumeration.

Thirdly, he also rejects sex ratio at birth as possible explanation because "there is no factual basis for the hypothesis that the population of the Indian subcontinent has a higher sex ratio at birth than the western population".
By rejecting all these existing theories for unbalanced sex ratio in India, Visaria concludes that the main explanation for the declining sex ratio is the sex differential in mortality which is exceptionally unfavourable to females. “The magnitude of such female disadvantage in chances of survival seems to be large enough to explain a major part and sometimes the entire excess of males in the population of the North Western areas of the subcontinent”. The factors responsible for excess female mortality are the strains of childbearing and resulting morbidity at the reproductive period and discrimination against female children and the neglect of females even at adult ages.

Thus, the study put an end to earlier speculations about under counting of females as a plausible explanation and clearly established higher female mortality in several age groups as the prime reason for low female ratios.

In his work on ‘Implications of Declining Sex Ratio in India’s Population’, Ashok Mitra aims at identifying the various socio-economic determinants of declining sex ratio in India upto 1971 under study. Besides this, he considers the sex ratio trends of all the states, Union Territories as well as all the districts from 1901 to 1971. For all the purposes the study makes use of tabular analysis with the help of census data, NSS data and statistics from office of the Registrar General.

The study observes that during the very beginning of the decade 1901-10, there was fall in the ratio which was attributed to female mortality from diseases like plague, malaria etc. and this fall continued from decade to decade except in the decade 1941-50 in which the partition may have contributed to higher losses and wastage of male lives in certain regions counter balancing the continuing diminution of the sex ratio. However, the overall ratio since 1901 shows a continuous trend towards a decline upto 1971.
The study observes that sex ratio differs widely throughout the country so much so that there are some states in which sex ratio has been well above the all India average, e.g. Bihar, Orissa, Andra Pradesh, Tamilnadu, Kerala etc. Again, there are some states which have been well below the average for all India in sex ratio, e.g., Assam, West Bengal, Punjab, Uttar Pradesh, Rajasthan etc. The states which have been close to all India average in sex ratio are Gujarat and Maharashtra. Moreover, sex ratio in urban areas is always favourable to male in India.

After examining the sex ratio trends in different parts of the country, the author provides some possible explanations for the decline in sex ratio. Firstly, high masculinity at birth, secondly, greater neglect of girls than boys in the first few years of their life and thirdly, a heavy toll of female lives in the earlier period of the reproductive age, that is, between the age of 15 and 34. The author believes that greater neglect of females and high rate of maternal mortality are mainly responsible for the decline in sex ratio. He has shown through tabular analysis that percentage of males getting some medical treatment is much higher than the percentage of females. Moreover, 70% of pregnant women in the country suffer from anaemia which contributes to increased risk to their unborn children and 40% of maternal deaths. He shows how the differential incidence of mortality among women has been on the increase in infancy and again in child bearing ages. This increased mortality among females result in declining proportion of females which can be taken as an index of continuing poor status of Indian women. Finally, he pays attention to the economic and cultural environment that generates discrimination against females in India.

Kumudini Dandekar in her work 'Why has the Proportion of Women in India's Population been Declining' discusses the factors responsible for a decline in the proportion of females in relation to males. Sex ratio which is defined in her work as
the number of males per 100 females is showing regular improvement and this is mainly due to higher mortality of females.

Sex ratio though biologically and socially determined, but biological factors influence only in the very early part of life. Thus, it is social factors that have significant impact on sex ratio and in case of India, the excess female mortality is due to social rather than biological factors.

The study observes that, sex ratio at birth in India is slightly higher i.e., 107.8 but it is not the main cause rather the sex differential in mortality which is responsible for male dominance of population in India. The study compares the sex ratio pattern among different countries and finds that the pattern in India and Srilanka is same because of similar culture prevailing in both the countries.

Male foetus is biologically weak and faces greater risk of life upto first month of age in all countries. But after the first month, social factors play an important role in bringing down the male disadvantage India is an exception where we find females are dying at a higher rate than their male counterpart after the first month of age. The author believes that lower status accorded to females is the main contributing factor. The dislike for female child has found expression through female infanticide which was common in the nineteenth as well as early part of twentieth century. The author conducts a health survey among six rural communities which reveals that among non-adults, the percentage of females ailing is higher than males and percentage of males getting some medical treatment is much higher than females. Lower employability of females and educational gap between males and females further aggravated the situation. Maternal mortality in India is so high that it establishes the fact that excessive child bearing compared to advanced countries is responsible for high death among females. From these, the author deduces that the
male in India in comparison with the males in other parts of the world is in a more advantageous position.

Finally, the author examines the sex ratio trends from 1901 to 1971 which is always in favour of males. This is mainly because of the overall change in the death rates consistently in favour of males than females. It has been found that most of the younger females face greater risk of life compared to males because younger females are much more handicapped vis-à-vis males. Thus in case of India, the low social status of females with low levels of education and employment result in the comparative neglect of females health throughout her life leading to their increased mortality and declining numbers in relation to males.

Lincon C Chen in his work on “Where have the Women Gone? Insights from Bangladesh on Low Sex Ratio of India’s Population” has attempted to offer some insights on low sex ratio in India on the basis of experiences gathered in Bangladesh.

The author makes certain demographic generalisations like a continuously declining sex ratio in India since 1901, diversity between the Indian states with regard to sex ratio etc. which in turn generate fundamental questions on accuracy of census data on sex ratio, mechanism of sex ratio calculation, factors responsible for such decline and lastly, measures for solving the problem.

The study observes that males greatly outnumber females throughout childhood and adolescence, but during the adult ages, females out number males, but male again predominates amongst elderly. Females exceeding males in the adult ages may be due to male predominance of adult out migration from Matlab to Dacca. In the neonatal period, male mortality exceeds females mortality where as in the post neonatal period female mortality exceeds male rates. Higher female mortality during post neonatal period persists during childhood, adolescence and -22-
adult years. By ages 45-64 years, male mortality again predominates but among the very elderly (65+), female mortality again exceeds that of males. The author believes that it is not sex ratio at birth or sex selective migration rather the excess mortality of females throughout the life span with the exception of neonatal and elderly ages is responsible for declining sex ratio.

In developing countries, child mortality is influenced by malnutrition, infection and health care practices in response to illness. With regard to sex differences of nutritional status among children, the data from Matlab shows that the percentage of severely and moderately malnourished girls are much higher than that of boys. Similarly, disparity in nutritional status between sexes may be attributed to sex discrimination against females in intra family allocation of food. Moreover, male children are brought to treatment facility more frequently by their guardian than female children.

The author is of the view that one possible explanation for such sex biased health, nutrition and mortality behaviour is related to the inferior status, role and work opportunities of women. Marked sex differentials are observed with regard to intra family food resource allocation and distribution.

With regard to the applicability of Bangladesh data for India, the author observes that this pattern of higher female than male mortality in Bangladesh is uniquely found in only three countries – Bangladesh, India and Iran but in other developing and developed countries, female longevity is much higher than males. However, the author believes that “the Bangladesh data suggest probably that single explanation cannot fully account for the observed low sex ratio of India’s population. Although higher female than male-child mortality probably plays the most important role, migration and methodologic constraints are also possibly
important”. Removal of economic poverty and improvement in the role, status of economic value of women will bring about an improvement in Indian sex ratio.

J.R. Rele and M.K. Jain in their work on ‘An Enquiry into the Declining Sex Ratio of India since 1901’ has made an investigation into the continuously declining sex ratio of India since 1901 which is in contrast to the sex ratio of European countries where it is highly favourable for females. They have observed inter-regional and interstate variations in the sex composition of population in India. In the Northern and the Central zone, sex ratio is very low compared with the other parts of India.

Though sex ratio is affected by migration but the impact of this component on sex composition is very negligible and can be ignored. However, the post partition mass transfer of population has affected the sex ratio of some states and union territories such as Assam, Gujarat, Jammu and Kashmir, West Bengal where the ratio declined due to the influx of refugee population.

As regards the under enumeration of females, the author is of the view that with the improvement in the census enumeration procedures and further with the advancement of the society, the sex differential under enumeration is reducing and it cannot be accounted as an important factor for declining sex ratio in India.

So far as sex ratio at birth is concerned, nature’s balance is favourable to male i.e., more male babies are born than female babies. This fact is supported by data from vital registration, sample registration scheme and from National Sample Survey data all of which report higher masculinity of birth.

However, the study of mortality conditions prevailing in India during the period under study reveals that significant sex differentials in mortality is the most important reason for the phenomenon of the declining sex ratio in India. The trend in
the ratio of female to male age specific death rates show that the reduction in the age specific death rates for both the sexes is not uniform. The data on age specific death rates of rural areas of several states of India during 1965-67 as reported by SRS data reveals that females have higher age specific death rates than males from early childhood upto middle ages. This is mainly due to slow pace of reduction in female age specific death rates as compared with her male counterpart. This is again attributable to low socio-economic status of females as compared with males in India. Female faces discrimination and neglect from the very beginning of their life which pursues her throughout the whole life span.

The authors conclude that the gap between age specific death rates of females and males has widened in the younger and reproductive ages and this has contributed to sex imbalance in the Indian population.

The work on “Excess Female Mortality and the Balance of the Sexes in the Population. An Estimate of the Number of Missing Females” by Ansley J. Coale discusses that the ratio of male to female is dependent on three factors i.e., (i) differences in the ratio at birth (ii) difference through migration, (iii) difference in mortality and this third factor is creating all differences in the ratio.

In European countries, sex ratio is favourable to female mainly because of excess male mortality in past major wars or revolution. But in Asian countries, masculinity in sex ratio is observed because in these populations, mortality rates are higher for females than males in most age groups, from age 1 to age 50 or 60 which are not due to biological factors.

The author observes that sex ratio is not uniform throughout India. In states like Punjab and Haryana, sex ratio is favourable to males because of high female mortality in these states. On the other hand, low masculine sex ratio is found in states like Kerala which is the result of lower female, relative to male death rates.
This sex differential mortality is indicative of discriminatory treatment which is adverse to female outweigh their normal advantage of experiencing mortality lower than that of males.

To show differential treatment that results in higher female mortality, the author makes references of two studies – One in Ludhiana district of Punjab, another in Matlab, Bangladesh. In both areas, female mortality is lower than male mortality in the early months, the pattern which is consistent of general tendency of female advantage in survivorship over the entire span of life. But in the latter part of the first year of life, reverse pattern is observed with female death rates higher than male death rates. This change in mortality pattern is partly due to provision of better nutrition and partly because of better health care provided to male child. In Punjab, it has been observed that mortality rate of under five years of females who have older sisters is higher than those without older sisters. It clearly reflects that higher female mortality is caused by a lower regard for female infants. Moreover, fewer females than male receive medical care and generally, the care that they receive is from attendants at a lower level of competence. The author believes that sex differential mortality caused by discriminatory treatment of females lead to imbalance in sex ratio in India.

The author M.K. Jain in his work on "Declining Proportion of Females in India: Its Extent and the Underlying Factors" traces the trend of sex ratio in India from 1901 to 1971 and examines the extent of the variation in the sex composition of the population in different parts of the country. An analysis of the probable causes of the declining sex ratio in India and a quantitative assessment of the several factors responsible for the interstate variations in the sex ratio is also made by the author in the present study.
The sex ratio which was 972 per thousand males in 1901 declined to 930 in 1971, amounting to a loss of 42 females per thousand males during past seventy years. This general deficiency of females in India is not evenly distributed in different parts of India and trends in sex composition also varies from region to region. In the Northern and Central zones, sex ratio was below the national average, it was very high in the southern zone and in the eastern zone during earlier censuses and in the western zone, it was close to the national average throughout the period. The pattern of sex composition in the state’s population reveals that in states like Gujarat and Maharashtra, sex ratio was close to the national average. But sex ratio was always higher than all India average in Bihar, Orissa Andhra Pradesh, Tamilnadu, Kerala, Myshore and Madhya Pradesh while in Assam, West Bengal, Uttar Pradesh, Punjab, Rajasthan, Jammu and Kashmir, it was well below the average.

The general shortage of females which has been continuing throughout the present century is determined by certain factors (1) migration (2) sex differential under enumeration (3) sex ratio at birth (4) sex ratio at death.

The author observes that migration including post partition refugee movement did not affect sex ratio during past decades because of its small magnitude though the position is reversed at the state level because internal migration plays an important role in the sex composition of the states population. It is further observed that thought the differential in the omission of males and females has some impact on the sex ratio of the population and this impact invariably depends on the extent of sex differentials in the under enumeration but it was not studied in the past decades due to non availability of data. So far as sex ratio at birth (SRB) is concerned, it appears that SRB is in the normal range and hence cannot be accepted for declining proportion of females in India.
In analysing the sex differentials in mortality, the author is of the view that, though females have greater chances of survival in western countries, the situation is completely reverse in India where they suffer from bad mortality conditions as compared to males. The possible causes of the relatively higher female mortality are (a) female infanticide (b) neglect of females (c) early marriage and pre mature cohabitation (d) frequent childbearing associated with unskilled midwifery and (e) poor nutrition, housing and sanitary conditions.

After discussing the declining proportion of females in India and analysing the probable reasons for such decline, an attempt is made by the author to assess quantitatively the impact of these factors on sex ratio of the states population during 1961 census and he concludes that sex differentials in the mortality conditions is the most important contributory factor towards the declining sex ratio in India. However, at the state level, the interstate migration and high female mortality together are responsible for three fourths variations in the sex ratio of a given state. Thus by improving the status of females in the society, reducing the burden of frequent child bearing and extending adequate medical care, the sex differential in the mortality condition could be minimised which consequently would increase the proportion of females in India.

Barbara D. Miller in her work on “Changing Patterns of Juvenile Sex Ratios in Rural India, 1961 to 1971” undertook a study of the change in mortality differentials between boys and girls overtime by examining the changing regional patterns in the juvenile sex ratio in rural India using district level data from the censuses of 1961 and 1971. She also describes the pattern of change in juvenile sex ratio (JSR) and provides implication for such change.

In the present work, JSR has been defined as the number of boys per 100 girls under the age of ten years which has been used as an indirect measures of
sex differential mortality among children. The author clearly demarcates three broad patterns of change in JSR in rural India between 1961 and 1971 censuses. Firstly, a highly masculine JSR and by inference higher girl mortality, which is above the national mean, is observed in western U.P. with surrounding secondary and tertiary rings spreading in Rajasthan and Gujarat to the west, Madhya Pradesh and possibly Maharashtra to the south and Bihar to the East. Secondly, the pattern of JSR which is close to national average is found most uniformly in the south eastern portion of the country. Thirdly, the pattern of JSR which is below national average is apparent in the Konkan Coast and much of Orissa, West Bengal and Assam in the far eastern part of the country.

This variation in JSR which is used as an index of sex differential mortality among children reflects the scarcity of daughters in India. In 1961, there were over one million fewer girls than boys under the age of ten years which became doubled to about two million in 1971 census. In 1981, there were about four million fewer girls than boys. This difference in the number of girls and boys is not due to errors in the data. Rather, it is the direct result of intra household discrimination against daughters in the allocation of food and medical care. Such biasness lowers the health and nutritional status of girls and results in the deaths of thousand more girls than boys every year.

The study shows significant change that occurred between the two censuses in JSR in a wider dispersion throughout the country. In 1961, 30% of the country's districts has JSR over 105 while the figure rose to 40% in 1971 census. This change in JSR may be due to change in the determinants of gender based discrimination. Lastly, the author viewed that a higher JSR in the absence of mortality data may mean two things: either the mortality rate of girls rose during the period under consideration, keeping the rate for boys same or declining or the
mortality rates of both girls and boys improved but improvement was much higher for boys than girls.

Mahendra K Premi in his work entitled 'Female Infanticide and Child Neglect as possible Reasons for Low Sex Raito in the Punjab 1881 – 1931' deals with low and declining sex ratio in Punjab for the period of 1881 – 1931. The ratio is unfavourable to all the three major religious groups – Mohammadan, Hindus, Sikhs of the Punjab province during the same period. The author tries to examine the socio – cultural and economic factors which are responsible for the neglect of girl child thereby resulting in lower sex ratio.

In Punjab, the lowest proportion of females is found amongst most of the communities where infanticide was very much prevalent though neglect of female infant was the general rule. The above discussion has shown that in Punjab two factors – very adverse sex ratio at birth and neglect of the females right from infancy to the old age have been most important for the observed pattern of sex ratio. The author concludes that the socio-cultural and economic factors namely the system of land holdings, inheritance strategies, structured customs in different parts of the province and notions of honour and status which probably have been at the back of neglect of girl child are largely responsible for low and distorted pattern of sex ratios in Punjab.

Natarajan in his monograph 'Changes in Sex Ratio' has brought together the writings on the sex ratio contained in a succession of census reports by various census commissioners from late nineteenth century. The explanations for the low sex ratio advanced by past census commissioners range from concealment of women, female infanticide, under count of females, high sex ratio at birth, maternal mortality to effects of food, climate and consanguineous marriage etc.
The author sums up that though there may be some tendency to omit females but there are no grounds to assume any general omission affecting the ratio. Thus, greater extent of masculinity at birth and higher female mortality in the early years and in the reproductive period may be the explanation for less number of females in India.

An assessment of the above works reveals that the difference between male and female ratio in India occurs mainly because of greater neglect of females than males and resulting higher female mortality. Infact, the differential incidence of mortality among females has been on increase in infancy and childhood and again in child bearing ages. This increased mortality among females results in their declining proportion which can be taken as an index of continuing poor status of Indian women.

2.2.2. Sex Ratio at Birth and Sex Ratio

M.K. Premi in his work on "India's Population Heading Towards Billion", has explained the sex ratio trend in India which is declining continuously except in 1981 from 1901 to 1991. In most populations in the world, sex ratio is favourable to females because of their greater resistance power to disease than males. But situation is different in India where ratio unfavourable to female is observed because of neglect of females which continue throughout the ages.

While explaining about the probable reasons for the declining trend in sex ratio in India, the author argues that there are some indirect indications that SRB in India has been rising. If it is so, then Sample Registration System based abridged life table through simulation exercise indicates that with the rise of one point in SRB, say from 104 to 105, the overall sex ratio declines by 3 points in 10 years, when other conditions remain constant. The author thus believes that an increase in SRB
can partially explain the decline in overall sex ratio, though sex differential mortality is also largely responsible for the decline.

In his work on "Recent Trends in Sex Ratios at Birth in China", Terence H. Hull attempts to analyse data from the one percent survey of China carried out by the State Statistical Bureau in 1987 to show how sex ratio at birth is on rise in China that indicate a serious and growing problem of "Missing" Female Births. He has given three explanations for the rising sex ratio at birth and among young children between 1982 and 1987, all of them related to pressures created by the “One child per couple” policy pursued nationally in China since 1979.

The first explanation postulates infanticide i.e. the missing females are born but die soon after birth due to deliberate neglect by parents. The second explanation relates to gender specific abortion. It means pregnant women obtain information about the gender of the foetuses they are carrying and that numbers of them selectively abort female foetuses. The third explanation assumes concealment of birth of female sex.

The author is of the view that each of these three potential causes of rising sex ratio at birth have various implications for demographic measurement, social effects and remedial policy responses. So far as the impact on demographic measurement is concerned, it has been observed that if the problem of rising sex ratio at birth is attributed to first explanation (rising female infanticide), then both the birth rate and the infant mortality rate are under estimated by an increasing amount over time.

If explanation 2 (differential abortion) is the main cause, then neither fertility nor mortality patterns would be affected and lastly, if greater proportion of the problem is attributed to third explanation, (concealment of females), then there
would be no impact on mortality estimates, although fertility would still be underestimated.

The degree to which high and rising sex ratio at birth have social effects depends on which explanation is most suitable for the reported trends. Accepting of first explanation as valid indicate a social pathology reflecting unfavourably on China's standing within the international community. It would also indicate a violation of numerous human rights conventions and constitutional and criminal law provision. In case of second explanation, it would imply that the state family planning commission has failed to prevent sex selective abortion. Infact, gender selective abortions reflect many of the difficulties and social conflicts inherent in China's reforms. Accepting third explanation as valid would imply that the concealed females suffer a further status loss in an already male biased society. As long as they are hidden from surveys and registration systems, it is likely that they are being deprived of the various benefits of child care, schooling and protection from exploitation to which they are entitled. This indicates a community failure to live up to the ideals of sexual equality officially professed by the state.

The author argues that if the growing problem of "Missing" female births in China is to be reduced, then it can not be done over night, rather efforts will have to be directed to reductions in the incidence of gender based abortion, infanticide and various forms of child abuse rather than to isolated publicity about exemplary individual case. It will have to eliminate the elements of policy and tradition that promote infanticide in general and the killing of female infants in particular.

The author concludes that the proximate cause of rising sex ratio in China is the increasing pressures felt by parents and local functionaries as a result of 'one child policy'. The family planning programme creates a new pressure on parents particularly mothers to give birth to a son. Moreover, the Chinese couples have
strong preference for sons, for support in old age, as carriers of the family name and as the primary recipients of inheritance. At this moment, a comprehensive strategy to raise the status of female children particularly of Chinese women in general is the need of the hour.

"Trends in Sex Ratio: A Review in Tribute to Ashok Mitra", is the work of N. Krishnaji in which the author has attempted to review some recent studies on the trends in sex ratio. He has accepted the established explanation of higher female mortality in several age groups as the prime reason for low female ratios. The decline in sex ratio during a period when the gender gap in death rates is narrowing clearly points out the possibility that larger female deaths are occurring at birth itself.

The author is of the view that increasing female foeticide mainly contributes to decline in sex ratio at birth of females. He refers to the study of Das Gupta and Bhat in the context of East Asian countries where there have been steep decrease in the female ratios among children as a consequence of significant declines in fertility. A cultural tradition of strong preference for sons is very much prevalent in these countries. Hence, well established preference for male progeny combined with an emerging preference for small families results in a loss of girls either before or after birth. The same is applicable for India too where easily accessible procedures for sex determination during pregnancy promote female foeticide. The study suggests that while declining fertility in India has had beneficial effects on the survival of women in the reproductive period through fewer births and a reduction in the associated mortality risk but at the same time, it increase discrimination against female children. Hence Sex Ratio at Birth becomes a very crucial factor for changing patterns of overall female deficits.

However, the interesting phenomenon is the emergence of gender biasness even in southern India. The works of Chunkath and Athreya shows the increasing
incidence of female infanticide in some districts of Tamilnadu including Salem, Dharmapuri and Madurai as a consequence of rapid decline in fertility in these areas. Instead of having improved status of women in South India as measured by literacy, life expectancy and work participation, the preference for sons is getting stronger and leading to female foeticide on a noticeable scale which makes Basu to forward a hypothesis that "a kind of regional convergence is taking place with new forms of bias emerging in the south".

Lastly, the author strongly advocates that the preference for sons in the next few decades will turn out to be a major determinant of sex ratio in India.

The above discussion reveals that increase in SRB in India has now become a reality and accepted as one of the prime reasons for low sex ratio. The widespread use of amniocentheses (foeticide) is contributing towards declining sex ratio through an un-natural increase in SRB. Strong preference for sons combined with an emerging preference for small families results in survival disadvantages of girls either before or after birth thereby affecting SRB in favour of males.

2.2.3. Demographic Transition and Sex Ratio

While explaining the declining sex ratio in India, the author Victor S. D'Souza in his work entitled "Declining Sex Ratio and the Demographic Transition in India" has attracted attention to some of the forces inherent in the process of Demographic Transition which has been bringing about an imbalance in the sex ratio. The decline in sex ratio, as he views can be attributed to a steeper decline in the sex ratio at birth which is rooted in the process of Demographic Transition. Infact, it has been noticed that the countries which are passing through demographic transitionary phase have experienced an increase in the proportion of the birth of male child. Hence, it would not be strange to find that a similar trend is visible in India since it is also passing through the process of demographic
transition. He has identified three major factors which contribute to the decline in sex ratio at birth and infancy which is adverse to females.

Firstly, the recent improvement in maternal as well as infant care is beneficial for the live birth and survival of both male and female child but the former tend to gain more than the latter which is contributing to a decline in sex ratio at birth as well as during infancy. Secondly, an important feature of the demographic transition is the universalisation of the small family norm backed by the ability to achieve it. Thus, the increasing tendency of the Indian couples to achieve the desired family size which in the context of the possible discrepancy between small family norm and the preference for the male child results in the birth of greater proportion of male babies. The third major reason for the decline in the sex ratio at birth which is also indirectly related to the declining size of the family is the increase in the proportion of first order births as the proportion of higher order births are declining as a result of the reduction in the size of the family. All these three factors are closely associated with the progress of demographic transition.

The author however, argues that in developed societies, the unbalanced sex ratio at birth and infancy, adverse to females, is countervailed by their relatively higher life expectancy since the societies which have achieved demographic transition, women live longer than men by 6 to 8 years on an average. But in developing societies like India where it would take many more years for women to achieve relatively higher levels of expectation of life compared to men, the decline in sex ratio is likely to continue for some time. The author concludes the discussion by suggesting that the influence of son preference on sex ratio is likely to diminish in future with the maturity of the Demographic Transition.

Peter Meyer in his work on "India’s Falling Sex Ratio" have made an extensive survey of literature on India’s low sex ratio which are dominated by
approaches that focus on the impact of either discrimination against girls and women or the inferior economic position of women. He discusses about the pronounced regional differences in India’s sex ratio in terms of tradition, culture, kinship, women’s autonomy, work participation as well as cropping pattern and finds greater masculine bias in the northern region than the southern region. However, he has addressed the sex ratio question with a view to explaining the trend of increasing masculinisation of the Indian population over the course of the 20th century in terms of two fundamental concerns which he terms as the historical test and the mortality paradox.

An important pre condition of the historical test is that only those explanatory factors can be examined for which there are satisfactory data series for the period 1911 – 1999. Firstly, he explores a number of alternative historical explanation for the long term decline in sex ratios of India, beginning with women’s work participation since long term changes in the levels of female employment and their effect on increasing male female differences in mortality may be a significant factor in the declining sex ratios in India in the 20th century. The time series data indicate a continuous decline in women’s participation in the work force which is closely correlated with the historical fall in sex ratio. Over 80% of the variation in sex ratio that has occurred since 1911 can be predicted from the changes in the level of women’s employment. Though importance of female literacy in human development and empowerment is well established, the author has observed that in India, as female literacy has increased, the sex ratio has fallen, the correlation being very strong.

While resolving the mortality paradox, the author relies on female life expectancy and finds that though female life expectancy has increased significantly in the past nine decades, but with each expansion of female life span, levels of female mortality measured by the declining ratio of women to men in the population
has increased. Moreover, an examination of the comparative figures for male and female life expectancy indicates that between 1921 and 1991, male life expectancy was greater than females though in 1991, for the first time since the beginning of the century, female life expectancy exceeded that of males.

The author observes that if the boys experience greater improvement than the girls, then with the gain in survival for all children, the number of males would become larger than the number of females during the period of population transition. This means that the declining sex ratio in the 20th century is due to significant sex differentiated improvement in the life expectancy of the Indian population thereby leading to increased population growth. Thus, in examining the association between the changing sex ratio and the rate of increase in Indian population, the author observes more masculine sex ratio with higher rates of population growth. Hence, discrimination and the differing values placed on women make a relatively minor direct contribution to historical trend in India's sex ratio. Until the demographic transition reaches its final phase, the trend toward increasing masculinility in India's sex ratios may well continue into the next century.

From the above, what we observe that the decline in sex ratio in India is attributed to the process of demographic transition by some demographers, since it has been found that the countries which are passing through demographic transition are experiencing an increase in the proportion of male births. Though there is no denying the fact that demographic transition has some influence on sex ratio in India, but it is actually the discrimination against the females manifested in terms of their excess mortality which is at work behind unfavourable sex ratio in the country.

2.2.4. Dowry and Sex Ratio

In a paper entitled "Indian Sex Ratio Through Time and Space: Development from Women's Perspective", Nirmala Banerjee and Devaki Jain examine how at
different times, different forces determine the trends in sex ratio since it is not possible to be certain about the relative weights of different forces influencing the sex ratio trends. Instead of undertaking a rigorous analysis of a particular hypothesis, the study explores evidence from diverse sources about factors that may have influenced the process. It is somewhat speculative in its approach when it explains the recent increase in the prevalence of the custom of dowry and its effects on the child sex ratio.

By taking sex ratio as the most important indicator of women's overall position, the authors view that the shortfall of women in India is clear demonstration of gender bias which is a social construct, shaped and sharpened by cultural and historical legacies. The deficit in the women's number is not due to natural factors since women's life expectancy has increased and it is at par with men. What ever natural differences exist in male female capacities for survival is being compensated by nature itself. The disparity in the number of male and female clearly reflects that deeply entrenched bias against Indian women is still going on.

The Bardhan/ Miller hypothesis of work giving worth to women has been refuted by the authors. They have observed that states having high female work participation has low sex ratio, on the other hand states with high sex ratio is experiencing a fall in female work participation. Moreover, cropping pattern remains a very poor explanation of whether women were in the work force or not. Hence, level of women's work participation cannot be taken as an indicator of sex ratio.

Low regard for the girl child is not really because she is not expected to contribute significantly to the family welfare. Rather, in many cases, it has been found that a family which permits or expects a daughter to earn a living runs the risk of losing its social status and further reducing their daughters chances of making a
good marriage. The authors say that, "in the Indian context, it is a cruel joke to opine that work gives women worth".

In almost all communities in India, the compulsion for the father to get all daughters married has a major impact on a girls' position in her natal family. The fact that for girls, there is still no alternative to marriage is the chief cause of their vulnerability to excess dowry and therefore to disfavour with their parental families. It has been observed that men in India generally marry women younger to them by about 5 to 7 years. Thus, in a continuously rising population in India since 1921, the cohort of women at marriageable age is always larger that of the men who are to marry them. The scarcity of grooms raises their value vis-à-vis that of the brides and leads to bride price being replaced by dowries for buying the scarce grooms. As a result, the men who get marginalised due to growing uncertainty of life time income that is reflected in the lack of access to assets for a regular living in a fixed occupation, opt for marriage market and look to dowry as a means of buying their way into a better living.

Lastly, the authors emphasise the urgent need for policy intervention to improve living facilities for single women and also for a strong women's movement to change the image of a girl as arakshaneeya [incapable of being protected] in the eyes of the society.

Ashish Bose in a paper entitled "Fighting Female Foeticide: Growing Greed and Shrinking Child Sex Ratio" deals with the contradictory phenomena as revealed by the recent census data. In 1991, the overall sex ratio improved and so also the child sex ratio (0-6 age group), while in 2001, the overall sex ratio improved but the child sex ratio declined. During 1981-91, there was a decline of 17 points in the child sex ratio and a decline of 7 points in the overall sex ratio while during 1991-2001, there was a decline in 18 points in the child sex ratio and an increase of 6
points in the overall sex ratio. The decline in the child sex ratio is all pervasive and has occurred throughout India in 2001. The most shocking declines are in Punjab, Haryana, Himachal Pradesh, Chandigarh, Gujarat and Delhi followed by Uttaranchal, Goa and Maharashtra.

In the context of alarming decline in child sex ratio in 2001 census, he has coined another acronym DEMARU where D stands for daughters, e for elimination, m for male, a for aspiring, r for rage and u for ultrasound, that is to say, daughter eliminating male aspiring rage for ultrasound. The author has classified Punjab, Haryana, Himachal Pradesh and Gujarat as DEMARU states. The ready availability of doctors during ultrasound test and the paying capacity which is conspicuous in the richest states of Punjab and Haryana may have been responsible for large scale female foeticide there. It is unfortunate that the son complex is not confined to Punjab and Haryana but it is creeping all over India even in the progressive South Indian states of Kerala. However, the latest census of 2001 confirms that increasing incidence of female foeticide has been affecting the Sex Ratio at Birth to become more and more favourable towards males which is however reflected in terms of adverse child sex ratio.

While discussing about the underlying factors behind female foeticide in India, the author argues that socio-cultural bias against the girl child is largely continuing in our society as a result of which girls are still treated as liabilities and boys become the assets. According to the author, “Girls mean dowry and with growing greed in Indian society and the mindless consumerism propagated by TV channels for 24 hours, the demand for dowry will increase further”. If things continue like this, the child sex ratio is likely to go down further in the coming years and this growing imbalance in the proportion of sex will distort the society resulting to polyandry and consequent conflict and violence.
An examination of the above works reveals that dowry has tremendous impact on sex ratio in India. Infact, the largest decline in child sex ratio in 2001 census has been attributed to the prevalence of dowry system in India. However, to what extent dowry is prevalent in Barak Valley region and in which way it is affecting the sex ratio pattern needs to be studied and will be taken up in the course of our micro level analysis.

2.2.5. Regional Variation and Sex Ratio

Barbara D. Miller in her work on 'The Endangered Sex: Neglect of female Children in Rural North India' makes a study about children some of whom are wanted and some of whom are not. She makes an in depth analysis about the power of culture in shaping family attitudes towards children and in determining how children are treated differently according to their sex. The study also examines sex ratio in India and explores reasons for unbalanced sex ratios among children in present day rural India and considers cultural link between the present and the past.

She further attempts to work out the interaction between the forces of agricultural production, nature of property holding and the sexual profile of the population representing the North-South dichotomy of these three forces. Discrepancy in the sex ratio due to differential survival rates for boys and girls is also examined and it is ascribed to comparative neglect of female children. It also demonstrates the interaction between culture and differential mortality patterns for age and sex groups.

The study makes use of historical analysis to draw a picture of where and by whom female infanticide was practised in the pre twentieth India with the help of secondary reports from the British period. It is found that the practice of female infanticide was confined mainly to the northern part of India from Gujarat in the west to the eastern border of present day Uttar Pradesh.
The author also discusses the regional and social variations in the juvenile sex ratios of rural India. She identifies two distinct regional ecological patterns in the Indian sex ratio viz. Northern with low female work participation in a wheat growing area, marriage payments from female to male and low sex ratio and southern with high female work participation in a rice growing area, marriage payment more equal and high sex ratio. She also finds that there are different patterns of mortality for boys and girls in North and South India and confirms the hypothesis that unbalanced juvenile sex ratios in the North are indeed the result of sex differentials in mortality. There are three factors that could result in differential mortality rates between boys and girls, namely, nutrition, medical care and love.

In the book under review, the author makes an important distinction between 'etic' perspective and 'emic' perspective. While the 'etic' perspective explains the economic value of a woman in terms of her roles in agricultural production, the 'emic' part of the explanation emphasises the importance of marriage costs and their influence on family feeling about daughters.

Lastly, the author examines the cultural foundations for strong son preference and daughter disfavour in the north India. Certain economic, cultural and personal advantages of sons over daughters are so large that there is a strong preference for sons rather than a clear dislike for daughters. The author warns that the future of females in India may be endangered by the increasing possibilities of sex selection of offspring at the time of conception. If such a choice were made available to the Indian population, then a time will come, when people opt for many more sons than daughters.

Miller's indepth analysis mainly highlights the socio cultural discrimination against the girl children pronounced in northern region in India as a primary reason for the higher girl child mortality. Such discrimination or 'culture against females'
creates an unequal access for the girl child to life sustaining inputs like food, health and parental care compared to male children in the family which results in deterioration in the proportion of females in Indian population. Miller's work has opened up one important lines of enquiry, that is, the role of economic factors in determining the intra household distribution of resources. Thus 'work' as determinant of 'worth' line of enquiry has been strongly emphasised by Miller through her analysis of the relation between sex ratio and female labour participation.

In a paper entitled "An Analysis of Sex Ratio Differentials by Regions of Madhya Pradesh", A.S. Dange attempted to analyse sex ratio differentials by regional pattern in the state of Madhya Pradesh. He observed preponderance of females in the eastern part of the state (which happened to be a rice growing area with a predominantly tribal population) as compared to the west which was wheat growing and had a more mixed population. Even in the non rice region, Dange found higher sex ratio of the tribal population which might be attributed to relatively higher status of women in tribal culture.

Pranab K. Bardhan in his work 'On Life and Death Questions' attempts to discuss the disparities in the vital rates in India like the rates of mortality and morbidity between various socio economic groups or on their link with the specific health and nutrition status of these group to their regional variation.

He starts with regional distribution of nutritional inadequacy in India. It is seen that the most calorie deficient state (e.g. Kerela) has the highest expectation of life at birth and lowest infant mortality. On the other hand, states which are calorie sufficient have the lowest life expectancy and highest infant mortality. This paradoxical regional variation may be due to better health and sanitation practices in Kerala compared to several other parts of the country.

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The author then discusses the impact of the differential access to nutrition, education and public health facilities for the different socio economic groups on the differential incidence of morbidity and mortality among these groups.

Lastly, the author analyses the regional variations with respect to male – female differential. It has been found that the female relative disadvantages in chances of survival is significantly higher for North and North Western regions of India and it is much smaller for East and South India. Regional variations in the nutritional intake, frequency of child birth and too early child bearing may be important causes of female death but these are not likely to be fully satisfactory explanation. But economic value attached to females may be a possible explanation for such differential. Male child is a potential source of economic support and are more valued in North and North West India compared to East and South India.

In all the states of East and South India, the predominant crop is paddy which tends to be relatively intensive in female labour. Transplantation, weeding, harvesting and threshing of paddy are exclusively female job. But in North and North western region where dry and wheat cultivation is prevalent, the work involves more muscle power. Thus, it may happen that in areas with paddy culture the economic value of a woman is more than in other areas, so that female child is regarded more of an asset and less of a liability than North and North West India. Thus the author believes that the adverse sex ratio is due to neglect and discrimination of female children which is related to the low participation of female labour in agriculture and in income generating activities. This idea is based on the observation that females are more disadvantaged in areas of dry land cultivation which includes the wheat growing areas of Northern India where their rates of labour for cultivation are low as compared with areas of wet land cultivation.
While discussing about regional variation, Tim Dyson and Mick Moore in their work entitled “On Kinship Structure, Female Autonomy, and Demographic Behaviour in India”, examine the long term historical consistency of the dichotomous regional pattern of demographic performance in India. They also develop a sociological model of different gender relations inherent in North and South Indian culture for explaining the differences in demographic behaviour.

They identify a link of division between North and South India that runs roughly along the lines of the Satpura Hills. The region to the North of the line is characterised by greater masculine bias in the population, higher levels of fertility, lower ages at marriage and higher levels of infant and child mortality than those to the South.

The authors are of the view that this regional demographic dichotomy is due to socio-cultural variation deeply rooted in India society which can be conceptualised in terms of kinship structure. The north Indian cultural system is characterised by the marriage of women into unrelated families outside their places of birth, political and economic solidarity among males and the exclusion of women from the inheritance of property. In the South, cross cousin marriage, male alliance with other males with whom they are related by marriage and the transmission of property to women. Thus the kinship structure in both the regions are so different that the southern kinship structure provides greater freedom, higher social status and consequently higher autonomy for women than northern kinship structure. High autonomy implies an ability to influence and make decisions covering the full range of personal and household affairs. Thus the division between the areas of northern and southern demographic regions broadly coincides with the division between areas of northern kinship – low female autonomy and southern kinship – high female autonomy. In the northern kinship system, where marriages create alliance for patrilineal groups, where female chastity is particularly prized and where women
are virtually powerless in their choice of partners, there are clear advantages to arrange early marriages. It is thus evident that women in such a system are subjected to relatively strong pronatalist pressure to produce male heirs and they are faced severe restrictions on their ability to control their fertility. As a result, females in the north are constrained from adopting family planning technique.

The authors observe that differences in kinship structure and female autonomy between north and south is a major influence on patterns of child care as well as child mortality. The family structure under southern kinship allows women to exercise greater indulgence towards their child in intra familial distribution of food and medical care which in turn benefits the survival of female children. The main reason for masculine sex ratio in the north is due to higher female mortality which is strongly influenced by age old practice of discrimination against female in access to food and medical care and such discrimination are mainly rooted in the northern kinship structure. From policy point of view, the authors suggest that the future demographic progress in northern India requires a wholesome revision of gender relations.

From the above discussion, it can be concluded that, regional variation in Indian sex ratio is a well established fact. The North South divide on sex ratio pattern is basically linked to differences in historical, demographic, cultural, ecological, economic and most importantly kinship system. Such a background knowledge of regional pattern on Indian sex ratio will give us greater insight and better idea of the pattern of sex ratio in Barak Valley and to identify the main factors that are responsible for the current trend of sex ratio.

2.2.6. Social Group and Sex Ratio

In a paper entitled "Increasing Gender Bias among Schedule Caste: Disaggregated Analysis of Decline in Sex Ratio in Madhya Pradesh and Rajasthan,"
1961 – 1991”, R.P. Gupta has attempted to explore the sex ratio behaviour among the three social categories of Indian population – the tribals, the schedule caste and the others referred as a general category with particular reference to Madhya Pradesh and Rajasthan and has tried to locate the factors responsible for the different pattern of changes in three social groups between 1961 – 1991.

It has been observed that in Madhya Pradesh, sex ratio of all the three categories declined but the decline was highest for SC. On the other hand, in Rajasthan, the sex ratio of ST and general category or non SC/ST increased but that of SCs declined. The author is of the view that social, cultural and economic factors are responsible for such variation in sex ratio among three categories since the impact of all these forces on females are related to the caste and class they belong to.

In the post independent India, SC and ST people are trying to be upwardly mobile in the social hierarchy. Along with increase in political power, SC people started adopting life style of higher caste people i.e. non SC/ST for gaining better acceptability in the society. Whereas for the ST people, the process of adoption of life style of higher caste people was not so strong since they have been very particular about preservation of their culture and identity.

The process of change in the life styles of upwardly mobile castes which is referred to as “Sanskritization” resulted in privatisation of females and forced tight constraints on them thereby badly affecting the work participation rate of females among SCs. Thus, the decreased economic value of females resulting from fall in female work participation rate also affected the allocation of resources within the family which in turn affected the relative survival chances of girls. There are, however, clear signs of the process of emancipation of females among non SC and STs. With the modernisation of the economy, the females of non SC/ST category
are exposed to more economic opportunities which improve their economic status. As a result of which, the restrictions on their sexuality and their privatisation has been reduced.

The process Sanskritisation among ST category was not as strong as it was among SC though both belong to economically and socially depressed classed in the society. Because, the tribals have never become the integral part of Hindu society and they maintain their separate socio cultural identity throughout the history. The author has identified the preservation of separate socio-cultural identity by tribals as the main factor for continuous higher sex ratio among them in the three social categories. Thus sex ratio behaviour in India is very much influenced by class and caste division of society.

Arup Maharatna in his work on "Fertility, Mortality and Gender Bias among Tribal Population: An Indian Perspective", critically explores the India's tribal demographic behaviour in terms of fertility, mortality and gender bias among tribal population in the post independence period. It has been observed that tribal fertility like general fertility vary across regions and tribes and there has been a declining trend in it overtime. Interestingly, the overall tribal fertility is always lower than that the levels for their closest comparable non tribal group namely SC inspite of similar economic condition in terms of poverty and levels of living. However, the pace of contemporary fertility transition among ST is somewhat slower than for non tribal group which may be due to their relative isolation from the main stream development effort and family planning programmes.

Tribal mortality like fertility varies quite widely across various tribal regions and it has been declining overtime. Moreover, Indian tribals appear to have a mortality advantage compared to non tribal population particularly the SC group. It has been estimated from the National Family Health Survey data that in 8 out of 11
states, infant mortality rate for ST group is lower than that for their most comparable group i.e., SC population. Tribals life styles having relatively low levels of crowding and pollution and prolonged breast feeding as well as longer birth interval may be attributed for better infant/child survival. However, the author is of the view that such tribal mortality advantage in the past especially prior to the spread of modern antibiotics and vaccinations has been eroded in course of increased contact and socio cultural assimilation within mainstream society. There is evidence that currently observed high maternal mortality and child mortality among tribal communities is sometimes the result of their much lesser accessibility to modern medical facilities partly because they are pushed back to relatively remote adverse and unhealthy areas and partly due to their own beliefs and prejudices relatively to health and modes of treatment.

However, the most important feature of Indian tribes that deserves special attention is the balance sex ratio unlike the mainstream population in many Indian region. The more egalitarian character of tribal gender relations and lesser gender bias in mortality is held responsible for such balanced sex ratio. But the author observes with a deep sense of concern that such a historic gender equity in terms of mortality and other indicators of well being instead of being duly preserved has been disappearing with so called assimilation and modernisation process. Since the sex ratio of the aggregate tribal population has declined from 983 in 1981 to 972 in 1991, it seems that with India's overall development and assimilation, sex pattern of tribal mortality has been conforming increasingly to anti female mainstream pattern. An increasing trend of son preference has been noticed among some tribal groups. Hence, the present day evidence on gender bias and female disadvantage among tribals is due to increasing influences from neighbouring caste Hindus and their patriarchal norms and values.
In this context, the author believes that the preservation of gender equality and female autonomy of traditional tribal culture should be the immediate policy recommendation. This necessitates an urgent need for systematic investigation into the nature and trend of intra household gender bias in tribal well being and also for its social cultural determinants.

An examination of the works on sex ratio by social groups reveals that sex ratio behaviour in India is very much affected by class and caste divisions of society. The ST communities who are mostly characterised by egalitarian character of gender relation with highest sex ratio compared to other social groups are now witnessing a decline in sex ratio, thereby creating a deep sense of concern among the demographers. However, in course of the present work, we will collect primary data on sex ratio disaggregated by various social groups to examine whether the same situation persists in the valley or not.

2.2.7. Development and Sex Ratio

M.K. Jain in his work on 'Impact of the Levels of Development on Sex Ratio of India – A Micro Level Analysis' makes an attempt to establish a relationship between the levels of development and the sex composition of the districts population in India, its regions and states. Generally, sex ratio is affected or determined by four factors – sex ratio at birth, sex ratio at death, sex differential migration and sex differential under enumeration. Again, these factors vary according to the extent of development of the particular area as differential mortality conditions of the two sexes is negligible in the developed areas because of better medical facilities and higher standard of living. Similarly, in developed areas, migration will be of significant amount due to modern industrial growth and male dominated migration into these areas. Thus, the author observes that the overall impact of modernisation will tend to produce a low sex ratio in developed areas
where as in underdeveloped areas, the absence of these characteristics will increase the sex ratio.

The classification of 326 districts of India according to the four levels of development is adopted from the 1961 census of India and it refers to the extent to which the twin process of economic development and cultural changes are at work in these parts of the country. From sex ratio computed for each level, it is observed by the author that sex ratio at the lowest level is very high as compared to the sex ratio observed at the highest levels of development in India. The sex ratios at the second and third level are found in between the sex ratios observed at the first and fourth level. The author observes similar trend at the regional level. In the central, eastern and western regions, the lower sex ratios have been observed at the successive levels of development, but some fluctuations are observed in the sex ratios of Northern and Southern region. However, the overall picture emerges at the regional level shows that sex ratio of the population living in the districts classified at the lowest levels of development is invariably higher than that of population living in the districts classified at the highest levels of development. The state level analysis also shows the same picture.

In conclusion, the author is of the view that the level of development of a particular region or a state has tremendous effects on the sex composition of the population of that area. A relatively low proportion of females at the highest levels of development is observed mainly due to the fact that the process of modern development has contributed in lowering the sex ratio which will continue in near future also. "The reason seems to be quite obvious because with the onset of modern development i.e., industrial growth, the process of population redistribution gets momentum which in turn results in to the growth of urbanisation and in the urban areas, the proportion of females to males is significantly lesser than the rural areas, because of job opportunities". Lastly, it can be said that, the regional
development has inverse impact on the sex composition of the population of an area.

While explaining the influence of poverty on sex ratio, N. Krishnaji in his work entitled "Poverty and Sex Ratio: Some Data and Specifications" observes that discrimination against female children is less intense among poorer household thereby resulting into higher sex ratio there. He has taken into consideration two types of relationships firstly, the sex ratio variations across families with land holdings of different size and between agricultural labour and rural household, secondly, between sex ratio and poverty defined by per capita consumption of families based on National Sample Survey data.

The author observes that agricultural labour household are characterised by a better sex ratio than other rural families consisting of middle and big landowners. Higher sex ratio is observed among labour household without land than with land, the sex ratio being 990 and 976 in 1964 - 65 and 982 and 969 in 1974 - 75. It means that sex ratio is influenced positively by land related variables even at the lowest end of the land scale among the labour families. Thus, an inverse correlation between the average household size and sex ratio has been noticed by the author i.e., highest proportion of females among landless labour households who also have the smallest average size. On the other hand, female male ratio declines as the land holding increases i.e., big deficits of females occur in the middle and big land size classes.

In the state level analysis also, sex ratio over 1000 is observed in the smallest land size class of less than an acre with the exception of Assam, Rajasthan and West Bengal. In the states of Punjab and Uttar Pradesh, (which are known for largest deficit of females) females outnumber males in the smallest
landholding class. In the south, which has highly feminine sex ratio, the upper end of the land scale reveals relatively masculine sex ratio.

The author is of the view that these variations in sex ratio may be influenced to some extent by rural to urban migration particularly more prominent among males seeking work. Such a sex selective migration to a large extent accounts for a higher sex ratio among agricultural labour and land – poor households. Propensity to migrate to towns aspiring for better opportunities and higher standard of living is high among those who have lesser landholdings. But it has also been found that household with biggest land holding category has a corresponding tendency to migrate. Thus explanation for higher sex ratio among labour and land – poor families is not only due to male emigration but possibly because of narrower mortality differentials between males and females.

Krishnaji further observes that sex ratio is higher at lower levels of the per capita expenditure scale and vice versa. The ratio is close to or over 1000 in many states of India at the bottom end of percapita expenditure while very low ratio of 800 and below are observed at the other extreme i.e., among families which can be described as the richest according to the criterion of per capita consumption.

In conclusion, the author argues that though mortality rate is higher among the poorer households, the differential between the sexes are relatively narrower in some age groups. It is possible that discriminatory practices particularly in relation to nutrition and health care are more intense among the land owing classes than in poor families, who have very low standard of living. This may be due to the fact that economic value of a woman is much higher for a labouring or small cultivator family than for a big farmer.

S. Sudha and Irudaya Rajan in their work on ‘Intensifying Masculinity of Sex Ratios in India: New Evidence 1981 – 1991’ attempt to examine sex ratios among
infants aged under 2, child mortality by sex and sex ratio at birth to see whether bias against female children persists during development and fertility decline and whether pre-natal sex determination techniques and abortion of female foetuses are spreading in India as else where in Asia.

The authors have observed increasing masculinity of sex ratio at birth in India which indicates that the preference for male children is unchanged by fertility and mortality decline and socio-economic development. Moreover, the increased masculinity in urban areas which have higher literacy and better health services suggests that the trend is due to the spread of prenatal sex determination and selective abortion of female foetuses. This reveals the fact that development in India is mostly to women's detriment which have only pushed them to the states of survival.

An assessment of the above works reflects that the process of development in India does not bring any positive change in women's life rather it has increased her economic marginalisation and greater socio-cultural devaluation. In terms of survival also she has experienced the greatest retrogression as revealed from her continuously declining proportion in total population. This leads us to believe that gender based inequality in the society will not decline only with the process of economic growth and development unless it is accompanied by rapid socio-cultural changes.

2.2.8. Violence and Sex Ratio

Philip Oldenburg in a paper entitled "Sex Ratio, son preference and violence in India" has viewed that the declining sex ratio in India is reflective of the deliberate choice pattern of the parents. Indian parents want more sons than daughters due to certain economic and cultural factors. The economic factors include the value of women in agricultural work, the expectations of financial support, not just in old age
and the burden of providing dowry. The cultural factors include the need for sons to carry on the lineage, the need for children in religious rituals and the physical and emotional support that comes from co-residing with children. All these socio-economic and cultural reasonings make the parents want sons so much so that they even kill their daughters. However, the author would like to propose another factor which has not often been cited, that is the perception of a need for sons to uphold with violence as family’s power vis-à-vis neighbours.

In this present work, the author thus examines the hypothesis that families in west central Uttar Pradesh want more sons because additional sons play important roles in local power struggles and enhance their capacity to defend themselves and dominate in the family and village by investigating the correlation of sex ratio with violence in the state. The correlation of sex ratio with violence has been investigated by the author by using murder case rate i.e., murder cases registered per million population as a fairly crude proxy variable for the incidence of violent behaviour. What he observes is that districts with high sex ratio have low murder case rate and vice versa. However, the author argues that a more careful micro study of the hypothesised linkage between sex ratio and violence has to be made before reaching a firm conclusion. Though it is a fact that in violent prone areas, the strong arms of adult sons and other male relatives are needed for the exercise of day to day power. In these areas of violence, daughters are seen as even greater burden than elsewhere because of greater risk of rape and abduction.

The author concludes that the low and declining sex ratio in India are the results of the preference for a family with more sons than daughters in it and the situation will not improve until that preference pattern is altered. Though less violent and confrontational social system may bring about a change in the preference pattern of Indian parents, but certain social and economic changes are necessary for enhancing the autonomy and power of women in India.

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The overview admittedly provides a detailed outline of the literature relevant to our analysis. Scholars and researchers have made attempt to understand the demographic puzzle of declining sex ratio in India at different periods of time. Actually, what is perturbing to them is the empirical reality that inspite of better biological advantages of women over men right from childhood, the sex ratio in India continue to be unfavourable to women. Several explanations have been advanced tentatively and with certainty but the weight of the available evidence indicates that the main factor responsible for the declining trend in sex ratio is largely due to mortality pattern which is highly unfavourable to women, a demographic aberration. The gender differential in mortality is a direct concomitant of highly discriminatory socio-economic practices which starts even before the birth of female child. The unbridled use of new sex determination technologies like amniocentesis that led to the abortion of thousands of female foetuses have been increasingly contributing to the female demographic disadvantage as revealed from the worsening child sex ratio. It is suggested that strong male domination and discrimination against women and cultural tradition of strong preference for sons result in increasing death of female either before birth or after birth and running well into the reproductive years. In societies like India, higher mortality for female is reflective of the role and status (inferior) of females both within the family and in society at large. This actually represents the health consequences of socio economic and cultural discrimination against them the discussion of which is therefore, taken up in the next section.

2.3. Gender Discrimination and Sex Differential Mortality:

In this section, we have reviewed about thirteen (13) works all of which provide evidence for excess female mortality due to unequal access by gender to the means to sustain life. Reviewing of all these works infact substantiate our standing that declining sex ratio in India is the result of gender differences in
mortality. Under allocation of food and medical resources to females as compared to males is widely recognised as the mechanism responsible for excess female mortality. All these studies have suggested that females are under valued to such an extent that son preference and concomitant daughter neglect often jeopardise the survival of the females. In order to have a comprehensive understanding of the nature of excess female mortality, this section draws together information from several different studies, firstly from Bangladesh (because once a part of India, Bangladesh has socio-economic structures which have close resemblance with India) and then from India on the extent and variation in this phenomenon and the mechanisms and motivations which brings about it.

2.3.1. Gender Discrimination and Sex Differential Mortality: A Bangladesh Experience.

Stan D’Souza and Lincoln C. Chen in their work on "Sex Differentials in mortality in Rural Bangladesh" provide conclusive documentation of higher female mortality than male shortly after birth through the child bearing ages in rural area in Bangladesh inspite of expected female superiority in life expectancy. Environmental factors lead to this differential mortality by sex. Because in traditional societies, where patriarchy prevails, preference for sons over daughters are strong, females and males receive differential treatment throughout their lives, with the former being discriminated against in medical care, food distribution, access to education and other resources in poor society. The data for the analysis have been collected from Matlab Thana, International Centre for Diarrheal Disease Research which has operated as a demographic surveillance system in Bangladesh for four study years 1974 – 77.

The study observes that the crude death rate for females is higher than the corresponding male rate but a break down into neonatal and post neonatal mortality
rates presents a very different picture. Neonatal rates for males are significantly higher than male rates as male biological risk of death is much higher than female. Conversely, post neonatal female rates are significantly higher than male rates which is governed by environmental factors. Sex differentials of infant mortality, therefore display a reversal from neonatal to the post neonatal period. It has been observed that female mortality rates are 46 to 53% higher than the corresponding male rate upto age 3 years.

The authors also examine the infant mortality among twin live births for the four study years combined. Twins are at higher biological risk at birth as a result of which overall infant mortality rates are three times higher than for single birth. However, interesting is the fact that female – female twin births experiences the highest infant mortality rate and male twin births experience the lowest post neonatal mortality rates.

Possible explanations for such aberrant childhood mortality differential may be intra family food distribution, feeding pattern, discriminatory parental care, treatment of illness favouring male children etc. During child bearing years, repeated pregnancy, child birth and induced abortion result in higher female mortality. The authors observe that such excess female mortality caused by sex differentials with respect to illness, malnutrition and morbidity actually speaks of the conditions prevailing in other regions of rural South Asia.

The study of Lincolin C. Chen, Emadul Huq and Stan D'Souza on "Sex Bias in the Family Allocation of Foods and Health care in Rural Bangladesh" examines the sex biased health and nutrition behaviour in rural Bangladesh which discriminates against female children thereby causing female predominance in the childhood mortality rates. Son preference in parental care, intra family food distribution, feeding practices and utilisation of health services are some of the
behavioural mechanisms through which sex biased health and nutrition related behaviour favouring male children is reflected. The data which has been used in the study are obtained from Matlab, Thana, Bangladesh at the rural field research station of the ICDDR for the period 1974 – 77.

Male mortality exceeds female mortality in the neonatal period because of higher biological risk of male foetus. However, during the post neonatal period, the pattern get reversed with female mortality exceeding male mortality which continues during reproductive years. The sex differential mortality is most pronounced in the 1 – 4 year age group in which female rates exceed male rates by 45%.

The major forms of illness among children in developing countries are protein calorie malnutrition and the common childhood infections. The authors have not only identified but also observed that the prevalence of malnutrition which is manifested through nutritional disparity is markedly higher among female children than among male children. This disparity in nutritional status between sexes may be attributed to sex discrimination against females in the intra family allocation of food. So far as health service utilisation or recovery rate is concerned, it is seen that despite free transport services, male children are brought to the treatment facility more frequently than female children by their guardians.

The study’s finding show that there is consistent discrimination against female children in comparison to male children. One possible explanation for such discrimination is related to the inferior status, role and work opportunities of women in Bangladesh. Intra family resource allocation and behaviour reflect such sex bias. Grown sons are economic asset. They provide income and security to the parents in their old age whereas daughters are liabilities. Investment in girls (dowry) donot contribute in the same manner as investment in boys to long run family well being and security.

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Lastly, the authors conclude that improvements in the health and nutritional status of female children is not possible only by increasing the efficiency in the mobilisation and application of available household resources. Rather fundamental structural changes in the role, status and economic value of women in the society will be required in addition to alleviation of the economic poverty.

Nazmunnessa Mahtab in a paper entitled "Health Education and Nutrition of Rural Women in Bangladesh" has attempted to discuss three very important and basic aspects of development with respect to rural women in Bangladesh - health, nutrition and education. These variables are interrelated and interdependent and prime determinant of the development of an individual's life. However, these three aspects are often ignored when formulating policies which further tend to reinforce the gender bias already existing at family and social levels.

It is observed that women in Bangladesh have an inferior social status as measured in terms of their poor health, malnutrition caused by inadequate food intake etc. The author is of the view that the cultural inhibitions and discriminatory food distribution are the root causes of health and nutritional problems.

So far education is concerned, women in Bangladesh are the most deprived groups as they constitute the majority of school dropout and the number of female illiterates are ever increasing. The authors argues that Islamic religion has reinforced and consolidated women's inferior status thereby leading to the negative attitudes towards women. Until and unless women are treated as persons and not as dependent and inferior like at present, there will not be any improvement in the status of women.

The work on "Effects of Family Composition on Mortality Differentials by Sex among Children in Matlab, Bangladesh" by Pradip K. Muhuri and Samuel H. Preston examines the effect of sex composition of older siblings on the mortality of
male and female children in Bangladesh. It analysis the degree to which excess female child mortality is a general phenomenon or is concentrated among families with more than one daughter.

The significant finding of the present study reveals the fact that mortality is much higher among girls with older sisters than among those without sisters. Male and female child mortality rates are relatively similar in families in which only older brothers are present or in which there are no older siblings. However, if only older sisters are present, girls mortality is more than double than that of boys at all ages. Among mixed sex siblings, excess mortality of girls is also marked. Thus parental discrimination against girls is highly selective and is concentrated among families with daughters. It suggests that higher female mortality is not primarily a result of a general pattern of cultural practices that treats all girls differently from boys. Rather, it points to a pattern of conscious, selective neglect of individual children.

M.A. Mannan in his work on "Sex division of Labour and Son Preference in Rural Bangladesh" attempts to answer some questions regarding son preference, by particularly concentrating on the economic importance of children. The author observes that the differential contribution of the two sexes being influenced by the mode of production in the society provides the economic basis for favouring sons over daughters.

Wherever son preference is strong, it tends to be accompanied by discrimination against women which is due to socio cultural attitudes and prejudices, religious influence and the exclusion of women from productive work as full and equal partners. Explicit manifestation of sex discrimination in childhood in terms of differential feeding and differential medical care have serious implications for the health of girls and their well being.
The author, however, recommends some policy measures including increasing access of girls and women to education and to productive resources such as land and credit which will enhance the perceived and economic value of women.

2.3.2. Gender Discrimination and Sex Differential Mortality: An Indian Experience.

Amartya Sen and Sunil Sen Gupta in their work on 'Malnutrition of Rural Children and the Sex Bias' make empirical studies of the nutritional conditions of children below 5 years of age in the two villages of Sahajapur and Kuchli in the Birbhum district of West Bengal. There has been a very active land reform programme around Kuchli whereas Sahajpur has a programme of direct nutritional intervention. Primary data has been collected for 236 children of which the number from Sahajpur is 146 and from Kuchi 90. The surveys are basically cases of complete enumeration rather than of samples.

The study finds evidences of high incidence of severe and disastrous undernourishment and systematic sex bias reflected in higher deprivation of girls vis-à-vis boys in the form of greater prevalence of undernourishment among girls than among boys and in the lower growth dynamics of girls in relation to boys.

Another significant findings of the study is an important contrast in nutritional standard of children as well as in the sex bias of nutritional deprivation between the two villages under study. It is interesting to note that the village with better overall nutritional record has much sharper sex discrimination. Infact, the nutritional inferiority of girls in Sahajpur is sufficiently slight whereas in Kuchli it is large and statistically significant. In both the villages, girls are systematically more undernourished at every level but while the gaps are mild in Sahajpur, they are very sharp in Kuchli. The entire gain of Kuchli over Sahajapur in terms of lower average malnutrition children as well as greater sex difference in Kuchli both seem to be due to the superior nutritional status of the Kuchli boys vis-à-vis Sahajapur boys. The
economic benefits accruing to the children of Kuchli through land reforms and other
general economic advantages have primarily benefited boys vis-à-vis girls. Within
both the villages, sex differences were sharper among landless families than among
landed ones.

Further, an attempt was made to assess the relative growth performance of
different groups in two villages. The findings shows that in each village boys grew
faster than girls and that the growth difference was relatively mild in Sahajapur but
very sharp in Kuchli.

Both boys and girls with literate mothers perform consistently better than
children with illiterate mothers in Sahajapur. The pattern is not quite clear in Kuchli.
However, the sex bias against girls in Caste Hindu families is much sharper in
Kuchli than in Sahajapur. Sex discrimination increases among the lower castes in
both villages and this is to be expected considering that they are also in the lower
ends of the economic spectrum.

The authors have noted that proper land redistribution and nutritional
intervention would go a long way in reducing general deprivation including
malnutrition. The former makes a more deeper and lasting impact on the rural
economic structure while the later through supplementary feeding has the additional
advantage of combating sex bias in nutrition within the family. They conclude with
the observation that increasing the income of the rural family may be an inadequate
instrument in combating the unequal deprivation of the female child.

The author Shushum Bhatia in her work on ‘Traditional Practices Affecting
Female Health and Survival: Evidences from Countries of South Asia’ examines the
mortality differentials between sex particularly in Indian sub continent where excess
female over male mortality exists in most ages. As a result of this, life expectancy at
birth for females is few years less than that of males in the region. She also
concentrates on the socio cultural practices that actually endanger the health of females and prove to be fatal in some cases.

It has been observed by the author that discrimination in the allocation of food and other family investment which begins at birth pursue a woman throughout her life. Traditional practices regarding marriage, pregnancy, childbirth, lactation, fertility control, health care utilisation etc. further aggravate the health impairment of women. Since, fertility levels in the Indian subcontinent are extremely high, the early and repeated child bearing results in drainage of the energies of the already malnourished mother. Bhatia points out that provision of health services will not eliminate differentials in mortality by sex. She suggests that education of women may be the “one single hope for the elimination of discriminatory behaviour towards females”.

Monica Das Gupta in her work on “Selective Discrimination Against Female children in Rural Punjab, India” examines the dynamics of sex discrimination at the household level and its relationship to individual parent’s family building strategies. She also explores the mechanisms like allocation of food, clothing and medical expenses whereby the mortality differentials occur. Lastly, she examines the reasons for strong son preference in Punjab society. The data for the present study were obtained from a restudy of the 11 villages in Ludhiana District, Punjab which were surveyed in the 1950s in the Khanna study.

It has been observed by the author that, sex differentials in child mortality in Punjab is very much present inspite of remarkable changes like decline in overall child mortality, greater improvements in income levels, health care delivery, nutritional levels and in female education. In Punjabi society, discrimination against female children is closely connected with individual parents family building strategies. Most of the Punjabi younger women continue to want one to two living
sons and do not want to have even one daughter and almost none wanted a second
daughter. This is evident from the higher rate of male mortality in the neonatal
period which is basically biologically determined. After the first month, when
mortality is more likely to be influenced by social factors, female mortality is almost
twice that of males.

She finds that burden of excessive mortality falls heavily on girls at higher
birth order i.e., those born into families that already have one or more surviving
daughters. This subset of girls experience 53% higher mortality than other children.
Moreover, these girls are subjected to increasing concentration of excess mortality
relative to other children if their mothers are younger and educated. Because,
through better capacity to manipulate both fertility and mortality, they are in better
position than their uneducated counterpart to achieve the desired family size and
sex composition.

The study observes that the mortality differentials occur because of
differential care of boys and girls. The expenditure on medical care for sons is 2.34
times higher than that for daughters in the first two years of life, the years of peak
mortality. Expenditure on clothing is greater for boys than for girls at all ages and in
terms of nutrition, boys receive food that is superior nutritionally and more valued
socially. Of all, the differential in medical care is mainly responsible for sex
differentials in child mortality.

In her attempt to find out the reasons for discrimination against females, the
author is of the view that it is not due to poverty or economic hardship, rather it is
primarily culturally determined and scarcity of resources may at most accentuate
the effects of sex ratio within a given culture. Nor it is related to the low participation
of females in income generating activities. Sex bias in Punjabi society is influenced
by the structure of rights over asset ownership and decision making which favours
male and restricts females from providing economic and other support to their parents. The author believes that it is the structural marginalisation of women in the kinship system of Punjabi society which is responsible for sex differential in child mortality. When a daughter marries, she loses her ability to contribute anything to her natal household even in times of need and there must be a continuous unidirectional flow of resources from her natal household to husband's household throughout her life. Due to these, women are so marginalised that results in sex discrimination or sex bias in Punjabi society.

The central thesis of the study entitled "Differentials in Mortality by Sex" undertaken by Malini Karkal is that the declining gap between the life expectancies of males and females since 1961 and slightly rising sex ratio in 1981 census donot indicate an improvement in the health status of women. Rather it shows that whatever improvement has taken place in life expectancy is accrued mostly to the older age group. Moreover increased infant mortality particularly in the pre natal period and large proportion of low birth weight babies with poor chances of survival is indicative of poor health of women in India.

The author observes that the gap between life expectancy at birth of males and females in India showed a decline from 1.7 to 1.5 and to 0.4 years for the periods 1961 – 70, 1971 – 75 and 1976 – 80 respectively. However, whatever gain in life expectancy that has been made by females, the larger share has gone to older women. Thus, it can be said that Indian females are at a disadvantage as compared to Indian males. This observation believes the argument that there is improvement in the health of females in younger ages particularly in the reproductive ages.

The author concludes that the increase in life expectancy of females than that of males is not "because of any reversal in the attitude of the society to the
position of women and treatment meted out to them, but due to the benefits of some of the public health programmes and more significantly due to effects of family planning programmes that have influenced maternal mortality as well as strains on the health of women resulting in gains in older ages rather than younger”.

While explaining the reasons for sex differentials in childhood mortality, Aloka Malwade Basu in her work entitled "Is Discrimination in Food Really Necessary for Explaining Sex Differentials in Childhood Mortality", observes that no direct causal link actually exists between under nutrition and death. It is the unequal access to health care which is responsible for sex differential in childhood mortality.

A survey was concluded by the author among poorer household in two districts in the north Indian states of Uttar Pradesh and four districts in the southern state of Tamilnadu, who are now living in a resettlement slum in Delhi. Though, their socio-economic condition and physical environment are identical but the level of child mortality is different with lower level of overall child mortality as well as sex differential mortality among the Tamil group.

It has been found that the probability of surviving early childhood for girls from Uttar Pradesh is much lower than that for boys while for those from Tamilnadu, the chances are equal for both the sexes. While linking such sex differences in mortality with sex differences in nutritional status, author finds that in Uttar Pradesh the girls appear to have received a slightly better diet than the boys while in Tamilnadu, the food intakes of the two sexes are similar. Therefore, severe malnutrition was more prevalent among boys than among girls in Uttar Pradesh though reverse was true in Tamilnadu. Still, the mortality of girls from Uttar Pradesh was not only higher than boys but also than that of Tamilnadu of either sex. However, in Tamilnadu, the mortality of girls was not higher than that of boys inspite of their lower nutritional levels. This is a clear deviation from the expected
relationship between malnutrition and mortality and hence the author makes clear that changes in mortality overtime cannot be explained by secular changes in differentials in nutritional levels.

The author attributes sex difference in mortality to differential access to health care which potentially explains female disadvantage in multiple settings, especially those with excess female mortality. The disadvantage suffered by girls during illness is greatest in north Indian sample in contrast to South Indian Sample. Since more girls than boys were given no treatment at all, it means that the girls are referred less frequently for modern clinical treatment. This difference in the amount and kind of medical care provided during illness is an important determinant of sex differential mortality.

Lastly, while considering some of the socio-economic factors which affect the level of sex discrimination in the use of health care, she observes that the lower socio-economic groups are much fairer in providing medical treatment for both the sexes in comparison to higher socio-economic groups. She suggests that women's employment outside the home is important in bringing about equality in the treatment of boys and girls in the household. This is because a gainful employment increases the autonomy of women in decision making which in turn increases their economic and social worth to the family and therefore reduces the discrimination they face even in childhood.

T.K. Sundari Ravindran in a paper entitled "Women's Health Situation in a Rural Population" focusses on women's health through a case study of women from a rural population. The paper attempts to address some of the questions relating to the extent of illness, causes of illness and the socio-economic and demographic characteristics of the women influencing their susceptibility to illness and their health seeking behaviour.
The author observes that the interplay between poverty and gender discrimination have profound influence on women's health problem since the women covered by the study belong to that section of population suffering from extreme social and economic deprivation.

The author also argues that the low priority accorded to women's health which is reflected in patterns of health care utilisation is the manifestation of patriarchal social setting. Women are permitted trained attendance only for the first delivery where as the proportion of such attendance gradually declined with increasing parity despite the fact that higher order births are more risky and may require medical attendance. An important reason for medically supervised deliveries for the first birth seems to be the value placed on the birth of a first child (Preferably a male child) for which the family does not want to take any risks.

It appears that in addition to constraints imposed by poverty, the main barrier to women's utilisation of health services relate to the value placed on women by society rather than education and employment which play if at all a minor role.

While explaining about gender preference, Prabhjot Malhi in a paper entitled "Influence of Gender Preference for Children on Fertility Behaviour: A Comparative Study of Men and Women in Haryana" has shown that couples in South Asian Countries including India have strong preference for sons over daughters. Infact, son preference is mainly responsible for high fertility in these countries as a result of which such gender preference for children act as a major constraint in the implementation of family planning programme particularly in countries which are beginning to experience a fertility transition. Couples who already have more sons may be more likely to have more children because of the perceived financial utility of sons whereas couples having more daughters may be likely to terminate further pregnancies because of economic liability of having several daughters.
However, the important results of the present study reveal a higher preferences for sons among women as compared to men, that is, among women, preference for male children is relatively more marked. This may be due to the fact that in such social settings where women are socially and economically dependent on men, their concern about security is important and sons are perceived as an essential future investment. In patriarchial societies, it is the women who are more pronatalist and strongly motivated to bear male children. Hence, measures must be taken to improve women's status in the society which would prevent the erosion of prevailing serial norms that support and sustain son preference in the state.

Sunita Kishor, in her work on "Gender Differentials in child mortality" has made an attempt to identify the impact of economic development and patterns of demographic change on excess female mortality. This paper brings together information from several different sources on the extent, variation and mechanism of excess female mortality in order to enable a comprehensive understanding of this phenomenon in India.

Using district level data from the 1981 census of India, the author examines the relevance of two different hypothesis, respectively stressing the influence of daughters 'economic worth' measured in terms of female labour force participation and 'cultural worth' as indicated by patrilocal exogamy on the relative survival chances of females vis-à-vis male children. Comparing economic and cultural factors, she observes that it is the cultural factor which is more significant in explaining excess female mortality. Cultural and economic factor appear to interact to determine the level of gender differences in mortality. Higher the level of exogamy, greater is the gender differences in mortality and higher the female labour force participation, the weaker is the exogamy. On the other hand, the greater the female labour force participation, the higher is the relative survival of females and
this association is weaker for lower exogamy. Thus, low economic and low cultural worth reinforce one another resulting in higher levels of excess female mortality.

Moreover, it is observed by the author that the probability of male survival is always enhanced where patrilocal exogamy is practised irrespective of the level of women's labour force participation. Conversely, the survival of females is actually lowered at average level of female labour force participation and at best is left unaffected when rates of female labour force participation are exceptionally high. District with higher proportion of Muslims, scheduled castes and landless labourer donot appear significantly different from other district with respect to gender difference in mortality though women of these categories are supposed to enjoy greater economic and cultural values due to fewer restrictions imposed on their mobility and activities. However, due to variations in kinship practices it has been noticed that a greater proportion of tribals is associated with gender differences in mortality.

One of the important findings of this research work is that with higher development, female children donot experience an improvement in their survival chances relative to male children. Indeed, agricultural development, industrialisation and urbanisation all are assoipciated with higher female mortality. Only higher levels of literacy can benefit both males and females equally. Gender based discrimination interms of allocation of resources does not decline with development rather it persists and can increase even when availability of resources is not a constraint. It is suggested by the author that gender inequality can be reduced either by raising economic worth of females where their cultural worth is particularly low or by raising their cultural worth where their economic worth is low.

2.4. Conclusion

An overall assessment of the above studies reveals the prevalence of discriminatory treatment and attitude towards women. Infact discrimination against
women seem to have its primary origins in their inferior status. In most societies women start off with an initial disadvantage due to their under valuation and cultural problems leading to their poor health status. Some scholars have gone so far as to term the persistent and multilayered bias against females as “Gender Cleansing”. The bias resulted in an unequal access for females to life sustaining inputs like food, nutrition, health care and other resources leading to higher female over male mortality. Several decades of efforts made in the direction of health and nutritional status have not been enough to make any real impact on the deteriorating demographic situation since improved health conditions provide better life chances to male foetuses that are by nature more frail and prone to die. Infact in the literature on the effects of development of women, we note a general recognition of the deleterious effect of development strategies on women. Women’s increasing economic marginalisation and greater socio-cultural devaluation underlines the contention that development in India has largely been to the detriment of women. The problem and deprivation of women, though increasing, receive little attention and importance as an independent discipline. To this extent, the present study is important since it attempts to examine the impact of so called gender neutral policies and programmes for the socio-economic development of the women who inspite of constituting half of world’s population are living in the edge.

We have observed that literature so far surveyed by us have attempted to understand the discrimination and subordination of women in terms of the framework of their respective discipline and so far no comprehensive framework in which to explain this phenomenon has been evolved. However, the present attempt of assessing the status of women in terms of behavioural pattern of sex ratio within the broad theoretical framework of feminist ideology would likely to make great contribution in this respect. To this extent, the present study will seek to fill in a long existing gap in feminist/ gender studies since sex ratio in the present work has been used a tool of analysis of gender studies to examine the gender biasness in a
patriarchal society. Added to this, attention needs to be focussed to the fact that the theoretical framework of the present work is elaborated further by examining it in the light of the Theory of Cooperative Conflict Approach to Intra household Resource Allocation of Amartya Sen. This theory in turn can through considerable light on the behavioural pattern of sex ratio phenomenon in India in terms of feminist school of thought. The present work may thus be considered a pioneering attempt in filling the long existing gap in the field of sex ratio studies.

An important area, the understanding of which have become crucial for our study is the productive role of women. In the course of our present work we have attempted to understand whether the productive role of women is significant so that their social worth is affected to a degree that can influence their chances of survival. Very little attempts have so far been made in this regard. To this extent, the present study is important since it proposes to explore the extent to which speculations regarding the close relationship between productive roles and sex ratio are justified on the basis of empirical observation. Besides economic factor, the present work has extended the range of explanatory factors to include age at marriage, infant mortality by sex, female literacy, son preference as well as dowry as some additional factors and attempts to fit them into regression models. The existing literature has not developed such integrated explanation since most of the works are of descriptive nature and has not given importance to the econometric treatment of the problem. However, the present study proposes to make such attempt by combining economic explanation with socio cultural ones to provide more integrated approach to the issue of behavioural pattern of sex ratio. Such investigation will enable us to capture the essence of the problem much more accurately.

It also needs to be highlighted here that most of the works undertaken on sex ratio are of a macro nature, which are unable to identify the specific micro level problems of different regions. Barak valley has some special features, which are not
prevalent in other regions or are uncomparable with the country as a whole. These features relate to its geographical location, economic, political, social and cultural characteristics, so that the findings of few micro level studies relating to other regions can not be applied here with the same degree of perfection. This calls for a special investigation of the determinants of sex ratio and their relative weightage. Added to these gaps, attention also needs to be focussed to the fact that very few work of this nature relating to Assam and practically none at all on Barak Valley has been undertaken so far. The present study is therefore an attempt to fill up these existing gaps and investigate into the main determinants of the present trend of the sex ratio in this region.

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