

Changing spatial pattern of social development in Ahirwal region of Haryana in the post liberalization period

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Abstract

The paper explores the trend and pattern of social development Ahirwal area in Haryana with the help of select demographic, educational and household amenities parameters in the period following economic liberalization initiated in the 1990s. Based on data pertaining to the years 1991, 2001 and 2011 the study compares the level of social development on the strength of composite indices constructed on 17 indicators. The study reveals significant change largely propelled by the increasing level of urbanization in most social indicators in the Ahirwal region that historically lagged in terms of social development. The rapid changes in the recent period merit special attention, as the post-reform period appears to have influenced the spatial pattern in the level of social development in the state.

Keywords: *Social development, composite index of development, inter-district variations, Ahirwal region, Haryana*

Introduction

Social development in a region is generally viewed in terms of enhancement in the level of education, urbanization, health services, the status of women, nutrition, quality of housing etc. The level of social development depends, among other things, on the historical experience of an area, social realities and geographical conditions, development level of the economy, infrastructural facilities, and efficiency in utilizing infrastructure and government policies (Mercy, 2007). Social development as a concept evades easy definition. It certainly is not pre-determined; rather a continuous process of improvement in the living status of humans (Narain, 2007; Ray, 2008). Indicators are required to be carefully selected to analyse the spatial pattern of social development, as they are context-sensitive and country/region-specific.

The development of education and its easy access to the people is a significant factor in social development. Furthermore, the education of women plays a very crucial role in the social developmental processes. Most studies establish a direct bearing of women's education on the quality of life of the entire family (Govindasamy and Ramesh, 1997; Drèze and Sen, 2002). The societies with higher women education also display low fertility rate, infant mortality and child death rate. Better child education and nutrition are other positive outcomes of the higher level of education among women (Murthi et al 1995; Thapan, 1997; Pervaiz et al 2011).

Haryana has been among the economically developed areas of India especially since its inception as a separate state in 1966. The

introduction of the green revolution in the late 1960s is viewed as the most important development in the post-independence period ushering in remarkable growth in agricultural production. However, Haryana remained one of the socially backward states of the country. In social parameters, it has particularly lagged in access to healthcare and education, sanitation and nutrition of women and children. When compared with most other states of India, Haryana manifests utter discrimination against women in every sphere of life. Significantly the state is counted among the worst-performing areas in the world in terms of the ratio of female/male child mortality (Jaglan, 2010).

The economic liberalization in 1991 accompanying the restructuring of the economy can be considered a watershed in transforming the economy of the state despite its uneven spatial impacts in developing areas adjoining the national capital territory (Yadav and Jaglan, 2021). Evidently, Gurugram district of the state and a part of the Ahirwal region, as well as the National Capital Region, emerged as the centre of most economic activities and corporate business during the post-liberalization era while the rest of the Ahirwal continues to be socially backward in most indicators of social development (Jaglan and Sindhu 2008).

Objectives

The research evaluates the spatial and temporal changes in the parameters of social development in the Ahirwal region vis-a-vis the rest of Haryana since 1991, the year when liberalization was initiated in the Indian economy. The study aims at evaluating the changes with the help of the following specific objectives:

- a. analysing the trends in social development in terms of indicators of demographic, educational and household amenities in the region during post-liberalization period and
- b. examining the inter-district disparity in the levels of social development in the region.

The study area

Ahirwal region which means the land of the *Ahirs*- a dominant caste of the region, lies in south Haryana adjoining the Alwar district of Rajasthan. It is a distinct socio-cultural region having a sandy plain topography interspersed by the relicts of Aravalli ranges (Singh and Khan, 1999, Michelutti, 2006). The region includes the districts of Gurugram, Rewari and Mahendragarh which comprise the bulk of the territory of the Haryana part of the Ahirwal region. For the present study, these three districts together constitute the Ahirwal region in the state (Fig. 1) though some parts of these districts are not strictly included in the region. The region extends between latitudes 27°79' to 28°54' N and longitudes 75°89' and 77°24' E. The National capital of Delhi is located on its east-northeast and is partly incorporated in the Metropolis. Spread over 4751 km², the region accounts for about 11 percent of the geographical area and about 13 percent of the population of Haryana in 2011.

Data and methodology

The data related to various aspects of demographic and household amenities parameters have been collected from the Census of India, office of the Registrar General of India. The data on educational indicators have been obtained from Department of Economic and Statistical Analysis, Statistical

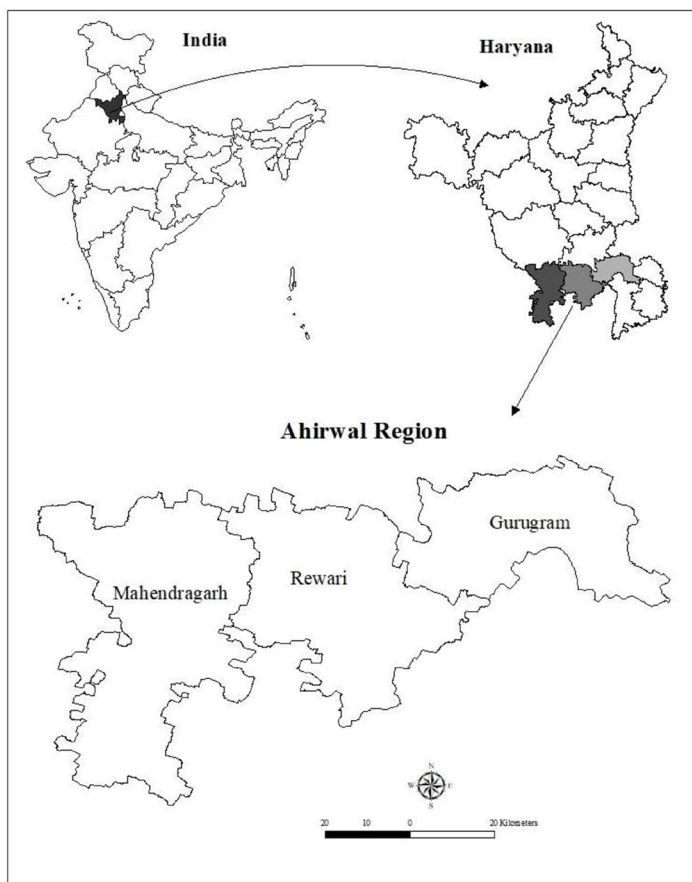


Fig. 1: Ahirwal region (Haryana)

Abstract of Haryana. The source of infant mortality rate (estimated by Sandhya Ahuja) is National Health Systems Resource Centre website (<http://nhsrindia.org>). The data pertaining to total fertility rate has been collected from the Registrar General of India, New Delhi (1997). For 2001 and 2011 this data has been collected from Guilmoto and Rajan (2002, 2013).

The data used in the study pertains to the years 1991, 2001 and 2011. In 1991, age at marriage data was in a different format than 2001 and 2011. The data on separate kitchen facility and bathrooms are available

only for 2001 and 2011. The computation methods of the indicators are mentioned with the indicators in following text. Sopher's disparity index modified by Kundu and Rao (1986) has been used to assess the gender disparity in the level of literacy with the help of the following formula:

$$DS = \text{Log}(X2/X1) + \text{Log}(200-X1)/(200-X2)$$

where DS is gender disparity index.

X1 is percentage of literate females to total female population.

X2 is percentage of literate males to total male population

Analysis of individual indicators of social development does not provide an integrated and easily comprehensible picture of the social development. Therefore, the composite indices of all the indicators of social development have been computed by taking the ratio of the values of the indicators by the average value of the state (Kundu, 1992) and multiplying by 100. Thus, the scale free values of indices have been obtained for Ahirwal region, rest of Haryana (territory of the state minus Ahirwal region) and three districts of Ahirwal region. Two negative indicators, infant mortality rate (IMR) and total fertility rate (TFR) were to be turned into positive values. It was done by subtraction of the scale free values from a constant value 2. The indices of demographic, educational and household amenities development were constructed by summation of the values of various indicators and dividing it by the number of indicators. The composite index of social development was obtained by computing the mean of the aforementioned three indices, i.e. demographic, educational, and household amenities. A total of 17 indicators of social development have been selected for the present study. Selection of the indicators is constrained by the availability of data.

Demographic Indicators

1. Percentage Urban Population
2. Child Sex Ratio (0-6) (females/1000 males)
3. Sex Ratio (females/1000 males)
4. Median Age at Marriage of Females (years)
5. Median Age at Marriage of Males (years)
6. IMR (Infant Mortality Rate) (number of infant deaths/1000 live births)

7. TFR (Total Fertility Rate) (number of children born/1000 women)

Educational Indicators

8. Literacy Rate (percent)
9. Index of Gender Disparity in Literacy
10. Gross Enrollment Ratio in Primary Schools (students enrolled at primary level/population in concerned age group $\times 100$)
11. Gross Enrollment Ratio in Middle Schools (students enrolled at middle level/population in concerned age group $\times 100$)
12. Gross Enrollment Ratio in High and Senior Secondary Schools (students enrolled at high and senior secondary level/population in concerned age group $\times 100$)
13. Teacher Pupil Ratio in Schools (number of teachers/1000 students)

Household Amenities Indicators

14. Percentage of Households with Toilets
15. Percentage of Electrified Households
16. Percentage of Houses with Separate Kitchen Facility
17. Percentage of Houses with Bathrooms within Premises

Result and discussion

Demographic indicators

The level of urbanization is one of the important measures as it accelerates the process of transformation from traditional to modern society (Bhagat, 2011). The level of urbanization in Ahirwal region was lower than the state average in 1991 (Fig.2) and in 2001 too. But the first decade of 21st century saw a complete transformation as the region achieved a level of urbanization (42.21%)

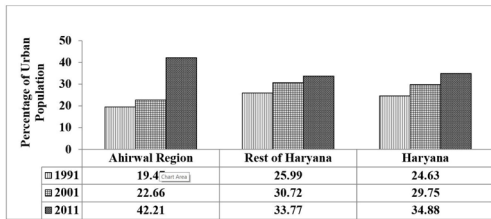


Figure 2. Ahirwal vis-à-vis Rest of Haryana: Level of urbanisation

Fig. 2: Ahirwal vis-à-vis Rest of Haryana: Level of urbanisation

far more than the state average (33.77%). This remarkable increase was however less spatially uniform with huge inter-district variation with Gurugram (68.82%) accounting for much of the urban development and Mahendragarh (14.41%) continuing with by and large rural character (Fig. 3).

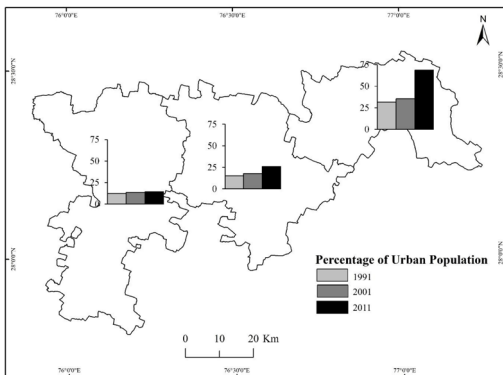


Fig. 3: Ahirwal: Level of urbanisation

Sex ratio is often considered an important demographic indicator of socio-economic status as it reflects the extent of the prevailing equity between males and females in a society (Chandna, 2009). In 1991, sex ratio in Ahirwal was higher than Haryana (Fig.4a) but by the year 2011 there was no difference in the ratio between Ahirwal and the rest of Haryana. Fig. 5a exhibits significant variations across Ahirwal region. Rewari district (898) recorded highest sex ratio in

2011 and Gurugram district (854) had the lowest sex ratio in the region.

Child sex ratio shows the status of the girl child, gender discrimination, infanticides, and feticides. In 1991 Ahirwal had higher child sex ratio than the rest of the state of Haryana (Fig. 4b). But it has continuously declined to reach a level even lower than the state average in 2011. The situation is alarming in Mahendragarh (775) and Rewari district (787) in 2011 (Fig. 5b).

As regards female age at marriage Ahirwal had comparatively low marriage age of women than the state average (Fig. 4c). However, it has continuously increased in the state as well as in Ahirwal region over the period 2001 to 2011 (Fig. 5c) with no marked difference between the region and the rest of Haryana. The inter-district variations in the female age at marriage within Ahirwal region too are insignificant.

Though slightly lower in the Ahirwal region, male age at marriage has also increased all over Haryana over time (Fig. 4d). In Ahirwal, Gurugram district recorded slightly higher male age at marriage than other districts in 2011 (Fig. 5d). Increase in the level of education seems to be increasing the age at marriage of both males and females across the state.

Infant mortality rate is a commonly used indicator of socio-economic wellbeing and general medical and public health conditions in a country (UNICEF, 2006). It is evident that the infant mortality has been higher in the Ahirwal region in comparison to the state average and the rest of Haryana. It has declined significantly all over the state during the decade 2001 to 2011 (Fig. 6a). The decline is evidently more in Ahirwal region

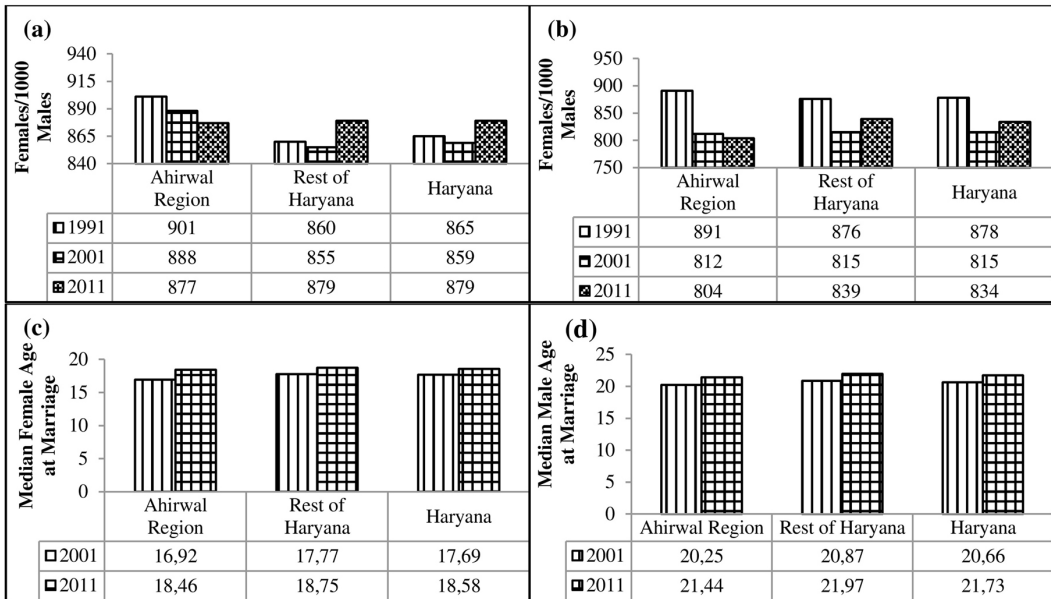


Fig. 4: Ahirwal vis-a vis Rest of Haryana: (a) Sex ratio (b) 0-6 Age group sex ratio (c) Female age at marriage (d) Male age at marriage

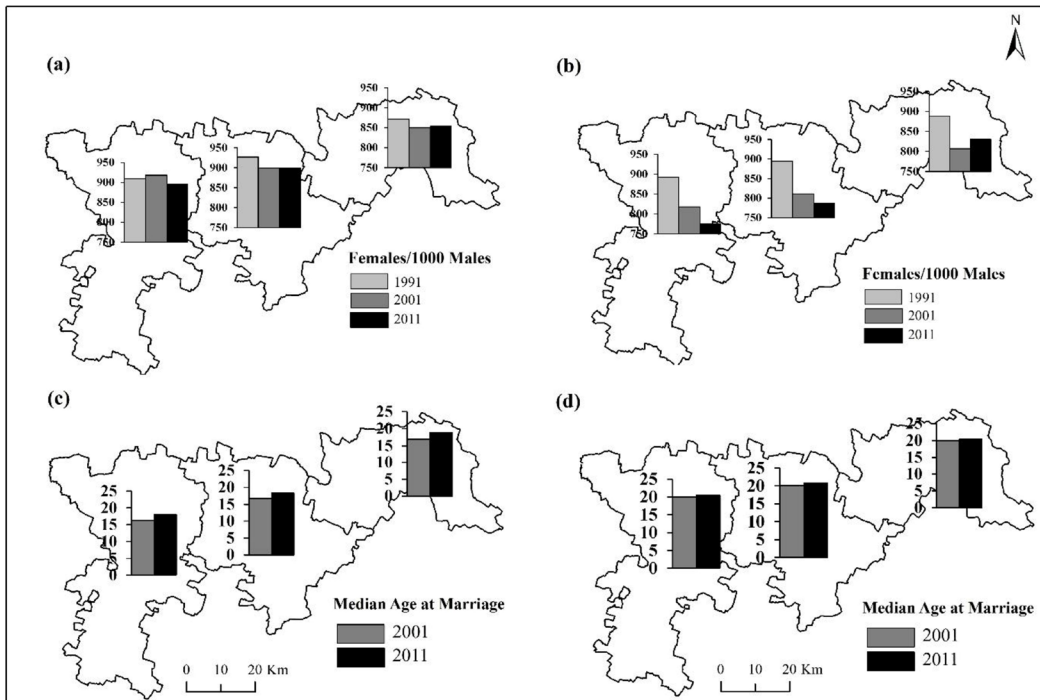


Fig. 5: Ahirwal: (a) Sex ratio (b) 0-6 Age group sex ratio (c) Female age at marriage (d) Male age at marriage

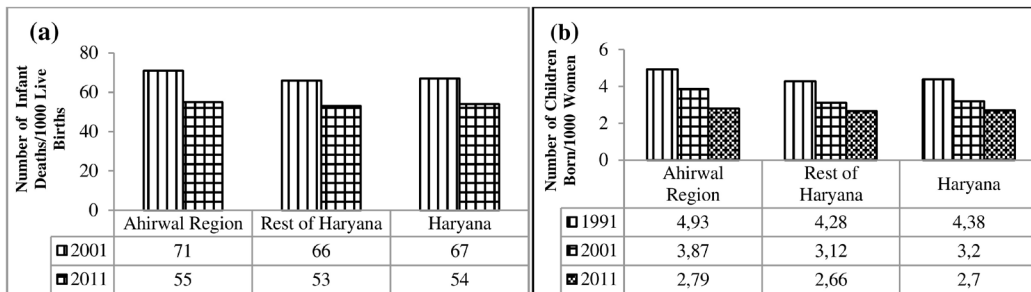


Fig. 6: Ahirwal vis-à-vis Rest of Haryana: (a) Infant mortality rate (b) Total fertility rate

(71 to 55) than the state average (67 to 54). It is intriguing that infant mortality rate has indeed increased in Rewari district of Ahirwal while it has declined significantly in other two districts of Ahirwal region (Fig. 7a).

Total fertility rate (TFR) measures average number of children born to a woman during her entire reproductive period. Though Ahirwal region has experienced slightly higher fertility compared to the state average, it has declined faster than the rest of the state (Fig. 6b). Fig. 7b reveals the declining trend in TFR within Ahirwal region. Rewari and Mahendragarh districts recorded comparatively lower TFR at 2.50 and 2.40 respectively in 2011.

Demographic development

The composite indices of demographic development have been depicted in Table 1. Index value above 100 indicates demographic advancement with respect to state average and vice versa. In 1991 Ahirwal region (93) lagged the state average level in respect of demographic development. During next decade too, there was no significant progress in the region as the index value remained 92 in 2001. But it gained most in terms of demographic parameters during next decade and the region performed better than the rest of

Haryana (99). It should be noted that Ahirwal region has surged ahead of rest of Haryana primarily on the account of higher level of urbanization in 2011. But there is a huge gap in level of demographic development in Ahirwal region between Gurugram district (110) and Mahendragarh district (90). Rewari district has also been a poor performer in this regard.

Education

Haryana has not been a region of high literacy in India. Fig. 8a shows that there has not been much difference in the literacy levels between Ahirwal and other parts of Haryana during the period 1991 to 2001. But Ahirwal region surged ahead of the rest of the state during next decade with 81.75 percent literates which were far more than the state average (75.55%). However, Fig. 9b shows that the inter-district difference within Ahirwal did increase over last two decades. In 2011 Gurugram district recorded highest literacy (84.70%) and Mahendragarh district (77.72%) had the lowest.

The gender disparity in literacy in Ahirwal was higher than the remaining part of Haryana in 1991 (Fig. 8b) with Mahendragarh district (0.45) recording the highest disparity. The disparity however drastically declined

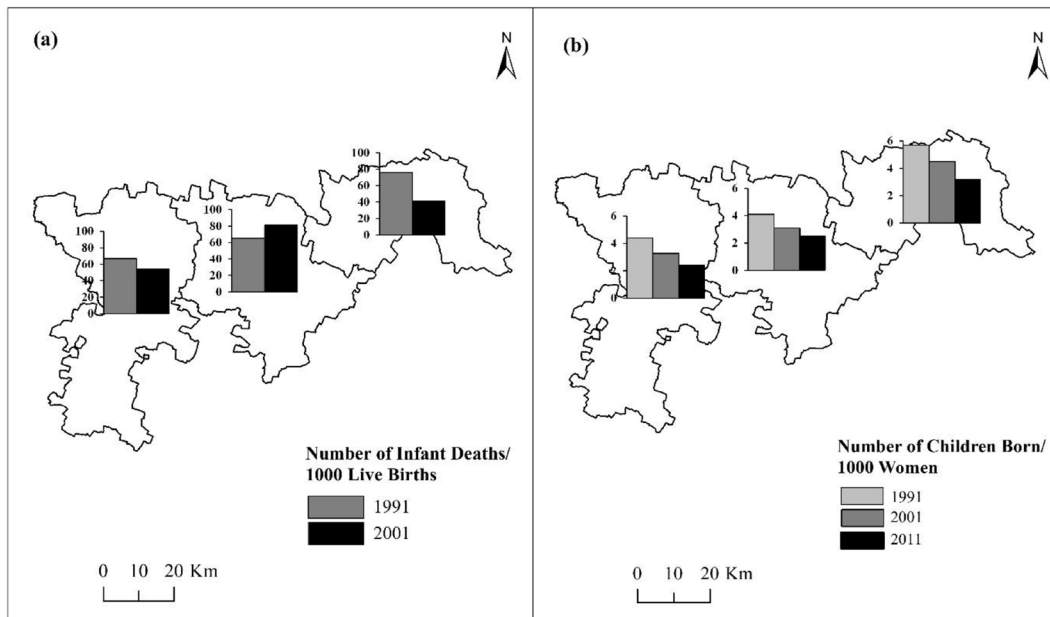


Fig. 7: Ahirwal: (a) Infant mortality rate (b) Total fertility rate

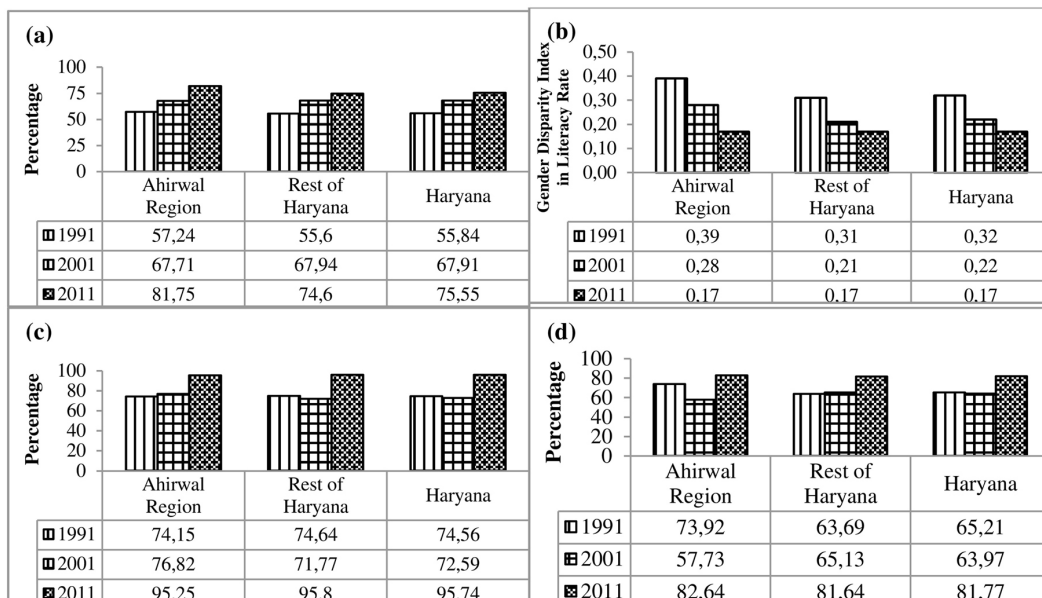


Fig. 8: Ahirwal vis-à-vis Rest of Haryana: (a) Literacy rate (b) Gender disparity in literacy (c) Gross enrollment ratio in primary schools (d) Gross enrollment ratio in middle schools

Table 1: Index of demographic development

Districts	1991	2001	2011
<i>Gurugram</i>	100	95	110
<i>Rewari</i>	94	94	96
<i>Mahendragarh</i>	89	91	90
<i>Ahirwal Region</i>	93	92	101
<i>Rest of Haryana</i>	101	101	99

Source: Computed by the authors

during the next decade in Ahirwal region bringing parity in the disparity level between the region and the rest of Haryana in 2011. However, there was significant intra-regional difference in gender disparity. Mahendragarh district (0.23) continued to record highest gender disparity but it is minimal in Gurugram district (0.11) (Fig. 9b).

Gross Enrolment Ratio (GER) is a ratio between the total enrolment in schools and total population of children in the corresponding age group expressed in percentage. Fig. 8c depicts that there was no difference in GER at the primary school level between the state average and Ahirwal region in 1991. The region had higher GER than the state average (72.59) in 2001. During the next decade GER increased for both the state as well as Ahirwal region ironing out whatever earlier differences existed between the two.

It may be seen that the at middle school level, enrolment ratio is higher in Ahirwal region than the rest of Haryana in 1991 and 2011 (Fig. 8d). Fig. 9d shows that the highest middle level GER has been observed in Rewari district where it increased from 1991 to 2011. The lowest GER has been recorded in Gurugram district

Enrolment ratio at the senior secondary level has continuously increased from 1991 to 2011 (Fig. 10a) and Ahirwal region is far

ahead of other parts of Haryana in this regard. Fig. 11b shows large inter-district variation in the gross enrolment ratio at high and senior secondary level within Ahirwal region. The highest GER had been observed in Rewari district in 2011. Gurugram district initially recorded low GER which however rapidly increased by 2011. Mahendragarh district of the region had the lowest GER.

Teacher Pupil Ratio (TPR) refers to the number of teachers at school level per student. Fig. 10b shows that in 2011 Ahirwal region lagged behind other parts of Haryana in terms of TPR at primary school level. On the other hand, in middle school, Ahirwal region was better placed than the rest of Haryana in 2011 (Fig. 10c). But at high and senior secondary level TPR was lower in Ahirwal region than rest of the state in 2011 (Fig. 10c). Fig. 11(b-d) illustrates the teacher pupil-ratio at primary, middle and high and senior secondary levels in Ahirwal region. Both at primary school and middle school level TPR was higher in Rewari district compared to other districts in 2011. But high/senior secondary level TPR was higher in Mahendragarh district.

Level of educational development

It is evident from Table 2 that in 1991 Ahirwal region (102) was ahead of the rest

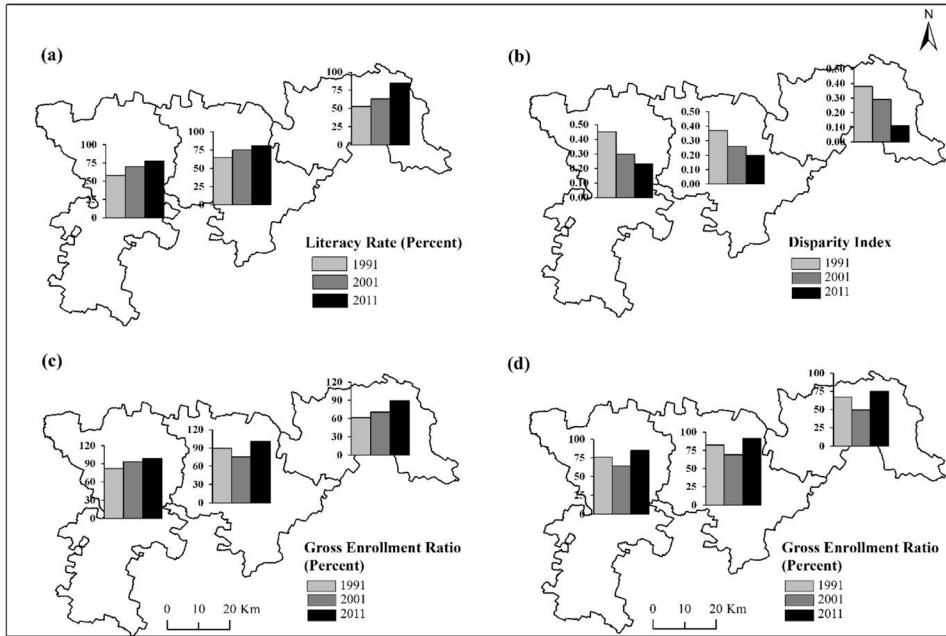


Fig. 9: Ahirwal: (a) Literacy rate (b) Gender disparity in literacy (c) Gross enrolment ratio in primary schools (d) Gross enrolment ratio in middle schools

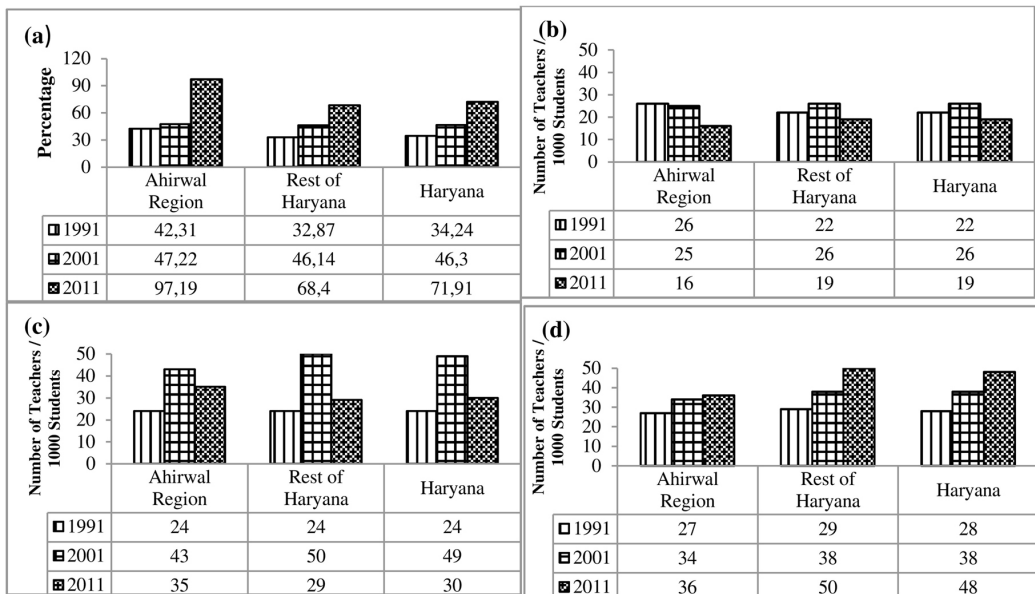


Fig. 10: Ahirwal vis-à-vis Rest of Haryana: (a) Gross enrollment ratio in high and senior secondary schools (b) Pupil teacher ratio in primary schools (c) Pupil teacher ratio in middle schools (d) Pupil teacher ratio in high and senior secondary schools

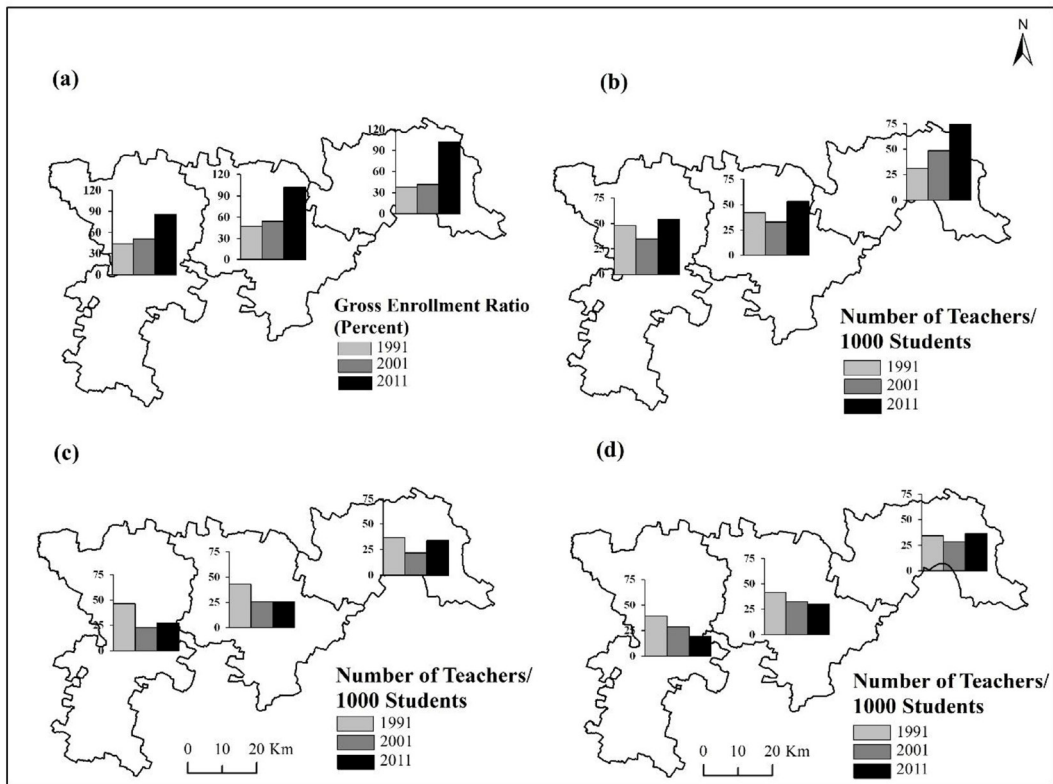


Fig. 11: Ahirwal: (a) Gross enrollment ratio in high and senior secondary schools (b) Pupil teacher ratio in primary schools (c) Pupil teacher ratio in middle schools (d) Pupil teacher ratio in high and senior secondary schools

of Haryana in terms of levels of educational development. But in 2001 this region lagged behind the other parts of the state but registered remarkable improvement by 2011 with an index of 106. However, much of this progress in the Ahirwal region took place along with persisting intra-regional disparity as evident from extreme unevenness in educational development in the three districts.

Household amenities

Availability of toilet facility in the premise of the house is a big step in improvisation of sanitation in an area. It ensures proper disposal of human wastes and reduces health hazards.

Ahirwal region with only 13.40 percent houses having toilets lagged far behind the rest of Haryana in 1991 (Fig. 12a). Despite substantial improvement in the following decade the region was far behind the rest of the state in 2001 too. The sanitation in the region improved rapidly during next decade and in 2011 with about two-third houses having toilet facility was at par with the rest of the state. This transformation however was brought about by remarkable progress registered by one district (Gurugram) while the remaining two districts lagged far behind (Fig. 13a).

Table 2: Index of educational development

Districts	1991	2001	2011
Gurugram	94	86	104
Rewari	117	109	109
Mahendragarh	101	106	106
Ahirwal Region	102	96	106
Rest of Haryana	99	101	99

Source: Computed by the authors

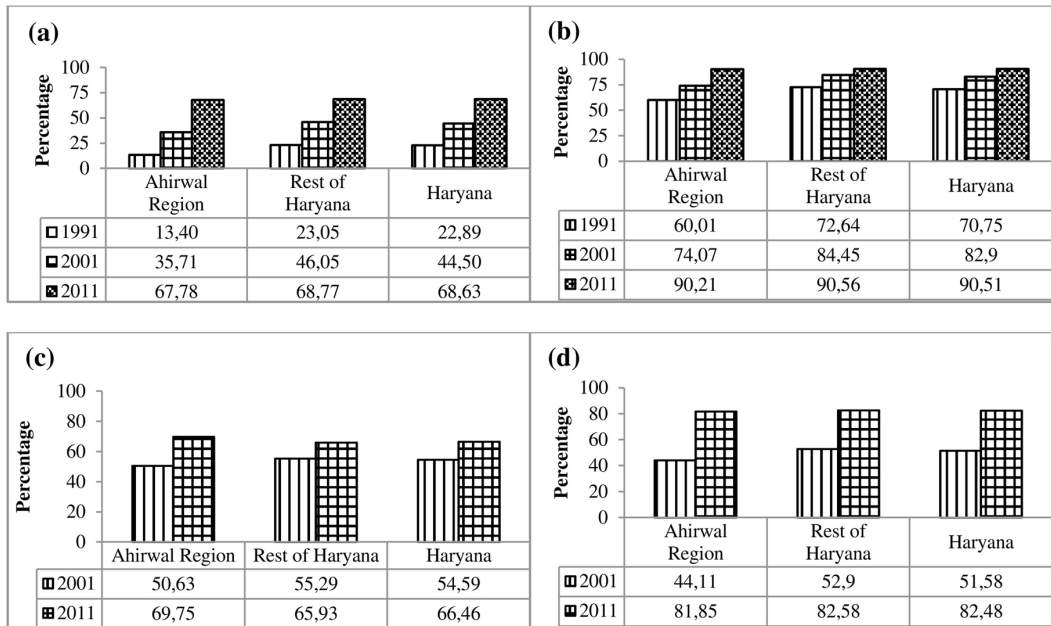


Fig. 12: Ahirwal vis-à-vis Rest of Haryana: (a) Availability of toilet (b) Availability of electricity (c) Availability of kitchen (d) Availability of bathrooms

Despite universal electrification of the villages, a significant number of rural households do not have electricity connection and the quality of electricity supply is poor. Fig. 12b shows that Ahirwal with 60 percent households electrified was behind the state average (71 percent) in 1991. But during the next two decades, electrification of houses in Ahirwal region has seen tremendous progress. The gap between the state average and

Ahirwal remained about 10 percentage points in 2001 despite significant improvement in electrification over the decade. However, in 2011 about 90 percent houses in Ahirwal were electrified and it was at par with the state average. But as Fig. 13b reveals, there was wide inter-district difference in respect of electrification in Ahirwal with Gurugram district (95%) on the top and Mahendragarh district (80.36 percent) at the bottom.

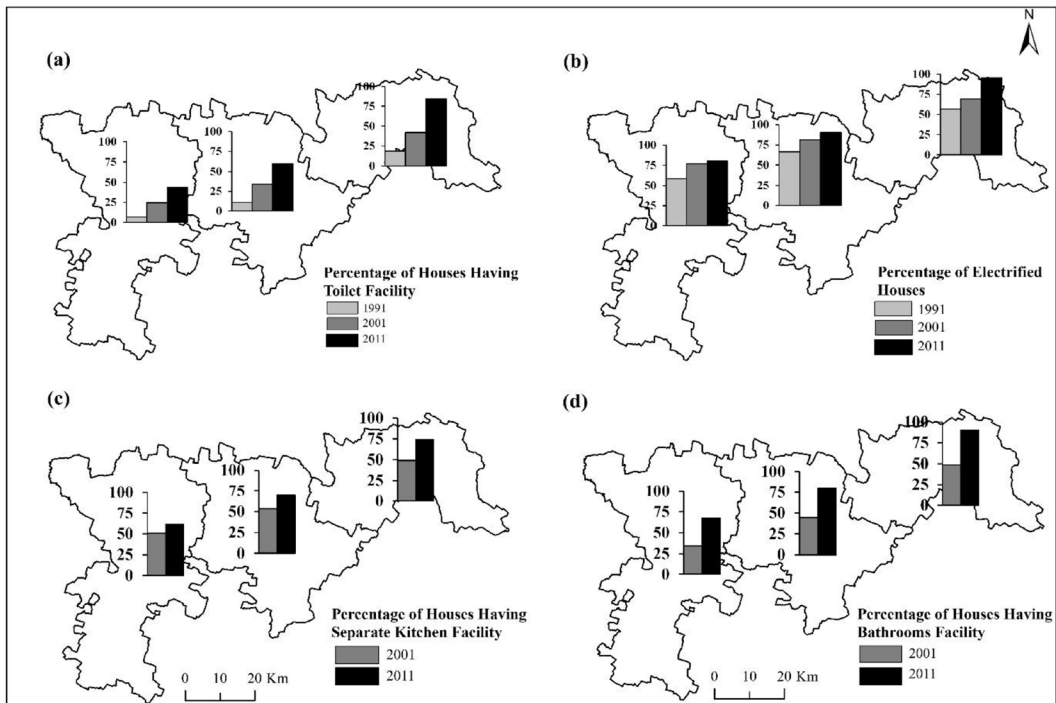


Fig. 13: Ahirwal: (a) Availability of toilet (b) Availability of electricity (c) Availability of kitchen (d) Availability of bathrooms

Availability of separate kitchen in the house indicates better micro environment. In 2001 about half of the houses in Ahirwal had kitchen and this figure increased to 70 percent in 2011 (Fig. 12c). During the first decade of 21st century the availability of separate kitchen increased rapidly in the state. In this regard Ahirwal region was better placed than the rest of Haryana in 2011. Gurugram district in Ahirwal region had about three-fourth houses having separate kitchen in 2011 in comparison to three in five houses in Mahendragarh district (Fig. 13c).

In 2001 Ahirwal region lagged behind the rest of Haryana in terms of bathroom availability inside the house (Fig.12d). However, during the next decade saw faster improvement and in 2011 about 82 percent

houses in the region had separate bathrooms. But there was a significant difference in the availability of bathrooms within the region. In 2011 about 91 percent houses in Gurugram had bathroom facility in comparison to about 67 percent in Mahendragarh district (Fig. 13d).

Level of household amenities development

Going by the composite index of availability of household amenities (Table 3), Ahirwal region shows remarkable improvement over the three decades especially in the period since 2001 catching up with state average with an index value of 99 in 2011. But as the table reveals, there is little decrease in intra-regional difference in the improvements registered with Gurugram district (112) accounting for much of the change and Mahendragarh district (82) languishing at the bottom.

Table 3: Index of household amenities

Districts	1991	2001	2011
<i>Gurugram</i>	81	91	112
<i>Rewari</i>	71	90	97
<i>Mahendragarh</i>	56	77	82
<i>Ahirwal Region</i>	72	87	99
<i>Rest of Haryana</i>	102	102	101

Source: Computed by the authors

Table 4. Composite index of social development

Districts	1991	2001	2011
<i>Gurugram</i>	92	90	109
<i>Rewari</i>	94	97	101
<i>Mahendragarh</i>	82	91	93
<i>Ahirwal Region</i>	89	92	102
<i>Rest of Haryana</i>	101	101	99

Source: Computed by the authors

Level of social development

Table 4 presents the sum total of indices of developments in demographic, educational and household amenities. The composite index value less than 100 indicates social backwardness and more than one 100 denotes advancement with respect to the state average. The index value of 89 for Ahirwal reveals social backwardness of Ahirwal region compared to the state average during early 1990s- a trend that continued well up to 2001 too with an index value of 92 in 2001. But during the first decade of 21st century the region took a big leap forward with an overall index value of 102 in 2011 much in parity with the rest of the state.

All the districts included in the region do show improvement in social development over the three decades, with Gurugram district

gaining the maximum. Rewari district too has gained during the last two decades, but social backwardness persisted in Mahendragarh district (93) even in 2011. It is evident that the positive impacts of the economic boom experienced during post liberalization period in Ahirwal region are mostly confined to Gurugram district with some spill over to the adjoining Rewari district.

Conclusions

Historically, the Ahirwal region has been a socially backward area of Haryana. It lagged in most parameters of social development. The post liberalization period did witness significant improvement in the level of industrialization and urbanization becoming a driver of social development of the region. The study reveals that this region had weaker demographic indicators in 1991. There was

no perceptible progression on this front in the region during the next decade too. However, it gained significantly in this regard during the next decade and in fact was placed ahead of the rest of Haryana in 2011. However, significant difference in demographic development continued to persist between Gurugram district on one hand and Mahendragarh district on the other. It appears that faster urbanization is the key factor in demographic development in the region. The overall economic changes had little impact on social changes as far as child sex ratio, infant mortality rate, and total fertility rate are concerned.

Despite backwardness suffered by the region historically, Ahirwal region has consistently fared well in educational indicators. Even in the year 1991 the level of educational development in the region was better than the rest of Haryana which though did not sustain in the next decade when it came down in Gurugram and Rewari districts relative to the state average. This temporary slide was arrested soon and by the year 2011 this region surged ahead of the rest of Haryana. The intra-regional disparity however continued unabated as is the case with demographic development.

Ahirwal region has always been a laggard in terms of availability of household amenities. However, availability of the amenities has continuously improved in the region over the decades bringing inter-regional parity to a significant extent. The intra-regional disparity though remains a major problem in this parameter too.

The positive effects of economic growth during post liberalization period on the parameters of social development in Ahirwal region (a part of NCR) are mostly confined to

Gurugram and adjoining Rewari district. The situation in Mahendragarh in all parameters of social development reveals continued and persistent social backwardness on the face of all round and pervasive improvement in the region. This poses the question of structural issues preventing uniform regional development- a fact not adequately examined in this research. Future research requires addressing the issue in greater detail.

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