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Rural-urban disparities in child sex ratio and its determinants in Haryana

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Abstract
Sex ratio serves as a vital indicator ofthe status of women and the level of developmentwithin any society. As awareness ofwomen's issues and rights grows dueto increased attention in both public discourse and academia, research onsexratios has likewise become more prominent. The childsexratio (CSR)provides moreinformative insights compared togeneralsexratio statistics, as it is less affected by factors such as migration and under-enumeration.
InHaryana, thedeclining CSR reflects serious social challenges and iscritical for addressing the broader upliftment of women. This paper analyzes the rural-urban differences in CSR in Haryana, using secondary data sources with the Census of India as the principal resource. The study concludes that rural-urban disparities substantially influence aggregate CSR levels: urban areas exhibit higher CSR compared to rural regions, partly due to greater access to technologies that enable prenatal sex determination.

Keywords: Sex ratio, sex ratio differentials, male dominance, traditional society

Introduction
Economic growth and development have remained key objectives for policymakers worldwide, including in India. Economic growth can be achieved by increasing per capita income and the grossdomestic product (GDP) oftheeconomy. Achieving economic growthisarelatively easier targetfordevelopmental policyasitrequires minimaleffort and does not necessarily address the qualityofdistribution orthesocial implications that come with it. Incontrast, development hasa broader scope and significance beyond mere economic growth. Development involves increases in per capita income and GDP along with various social dimensions. Equitable wealth distribution, improvementsinliteracyrates, and the general well-being of the population are significant indicators of economic development. In recent decades, the improved status ofwomenhas also become recognized as a crucialindicatorofsocietaland economic development. With the global spread of feminism, women's rights and well-being are increasingly considered essential for economic progress (George & Dahiya, 1998) [4].
In many traditional societies with low social development, the status of women is poor. Often, women are deprived oftheir rights and live at subsistence levels. They have fewer opportunities compared to their male counterparts, resulting in a persistent gender disparity in development. By nature, women differ from men, as they possess distinct qualities. Women tend to be soft- hearted and caregiving, bearing most family responsibilities. Conversely, men generally hold more power and higher social status, with greater access to resources.
In many developing countries, women's deprived status is further exacerbated by limited educational opportunities, which negatively impacts their social standing. During times of crisis or emergencies, women and other marginalized groups suffer disproportionately compared to men and the affluent. Social science research strongly focuses on understanding women's status to uncover the causes and extent of their suffering. Geography, as a discipline within the social sciences, also examines women's status and its various manifestations. Within this framework, the study of sex ratio is an important indicator of women's status, influencing many socio- economic aspects of society.
Inthe Indiancontext, the sexratio is a complexand pressing issue. Census reportsoverthe years reveal alarmingly low sex ratios in many parts of the country, demanding urgent policy intervention. Historically, women's status in India has not always been poor; during the Vedic period, women enjoyed rights and social status comparable to men. Vedic literature records that women had privileges such as the right to read and write. However, over the centuries, particularly during medieval and modern times, women's rights and status deteriorated, leadingto perceptions of girls as family burdens (Banerjee, 1977) [2].
Indicators such as low female literacy rates, skewed sex ratios, increased violence against women, and pervasive discrimination reflect the dismal status of women. Regions like north- western India face particularly severe challenges, including the social evil of female feticide, which has further aggravated the declining sex ratio. This trend is not restricted to urban areasbut has deeply influenced ruralpopulations as well. This paper attempts to analyse the dynamics of the Child Sex Ratio in Haryana.
In recent years, the skewed sex ratio has become a matter of serious concern and public debate across various parts of India. As Nobel Laureate Amartya Sen famously stated, "More than 100 million women are missing" from the population due to gender biases and discrimination.

Sex Ratio and its Driver
Sex is an observable characteristic ofan individual; therefore, data on sex (male and female) are available in nearly all census operations worldwide. Since each census provides comprehensive datasets on various demographic and social aspects, the number of males is readily available for analysis. Demographically, data on the male-female composition are understood as the sex composition of a society.
Sex is a biological phenomenon, and the sex ratio can be defined as the number of females per 1,000 males. It is one

of the key demographic indicators that provide insights into the status of women within a society. The sex ratio results from multiple drivers, which can be statistically identified. The balance between males and females at any given time is governed by the following factors:

1. SexRatioatBirth

As known, sex ratio is a biological characteristic, and under natural conditions, society typically observes a predominance of male babies at birth. This predominance is offset because male fetuses are more susceptible to loss or death than female fetuses. This natural bias gives an advantage to male babies, but overall, nature strives to maintain a balance between the sexes.

2. MortalityDifferentials

While the sex ratio at birth is largely determined by biological factors, mortality differentials are largely the result of social discrimination. These differentials refer to differences in death rates between males and females. Usually, male fetuses have higher mortality rates compared to females. However, social systems often favor males and neglect females, leading to imbalanced outcomes. For instance, female children are sometimes considered burdens, while males are regarded as sources of wealth and pride. Births of male children are celebrated culturally and socially, whereas female births are not. Consequently, the sex ratio is considered a significant indicatorofwomen's status in society (Sen, 1990) [8].

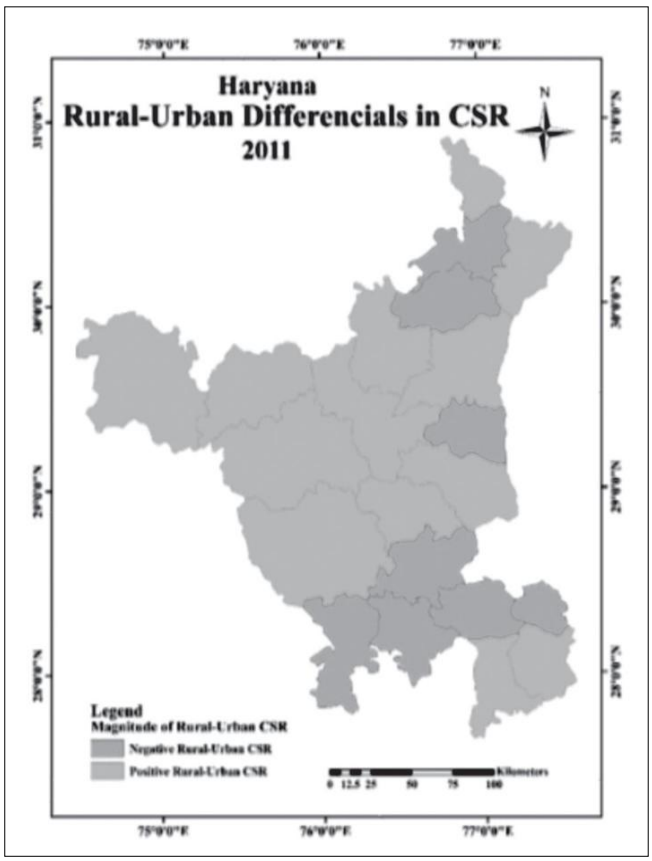
3. Migration

Migration significantly influences population distribution. According to Ravenstein (1885), migration isage- and sex-selective; typically, most malesofworking age migrate from one region to another. This migration skews the sex ratio of the region and often results in its decline. To eliminate the impact of migrationonsexratio analysis, the child sex ratio (CSR) for children aged 0-6 is studied, as this age group is generally non- migratory.

4. Underreporting of Girls

In some societies or social groups, the underreporting of girl children contributes to the skewed sex ratio. Although this underreporting is relatively small, it is prevalent in tribal communities living in remote forests.

Therefore, the sex ratio is a complex phenomenon influenced by various factorsdiscussed above. It impacts many aspects of society, such as the availability of womenfor marriage, whichcan lead tothe migrationofgirls fromother regionsand cultures into Haryana**.**



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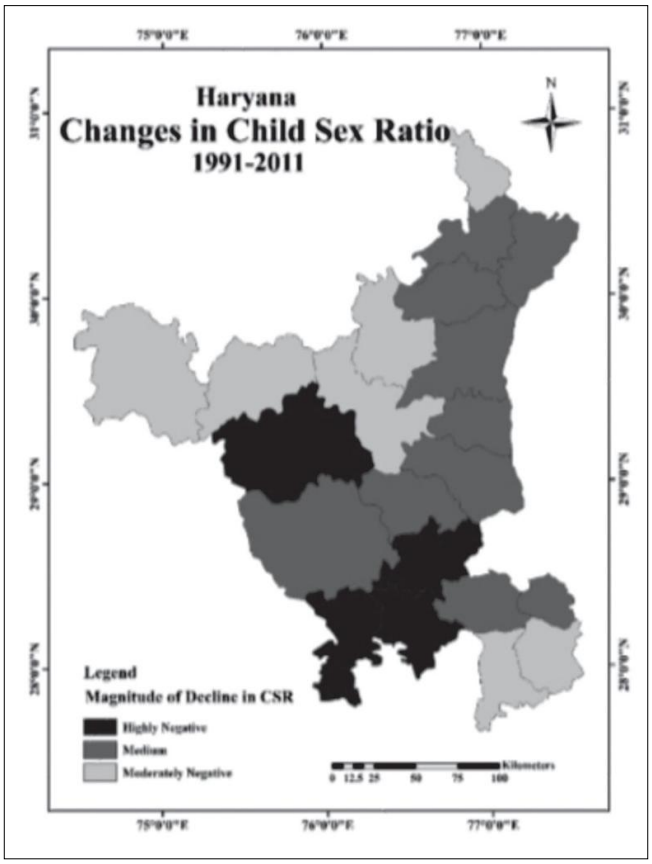
Map 1:



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Map 2:

Objective

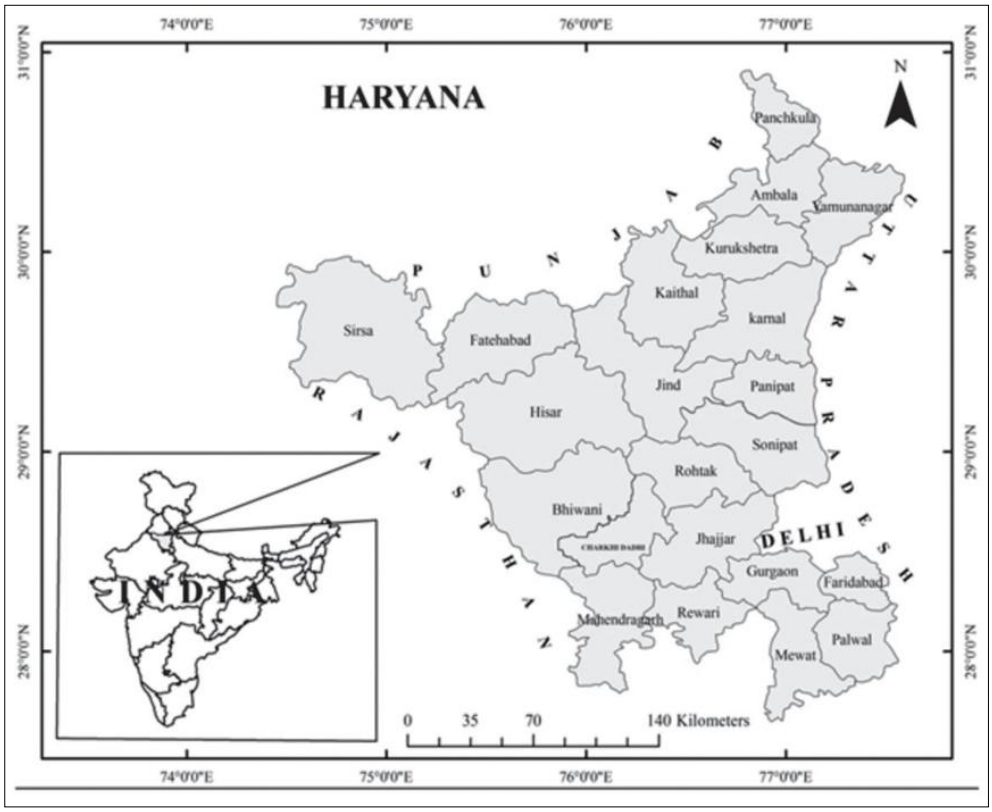
The primaryobjectives of this paper areto understand the dynamics of the child sex ratio (CSR) in the state of Haryana and to analyse rural-urban differentials in the sex ratio, including a discussion of the causes and consequences of emerging trends.

StudyArea

For this analysis, Haryana has been selected as the study area, with all the districts of the state included at the district level of study. Haryana is undeniably one of the most economically developed states in India. It boasts extensive fertile land and abundant water resources supplied through a perennial canal system, earning it the title of the "granary of

India." Haryana's agriculturalprowess isdemonstrated byitscontributionofnearly16 percent offood grainsto the central pool, used to meet the needs of the Public Distribution System (PDS) and mid-day meal schemes. Additionally, Haryana isoneofthe leadingstates inIndia inanimalhusbandry, playing a significant role in providing quality milk and milk-related products to consumers through improved livestock varieties. Over recent decades, Haryana has also emerged as an industrialhub for the region, benefitting from its strategic location and proximity to large markets such as Delhi NCR.

However, evidence indicatesthat Haryana hasnotperformed equallywellin socialdevelopment. Among the many social challenges in the state, the poor status of women and the resulting declining sex ratio are particularly worrisome. The state's sex ratio remains well below the national average, with some districts ranking among the lowest in the country. Therefore, understanding the root causes of the declining sex ratio and exploring the rural-urban divide concerning the child sex ratio are vital steps toward addressing the social crisis in Haryana.



Data base and Methodology

Every research study relies on certain data sources, which can be classified as primary or secondary by nature. In social research dealing with demographic phenomena, the Census of India serves as the principal source of quantitative data. Similarly, for this research paper, the Census of India has been utilized as a secondary data source. Haryana has been selected as the primary unit of analysis, and data from various districts within Haryana have been used, derived fromcensusreportsspanning multiple years. For datarepresentation, mapsand other appropriate cartographic techniques have been employed to visually depict the findings.

Result and Analysis

The general sex ratio in India has been a longstanding concern for policymakers over many decades. Thespatialdistributionofthesexratio revealsaclear north-southdivide. Most southern states, such as Kerala and Tamil Nadu, exhibit higher sex ratios favoring females compared to many northern states. Extensive analysis suggests that the overall sex ratio is significantly influenced bymigration. It iswellknownthat migrantstypicallymove fromeconomicallyp oorer states like Bihar and Jharkhand to more prosperous states, skewing the general sex ratio distribution.

Consequently, manydemographersprefer using the Child SexRatio (CSR)forthe 0-6age group to obtain a more accurate picture, as it reduces the influence of migration on sex ratio fluctuations. Generally, CSR results from the sex ratio at birth, mortality differentials, and various social factors. Its spatial and temporal distribution is also highly uneven. As shown in Map 1 and Map 2, CSR ishighest insouthernand northeasternstates, while the most concerning trends emerge from northwestern states such as Punjab and Haryana.

In Haryana, the CSR scenario has historically remained dismal. Table 1 illustrates that the general sex ratio from 1901 to 2011 has consistently been unfavourable to females, never exceeding879. This points toward widespreadgenderdiscriminationinthestate. Another critical issue requiring urgent policy attention is the rural-urban disparity in sex ratio, with Table 1 also indicating a very low rural-urban sex ratio.

Although the 2011 census data show some improvement in the overall sex ratio, the situation remains problematic for the 0-6 age group. Here, too, the Child Sex Ratio favours males over females. It is troubling that Haryana's CSR dropped as low as 819, demonstrating that despite achieving higher economic growth and development, the status of girls remains severely disadvantaged.

Table 2 documents the CSR trend in Haryana from 1961 onward, highlighting persistent discriminationagainst female children. Haryana, being a traditionalHindu society, viewsgirlsas a family burden, whereas boys are welcomed as family name bearers. The widespread dowry system and increasing costs associated with girls' marriages further reduce their welcome in families. Field reports indicate that women and girls receive less education and have minimal roles in family decision-making. Additionally, higher incidences of malnutrition and anemia are common among women, due to inadequate nutrition. Politically, women are also disadvantaged relative to men.

Insummary, cultural preferences forsonshaveadverselyaffect edthe livesofgirlsandwomenin Haryana. The strong desire for male children has led families to resort to cruelpractices such as female infanticide and sex-selective abortion. The availability ofadvanced medical and imaging technologies has exacerbated this issue, contributing significantly to the decline in CSR.

Table 3 presents district-wise urban CSR and decadal changes from 1991 to 2011. It is concerning that between 1991 and 2001, all districts experienced declines in urban CSR. This trend reflects the widespread and often unchecked use of medical technology for sex-selective abortions during that period. However, following media attention and public outcry, stricter regulations on medical imaging—particularly ultrasound—were implemented, leading to significant CSR improvements in most districtsfrom2001 to 2011. Nevertheless, a few districts, including Bhiwani, Jhajjar, Mahendragarh, Rewari, and Faridabad, continued to experience declines.

Viewed broadly, theurbanCSRscenario inHaryana from 1991 to 2011 remains bleak, asalmost all districts showed declines during this period. The high misuse of medical termination and imaging technologies from 1991 to 2001 continues to have lingering effects, despite stricter policies implemented subsequently.

Moving forward, renewed efforts are necessary to monitor and prevent illegal medical practices that facilitate sex determination and abortions. A two-pronged strategy is essential: stringent inspections of hospitals and nursing homes to prevent illicit medical activities, and widespread social awareness campaigns to sensitize the public about the growing social evils (Unisa *et al*., 2007) [10].

Table 1: Trendsin Overall Sex Ratioin Haryana, 1901-2011

CensusYear	Total	Rural	Urban
1901	867	908	861
1911	835	842	834
1921	844	811	848
1931	844	792	851
1941	869	806	879
1951	871	845	877
1961	868	842	874
1971	867	853	870
1981	870	849	876
1991	865	868	864
2001	861	847	866
2011	879	873	882

Source: Census of India for Various Years

Table 2: Haryana: Child Sex Ratio (0-6 age group)

CensusYears	ChildSexRatio	DecadalChange
1961	910	—
1971	898	-12
1981	902	+4
1991	879	-23
2001	819	-60
2011	830	+11
2021*	893	+63

Source: CensusofIndiaforVariousYears,1961-2011
*NationalFamilyHealth Survey (NFHS-5)

Table 3: Haryana: District Wise Urban Child Sex Ratioand Decadal Changesin Urban Child Sex Ratio in Haryana during 1991 – 2011

Sr. No	Districts	1991	2001	2011	1991 to 2001	2001 to 2011	1991 to 2011
1	Ambala	888	808	832	-80	24	-56
2	Bhiwani	891	827	814	-64	-13	-77
3	Palwal	NA	NA	830	NA	NA	NA
4	Fatehabad	NA	798	836	Na	38	NA
5	Mewat	NA	NA	890	NA	NA	NA
6	Hisar	867	806	843	-61	37	-24
7	Jhajjar	NA	804	794	NA	-10	NA
8	Jind	875	775	833	-100	58	-42
9	Kaithal	857	769	825	-88	56	-32
10	Karnal	872	792	810	-80	18	-62
11	Kurukshetra	865	766	820	-99	54	-45
12	Mahendragarh	896	795	783	-101	-12	-113
13	Panchkula	NA	813	856	NA	43	NA
14	Panipat	905	807	849	-98	42	-56
15	Rewari	911	816	799	-95	-17	-112
16	Rohtak	879	781	818	-98	37	-61
17	Sirsa	874	801	838	-73	37	-36
18	Sonipat	892	775	794	-117	19	-98
19	Yamunanagar	886	789	823	-97	34	-63
20	Gurgaon	889	816	845	-73	29	-44
21	Faridabad	895	848	847	-47	-1	-48

Source: Census of India for Various Years
NA: indicatesthatthesedistrictswerenotinexistence.

Table 4: Haryana: District Wise Rural Child Sex Ratio andDecadalChangesinRuralChildSex Ratio in Haryana during 1991 – 2011.

Sr. No	Districts	1991	2001	2011	1991 to 2001	2001 to 2011	1991 to 2011
1	Ambala	888	770	795	-118	25	-93
2	Bhiwani	885	844	835	-41	-9	-50
3	Palwal	NA	NA	874	NA	NA	NA
4	Fatehabad	NA	834	858	NA	24	NA
5	Mewat	NA	NA	908	NA	NA	NA
6	Hisar	868	839	855	-29	16	-13
7	Jhajjar	NA	800	778	NA	-22	NA
8	Jind	855	828	839	-27	11	-16
9	Kaithal	854	796	829	-58	33	-25
10	Karnal	876	813	829	-63	16	-47
11	Kurukshetra	867	773	818	-94	45	-49
12	Mahendragarh	891	821	774	-70	-47	-117
13	Panchkula	NA	839	871	NA	32	NA
14	Panipat	874	810	826	-64	16	-48
15	Rewari	891	810	782	-81	-28	-109
16	Rohtak	875	807	822	-68	15	-53
17	Sirsa	885	823	869	-62	46	-16
18	Sonipat	876	792	800	-84	8	-76
19	Yamunanagar	890	814	828	-76	14	-62
20	Gurgaon	896	866	801	-30	-65	-95
21	Faridabad	875	851	834	-24	-17	-41

Source: Censusof India for Various Years
NA: indicatesthatthesedistrictswerenotinexistence.

It is commonlyassumed that ruralsocietyis more sympathetic towardwomenthanurban society and is less likely to resort to medical termination of pregnancies. However, as shown in Table 4, trends in rural Child Sex Ratio (CSR) closely mirror those in urban areas. The perception of the girl child as a burden on the family has also spread to rural regions. Furthermore, individuals and medical facilities engaged in illegal prenatal sex determination and subsequent termination are increasingly reaching rural populations.

Similar to urban patterns, rural CSR declined in most districts between 1991 and 2001. Thesituationimproved between2001and2011duetostricterenforcement andvigilance. In summary, the overallruralCSR scenario remains as concerning as that in urban areas. Table 4 indicates that urgent measures are necessary to improve CSR in both rural and urban regions.

Suggestions and Conclusions

India is an emerging economic powerhouse and has become one of the fastest-growing nations globally. With increasing demand for skilled manpower, maintaining a balanced sex ratio is essential. A balanced distribution of age and sex forms the foundation for the healthy functioning ofsocietyand the economy. Age balance ensures a consistent supply of labor, while a balance between males and females is critical for social stability. Without this balance, social challenges may arise, including the necessity to bring brides from other regions, which often leads to cultural and linguistic barriers that are difficultto overcome.

Generally, women in India hold a relatively low social status, as evidenced by the persistently declining sex ratio. Compared to the overall sex ratio, analysis of the Child SexRatio (CSR) providesa more precise understanding byeliminating migrationeffects. The CSR in Haryana remains alarmingly low, displaying consistent trends ofdisparity in both rural and urban areas. The decline in unregulated abortions and female feticide was particularly steep between 1991 and 2001. Although conditions slightly improved between 2001 and 2011, supported by stricter oversight of hospitals and nursing homes, challengespersist. Apositiveoutlook isevident fromtheNational FamilyHealthSurvey- 5 (NFHS-5) report, which shows increases in CSR across both rural and urban parts of Haryana. However, the threats of female feticide and sex-selective abortions must be urgently addressed through multifaceted strategies. Improving the child sex ratio at both the state and national levels require concerted social movements involving leaders and citizens from all walks of life.

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