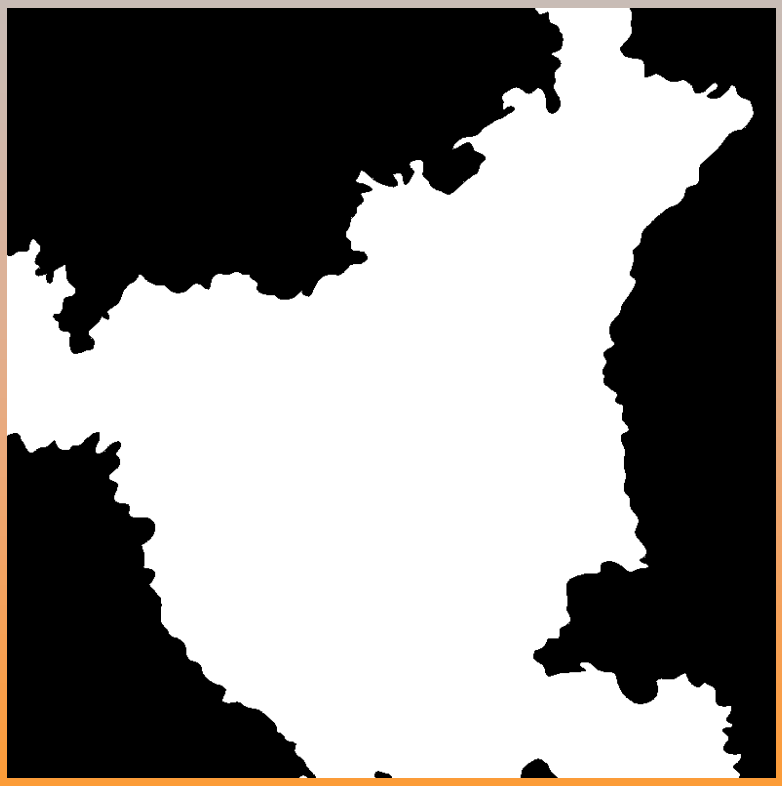
Inter Regional Disparities In Haryana



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Institute For Development And Communication
For
Department of Planning, Government of Haryana

INTER REGIONAL DISPARITIES IN HARYANA

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INSTITUTE FOR DEVELOPMENT AND COMMUNICATION (IDC)
For
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Authors

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EXECUTIVE SUMMARY

1. This study analyzes the extent of inter regional disparities in Haryana. Based on secondary data, it examines the income, consumption, educational and health inequality between different districts as well as between different social groups in Haryana.

2. Haryana, over the last three decades, has witnessed a remarkable economic growth. The average economic growth in Haryana has remained better than national. In line with national experience, the economic growth in Haryana has been primarily driven by service sector and real estate boom has played an important role in economic growth during the last decade.

3. The economic growth in Haryana has been highly concentrated. Districts surrounding the national capital have grown at a very high rate, while the western districts, despite their low base, have grown at a much lower rate. More than 40 percent of economic growth during last twelve years has come from Gurgaon and Faridabad alone. The concentration of economic growth in National Capital Region has further aggregated the existing economic imbalance between Eastern and Western districts.

4. The per capita income varies substantially across districts in Haryana. The per capita income of Gurgaon is around eleven times than the per capita income of Mewat, which is the poorest district. The inter district variation in per capita income has been increasing over the last twelve years as the per capita income in poor districts, which are far away from state or national capital, is consistently falling behind the state average.

5. Literacy, road infrastructure and private investment are the important determinants of per capita income inequality. The trends in these variables suggests that apart from literacy, the other two determinants of per capita income are diverging across districts. Urgent efforts, therefore, are needed to correct the inter district variations in private investment and infrastructure.

6. Analysis of per capita expenditure suggests that average per capita expenditure in Haryana has increased in both rural and urban sectors. However, consumption expenditure growth in urban areas has been more than five times higher than the consumption growth in rural areas, which suggests that rural urban divide in Haryana has increased substantially.

7. The overall consumption inequality in Haryana has increased in the recent past. However, the increase in overall inequality has been exclusively driven by increase in inequality in

urban areas as the extent of inequality in rural areas has declined. Moreover, the breakup of urban inequality between non Dalit and Dalit suggests that increase in consumption inequality in urban area could exclusively be attributed to spike in inequality among non Dalits. Given the fact that real estate has been the main driver of economic growth in last one decade, this pattern of change in inequality is hardly surprising.

8. At district level, the extent of inequality has been extremely high in Gurgaon and Faridabad as compared to the state average.

9. Haryana has, recently, made a noteworthy progress in educational sector. The level of literacy as well as the gross enrolment ratio has gone up, which has improved its relative ranking among Indian states. Importantly, the progress in educational sector has been more inclusive as the gender as well as caste inequality in literacy and gross enrolment ratio has declined sharply.

10. Literacy rate of Haryana is just 2 percent higher than national literacy rate. In Haryana the highest literacy rate is of district Gurgaon (84.4%) whereas in Mewat, it is lowest (56.1%). Similarly in other district, there is wide variations in literacy in districts.

11. Haryana has excellent access to school, particularly in rural areas. However, proportion of people going to government institutions or institutions run by local bodies is much less in Haryana as compared to the all India level. Only 53.5 percent total students go to government schools in Haryana, while the corresponding figure for all India is 67.8 percent. It clearly reflects people's lack of faith in government-run educational institutions. Urgent policy initiatives are required to improve the quality and hence the credibility of government-run educational institutions.

12. Cost of eduaction in Haryana is considerably higher than national average, both in rural as well as in urban areas. The cost of education, even for those attending government schools in rural areas is almost two time higher than the national average. It shows that there is a great scope for improvement in education sector by reducing the cost of education.

13. Health is another aspect, which determines the quality of human capital and hence determines the economic prospects of an individual as well as of the society. The provision of health infrastructure is the most crucial determinant of health outcome. Though, the status of health infrastructure in Haryana is better than national average, it is far behind the best performing state like Kerala. Moreover, Haryana seems to have a very high rural urban disparity in health infrastructure as around 92 percent of total hospitals and hospital beds are concentrated in urban areas while with 70 percent share in total population, rural areas only account for less than 9 percent share in total hospitals.

14. The rural-urban inequality also reflects in the health outcome and health utilization indicators. A very high rural-urban gap in the same underlines that availability of health infrastructure is a crucial determinant of health outcome.

15. Health infrastructure also varies substantially across districts. Surprisingly, the status of health infrastructure has been extremely poor in south eastern districts, which have been the 'poster boy' of economic growth prosperity in Haryana. In contrast, the overall health infrastructure has been comparatively better in western districts of Haryana which have missed the economic boom. This mismatch in economic prosperity and health infrastructure is quite strange.

Policy Recommendations:

The report recommends three policy measures to reduce the intra regional inequality in Haryana:

First, there is an urgent need to develop a growth centre in western part of Haryana to reduce the concentration in private investment which is resulting in a very uneven economic growth across districts. Investment in roads and other industrial infrastructure in western areas could be useful to build a growth centre in western districts.

Second, policy intervention is needed to correct the inter district disparity in education. Reduction in cost of education through government subsidies could be an effective step in this direction.

Third, inter district and rural urban variations in health infrastructure needs to be corrected in order to remove the disparities in health outcome and health utilization.

I
INTRODUCTION

The issue of economic disparity in the process of economic growth has bothered economists for a long time. Since the time of Adam Smith to the debate on convergence, divergence and globalization, economic inequality has always remained an integral part of economic discourse. However, recent outburst against inequality in developed countries, which followed the global financial crisis, has put the economic disparity at the forefront of economic debate worldwide. Researchers have argued that most of developed countries have hit a record inequality in income and capital (Piketty 2014). It has been argued that if not corrected, the percent level of inequality could reduce the pace and durability of economic growth by undermining the progress in health and education and thereby increasing political and social instability (Ostry et al. 2014). India too has witnessed an intense debate on disparities during the last few years. Many researchers have argued that services led geographically concentrated economic growth in India, during post reform period, has increased the income inequality between states as well as between households (Nayar 2008, Bandyopadhyay 2011, 2012, Sen and Himanshu 2004).

At this juncture of high economic growth and rising economic inequalities, there is no study as such which studied the regional inequalities within a developed state like Haryana. The state Haryana made a tremendous development in agriculture, manufacturing and service sector in the post green revolution period. Since, the period of green revolution to the post liberalization era, some regions of this state developed significantly in terms of education, health and income. Contrary to this, many regions lagged behind in terms of economic development. Therefore, in this report an effort has made to capture the economic inequalities in different regions of Haryana.

Date and Methodology:

The universal features of economic development mainly revolves around the three indicators i.e. income either gross or per capita, health and education. Here, in this study we focused only on these indicators. Further, these three indicators disaggregated into various relevant variables.

In this report, we relied upon the recent secondary data sources like Statistical Abstracts of Haryana, data of NSSO of various rounds, Census data and many other published data sources.

Objectives of the Study:

The study has the following objectives:

1. To study the structural transformation in the economy of this state;

2. To compare the economy and per capita income of the different regions. The impact of growing economy on poverty and consumption has also analysed;
3. To examine the availability of education facilities in different regions of Haryana. Further, the status of education among different social groups has also studied;
4. Lastly, the inter-regional comparison of health facilities has reviewed alongwith the use of different health facilities by different social groups has reviewed.

Chapter Scheme:

The whole study has arranged into the following chapters:

1. Economic Growth and Inter District Income Disparity in Haryana;
2. Poverty and Consumption Disparities: Sectoral and Social Dimensions;
3. Education in Haryana – Changing Spatial Differences;
4. Regional Variation in Health Infrastructure And Health Outcomes;
5. Policy Recommendations.

II
ECONOMIC GROWTH AND INTER DISTRICT INCOME DISPARITY IN HARYANA

Over the last two decades, Haryana has emerged as one of the most prosperous states of Indian federation. Service sector boom along with sizeable industrialization has propelled a vertical increase in state per capita income. However, little is known about the variation in economic growth and economic prosperity within Haryana. In this section, we examine the inter district variation in economic prosperity in Haryana and try to identify the determinants of inter districts variation in economic prosperity.

2.1 Drivers of Economic Growth in Haryana

The implication of economic growth for income inequality depends on the nature and drivers of economic growth. Since agriculture and low skilled labour intensive manufacturing sector generates more employment for unskilled labour, growth driven by these sectors is expected to be more equitable. In contrast, skill intensive service sector such as banking, business and insurances are expected to generate employment only for few highly educated urban centric labour and hence economic growth driven by these sectors could sharpen the existing economic divide. Therefore, any study which intends to examine the extent of inequality must begin with an indepth analysis of drivers of economic growth. In this section, we identify the drivers of the economic growth in Haryana by analyzing sector-wise growth performance and their contribution to Gross State Domestic Product (GSDP) growth. We have used the GSDP (at factor cost) data since 1980s. To make GSDP series comparable across time, we have used the splicing technique.

Table 2.1 shows the decadal growth rate of different economic sectors in Haryana and compares it with the all India average. It is evident from the table that Haryana has been consistently performing better in terms of GDP growth than all India average in the last three decades beside the decade of 1990-2000. The overall GDP growth of the state for last three decades (1980 to 2010) has been more than 6.8 percent per annum, higher than that of all India average. However, in the second decade - in 1990s - the growth rate of GDP in the state was slightly lesser than that of the all India average. The state has seen 9 percent GDP growth per annum in the last decade. At disaggregate level, the growth rate of service sector has been the highest both in Haryana and all India. While service sector in Haryana has grown at an annual rate of 9.2 percent during the last three decades, the corresponding figure for all India has been 7.7 percent per annum. For both

Haryana and all India, Industrial sector was the top performers in 1980s while service came to prominence since 1990s. The further disaggregation of service sector shows that there is considerable variation in growth among subsectors of services. Banking and insurance has been the top in growth rate among sub sectors in service followed by

> *"Over the last three decades Haryana has witnessed a robust growth in all sectors of economy and growth rate has remained better than national average."*

transport and communication for both Haryana and India for the last thirty years.

Banking and Insurance services has grown at the rate of 12.3 per annum in Haryana for the period of 1980-2010 and the corresponding growth rate for all India has been 11.6 per annum. Transport and communication has grown at 10.4 percent per annum for Haryana and 9.1 percent per annum for India during the same period. A significant in growth rate among sub sectors in service in Haryana is the growth rate of real estate related activities in 2000s. The growth rate of real estate has been at 14.7 per annum which is highest in any sector or subsector for Haryana and all India for the decade of 2000-10.

Table 2.1: GSDP Growth Rate by Basic Economic Activities (CAGR)

Sectors	Haryana				India			
	1980-90	1990 -2000	2000-10	1980 -2010	1980-90	1990 -2000	2000-10	1980 -2010
Agriculture	**3.9**	**1.9**	**3.3**	**3.3**	**2.9**	**3.2**	**3.0**	**2.9**
Industry	**8.5**	**5.4**	**9.5**	**7.8**	**6.9**	**6.6**	**8.7**	**6.7**
Manufacturing	10.0	5.8	7.3	7.7	7.3	7.2	8.8	6.9
Services	8.0	7.5	11.8	9.2	**6.7**	**8.0**	**9.5**	**7.7**
Transport, storage & communication	**8.0**	**7.9**	**14.4**	**10.4**	7.4	8.2	13.4	9.1
Trade, hotels and restaurants	8.7	7.9	11.3	9.5	6.0	8.6	9.2	7.6
Banking & Insurance	**12.8**	**12.7**	**12.7**	**12.3**	**12.9**	**12.1**	**12.5**	**11.6**
Real estate and Business services	4.5	4.1	14.7	8.1	3.6	4.5	8.7	5.3
Public Administration	9.0	6.2	6.0	6.7	8.0	6.3	6.0	6.0
Other services	5.7	5.5	7.5	6.0	5.3	7.5	6.9	6.9
GSDP	**6.2**	**4.8**	**9.0**	**6.8**	**5.4**	**6.2**	**8.0**	**6.1**

Source: Computed from CSO Data Base

The growth rate in manufacturing sector has been higher in Haryana in comparison to all India in the last three decades. However, the growth rate of the sector has come down from 10 percent per annum in the 1980s to 7.7 percent per annum in 2000s in Haryana. The corresponding growth rates for all India are 7.3 and 8.8 percent per annum respectively. Agriculture too has performed better in Haryana in comparison to all India. The sector has grown at 3.3 percent per annum in Haryana in the last three decades while India's being at 2.9 percent per annum. In the sub periods, the growth rate of agriculture was higher in Haryana than that of India in 1980s but it declined in 1990s in the state. The last decade has seen a slight revival of the sector in the state.

Table 2.2 provides the details on the contribution of different sectors to overall GDP growth for both Haryana and all India. Service sector has been key driver of growth in the last three decades for both Haryana and all India. The service sector contribution is about 57 percent for Haryana and 62 percent for all India to the aggregate growth for the period of 1980-2010. The sector has alone contributed about 61 percent of aggregate growth in the last decade (in 2000s) in Haryana while the contribution is about 66 percent in all India. The agriculture contribution to aggregate growth has been declining for both Haryana and all India. The sector's contribution to aggregate growth was about 28 percent in 1980s in the state and it has come down to 13.5 percent in 2000s.The corresponding figures for all India are 22.5 and 10.6 percent respectively.

The contribution of industry to aggregate growth was about 33 percent in 1980s and it has come down to 30 percent in 2000s. The corresponding figures for all India are about 30.3 percent and 27.3 percent respectively. Similarly, the contribution of service sector to the aggregate growth was about 38.6 percent in 1980s and it has increased to 61.4 percent in 2000s. The corresponding figures for the same time periods for all India were 47.2 percent and 65.8 percent respectively. Among the sub sector within service, trade and hotels contributed about 19 percent to the state GSDP growth in the last three decades in Haryana. The corresponding figure for all India was about 17 percent.

"GSDP growth in Haryana is primarily driven by Service sector. Within services sector, the real estate and business services have emerged as one of the prominent contributor to growth in last decade."

Table 2.2: Sectoral Contributions to GSDP Growth

Sectors	Haryana				India			
	1980-90	1990-2000	2000-10	1980-2010	1980-90	1990-2000	2000-10	1980-2010
Agriculture	**28.1**	**14.5**	**8.9**	**13.5**	**22.5**	**13.4**	**6.8**	**10.6**
Industry	**33.3**	**30.9**	**29.7**	**29.9**	**30.3**	**24.7**	**27.3**	**27.5**
Manufacturing	25.4	23.2	15.1	18.0	18.8	14.9	16.5	16.6
Services	38.6	54.6	61.4	56.6	**47.2**	**61.9**	**65.8**	**61.9**
Transport, storage & communication	**5.7**	**9.2**	**14.0**	**11.8**	7.5	9.7	17	13.9
Trade, hotels and restaurants	13.3	18.9	20.4	19.4	12.9	18	17.4	16.8
Banking & Insurance	3.1	7.1	6.0	5.5	5.9	10	10.5	9.3
Real estate and Business services	5.1	5.1	14.0	11.2	5.8	6.3	8.3	7.6
Pub. Administration	4.0	4.1	1.8	2.4	8.4	7.8	5.4	6.2
Other services	6.5	7.7	5.2	5.6	6.7	10.1	7.3	8.1
GSDP	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Computed from CSO Data Base

Table 2.3 provides insights to the structure of economy. The structure of economy has witnessed a significant change in the last three decades for both all India and Haryana. The service sector contributes about 52 percent to the state income followed by industry at 28.8 percent and agriculture being just 19 percent to the state income in 2009-10. The corresponding figures for all India are 57 percent, 28 and 14 percent respectively. The temporal change also has been enormous for both the state as well as all India. The service sector contribution to the state income was about 27.8 percent in 1980-81, it has increased to 52.3 percent in 2009-10. Similarly the contribution of service to all India GDP has increased from 36 percent in 1980-81 to 57 percent in 2009-10. Among the subsectors in service, trade and restaurant has been maintaining prominence in its contribution to GDP for Haryana and all India across time under study. Real estate and Transport have emerged as important sectors contributing to the tune of 11 percent to the state income in the last decade in the state.

The industry contribution to the state income has gone up from 22 percent in 1980-81 to 29 percent in 2009-10. The corresponding figures for all India were at 26 and 28 percent respectively. The contribution of agriculture to the GSDP has drastically fallen for Haryana. It has come down from 50 percent in 1980-81 to 19 percent in 2009-10 while for all India it has come down from 38 percent in 1980-81 to 14 percent in 2009-10.

Table 2.3: Structure of Economy

Sectors	Haryana				India			
	1980-81	1990-91	2000-01	2009-10	1980-81	1990-91	2000-01	2009-10
Agriculture	**50.1**	**41.3**	**30.7**	**18.9**	**38.1**	**30.9**	**23.9**	**14.5**
Industry	**22.1**	**27.1**	**27.6**	**28.8**	**25.9**	**30**	**25.8**	**28.3**
Manufacturing	13.6	18.7	19.9	17.3	17.7	21.1	15.3	16.1
Services	**27.8**	**31.6**	**41.7**	**52.3**	**36**	**39.1**	**50.3**	**57.2**
Transport, storage & communication	4.2	5.0	6.9	10.7	2.8	5.3	8	10.1
Trade, hotels and restaurants	8.6	10.1	14.7	17.8	12	12.5	14.3	16.2
Banking & Insurance	1.1	1.9	3.6	4.9	6	5	7.5	7.8
Real estate and Business services	7.5	6.2	6.7	10.6	4.7	5.3	6.7	9.5
Public Administration	2.5	3.0	3.1	2.4	5.8	5.7	8.3	6.2
Other services	7.3	6.6	6.7	5.9	4.7	5.3	8	7.5
GSDP	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Computed from CSO Data Base

2.2 Inter-District Variation in Economic Growth

Previous section shows that Haryana has witnessed a healthy growth during last three decades. However, the question is: has the economic growth in Haryana been uniformly distributed across districts? In order to answer this, we calculated the growth rate of all districts of Haryana and compared it with state average. The exercise shows that the economic growth in Haryana has not been uniform across districts. While the aggregate, Haryana has grown at an average annual growth rate of 8.8 percent during 2000-01 to 2011-12[1], there are districts that have grown at a much higher and much lower rate than this (Figure 2.1). For example, districts such as Gurgaon, Faridabad and Panipat have grown at high average annual growth rates of 12.1 percent, 10.6 percent and 10.3 percent, respectively during 2000-01 to 2011-12. Whereas, districts such as Kaithal and Fatehabad have grown at even less than 6 percent per annum during the same period. Thus, the growth in slow growing districts of Haryana is even less than half of fast growing districts. Of the seven districts[2] that have grown at a higher rate than the state average

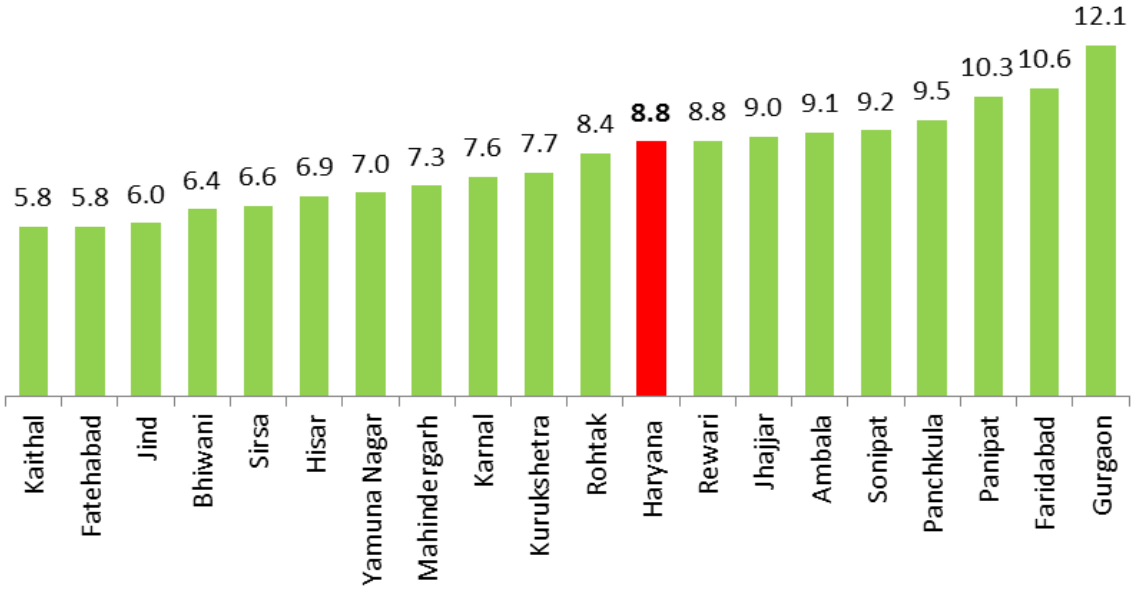
[1] Data on district domestic product is available only from 1999-00 onward. Therefore, in this section we have examined the variation in regional economic growth only for last twelve years.

[2] Presently Haryana has 21 districts but for the purpose of long-term analysis, a time-series of 19 districts have been constructed by merging newly created districts with their parent districts. Palwal has been merged with Faridabad and Mewat has been merged with Gurgaon.

i.e. Gurgaon, Faridabad, Panipat, Panchkula, Sonipat, Ambala, Jhajjar and Rewari, a majority fall in the South-East region and are closer to the national capital Delhi. Whereas, the districts that lag behind i.e. Kaithal, Sirsa, Fatehabad, Hisar etc., are mostly in the Western region and are located far from the national capital. The inter district variation in economic growth clearly reflects that Haryana has two growth centers. One growth centre is located around national capital and another growth centre is concentrated around the state capital.

"There is huge inter district variation in economic growth in Haryana as western districts have grown at a modest rate. Haryana seems to have two growth centers. One growth centre is located around national capital, while second growth centre is located around state capital."

Figure 2.1: Inter District Variation in Economic Growth (2000-01 to 2011-12)



Source: Authors calculation based on data from the Statistical Department of Haryana

Note: Figure shows the average annual growth rate of district domestic products form 2000-01 to 2011-12

Table 2.4 shows the district wise growth rate of three main economic sectors. It is evident from the table that the growth rates of all three key economic sectors vary substantially across districts. However, the extent of variation is lowest in case of agriculture. Surprisingly, the agriculture sector has done extremely well in Gurgaon and Faridabad, which are known for industries and services. The agriculture in these districts has grown at an average annual growth rate of more than 5 percent per annum during 2000-01 to

2011-12. This is almost double of agriculture growth recorded in Kaithal, Fatehabad and Jind where it has grown by just around 3 percent during the same period.

The inter district variation in growth rate is much higher in case of industrial and service sector. Interestingly, Rewari, Panipat and Jhajjar have witnessed a double-digit growth in industrial sector during 2000-01 to 2011-12. This is much higher as compared to Panchkula and Yamuna Nagar, where the industrial sector has grown at annual rate of 4.9 percent and 5.4 percent, respectively during the same period. The extent of inter district variation in growth is even higher in case of service sector, which has been serving as the main driver of economic growth in Haryana. The service sector growth in Haryana has been mainly concentrated in districts falling in the National Capital Region (NCR) i.e. Gurgaon, Faridabad and Sonipat. Gurgaon has seen the highest, 16.45 percent per annum, rate of growth in service sector from 2000-01 to 2011-12 and has rapidly emerged as the hub of knowledge and knowledge-based industry in India. In Faridabad services sector has grown at an average annual growth rate of 14.3 percent during the same period. In contrast, in districts such as Fatehabad, it has grown at even less than 9 percent per annum.

Table 2.4: Inter District Variation in Sectoral Growth Rate: 2000-01 to 2011-12

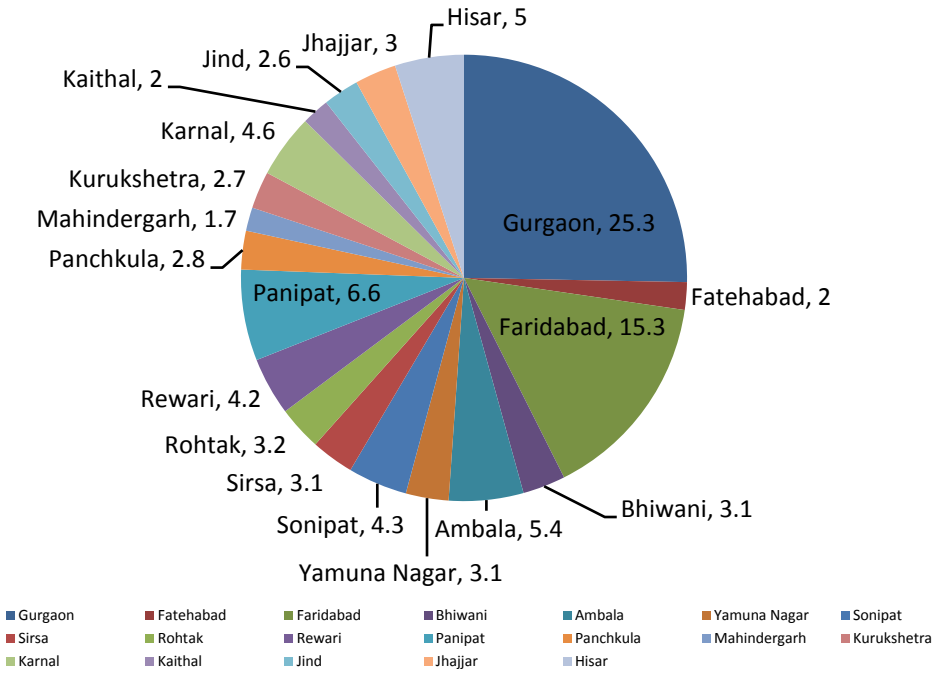
Districts	Agriculture	Industry	Services
Ambala	4.63	7.62	10.68
Bhiwani	3.58	7.32	9.44
Faridabad	5.04	7.09	14.32
Fatehabad	3.06	9.46	8.93
Gurgaon	5.72	8.06	16.45
Hisar	3.29	8.97	10.00
Jhajjar	3.78	10.05	11.40
Jind	3.13	8.57	9.22
Kaithal	2.47	8.72	9.20
Karnal	4.09	7.84	10.53
Kurukshetra	4.35	9.80	10.20
Mahindergarh	4.60	8.74	9.70
Panchkula	5.57	4.86	13.04
Panipat	4.80	10.51	11.97
Rewari	3.73	10.52	9.94
Rohtak	4.78	7.22	10.99
Sirsa	4.88	8.50	9.11
Sonipat	3.54	8.96	13.07
Yamuna Nagar	4.62	5.38	10.09
Haryana	3.76	7.83	12.16
Standard Deviation	0.88	1.54	2.01

Source: Authors calculation based on data from the Statistical Department of Haryana

It is evident from the section above that economic growth in Haryana has been concentrated around national capital region. However, the magnitude of this concentration becomes more visible when we look at the contribution of different districts in total GSDP growth in Haryana. It is astonishing to see that more than one fourth of total GSDP growth during 2000-01 to 2011-12 has come only from one district Gurgaon (Figure 2.2). Similarly, Faridabad, the other adjacent district to Delhi, has also contributed 15.3 percent to total GSDP growth. Interestingly, both these districts put together accounts for less than 15 percent of total population of Haryana. In contrast the contribution of western districts in total GSDP growth has remained extremely low. Four western districts (Bhiwani, Hisar, Sirsa and Fatehabad), with a population share of more than 23 percent has contributed only around 13.2 percent to total GSDP growth. This mismatch between share in population and contribution to GSDP growth clearly shows that the benefit of economic booms in Haryana has remained confined to few people residing in National Capital Region (NCR).

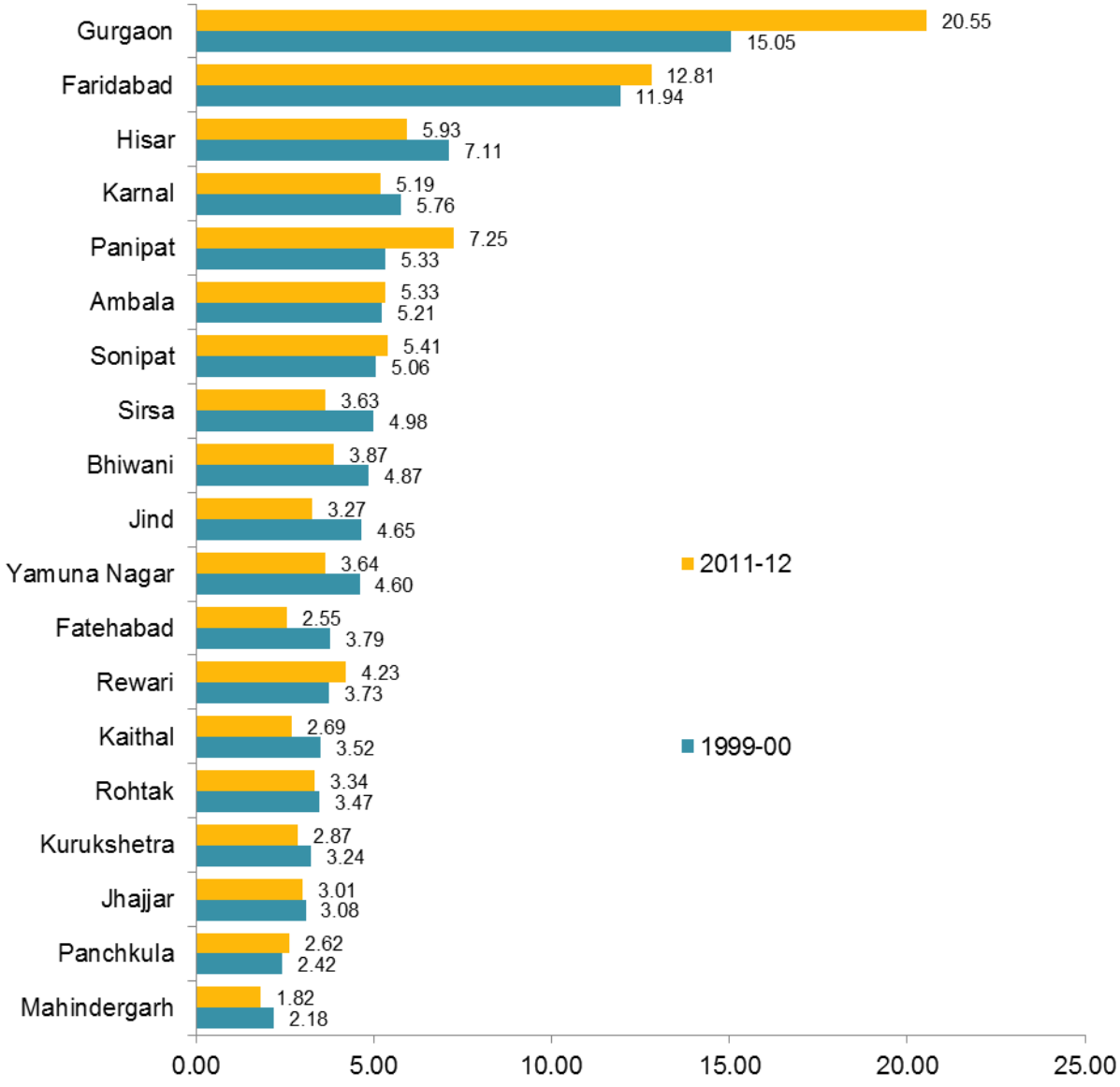
> *"More than 40 percent to GSDP growth in Haryana has come from Gurgaon and Faridabad".*

Figure 2.2: Contribution of Different Districts in GSDP Growth



The uneven economic growth across districts in Haryana has aggravated the existing economic imbalance in Haryana (Figure 2.3). In 1999-00, Gurgaon had around 15.05 percent share in total GSDP of state, which increased to more than 20.55 percent in 2011-12. Similarly, the share of Panipat and Faridabad in total GSDP also went up by two and one percentage points respectively during the same period. Besides these districts, Ambala, Sonipat, Rewari and Panchkula have also witnessed a miniscule increase in their shares in total state GSDP. In contrast, the combined share of four western districts (Hisar, Sirsa, Fatehabad and Bhiwani) in total GDSP has declined by more than four percentage points.

Figure 2.3: Share of Districts in GSDP of Haryana

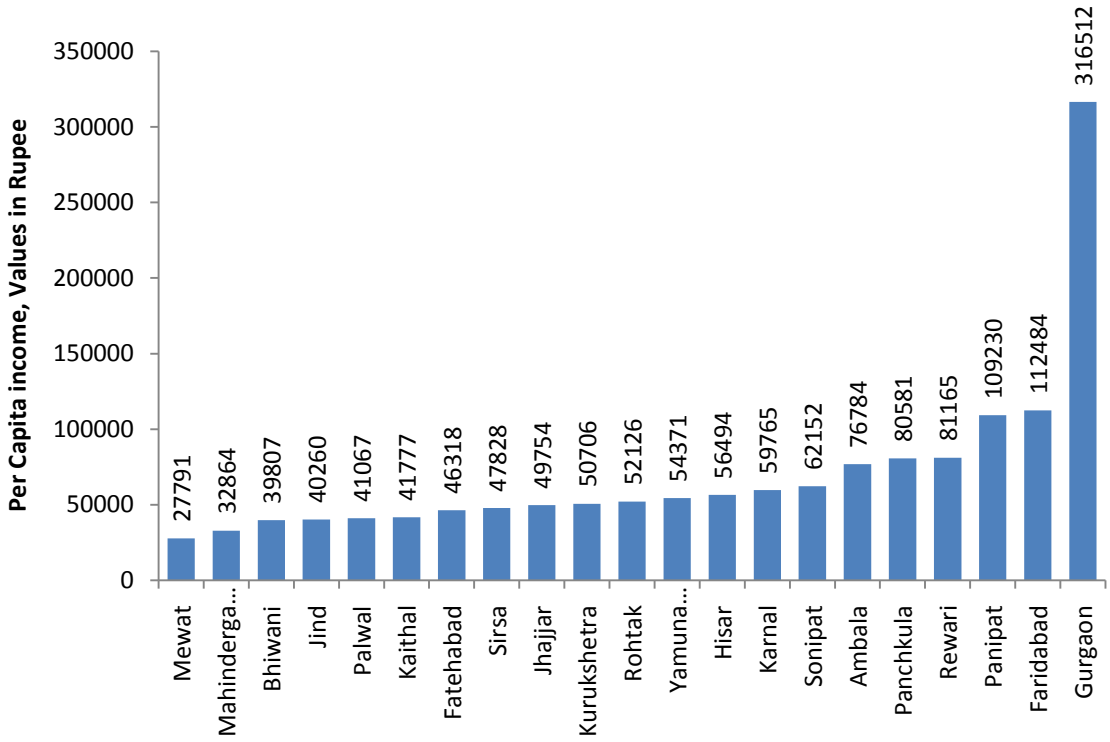


Source: Authors calculation based on data from the Statistical Department of Haryana

2.3 Inter-District Variation in Per Capita Income

The high growth in Haryana has translated into rising per capita income of the state. However, there is wide variation in the level of per capita income within the state (Figure 2.4). As per the latest data available, Gurgaon, with a per capita income of Rs. 316,512 is the richest district of Haryana. In comparison to Gurgaon, the level of per capita income in other districts of Haryana is extremely low. Even Faridabad, which is the second richest district of Haryana, has the per capita of Rs 112484, which is only one third of per capita income of Gurgaon. The gravity of inter district income inequality becomes clearer when we compare the per capita income of Gurgaon with Mewat. Interestingly, despite geographical proximity to each other, Gurgaon and Mewat districts are poles apart from each other in terms of per capita income wherein Gurgaon's per capita income is almost eleven times higher than that of Mewat.

Figure 2.4: District Wise Per Capita Income in 2011-12: Twenty One Districts



Source: calculation based on data from the Statistical Department of Haryana
Note: Per capita income at constant 2004-05 prices, value in Rupee

Though, it is clear that the level of per capita income varies substantially across different districts of Haryana, it is noteworthy to examine the temporal trend in inter district income disparity. In order to do so, we constructed a comparable series of per capita income for 19 districts by merging the newly created districts of Mewat and Palwal with

their parent districts[3]. The trend in per capita income of nineteen districts is shown in table 2.5. It is evident from the table that per capita income in all districts has increased during the last twelve years. However, the rate of increase has not been uniform across districts. Going with convergence hypothesis, it was expected that poorer districts would register higher growth in per capita income. Nonetheless, this has not been the case in Haryana. On the contrary, per capita income growth, during last twelve years, has been significantly higher in the developed districts of Haryana as compared to backward districts. For example, with an annual growth rate of 9.5 percent per annum, Gurgaon, the richest district of Haryana, has witnessed three-fold increase in per capita income during 1999-00 to 2011-12. Similarly, Panipat, Faridabad, Sonipat, Panchkula and Ambala have also registered a very high growth in their per capita income. In all these districts, per capita income, during last twelve years, has grown at an annual rate of more than 7 percent. In contrast, the growth rate of per capita income has remained low in less developed western districts which were at the lower level of development in 1999-00. Consequently the inter district variation in per capita income has increased substantially. In 1999-2000, the coefficient of variation in per capita income of nineteen districts was 0.29, which increased to 0.50 in 2011-12 (Table 2.5)

It is interesting to observe that per capita income growth in the districts of Haryana has been positively related with their distance from either state or national capital (Figure 2.5). Districts which are closer to either the national capital or the state capital have witnessed higher per capita income growth than those which are far located. For example, Gurgaon, Faridabad, Panipat and Sonipat districts are closer to national capital and have seen the highest per capita income growth from 1999-00 to 2011-12. Similarly, Panchkula and Ambala have close proximity to state capital Chandigarh and their per capita income growth has been next only to Gurgaon, Faridabad, Panipat and Sonipat. On the contrary, Fatehabad, Sirsa, Bhiwani and Mahindergarh are located faraway from national and state capitals and per capita income growth in these districts has been at the lowest end. It indicates that location has been playing an important role in the economic growth of districts in Haryana.

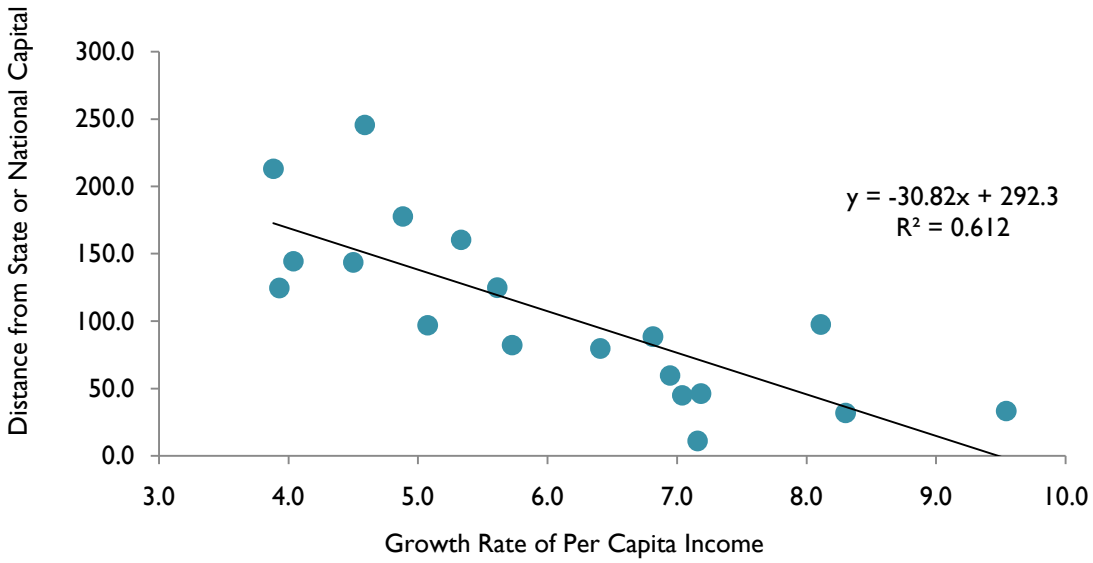
[3] Mewat has been merged with Gurgaon and Palwal has been merged with Faridabad. It should be noted that this is not perfect way to create comparable data series as the new districts have not been carved out exclusively from Gurgaon and Faridabad. However, given the limitation of data, this is the best approximation that one can do.

Table 2.5: Growing Inter District Income Disparity: Nineteen Districts

Districts	1999-00		2011-12		Average Annual Growth Rate: 1999-00 to 2011-12
	Per capita Income	Rank	Per capita Income	Rank	
Gurgaon	59463	1	175825	1	9.5
Panipat	43811	2	109230	2	8.1
Faridabad	34511	5	86320	3	8.3
Rewari	37146	3	81165	4	6.8
Panchkula	35532	4	80581	5	7.2
Ambala	34069	6	76784	6	7
Sonipat	27156	12	62152	7	7.2
Karnal	31140	8	59765	8	5.6
Hisar	32172	7	56494	9	4.9
Yamuna Nagar	30130	9	54371	10	5.1
Rohtak	24902	16	52126	11	6.4
Kurukshetra	26100	14	50706	12	5.7
Jhajjar	22471	18	49754	13	6.9
Sirsa	28321	11	47828	14	4.6
Fatehabad	29626	10	46318	15	3.9
Kaithal	26502	13	41777	16	3.9
Jind	25190	15	40260	17	4
Bhiwani	23739	17	39807	18	4.5
Mahindergarh	18027	19	32864	19	5.3
Coefficient of Variation	0.29		0.5		

Source: calculation based on data from the Statistical Department of Haryana
Note: Per capita income at constant 2004-05 prices, value in Rupee

Figure 2.5: Per Capita Income Growth and Distance from State or National Capital



2.4. Determinants of Per Capita Income

Last section shows that level of per capita income in Haryana varies substantially across districts. Some districts have achieved a very high level of per capita income while others have remained relatively poor. So what makes some districts within a small state like Haryana relatively richer while others unimaginably poor? Economic theory identifies investment (public and private) physical infrastructure, human capital etc as the potential factors which could explain the income inequality between different geographical units. In this section we examine whether these variables are responsible for inter district variation in per capita income in Haryana? In order to quantify and identify the determinants of per capita income, we estimate the following equation in a panel data framework.

$$\text{Log } (Yit) = (1+\beta) \text{ Log } (Y_{it-\Omega}) + \beta_1 X_{it} + n_i + \mu_t + e_{it} \quad \ldots\ldots\ldots 1$$

This equation expresses per capita income as a function of the initial level of per capita income and a set of other variables. Here Y denotes real per capita income (real per capita gross district domestic product), i indexes the district, t indexes the time period, Ω denotes the number of years between each successive observation, n is a state-specific fixed effect, and μ is a year- specific effect. X is a vector of explanatory variables, which includes literacy rate, density of state highways and per capita bank credit extended by all scheduled commercial banks. The literacy rate is included as proxy for quality of human capital; while density of state highways has been taken as an indicator of inter district variation in physical infrastructure. The per capita bank credit has been included as an indicator of private investment. The initial per capita income has been included to check the potential unconditional and conditional β convergence. The equation is estimated with fixed effect estimator, which controls for the unobserved heterogeneity across districts.

Regression Results

We produced two results from equation 1. First we estimated our equation without control variable to examine the hypothesis of unconditional convergence. The results of this exercise are reported in column 1 of table 2.6. The results show that an unconditional divergence in per capita income across districts. However, in column 2 we find the evidences of condition convergence as the co-efficient on lagged income i.e. 1+β is estimated at 0.754. This implies β of -0.246 which is negative and statistically significant at 1 percent level of significance. The results shows that once we control the factors which affects the steady level of income, the poorer districts grow faster on an average than richer districts. Our results also reveal that literacy is a significant determinant of per capita income. It underlines the fact that availability of educated workforce plays positive role in increasing the level of per capita income, which is quite expected. Similarly, positive and significant coefficient of density of state highway suggests that better road

network is crucial to achieve the higher level economic prosperity. The coefficient of per capita bank credit also turns out to be positive and significant at conventional level. Since we have taken the per capita bank credit as proxy of private investment, our results suggests that private investment is a key determinant of inter district variation in per capita income.

Our results show that literacy, density of state highways and per capita bank credit are the significant determinants of per capita income. It implies that inter district variation in per capita income in Haryana could be solved by reducing the inter district variation in literacy, road infrastructure and private investment. However, an analysis of inter district variation in these determinants of per capita income suggest that apart from literacy, the inter district variation in other two determinants of per capita income has been continuously increasing (Table 2.7). These trends did not augur well for state which has been witnessing huge inter-districts income inequality. Therefore it is important that government should take some policy measures to correct the regional imbalance in private investment. Government should also take urgent initiatives to improve the road infrastructure in districts where it is lagging. In fact, government investment in state highways and other industrial infrastructure could be used as a tool to attract the private investment in western districts, which are missing the growth boom.

Table 2.6: Determinants of Per Capita Income

Dependent Variable: Log Per Capita District GSDPt-1		
	1	**2**
Constant	-0.308*	0.366***
	{0.174}	{-0.198)
	[-1.77]	[1.850]
Log Per Capita District GDP t-3	1.084*	0.759*
	{0.038}	{-0.067}
	[28.52]	[11.29]
Literacy		0.010*
		{-0.002}
		[4.76]
Road Density		
State Highways		0.101***
		{-0.057}
		[1.78]
Per Capita Bank Credit		0.154***
		{-0.08}
		[1.91]
R Square	0.98	0.891
Number of Observations	76	76
Implied (rate of conversion)	0.028	-0.06

Note: *, **, *** significant at 1, 5 and 10 percent respectively
Figures in curly brackets are standard error and those in square brackets are t values

Table 2.7: Inter District Variation in Determinants of Per Capita Income

Determinants of Per Capita Income	Co-efficient of Variation		
	1999-00	2005-06	2011-12
State Roads Density	0.31	0.32	0.37
Literacy Rate	0.08	0.07	0.06
Per Capita Bank Credit	0.59	0.82	1.4

2.5 Concluding Remarks

Haryana, over the last three decades has witnessed a remarkable growth. However, the growth has been highly concentrated in national capital regions (NCR) as districts in NCR have grown at a much higher rate. The concentration of economic growth in few districts has widened inter district income disparity in Haryana. The regression analysis suggests that variation in road infrastructure, literacy rate and per capita bank credit are significant determinants of inter district income inequality. Therefore, government should introduce appropriate policy and take some policy measures to correct the regional imbalance in private investment. At the same time, government should increase the infrastructure spending in the western region which seems to have missed the economic boom. There is an urgent need to develop a growth centre in western part of Haryana, which could help to bridge the growing East West economic divide.

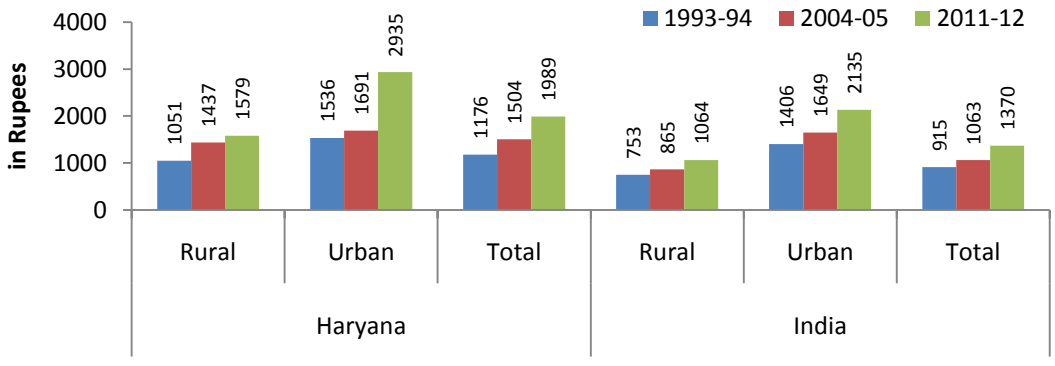
III
POVERTY AND CONSUMPTION DISPARITIES: SECTORAL AND SOCIAL DIMENSIONS

This part of the report focuses on the dynamics of growth, poverty and inequality in Haryana and tries to address the rural urban and social differences across these variables. In Haryana efforts are being made to mainstream those sections of society, which have been bypassed by higher rates of economic growth witnessed in recent years. Here evaluation of economic growth, poverty reduction and inequality is done across social groups in rural and urban Haryana both at state level and at the level of district. According to 68th round of NSSO conducted in 2011-12 there are 28.2 per cent of OBC, 23 per cent of schedule caste, 48.1 percent of others in Haryana. In this study, however, we have formed two categories namely Dalits and non Dalits for analysis.

3.1 Growth in Consumption Expenditure

Growth in consumption expenditure is used as a proxy for income growth. Estimates show that the level of average per capita expenditure in Haryana has always been higher than the all-India averages (see figure 3.1). In the post-reform period there has been an increase in average per capita expenditure at the all-India level as well as in Haryana, however this increase has not been uniform across sectors. During 11 year period from 1993-94 and 2004-05, aggregate average monthly per capita expenditure (APCE) for all-India has grown at the rate of less than 1.5% per annum in aggregate, in rural and in urban sectors, however during the 7 year period from 2004-05 and 2011-12 it has grown at a rate of more than 3% per annum across the sectors (see appendix 3.1). In Haryana growth rate of average per capita expenditure has improved during 2004-05 and 2011-12 compared to 1993-94 and 2004-05 with urban Haryana growing at an outstanding rate of 8.20% per annum, but in rural Haryana the growth rate has come down during the same period. It shows that urban Haryana is performing better than their rural counterparts and is contributing more to overall growth in Haryana.

Figure 3.1: Average Monthly Per Capita Expenditure: 1993-2012

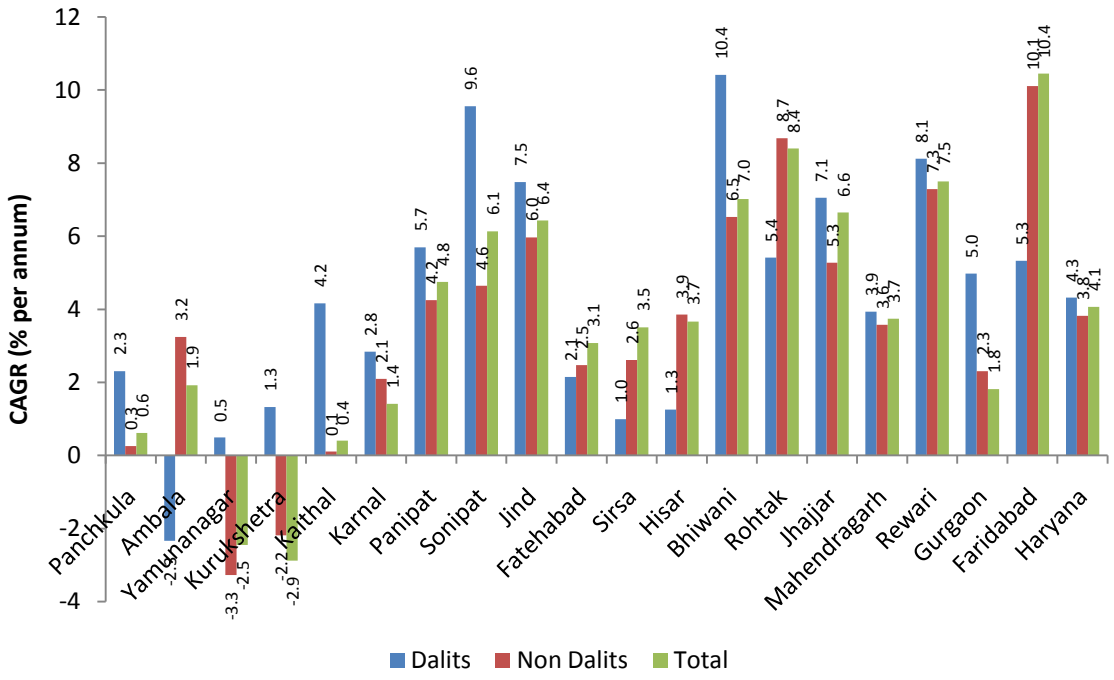


Source: Authors' construction using estimates from Appendix *3.2.*

Average Monthly Per Capita Expenditure in Haryana

- During 2004-05 and 2011-12, level of APCE has increased in rural as well as in urban Haryana.
- In urban Haryana APCE has grown at an outstanding rate of 8.20% per annum as compared to only 1.35% per annum in rural Haryana.
- Level of APCE for Dalits in Haryana has been lower than that of non Dalits in both rural and urban Haryana.
- Growth rates of APCE for Dalits has been higher than that of non Dalits in rural sector leading to narrowing of gap in the standard of living between the two groups but gap seems to be increasing in urban sector.
- Faridabad and Rohtak are growing at impressive rates of 10.45%and 8.40% per annum.
- Yamunanagar and Kurukshetra have registered negative growth in APCE

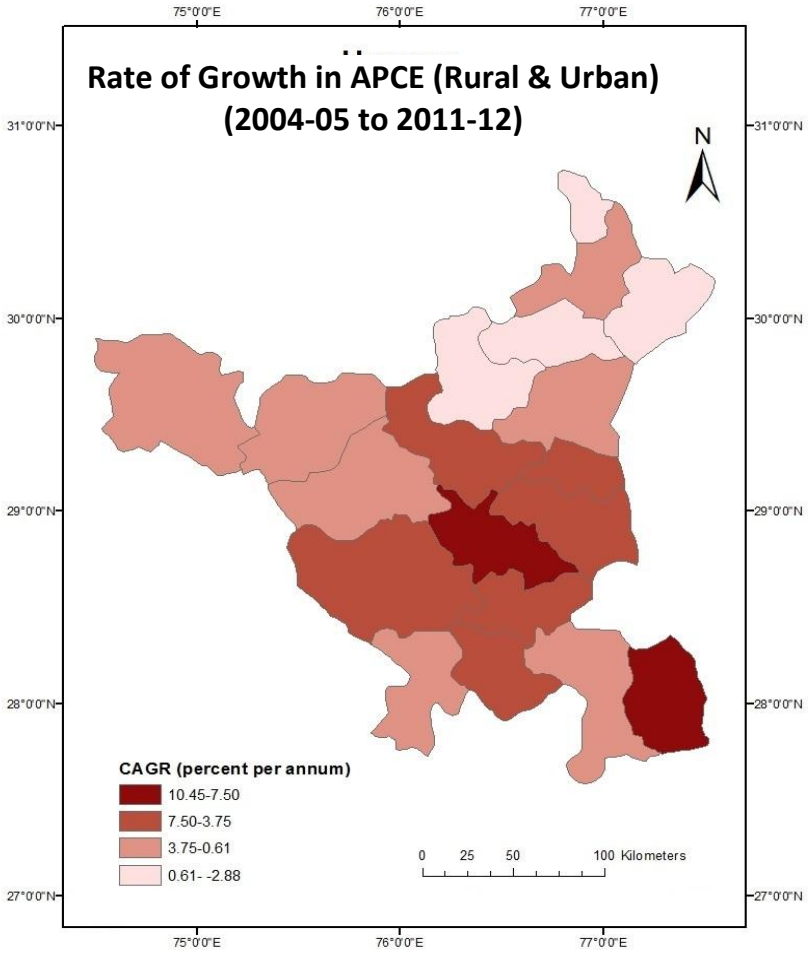
Figure 3.2: Growth in Average Monthly Per Capita Expenditure Across Districts and Social Groups: 2004-05 to 2011-12



Source: Authors' construction using estimates from appendix 3.2.

Average monthly per capita expenditure for Dalits in Haryana has been lower than that of non Dalits during 2004-05 as well as during 2011-12, however the levels have increased for both groups in aggregate and across rural and urban areas during the period (see

appendix 3.2). Again, the growth rates are not uniform. During 2011-12, aggregate and rural sector growth rates for Dalits has been higher than that of non Dalits leading to narrowing the gap in the standard of living between the two groups but in the urban sector growth rates for non Dalits has been a bit higher. Moreover, growth in average monthly per capita expenditure for both Dalits and non-Dalits was much higher in urban sector than the rural.



Source: Authors' construction using estimates from Appendix 3. 2.

District wise estimates clearly reveal huge inter-regional disparities in the APCE within the state of Haryana (see appendix 3.2). The APCE out of 19 districts only 8 (Panipat, Sonipat, Jind, Bhiwani, Rohtak, Jhajjar, Rewari and Faridabad) were growing at the rate more than the state average of 4.07% per annum including Faridabad and Rohtak growing at impressive rates of 10.45%and 8.40% per annum. Yamunanagar and Kurukshetra were the only districts where the growth in average monthly per capita expenditure was negative during 2004-05 and 2011-12. Moreover, across the districts also there are rural-

urban differences. In rural areas of Panchkula, Ambala, Yamunanagar, Kurukshetra, Kaithal, Gurgaon and urban areas of Kurukshetra and Karnal growth rates were negative during 2004-05 and 2011-12.

Cross tabs between social groups and districts shows that during 2011-12 average monthly per capita expenditure for Dalits was lower than non Dalits across all the districts and both sectors with the exception of rural areas of Panchkula and Yamunanagar and urban areas of Kaithal and Bhiwani where level of average monthly per capita expenditure was higher for Dalits signifying narrowing the gap between Dalits and non Dalits. Growth rates of average monthly per capita expenditure differs for Dalits and non-Dalits across sectors and districts showing no clear pattern but overall urban sector performance is better than the rural one.

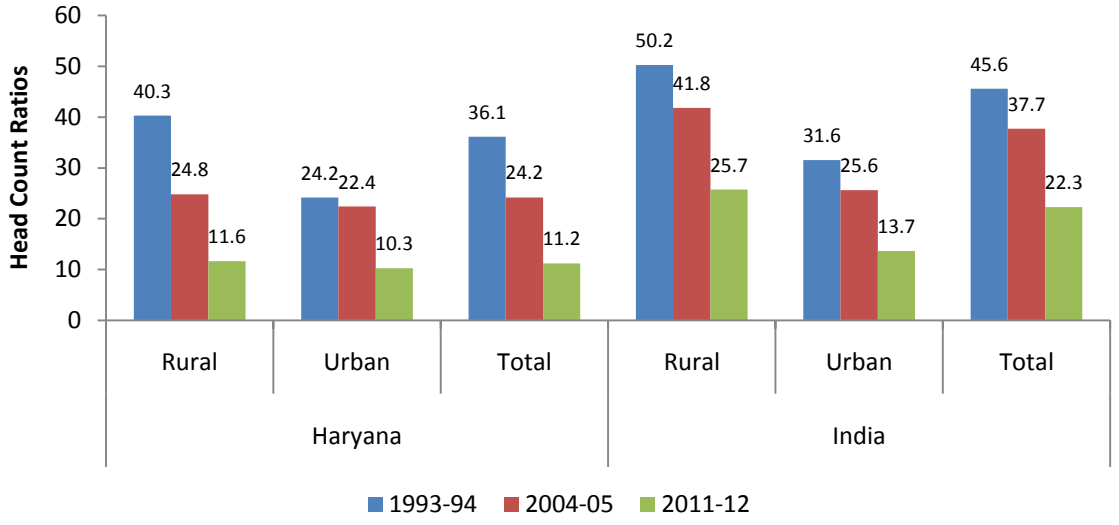
3.2 Incidence of Poverty

Estimates using poverty line based on Tendulkar Committee report shows that poverty rates in Haryana are uniformly lower than the all-India poverty rates across rural and urban areas throughout the period (see figure 3.3). Moreover, poverty in Haryana has declined sharply during 1993-94 and 2011-12 in both rural and urban areas with comparatively high rate of reduction during the faster-growth period of 2004-05 to 2011-12 (see appendix 3.3). Further, decline in rural Haryana is more than in urban during 2004-05 to 2011-12.

Poverty

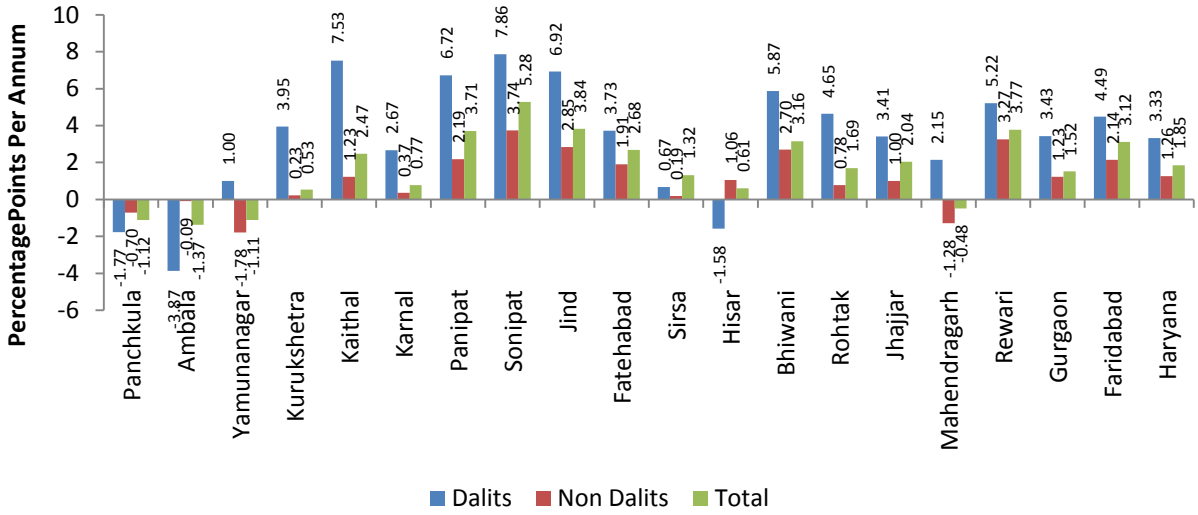
- During 2004-05 and 2011-12, incidence of poverty has declined sharply in rural as well as in urban Haryana.
- Rate of decline of poverty in rural Haryana has been slightly more than in urban Haryana.
- Incidence of poverty among Dalits has been much higher than that of non Dalits in Haryana.
- Poverty is declining more sharply for Dalits as compared to non Dalits in Haryana.
- Kaithal is the only district where incidence of poverty has declined to zero.
- Panchkula, Ambala, Yamunanagar and Mahendragarh have registered increase in poverty rates.

Figure 3.3: Incidence of Poverty in Haryana and India: 1993-2012



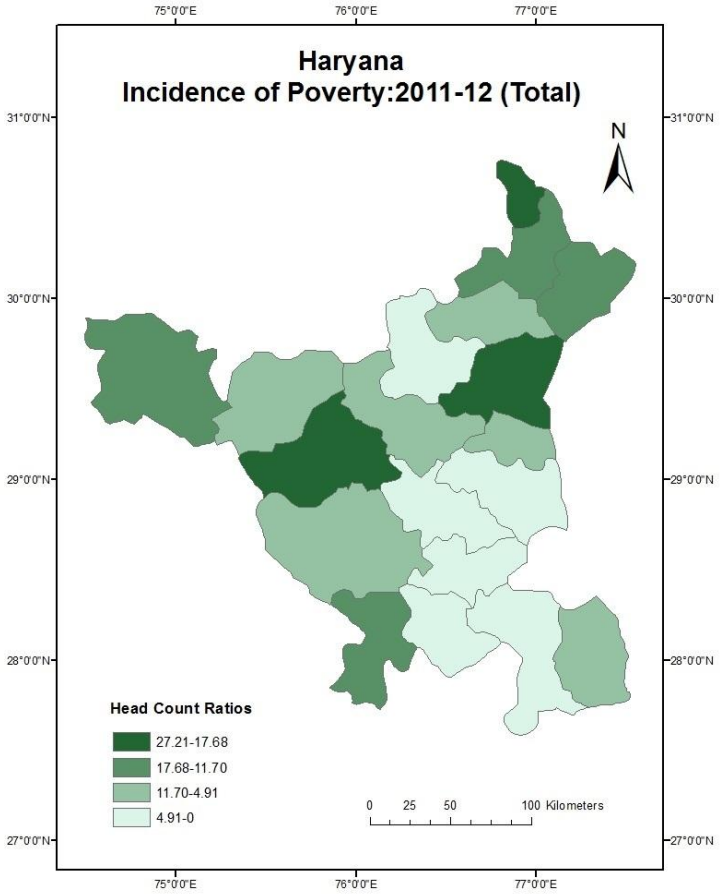
Source: Authors' construction using estimates from Appendix 3.3.

Figure 3.4: Poverty Reduction Across Districts and Social Groups: 2004-05 to 2011-12



Source: Authors' construction using estimates from appendix 3.4.

Incidence of poverty among Dalits in Haryana has been higher than that of non Dalits during 2004-05 as well as during 2011-12 across rural and urban areas but poverty rates for both groups are declining during the period with comparatively more sharp decline for dalits (by more than 3 percent points per annum) in both rural and urban areas (see appendix 3.4). It has lead to considerable narrowing the gap between Dalits and non Dalits during 2011-12 across the sectors and in aggregate.



Source: Authors' construction using estimates from Appendix 3.4.

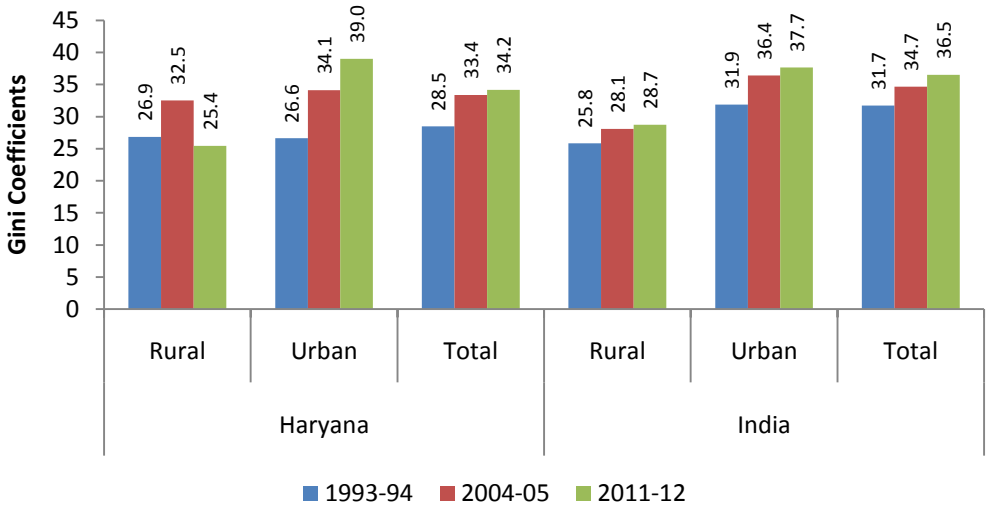
Within Haryana, poverty is unevenly distributed. During 2011-12, in 8 districts of Haryana (Panchkula, Ambala, Yamunanagar, Karnal, Fatehabad, Sirsa, Hisar and Mahendragarh) incidence of poverty is higher than the state average of 11.23%. Further, there are huge rural and urban differences across the districts. In rural parts of districts like Panchkula, Kurukshetra, Sonipat, Fatehabad, Bhiwani, Jhajjar, Mahendragarh, Rewari and Faridabad incidence of poverty has been much lower than that of urban one during 2011-12. In fact in Kaithal, Jhajjar and Rewari, rural incidence of poverty is zero. It shows that in Haryana rural areas are performing much better than the urban ones. If we see poverty reduction rates, out of 19 districts, poverty has declined in 15 districts although in other four including Panchkula, Ambala, Yamunanagar and Mahendragarh poverty rates has increased. In rural areas of districts like Ambala, Yamunagar, Hisar and Mahendragarh and in urban areas of districts like Panchkula, Yamunanagar, Kurukshetra, Karnal and Mahendragarh poverty has increased. Kaithal is the only district where incidence of poverty has declined to zero across sectors and in aggregate in 2011-12.

If we see social groups across districts, incidence of poverty among Dalits is much higher than that of the non-Dalits in 2011-12 in all the districts except in Yamunanagar where poverty rates for Dalits are even below than those for non-Dalits. However, the percentage point reduction in poverty has been larger for Dalits than non-Dalits in almost all the districts leading to narrowing of gap between Dalits and non Dalits in 2011-12. There are few exceptions like Panchkula, Ambala and Hisar where the poverty rates for Dalits has in fact increased during 2004-05 and 2011-12. Again, there are sectoral differences. Interestingly, in rural parts of districts like Yamunanagar, Mahendragarh and Faridabad and in urban parts of districts like Karnal, Panipat, Sonipat, Sirsa, Bhiwani and Gurgaon poverty rates for Dalits are lower than those for non-Dalits during 2011-12.

3.3 Consumption Inequality

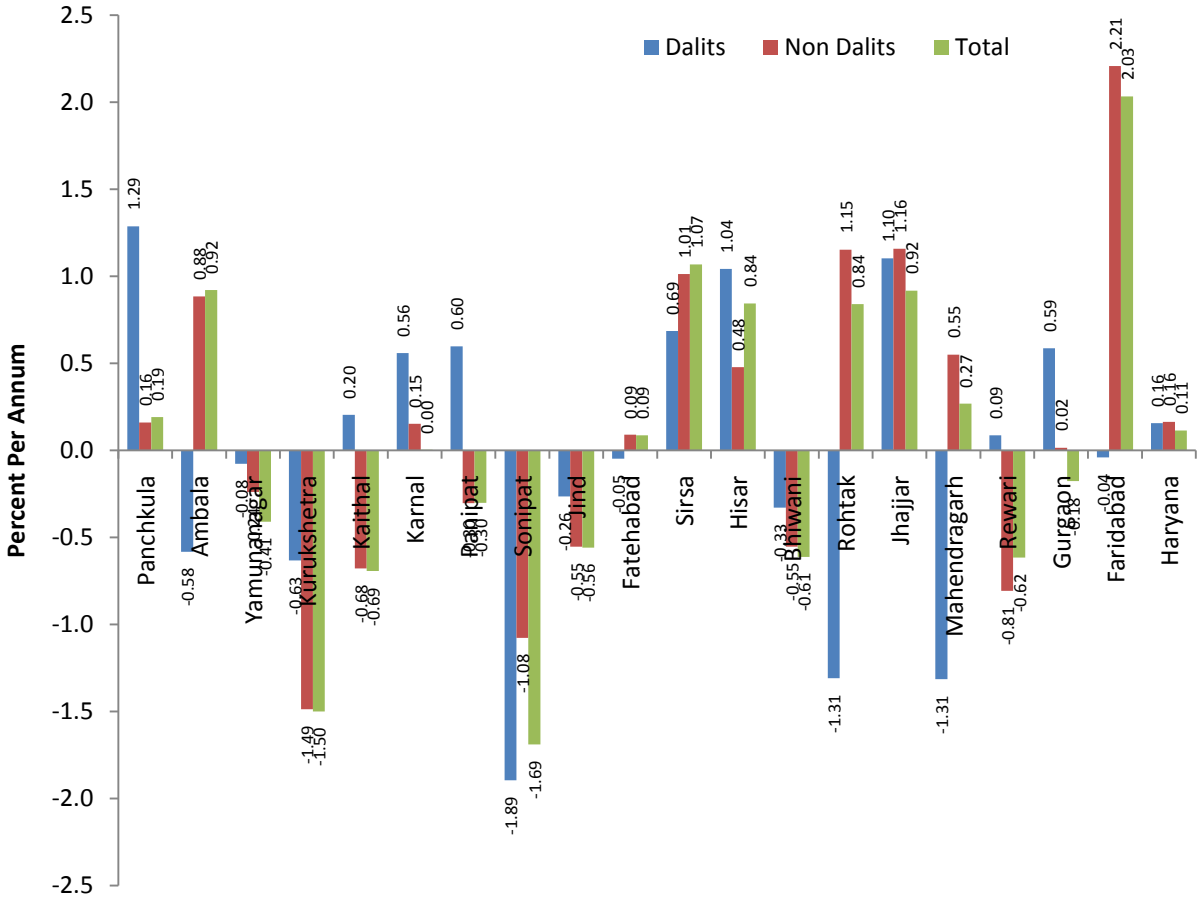
Estimates clearly show that at the all-India level Gini coefficients are increasing in aggregate and across sectors in both time periods. In Haryana also, Gini coefficients are increasing in aggregate as well as in urban sector, but are showing signs of decreasing consumption inequality in rural Haryana in the second period, 2004-05 to 2011-12 (see figure 3.5). However, Gini coefficients are increasing less sharply during 2004-05 to 2011-12 as compared to the previous period 1993-94 to 2004-05 and were in fact negative in rural Haryana during 2004-05 to 2011-12 (see appendix 3.5).

Figure 3.5: Consumption Inequality in Haryana and India: 1993-2012



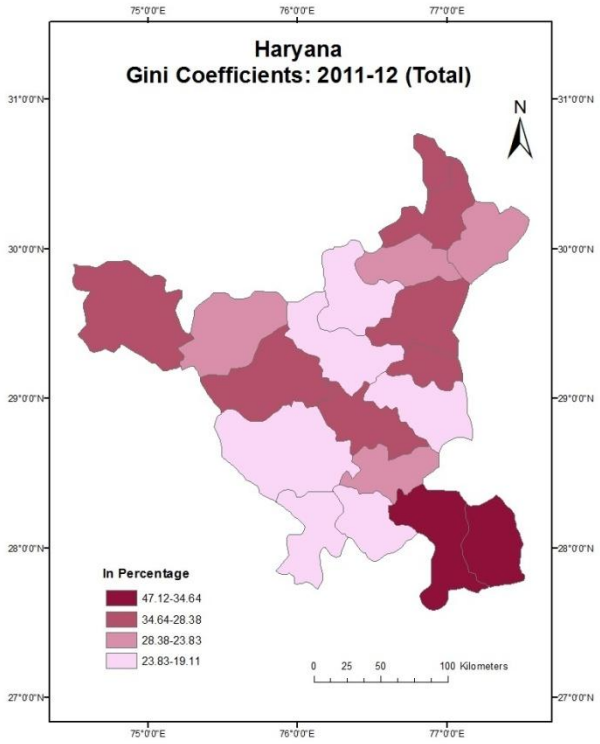
Source: Authors' construction using estimates from Appendix 3. 5.

Figure 3.6: Changes in Gini Coefficient Across Districts and Social Groups: 2004-05 to 2011-12



Source: Authors' construction using estimates from Appendix 3.6.

Consumption inequality among non-Dalits in Haryana has been higher than that of Dalits and is increasing for both groups during 2004-05 and 2011-12, although, the rate of increase for both groups is more or less equal in aggregate (see appendix table 3.6). Interestingly, in rural Haryana growth rate of Gini coefficients for both groups has been negative during 2004-05 to 2011-12 which is an important sign because Gini coefficient is said to be a robust measure which takes time to change. In urban Haryana also growth rate for Dalits was almost zero while for non Dalits, it is positive showing more equality among Dalits than non Dalits in urban Haryana.



Source: Authors' construction using estimates from Appendix 3.6.

During 2011-12, Gini coefficients in three districts namely Gurgaon (47.13%), Faridabad (42.59%) and Karnal (34.64%) have been higher than the state average of 34.18%. Gurgaon and Faridabad are also the districts where the growth rate of district domestic products from the services sector has been the highest (16.5% in Gurgaon and 14.3% in Faridabad) during 2000-01 to 2011-12. Moreover, in these two districts share of services in district GDP has been one of the highest i.e. 62.9% in Gurgaon and 63.9% in Faridabad and share of agriculture in district GDP has been the lowest i.e. 4.4% in Gurgaon and 5.6% in Faridabad. Here one can argue that services sector growth is promoting inequality in the region. If we see rate of change in Gini coefficients during 2004-05 to 2011-12, out of 19 districts, Gini has declined in 9 districts including Yamunanagar, Kurukshetra, Kaithal, Panipat, Sonipat, Jind, Bhiwani, Rewari and a liitle bit in Gurgaon). Sector-wise also there are huge differences across the districts. In rural areas of Panchkula, Ambala, Yamunanagar, Kurukshetra, Kaithal, Panipat, Sonipat, Jind,,Bhiwani, Rewari and Gurgaon and urban areas of Yamunanagar, Kurukshetra, Kaithal, Panipat, Sonipat, Jind, Fatehabad, Bhiwani and Jhajjar growth rates of Gini coefficients were negative showing declining inequality during 2004-05 to 2011-12.

If we see social groups across districts then during 2011-12 consumption inequality among non-Dalits has been more than that of Dalits in all districts of Haryana except in Bhiwani and Rewari districts where Dalits are more unequal as compared to non-Dalits. However, changes in inequality for Dalits and non-Dalits during 2004-05 and 2011-12 are

showing no fixed pattern across the districts. Estimates also show inter-sectoral disparities in level and growth rates of Gini-coefficients but again exhibit mixed trend of results. Overall one can say that social groups in rural areas of the districts are performing better than their urban counterparts during 2011-12 as growth rates for social groups in rural parts are comparatively less or often negative as compared to the urban areas.

3.4 Concluding Remarks

Haryana's development path is combining the acceleration of growth with the marked reduction in poverty and some signs of decrease in inequality only in rural Haryana. It has also been able to, some extent, bring historically marginalized social groups into the mainstream of development process. But state level outcomes are sometimes not able to reveal much about the internal dynamics of the economy and therefore the policy recommendations emerging from the state level analysis may not be as effective for the individual regions within each state. For this a sub-state level analysis is necessary. This study reveals that different districts and social groups within them are experiencing completely different outcomes.

Existing literature is of the view that economic growth is beneficial for poverty reduction (Ravallion and Datt, 1996; Deaton and Dreze, 2002; Bhanumurthy and Mitra, 2004; Dev and Ravi, 2007). With respect to inequality, the view is that growth widens income disparities (Jha, 2000; Bhanumurthy and Mitra, 2004; Sen and Himanshu, 2004; Bhaduri, 2008). Moreover, if economic growth is benefitting the rich more than inequality gets widened and there will be less poverty reduction inspite of the fact that the average incomes are increasing and if it's benefitting the poor more than inequality decreases and poverty also declines. Kakwani and Pernia (2000) have termed the situation where growth is benefitting the poor more, as pro-poor growth.

During 2004-05 to 2011-12, in Haryana and 6 of its districts (Fatehabad, Sirsa, Hisar, Rohtak, Jhajjar and Faridabad), economic growth has been accompanied by an increase in inequality but still poverty has decreased. In Kaithal, Karnal, Panipat, Sonipat, Jind, Bhiwani, Rewari and Gurgaon, there has been an increase in economic growth followed by decrease in both poverty and inequality showing the most preferred outcome where economic growth is benefitting the poor more. In Panchkula, Ambala and Mahendragarh inspite of positive growth rate, there is increase in poverty. Here increased inequality in the post-reform period seems to have offset the impact of increasing growth on poverty reduction. In Yamunanagar, economic growth is negative leading to no decline in poverty but still the distribution has become more equitable while in Kurukshetra, negative economic growth is accompanied by decline in poverty and inequality. All these results show that there are certain factors other than growth and inequality which are also playing some role in affecting poverty levels. Here institutions seem to play a very important role in shaping the dynamics of growth and its outcomes which also needs to be analyzed.

IV
EDUCATION IN HARYANA – CHANGING SPATIAL DIFFERENCES

In this section, we will critically examine Haryana's performance in education sector during the last decade. In our cross-sectional analysis, we will compare our findings on Haryana with the all India levels. We will have a brief inter-regional analysis within Haryana to bring out differences and disparities within the state. We will largely use NSSO 55th Round (1999-2000), NSSO 64th Round (2007-08) and NSSO 68th Round (2011-12) data for our analysis. NSSO 55th Round & 68th Round are quinquennial large-sample rounds; hence broad estimates of education without much disaggregation will produce fairly accurate estimates. NSSO 64th Round, which is an education specific survey, will be used for our analysis at various intra-state disaggregated levels.

4.1 Key Education Indicators: Haryana's Performance Over Time

In this section, we would briefly evaluate Haryana's performance in terms of some key educational indicators. We would make a comparison between NSSO 55th Round (1999-2000) and NSSO 68th Round (2011-12).

Literacy

Literacy rate is one of the basic indicators of education outcomes. Literacy rate of Haryana increased to 78.7% in 2011-12 (NSSO 68th Round) from 67.3% in 1999-2000 (NSSO 55th Round) for individuals of age 6 years and above; in comparison, India's literacy rate improved to 74.7% from 62.1% in the same time period for the same age group. Ranking all the states and Union Territories (UTs) in terms of literacy rate for NSSO 55th and 64th Round reveals that Haryana has improved its position of literacy rate for age group of 6 years and above, whereas it has slightly slipped in its position for 6-14 years age group. This is shown in Table 4.1.

Table 4.1: Rank of Haryana - Literacy Rate

	6 years and above	6-14 years of age
NSSO 55th Rnd (1999-2000)	21	20
NSSO 68th Rnd (1999-2000)	19	21

Source: NSSO

Enrollment

Another way of looking into educational performance is the participation of the populace in educational institutions. We will compare Gross Enrollment Ratios (School as a whole, Primary and Upper Primary) for this purpose. Gross Enrollment Ratio is the proportion of

enrolled persons at certain education level to the total number of people in the population within the age group appropriate for that education level. So, Gross Enrollment Ratio at Primary level is proportion of those who are enrolled at Primary level to the number of children in the age group of 6-10 years. Likewise, Gross Enrollment Ratio at Upper Primary level is proportion of those who are enrolled at Upper Primary level to the number of children in the age group of 11-14 years.

To analyse Haryana's performance over-time in this regard as compared to the national scenario, we have ranked the states in terms of Gross Enrollment Ratio. Among all the states and UTs, Haryana's rank of Gross Enrollment Ratio at School level has improved from 17th position to 10th position. Breaking up GER gives us a complex picture though. The GER of Primary level has deteriorated from 11th position in NSSO 55th Round to the 16th in NSSO 68th Round. However, on the contrary, its rank at Upper Primary level has improved from 25th to 13th position. The detailed illustration is given in Table 4.2, Table 4.3 & Table 4.4.

Table 4.2: Rank of Haryana – GER School	
	6-14 years
NSSO 55th Rnd (1999-2000)	17
NSSO 68th Rnd(2011-12)	10
Table 4.3: Rank of Haryana – GER Primary	
	6-10 years
NSSO 55th Rnd (1999-2000)	11
NSSO 68th Rnd (2011-12)	16
Table 4.4: Rank of Haryana – GER Upper Primary	
	11-14 years
NSSO 55th Rnd (1999-2000)	25
NSSO 68th Rnd (2011-12)	13

4.2 Social Inclusion: Literacy and Enrollment Disparity by Gender and Caste

Degree of uniformity of any social good or service across various groups and communities is an important indicator of social inclusion. In a society stratified with different hierarchies, socio-economic disparities are visible across different social groups. And extent of such disparity is an indicator of social inclusion, or the lack of it. In this section we will disaggregate the literacy and enrollment data by gender and caste to understand how inclusive the system of education in Haryana is, as compared to the national picture.

Gender

Gender inequality in education is linked to inequality in other spheres of women's lives. For literacy, we have measured gender equality by the proportion (expressed as percent)

of female literacy rate over male literacy rate. In Haryana, male literacy rate, for persons of age 6 years and above, stood at 78.4% as compared to 55% for female in 1999-2000. In 2011-12, the figures stood at 86.83% and 69.15% respectively. If we express gender equality as we have mentioned above, then for Haryana gender equality literacy rate for 6 years and above age group has improved during this period. However, if we rank the states in terms of gender equality, we will see that Haryana's position has deteriorated, from 24th to 26th, during this period. However, state's ranking in gender equality of literacy rate for children of school going age 6-14 years has improved from 24th position to 19th position during this period. This is illustrated in Table 4.5.

Table 4.5: Rank of Haryana – Gender Equality in Literacy Rate

	6 years and above	6-14 years of age
NSSO 55th Rnd (1999-2000)	24	24
NSSO 68th Rnd (2011-12)	26	19

Source: NSSO

We will repeat the same exercise for GER for school-going children i.e. 6-14 year age group. Here gender equality is defined as GER for school-going girls as a proportion (percent) of GER for school-going boys. Gender equality of GER for school-going children in Haryana has improved, which is evident from the fact that Haryana's rank of gender equality in GER of this level has improved from 16th position in 1999-2000 to 14th position in 2011-12. This is enumerated in Table 4.6.

Table 4.6: Rank of Haryana – Gender Equality in GER at School level (I-VIIIth Standard of Age 6-14 Years)

NSSO 55th Rnd (1999-2000)	16
NSSO 68th Rnd (2011-12)	14

Source: NSSO

Caste

We will measure caste equality in the manner similar to our treatment with gender. For the sake of simplicity, we have clubbed the 'General' and the Other Backward Classes (OBC) together which we will term here as 'non-lower-castes'. On the other hand, represent Scheduled Castes (SC) 'lower-castes'. We will define caste equality in literacy as literacy rate of the 'lower-castes' as a proportion (percent) of the literacy rate of 'non-lower-castes'. Haryana's caste equality in literacy in 1999-2000 is similar to the All India Level. However, in 2011-12 it is more equal than the all India level. This is true for literacy rates for age 6 years and above and also of 6-14 years age group. Naturally this is

reflected in improvement of Haryana's rank in caste equality in literacy rate, for both the age groups mentioned above, during this time period. This is shown in Table 4.7.

Table 4.7: Rank of Haryana – Caste Equality in Literacy Rate

	6 years and above	6-14 years of age
NSSO 55th Rnd (1999-2000)	21	23
NSSO 68th Rnd (2011-12)	15	18

Source: NSSO

We will repeat the same exercise, for Gross Enrollment Ratios. Caste equality in GER is measured in terms of GER of 'lower-caste' as a proportion (percent) of that of the 'non-lower-castes'. In 1999-2000, Haryana was highly unequal in this regard – it ranked 24th among all the states and UTs on equality measurement for GER School Level (as a state, its equality measure was lower than the All India average). However in recent years, it has made significant improvement – among those same states its ranking has improved to 16th position in 2011-12 (though its equality measure is still marginally lower than the All India average). This is enumerated in Table 4.8.

Table 4.8: Rank of Haryana – Caste Equality in GER at School Level (I-VIIIth Standard of Age 6-14 Years)

NSSO 55th Rnd (1999-2000)	24
NSSO 68th Rnd (2011-12)	16

Source: NSSO

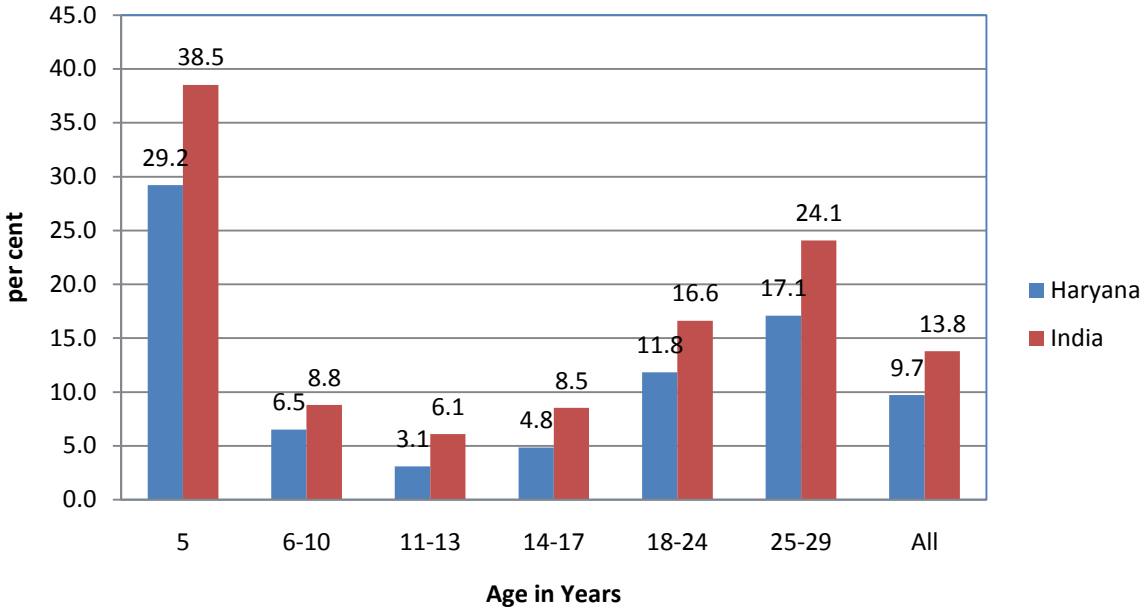
4.3 Non-Enrollment and Dropouts

In this section we will look into some additional aspects of education outcomes like those who have dropped out from the education system or, even worse, were never a part of it – the 'never-enrolled'. These were asked in Education Surveys of the NSSO. For this, we will use NSSO 64th Round (2007-08) of Education Survey – the most recent survey on the topic.

Never Enrolled

Never enrollment is still a serious problem among young Indians. At the All India level, within age group of 5-29 years, 13.8% of the individuals have never enrolled in any educational institution. Haryana is much better in this regard. This is shown in detail in Figure 4.1.

Figure 4.1: Never Enrolled by Age



Source: NSSO 64th Round (2007-08)

There is some gender inequality in non-enrollment. Gender inequality is measured as percentage of women in the age group 5-29 years who are not enrolled as a proportion of percentage of such men. For Haryana, gender equality is much lower than the All India level (Table 4.9).

Table 4.9: Percent Non-enrolled by Gender (5-29 Years)

Sex	Haryana	India
Male	6.3	9.8
Female	13.9	18.2
Gender Inequality	2.2	1.9

Source: NSSO 64th Round (2007-08)

Caste inequality (measured as percentage of 'lower-castes' in the age group 5-29 years who are not enrolled as a proportion of percentage of such 'non-lower-castes') is also much higher in Haryana than that of the All India level (Table 4.10).

Table 4.10: Percent Non-Enrolled by Caste (5-29 Years)

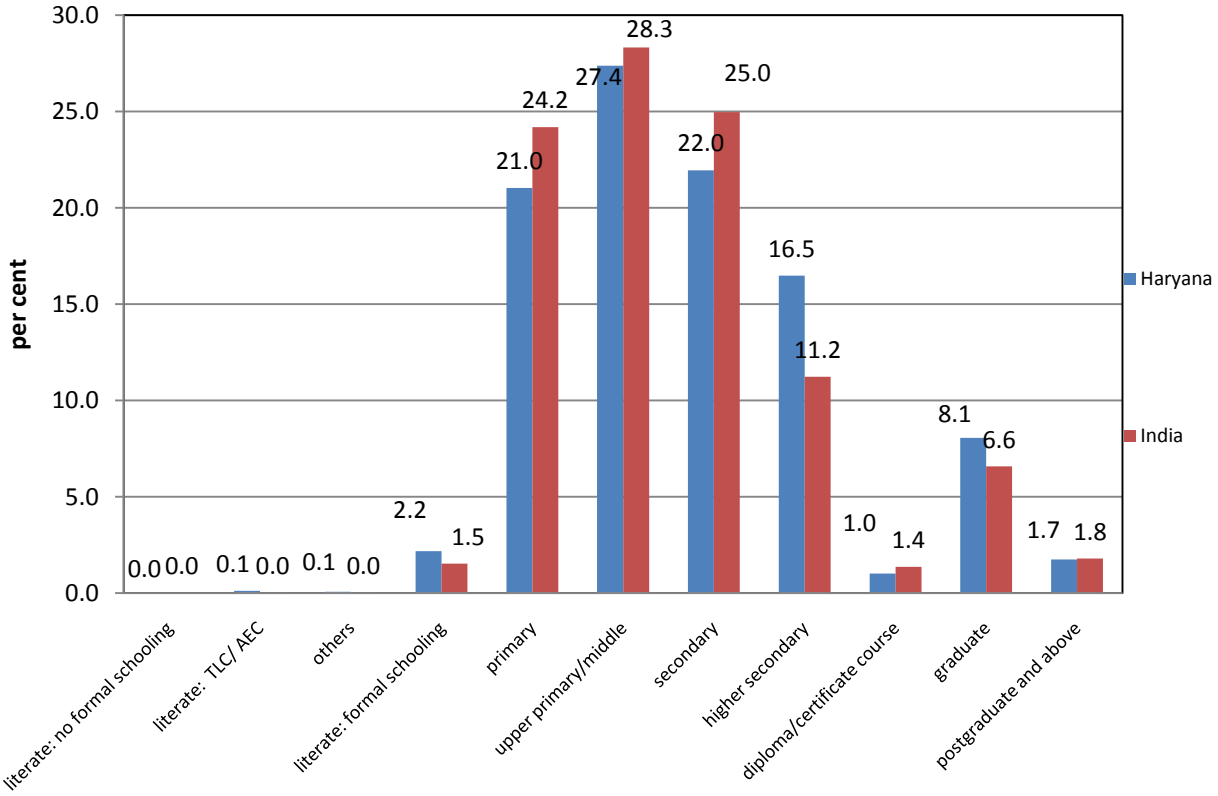
Caste	Haryana	India
Non-Lower Caste	7.6	11.9
Lower Caste	15.8	18.4
Caste Inequality	2.1	1.6

Source: NSSO 64th Round (2007-08)

Drop-outs

The drop-outs are essentially of two kinds – those who have achieved their desired level of education and 'left' studies and those who have been 'forced' out of education system due to different socio-economic 'stress'. So it is generally true that the drop-outs at lower levels of education are of the second kind whereas drop-outs at higher levels of education are of the first. Figure 4.2 shows that compared to All India level, relative share of drop-outs at lower levels of education like primary, middle or secondary school level is much less. Whereas at higher education levels like higher secondary or diploma or post graduate level (at graduate level, it is similar), relative share of drop-outs in Haryana is higher than the All India levels. So it seems that forced drop-outs are less in proportion in Haryana than at the aggregate national level. This is for the individuals of age 5-29 years.

Figure 4.2: Level of Education Completed Before Discontinuing

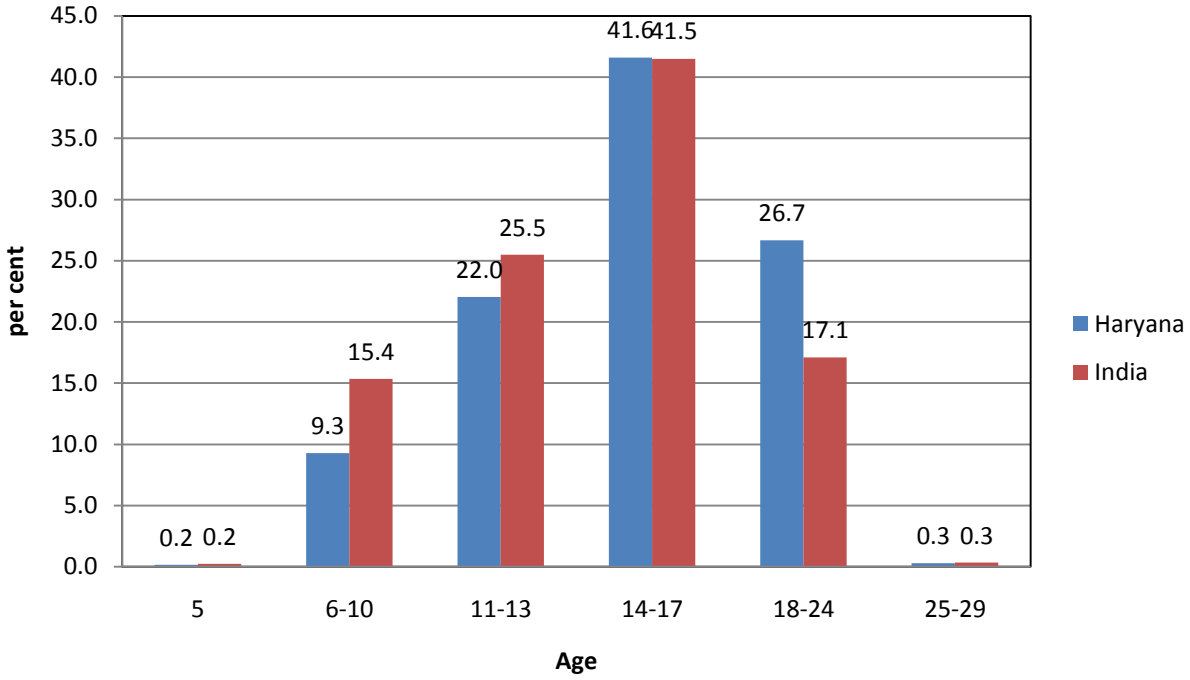


Source: NSSO 64th Round (2007-08)

The same is true for the age of dropping out. The lower-age drop outs are more likely to be forced drop-outs who have discontinued the education at higher age. In Haryana, the

relative share of drop-outs at lower age is less than the All India scenario, indicating that forced drop outs are relatively less in the state.

Figure 4.3: Age of Dropping Out



Source: NSSO 64th Round (2007-08)

Now, let us conceptually assume that drop-outs before completion of secondary education is a 'forced drop-out' due to various socio-economic stress and difficulties. We find that such drop-outs are little higher in Haryana than in All India aggregate level. Caste as well as gender inequality, as we had defined above, is much higher in Haryana than All India. This is shown in Table 4.11.

Table 4.11: Percent of Individuals Dropped Out Before Secondary Education (5-29 Years)

	Non-Lower Caste	Lower Caste	Caste Inequality	Male	Female	Gender Inequality	Total
Haryana	16.6	27.8	1.7	19.0	20.2	1.1	19.5
India	17.3	21.5	1.2	18.3	18.9	1.0	18.5

Source: NSSO 64th Round (2007-08)

4.4 Intra Regional Differences

In this section on the basis of detailed NSSO 64th round we have compard the inter-regional scenario of education as we previously did for Haryana and India. First, in figure 4.4 we have compared the literacy in districts of Haryana on the basis of Census, 2011 and after this we used the NSSO data on the specific indicators which are not taken in census.

Literacy

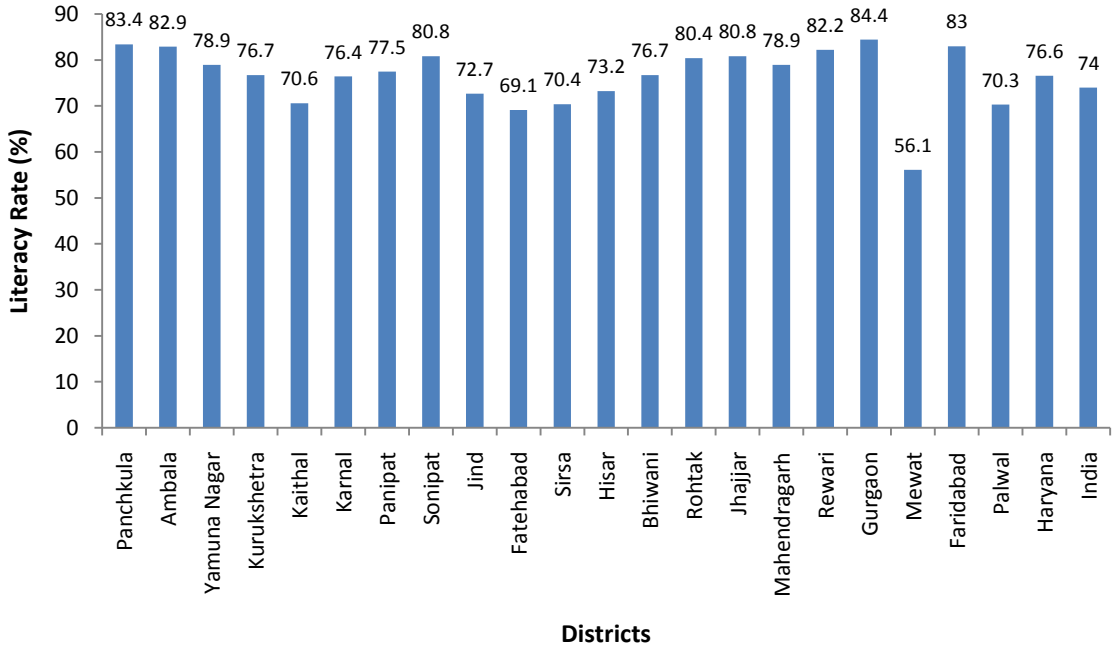
There are notable variations of literacy rate at district level. Gurgaon has the highest literacy rate of nearly 84.4%, whereas Mewat has the lowest rate at 56.1%. This is shown in Figure 4.4.

Literacy Rate in Haryana

Districts	Literacy Rate (Persons)
Panchkula	83.4
Ambala	82.9
Yamuna Nagar	78.9
Kurukshetra	76.7
Kaithal	70.6
Karnal	76.4
Panipat	77.5
Sonipat	80.8
Jind	72.7
Fatehabad	69.1
Sirsa	70.4
Hisar	73.2
Bhiwani	76.7
Rohtak	80.4
Jhajjar	80.8
Mahendragarh	78.9
Rewari	82.2
Gurgaon	84.4
Mewat	56.1
Faridabad	83.0
Palwal	70.3
Haryana	76.6
India	74.0

Source: Series-7 Provisional Population Totals Paper-1 of Census, 2011.

Figure 4.4: Literacy Rate in Haryana

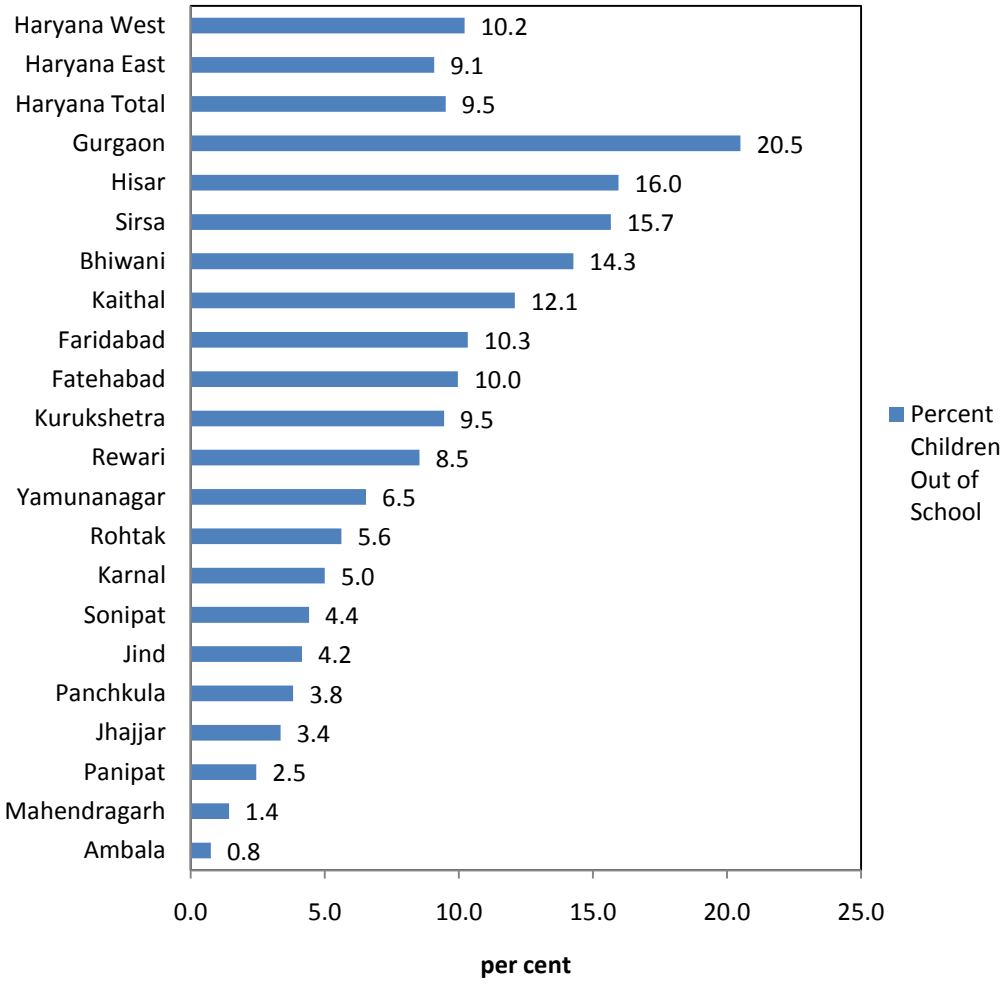


Source: Series-7, Provisional Population Totals Paper-1 of Census, 2011.

Out of School

The percentage of out of school children among school-going age (6-14 years) is an important measurement of lack of child education. In the state, around 10% of the children of that age group are not going to school. But there is quite a bit of district level variations, though East-West regional difference is not that stark. Surprisingly Gurgaon, an Eastern district has the highest 20% of child population who are out of school. It may be due to the Muslim population in Mewat which generally don't take education in formal schools. Though Hisar a Western district is second at 16%. On the other hand, the same for Ambala, an Eastern district is only at 1%.

Figure 4.5: Percent Children (6-14 Years) Out of School



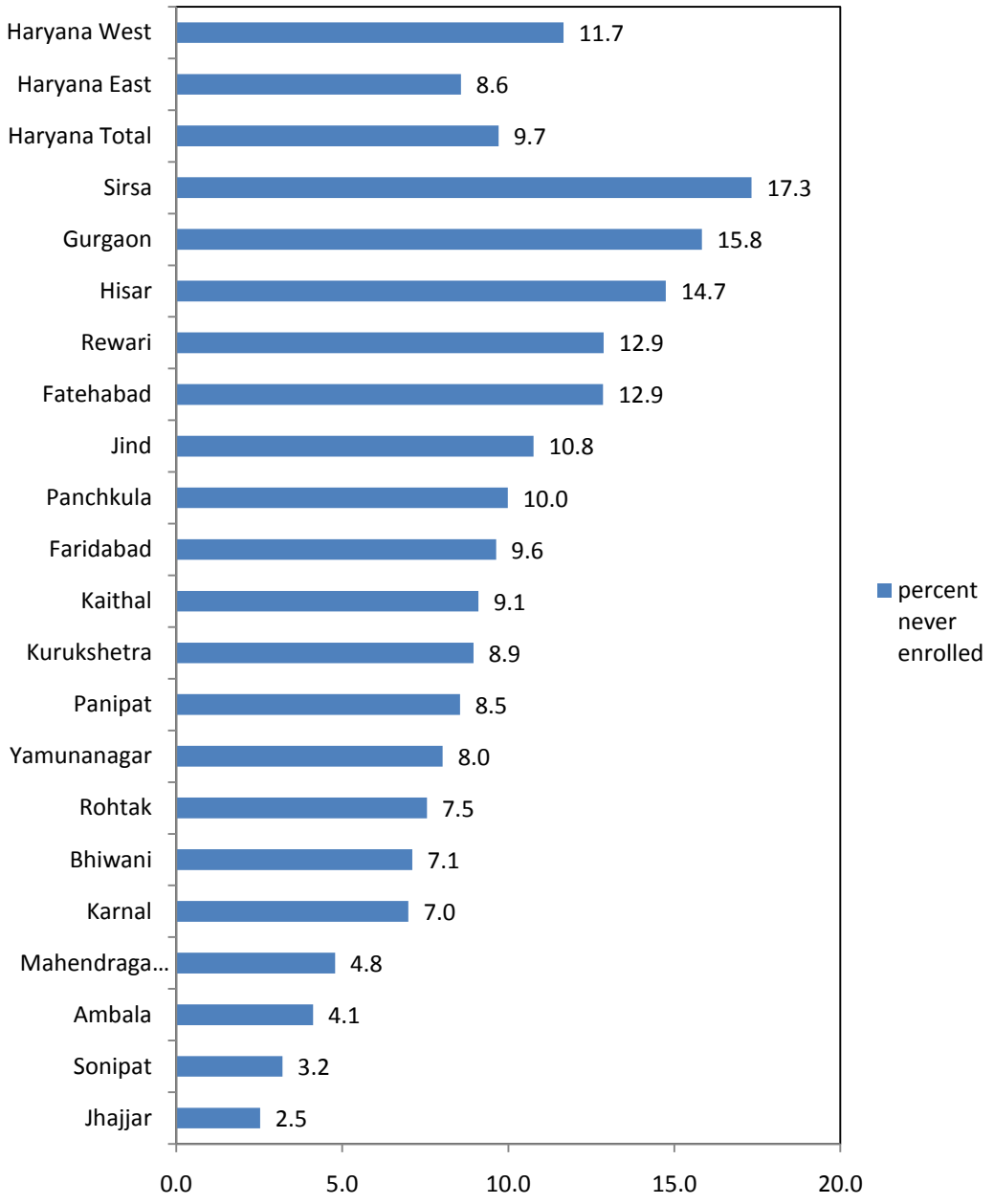
Source: NSSO 64th Round (2007-08).

Note: Two districts Mewat and Palwal merged with Gurgaon & Faridabad because the districts were carved up recently at the time of NSSO Survey.

Never Enrolled

The story about intra-state variations regarding never enrollment is similar. The percentage of individuals (of age 5-29 years) who have never been enrolled in any educational institution vary considerably across districts. As we have observed with other indicators above, the Eastern part of the state is performing better than the Western part.

Figure 4.6: Percent Never-Enrolled Between Age Group of 5-29 Years



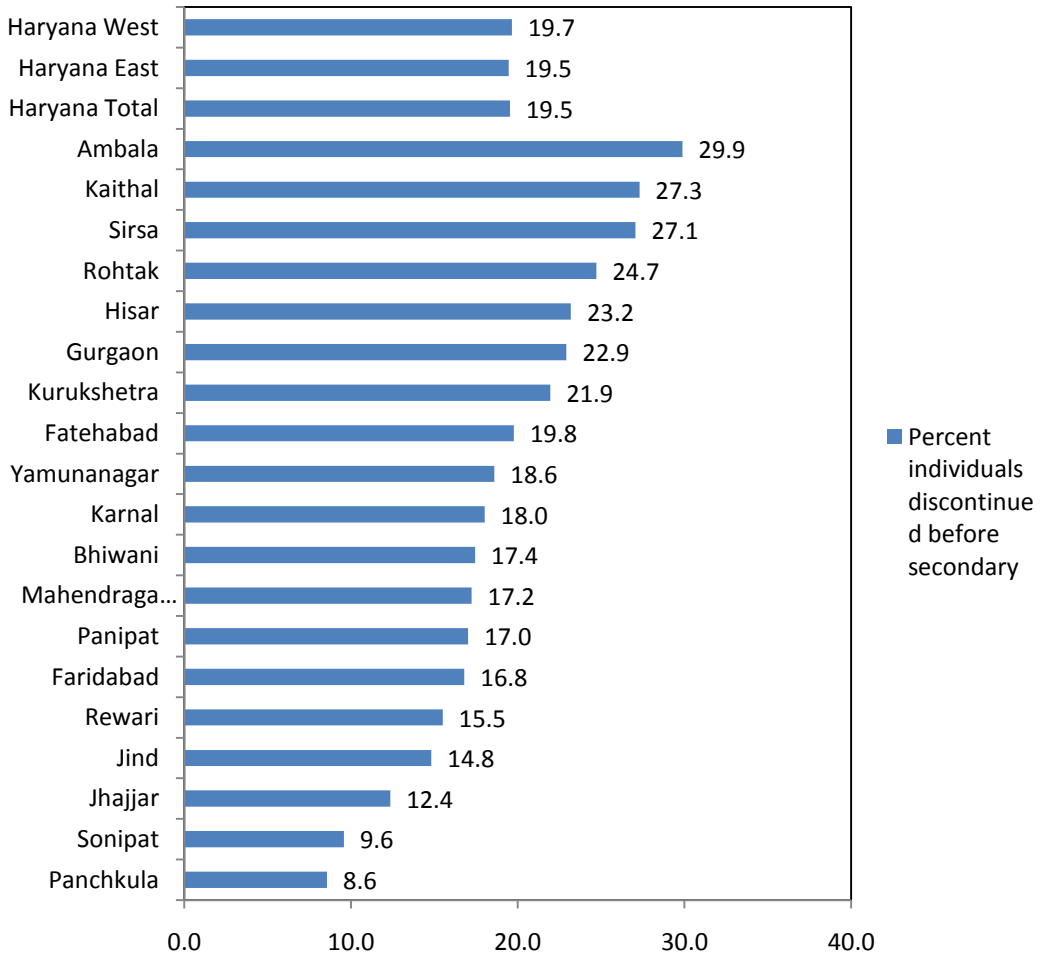
Source: NSSO 64th Round (2007-08).

Note: Same is given in figure 4.5.

Drop Outs

Percentage of forced drop-outs, defined as those individuals (of age 5-29 years) who have discontinued education before secondary level, also vary widely across districts. Though there is no distinct East-West variations in this case. This is shown in Figure 4.7.

Figure 4.7: Percent Individuals: Age Group 5-29 Years Discontinued Before Secondary School



Source: NSSO 64th Round (2007-08).

Note: Same as given in figure 4.5.

4.5 Evaluating Educational Outcomes – Taking Stock

We will try to briefly evaluate these educational outcomes that Haryana has experienced. The experience is not very encouraging. Over the last decade, its literacy rate relative to other states, at best, has remained the same.

In terms of Gross Enrollment Ratio (GER) at school level (i.e. I-VIII standard), Haryana's rank among the states has improved. This is no doubt a positive development. But primary schooling remains a problematic area – Haryana's rank in terms of GER at primary school level (i.e. I-IV standard) has fallen.

However, there are some clear indications of improvement in social equity over time, at least for the school going children of age group (6-14 years). Both literacy and enrollment shows improvement of gender and caste equality, relative to other states.

Having said so, high spatial disparity is a major concern. There are high regional or inter-district variations within the state. Our Section 4.5 has made a clear observation be it in terms of literacy rate, or percentage of out of school children, percentage of non-enrollment (i.e. those who have never enrolled in any educational institution) or dropping out, regional disparity is high in Haryana. We have observed that in many cases, Western Haryana is worse-off than its Eastern counterpart. Both Gender and Caste disparity is high in Haryana, compared to the All India situation, in terms of never enrolling in education institution or 'forced dropping out'.

Given this experience, what are the future possibilities for Haryana in improving its education sector? How much education is accessible to the people, both in terms of infrastructural availability and the monetary cost of that? We will investigate that in the next two sections following up with a critical argument for further improvement.

4.6 Access – Distance of Educational Institution from Residence

Physical access to education is one of the major supply side factors that affect educational outcomes and participation. NSSO records distance of each household from nearest school (primary, upper-primary and secondary), which would give us an idea about physical access of households, and individuals, to education.

Urban Haryana has slightly better access of households to schools compared to the urban All India. However, the stark difference is in rural Haryana. Rural Haryana has excellent access to schools, particularly at the upper-primary and secondary level, compared to the aggregate rural All India situation. This is depicted in Table 4.12 and Table 4.13.

Table 4.12: Percentage of Households by Distance of Nearest School from Residence (Rural)

	Primary			Upper-primary			Secondary		
	Less than 2 km	2-5 km	More than 5 km	Less than 2 km	2-5 km	More than 5 km	Less than 2 km	2-5 km	More than 5 km
Haryana	99.8	0.2	0.0	96.3	3.3	0.4	77.3	15.5	7.2
India	**98.4**	**1.5**	**0.1**	**78.9**	**18.1**	**3.1**	**47.4**	**35.5**	**17.1**

Source: NSSO, 64th Round (2007-08).

Table 4.13: Percentage of Households by Distance of Nearest School from Residence (Urban)

	Primary			Upper-primary			Secondary		
	Less than 2 km	2-5 km	More than 5 km	Less than 2 km	2-5 km	More than 5 km	Less than 2 km	2-5 km	More than 5 km
Haryana	99.8	0.3	0.0	98.6	1.5	0.0	91.6	8.1	0.3
India	**99.0**	**1.0**	**0.1**	**96.6**	**3.2**	**0.2**	**90.8**	**8.2**	**1.1**

Source: NSSO, 64th Round (2007-08).

4.7 Accessibility in Terms of Cost: Public and Private Education

It is necessary to investigate the role the private sector – or private schools – is playing in Haryana in the context of weaker state support as compared to the all India situation. In this section we will analyse the issue by taking into account persons (5-29 years age) who are currently attending any educational institution at primary level and above.

Table 4.14: Persons (5-29 Years) Currently Attending Education Institution By Institution Type (%)

Type of Institution	All India			Haryana		
	Rural	Urban	Total	Rural	Urban	Total
Government	71.3	39.3	63.1	62.5	25.5	52.5
Local body	5.1	3.6	4.7	0.8	1.5	1.0
Private aided	9.0	21.6	12.4	5.0	12.8	7.1
Private unaided	14.2	34.1	19.4	31.4	58.7	38.8
Not known	0.4	1.1	0.6	0.3	1.5	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from the unit level data of NSSO 64th Round, Participation and Expenditure in Education Survey.

Table 4.14 shows the percentage of persons (5-29 years age) currently attending any educational institution by type of institution. There are two important observations that one can highlight from it.

Firstly, overall, proportion of people going to government institutions or institutions run by local bodies is much less in Haryana compared to the all India levels. In Haryana, going to private education institution is much more prevalent than in the country in general. However, there is a complex detail to this general picture. We have investigated about the type of educational institution the persons, belonging to poorest 20% and richest 20% of the households (rural and urban separately), are currently attending. It shows that the rural poor in Haryana depend almost solely on government education system, whereas the rural rich has a greater affinity for private education. In urban Haryana however, both the poor and the rich have greater affinity for private education compared to their counterparts at All India level.

Table 4.15: Persons (5-29 Years) Currently Attending Different Types of Educational Institution by Economic Status (%)

Type of Institution	Rural				Urban			
	All India		Haryana		All India		Haryana	
	Poorest 20%	Richest 20%	Poorest 20%	Richest 20%	Poorest 20%	Richest 20%	Poorest 20%	Richest 20%
Government	83.1	48.3	83.8	41.9	53.8	21.3	44.2	4.1
Local body	4.9	3.9	0.0	0.8	6	1.1	1.9	1.1
Private aided	4.5	18.9	0.0	8.7	17.1	23.1	0.3	23.1
Private unaided	7.1	28.3	16.2	48.7	22.3	53.2	52.8	71.7
Not known	0.4	0.7	0.0	0.0	0.8	1.4	0.7	0.0
Total	100	100	100.0	100.0	100	100	100.0	100.0

Source: Calculated from the unit level data of NSSO 64th Round, Participation and Expenditure in Education Survey.

What are the reasons and contours of this? Table 4.16 shows average per-head total expenditure on education incurred by persons who are currently attending any educational institution, by different types of educational institutions, both in Rupee terms as well as expressed as a percentage of expenditure (average) in government educational institutions.

Table 4.16: Average Total Expenses on Education Per-Head (Currently Attending Persons) by Type of Education Institution

Type of Institution	Rural				Urban			
	All India		Haryana		All India		Haryana	
	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Government	1037	100	1980	100	3473	100	4756	100
Local body	691	67	5958	301	2382	69	7293	153
Private aided	4001	386	7192	363	7504	216	11851	249
Private unaided	4722	455	7012	354	10061	290	10699	225
Not known	3649	352	4247	214	7583	218	7307	154
Total	1820	176	3859	195	6607	190	9269	195

Source: Calculated from the unit level data of NSSO 64th Round, Participation and Expenditure in Education Survey.

One thing becomes clear in the first glance – cost of education is much higher in Haryana than that of the all India levels, be it in government sector or private sector. Cost of private education relative to that of government education is quite high; though it is somewhat lower compared to All India scenario. Surprisingly, cost of education in private aided schools is much higher than private un-aided schools.

4.8 Concluding Remarks

This high cost of education, compounded with the fact that private education being much costlier than state funded education, is a prime concern. This high cost of education has naturally hit the deprived sections – the 'lower castes', women – the most. The backward regions are also yet to come up to the levels of the better-off parts of the state. High social and spatial difference is definitely due to lack of affordability. A re-defined role of the state dedicating itself to make education more affordable should be one of the goals for the development of the state.

V
REGIONAL VARIATION IN HEALTH INFRASTRUCTURE AND HEALTH OUTCOMES

Haryana has been notified as one of the wealthy and developed states in India. However, its achievement in most of the social indicators like health, education, nutrition and water supply has remained far from satisfactory. In terms of overall human development and health achievement its rank comes under lower middle in health and human development index (HDI) states category (Planning Commission, 2011). This reflects that economic development has not been able to translate into high social and human development in the state. As regards to low health status, the lack of equity in access to healthcare across region, social and economic groups could be one of the reasons. To understand such reasoning in detail, this section analyzes the status of inequality in healthcare services and outcomes across districts of Haryana. Specifically, the variation in health infrastructure, outcomes and utilization status is analyzed.

5.1 Status and Variation in Health Infrastructure

Comparing Haryana with other States

In Haryana, the availability of health infrastructure is highly biased. Around 60 percent public hospitals and 85% hospital beds are located/concentrated in urban areas. A comparison of availability of health infrastructure with better performing state Kerala and with another high developed state Gujarat show that the health services access in rural areas seems to be better in Kerala as compared to the Haryana and Gujarat. In Kerala, 44 percent beds and around 73 percent hospitals are located in the rural areas (Table 5.1).

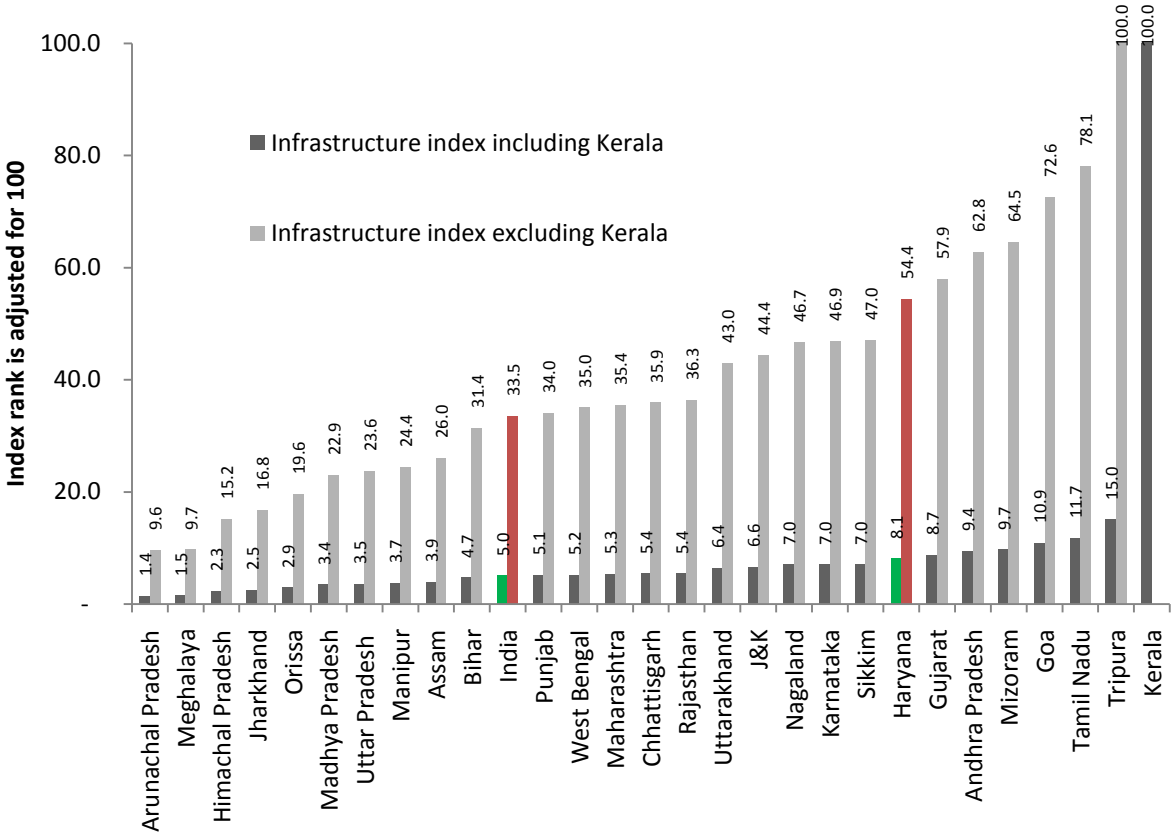
Given the high burden of mortality, morbidity and disease in rural areas of Haryana (discussed below) as compared to the urban areas, it was expected that government will provide comprehensive health facilities to meet the demands of 70 percent rural population of Haryana. However, analysis shows that Haryana has not come out with distinctive needs of rural and urban population separately, as the state of Kerala has done.

Table 5.1: Location of Hospitals and Beds in Rural & Urban Area of Developed States of India

States	Rural Area(I)		Urban Area (II)		Total (I+II)	
	Hospitals (No.)	Beds (No.)	Hospitals (No.)	Beds (No.)	Hospitals (No.)	Beds (No.)
Gujarat	282	9619	91	19339	373	28958
	(75)	(33)	(25)	(67)		
Haryana	61	1212	93	6667	154	7879
	(40)	(16)	(60)	(84)		
Kerala	281	13756	105	17529	386	31285
	(73)	(44)	(27)	(56)		
India	6795	149690	3748	399195	10543	548885
	(65)	(28)	(35)	(72)		

Source: Directorate of Health Services, 2010.
Note: Hospitals (Govt.) include CHCs also. Figures in brackets are percentages.

Figure 5.1: Variation in Availability of Health Infrastructure Across States: 2011-12



Source: Authors' Estimates using data from Bulletin of Rural Health Statistics, 2012.
Note: Index of health infrastructure is constructed using DH, CHCs, PHCs, SCs per villages in a state using Principle Components Analysis (PCA).

India and constituent states follow a decentralized provision of health facility in the country. This includes district hospital (DH) in district, Community Health Centre (CHCs), Primary Health Centre (PHCs) and Sub-Centres (SCs) in villages. It is expected that this decentralized health delivery structure can serve both rural as well as urban population effectively. To compare Haryana situation in this regards, the study constructed an index of the availability of DH, CHCs, PHCs, and SCs by applying Principle Component Analysis (PCA) across states of India. The Index values are further adjusted to be between 0 and 100. The analysis shows that Kerala scored high value in the availability of such health facilities. Haryana is lagging behind Kerala, but score value turned out to be more than the national average score (Figure 5.1).

The status of provisioning of basic health facilities is however above the national average but lagging far behind from better performing state like Kerala.

Variation in Availability of Health Infrastructure Across Districts

There exists high variation in the availability of hospitals and beds across districts of Haryana in 2011-12. As far as the number of beds per 100, 000 population is concerned, a vast variation recorded across districts. Only about 19 beds are available per lakh of population in a poor district like Mewat and highest in Rohtak with 150 beds in 2011-12 (Table 5.2). Similarly, number of health institutions per lakh population were found to be quiet low in districts like Gurgaon and Faridabad compared to the State. Number of beds per health institution is again highest in Rohtak i.e. 11 and in majority of districts it is between 2 to 3. Outdoor and indoor patients treated per hospital is again highest in Rohtak.

The resource poor districts of Haryana are highly lagging behind availability of hospital and hospital beds. Hospital availability in some of the districts however high but lacking in availability of beds and vice-versa, indicating hospitals without beds or beds with no/low hospitals.

Table 5.2: Health Institutions Availability of Beds and Patients Treated Per Institution

Districts	No. of Beds per lakh population	Health institution per lakh population	Bed per hospital	Indoor patients treated per hospital	Outdoor patients treated per hospital
Ambala	44	11	4.0	273	4679
Panchkula	54	14	4.0	454	9061
Yamunanagar	36	13	3.0	208	4945
Kurukshetra	31	14	2.0	177	3750
Kaithal	27	15	2.0	125	3443
Karnal	31	12	3.0	251	4410
Panipat	25	10	3.0	165	3648
Sonipat	26	14	2.0	147	4267
Rohtak	150	14	11.0	735	11355
Jhajjar	32	15	2.0	110	3130
Faridabad	37	6	6.0	526	7693
Palwal	23	10	2.0	177	2944
Gurgaon	40	9	5.0	357	7578
Mewat	19	11	2.0	179	3282
Rewari	37	15	3.0	197	3710
Mahendragarh	33	14	2.0	228	3746
Bhiwani	55	17	3.0	187	3051
Jind	35	14	2.0	166	4126
Hisar	42	14	3.0	170	4051
Fatehabad	28	14	3.0	256	3709
Sirsa	28	14	2.0	126	2530
Haryana	**40**	**13**	**3.0**	**232**	**4478**

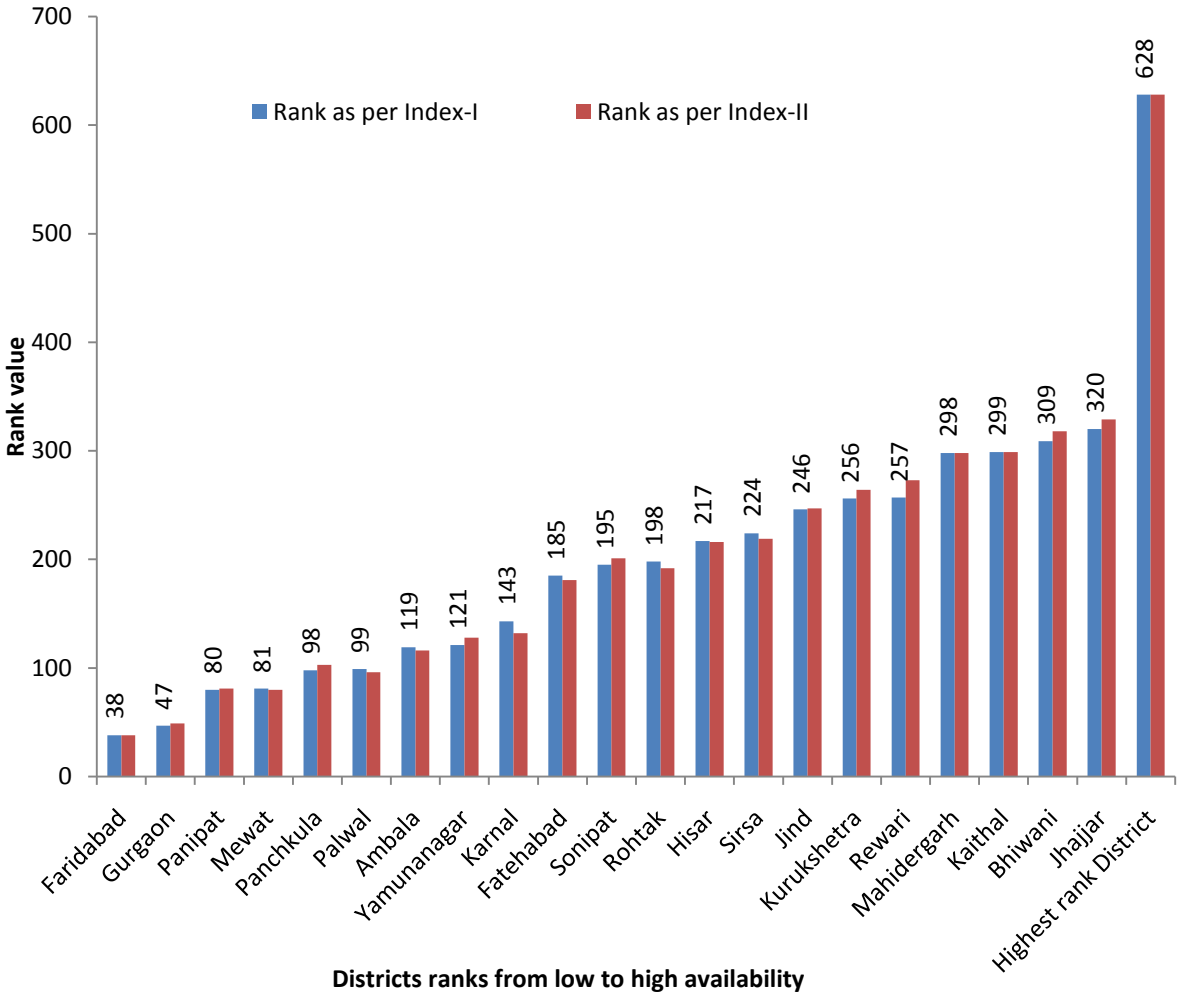
Source: Statistical Abstract of Haryana, 2012-13.

As discussed, the score value of the availability of basic health facility is highly lagging behind the best performing state of Kerala. There is high probability that the availability of such facilities may vary across districts of Haryana. Therefore, it became important to understand health infrastructure availability situation (both inequalities and diversity) of a particular district of Haryana as against the best performing district of India and best performing district of Haryana.

To identify the status of such inequalities and diversity in the availability of basic health infrastructure facilities, the study has constructed an index of the availability of health infrastructure across the districts of India. We covered 628 districts of India, on which the information was available, especially on Sub Centres, PHCs, CHCs, Sub Divisional Hospitals and District Hospitals and private hospitals that are on the empanelled list of Rashtriya Swasathya Bima Yojana (RSBY). This index is constructed by applying the PCA method. All districts of India are then ranked from low 1 to high 628 rank. The rank values of Haryana districts are then compared with high rank (i.e., 628) district of India. A profile of such comparison shows that out of 628 rank value, the district Jhajjar have scored 320 rank position, almost half the mark of availability of health infrastructure in highest rank district of India (Figure 5.2). Surprisingly, the district Faridabad just comes on 38 positions in all India district rank. Around 1/3 of Haryana districts could not even achieve 100 position and around half of the districts remain one-third of the rank value of India. This is worrisome. Given this highly biased situation of the availability of health infrastructure facility across districts of Haryana, it is not surprising that health outcomes in some of the districts, particularly in low health facility availability districts, are low.

A ranking of the availability of basic health facilities of 628 districts of India shows more worrisome problems for Haryana. Only one district of Haryana crosses half the mark, one-third districts are even less than 100 score and as low as 38 score of one of the district Faridabad.

Figure 5.2: Divergence in the Availability of Health Infrastructure: Comparing Haryana Districts with India best Performing Districts for 2011-12

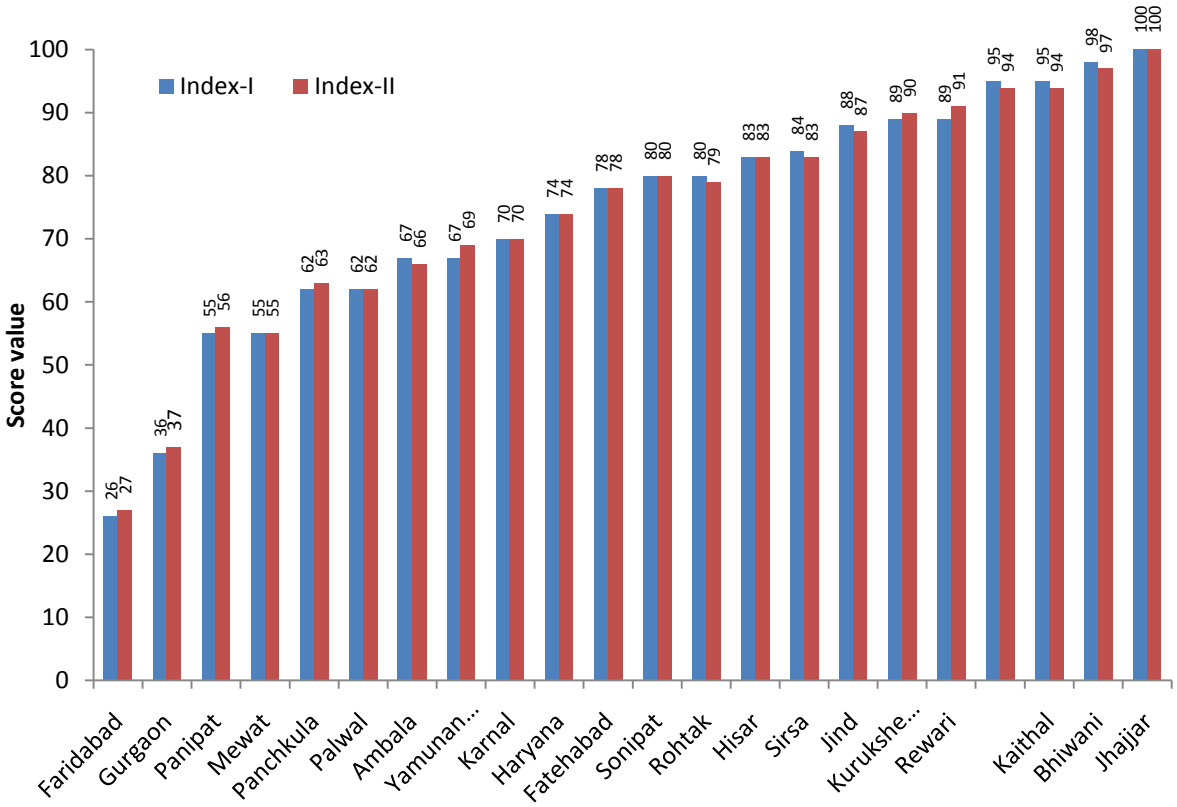


Source: RSBY and Bulletin of rural health statistics, 2012

Note: First an index of infrastructure availability across the districts of India is constructed by including Sub Centres, PHCs, CHCs, Sub Divisional Hospital and District Hospital per rural population for Index-I and then the divergence of Haryana's district is estimated from the higher infrastructure availability districts of India. The Index-II along with the above variables also includes the private hospitals that are empanelled under Rashtriya Swasthya Bima Yojana (RSBY). Total 628 districts studied for infrastructure index. A high rank indicates high availability of health infrastructure and vice-versa.

Availability of basic facilities is very low in most of those districts which generate more (tax) revenue resources for state Government.

Figure 5.3: Variation in Availability of Health Infrastructure Across Districts, Haryana: 2011-12



Note and Source: Figure 2.

The Figure 5.3 gives a similar picture of the diversity in the availability of health infrastructure across districts of Haryana. The index value is adjusted for 100. The results show that out of 100 score value, the districts Faridabad and Gurgaon, from where Haryana collects most of its tax and other revenue, scored only 26 and 36 points.

Variation in Access to Health Facilities

Some other parameters that reflect the access to healthcare services by distance shows that about 86 percent Haryana's villages had ICDSC (Aganwadi) in the village. This shows that ICDS centre have high coverage in Haryana villages. The IMS Institute, which works extensively on health informatics, reported that the health centre either should be in the village or within a range of 5 kilometres. As per NFHS-3 data information, about 24 percent of the villagers have to travel more than 5 km even to access the basic health facilities that are provided under sub-centre setting. Around 50 percent, 72 percent, 74 percent of the villagers have to travel more than 5 km to avail nearest PHCs, CHCs/government hospital and private hospitals facilities respectively (Table 5.3). And in

around 38 percent villages there is no availability of small private clinic/doctor. This shows that not only the public, the private hospitals/facilities are also equally scarce in many villages. That is, these facilities are not easily available to the villagers under their reach. If one talks about the availability of PHCs, CHCs, government and private hospitals within in the village, the situation is more deteriorated.

Table 5.3: Percentage Distribution of Villages by their Distance from the Nearest Health Facilities

Facilities	Location of Facility							
			Outside village but at a distance (kms.) of					
	Within village		0-5km.		5-10		More than 10	
	2002-04	2007-08	2002-04	2007-08	2002-04	2007-08	2002-04	2007-08
1. ICDSC (Anganwadi)	86.3		6.2		4.3		3.2	
2. SCs/dispensary	30.2	59.5	45.7	16.3	19.8	16.8	4.3	7.5
3. PHCs	13.7	12.6	40.9	37.5	27.3	32.2	18.1	17.8
4. CHCs/govt. hospital	2.6	4.7	28.6	23.6	30.8	41	38.0	30.7
5. Private hospital	4.5	4	35.2	21.9	23.8	30.1	36.5	44
6. Private clinic/doctor	64.8	35.5	28.5	27.1	5.2	19.4	1.5	18
7. Medicine shop	2.6		27.4		32.0		38.0	

Source: Availability of Selected Facilities in Rural Haryana, Economic & Statistical Adviser Planning Department, Haryana, 2006; NFHS-III

Note: There may high variation between these two time period data set, as source and sample coverage are different.

A large proportion (around 50 percent and 72 percent) of villagers in the states travel more than the IMS prescribed norms (5 km.) to access the PHCs and CHCs/government hospital facilities, indicating access to health facilities are highly inadequate in the state with high variation across districts.

A district-wise analysis of the access/availability of different healthcare services like SCs, PHCs, any government health facility, doctor, ASHA, VHSC, Anganwadi workers, etc. within a village shows considerably high variation across districts (Table 5.4). The variation in availability of VHSC, doctors, PHCs and SCs across districts was found to be high. The NFHS-3 records show that there is not a single doctor and VHSC available in villages of Faridabad. In Gurgaon, all villages are without PHCs. The villages of Hisar have high availability of SCs, where about 81 percent villages have this facility and low in Yamunanagar at around 9.7 percent villages. The villages of Rohtak have high percentage (22 percent) of PHCs and low in Gurgaon. A high coverage, around 3/4th of villages of district Hisar and Rohtak are equipped with any government health facility, while only 1/3rd of villages of district Yamunnanagar, Gurgaon, Faridabad, Mewat, Panchkula and

Mahendergarh are with any government facility. The villages with availability of doctors were found to be high in Kurukshetra, Karnal, Panipat, and Sonipat and low in Faridabad, Jhajjar, Mewat. The Anganwadi and ASHA workers, that is expected to improve service delivery system for maternal and child healthcare, was found to be high in most of the village across districts of Haryana. The JSY beneficiaries' percentage was found high (97%) in villages of Jhajjar and low (46%) in Mewat (Table 5. 4). The concept of Village Health and Sanitation Committee (VHSC) was introduced under National Rural Health Mission (NRHM) to increase the involvement and participation of local communities in healthcare policy, planning, management and delivery. This comprises of village's female health worker, teachers, ASHA and Anganwadi workers, Village's Sarpanch/Panch, member of Gram Sabha. The results from NFHS-3 shows that on an average only 20 percent villages have VHSC existence with high percentage in district Sirsa (46%) and low in Faridabad and Bhiwani.

Table 5.4: Availability of Facility and Health Personnel by Districts, Haryana: 2007-08

Districts	Percentage of Villages with									
	Sub-centre	PHCs	Any govt health facility	Doctor	ASHA	Anganwadi workers	JSY beneficiary	VHSC	Aware of Untied fund	No. of villages
Panchkula	21.4	7.1	28.6	42.9	78.6	96.4	78.6	14.3	32.1	28
Ambala	31.3	6.3	37.5	34.4	78.1	100	50	15.6	65.6	32
Yamunanagar	9.7	6.5	12.9	29	51.6	96.8	48.4	9.7	45.2	31
Kurukshetra	43.2	8.1	43.2	54.1	75.7	97.3	54.1	21.6	21.6	37
Kaithal	60	20	60	35	92.5	100	72.5	22.5	30	40
Karnal	32.4	18.9	40.5	54.1	83.8	100	70.3	13.5	40.5	37
Panipat	50	16.7	53.3	46.7	90	100	50	50	40	30
Sonipat	62.2	10.8	64.9	45.9	86.5	100	73	13.5	18.9	37
Jind	57.5	17.5	60	27.5	87.5	97.5	82.5	20	60	40
Fatehabad	68.3	9.8	68.3	12.2	92.7	100	85.4	29.3	61	41
Sirsa	48.6	13.5	56.8	21.6	91.9	97.3	86.5	45.9	81.1	37
Hisar	81.1	21.6	81.1	16.2	86.5	97.3	91.9	37.8	37.8	37
Bhiwani	56.1	22	56.1	12.2	61	100	63.4	2.4	22	41
Rohtak	78.1	21.9	78.1	18.8	81.3	100	65.6	6.3	34.4	32
Jhajjar	71.8	20.5	71.8	5.1	97.4	100	97.4	28.2	33.3	39
Mahendragarh	30.2	7	30.2	11.6	79.1	97.7	62.8	20.9	16.3	43
Rewari	41.5	4.9	43.9	19.5	90.2	97.6	65.9	19.5	36.6	41
Gurgaon	25	0	25	21.9	90.6	93.8	46.9	6.3	43.8	32
Faridabad	25	10	25	0	90	100	65	0	25	20
Mewat	19.6	6.5	26.1	13	47.8	93.5	45.7	15.2	19.6	46
Haryana	**46.6**	**12.6**	**49.1**	**25.8**	**81.3**	**98.2**	**68.2**	**20.1**	**38**	**721**
Coeff. of Variation	**45.8**	**54.7**	**41.0**	**61.9**	**16.7**	**2.1**	**23.2**	**68.2**	**45.4**	

Source: NFHS-III

5.2 Status and Variation in Health Outcomes

A comparative profile of selected health outcomes parameters shows that achievement in most of the mortalities indicators like, child (age 0-4years), under-five, infant, neo-natal, early neo-natal, late neo-natal, post neo-natal, pre-natal, maternal mortality rates of Haryana more or less remained equal to the national/India average mortalities indicators. For instance, the maternal mortality rate which is defined as the number of maternal deaths of women in the ages 15-49 per 100,000 women in that age group found around 12.4 in Haryana and 11.6 in India (Table 5.5). For instance, the maternal mortality ratio which refers to the number of women who die as a result of complications of pregnancy or childbearing in a given year per 100,000 live births in that year were found to be around 153 in Haryana and 212 in India. The overall and child sex ratio, which are important indicators to judge women status in society, remained very low at 877 and 830 in Haryana respectively as against 940 and 914 respectively at the national level. The rural-urban gaps in these mortalities indicators in Haryana are however noticed to be low as those compared to the rural-urban gaps at the national level, but it is a cause of serious worry.

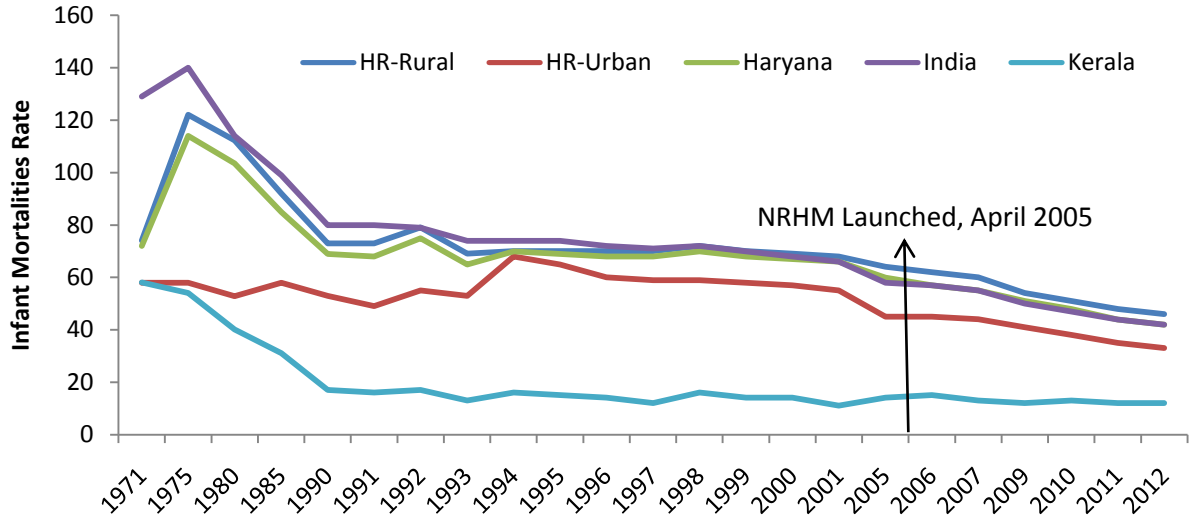
Being a high developed state, most of the mortalities and morbidities indicators of Haryana are noticed to be equal or less than the national averages.

Table 5.5: Comparison of Selected Health Outcome Parameters of Haryana and India (2012)

Indicators	India			Haryana		
	Total	Rural	Urban	Total	Rural	Urban
Child mortality rate (age 0-4years)	11	13	7	11	12	8
Under-five mortality rate	52	58	32	48	52	39
Infant mortality rate	42	46	28	42	46	33
Infant Mortality Rate (low-high) range	43-46	47-50	27-31	38-51	40-56	26-43
Neo-natal mortality rate	29	33	16	28	31	20
Early neo-natal mortality rate	23	25	12	21	24	13
Late neo-natal mortality rate	6	7	4	7	7	7
Post neo-natal mortality rate	13	14	12	14	15	13
Peri-natal mortality rate	28	31	17	30	34	19
Still birth rate	5	5	5	9	10	6
Maternal Mortality Rate	12.4	?	?	11.6	?	?
Maternal Mortality Ratio (SRS 2007-09)	212	?	?	153	?	?
Total Fertility Rate	2.4	2.6	1.8	2.3	2.4	2
Crude Birth Rate	21.6	23.1	17.4	21.6	22.6	19.2
Crude Death Rate	7	7.6	5.6	6.4	6.9	5.4
Sex Ratio (Census 2011)	940	?	?	877	?	?
Child Sex Ratio (Census 2011)	914	?	?	830	?	?

Source: SRS-2012, Census, 2011

Figure 5.4: Infant Mortality Rate of Haryana and India



Source: SRS, Sample Registration Scheme in Haryana

Amongst the other measure of health indicators, the infant mortality rate (IMR) is generally considered an exhaustive indicator of health standard measure in a country/state/region. The progress in reducing the IMR remained noticeable, which has declined from 114 in 1995 to 42 in 2012. The rate in decline in IMR noticed almost equal to the national rate. The more substantial improvement in decline in IMR both for India and Haryana remained more noticeable in the recent period, especially after the launch of National Rural Health Mission in 2005. Much more needs to be done to achieve the IMR level equivalent to the best performing state like Kerala, which has secured IMR very low about 12 per 1000 live birth (Figure 5.4).

In Haryana, there exist high rural-urban gaps in various mortalities indicators. The variation in different health outcomes parameters at district level is even more worrisome (Table 5.6). An estimate of the status of under 5 mortality rate across districts of Haryana as compared to the best performing district of India shows that Ambala turned out to be a better performing district with 224 rank out of total 593 rank of India districts. The district Gurgaon remained worst performing with high (high rank indicate worst performing district) rank 375. Furthermore, the performance in various input-output health indicators, estimated by IIPS in 2008, also varies considerably across district of Haryana. The IIPS estimated the rank of 593 rural districts of India using information on 13 Indicators like 1. percentage of population 0-6 years; 2. birth order three and above; 3. birth below age 20; 4. complete immunization coverage; 5. dropout from full immunization; 6. female literacy rate; 7. households using safe drinking water; 8. households with toilet facility; 9. percentage of electrified households; 10. women receiving 2 TT injections; 11. women receiving 3 or more ANC visits; 12. under 5 mortality rate; and 13. contraceptive prevalence rate. The low rank indicates high development in

these parameters and high rank means low development. The rank of Haryana districts ranges from 26 (best) to 367 (worst performing). It is noticed that out of total 593 districts, Ambala remained at 26th rank, indicating high performance district of Haryana. Surprisingly, the district Gurgaon, considered being one of the high developed districts of Haryana, ranked high around 367, indicating worst performing district of Haryana (Table 5.6).

Gender (male) preference is more prevalent among educated families in Haryana.

The sex-ratio, which present the child and women status, noticed to be one of the lowest (861) in the states as compared to the other states of India with a considerably high variation across the districts. The ratio was found to be low (823) in Panchkula and high (918) in Mahendragarh. Interestingly, the level of literacy in district Panchkula is high while low in Mahendragarh, indicating gender bias is more prevalent among the educated in Haryana.

Table 5.6: Selected Input-Output Health Indicators and Ranking of Haryana Districts

Districts	On the Basis of Percentage of Women Having Three and More Children	On the Basis of Contraceptive Prevalence Rate	On the Basis of Under 5 Mortality Rate	On the Basis of 3 or More ANC Visits	Overall Rank within the Country - out of 593 Districts	Sex Ratio: 2011
Ambala	109	47	224	120	26	868
Panchkula	137	60	264	178	60	823
Kurukshetra	143	77	306	146	70	866
Yamunanagar	203	165	331	379	129	862
Rohtak	175	148	254	235	131	847
Karnal	225	188	322	260	155	865
Jhajjar	130	138	254	264	176	847
Rewari	108	67	283	311	179	899
Panipat	262	286	306	314	183	829
Hisar	194	144	248	354	184	851
Fatehabad	236	90	401	335	201	884
Sonipat	204	166	300	319	207	839
Sirsa	192	146	286	395	216	882
Faridabad	342	309	258	333	218	839
Bhiwani	183	194	265	309	245	879
Jind	243	224	368	346	263	852
Mahendragarh	157	157	265	388	271	918
Kaithal	198	207	388	350	279	853
Gurgaon	469	433	375	397	367	873

Source: Ranking and Mapping of Districts (2006), International Institute for Population Sciences (IIPS), 2008; retrieved from: http://www.jsk.gov.in

Note: The overall rank is estimated using 13 Indicators for rural india: 1. percentage of population 0-6 years; 2. birth order three and above ; 3. birth below age 20 ; 4. complete immunization coverage 5. dropout from full immunization; 6. female literacy rate; 7. households using safe drinking water; 8. households with toilet facility; 9. percentage of electrified households; 10. women receiving 2 TT injections; 11. women receiving 3 or more anc visits; 12. under 5 mortality rate; and 13. contraceptive prevalence rate. The rank for 593 districts of the country is estimated. The low rank indicates high development and high rank means low development.

5.3 Status and Variation in Healthcare Utilization

Child Immunization Status

In general, the immunization programme in India was initiated in the late 1970s. The purpose was to immunize children against preventable killing diseases such as tuberculosis, polio, diphtheria, pertusis (whooping cough), tetanus and measles. The programme was however further modified as Universal Immunization Programme in the middle of 1980s with an objective to achieve 100 percent immunization target. The DLHS-3 survey round that present the results for 2007-08 shows that only 60 children received full vaccination, which is much less from 100 percent target. The variation in receiving full immunization across districts, however, remained low with 23.7 percent variation. The full immunisation received percentage was found high at about 79 percent in district Ambala and low (11 percent) in Mewat. The coverage of BCG received remained high with about 86.5 percent coverage, followed by DPT3 (69 percent), Polio3 (68 percent) and measles (69 percent). The coverage of Polio remained low. Only about 28 percent children received Polio0 vaccination in Haryana (Table 5.7). There exists high variation across districts of Haryana. The children in district Mewat receive low immunization services as compared to others. In general, the status of immunization received was found low in those districts where the availability of health infrastructure is low compared to the high infrastructure districts. This indicates that the states need to provide equal and adequate level of health infrastructure spreading across villages in each district.

The immunization received status in the state was found to be lower (only around 60 percent children receive full immunization) than the target with high variation across rural-urban residents, socio-economic stratum groups and districts.

The pattern of child immunization received status across rural and urban areas show significant dissimilarity. Around 56 percent rural children received full immunization as against high immunization of about 71 percent among urban children. Similarly, BCG, DPTs, Measles and Polio3 vaccination was found high among urban children as against rural children. There also exist high variations in receiving full immunization across social and economic sub groups. In general caste about 69.5 percent children received full immunization while this percentage among SCs was 56.6 percent. Similarly, the high economic group children received full immunization (about 74.4 percent) as against 28.5 percent by low economic stratum children. This indicates that the high economic groups receive full immunization around more than 2.5 times than that is received by low/poor economic stratum groups (Table 5.7). It is important to note that such immunization services are provided under government health setting free of cost. The purpose was to achieve universal health coverage in immunization. But data analysis shows that the

immunization services are not received universally in Haryana. There is high variation across districts, rural-urban regions, social and economic caste and class. This is worrisome and needs to be taken care of.

Table 5.7: Status of Child (Aged 12-23 Months) Immunisation by Socio-Economic Backgrounds and Districts of Haryana: 2007-08

		%age of children received specific vaccination					
	Background	**BCG**	**DPT3**	**Polio0**	**Polio3**	**Measles**	**Full vaccination #**
Region	Rural	85	66.2	31.5	65	66.3	55.9
	Urban	91	77.6	17.8	76.2	77.2	70.9
Castes	Scheduled castes	88.4	69.4	29.3	68	68	56.6
	Other backward class	80.5	60.7	32.1	59.8	61.5	53.1
	Others	92	78.6	22.7	77.1	78.9	69.5
Wealth index	Lowest	51.8	31.4	65.5	31.4	32	28.5
	Second	66.1	43.9	48.8	42.1	40.6	30
	Middle	76.6	47.3	39	46.8	48.5	36.3
	Fourth	85.8	66.7	31.6	65.6	66.6	57.3
	Highest	94.1	83	18.1	81.4	82.9	74.4
District	Panchkula	94.9	88.7	9.5	90.2	82.8	78.1
	Ambala	95.2	82	1.7	86.2	91.9	79.1
	Yamunanagar	97.7	82.1	1.4	79.6	85.7	70
	Kurukshetra	93.8	77.9	6.6	74.3	82.7	67.8
	Kaithal	91.9	83.5	18.1	83.5	73.7	72.5
	Karnal	98.1	89.9	4.4	81.8	87.1	75.2
	Panipat	83.8	70.7	4.9	63.4	71.8	57
	Sonipat	95.6	81.6	11.3	78.8	83.9	73
	Jind	92.5	66.4	42.2	66.4	67.3	55.4
	Fatehabad	86.8	72.5	31.1	70.9	76.2	62.8
	Sirsa	94.1	69.5	17.4	71.1	76.2	61.3
	Hisar	93.7	69.6	21.1	69.6	65.7	55.8
	Bhiwani	88.5	70.8	45.1	68.5	71.8	58.4
	Rohtak	95.1	86.7	29.7	86.7	80.6	75.7
	Jhajjar	90.6	81.2	33.1	77.7	69.6	64.8
	Mahendragarh	92.1	79.4	31.3	79.5	71.9	67.7
	Rewari	94.8	82.2	31.1	80.6	74.3	67.3
	Gurgaon	90.7	74.7	29.6	74.7	76.5	70.5
	Faridabad	79.2	54.8	37	54.8	57	46.4
	Mewat	48.5	14	71.7	14	20.3	11
	Haryana	86.5	69	28.1	67.8	69	59.6
	Coeff. of Variation	**12.0**	**22.3**	**74.6**	**22.4**	**20.4**	**23.7**

Note: #-BCG, three injections of DPT, three doses of Polio (excluding Polio 0) and measles.

Source: DLHS-3

Ante-natal and Post-natal Care

Receiving proper antenatal care is crucial for the good health of both mother and child. In general, receiving services on three indicators - whether mothers who had at least 3 antenatal care visits for their last birth, consumed IFA for 90 days or more when they were pregnant with their last child, received at least two TT (TT1/TT2) injections during

pregnancy - are notified that women have received full ANC treatment. The analysis of DLHS-3 round data shows that only about 13.2 percent women have received full ANC cares (Table 5.8), while about 86 percent Kerala women receive such services. This indicates that full ANC receiving status in Haryana is one of the lowest. It is argued that high ANC received reduces some premature mortality. Given the fact of low ANC received status, it may not be surprising that some neonatal mortality rates are higher in Haryana as compared to some other Indian States.

Not only the ANC/PNC received and institutional delivery status is very low in the state as against the better performing state (Kerala) and national average but also high variation across districts, rural-urban regions and socio-economic groups, therefore it is not surprising that neonatal, maternal and child mortalities are higher in Haryana than some of the states.

As far as the status of any ANC received is concerned, around 87.2 percent women received any ANC. When it comes to full ANC, it comes very low at around 13.2 percent, which is a cause of serious worry. Besides the low level of full ANC received, there exists high variation (about 46.2 percent) across districts of Haryana. The full ANC received was found to be one of the lowest in district Mewat at about 1.9 percent as compared to high about 27.5 percent in Gurgaon and Rohtak. The variation across districts in any ANC received however remained one of the lowest, the coefficient of variation value turned around 10 percent. In case of any ANC, it was revealed from data analysis that around 97 percent women from district Rohtak received any ANC as against a low percentage of about 54 by Mewat women. There also exists high variation in receiving full ANC across rural-urban region. Around 23 percent urban women receive full ANC as against low about 10 percent by rural women. And around 94 percent urban women receive any ANC as against low about 85 by rural women (Table 5.8).

There also exists high variation in receiving antenatal care across different socio-economic sub-groups. Generally, low socio-economic population sub-groups women receive low ANC checkup as compared to the high socio-economic stratum groups. The women access different health facilities like public, private, community based etc for antenatal care check-up. It reveals that the around 46 percent women receive antenatal checkup from government and private health facility each. This reveals that there exists high variation in receiving ANC services across districts, rural-urban regions, social and economic caste and class. Similar trends also emerge in case of PNC cares (Table 5.8). However, status of any PNC received (49 percent) remained lower than any ANC received (87 percent).

It is also bit visible that availability of health infrastructure matter in determining the status of ANC received and therefore states need to provide adequate health facility across region in different districts.

Table 5.8: Antenatal (ANC) and Postnatal Check-Up (PNC) Received (Women Aged 15-49) by Socio-Economic Backgrounds and Districts, Haryana: 2007-08 (%)

	Background	Any antenatal check-up	Place of antenatal check-up			Full ANC received#	Any PNC received (within-2 week)
			Govt health facility	Private health facility	Community based services		
Region	Rural	85.1	44.4	41.1	3.8	10.2	46.4
	Urban	93.7	49.0	58.9	3.6	22.6	58.7
Castes	SCs	87.9	53.2	30.7	3.7	10.3	40.1
	Other backward class	-	-	-	-	10.3	46.6
	Others	94.7	42.0	57.6	2.9	18.5	59.4
Wealth index	Lowest	-	-	-	-	1.4	27.3
	Second	68.5	47.5	17.9	8.6	3.4	31.6
	Middle	77.3	46.6	25	4.7	5	34.9
	Fourth	-	-	-	-	9.2	43.5
	Highest	97.0	42.2	64.9	2.9	23.5	66.8
District	Panchkula	91.9	67.6	40.4	0.4	19.1	-
	Ambala	84.3	37.1	56.3	4.5	17.4	-
	Yamunanagar	90.8	28.2	60.2	3.9	20.8	-
	Kurukshetra	92.0	34.3	60.8	4.9	11.8	-
	Kaithal	95.1	50.9	45.8	5.3	21.1	-
	Karnal	90.3	39.8	57.5	2.9	16.6	-
	Panipat	87.2	34.7	63.9	1.5	6.2	-
	Sonipat	95.5	37.4	51.7	2.4	14.9	-
	Jind	93.2	50.7	42.2	0.9	9.7	-
	Fatehabad	91.0	64.8	28.9	4.0	9.5	-
	Sirsa	92.8	48.8	43.2	3.6	17.8	-
	Hisar	92.9	55.3	42.9	5.3	10.4	-
	Bhiwani	91.0	49.0	30.5	1.4	8.9	-
	Rohtak	96.6	57.4	33.6	2.2	27.5	-
	Jhajjar	92.1	63.2	43.6	2.9	16.2	-
	Mahendragarh	95.2	51.9	37.1	1.8	9.1	-
	Rewari	96.2	47.1	58.4	1.4	20.6	-
	Gurgaon	94.1	41.5	53.8	2.3	27.5	-
	Faridabad	81.5	40.3	49.7	6.9	9.3	-
	Mewat	54.2	33.9	21.1	12.7	1.9	-
	Haryana	**87.2**	**45.7**	**45.8**	**3.8**	13.2	49.5
	Coeff. of Variation	**10.3**	**24.0**	**25.8**	**77.1**	**46.2**	

Source: DLHS-III

Note: #-At least three visits for antenatal check-up, at least one TT injection received and 100+ IFA tablets/ syrup consumed

Child Delivery

The institutional delivery however considered to be one of the good indicators that can protect maternal and infant death in a region. But data analysis shows that only about 47 percent women had institutional delivery as against a high of about 53 percent at home in the state. There exists high variation in institutional delivery across districts of Haryana, with 23 percent value of coefficient of variation. For instance, only about 14.8 percent women had institutional delivery in Mewat, while 64 percent in Panchkula and Kurukshetra (Table 5.9). The difference between top and bottom wealth index quintile in terms of proportion of women having institutional delivery has found around more than four times. That is, the institutional delivery is only about 14.8 percent among poorest and 70.9 percent among richest wealth quintile.

There can be various reasons for having high institutional delivery among different socio-economic economic groups. Financial reason could be one for not seeking institutional delivery among poorest and SCs. Due to financial constraints they prefer home delivery leading to high infant, child and maternal death among these sub-groups. As regards to the variation in institutional delivery across districts, we found that low institutional delivery took place in most of those districts where the availability of primary health facility is low. For instance, in some of the districts like Palwal and Mewat, health staff (like doctors, health worker and other staff related to immunization) is inadequate. This probably leads to low level of institutional delivery in these districts.

Table 5.9: Place of Child Delivery (Women Aged 15-49) by Socio-Economic Backgrounds and Districts of Haryana: 2007-08

	Background	Percentage of women who had institutional delivery	Percentage of women who had delivery at home	Home delivery assisted by skilled persons@	Percentage of safe delivery#
Region	Rural	42.1	57.5	5.7	47.8
	Urban	61.5	38	8.1	69.6
Castes	Scheduled castes	36.8	63	7.3	44.1
	Other backward class	40.4	58.9	5.6	46
	Others	61.2	38.4	6.6	67.8
Wealth index	Lowest	14.8	83.8	0.7	15.5
	Second	18.4	81.1	4.1	22.5
	Middle	26.3	73.2	5.9	32.2
	Fourth	39.8	59.7	7.5	47.3
	Highest	70.9	28.6	6.4	77.3
District	Panchkula	64.3	35.4	3.5	67.8
	Ambala	55.4	43.7	7.5	62.9
	Yamunanagar	52.3	47.5	6.1	58.4
	Kurukshetra	64.2	35.5	3.6	67.8
	Kaithal	48	52	9.4	57.4
	Karnal	51.3	47.8	5.8	57.1
	Panipat	39	60.4	9.4	48.4
	Sonipat	53.7	45.4	7.3	61
	Jind	42.1	56.9	6.2	48.3
	Fatehabad	48.6	51.1	9.5	58.1
	Sirsa	53.5	46.4	16	69.5
	Hisar	48.6	50.7	5.9	54.5
	Bhiwani	35.7	64.6	9.1	44.8
	Rohtak	52.8	46.4	6.1	58.9
	Jhajjar	48	51.6	9.9	57.9
	Mahendragarh	56.8	43.1	8.3	65.1
	Rewari	65	35.1	8.5	73.5
	Gurgaon	52.3	47.5	4.5	56.8
	Faridabad	39.1	60.6	3.6	42.7
	Mewat	14.8	84.5	1.5	16.3
	Haryana	**46.8**	**52.7**	**6.4**	**53.2**
	Coeff. of Variation	**23.3**	**22.7**	**44.9**	**22.1**

Source: NFHS-III

Note: @- Includes Doctor/ANM/Nurse; #-Either institutional delivery or home delivery assisted by skilled person

5.4 An Overview on Policy Failure

Gaps in Required level of Health Infrastructure

Being a highly developed state, Haryana has been unable to provide adequate/required, as per the national norms, level of health infrastructure on many fronts. For instance, as per norms, about 4159 sub-centres are required but only 2520 sub-centres were in place in 2012, indicating a shortfall of about 39 percent than the required level of sub-centres in the state. This shortfall however is only about 23.2 percent at the national level. In Haryana about 32 percent PHCs were found less than its required level, as against the 26 percent at national level. Around 33 percent CHCs were found less than the required level in Haryana. It is also observed a high mismatch between the physical infrastructure and human infrastructure required for that. For instance, the number of SCs, PHCs, CHCs in place on one hand was found less that the required level but lower level of health staff like health workers (M/F), ANC, health assistance, radiographers, pharmacist, and nursing staff position was found higher than the required level. This indicates a high mismatch between physical and lower level personnel, further probably limiting the health centre/staffs to perform better, while in position status of doctors was found less than its required level. The ASHS which is expected to improve health delivery system at the local level was found lower than its required level (Table 5.10).

The existing basic health infrastructure facilities noticed to be lower than the required level, indicating that the state needs to spend its public resource in health sector.

Table 5.10: Gaps in Required Level of Health Infrastructure: A Comparative Picture of India-Haryana: 2012

Indicators	Haryana				India			
Particulars	R	P	S	% shortfall	R	P	S	% shortfall
Sub-centre	4159	2520	1639	39.4	189094	148366	43776	23.2
Primary Health Centre	657	447	210	32.0	30565	24049	7954	26.0
Community Health Centre	164	109	55	33.5	7631	4833	3044	39.9
Health Worker (female)/ANM at Sub Centres	2520	4363	*	#	148366	188715	2717	1.8
Health worker (Female)/ANM at Sub Centres & PHCs	2967	4973	*	#	172415	207578	6630	3.8
Health Worker (Male) at Sub Centres	2520	1682	838	33.3	148366	51705	96734	65.2
Health Assistant (Female)/LHV at PHCs	447	398	49	11.0	24049	16109	9152	38.1
Health Assistant (Male) at PHCs	447	503	*	#	24049	14648	12658	52.6
Doctor at PHCs	447	342	105	23.5	24049	28984	2489	10.3
Obstetricians, Gynaecologists & Pediatricians at CHCs	218	21	197	90.4	19332	5858	13477	69.7
Total specialists at CHCs	436	29	407	93.3	19332	5858	13477	69.7
Radiographers at CHCs	109	142	*	#	4833	2314	2557	52.9
Pharmacist at PHCs & CHCs	556	880	*	#	28882	26219	5295	18.3
Laboratory Technicians at PHCs & CHCs	556	394	162	29.1	28882	17525	12494	43.3
Nursing Staff at PHCs & CHCs	1210	1698	*	#	57880	66424	13521	23.4
ASHA (targeted & in place)	18000	16774	1226	6.8				

Source: RHS Bulletin, March 2012, M/O Health & F.W., GOI

Note: R-Required, P- in position, S- shortfall, *-No shortfall

Status of Public Expenditure on Health

Health is a state subject in India. The primary responsibility of providing health facilities rests with the state government. The central government is also involved in providing tertiary care services in the country and distribute funds through centrally sponsored/plan schemes to the states. India announced its first National Health Policy in 1983 and committed to achieve 'Health for All by the year 2000' through the introduction of certain number of CHCs, PHCs and SCs in the country. As discussed, the prescribed number of physical and human infrastructure in health sector was found low both at

national level as well as in the state of Haryana. This indicates that the state government has not given enough priority to provide even the basic health facilities. The analysis of the trends of state government expenditure on health however shows some rosy picture. That is, the real per capita government expenditure on health in the state shows increasing trend (Table 5.11) with high growth rate during the period from 2005-2011 (Figure 5.5), indicating with the launch of NRHM, the government spending on health increased. But it seems that the increased trend in health expenditure could not meet the increased demand of health care. As discussed, the level of health infrastructure on various front is still less than the required level of health infrastructure in the state and thereby more worrisome to achieve the equity in health infrastructure across districts and rural-urban regions.

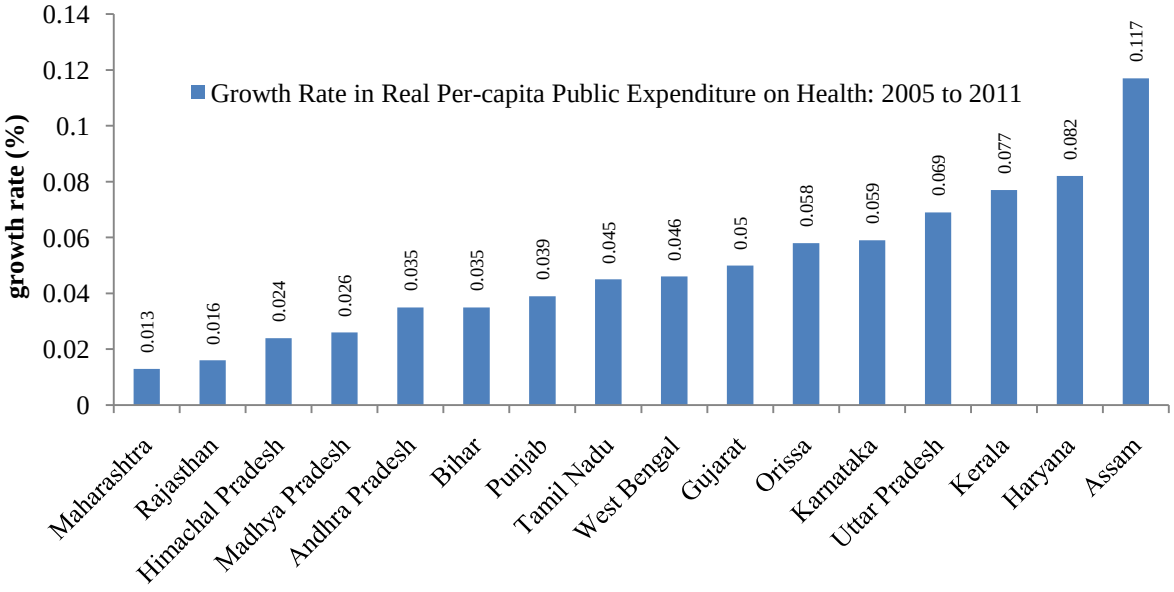
Table 5.11: Trends in Real Per-Capita Public Expenditure on Health Across Indian States

States	Medical, Public Health, Family Welfare		Water Supply, Sanitation, Nutrition		Total Health Expenditure	
	2000-01	2010-11	2000-01	2010-11	2000-01	2010-11
Andhra Pradesh	109	169	107	28	216	197
Assam	76	217	46	65	122	282
Bihar	48	68	15	43	63	111
Gujarat	128	168	184	93	312	261
Haryana	87	138	108	199	195	337
Himachal Pradesh	280	413	323	474	603	887
Karnataka	129	154	67	65	196	219
Kerala	119	216	29	53	148	269
Madhya Pradesh	85	132	57	71	142	203
Maharashtra	111	157	77	41	188	198
Orissa	77	117	46	53	123	170
Punjab	165	174	39	68	204	242
Rajasthan	106	118	140	113	246	231
Tamil Nadu	122	250	126	79	248	329
Uttar Pradesh	59	134	12	20	71	154
West Bengal	116	124	34	19	150	143
India	**114**	**172**	**88**	**93**	**202**	**265**

Source: www.epwrfits.in

Note: Real per-capita is taken at 1993-94 prices

Figure 5.5: Growth Rate in Real Per-Capita Public Expenditure on Health: 2005 to 2011



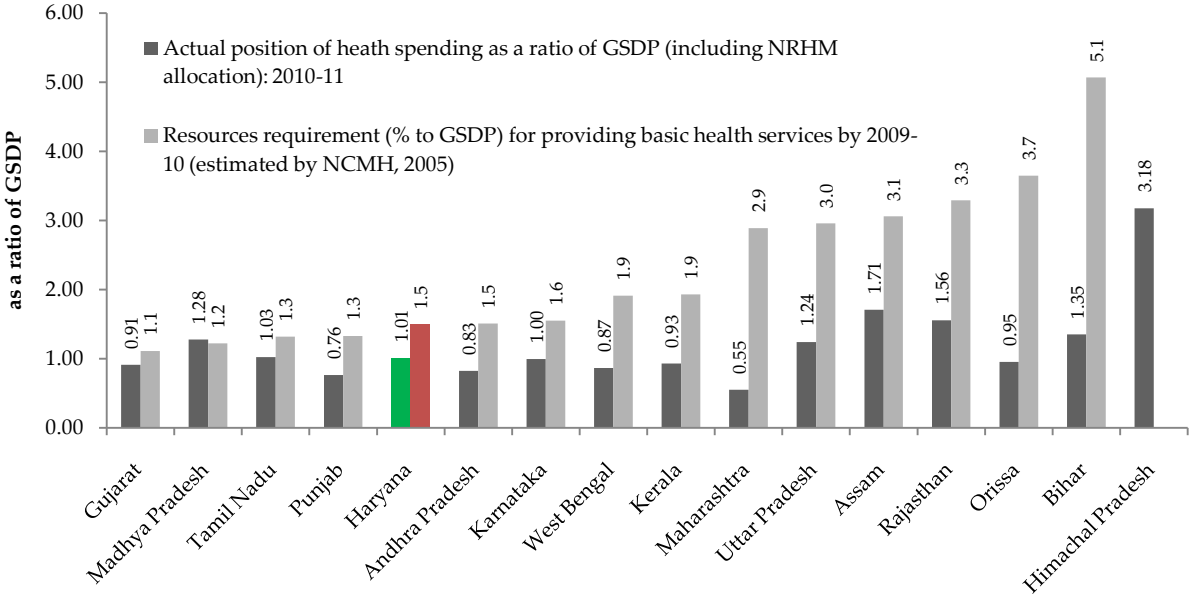
Source: www.epwrfits.in

Note: Real per-capita is taken at 1993-94 prices

Though the per capita spending on health in the state has increased specialty after the launch of NRHM, fund allocation remained lower than the required level of resources.

In 2005, the National Commission of Macro-Economic and Health estimated a minimum level of resource requirements to meet the adequate level of basic health services in the country across the states. It was expected that every state government would spend this required level of public funds in health sector by 2009-10 out of their Gross State Domestic Product (GSDP). To understand, whether the state governments have paid enough attention to such spending, we estimated the level of state government health spending as percentage of GSDP for the year 2010-11. We noticed that the existing level of health expenditure is recorded lower than the required level of resources in the state. The gaps between required level of resources and actual spending was found not only in Haryana but in most of the Indian states, except Himachal Pradesh (Figure 5.6). Note that the actual position of health spending includes spending on medical, public health, family welfare, water supply and sanitation and NRHM fund allocation. If one excludes the water supply and sanitation expenditure from the total, then the total spending on health will go down further and the gap will became wider.

Figure 5.6: Resource Requirements vs. Actual Spending in Health Across States



Source: RBI: State Finance: A Study of State Budget and NRHM expenditure statements.

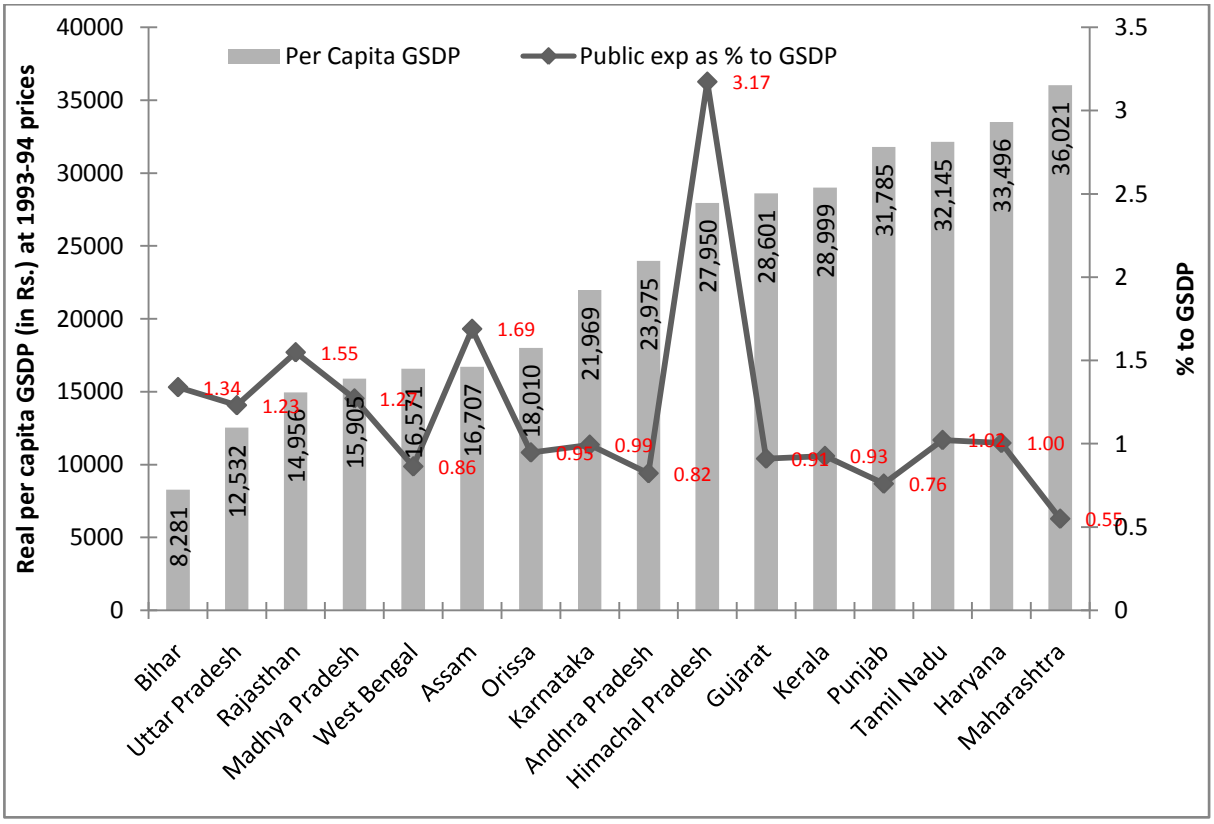
Note: The health expenditure includes expenditure on medical, public health, family welfare, water supply, sanitation and NRHM allocation: 2010-11. For resource requirements see NCMH, background paper, Rao, M.G., Choudhury and Anand M: 2005, pp.297-317

This indicates that even after adding the expenditure on complementary services like water supply and sanitation the expenditure level as percentage of GSDP remained low. This shows government's failure in serving and providing adequate health services to the population. Haryana, despite its low health outcomes, has learnt no major lesson from its past. Worse, Haryana has given less priority to health sector. The Universal Health Coverage (2012) of India again suggested that every state needs to allocate a certain level of public funds to health sector by 2022 to achieve adequate level of health facilities in the country. Given the past experiences, how state governments respond needs to be evaluated further.

The most surprising thing is that the commitment of richest states towards health sector was found noticeably low. The trends analysis of health expenditure shows as the level of development of a state increase, funds allocation towards health out of their GSDP deceases (Figure 5.7). It is noticed that not one percent increase in per capita GSDP of the percentage share of public spending on health has not increased across Indian states. On the behaviour of increasing level of GSDP at the same time low level of spending on health, someone may argue that with the increase in incomes, peoples' willingness to access government facilities may decline. As high level of incomes increase the

affordability of care, citizens may opt for private over government facilities. But this phenomenon is not un-equivocally true. As, developed and developing countries experiences show that with the increase in level of income the demand for public systems increase. That is, the most developed/high income countries spend high amount of public funds on health out of GDP. We believe that this probably is not the demand side problem, but it is the supply side constraint and less political commitment. Therefore, states need to spend more funds on health sector with immediate effect.

Figure 5.7: Association between Public Health Spending and State's GDP: 2010-11



Source: Author's Estimates using data from www.mospi.nic.in and www.epwrfits.in

Implementation Status of Health Insurance Scheme

It is recognized that due to low level of public spending on health, people are bound to spend/access private costly health facilities. Because of that most of health spending is met out of the pocket of the individual. In India, a high amount of healthcare expenditure (around 71 percent) is met out of the individuals' pocket (Hooda, 2013). To meet the costs of healthcare around 40-45 percent country's poor had to borrow/sell assets thereby resulting in inequitable access to healthcare, rural indebtedness and even impoverishment. Thus, financial constraint is the major barrier of access to healthcare, particularly for poor and marginalized section of the society. To provide health access and financial protection during health emergency, the Ministry of Labour and Employment,

Government of India launched Rashtriya Swastha Bima Yojana (RSBY) in April 2008, specifically to provide financial protection to the poor, disadvantaged and people working in informal sector. This is a centre-state (75:25) share health insurance scheme. As per the guideline, every state is expected to rollout the scheme in their respective state. For this purpose, as per centre guideline, the state first needs to identify the list of beneficiaries, which will be based on below poverty line estimates, and then RSBY card will be issued to them with a minimal charge/premium Rs. 30/- from beneficiaries.

Being a pioneer state in the launch of publicly-financed pro-poor health insurance scheme (RSBY), the enrolment ratio was noticed to be very low in the state with high variation across districts, indicating low level of implementation status of RSBY in the state.

Table 5.12: Rashtriya Swastha Bima Yojana Coverage Status in Haryana

Districts	Total target families	Total families enrolled	Percentage of Enrolled to Target
Ambala	75850	27554	36.3
Bhiwani	92784	24374	26.3
Faridabad	77058	16626	21.6
Fatehabad	49229	13185	26.8
Gurgaon	38211	14591	38.2
Hisar	81891	19567	23.9
Jhajjar	37423	19376	51.8
Jind	83117	18508	22.3
Kaithal	76812	22957	29.9
Karnal	89244	33703	37.8
Kurukshetra	62888	28934	46.0
Mahendragarh	48020	24846	51.7
Mewat	39369	19111	48.5
Palwal	48253	14693	30.4
Panchkula	22048	8832	40.1
Panipat	41721	13868	33.2
Rewari	39511	22368	56.6
Rohtak	52422	16044	30.6
Sirsa	79347	30545	38.5
Sonipat	56954	17036	29.9
Yamunanagar	71661	46276	64.6
Haryana	**1263813**	**452994**	**35.8**
India	**2527626**	**906019**	**35.8**

Source: www.raby.gov.in, 2013

The scheme covers inpatient care expenses of those BPL families that have PSBY card. The benefit will be up to 5 members of the family. The reimbursement facility was provided up to Rs. 30,000/- per hospitalization cases. Haryana however remained the pioneer in implementation the schemes. Haryana implemented this scheme immediate after the launch of RSBY. But data analysis of targeted families and enrolled families for the year 2013 shows that scheme implementation status remained low (Table 5.12). The percentage of enrolled families to target families' (generally know as coverage ratio) remained only 36 percent as on October, 2013. This indicates that about 64 percent BPL families that were entitled to receive the benefits of this scheme remained out of purview. Besides, there exists a high variation in implementation of this scheme across the districts of Haryana. The enrolment to targeted families ratio ranges from as low as 22 percent in Faridabad and Jind and a high (around 3 times) of about 65 percent in the district of Yamunanagar (Table 5.12).

5.5 Concluding Remarks

While Haryana has been notified as one of the wealthy and developed states of India, its achievement in most of the health indicators has remained far from satisfactory.

Public as well as private health facilities are highly concentrated in urban area in the states. The status of provisioning of basic health facilities is however above the national average but lagging far behind from better performing states like Kerala. The resource poor districts of Haryana are grossly lagging behind in availability of hospitals and hospital beds. Hospital availability in some of the districts however high but lacking in availability of beds and vice-versa, indicating hospitals without beds or beds with no/low hospitals in many districts. A ranking of the availability of basic health facilities of 628 districts of India is more worrisome. Only one district of Haryana crosses half the mark, one-third districts are even less than 100 score and as low as 38 score of one of the district of Faridabad. Even the availability of basic facilities was noticed as very low in some of those districts that generate more (tax) revenue resources for state Government. A large proportion (around 50 percent and 72 percent) of villagers in the states travel more than the IMS prescribed norms (5 km) to access PHCs and CHCs/government hospital facilities, indicating access to health facilities as highly inadequate in the state with high variation across districts.

Being a highly developed state, most of the mortality and morbidity indicators of Haryana are noticed to be equal or less than the national average, whereas some middle income states (like Kerala) performed well. Gender (male) preference is more prevalent among educated families in Haryana.

The immunization received status in the state was found to be lower (only around 60 percent children receive full immunization) than the target with high variation across rural-urban residents, socio-economic stratum groups and districts. It is noticed that not only the ANC/PNC received and institutional delivery status is very low in the state as against the better performing state (Kerala) and national average but also high variation across districts, rural-urban regions and socio-economic groups. Therefore it is not surprising that neonatal, maternal and child mortalities are higher in Haryana than some of the states.

Given the fact that the existing basic health infrastructure facilities are lower than the required level of infrastructure, the state needs to increase the allocation of public resource for health sector. Though the per capita spending on health in the state has increased after the launch of NRHM in 2005, fund allocation remained lower than the required level of resources. Furthermore, being a pioneer state in the launch of publicly-financed pro-poor health insurance scheme (RSBY), the enrolment ratio was noticed to be very low in the state with high variation across districts, indicating low level of implementation status of RSBY in the state, which limits better health access for poor people and needs to be strengthened.

VI
POLICY RECOMMENDATIONS

This study has analyzed the extent of economic, health and education inequalities within Haryana. It has found a considerable level of inequality in Haryana, which requires urgent attention. Following are few policy recommendations that emerge from this study.

- Haryana, over the last three decades has witnessed a remarkable growth. However, the growth has been highly concentrated in National Capital Region (NCR). Consequently, inter district income disparity in Haryana has increased substantially. Our analysis suggests that road infrastructure, literacy rate and private investment are significant determinants of inter district income inequality. Therefore, government should introduce appropriate policy measures to remove the inter district variation in these determinants of income. It is vital that government should take some urgent steps to correct the growing inter district imbalance in private investment. Since, NCR is working as an investment magnet; there is an urgent need to develop a growth centre in western part of Haryana, which could help to bridge the growing East West economic divide. Perhaps government investment in roads and other industrial infrastructure could be used as an instrument to achieve this target.
- The economic growth in Haryana has been primarily driven by the service sector. Since the service sector generates employment for skilled and educated labour, educational development holds the key to make the growth more inclusive and reduce the inequality. Though Haryana has made substantial progress in education in the recent past, western districts are still lagging behind. Therefore efforts to improve level of education in western district are needed urgently. The cost of education is significantly higher in Haryana as compared to national average. Therefore, government should try to reduce the cost of education to make it affordable for weaker and less privileged sections of the society. Reduction in the cost of education will not only help bridge the east west divide but also improve the participation of weaker sections of society in economic growth.
- Haryana has very high rural urban and inter district disparity in health infrastructure, which is resulting in disparities in health outcome and health utilization indicators across rural urban areas and districts. Therefore, immediate steps are needed to correct the imbalance in health infrastructure. It is important that fund allocation across districts for health infrastructure should be strictly based upon a requirement based devolution criteria.

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APPENDIX

Appendix 3.1: Average Monthly Per Capita Expenditure: 1993-94 to 2011-12

State	MPCE			CAGR (% per annum)	
	1993-94	2004-05	2011-12	1993-94 to 2004-05	2004-05 to 2011-12
RURAL					
Haryana	1051.0	1436.8	1578.7	2.88	1.35
All-India	752.8	864.5	1063.8	1.27	3.01
URBAN					
Haryana	1535.6	1690.7	2935.4	0.88	8.20
All-India	1405.6	1648.7	2135.4	1.46	3.76
TOTAL					
Haryana	1176.0	1504.4	1988.8	2.26	4.07
All-India	914.6	1063.0	1370.0	1.38	3.69

Source: Estimated by author from the unit level data of NSSO 50th, 61st and 68th rounds of Consumption Expenditure Surveys using mixed reference period.

Appendix 3. 2: Average Monthly Per Capita Expenditure Across Districts by Social Groups

District	Social Group	Rural		Urban		Total		CAGR (% per annum): 2004-05 to 2011-12		
		2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	Rural	Urban	Total
Panchkula	Non Dal.	1704.0	1366.9	2298.9	2207.8	1991.3	2026.8	-3.10	-0.58	0.25
	Dalits	1157.2	1566.2	1117.6	1133.2	1136.0	1332.5	4.42	0.20	2.31
	Total	1539.2	1471.9	1888.8	1924.4	1713.9	1789.0	-0.64	0.27	0.61
Ambala	Non Dal.	1625.9	1372.5	1876.8	2775.1	1713.6	2142.6	-2.39	5.75	3.24
	Dalits	1315.1	1031.5	1383.4	1697.1	1323.8	1121.8	-3.41	2.96	-2.34
	Total	1489.1	1202.2	1790.3	2652.2	1569.6	1793.1	-3.01	5.78	1.92
Yamunana gar	Non Dal.	2199.8	1087.3	1990.5	2350.2	2097.7	1661.9	-9.58	2.40	-3.27
	Dalits	1121.5	1132.4	1165.4	1546.1	1128.8	1168.1	0.14	4.12	0.49
	Total	1825.1	1100.7	1907.7	2313.5	1858.8	1562.5	-6.97	2.79	-2.45
Kurukshetra	Non Dal.	1769.8	1839.2	4176.9	2238.1	2371.6	2030.9	0.55	-8.53	-2.19
	Dalits	1180.1	1252.7	1035.8	1556.9	1169.5	1282.2	0.86	5.99	1.32
	Total	1671.8	1579.9	4033.8	2180.5	2204.5	1796.4	-0.80	-8.41	-2.88
Kaithal	Non Dal.	1500.3	1412.2	1701.3	1945.4	1531.2	1542.4	-0.86	1.93	0.10
	Dalits	877.4	1048.2	1125.6	2140.1	902.7	1201.2	2.57	9.61	4.17
	Total	1371.4	1301.5	1620.4	1980.5	1407.1	1447.7	-0.74	2.91	0.41

District	Social Group	Rural		Urban		Total		CAGR (% per annum): 2004-05 to 2011-12		
		2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	Rural	Urban	Total
Karnal	Non Dal.	1364.9	1696.8	3112.6	3126.7	1815.5	2099.3	3.16	0.06	2.10
	Dalits	1008.6	1125.4	1305.5	1598.9	1014.8	1234.1	1.58	2.94	2.84
	Total	1255.6	1477.2	3064.9	2634.5	1614.4	1780.9	2.35	-2.14	1.41
Panipat	Non Dal.	1345.2	1998.0	2290.0	2680.6	1665.2	2228.0	5.81	2.28	4.25
	Dalits	901.0	1191.5	883.5	1904.5	899.1	1325.1	4.07	11.60	5.70
	Total	1170.0	1722.4	2104.8	2532.7	1416.0	1959.4	5.68	2.68	4.75
Sonipat	Non Dal.	1406.7	1690.9	1208.2	2399.8	1371.3	1884.7	2.66	10.30	4.65
	Dalits	814.9	1565.3	865.3	1648.6	830.0	1572.2	9.78	9.64	9.56
	Total	1208.7	1640.3	1037.6	2295.5	1170.5	1775.7	4.46	12.01	6.13
Jind	Non Dal.	1312.9	1933.1	1486.9	2311.5	1342.9	2015.1	5.68	6.51	5.97
	Dalits	699.7	1315.1	1357.7	1827.5	830.0	1375.3	9.43	4.34	7.48
	Total	1179.1	1810.0	1454.7	2259.9	1228.1	1899.5	6.31	6.50	6.43
Fatehabad	Non Dal.	1365.4	1657.5	1525.4	1633.6	1394.7	1654.6	2.81	0.98	2.47
	Dalits	958.4	987.8	680.8	1573.7	915.6	1062.2	0.43	12.72	2.15
	Total	1252.6	1555.5	1324.7	1624.1	1265.2	1563.9	3.14	2.95	3.07
Sirsa	Non Dal.	1407.4	1356.2	1334.6	2374.3	1376.7	1648.7	-0.53	8.58	2.61
	Dalits	908.0	924.8	2055.2	2099.7	951.9	1020.3	0.26	0.31	1.00
	Total	1128.3	1247.4	1381.2	2355.4	1193.1	1518.4	1.44	7.92	3.50
Hisar	Non Dal.	1353.0	1548.9	1396.0	2601.3	1364.9	1778.6	1.95	9.30	3.85
	Dalits	824.7	812.3	853.9	1809.5	831.5	907.5	-0.22	11.32	1.26
	Total	1190.4	1337.5	1255.6	2496.8	1207.5	1553.8	1.68	10.32	3.67
Bhiwani	Non Dal.	1177.3	1886.1	1290.4	1796.4	1201.4	1869.6	6.97	4.84	6.52
	Dalits	919.3	1688.9	563.6	2101.2	864.3	1728.8	9.08	20.68	10.41
	Total	1137.9	1861.3	1211.7	1816.0	1153.1	1853.4	7.28	5.95	7.02
Rohtak	Non Dal.	1462.7	2137.7	1489.4	3274.5	1471.7	2635.8	5.57	11.91	8.68
	Dalits	1020.4	1135.3	981.4	2172.2	1004.1	1452.3	1.54	12.02	5.41
	Total	1374.7	1908.9	1358.1	3116.8	1368.8	2407.2	4.80	12.60	8.40
Jhajjar	Non Dal.	1508.7	1965.2	1281.8	2421.0	1464.7	2098.9	3.85	9.51	5.27
	Dalits	909.3	1116.9	1289.8	2154.7	1016.1	1637.2	2.98	7.61	7.05
	Total	1326.2	1922.9	1285.2	2390.9	1317.1	2066.9	5.45	9.27	6.65
Mahendra garh	Non Dal.	1342.5	1708.1	1416.9	1871.4	1349.2	1724.9	3.50	4.05	3.57
	Dalits	874.1	1268.7	1317.0	1312.2	978.8	1282.6	5.47	-0.05	3.94
	Total	1253.6	1641.7	1374.7	1635.5	1268.4	1640.8	3.93	2.51	3.75
Rewari	Non Dal.	1363.3	2128.6	1315.3	2834.5	1354.6	2215.9	6.57	11.59	7.28
	Dalits	916.1	1475.4	574.8	1746.0	898.0	1551.4	7.04	17.20	8.12
	Total	1238.0	1994.7	1249.2	2381.5	1239.7	2057.1	7.05	9.66	7.50
Gurgaon	Non Dal.	3025.1	1760.7	2153.8	5915.2	2873.8	3370.9	-7.44	15.53	2.31

District	Social Group	Rural		Urban		Total		CAGR (% per annum): 2004-05 to 2011-12		
		2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	Rural	Urban	Total
	Dalits	1167.7	1356.0	1030.5	2074.0	1144.7	1608.4	2.16	10.51	4.98
	Total	2770.6	1669.8	2005.2	5151.2	2638.3	2992.2	-6.98	14.43	1.81
Faridabad	Non Dal.	1202.4	1615.9	1678.9	3938.5	1490.1	2923.2	4.31	12.95	10.11
	Dalits	852.9	1286.8	979.7	1285.4	894.0	1285.9	6.05	3.96	5.33
	Total	1083.1	1582.5	1580.9	3535.4	1351.2	2709.3	5.57	12.18	10.45
Haryana	Non Dal.	1623.5	1710.4	1837.5	3176.9	1685.8	2192.0	0.75	8.14	3.82
	Dalits	957.1	1201.8	1044.1	1700.7	973.9	1309.0	3.31	7.22	4.32
	Total	1436.8	1578.7	1690.7	2935.4	1504.4	1988.8	1.35	8.20	4.07
All-India	Non Dal.	898.3	1096.3	1734.5	2229.8	1120.5	1437.8	2.89	3.65	3.63
	Dalits	736.9	940.0	1185.4	1583.9	827.6	1081.3	3.54	4.23	3.89
	Total	864.5	1063.8	1648.6	2135.4	1063.1	1370.0	3.01	3.76	3.69

Note: In the 68th round, estimates for Mewat district are merged with Gurgaon district.
Source: Estimated by author from the unit level data of NSSO 61st and 68th rounds of Consumption Expenditure Surveys using mixed reference period.

Appendix 3. 3:Incidence of Poverty: 1993-94 to 2011-12

State	Poverty Ratios (in Percent)			Changes in poverty (Percentage Points Per Annum)	
	1993-94	2004-05	2011-12	1993-94 to 2004-05	2004-05 to 2011-12
RURAL					
Haryana	40.27	24.82	11.64	-1.4	-1.88
All India	50.24	41.78	25.73	-0.77	-2.29
URBAN					
Haryana	24.17	22.39	10.28	-0.16	-1.73
All India	31.57	25.64	13.69	-0.54	-1.71
TOTAL					
Haryana	36.12	24.18	11.23	-1.09	-1.85
All India	45.61	37.69	22.29	-0.72	-2.20

Source: Estimated by author from the unit level data of NSSO 50th, 61st and 68th rounds of Consumption Expenditure Surveys using Tendulkar poverty lines.

Appendix 3. 4: Poverty by Social Groups Across Districts

District	Social Group	Rural		Urban		Total		Changes in poverty (Percent Points Per Annum): 2004-05 to 2011-12		
		2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	Rural	Urban	Total
Panchkula	Dalits	32.29	2.57	25.30	73.62	28.55	40.92	-4.25	6.90	1.77
	Non Dal.	6.14	-	13.37	18.56	9.63	14.57	-0.88	0.74	0.70
	Total	14.03	1.36	17.51	33.08	15.77	23.59	-1.81	2.22	1.12
Ambala	Dalits	12.08	40.78	-	17.67	10.54	37.64	4.10	2.52	3.87
	Non Dal.	1.59	6.19	12.49	5.96	5.40	6.07	0.66	-0.93	0.09
	Total	6.21	23.47	10.30	7.29	7.30	16.88	2.47	-0.43	1.37
Yamunanagar	Dalits	25.27	13.34	11.22	43.54	22.93	15.95	-1.70	4.62	-1.00
	Non Dal.	7.06	29.44	3.14	3.47	5.15	17.63	3.20	0.05	1.78
	Total	13.39	24.66	3.95	5.30	9.53	17.29	1.61	0.19	1.11
Kurukshetra	Dalits	38.51	5.20	64.10	83.08	40.40	12.77	-4.76	2.71	-3.95
	Non Dal.	5.72	0.52	5.51	7.91	5.67	4.07	-0.74	0.34	-0.23
	Total	11.17	2.59	8.17	14.26	10.49	6.80	-1.23	0.87	-0.53
Kaithal	Dalits	52.66	-	53.10	-	52.71	-	-7.52	-7.59	-7.53
	Non Dal.	7.71	-	13.59	-	8.61	-	-1.10	-1.94	-1.23
	Total	17.01	-	19.14	-	17.31	-	-2.43	-2.73	-2.47
Karnal	Dalits	49.28	34.66	-	12.34	48.25	29.53	-2.09	1.76	-2.67
	Non Dal.	29.07	19.07	0.62	19.48	21.74	19.18	-1.43	2.69	-0.37
	Total	35.27	25.06	0.61	17.18	28.40	22.99	-1.46	2.37	-0.77
Panipat	Dalits	63.16	19.00	60.08	2.02	62.83	15.82	-6.31	-8.29	-6.72
	Non Dal.	27.37	2.31	4.72	8.42	19.70	4.37	-3.58	0.53	-2.19
	Total	41.49	8.01	12.01	7.20	33.73	7.78	-4.78	-0.69	-3.71
Sonipat	Dalits	61.97	8.94	66.18	-	63.23	8.21	-7.58	-9.45	-7.86
	Non Dal.	24.44	-	51.48	11.37	29.25	3.11	-3.49	-5.73	-3.74
	Total	37.00	3.61	58.79	9.79	41.86	4.89	-4.77	-7.00	-5.28
Jind	Dalits	81.65	18.45	5.31	15.17	66.53	18.06	-9.03	1.41	-6.92
	Non Dal.	22.12	6.92	41.54	0.48	25.47	5.52	-2.17	-5.87	-2.85
	Total	35.11	9.22	32.52	2.04	34.65	7.79	-3.70	-4.35	-3.84
Fatehabad	Dalits	44.14	25.88	94.70	25.43	51.94	25.82	-2.61	-9.90	-3.73
	Non Dal.	22.66	8.02	21.88	17.35	22.52	9.16	-2.09	-0.65	-1.91
	Total	28.62	10.74	39.18	18.63	30.47	11.71	-2.55	-2.94	-2.68
Sirsa	Dalits	46.37	43.73	6.49	-	44.85	40.18	-0.38	-0.93	-0.67
	Non Dal.	6.66	13.81	21.35	5.82	12.86	11.52	1.02	-2.22	-0.19
	Total	28.86	21.35	20.39	5.42	26.69	17.46	-1.07	-2.14	-1.32
Hisar	Dalits	59.19	79.26	73.75	20.17	62.55	73.62	2.87	-7.66	1.58
	Non Dal.	14.42	9.90	29.10	15.28	18.47	11.08	-0.64	-1.97	-1.06
	Total	28.19	29.81	40.67	15.92	31.47	27.22	0.23	-3.53	-0.61
Bhiwani	Dalits	41.17	9.10	98.06	6.98	49.96	8.90	-4.58	-13.01	-5.87
	Non Dal.	26.05	4.31	29.16	23.27	26.71	7.80	-3.11	-0.84	-2.70
	Total	28.35	4.91	36.62	22.22	30.04	7.92	-3.35	-2.06	-3.16
Rohtak	Dalits	41.34	22.24	61.35	5.44	49.67	17.11	-2.73	-7.99	-4.65
	Non Dal.	-	0.54	20.02	2.31	6.74	1.31	0.08	-2.53	-0.78
	Total	8.22	5.49	30.70	2.76	16.19	4.36	-0.39	-3.99	-1.69

District	Social Group	Rural		Urban		Total		Changes in poverty (Percent Points Per Annum): 2004-05 to 2011-12		
		2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	Rural	Urban	Total
Jhajjar	Dalits	35.01	-	21.27	14.59	31.15	7.31	-5.00	-0.95	-3.41
	Non Dal.	4.13	-	21.18	1.57	7.44	0.46	-0.59	-2.80	-1.00
	Total	13.53	-	21.22	3.04	15.24	0.94	-1.93	-2.60	-2.04
Mahendragarh	Dalits	50.43	7.93	18.70	70.36	42.93	27.89	-6.07	7.38	-2.15
	Non Dal.	3.57	16.10	34.37	8.23	6.35	15.29	1.79	-3.73	1.28
	Total	12.46	14.87	27.75	34.44	14.33	17.69	0.34	0.96	0.48
Rewari	Dalits	41.04	-	100.00	27.17	44.17	7.62	-5.86	-10.40	-5.22
	Non Dal.	21.59	-	31.81	4.77	23.44	0.59	-3.08	-3.86	-3.27
	Total	27.04	-	37.89	14.09	28.66	2.27	-3.86	-3.40	-3.77
Gurgaon	Dalits	22.98	8.68	64.50	0.84	29.96	5.93	-2.04	-9.09	-3.43
	Non Dal.	13.29	5.86	13.05	2.72	13.25	4.64	-1.06	-1.48	-1.23
	Total	14.62	6.49	19.85	2.35	15.52	4.92	-1.16	-2.50	-1.52
Faridabad	Dalits	74.09	-	49.96	51.92	66.28	34.83	-10.58	0.28	-4.49
	Non Dal.	32.11	7.90	12.89	3.65	20.51	5.51	-3.46	-1.32	-2.14
	Total	46.44	7.10	18.08	10.99	31.17	9.34	-5.62	-1.01	-3.12
Haryana	Dalits	47.51	23.58	46.86	25.87	47.39	24.07	-3.42	-3.00	-3.33
	Non Dal.	16.00	7.46	16.83	7.23	16.24	7.39	-1.22	-1.37	-1.26
	Total	24.82	11.64	22.39	10.28	24.18	11.23	-1.88	-1.73	-1.85
All-India	Dalits	52.70	32.28	40.02	21.57	50.14	29.93	-2.92	-2.64	-2.89
	Non Dal.	38.94	24.01	23.09	12.34	34.73	20.49	-2.13	-1.54	-2.03
	Total	41.82	25.73	25.74	13.69	37.75	22.29	-2.30	-1.72	-2.21

Note: In the 68th round estimates for Mewat district are merged with Gurgaon district.
Source: Estimated by author from the unit level data of NSSO 61st and 68th rounds of Consumption Expenditure Surveys using Tendulkar poverty lines.

Appendix 3.5: Gini Coefficients: 1993-94 to 2011-12

State	Gini Ratios (in percentage)			Changes in Gini (% per annum)	
	1993-94	2004-05	2011-12	1993-94 to 2004-05	2004-05 to 2011-12
RURAL					
Haryana	26.85	32.54	25.42	0.52	-1.02
All India	25.83	28.08	28.75	0.2	0.10
URBAN					
Haryana	26.63	34.13	39.00	0.68	0.70
All India	31.87	36.43	37.68	0.41	0.18
TOTAL					
Haryana	28.5	33.38	34.18	0.44	0.11
All India	31.72	34.65	36.51	0.27	0.27

Source: Same as table 1.

Appendix 3.6: Gini Coefficients by Social Groups, Districts and Sector

District	Social Group	Rural		Urban		Total		Changes in Gini (% per annum)		
		2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	Rural	Urban	Total
Panchkula	Dalits	16.81	15.56	16.63	28.77	18.31	27.32	-0.18	1.73	1.29
	Non Dalits	25.41	11.96	32.61	32.95	30.66	31.78	-1.92	0.05	0.16
	Total	25.12	14.67	34.39	36.01	30.91	32.25	-1.49	0.23	0.19
Ambala	Dalits	24.85	16.67	20.31	24.36	24.47	20.39	-1.17	0.58	-0.58
	Non Dalits	20.95	17.61	23.46	23.65	22.59	28.77	-0.48	0.03	0.88
	Total	24.01	19.20	24.22	25.16	24.90	31.35	-0.69	0.13	0.92
Yamunanagar	Dalits	15.83	11.50	11.12	32.71	15.18	14.64	-0.62	3.08	-0.08
	Non Dalits	36.00	16.87	24.69	22.04	31.10	29.43	-2.73	-0.38	-0.24
	Total	34.69	15.45	25.17	22.89	31.25	28.38	-2.75	-0.33	-0.41
Kurukshetra	Dalits	18.49	10.81	29.93	36.96	19.91	15.48	-1.10	1.00	-0.63
	Non Dalits	21.70	23.14	42.93	28.09	36.69	26.29	0.21	-2.12	-1.49
	Total	22.62	21.11	44.08	30.13	36.90	26.40	-0.22	-1.99	-1.50
Kaithal	Dalits	16.10	10.61	15.47	11.26	16.77	18.20	-0.78	-0.60	0.20
	Non Dalits	21.09	12.88	26.14	24.23	22.29	17.55	-1.17	-0.27	-0.68
	Total	23.10	14.65	26.34	22.91	23.96	19.11	-1.21	-0.49	-0.69
Karnal	Dalits	18.72	21.34	16.95	20.72	18.93	22.84	0.37	0.54	0.56
	Non Dalits	26.50	25.88	28.14	40.53	34.04	35.11	-0.09	1.77	0.15
	Total	26.47	27.45	28.65	40.36	34.62	34.64	0.14	1.67	0.00
Panipat	Dalits	19.34	20.82	11.01	16.14	18.76	22.94	0.21	0.73	0.60
	Non Dalits	26.35	24.29	32.68	36.01	31.98	29.85	-0.29	0.48	-0.30
	Total	26.74	26.70	34.75	34.10	32.74	30.63	-0.01	-0.09	-0.30
Sonipat	Dalits	24.62	16.44	37.59	5.70	29.02	15.76	-1.17	-4.56	-1.89
	Non Dalits	27.75	16.36	36.83	27.08	29.71	22.16	-1.63	-1.39	-1.08
	Total	30.14	16.57	39.23	26.65	32.48	20.66	-1.94	-1.80	-1.69
Jind	Dalits	16.54	19.87	10.19	17.05	22.63	20.78	0.48	0.98	-0.26
	Non Dalits	23.67	22.99	36.14	19.67	26.44	22.57	-0.10	-2.35	-0.55
	Total	26.19	24.22	31.80	19.94	27.75	23.83	-0.28	-1.69	-0.56
Fatehabad	Dalits	18.09	14.58	10.91	22.52	18.45	18.11	-0.50	1.66	-0.05
	Non Dalits	24.21	25.37	24.01	21.57	24.36	24.98	0.17	-0.35	0.09
	Total	24.35	26.20	28.03	21.87	25.14	25.75	0.26	-0.88	0.09
Sirsa	Dalits	13.97	17.05	22.05	11.88	17.14	21.93	0.44	-1.45	0.69
	Non Dalits	19.75	24.80	26.69	31.17	23.35	30.44	0.72	0.64	1.01

District	Social Group	Rural		Urban		Total		Changes in Gini (% per annum)		
		2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	Rural	Urban	Total
	Total	21.07	25.33	27.63	30.28	23.53	31.01	0.61	0.38	1.07
Hisar	Dalits	16.26	15.61	10.53	33.77	15.11	22.42	-0.09	3.32	1.04
	Non Dalits	21.84	20.35	27.06	31.75	23.47	26.81	-0.21	0.67	0.48
	Total	23.94	25.20	26.89	33.35	24.84	30.74	0.18	0.92	0.84
Bhiwani	Dalits	22.47	19.60	3.40	28.04	23.22	20.91	-0.41	3.52	-0.33
	Non Dalits	23.02	18.88	26.97	25.04	24.14	20.27	-0.59	-0.27	-0.55
	Total	23.38	19.14	28.71	25.49	24.73	20.45	-0.61	-0.46	-0.61
Rohtak	Dalits	26.96	10.86	31.79	5.42	29.92	20.75	-2.30	-3.77	-1.31
	Non Dalits	17.34	20.08	28.74	34.45	21.83	29.89	0.39	0.82	1.15
	Total	20.40	23.28	31.58	33.11	24.99	30.87	0.41	0.22	0.84
Jhajjar	Dalits	12.93	11.69	18.69	20.04	17.92	25.64	-0.18	0.19	1.10
	Non Dalits	18.06	29.02	24.09	18.87	19.64	27.75	1.57	-0.75	1.16
	Total	21.09	29.04	22.25	19.41	21.41	27.83	1.14	-0.41	0.92
Mahendragarh	Dalits	27.70	15.05	18.16	20.84	27.31	18.11	-1.81	0.38	-1.31
	Non Dalits	17.75	22.69	25.74	20.64	18.71	22.56	0.71	-0.73	0.55
	Total	20.72	22.91	23.36	23.51	21.22	23.09	0.31	0.02	0.27
Rewari	Dalits	19.94	16.84	4.72	28.67	20.39	20.99	-0.44	3.42	0.09
	Non Dalits	24.45	15.86	28.43	33.78	25.33	19.68	-1.23	0.77	-0.81
	Total	25.16	17.80	29.67	35.02	25.93	21.61	-1.05	0.77	-0.62
Gurgaon	Dalits	15.40	21.33	33.09	15.79	19.43	23.54	0.85	-2.47	0.59
	Non Dalits	49.23	29.50	34.49	41.36	48.25	48.36	-2.82	0.98	0.02
	Total	49.28	28.65	36.70	43.57	48.37	47.13	-2.95	0.98	-0.18
Faridabad	Dalits	23.84	17.13	15.28	23.85	22.24	21.95	-0.96	1.22	-0.04
	Non Dalits	24.37	29.97	26.04	36.83	26.72	42.17	0.80	1.54	2.21
	Total	26.32	29.10	26.74	39.90	28.35	42.59	0.40	1.88	2.03
Haryana	Dalits	21.83	21.18	26.04	26.05	22.80	23.89	-0.09	0.00	0.16
	Non Dalits	32.73	24.86	33.36	38.97	33.25	34.39	-1.12	0.80	0.16
	Total	32.54	25.42	34.13	39.00	33.38	34.18	-1.02	0.70	0.11
All-India	Dalits	24.05	26.21	30.16	31.80	27.8	30.32	0.31	0.23	0.36
	Non Dalits	28.64	29.13	36.61	37.97	35.4	37.24	0.07	0.19	0.26
	Total	28.08	28.75	36.43	37.68	34.65	36.51	0.10	0.18	0.27

Note: Same as table 2.

Source: Same as table 2.