

4.1 INTRODUCTION

The present chapter of the study entitled 'Results & Discussion' deals with the results of all the objectives in detail. The study has been aimed to achieve three main objectives, so the detailed discussion and analysis on these objectives have been explained in three main sections. Section 4.2 of the chapter explains the determinants of rural transformation in India in detail, where a detailed description of different determinants and their association with rural transformation has also been discussed.

Section 4.3 explains the association of urbanization, industrialization, rural industrialization and rural livelihood in Haryana in detail. Other relevant information required to achieve the objective has also been given in various sub sections of the same section. The last objective of the present research work is to check the effect of urbanization on employment, wages and livelihood of rural people in Haryana, which has been given in section 4.4 in detail. The conclusion part of each objective has also been given in their respective sections.

4.2 DETERMINANTS OF RURAL TRANSFORMATION IN INDIA

Transformation means transition of the economy from one stage to another stage of development in which societies face changes in their social, economical, political, institutional and cultural bases, whereas the common pattern of transformation of many economies has been in form of movement of economy from agriculture sector to manufacturing and followed by services (Pal & Biswas, 2010). When the economy grows over time the share of manufacturing and services increases whereas the share of agriculture sector in GDP and in total employment tends to reduce. The idea of rural transformation can also be explained in same belief where rural societies experience changes in their economies by expanding their economic activities outside the agriculture. By meaning, rural transformation can be considered a procedure of wider structural changes in the entire economy with the relative reduction in the agriculture sector and rise in industry and services with less migration of rural people to cities (Timmer 2007). At the time of globalization and fast growth in every sector globally, we can see that in some economy one sector is experiencing all kind of opportunities in

terms of access of education, health, infrastructure, communication, jobs and entertainment, on the other hand another sector is still struggling for the basic opportunities for growth and development. So the essence of rural transformation lies in notion where social, economic, political, academic and cultural differences between rural and urban gradually declines and grow by utilizing the potentials of each other. Traditionally, agriculture has been the prime sector for rural employment and income generation. But, “the shift in composition of output and occupation from agriculture to more productive nonfarm sectors can be considered as a significant spring of economic growth and transformation in rural areas” (Chand et. al, 2017).

Non agriculture sector is now well recognized in the developing economies. Many studies have reported that rural economy of India is also experiencing such transition, though the pace is seen to be slow (Papola, 2008; Maurya & Vaishampayan, 2012). The importance of the RNFE can be seen in many studies like Lewis (1954), Fie-Ranis (1961) and Harris-Todaro (1970) which pointed out that the problem of rural economies in context of disguised unemployment and low income can be solved by transferring the labour from agriculture sector to manufacturing sector, but urban sector also have some constraint to absorb the entire labor which makes RNFE more significant due to its multiple advantages in rural sector.

RNFE has occupied an important space after 1970 in India when a decline in poverty can be seen with the transferring of labor from agriculture to non-agriculture sector. A downturn in agricultural share as well as contribute of agricultural workers in National income has resulted in decline in agricultural productivity per worker and substantial increase in non-agricultural activities (Jayraj, 1994; Unni & Rani, 2000). This has created a larger scope for RNFS in rural areas.

The studies on RNFE in many developing countries of Latin America, Africa and Asia have also stressed the importance of nonfarm activities in India. It has been found that RNFS is significant in many countries in term of income and employment. These studies revealed that proportion of workers in RNFE are higher in Latin America than in Asia and Africa (Lanjouw & Lanjouw, 1995). The growth of non-agriculture sector has contributed in National income of Asia, Latin America and Africa countries. One significant reasons of the East Asian development has been the utilization of rural cheap

labour outside the traditional farming (Aoki. et al., 1997). So the developing countries like India where huge unemployment in rural area exists, should also try to follow the East Asian countries for inclusive development and rural transformation of India.

The non-farm sector includes manufacturing and industrial activities, though, it is not only confined to these activities and data are still very insufficient and often outmoded, but the evidences point to a growing importance of the non-farm economy in developing nations. Although there have been across countries dissimilarities in the implication of the non-farm economy, but half of the total income in different rural areas comes from nonfarm activities in case of developing world.

However, the importance of RNFE has been found varying among the different state. The role of RNFE in achieving the rural transformation has been favored by many researchers. The definition of RNFE, importance of RNFE, push and pull factors of RNFE has been explained in chapter-1 in detail. This chapter discusses the effect of different variables on RNFE with the help of data.

The first objective of the present study is to ascertain the main determinants of rural transformation in India after 1990s. To find out the determinants, rural literacy rate, urbanization, rural industrialization, growth of agriculture & allied sector and rural roads have been considered in the present study. RNFE has been taken as an indicator for rural transformation. The study is based on the effect of these determinants on rural non farm sector after the reforms period. Hence, in below sections, an over view of Indian rural non-farm employment sector and its relationship with other variables i.e. urbanization, rural industrialization, rural roads, rural literacy and agriculture and allied sector GDP have been discussed in detail.

4.2.1 Structure of Rural Non-Farm Sector in India

The RNFS sector has huge potentials to absorb the rural labors and its share in total rural employment has risen with time, while the share of farm employment has reduced after post reform period in India. Table 4.1 shows the growth of nonfarm employment after 1990s. The nonfarm employment of total employment in 1994-95 was 21.6 per cent, while it was 16.6 per cent during pre-reform period. The share of RNFE in rural area has improved from 21.6 per cent to 23.7 per cent in 1999-2000 and further increased to 32.1

per cent in 2009-10, which showed that RNFE has increased by almost 10.5 per cent. The expansion of manufacturing sector and other sector due to economic reform can be considered as one of the important reason behind this growth. We can also see the gender wise distribution of RNFE. Table shows that in 1993-94 male participation in RNFE was 26.0 per cent which has increased to 37.2 per cent in 2009-10, which shows more than 11 per cent point increase in 17 years. On the other side female participation has been increased from 13.8 per cent to 20.6 per cent indicating 7 per cent increase in female RNFE from 1994 to 2010. Data showed that there has been increase in RNFE participation over the time where 37 per cent male are working in RNFE compared to 21 per cent female. This shows the gender disparities in RNFE like some other sector of India.

Table: 4.1

**Gender-wise Distribution of Rural Workforce (PS+SS)¹ in Non-Farm Activities (%)
in India**

Year	Persons	Males	Females
1993-94	21.6	26.0	13.8
1999-00	23.7	28.6	14.6
2004-05	27.6	33.5	16.7
2009-10	32.1	37.2	20.6

Source: Various relevant rounds of NSSO on employment and unemployment situation in India, MoSPI.

4.2.1.1 Sectoral Distribution of Rural Workforce in India

Table 4.2 showed the sector-wise distribution of total rural workforce including male and female in farm and nonfarm activities in India. The table revealed that however the share of agriculture has decreased from 1993 to 2009, it is still considered as the major source of employment in rural areas. The perusal of the table 4.2 indicates that, the employment in agriculture and allied activities has decline from 78.4 per cent to 67.9 per cent i.e. almost 10.5 per cent point decline from 1993-94 to 2009-10. In sub-sectors, construction

¹ According to NSSO, “for a person pursuing more than one occupation, principal occupation is the one in which maximum labour time is spent. The other occupations will be considered as subsidiary occupations”

has shown significant growth from 2.4 per cent to 9.4 per cent in RNFE from years 1993 to 2009. Manufacturing sector holds second position in providing employment to rural households. The sector contributes in providing employment to 7.0 per cent of rural households in 1993-94 which has increased to 7.2 per cent in 2009-10. Trade, Hotel & Restaurants, has come out as a new sector in employment generation to rural households. The table revealed that RNFE in this sector has improved from 4.3 per cent to 6.4 per cent from 1993-94 to 2009-10 respectively. 'Transport & Communication' sector has also shown growth from 1.4 per cent to 2.9 per cent in same years. On the other side, no growth has been observed in 'Mining & Quarrying', 'Electricity, Gas & Water' and there was decline in the RNFE in 'Other Services' too over the years. The decreased share of employment in agriculture sector and increase share of RNFE may be due to distress in agriculture rather than demand pull (Papola & Sahu, 2012). The table also shows that the employment dependency on agriculture has declined and employment in RNFS has increased over the time.

Table: 4.2

Sector-wise Distribution of Rural Workforce (PS+SS) in India (in %)

Sectors	1993-94	1999-00	2004-05	2009-10
Agriculture & Allied	78.4	76.3	72.7	67.9
Mining & Quarrying	0.6	0.5	0.5	0.6
Manufacturing	7.0	7.4	8.1	7.2
Electricity, Gas & Water	0.2	0.2	0.2	0.2
Construction	2.4	3.3	4.9	9.4
Secondary Sector	10.2	11.4	13.7	17.4
Trade, Hotel & Restaurants	4.3	5.1	6.1	6.4
Transport & Communication	1.4.	2.1	2.5	2.9
Other Services	5.7	5.2	5.0	5.4
Tertiary Sector	11.4	12.4	13.6	14.7

Source: NSSO Report No. 537: Employment and unemployment situation in India, 2009-10, MoSPI.

4.2.2 Determinants of Rural Transformation in India

This section deals with the relationship between all independent variables (rural roads, urbanization, rural literacy, GDP of agriculture & allied sector and unorganized manufacturing) and dependent variable {rural nonfarm employment (RNFE)}. A general overview of all these variables has also been given below.

4.2.2.1 Rural Roads and Rural Transformation in India

Infrastructure is strongly related to economic growth (Brueckner, 2014). The studies on RNFE also found that infrastructure has positive correlation with the growth of rural nonfarm employment. Population density, infrastructure, education, electrification and irrigation are important factors of RNFE (Fabella, 1985). In many East Asian countries roads, electricity, banking, post and telegraph infrastructure has linked with RNFE. “31 per cent of the world’s rural population lives in settlements more than 2 km from a paved road (Asher & Novosad, 2017)” and 98 per cent people are lacking such access to outer markets and government services in developing countries (World Bank, 2015). Due to this transportation cost has increased which has prevented the exchange of goods, services and labour from rural areas to urban areas in many developing countries but situation can be reversed with high-quality rural roads. The studies found out that rural roads are responsible for labour movement out from agriculture. A new road decreases a 10 per cent point in the share of workers in agriculture and an equivalent increase in wage labor (Asher & Novosad, 2017). Rural roads provide the market exposure to the villagers, whom they can use for movement of goods and services and can reduce the total output cost. Rural roads have positively affected poverty in rural areas by increasing opportunities for rural people and by increasing the rural urban linkages. Construction of roads can also increase employment in nonfarm sector. Provision of rural road network is an important factor for rural people to access the health facilities, education facilities, market facilities and flow of labour thus serve as an input to socio-economic transformation, poverty reduction, holistic and inclusive rural development, national integration, achievements of Millennium Development Goals (MDG) and breaking the isolation of village communities (report 12th five year plan). Studies have found that the states with low road connectivity have relatively high poverty. “The study found that

employment in trade and transport is strongly correlated and is more influenced by basic infrastructure such as roads (Jha WP, 267).”

Road network has a significant part in facilitating transport, trade specialization, extension of market, economies of scale and economic growth and development. Transportation by roads is considered to be better compared to other means of transportation due to its flexibility in operation, accessibility and reliability for both people and goods. The road transport sector has extended after independence in terms of spread and capacity. The total road length has increased from 399942 Km. in 1951 to 4690342 Km. in 2011 (Table 4.3). This has gained the growth of 11 times during the same period. There has been growth in almost all categories of rural roads after independence including the National Highways, rural roads, state highways and urban roads.

Table: 4.3
Road Network by Categories (in kilometers) in India, 1951 to 2011

Road Category	1951	1961	1971	1981	1991	2001	2011
National Highways	19811 (4.95)	23798 (4.54)	23838 (2.61)	31671 (2.13)	33650 (1.45)	57737 (1.71)	70934 (1.51)
State highways	173723 (43.44)	257125 (49.02)	56765 (6.20)	94359 (6.35)	127311 (5.47)	132100 (3.99)	163898 (3.49)
Urban Roads	0 (0.00)	46361 (8.84)	72120 (7.88)	123120 (8.29)	186799 (8.03)	252001 (7.12)	411840 (8.78)
Rural Roads	206408 (51.61)	197194 (37.60)	354530 (38.75)	628865 (42.34)	1260430 (54.16)	1972016 (58.46)	2749805 (58.63)
Total roads (including PWD & Project Rodas)	399942	524478	914979	1485421	2327362	3373520	4690342

Source: Basic Road Statistics of India, 2008-09, 2009-10, 2010-11.

Note: Figures within parentheses indicate per cent to total road length in each road category.

The table 4.3 showed the length of National Highways have rose from 19811 Km. to 70934 Km. with a CAGR of 2.1 per cent from 1951 to 2011. The state highways roads have shown reduction from 173723 Km. in 1951 to 163898 Km. in 2011. Rural roads consists highest share (58.63 per cent) of total roads in 2011. The length of rural roads increased at highest rate from 206408 Km. in 1951 to 2749805 Km in 2011 which is of 13 times higher in same period. Rural roads includes of “Panchayati Raj roads (Zilla Parishad roads, Village Panchayat roads and Community Development/Panchayat Samiti roads), roads constructed under Jawahar Rozgar Yojana and Pradhan Mantri Gram Sadak Yojana”, which had begun in 1989-90 and 2000, respectively (Basic road statistics of India). In case of rural roads the maximum CAGR of 4.4 per cent tells the growth of rural roads from 1951 to 2011. Rural roads and other PWD rods have shown maximum share in total road network in India in 2011. Urban roads have also risen by a CAGR of 4.5 per cent between 1961 and 2011 and their length stood at 411840 Km. as on 2011. In short we can say that infrastructure facilities in rural areas strengthen the backward- forward linkages between urban and rural areas and all of these linkages generate employment opportunities in rural area where these opportunities can also be helpful to reduce disguised unemployment in agriculture sector as well as increase the productivity of farmer.

4.2.2.2 Urbanization and Rural Transformation in India

The growth of urbanization² is expected to have positive impact on rural nonfarm economy. Urban areas especially towns and rural towns act as pull factor for rural workforce to join the nonfarm sector. Studies found that most of the nonfarm employment opportunities and productive activities are found in the urban areas (Fafchamps & Shilpi, 2003). Many small scales, large scale, organized and unorganized activities are available in rural towns, towns and urban centers. The proximity to urban areas creates livelihood diversification for rural households (Bhalla, 1997). As we have

² According to census of India, “an urban is defined as:

(a) all places with a Municipality, Corporation or Cantonment or Notified Town Area

(b) all other places which satisfied the following criteria: (i) a minimum population of 5,000. (ii) At least 75% of the male working population was non-agricultural. (iii) a density of population of at least 400 sq. Km. (i.e. 1000 per sq. Mile)”

discussed that through backward forward linkages urban areas create employment, input and output market opportunities, services and infrastructure facilities to the rural households. Productivity and income from non-farm establishments have been higher in the province where rural towns are more evenly spread than of scattered settlements in terms of forward and backward linkages (Papola, 1992). The strong backward forward linkages between urban centre and rural area can play crucial role in inclusive and sustainable growth of any country. The proximity to urban areas is an important determinant for the growth of RNFE because in many countries industries are developed near industrial area or peri-urban area within the radius of 25-30 mile of a major economic centre (Yusuf & Kumar, 1996; Fafchamps & Shilpi, 2003). This shows that the growth of rural non farm sector depends on urban areas. The table 4.4 census data shows that there has been growth in total and urban pollution from 1951 to 2011. Though the pace of urbanization is not so high in India but urban population has increased approximately 2 times after independence from 17 per cent in 1951 to 31 per cent in 2011. After independence first decade has shown the substantial growth of 3.5 per cent growth rate in 1951 due to entry of migrants and refugees in India. But in next decade it has slow down to 2.34 per cent.

Table: 4.4
Urban Population of India (1951 to 2011)

Census Year	Percent of urban Population to Total Population	No of Towns (ST/CT)³	Decennial Growth Rate in Total Urban Population (%)	Average Annual Exponential Growth Rate of Total Urban Population (%)
1951	17.29	2843	41.40	3.46
1961	17.96	2365	26.41	2.34

³ According to Census, “all administrative units that have been defined by statute as urban like Municipal Corporation, Municipality, Cantonment Board, Notified Town Area Committee, Town Panchayat, Nagar Palika etc., are known as Statutory Towns. Administrative units satisfying the following three criteria simultaneously are treated as Census Towns: i) A minimum population of 5,000 persons ; ii) 75 per cent and above of the male main working population being engaged in non-agricultural pursuits; and iii) A density of population of at least 400 persons per sq. km. (1,000 per sq. mile).”

1971	19.91	2590	38.23	3.24
1981	23.33	3378	46.14	3.79
1991	25.71	3768	36.44	3.11
2001	27.78	5161	31.51	2.74
2011	31.16	7935	31.80	2.76

Source: Population census of India, Office of the Registrar General, India and author's calculation.

The reason of this slowdown may be the standardization of development of urban settlement. In 1981 it reached to the highest of 3.8 per cent growth rate and after that the decrease in growth rate was observed. The 1991 urbanization policy was expected to boost the urbanization but it couldn't meet the expectations due to low non agriculture sector and problems of housing and basic amenities in urban areas.

The table 4.5 showed top 10 urbanized states and UTs in India according to Census, 2011. Where Delhi (97.50) has been found most urbanized UT of India followed by Chandigarh (97.25), Lakshadweep (78.07) and Daman & Diu. The reasons of the higher urbanization are diversified income and employment opportunities available in these areas.

Table: 4.5
Top 10 Urbanized States and Union Territories of India

State	% of Urban Population
Delhi	97.50
Chandigarh	97.25
Lakshadweep	78.07
Daman & Diu	75.17
Pondicherry	68.33
Goa	62.17
Mizoram	52.11
Tamil Nadu	48.40
Kerala	47.70
Dadra & Nagar Haveli	46.72

Source: Population census of India, 2011, Office of Registrar General, India.

4.2.2.3 Literacy and Rural Transformation in India

The earnings of an individual tends to increase with the increase in years of schooling (Psacharopoulos, 1988) and one can deal in any disequilibrium situation of employability with the help of education (Welch, 1970; Schultz, 1975). The education play a vital role to increase growth of RNFE, enhance the qualification required for many nonfarm jobs, on the other hand it also enhances the ability to work in efficiently among different income producing activates in farm and nonfarm sector (Huffman, 1980). Secondary education improves entrepreneurial and managerial skills with exposure to many business activities; while primary education improves the labour force productivity. The more educated person tends to move to non-agriculture sector for high wages and high profit by generating self-employment in nonfarm sector. In the rural non agriculture sector, worker with higher education are supposed to be engaged in self RNFE due to their exposure to different opportunities associated with the same. A person with better education can have relatively permanent and well-paid jobs in RNFE (Shylendra & Thomas, 1995) whereas illiterate person seasonally migrate to urban areas and get low wages with unskilled works. Many studies have shown that workers with better education have given up their family occupation and found better opportunities in nonfarm sector (Sidhu & Toor, 2002; Anilkumar, 2012).

The table 4.6 shows the literacy rate by residence for male and female after independence. It can be observed from the table that the rural literacy rate has improved from 12.1 per cent to 36 per cent from 1951 to 1991 respectively and has risen additional to 68 per cent in 2011. Similarly, the urban literacy has improved from 34.59 per cent in 1951 to 84.1 per cent in 2011. The growth of literacy for male and female has found to be higher in both rural and urban areas. But the per cent increase in literacy has been higher in rural areas from 2001 to 2011 in contrast to urban areas. The same table shows that the higher increase of 12.05 per cent can be seen in rural female from 2001 to 2011. This increase in literacy rate in rural areas, especially for female can attribute to the literacy mission of government of India, which can be directly linked to the transformation of rural areas.

Table: 4.6**Literacy Rate by Residence for Male and Female after 1951**

Year	Rural Literacy			Urban Literacy			Combined (Rural + Urban)		
	Total	Female	Male	Total	Female	Male	Total	Female	Male
1951	12.1	4.87	19.02	34.59	22.33	45.6	18.32	8.86	27.15
1961	22.5	10.1	34.3	54.4	40.5	66	28.31	15.35	40.4
1971	27.9	15.5	48.6	60.2	48.8	69.8	34.45	21.97	45.96
1981	36	21.7	49.6	67.2	56.3	76.7	43.57	29.76	56.38
1991	36	30.17	56.96	67.2	64.05	81.09	52.21	39.29	64.13
2001	59.4	46.7	71.4	80.3	73.2	86.7	64.83	53.67	75.26
2011	67.8	58.75	78.57	84.1	79.92	89.67	74.04	65.46	82.14
% Increase in 2001 over 2011	14 (8.4)	26 (12.05)	10 (7.17)	5 (3.8)	9 (6.72)	3 (2.97)	14 (9.21)	22 (11.79)	9 (6.88)

Figures in parentheses show the change in per cent from 2001 to 2011.

Source: Population census of India, 2011, Office of Registrar General, India.

4.2.2.4 Agriculture & Allied Sector and Rural Transformation in India

Agriculture is found to be responsible for emergence, growth and sustainability of nonfarm sector. The process by which agricultural growth contributes to non-agriculture sector is known as agriculture induced non-farm sector. High productivity in agriculture can lead to investment in other nonfarm activities.

Hirschman has shown weak linkage of agriculture with other sectors due to its less purchase of capital goods from other sectors in a traditional sector. Mellor and Lele (1973) argued that the modern agriculture which is based on high productivity and less cost techniques can be linked with non-agriculture sector due to its linkages. There has been positive relation between earnings per worker in farm sector and development of nonfarm activities (Chadha, 1986; Papola, 1987; Rosegrant & Hazell, 2000).

Literature suggests that there are many linkages associated with agriculture and non-agriculture sector like production, consumption, productivity, factor market and reverse linkages. But, most important linkages are production and consumption linkages, one the other hand others can be seen as effects of the same linkages.

The perusal of table 4.7 shows that the agricultural & allied sectors comprised about 57 per cent of overall GDP with 70 per cent workers involved in the same sector in 1950s. Though acceleration can be seen in agriculture and allied sector mainly in phase 2 and phase 3(i.e.70s & 90s), yet a reduction in the share of agriculture and allied sector in overall GDP has been witnessed.

The reason can be seen in low growth of this sector in contrast to the other sectors of the economy. While the share of agriculture and allied sector in total GDP has decline sharply from 44 per cent during 1972-73 to 14 per cent in 2012-13. On the other hand, workers engaged in same sectors have reduced from 70 per cent to 55 per cent in the same period.

Table: 4.7
Agricultural & Allied Sectors GDP and Employment

Years	Share of Agriculture and Allied Sectors in Overall GDP (%)	Share of Workers Engaged in Agricultural and Allied Sectors to Total Number of Workers (%)
1952-53	56.5	69.8
1972-73	43.5	69.7
1992-93	29.3	64.8
2012-13	14.3	54.6

Sources and Notes: “(1) Registrar General of India: *Census* data for various years, Office of the Registrar General of India, New Delhi. (2) The data for workers are for Census years 1951, 1971, 1991, and 2011. (3) Central Statistical Office (CSO): *Annual Accounts* for various years, Ministry of Statistics and Programme Implementation, New Delhi.”

It shows that the movement of workers from agriculture to industry and services has been very slow in phase I and phase II but due to economic reforms in 1990, the pace transformation increased in phase III. These can be considered as well-known wide trends in the share of agriculture in GDP and employment.

Table: 4.8
Contribution of Allied Sectors in Total Agriculture and Allied Sector GDP

Years	Agriculture and Livestock (%)	Forestry (%)	Fisheries (%)	Total GDP at Constant 2004-05 Prices (in Rs. crore)
1952-53	74	24.3	1.8	162,112
1972-73	75.3	22.1	2.7	258,070
1992-93	83.3	12.8	3.9	406,404
2012-13	85.1	9.7	5.2	745,385

Sources: Central Statistical Office (CSO): *Annual Accounts* for various years, Ministry of Statistics & Programme Implementation, New Delhi.

The table: 4.8 show three major components of agriculture and allied sectors in India i.e. livestock, forestry, and fishery. The share of agriculture including livestock has contributed major share in total GDP and its contribution is still exists. On the other hand share of forestry and fisheries sector has showed reduction. The share of agriculture including livestock has increased from 74 per cent to 85 per cent from 1952-53 to 2012-13 respectively. In allied sector, forestry sector has come down from 24 per cent in 1950s to 10 per cent in 2012-13. Table shows, however, fisheries account a little share in total allied sector but its contribution has increased from 1.8 in 1950s to 5.2 in 2012-13, shows the healthier growth of this sector.

4.2.2.4.1 Production and Consumption Linkages between Agriculture and Non-Farm Sector

The growing farm sector demand for agro processing, marketing, trade, transport and selling & distributing the agriculture produce makes the example of forward linkages of production. The backward linkages are generated in terms of demand of agriculture production itself by other sectors.

Since the income of farm household rises, the share of their expenditure on non-food items increases with a considerable rate (Mellor & Lele, 1973; Hossain 2006). The consumption linkages have been found stronger than of production linkages in many areas (Haggblade et al., 1989, Hazell & Haggblade, 1990). Studies show that both rural and urban informal sectors are closely dependent on agricultural output for processing, grinding, milling and related activities as agriculture output acts as intermediary between farm and nonfarm activities. There is a several literature which found strong linkages between farm and nonfarm sector. Green revolution in India has increased the demand for regionally produced labour-intensive rural non-farm goods and services (Mellor, 1976). There are forward linkages associated with agriculture and rural nonfarm sector like agro processing, marketing and transport facilities. Apart from this, backward linkages in favor of increased demand for inputs like pump sets, seed drillers and mechanical ploughs also exists. As the economy gets advancement in the agriculture sector, it also helps in changing the nature and structure of non-farm sector (Bhalla, 2004).

After independence in early phase of 1952-53, agriculture and allied sector has contributed to 57 per cent share in total GDP with 70 per cent workers engagement in the same sector. Though, there have been growth in agriculture and allied sector in phase II (1972-73 to 1992-93) and phase III (1992-93 to 2012-13), but the share of the sector in total GDP has decline in same period from 44 per cent to 14 per cent. The share of employment has also reduced from 70 per cent in 1950s to 55 per cent in recent years due to shift of workers to industry and service sector. The importance of agriculture and livestock sector can be seen under the fact of increasing GDP from 72 per cent in 1950s to 85 per cent in 2012. The percentage share of forestry has decline from 24 per cent to 15 per cent in from 1950s to 2012-13 respectively. The performance of the fisheries sector has been better as compared to the agricultural sector during all three reference phases (table 4.8).

4.2.2.5 Rural Industries and Rural Transformation in India

The contribution of industrial sector is well established in providing the growth and employment in entire economy. Rural industries or rural enterprises constitute the major part of rural nonfarm sector and its effect on RNFE need to be investigated independently. Rural industrialization not only provides employment to the rural people even it reduces the gap between rural and urban areas. Rural industrialization shifts the local labour from agriculture to industry sector. It helps in reducing the disguised unemployment in agriculture and increases per capita income. The growth of rural industries can be influenced by certain demand and supply side factors. The agriculture sector demands several tools and material from the industrial sector, on the other hand developed agriculture boosts the agriculture and industry linkages by providing raw material to industrial sector. One more key aspect of agri-industry linkages is supply of rural labour, which acts as necessary push factor for rural industrialization when there is adverse man-land ratio. Rural industries are not homogenous nature and different category of industries depends upon the historical path and stages of development. In India there are many types of rural industries including agro base industries, food

processing industries, forest based industries, minerals based industries, traditional industries and dairy industries etc.

Manufacturing industries in rural areas or adjacent to rural areas can absorb extra labor of villages and can help in increasing the income of rural households in developing countries. Rural industrialization has several linkages with urban industries in many countries like Japan, South Korea, Taiwan and China. Commercialization and specialization of agriculture has made the rural industrialization as a specialized activity rather than a part time activity. The rural industries have been based on local resources with strong linkages with agriculture sector.

Table: 4.9
Employment in Organized and Unorganized Sector of India (in millions)

Year	Organized	Unorganized	Total	Unorganized (%)
1973-74	18.82	216.65	235.47	92.01
1978-79	21.24	247.84	269.08	92.11
1983-84	24.01	280.53	304.54	92.12
1988-89	25.71	299.55	325.26	92.10
1991-92	26.73	315.17	341.90	92.18
1994-95	27.23	347.04	374.27	92.72
2000-01	28.15	369.73	397.88	92.93
2004-05	26.46	431.02	457.48	94.22
2009-10	28.29	436.98	465.27	93.92

Source: Collected from various round of NSSO on Employment and Unemployment, MoSPI.

The importance of unorganized or informal sector in India can be seen under the fact of its absorption of highest amount of labour. “The unorganized sector consists of all unincorporated private enterprises owned by individuals or households engaged in the sale and production of goods and services operated on a proprietary or partnership basis and with less than ten total workers” (National Commission for Enterprises in Unorganized Sector). The unorganized sector is also “consists of casual and family

workers; self-employed persons in un-organized sector and private households; and other employed unorganized enterprises that are not eligible either for paid, sick or annual leave or for any social security benefits given by the employer” (C. Tholkappian,2014). The informal sector in India also creates employment opportunities which contribute in a large amount of employment and national domestic product. Though, the contribution of unorganized sector is not much but still dominating in terms of employment generation. This feature of employment absorption makes this sector dominant instead of a residual sector. Table 4.9 shows that above 90 per cent of total workforce have worked in informal sector in India from 1973 to 2009. In this regard after excluding agriculture sector, the leading contributors of informal employment are manufacturing, construction and trade. This shows the importance of unorganized manufacturing in income and employment generation for entire economy.

Table 4.10 shows the number of enterprises and employment in unorganized manufacturing form 1994-95 to 2010-11. The aggregate number of enterprises in 1994-95 including rural and urban were 14.5 million which were providing the employment to 33 million workforces in the same year. The share of OAMEs has maximum in all enterprises with the maximum employment to people (22 million). The OAMEs are more in rural areas as compared to urban areas in term of number of enterprises and employment in the same. While in case of NDME and DME taken together, the number of enterprises and employment are more in urban areas as compared to rural. In 2000-01, total unorganized manufacturing enterprises were 17.02 million providing employment to 37.08 million people. In total industries OAMEs accounts maximum number of industries and employment in both rural and urban areas, but the number of industries and employment under OAMEs are higher in rural areas (11.05 million units and 19.14 million employed persons) as compared to urban areas (3.60 million units and 5.91 million employed persons). NDMEs accounted for 1.71 million units followed by DMEs with 0.68 million units. While in case of employment in the contribution of DMEs (0.65 million) is higher than that of the NDMEs (0.56 million). During this period, the number of rural enterprises has almost double to that of the urban areas. In 2005-06, the number of enterprises are 17.07 million units with the employment to 36.44 million people,

likewise earlier period OAMEs are maximum in number i.e. 14.61 million followed by NDMEs (1.77 million) and DMEs (0.68 million) which are providing employment to 23.68 million people followed by DMEs (6.97 million) and NDMEs (5.77 million).

Table: 4.10
Number of Enterprises and Employment in Unorganized Manufacturing in India
by Type of Enterprise (figures in '000)

Type of Enterprise	No. of Enterprises			Employment		
	Rural	Urban	Combined	Rural	Urban	Combined
1994-95						
All Enterprise	10,497	4,007	14,504	22,126	11,077	33,203
OAMEs	9,535	2,715	12,250	17,845	4,817	22,662
NDMEs	668	932	1,600	1,829	3,057	4,886
DMEs	294	360	654	2,452	3,203	5,655
2000-01						
All Enterprise	11,935	5,089	17,024	23,986	13,095	37,081
OAMEs	11,058	3,607	14,665	19,147	5,914	25,061
NDMEs	630	1,082	1,712	1,933	3,629	5,562
DMEs	247	400	647	2,906	3,552	6,458
2005-06						
All Enterprise	12,128	4,943	17,071	23,458	12,985	36,443
OAMEs	11,109	3,504	14,613	18,021	5,666	23,687
NDMEs	745	1,025	1,770	2,384	3,395	5,779
DMEs	274	414	688	3,053	3,924	6,977
2010-11						
All Enterprise	10,115	7,095	17,210	18,510	16,378	34,888
OAMEs	9,138	5,292	14,430	13,213	7,632	20,844
Estt.	977	1,803	2,780	5,298	8,746	14,044

Source: Calculated from NSSO, 1998 (Report No 433), NSSO, 2002 (Report No. 478, 479) & NSSO, 2008 (Report No. 525), NSSO, 2011 (Report No, 549), MoSPI.

In 2010-11 OAMEs again contributes more in number and employment both in rural and urban area, where OAMEs provides higher employment to rural people than urban people. However the total number of enterprises has been improved from 17.07 to 17.21 million units, the rural enterprises units and employment have come down from 12.12 million to 10.11 million units and 23.46 million to 18.5 million, respectively. The comparison of rural – urban enterprises in different types of enterprises shows no variation in earlier composition of employment in unorganized manufacturing sector in India. The number of NDMEs and DMEs enterprises has expanded after 2000-01 in contrast to a reduction in the preceding period. The table is shows many differences between 2005-06 and 2011-12 as compared to the earlier periods. Rural areas have observed a sharp decline in number of enterprises and employment both whereas positive changes can be seen in urban area. The reason behind this decline in rural areas is due to reduction in OAMEs. On the other hand number of enterprises and workers in OAMEs compared to establishment has increased in urban areas. It shows the trends of urbanization in the unorganized fragment of the manufacturing sector on the one side and shifts from OAMEs to the bigger sized establishments (NDMEs and DMEs) on the other side.

The Indian unorganized manufacturing sector involves a large number of enterprises (about 17.21 million in 2010-11). The data found that most of these enterprises are situated in rural areas as compare to urban areas. It can be seen that the absolute number of enterprises in rural and urban areas has increased during 1994-95 to 2000-01. The share of OAMEs in total number of enterprises and in total employment is observed to be higher. Table 4.11 showed that the share in total enterprises and employment in rural enterprises in total unorganized manufacturing enterprises is at a significant level of 59 per cent and 53 per cent in 2011, respectively. As compared to the all establishments, the share of rural OAMEs is higher. It recognizes the bias of OAMEs in favor of rural areas whereas larger sized units i.e. establishments are more near to urban centre. But the share of rural enterprises in gross value added (GVA) does not correspond to the shares of total enterprises as well as employment. Though the GVA in rural OAMEs has been more than 65 per cent from 2000-01 to 2005-06 and reduced to 52 per cent in 2011-12. But it is

found lower than their share in enterprises and employment which was around 75.4 per cent (2000-01), 76.02 per cent (2005-06) and 63.33 per cent (2011-12).

Table: 4.11
Share of Rural Enterprises in Total enterprises & Employment in India

Share in Enterprises (%)				
Type	1994-95	2000-01	2005-06	2010-11
OAMEs	77.84	75.4	76.02	63.33
NDMEs	41.75	36.78	42.1	35.14**
DMEs	44.96	38.15	39.89	
Rural All*	72.37	70.1	71.05	58.77
Share in Employment (%)				
Type				
OAMEs	78.74	76.4	76.08	63.39
NDMEs	37.43	34.75	41.25	37.72**
DMEs	43.37	45	43.76	
Rural All*	66.64	64.69	64.37	53.06

* Share of rural enterprises in all enterprises. ** Contains both i.e. NDME & DME.

Source: Calculated from NSSO Rounds (51st, 56th, 62nd and 67th), MoSPI.

4.2.3 Analysis and Discussion

To ascertain the functional relationship between dependent variable RNFE and independent variables (rural unorganized manufacturing industries, urbanization, rural literacy, rural road and GDP of agricultural & allied sector), multivariate regression analysis has been employed. The regression result is presented in Table 4.12. The earlier literature argues that rural nonfarm employment is influenced by the major factors such as unorganized manufacturing in the area, level of urbanization, literacy rate, rural road and GDP of agriculture and allied sector. However, degree of influence of these factors on the nonfarm employment varies. Thus, this study has made an attempt to empirically examine their impact in the Haryana region. As presented in table 4.12, with various combinations, urban population in total population (UTP) has been found to be positive and statistically significant at one per cent level of significance.

Table: 4.12

Estimated Parameters of Multivariate Regression Analysis for All Models

Coefficient	Panel Regression model						
	Model I	Model II	Model III	Model IV	Model V	Model FE	Model RE
UM	39.64*** (0.00)	27.38*** (0.00)	27.42*** (0.00)	42.16*** (0.00)	26.59** (0.01)	24.96** (0.03)	26.59** (0.01)
UTP	86.23*** (0.00)	48.61*** (0.00)	48.48*** (0.00)	85.42*** (0.00)	48.10*** (0.00)	46.83*** (0.00)	48.10*** (0.00)
LR	60.57*** (0.00)	44.70*** (0.00)	44.58*** (0.00)	60.95*** (0.00)	45.32*** (0.00)	53.28*** (0.00)	45.32*** (0.00)
RRG	-0.211603 (0.289)	-0.021041 (0.906)	-	-	-0.029004 (0.896)	-0.071731 (0.757)	-0.029004 (0.896)
RRP	-	-	-39.14 (0.937)	-1014.06* (0.07)	39.71 (0.953)	-89.59 (0.904)	39.71 (0.953)
AGRP	0.000314 (0.380)	-	-	0.000515 (0.162)	-0.000061 (0.865)	-0.000107 (0.771)	-0.000061 (0.865)
AGNSA	-	0.000183*** (0.00)	0.000183*** (0.00)	-	0.000185*** (0.00)	0.000179*** (0.00)	0.000185*** (0.00)
Constant	-59.812830*** (0.00)	-36.966670*** (0.00)	-36.902430*** (0.00)	-62.265430*** (0.00)	-36.247380*** (0.00)	-38.603250*** (0.00)	-36.247380*** (0.00)
Observations	92	92	92	92	92	92	92
R²	0.678400	0.752800	0.752800	0.686300	0.752900	0.751600	0.752900
Cluster by	State	State	State	State	State	State	State

p-value are given in parentheses.

*Statistically Significant at 10 percent level of significance, ** Statistically Significant at 5 percent level of significance, *** Statistically Significant at 1 percent level of significance.

The result explores that urbanization is paramount in improving quality of life in rural economy. As per the analysis, one unit increase in share of urban population in total population induces the rural transformation/ RNFE in the range of 46.83 to 86.23 persons. This relationship conveys a possibility of linkage between demand from urban population and supply of rural areas. As a result, employment opportunities in the rural areas have been increased. Here also the Centre periphery rules applicable where the growth and share of developed area/region increases the chances of growth of near periphery regions.

Similarly, another major variable in rural transmission is unorganized manufacturing activities. An association between nonfarm rural employment and unorganized manufacturing activities is found to highly statistically significant in case of all the models. This variable was found to be statistically significant at one per cent level of significance in regression models (I), (II), (III), (IV). This gives a sense that one per cent increase in industrial activities encourages the rural transmission by creating non-farm employment for a range of 24.96 to 42.16 persons. This relationship also depends upon the type of activity that the rural households perform. These unorganized activities are generally associated with low level of income and if high, depend on the type of activity. Non-farm employment includes all the activities from small petty to accounting. Therefore, increase in the number of people in the unorganized sector provides an income source for the rural households. This in turn, increases the non-farm employment participation.

In this regression model, rural literacy rate also establishes a positive association with the dependent variable rural non-firm employment, which is in line with the earlier literature. The study reveals that one per cent increase in literacy rate can scale up the non-firm employment ability of rural population in the range of 44.58 to 60.95 persons. This is because, education act as an asset for the rural households to participate and grab the opportunities in the non-farm sector. The relationship between non-farm employment and level of education of residence is known to be strong and positive. This implies that higher level of education enables an individual to participate in better job in the nonfarm sector.

Spatial variation in development and socio-economic indicators around urban centre presents a complex situation. In case of physical infrastructure, rural roads connectivity is an important determinant for providing jobs in rural areas and employment for rural population. Road connectivity helps the rural individuals to get better job opportunities in different urban areas. In addition, it also supports their connectivity within the rural areas. For defining this parameter, the road density is calculated by dividing total rural road with the total geographical area.

This relationship is found to be complex over the literature. Result based on the estimated model explores an inverse relation between road infrastructure and rural nonfarm employment. This shows that one-kilometer extension of road connectivity may probably decrease employability for 1014 person in the rural nonfarm sector (at ten per cent level of significance) in the Model (IV). This is, because, it is assumed that the connectivity between the rural and urban center gives the opportunity for rural households to migrate for work in urban areas. Better road connectivity facilitates the daily migration of rural people to urban areas for better employment opportunities. Therefore, the relationship with rural nonfarm employment is found to be negative and vice versa. To get clear deep insight about the relationship between road connectivity and non-farm employment, a separate study can also be done.

Growth and share of agriculture and allied sector also have an impact on rural nonfarm employment. The ability of agriculture to attract a large number of the labour force is, however, limited. Several districts of different states, reported no increase in labour productivity (Bhalla & Singh, 2001). To overcome this problem, the incremental labour force can be significantly employed through sectoral diversification in rural areas. In the same way agricultural & allied GDP per hectare net sown area (AGNSA) is positively related with the nonfarm employment at one per cent level of significance in the combination model. However, this association is minimal. This may occur due to the fact that rural people might be seeking shelter in activities outside the farming.

The fixed effect and random effect also reveal that the variables like Unorganized Manufacturing, Urbanization, Literacy and Agriculture GDP/ Total Geographical area

have significant influence on the nonfarm employment in the rural areas. All these variables are found to be an important indicator of rural transformation.

Based on the Huasman test, the study found the Huasman test value at 0.8267 with a p value of greater than 0.05. This is indicating that random effect model is most appropriate for the present study. Hence, result of random effect model has been considered. The proportion of rural transformation is explained by all these four factors in a range of 67 per cent to 75 per cent in different models. Moreover, the significance of these factors in all panel regression models indicates the robustness of these factors in transforming rural area.

4.2.4 Conclusion

Based on the estimated results, it is observed that rural nonfarm employment is strongly determined by the urbanization, rural unorganized industries and literacy rate only. Coefficient of these variables is highly statistically significant with one percentage level. GDP of agriculture and allied sector has also shown positive association with RNFE. However the level of association is minimal. On the other hand, the study did not find any association with variable rural connectivity. This variable is found to be statistically insignificant. Hence, it is proposed that, if government is in view of increasing the income of farmers, than a good policy initiative should be taken in investing in these sectors.

4.3 ASSOCIATION BETWEEN URBANIZATION, INDUSTRIALIZATION, RURAL INDUSTRIALIZATION AND RURAL LIVELIHOOD

Industrialization and Urbanization are generally used as a sign of modernization. As an economy shifts from agriculture to manufacturing, industrial value added as a share of GDP also increases. This shift also increases urbanization by rural to urban migration. Urbanization helps in moving the different economic activities in cities and metropolitan areas, which further generates economies of scale. So a strong relationship exists between urbanization and industrialization. The towns can also perform as local centers that use to establish networks with different rural regions. It is said that “industrialization and

urbanization are just like brothers that grow and develop together and developed each other” (Lexicon Universal Encyclopedia, 1997). All through the historical backdrop of human progress, urbanization happened to be near the river areas as it used to provide water and sustenance needs of huge population. In case of industrial revolution, industries were setup in the same urban areas where all resources in form of labour and water were available.

In 20th century one of the most impressive transformations of Chinese economy has been due to urbanization and industrialization. There exists a correlation between urbanization and industrialization (Petty & Kuncoro, 2016). It is also said that industrialization cannot be attained sans a simultaneous process of urbanization (Pal & Bisbas, 2009).

Industrialization is again associated with the rural industrialization. Rural Industrialization can have different importance for a different country or local context. The regional development of many large rural areas of China is due to fast growth of industries (Xiaojian, 2002). It enhances the overall development and living standard of people in such areas by reducing rural poverty. It also creates employment opportunities in rural area with the help of rural industries which again leads to the betterment of rural lives. Theories explain that when industrial sector grows, it provides space for rural industries to grow. The rural industrialization has been influenced more by the industrial growth in urban areas rather than agriculture sector within a state (IMAR, 2014). The whole evidence suggested a significant existence of urban linked rural industrialization in the state. So it is also important to recognize implications of such industrialization for livelihood of rural people.

In this section, association between urbanization, industrialization, rural industrialization and rural livelihood in Haryana has been studied and discussed. For this, district level information regarding the above variables has been used. First of all, the trends and growth in the above variables have been presented and thereafter association between them has been discussed.

4.3.1 Urbanization in Haryana

In this process state Haryana has also contributed in the growth of nation's development seeing that the big cities like Gurgaon, Faridabad, Panchkula are the part of Haryana state. These regions have been a boon for the development of the state as well as for whole country. Urbanization in Haryana has been increased from 28.9 per cent in 2001 to 34.7 in 2011 (Table 4.14) and plays a significant role in growth due to its proximity with other developed states. But, there is variation among the districts and because of that the fruits of growth cannot be shared by everyone. Hence, it is important to investigate the level, trends and pattern of urbanization in Haryana.

The table 4.13 shows the administrative setup of Haryana in 2001 and 2011. After the census 2001 two new districts in Haryana i.e. Mewat and Panchkula has been formed and the number of districts have been increased from 19 to 21 as depicted in the table. Table 4.13 shows that number of sub-districts in Haryana has increased for 67 in 2001 to 74 in 2011. The population residing in rural area accounts for 65.21 per cent of Haryana's total population and the decadal rate of growth in rural population is 10 per cent (Table 4.14).

Table: 4.13
Administrative Setup in Haryana

Sr. No	Particulars	2001	2011
1	No. of Districts	19	21
2	No. of Sub Districts	67	74
3	No. of Villages	6955	6841
4	Statutory towns (ST)	84	80
5	Census Towns (CT)	22	74
6	Urban Agglomerations	11	12
7	Out Growths	15	15

Source: Population census of Haryana, Office of Registrar general, 2011.

However, surprisingly number of villages has been decreased from 6955 in 2001 to 6841 in 2011. This decline in number of villages could be due to growth of urban area in

Haryana. The Census of India, 2011 also shows that there has been unexpected increase in the census towns (CTs) in India, which has increased from 22 in 2001 to 74 in 2011. Number of total towns (STs & CTs) were 106 in 2001 in state that has increased to 154 in 2011. In these 74 census towns, 48 are transformed from village to CT. A very little growth can be seen in urban agglomeration but no growth has been seen in outgrowth in Haryana.

4.3.1.1 Urban Population and Towns in Haryana

The economy of Haryana predominantly has been based on agriculture. Due to more share of agriculture than industry and services, the level of urbanization was very low before independence, which has made Haryana's economy a rural based economy. The level of urbanization was less than 15 per cent before independence. However, the partition in 1947 had increased the pace of urbanization in Haryana due to in-migration of refugees to Indian Punjab and Haryana (Goel, 2011). The urbanization has increased from 13.39 per cent in 1941 to 17.07 per cent in 1951. This increase shows the growth of urbanization throughout this period.

Table 4.14 shows that, before the formation of Haryana in 1966 as a separate state, urbanization was less than nation average, but after 1966, Haryana has witnessed an increase in urbanization by approximately 4 per cent. It has increased from 17.66 per cent to 21.88 per cent from 1971 to 1981 and again to 24.63 and 28.92 per cent in 1991 and 2001, respectively.

This transformation occurred due to its increasing share in manufacturing and service units available in different urban pockets of the state. However, green revolution has also triggered the growth in several sectors. In 2011, the urbanization in Haryana has been recorded to 34.79 per cent of total population, which is more than the national average of 31.16 per cent. As per Census 2011, Haryana forms 2.09 per cent of the total population of the country and share of urban population to total urban population of the country is 2.34 per cent. Data also shows that population of Haryana is larger than the population of countries like Australia, Ghana and Sri Lanka (Census, 2011).

Table: 4.14
Urban Population and Towns in Haryana, 1901-2011

Census Year	Urban population (in %)	Towns (statutory & census town)
1901	12.42	54
1911	10.77	36
1921	11.30	39
1931	12.38	41
1941	13.39	45
1951	17.07	62
1961	17.22	61
1971	17.66	65
1981	21.88	81
1991	24.63	94
2001	28.92	106
2011	34.79	154

Source: Population census of Haryana, Office of Registrar General, Haryana.

The decadal growth of population has declined from 28.43 per cent in 1991-2001 to 19.90 per cent in last decade of 2001-11. The decadal growth of urban areas was recorded to 44.25 per cent in 2001-11 in contrast to 10 per cent in rural areas during last decade. Haryana has witnessed the increase in number of towns (statutory & census) from 1901 to 2011. In 1901, there were only 54 towns in Haryana, which has increased to 154 in 2011. The increase in growth of towns shows the increasing trend of urbanization in Haryana.

4.3.1.2 District wise Urban Population, Its growth and Number of Towns

The second column of table 4.15 shows the per cent of urban population to the total population in different districts of the state. The perusal of the table 4.15 indicates that the districts, which are relatively urbanized and industrialized, are contributing more to the state's total urban population. The districts like Faridabad (16.20 per cent) and

Gurgaon (11.81 per cent) were contributing more than 25 per cent to the total urban population of state. Other than these districts, Panipat, Hissar, Ambala, Yamuna nagar, Sonipat, Rohtak and Karnal are the districts, which contains higher urban population as per cent to state's total urban population.

On the other side, Mewat, Mahendergarh, Fatehabad, Kaithal, Rewari, Jhajjar & Palwal are the districts having less per cent of urban population to total urban population of state. The extent of urbanization in all districts shows that there is large variation among all districts of Haryana. Faridabaad is most urbanized district (79.44 per cent) of population lives in urban area followed by Gurgaon (68.82), Panchkula (54.87), and Panipat (45.97).

Table: 4.15
District wise Urban Population, Growth and Number of Towns in Haryana, 2011

District	Urban population as per cent to state's total urban population (2011) (%)	Percent of urban population to total population of district (%)	Ranking by per centage of urban population to total population(2011)	Number of towns (2011)	Growth rate (total population) 2001-2011 (%)
Panchkula	3.48	54.87	12	8	19.3
Ambala	5.72	44.38	5	15	12.1
Yamunanagar	5.36	38.94	6	12	16.6
Kurukshetra	3.16	28.93	14	5	16.8
Kaithal	2.67	21.97	16	4	13.4
Karnal	5.17	30.27	7	8	18.2
Panipat	6.26	45.97	4	12	24.3
Sonipat	5.12	30.52	8	8	15.7
Jind	3.45	22.82	13	6	12.0
Fatehabad	2.03	19.04	19	4	16.8
Sirsa	3.36	24.75	11	5	16.0

Hisar	6.27	31.73	3	11	13.4
Bhiwani	3.66	19.80	10	6	14.3
Rohtak	5.04	42.02	9	5	12.6
Jhajjar	2.75	25.39	15	5	8.7
Mahendergarh	1.51	14.43	20	5	13.4
Rewari	2.62	25.82	18	9	17.1
Gurgaon	11.81	68.82	2	9	73.09
Mewat	1.41	11.38	21	8	37.9
Faridabad	16.20	79.44	1	3	31.7
Palwal	2.67	22.65	17	6	25.5

Source: Population census of Haryana, Office of Registrar General, 2011.

The reason behind the large agglomeration of population in these districts is the economic development of the region due to closeness to national capital and NCR. On the other hand, Mewat (11.38 per cent) and Mahendragarh (14.43 per cent) are the least urbanized districts.

Mahendragarh has been found least urbanized district in Census 2001 due to less industrial development and poor connectivity with other developed regions of the state. A difference between urban population and number of towns can be seen from the table 4.15. This can be due to large concentration of population in a very few towns of the districts (Faridabad, Gurgaon). In all 21 district of Haryana, the highest decadal growth was observed in district Gurgaon (73.93) followed by Mewat (37.94) and Faridabad (31.75). On the other hand, lowest decadal growth was observed in Jhajjar (8.73) followed by Jind (11.95) and Ambala (12.06).

Table: 4.16
Top and Bottom Five Districts in Haryana by Percentage and Density of Urban Population

Top Five Districts		Bottom Five Districts	
Name of District	% of Urban Population	Name of District	% of Urban Population
Faridabad	79.44 (2298)	Mewat	11.38 (729)
Gurgaon	68.82 (1241)	Mahendergarh	14.43 (485)
Panchkula	54.87 (622)	Fatehabad	19.04 (371)
Panipat	45.97 (949)	Bhiwani	19.80 (341)
Ambala	44.38 (722)	Kaithal	21.97 (463)

Figures in parentheses indicate population density.

Source: Population census of Haryana, 2011.

The top & bottom five districts by percentage and density of urban population have been presented in table 4.15. The population density is defined as the number of persons/km² in an area. It is commonly an easy indicator to understand the pressure of population on land resources. As the table 4.16 indicated, the urban population and density is highest in Faridabad (2298 person/Km.²) and Gurgaon (1241 person/Km.²), whereas Panchkula, Panipat and Ambala have reported higher urbanization with low level of density in relation to other districts of Haryana. On the other hand, Mewat, Mahendergarh, Fatehabad, Bhiwani and Kaithal are the districts with lowest population and low density in urban areas. Nearness to NCT-Delhi is the main reason for higher density in the Sub-region as compared to the rest of the State. Faridabad and Gurgaon are highly urbanized and industrialized districts of Haryana. Presence of numerous industries in both the districts has becomes an attraction for huge migration of people in these districts. Due to

its economic activity, population growth rate of Faridabad has also increased considerably in the last two decades.

Table: 4.17
Urban Population by Size and Class of Towns in Haryana, 2011

Towns Class	1951	1961	1971	1981	1991	2001	2011
Million Plus City	NIL	NIL	NIL	NIL	NIL	1 (17.25)	1 (15.99)
I	NIL	1 (8.07)	2 (12.82)	9 (47.02)	11 (52.92)	19 (52.12)	19 (52.03)
II	6 (39.62)	7 (36.22)	9 (39.75)	7 (16.84)	11 (18.99)	7 (6.79)	11 (7.99)
III	8 (23.04)	11 (28.39)	14 (26.06)	15 (17.72)	18 (13.14)	26 (12.98)	45 (14.87)
IV	12 (17.65)	15 (15.68)	15 (12.54)	25 (12.04)	31 (10.78)	36 (8.68)	34 (5.80)
V	18 (13.95)	15 (8.24)	20 (7.84)	23 (6.11)	21 (3.94)	16 (2.11)	36 (2.97)
VI	18 (5.74)	12 (3.40)	5 (0.99)	2 (0.27)	2 (0.23)	1 (0.07)	8 (0.35)
Total	62 (100)	61 (100)	65 (100)	81 (100)	94 (100)	106 (100)	154 (100)

Figures in parentheses show the percentage of urban population in living in respective towns.

Source: Population census of Haryana, 2011, Directorate of census operations.

It can be seen from table 4.17 that there are significant changes in number of urban settlement in Haryana after independence. The differences in physical setting, the functional differentiation and the unequal opportunities of employment have been the major responsible factors to change the status of towns in state. Forty eight new towns have been added in 2011 (154) as compared to 2001 (106) in Haryana. Out of these total 154 towns, 80 towns are statutory towns and 74 are census towns, which contains

approximately 35 per cent of total population of Haryana. There has been an increasing trend of cities after independence but the number remain unchanged from 2001 to 2011 i.e. 19 cities. But, there has been growth in class III type towns (medium towns) in 2011. The class III type towns have increased to 45 in 2011 which was only 26 in 2001. Despite of this increase, the urban population has increased marginal (1.89 per cent). The class IV and V has also shown the increase in the numeric number of towns with a little variation. On the other hand, the number of Class VI towns has shown decrease from 1951 onwards, except 2011 which shows an increase of 7 towns. The table 4.17 also revealed that the high population is concentrated in class I and in million plus cities due to diverse income and employment opportunities with better urban amenities. “It is also important to point out that Class VI cities can drop their individuality in the coming years due to the continuous decrease in the proportion of urban population in these towns from 5.74 per cent in 1951 to 0.35 per cent in 2011” (Sangwan et. al., 2014). The concentration of urban population from small to medium and then to large urban centers can be seen from the fact that the number of cities and per cent of population both has been reduce from 1951 to 2011, which reflects the unequal distribution of resources, but also diverse urban development.

4.3.1.3 Growth of NCR and Non-NCR Region of Haryana

The Nine districts in Haryana, comes under National Capital Region (NCR) are Panipat, Rohtak, Jhajjar, Rewari, Mewat, Gurgaon, Faridabad and Palwal. The growth rate of NCR region for 2011 has been reported as 27.06 per cent. In this same context, rural areas of NCR have reported the growth of 9.80 and urban areas have reported the higher growth rate of 60.38 per cent from 2001 to 2011. In urban areas under NCR region 57.79 per cent and 63.47 per cent growth has been observed for male as well as female respectively. On the other hand, in non-NCR areas the decadal growth rate was 14.91 per cent, where the same in rural areas is as reported 10.22 per cent. In the same direction, growth of male and female population in urban non-NCR areas has been reported as 27.70 per cent and 30.70 per cent respectively.

4.3.1.4 Spatial Variation of Urbanization in Haryana

There exist variation in the different parts of the country i.e. some areas are highly developed and some are highly backward. These kinds of variations can also be seen in different districts of Haryana, where few areas are more developed than other. So, it is important to investigate the reasons behind these variations for the better policy implications in the future. The all districts of Haryana have been segregated into three broader types on the basis of urbanization and researcher has tried to analyze the reason behind this agglomeration:

1. Lowest level of urbanization
2. Low level of urbanization
3. High level of urbanization

4.3.1.4.1 Lowest Level of Urbanization

The districts in which 20 per cent or less than 20 per cent population lives in urban areas are consider as lowest urbanized areas. In this, Mewat and Mahendragarh, are included. Studies found that these are the areas with less economic development, industrial development, social development and other opportunities for the progress. These are the agriculture based areas with low level of social awakening; with believe in strong norms of patriarchy. Thus, the location of big cities also influences the growth of other small urban areas. The study found that the location of Delhi or proximity of Delhi with many districts of Haryana has produced important outcome for the state.

4.3.1.4.2 Low Level of Urbanization

The area where 20-35 per cent population is urbanized has been grouped in the category of low level of urbanization. Districts like Kaithal (21.97 per cent), Palwal (22.65 per cent), Jind (22.82 per cent), Sirsa (24.75 per cent), Jhajjar (25.29 per cent), Rewari (25.82 per cent), Kurukshetra (28.93 per cent), Karnal (30.27 per cent), Sonipat (30.52 per cent) and Hissar (31.73 per cent) comes in this group. These areas are urbanized because of proximity of small and big industrial units. Some of these areas have been developed

because of their location which comes under state highways. Proximity of large urban areas, migration, industrial development, transportation facilities are the reasons of the urbanization. But these districts don't enjoy industrial fruits due to many constraints. Hence, the migration of people from these areas to other big cities may be a factor of low urbanization.

4.3.1.4.3 High Level of Urbanization

The area where more than 35 per cent of population is living in urban areas is classified as highly urbanized areas. In Haryana there are 7 districts which come under this category. These are Yamunanagar (35.94 per cent), Rohtak (42.02 per cent), Ambala (44.38 per cent), Panipat (45.97 per cent), Panchkula (54.87 per cent), Gurgaon (68.82 per cent) and Faridabad (79.44 per cent) (Table 4.15). It is observed that high level of urbanization exists where the development in all sector exist. For example, Faridabad, Gurugram, Panipat are the areas where high degree of industrial development has been witnessed. Rohtak has also faced advantage of good roads, railway lines and educational institutes which has attracted the population in this district.

4.3.2 Rural Industrialization in Haryana

For the development of any economy, a large amount of investment in the rural infrastructure and industries is required for the growth of agriculture and industry sector. A country's progress is possible only through overall development of villages, speedy rural industrialization and suitable technologies. The availability of infrastructure facilities stimulates economic growth of industry and agriculture. The pre-requisite for agricultural development are provision of sufficient irrigation facilities, transport, credit, power supply etc. In short, infrastructure acts as an essential precondition for the development of the economy and the link between development and infrastructure cannot be called once for all affairs because it is a continuous process. If a nation wants to achieve its desired aims of a self-accelerated ways of economic development then process of development has to be accompanied and pursued by improvement in infrastructure. Though, Haryana is considered among one of the developed states in India and ranks

fourth in terms of growth rate of state domestic product. But within the state, some regions are backward. For example, there are huge differences in irrigation facilities between north and south Haryana. Recently, Faridabad and Gurgaon districts appear to have forged ahead in terms of industrialization and services. A detailed study is required to analyze the relative inter- district backwardness in the state along with the distribution of infrastructural facilities across districts. Faridabad is becoming industrial hub of Haryana and producing a wide range of goods such as tractors, motorcycles, electronics, scientific instruments etc. On the other hand, Gurgaon, Panipat, Sonapat have also grown-up into important industrial centers. A speedy provision of physical infrastructure is helpful for the industrial development of state. In terms of physical infrastructure, by 1971, the state had electrified its villages, and by 1975, most of villages had been linked by metalled road.

The impact of the green revolution has confined to few crops and few districts of the state, which resulted in the stagnant occupational structure and industrial development. A further increase in the agricultural productivity and industrial development requires huge investment in rural infrastructure i.e. in irrigation facilities, transports, roads, power supply, health and education, etc.

The table 4.18 shows the number of enterprises by enterprise type in rural and urban area of Haryana from 1994 -95 to 2010-11. The share of rural enterprises have been found more than urban enterprises in Haryana during 1994-05 to 2005-06 periods and increased from 55 per cent in 1990-91 to 52 per cent in 2005-06. But in 2010-11, the share of rural enterprises has decreased to 41 per cent and urban enterprises have increased to 59 per cent of total enterprises in Haryana. However, the absolute number of enterprises has increased from 119687 in 2005-06 to 436054 in 2010-11 in rural areas and if the share of rural enterprises increases it would be better for rural transformation and development of Haryana. Table 4.18 also indicates that share of all enterprises of Haryana in total enterprises of India has grown from 0.97 per cent to 1.83 per cent from 1994-95 to 2010-11, respectively. The proportion of OAEs is 90 per cent (69200) in 1994-95 which is highest in total rural enterprises in Haryana, whereas proportion of establishments is only 10 per cent (7900) of total rural enterprises in state.

Table: 4.18
Number of Unorganized Manufacturing Industries in Haryana

NIC - 2008	Rural			Urban			Share of Haryana in total enterprise
	OAE	Estt.	All	OAE	Estt.	All	
1994-95	69200 (90)*	7900 (10)*	77100 (55)#	40100 (62)**	24200 (38)*	64300 (45)#	0.97
2000-01	89700 (89)*	11000 (11)*	100700 (52)#	57800 (62)**	34800 (38)*	92600 (48)#	1.14
2005-06	102113 (85)*	17573 (15)*	119687 (52)#	60448 (55)**	49975 (45)*	110423 (48)#	1.35
2010-11	377514 (87)*	58539 (13)*	436054 (41)#	481177 (78)**	139501 (22)*	620678 (59)#	1.83

* Share of rural enterprises in all rural enterprises in Haryana. ** Share of urban enterprises in all urban enterprises in Haryana. # Share of rural & urban enterprises in total enterprise of Haryana.

Source: "Estimates based on NSSO employment and unemployment data for various relevant rounds"

In urban areas OAEs accounted 62 per cent and Establishments accounted 38 per cent of total urban enterprises in 1994-95. In 2000-01, 1 per cent decrease in OAEs and 1 per cent increase in Establishments has been noticed in rural areas, but no change has been observed in urban areas in same period. In 2005-06, the rural enterprises, OAE have again come down to 85 per cent, but establishments have again increased from 11 per cent to 15 per cent. Table shows that in 2010-11, ratio of enterprises in urban areas is higher than rural areas.

The estimated number of workers in different enterprises in Haryana has been given in the Table 4.19. According to table 4.19, proportion of employment in rural enterprises was lower (49 per cent) than the urban enterprises in 1994-95. The total employment in different enterprises (OAEs & Establishments) in rural areas has declined from 49 per cent in 1994-95 to 40 per cent in 2010-11. On other side, employment in urban area has been increased from 51 per cent to 60 per cent in same years. Workers employed in OAE

have always been higher than the Establishments in all reference periods in rural areas; employment in urban areas is higher in Establishment as compared to OAEs. This change shows that OAEs are higher employment provider in rural areas while Establishments provides higher employment in urban areas in Haryana. The share of employment of Haryana in total workforce of India has increased marginally and ranged from 1.01 per cent in 1994-95 to 1.34 per cent in 2011.

Table: 4.19
Estimated Number of Workers in Unorganized Manufacturing in Haryana

NIC - 2008	Rural			Urban			Share of Haryana in Total Worker
	OAE	Estt.	All	OAE	Estt.	All	
1994-95	115800 (69)	51200 (31)	167000 (49)	62600 (37)	105300 (63)	167900 (51)	1.01
2000-01	127700 (72)	50500 (28)	178200 (42)	90700 (37)	151500 (63)	242200 (58)	0.54
2005-06	138171 (62)	86178 (38)	224349 (41)	95867 (30)	223807 (70)	319674 (59)	0.85
2010-11	478060 (62)	290476 (38)	768536 (40)	60378 6 (53)	530014 (47)	1133800 (60)	1.34

Source: Calculation based on various NSSO rounds on employment and unemployment. Figure in parentheses shows the per cent in all.

4.3.2.1 District-wise Rural Industries in Haryana

The district wise distribution of unorganized manufacturing industries in Haryana has been presented in Table 4.20. As perusal of the table 4.20 indicates that in 1994-95 the highest number of industries was in Ambala district, as it was considered as industrial hub of Haryana. The other districts which follow the trend are Hissar, Jind and Yamunanagar. The lowest numbers of industries in same periods was observed in Faridabad, Kurukshetra and Sonipat. In 2000-01, highest number of industries has been reported in Sirsa followed by Jind, Kurukshetra, Karnal, Ambala and Gurgaon. The lowest numbers of industries in same period have been found in Mahendergarh, Hissar

and Bhiwani. In 2004-05, total numbers of industries have increased marginally and Gurgaon has shown highest number of industries in rural areas.

Table: 4.20
District-wise Distribution of Rural Unorganized Manufacturing Industries in Haryana

Total	1994-95	2000-01	2005-06	2010-11
Panchkula	0	3553	1636	6710
Ambala	10230	7300	4474	24655
Yamuna Nagar	5313	3914	6120	14359
Kurukshetra	2267	8923	7388	26644
Kaithal	4530	2783	5371	17621
Karnal	3415	8557	11800	28664
Panipat	4516	6795	6220	22184
Sonipat	2482	3630	8361	33094
Jind	8067	9961	13183	32481
Fatehabad	0	5104	4614	13600
Sirsa	3378	12950	5182	26739
Hisar	8742	2008	1998	32023
Bhiwani	4036	2446	9305	24354
Rohtak	4240	4801	4319	12705
Jhajjar	0	4714	4072	8446
Mahendragarh	6916	1436	4016	26308
Rewari	3072	2286	2297	15102
Gurgaon	3904	6910	14006	44362
Faridabad	2007	2625	5327	13450
Mewat	0	0	0	12552
Total*	77116	100695	119687	436054

Source: Estimates based on NSSO employment and unemployment data for various relevant rounds.

*Total can be a little different from the published report as the data has been extracted from unit level data of NSSO.

Other districts with highest number of rural industries are Jind, Karnal and Bhiwani. In 2010-11 good increase can be seen in rural industries of state. The highest number of industries has been reported In Gurgaon followed by Sonapat, Jind, Hissar. Therefore, it can be resulted that distribution of unorganized manufacturing in Haryana has not been uniform.

4.3.3 Rural Non-Farm Employment (RNFE) in Haryana

The development of the non-farm sector (RNFS) plays as important role in growth of rural areas because only agriculture sectors cannot provide the income and employment to the growing labour force of rural areas. But rural non-farm sector generates employment and income opportunities for rural areas. It also checks the problem of migration, slums, unemployment and other socio-economic problems. Before going into further analysis on (RNFE), it is important to understand the concept of RNFE in rural context. There is no consensus among various organizations about what kind of activities to be included in rural non-farm employment by various organizations.

According to Census of India, “there are mainly nine categories of workers i.e. cultivators; agricultural labour; workers in livestock rearing; mining and quarrying; manufacturing, processing, servicing and repairs; household industry; non household industry; construction; trade and commerce; transport, storage and communications and other services”. Actually, RNFE covers a wide range of economic activities from category IV to IX outside the agriculture which requires different amount of time and skills. Thus for this study on RNFE, all household and non household manufacturing, processing, servicing, repairs, construction, trade, storage, communication, transport and other services for the state Haryana has been included.

Haryana has registered enormous growth in economic development because of its industrial and service sector growth. The literature on RNFE revealed that employment in non-farm sector has increased in last two decade and it has potentials to generate more employment in rural regions and this can be achieved with the implementation of result oriented policies. This objective can be achieved if the data on pattern, magnitude and direction of RNFE is available on disaggregate level. But currently, it is available in

uneven strata. Therefore, in this objective researcher had try to find out the status of RNFE in Haryana, as some districts of Haryana are very near to Delhi NCR and in this context it would be important to find out the pattern of RNFE in state.

4.3.3.1 Structure of RNFE in Haryana

The RNFE sector is diverse and heterogeneous because it encompasses workers from mining and quarrying to workers in other service. The share of total workers in non-farm sector in Haryana is increasing continuously (NSSO).

Table: 4.21
Employment of Main Workers in Farm and Non-Farm Sectors in Rural Haryana

Years	Farm Sector %	Non-Farm Sector %
1983-84	76.9	23.1
1993-94	71.4	28.6
2004-05	64.0	36.0
2009-10	59.8	40.2

Source: Estimates based on NSSO employment and unemployment data for various relevant rounds.

The distribution of workers between farm sector and non-farm sector has been given in table 4.21. The table 4.21 indicates that in 90s, RNFE was 23.1 per cent of total workers of state. In reform period, the proportion of RNFE in Haryana has increased by 5 per cent. The table shows that in post-reform period (2004-05), RNFE has shown the highest increase (7.6 per cent).

The highest employment in rural non-farm sector was generated by other services. In 2010-11, 40.2 per cent workers have been working under RNFE, which is quite higher as compare to many sates like Gujarat, Maharashtra, Punjab, Rajasthan and Tamil Nadu. Construction, trade & commerce, transport & storage has came out as the growing sectors in the rural economy of Haryana and showing rising trend in the proportion of workers employed during the reference period.

4.3.3.2 Work Force Participation Rate (WFPR) in Haryana

The Haryana is an agricultural state and now turned to an industrial state where demand of skilled as well as unskilled workers is growing day by day. Workforce participation rate (WFPR) is an important indicator to study the employment pattern in an area. The workforce participation rate to total population for male, female and persons at five different times period is presented in Table 4.22. The perusal of the table 4.22 indicates that total workers are again divided in main and marginal worker, which has been given below in table 4.22. The result of WFPR in Haryana shows interesting trend. It has been observed that total WFPR of all persons in Haryana has increased from 26.47 in 1971 to 43.13 per cent in 2001. But, surprisingly it has again decline to 36.3 per cent in 2011. The workforce participation for main workers has marginally decline from 1981 to 1991, on the other hand, the growth of marginal workers has risen to 10 per cent, which is significantly high as compare to main workers.

Table: 4.22
Workforce Participation Rate in Rural Haryana

Classification of Worker	Period	Total Workers (%)	Main Workers (%)	Marginal Workers (%)
Persons	1971	26.47	24.46	2.01
	1981	32.3	29.1	3.02
	1991	31.87	28.85	3.02
	2001	43.13	30.2	12.93
	2011	36.3	26.8	9.4
Male	1971	47.5	45.5	2
	1981	49.8	47.6	2.8
	1991	48.51	48.2	0.31
	2001	50.89	42.71	8.18
	2011	49.9	41.7	0.08
Female	1971	2.29	1.01	1.28
	1981	12.3	4.88	7.42

	1991	12.62	6.46	6.16
	2001	34.18	15.78	18.4
	2011	20.9	9.9	11

Source: Population census of Haryana; 1991, 2001, 2011. Directorate of Census Operations.

But in 2011, both main and marginal workers have declined by more than 3 per cent. Total WFPR for male has also increased marginally from 1971 to 2011. The increasing trend can be seen in case of male WFPR which has increased from 45.5 per cent to 47.6 per cent from 1971 to 1981 and then decreased to 41.7 per cent in 2011. The similar pattern was also visible for marginal workers too. The male marginal workers have also declined from 2 per cent in 1971 to 0.08 per cent in 2011. Relatively very high boost can be seen in case of female WFPR in Haryana. The female WFPR first increased to 12.30 per cent in 1981 from 2.29 per cent in 1971 and then almost become constant for a decade. The reforms period of 90s has been found extremely conducive for female WFPR which increased the female WFPR from 12.62 per cent in 1991 to 34.18 per cent in 2001. However, in 2011, total female WFPR has declined, but in case of female marginal workers a decline in 2011 has been witnessed after an increase from 1971 to 2001.

4.3.3.3 District wise Workforce Participation in Haryana

As per the Census of India 2011 Main Workers are “those who had worked for the major part of the year. Major part of the year means at least six months (183 days)”. “The workers who have not worked for the major part of the year (less than 183 days) are term as Marginal Workers”. On the other hand “Non Workers are the persons who did not work at all during the reference period.” “The non-workers broadly constitute students who did not participate in any economic activity paid or unpaid, household duties who were attending to daily household chores like cooking, cleaning utensils, looking after children, fetching water etc. and are not even helping in the unpaid work in the family farm or cultivation or mulching, dependant such as infants or very elderly people not included in the category of worker, pensioners those who are drawing pension after

retirement and are not engaged in any economic activity.” The district-wise workforce participation in Haryana has been presented in table 4.23.

Table: 4.23
District wise Workforce Participation Rate in Rural and Urban Haryana, 2011

Districts	Rural				Urban		
	Total Workers (%)	Main Worker (%)	Marginal Worker (%)	Non Workers (%)	Main workers (%)	Marginal Worker (%)	Non Workers (%)
Haryana	36.36	26.87	9.49	63.64	29.17	3.77	67.06
Panchkula	38.19	30.33	7.85	61.82	34.32	3.94	61.74
Ambala	31.21	25.99	5.2	68.83	31.22	3.97	64.79
Yamunanagar	31.74	26.64	5.1	68.27	29.93	2.61	67.46
Kurukshetra	36.08	29.67	6.4	63.92	29.55	2.5	67.94
Kaithal	35.89	27.17	8.72	64.11	26.64	4.28	69.08
Karnal	34.57	26.57	8	65.43	29.1	4.51	66.39
Panipat	34.12	25.78	8.34	65.88	30.86	3.43	65.8
Sonipat	37.75	27.25	10.49	62.25	27.59	4.83	67.58
Jind	41.82	29.77	12.05	58.18	26.08	8.9	65.04
Fatehabad	41	30.96	10.04	59	27.97	3.46	68.57
Sirsa	40.65	31.37	9.28	59.35	29.14	3.82	67.04
Hissar	42.6	31.41	11.19	57.4	28.42	4.9	66.68
Bhiwani	40.07	27.71	12.36	59.93	25.43	4.24	70.33
Rohtak	34.58	27.12	7.46	65.41	27.38	2.49	70.12
Jhajjar	35.5	25.55	9.94	64.5	26.2	3.67	70.12
Mahendergarh	37.75	22.69	15.06	62.25	25.09	5.48	69.43
Rewari	39.64	27.4	12.24	60.36	28.9	2.52	68.57
Gurgaon	33.56	26.46	7.1	66.44	34.78	2.28	62.94
Mewat	26.81	18.59	7.22	74.83	19.98	5.19	74.83
Faridabad	28.79	22.77	6.01	71.21	28.55	4.28	67.16
Palwal	30.05	20.35	9.7	69.95	20.5	8.69	71.5

Source: Population census of Haryana, 2011, Directorate of Census Operations.

The table 4.23 indicates that in 2011 maximum rural main workers participation has been observed in Hissar (31.41), followed by Sirsa (31.37), Fatehabad (30.96) and Panchkula (30.33). On the other hand, in urban area, highest main workers participation has been recorded in Gurgaon (34.78) followed by Panchkula (34.32), Ambala (31.22) and Panipat

(30.86). In 2011, percentage of rural marginal workers has been observed to be highest in Mahendragarh (15.06 per cent) and highest urban marginal workers has been found in Jind (8.90 per cent). The urban non workers have been observed maximum in Faridabad (71.21 per cent) and Jhajjar (73.76 per cent). Hence, the variation in WFPR from district to district in Haryana, showed the diversification of workforce.

4.3.3.4 Farm and Non-Farm Employment in Haryana

The district-wise participation of workforce occupied in farm & non-farm sectors is shown in the Table 4.24. The district wise proportion of workers among four broad categories i.e. cultivators, agricultural labor, household industry and other workers have been discussed here. The proportion of workers engaged as cultivators in 2011 varies from district to district in Haryana. The highest proportions of cultivators have been found in Bhiwani (56.62 per cent) followed by Hissar (53.22 per cent), where the district with lowest proportion of cultivators has been Faridabad (23.28 per cent). Like cultivators, proportion of agricultural labour among the districts varies significantly. It is observed to be highest in Sirsa (30.86 per cent) followed by Kurukshetra (30.6 per cent). The higher employment as agricultural labor in some districts may be due to less lucrative field of employment in other sectors.

The proportion of agricultural labour was surprisingly low in Rewari (5.13 per cent) and Mahendergarh (5.64 per cent). When employment in overall farm sector is examined, it was observed that except Panchkula (34.59 per cent), Faridabad (36.29 per cent), Gurgaon (39.35 per cent) and Rewari (44.20 per cent), in all other remaining districts, the farm sector provide employment to more than 50 per cent workforce of the respective district, which shows that the farm sector plays a significant part in providing employment to 79 per cent districts of Haryana. The overall proportion of household industry (HHI) workers comprises 2.01 per cent workers of total workers in rural Haryana in 2011. The highest section of workers have been found in Faridabad (4.71) followed by Ambala (3.21) and Panchkula (3.04).

Table: 4.24
Farm and Non-Farm Employment in Haryana in 2011

Name	Farm sector (%)			Non-farm sector (%)			Rank of district
	Main Cultivator	Main Agri.	Total farm	Main Household Industries	Main Other Workers	Total Non-Farm	
HARYANA	42.68	18.22	60.90	2.01	37.10	39.10	-
Panchkula	25.20	9.38	34.59	3.04	62.38	65.41	1
Ambala	29.08	21.87	50.96	3.21	45.83	49.04	5
Yamunanagar	28.66	25.64	54.31	1.87	43.82	45.69	8
Kurukshetra	30.68	28.74	59.42	1.40	39.18	40.58	14
Kaithal	47.42	19.77	67.19	1.94	30.87	32.81	13
Karnal	34.74	27.35	62.09	2.24	35.66	37.91	15
Panipat	35.31	18.80	54.11	2.26	43.63	45.89	7
Sonapat	39.33	17.84	57.17	2.53	40.30	42.83	12
Jind	54.84	17.17	72.01	1.19	26.80	27.99	17
Fatehabad	45.27	24.84	70.11	1.28	28.61	29.89	17
Sirsa	44.09	30.86	74.95	1.80	23.25	25.05	19
Hisar	53.22	20.90	74.12	1.67	24.21	25.88	18
Bhiwani	56.62	13.07	69.70	1.62	28.68	30.30	16
Rohtak	46.13	10.54	56.67	2.13	41.20	43.33	11
Jhajjar	45.53	9.52	55.05	2.41	42.55	44.95	9
Mahendragarh	46.79	5.64	52.44	1.78	45.79	47.56	6
Rewari	39.07	5.13	44.20	2.16	53.65	55.80	4
Gurgaon	31.25	8.09	39.35	2.90	57.75	60.65	3
Mewat	44.20	13.49	57.70	1.81	40.49	42.30	13
Faridabad	23.28	13.01	36.29	4.71	59.00	63.71	2
Palwal	41.83	14.44	56.27	2.04	41.69	43.73	10

Source: Calculated from population census of Haryana, 2011, Directorate of Census Operations.

The districts having lowest proportion of workers in this category were found in Jind and Fatehabad. The next category of workers also presents the diverse image of workers in non-farm sector in the state. The districts having more than 50 per cent population of main workers occupied in other works have been found in Panchkula (62.38 per cent), Faridabad (59.00 per cent), Gurgaon (57.75 per cent) and Rewari (53.65 per cent). On the other hand, Sirsa (23.25 per cent), Hissar (24.21 per cent), Jind (23.80 per cent), Fatehabad (28.61 per cent) and Bhiwani (28.68 per cent) districts have less than 30 per cent of total non-farm workers as other workers.

The rural non-farm sector is an important component of rural employment. According to census 2011, RNFE in Haryana is 39.10 per cent. District wise highest RNFE has been observed in Panchkula where 65.41 per cent main workers have engaged in nonfarm activities. The districts having more than 50 per cent non-farm workers are Faridabad (63.71 per cent), Gurgaon (60.65 per cent) and Rewari (55.80 per cent) while lowest non-farm employment has been observed in Sirsa (25.05 per cent), Hissar (25.88 per cent), Jind (27.99 per cent) and Fatehabad (29.89 per cent). The Hissar and Jind show the highest gap between farm and non-farm workers. It can also be seen from table 4.24 that RNFE is higher in those districts where agricultural is less and industrial activities are more.

4.3.3.5 Sectoral Distribution of Workers in Major Industries in Haryana

After discussing the proportion of workers to total population and the distribution of workers into main and marginal workers in rural Haryana, it is imperative to discuss about the workers engaged in two broad categories, namely, farm and non-farm sectors workers. The break-up of workers into nine broad industrial categories for the years 1971, 1981 and 1991 has been given in Table 4.25. But, the same breakup is not available for period 2001 and 2011. However, the results for broad four categories such as cultivators, agricultural labourers, household industry workers and other workers for the same period have been mentioned in the table. In rural Haryana, cultivators emerged as the dominant category among the workers and even the latest estimates of Census, 2011 show that 42.08 per cent of main workers were falling in this group. The agricultural labourers constituted 18.22 per cent of main workers and have declined a little over period of time. On the other side, the proportion of workers in livestock forestry, fishing and hunting related activities has declined from 1.48 per cent in 1971 to 0.81 per cent in 1991, but latest data is not available on this aspect. If all put together, farm sectors employs 65 per cent of rural work force in Haryana with a declining from 78.40 per cent in 1971 to 76.48 per cent in 1981 and further to 73.77 per cent in 1991. There has been a very little decline, in all categories of workers in 2011 in Haryana except workers in other services.

Table: 4.25
Employment of Rural Workers in Major Industrial Categories in Haryana (1971-2011)

Years	Cultivators	Argil. Labourers	Livestock Forestry ect. Workers	Mining and Quarrying Workers	Industry Workers	Construction Workers	Trade and Commerce Workers	Trans and Storage	Workers in Other Services
1971	58.09	18.83	1.48	0.19	6.87	1.50	2.93	1.07	8.91
1981	55.81	19.66	1.01	0.10	2.56	1.85	3.42	2.30	12.00
1991	49.58	23.38	0.81	0.10	6.25	1.93	3.55	2.32	12.08
2001	46.10	18.90	NA	NA	2.10*	NA	NA	NA	32.90**
2011	42.68	18.22	NA	NA	2.01*	NA	NA	NA	37.10**

*(Household Industry Workers), ** (Other Workers)

Source: Statistical Abstract of Haryana, State Government of Haryana, Chandigarh.

4.3.4 Extent of Association between the Urbanization, Industrialization, Rural Industrialization and Rural Livelihood in Haryana

Correlation is one of the most widely used methods to check the strength of association among variables which is independent of origin and scale. Thus, covariate correlation method has been used to check the strength of association among the variables for different periods. The results of Pearson correlation analysis and diagonal correlation coefficient between urbanization, rural industrialization, industrialization and rural non-farm employment for the period 1994-95, 2000-01, 2005-06 and 2010-11 have been given in Table 4.26.

Table: 4.26
Pearson Correlations Metrics for Urbanization, Rural Industrialization, Industrialization and Rural Non-Farm Employment (1994-95)

Variables	Urbanization	Rural Industrialization	Industrialization	Rural non-farm employment
Urbanization	1			
Rural Industrialization	-.197	1		
Industrialization	.320	.398	1	
Rural non-farm employment	.331	.146	.304	1

The correlation metrics for the period of 1994-95 (Table 4.26) indicates positive association between urbanization and industrialization (0.320), urbanization and RFNE (0.331), industrialization and rural industrialization (0.398), rural industrialization and RNFE (0.146). The negative correlation coefficient between urbanization and rural industrialization (-0.197) has been observed. Although, association between urbanization, rural industrialization, industrialization and rural non-farm employment for the period 1994-95 have been found positive except between urbanization and rural industrialization

for which it is found negative but none of the correlation coefficient was found statistically significant. The reason can be that Haryana has been an agriculture based economy and the state did not witness much industrialization in 1994-95. So the effect of urbanization was concentrated to the urban areas and could not reach to the rural areas of Haryana in 1994-95.

Table: 4.27
Pearson Correlations Metrics for Urbanization, Rural Industrialization, Industrialization and Rural Non-Farm Employment (2000-01)

Variables	Urbanization	Rural Industrialization	Industrialization	Rural non-farm employment
Urbanization	1			
Rural Industrialization	-0.114	1		
Industrialization	0.271	0.771***	1	
Rural non-farm employment	0.286	0.064	0.237	1

*** Statistically significant at 1 percent level of significance.

The correlation matrix for the period 2000-01 has been given in the table 4.27. The perusal of Table 4.27 indicates that the correlation coefficient between urbanization and industrialization (0.271), urbanization and RNFE (0.286), rural industrialization and RNFE (0.064) and industrialization and RNFE (0.237) is positive but not statistically significant while it has been found statistically significant for industrialization and rural industrialization (0.771) indicating that increased industrialization led to the rise in rural industrialization and vice versa. This association has also been favored by many studies. Only urbanization and rural industrialization have been found negatively (-0.114) associated with each other but this has not been found statistically significant.

Table: 4.28
Pearson Correlations Metrics for Urbanization, Rural Industrialization,
Industrialization and Rural Non-Farm Employment (2005-06)

Variables	Urbanization	Rural Industrialization	Industrialization	Rural Non-Farm Employment
Urbanization	1			
Rural Industrialization	0.127	1		
Industrialization	0.514**	0.771***	1	
RNFE	0.221	0.570**	0.428	1

*** Statistically significant at 1 percent level of significance. **Statistically significant at 5 percent level of significance.

The correlation matrices for the period 2005-06 and 2010-11 have been presented in the table 4.28 and 4.29, respectively. The perusal of Table 4.28 indicates positive and non-significant association between urbanization and rural industrialization (0.127); urbanization and RNFE (0.221); industrialization and RNFE (0.428). However, association between urbanization and industrialization (0.514); industrialization and rural industrialization (0.771) and rural industrialization and RNFE (0.570) have been found to be positive and statistical significant. The positive and statistical significant association between urbanization and industrialization, industrialization and rural industrialization and rural industrialization and RNFE implies that any change in one variable will lead to change in other variables in same direction.

Table 4.29 has shown negative but no significant association between urbanization and RNFE (-0.258), industrialization and RNFE (-0.337) and industrialization and rural industrialization (-0.017) in 2010-11. The association between urbanization and industrialization (0.481) and rural industrialization and RNFE (0.489) has been found positive and statistical significant implying that an increase in urbanization will also lead to the increase in industrialization. The positive association has also been observed between urbanization and rural industrialization but it is not statistically significant. The

positive and significant association between urbanization and industrialization is in accordance with the literature reviewed.

Table: 4.29
Pearson Correlations Metrics for Urbanization, Rural Industrialization, Industrialization and Rural Non-Farm Employment (2010-11)

Variables	Urbanization	Rural Industrialization	Industrialization	Rural non-farm employment
Urbanization	1			
Rural Industrialization	0.183	1		
Industrialization	0.841***	-0.017	1	
Rural non-farm employment	-0.258	0.489**	-0.337	1

*** Statistically significant at 1 percent level of significance. **Statistically significant at 5 percent level of significance.

Table: 4.30
Diagonal Degree of Association between Industrialization and Rural Industrialization for 1994-95, 2000-01, 2004-05 and 2010-11.

	Rural Industrialization (1994-95)	Rural Industrialization (2000-01)	Rural industrialization (2004-05)	Rural Industrialization (2010-11)
Industrialization (1994-95)	0.398			
Industrialization (2000-01)		0.771***		
Industrialization (2004-05)			0.771***	
Industrialization (2010-11)				-0.017

*** Statistically significant at 1 percent level of significance

The association between industrialization and rural industrialization has increased from 1994-95 to 2000-01 and remained constant in 2004-05 (Table 4.30). The correlation coefficient has become negative in 2010-11. The correlation coefficient between industrialization and rural industrialization has been statistical significant in 2000-01 and

2004-05 indicates that industrialization and rural industrialization has moved in same direction.

Table: 4.31
Diagonal Degree of Association between Rural Industrialization and Rural Non-Farm Employment for Sample Periods

Variables	Rural Industrialization (1994-95)	Rural Industrialization (2000-01)	Rural Industrialization (2004-05)	Rural Industrialization (2010-11)
Rural non-farm employment (1994-95)	0.146			
Rural non-farm employment (2000-01)		0.064		
Rural non-farm employment (2004-05)			0.570**	
Rural non-farm employment (2010-11)				0.489**

** Statistically significant at 5 percent level of significance

Comparative diagonal analysis for degree of association for the study period 1994-95, 2000-01, 2004-05 and 2010-11 between rural industrialization and RNFE is presented in Table 4.31. The table 4.31 indicates that strength of association between rural industrialization and RNFE has weakened from 1994-95 to 2000-01 but this association is not found statistical significant. During 2004-05, not only strength of association has increased but become statistical significant and remain statistical significant in 2010-11 with reduction in the extent of association. This indicates that over period of time the strength of association between rural industrialization and RNFE has turned statistical significant with marginal decline in degree of association.

The association between urbanization and rural industrialization has been found negative but insignificant in 1994-95 and 2000-01 which turned positive in later period (2005-06 and 2010-11) as shown in Table 4.32. This implies that increased in urbanization has reduced the rural industrialization in initial period while in later period increase in urbanization has led to the increase in the rural industrialization as value of coefficient of urbanization and rural industrialization are positive for the period 2000-01 and 2010-11.

Table: 4.32
Diagonal Degree of Association between Urbanization and Rural Industrialization over Period of Time

Variable	Urbanization (1994-95)	Urbanization (2000-01)	Urbanization (2004-05)	Urbanization (2010-11)
Rural industrialization (1994-95)	-0.197			
Rural industrialization (2000-01)		-0.114		
Rural industrialization (2004-05)			0.127	
Rural industrialization (2010-11)				0.183

The result of diagonal correlation coefficients of urbanization and rural nonfarm employment has been given in Table 4.33. The perusal of table 4.33 indicates that urbanization and RNFE has been found positive over the study period except 2010-11 in which it has been found negative (-0.258). Though, there has been reduction in the magnitude of correlation coefficient during 1994-95, 2000-01 and 2005-06 which has become negative in 2010-11. The reason for this decline can be because of a marginal decline of RNFE in same period, which has affected the relationship between two

variables. It is observed from table that association between urbanization and RNFE has not been found statistical significant in any period. This indicates that, although, urbanization and RNFE are associated with each other but this association may not lead to change in each other.

Table: 4.33
Diagonal Degree of Association between Urbanization and RNFE over Period of Time

Variable	Urbanization (1994-95)	Urbanization (2000-01)	Urbanization (2004-05)	Urbanization (2010-11)
Rural non-farm employment (1994-95)	0.331			
Rural non-farm employment (2000-01)		0.286		
Rural non-farm employment (2004-05)			0.221	
Rural non-farm employment (2010-11)				-0.258

Table: 4.34
Diagonal Degree of Association between Urbanization and Industrialization over Period of Time

Variable	Urbanization (1994-95)	Urbanization (2000-01)	Urbanization (2004-05)	Urbanization (2010-11)
Industrialization (1994-95)	0.320			
Industrialization (2000-01)		0.271		
Industrialization (2004-05)			0.514**	
Industrialization (2010-11)				0.841***

*** Statistically significant at the 1 percent level of significance, ** statistically significant at the 5 percent level of significance

The strength of association between urbanization and industrialization has increased over time as evident from table 4.34. In the initial period though, the association between

urbanization and industrialization has been found positive but not statistical significant. In the later period, not only extent of association has grown but they were found statistical significant. This rise in strength signifies the role of urbanization in industrialization and vice versa in Haryana.

Thus, the results of correlation analysis showed that the association between different variables has varied with the period of time, which shows the changes in the economy of Haryana after 1990s. There has been a positive but not statistically significant (1994-95) relationship between industrialization and rural industrialization which turned in positively statistical significant relationship from 2001 to 2005 shows the importance of industrialization for rural industrialization in state.

A positive relationship has been seen between rural industrialization and rural nonfarm employment, which remains positive throughout the period. Although, it did not show the statistical significant association up to 2001 which become statistical significant after 2001, which results in establishment of employment opportunities in rural nonfarm sector in Haryana. The result shows that in initial years (1994-95 to 2000-01) urbanization is not creating rural industrialization in Haryana, but after 2001, the trend has shown the positive but statistical insignificant relation. Urbanization has also shows positive correlation with growth of rural non farm sector but in 2010-11, the same association has decline, the reason can be a marginal decline in total rural nonfarm employment in Haryana.

Trend of urbanization has shown the positive association with industrialization throughout the study period and in later stage, it has become strong and significantly associated with each other, showing the importance of urbanization and industrialization. No significant negative association has been observed for any combination of variables indicating that change in one factor changes other factor in the same direction.

4.3.5 Conclusion

It can be concluded that urbanization is directly not associated with the rural non farm sector in Haryana. But urbanization is strongly linked with industrialization in Haryana and the industrialization is associated with rural industrialization and rural

industrialization in Haryana is significantly associated with the rural non farm sector. So, it can be argued that urbanization is not directly associated with rural livelihood but it strongly helps in creating the opportunities for rural sector indirectly in the state. Hence, if government is of the view in enhancing rural livelihood, then, it will have to devote resources in making the strong linkages between urbanization, industrialization and rural industrialization, so that objective of rural livelihood can be achieved in the state.

4.4 EFFECT OF URBANIZATION ON EMPLOYMENT, WAGES AND LIVELIHOOD OF RURAL PEOPLE IN HARYANA

The review of past studies have indicated that urbanization have positive effect on employment, wages and livelihood by creating more employment opportunities, increasing the wages of unorganized sector and providing more livelihood opportunities along with creating urban amenities in less urban area. Since, Haryana is a urbanized and industrialized state; the effect of these factors would be more concrete in the state. Keeping this in view, effects of urbanization on employment, wages and livelihood in the Haryana have been studied and discussed here.

4.4.1 Profile of the Sampled Districts

The profile of sampled villages regarding area, number of village, level of urbanization, density and employment structure has been given below. The table 4.35 showed the profile of different districts from which sample have been taken. The table 4.35 showed that the higher numbers of villages are in Rewari (403) district as compared to Mahendergarh (370) and Gurgaon (242), whereas in terms of geographical area, Mahendergarh (1899.0 Km.²) stands first in all three districts. Low area shows the highest density of population in sampled districts i.e. Guragaon and Rewari. The least number of towns are in Mahendergarh (5) district while no difference has been seen in number of towns in Guragon (9) and Rewari (9). The table 4.35 showed that Gurgaon is having the highest population (1,514,432) and highest number of household (325,239), whereas Rewari and Mahendergarh districts have shown less population and households, respectively. Table 4.35 indicates that Gurgaon is the highest urbanized districts as

compare to Rewari and Mahendergarh. A strange fact has been seen in term of sex ratio in sampled district, where highest urbanized district is showing the lowest sex ratio. The highest sex ratio has been reported in Rewari (907) followed by Mahendergarh (896). Literacy is an important indicator of development of individual and it can be seen from table 4.35 that with the growth of urbanization the literacy rate is also increasing.

Table: 4.35
Basic Indicators of Selected Districts in Haryana

Basic Indicators	Mahendergarh	Rewari	Gurgaon
Number of Villages	370	403	242
Number of Towns	5	9	9
Number of Households	170,824	177,753	325,239
Population (P)	922,088	900,332	1,514,432
Urban Population (%)	14.41	25.93	68.82
Density of Population	486	565	1204
Area (in sq Km.)	1899.00	1594.00	1258.00
Sex ratio (Rural)	896	907	878
Literacy Rate (%)	77.72	80.99	84.70
Main Workers Persons (%)	23.03	27.79	32.19
Marginal Workers Persons (%)	13.68	9.72	3.78
Cultivators* (%)	44.05	30.41	13.29
Agricultural Labourers (%)	11.32	8.35	4.97
Workers in Household Industry (%)	2.25	2.90	3.35
Other Workers (%)	42.38	58.34	78.39

*Cultivators, agriculture labourers, workers in household industry & other worker contain main & marginal workers.

Source: District census handbook for different districts, Population census of Haryana, 2011.

Occupational structure also acts as a significant factor in determining the employment and livelihood of the people of a region. It can be noticed from above table 4.35 that percentage of main workers is highest in district Gurgaon as compared to Rewari and

Mahendergarh. More employment in main work shows the stable employment as compare to marginal. So, it can be concluded that percentage of main workers is higher in the most urbanized district indicating the effect of urbanization on rural people. The cultivators and agricultural labour are found to be highest in least urbanized district and lowest in the most urbanized district. This shows that the regions with less urbanization have fewer opportunities to work in off farm activities.

On the other part, workers in household industries are highest in Gurgaon and lowest in Mahendergarh signifying that in urbanized regions people can have more possibilities to work in nonfarm activities as there are chances to have more industrial activities with urbanization.

4.4.2 Demographic Profile of Study Area

The demographic profile of sampled villages has been indicated in Table 4.36. As perusal of table indicates that villages located away from urban centre (cluster 2) was more populated than the villages located near to urban centre (cluster 1) in all sampled districts. Moreover, district with higher urbanization has been found more populated than the district with less urbanization i.e. Gurgaon is more populated than Mahendergarh and Rewari. Out of total population, 52.63 per cent are male and 47.37 per cent are female in the cluster 1 while in cluster 2, 54.69 per cent were male and 45.31 per cent were female. On an average 31.21 per cent, 46.05 per cent and 22.75 per cent of total population were found to be General, OBC and SC/ST, respectively in cluster 1.

In cluster 2, 32.83 per cent, 47.87 per cent and 19.30 per cent were General, OBC and SC/ST, respectively. On an average, 91.79 per cent of total male population and 70.10 per cent of total female population have been found literate in cluster 1 and 91.28 per cent of total male population and 68.95 per cent of total female population was found literate in cluster 2.

Table: 4.36
Demographic Feature of Population in Sampled Villages

Particulars	Mahendergarh		Rewari		Gurgaon		Overall	
	Clusters		Clusters		Clusters		Clusters	
	1	2	1	2	1	2	1	2
Total Population (No.)	2006.74	2555.00	1927.11	2990.63	2127.33	2864.38	2020.39	2803.34
No. of households	424.48	619.05	376.33	651.00	400.83	646.00	400.55	638.68
Male	1062.43 (52.94)	1370.00 (53.62)	1007.67 (52.29)	1648.38 (55.12)	1120.00 (52.65)	1580.95 (55.19)	1063.37 (52.63)	1533.11 (54.69)
Female	944.30 (47.06)	1185.00 (46.38)	919.44 (47.71)	1342.25 (44.88)	1007.33 (47.35)	1283.43 (44.81)	957.03 (47.37)	1270.23 (45.31)
General (%)	29.17	28.65	25.78	32.85	38.67	37.00	31.21	32.83
OBC (%)	46.30	50.60	53.00	49.00	38.83	44.00	46.05	47.87
SC/ST (%)	24.52	20.75	21.22	18.15	22.50	19.00	22.75	19.30
Literacy (%)								
Male	91.54	91.63	91.44	90.00	92.39	92.20	91.79	91.28
Female	69.35	68.75	66.22	67.46	74.72	70.63	70.10	68.95

Figure in parentheses indicate per centage to total population.

4.4.3 Main Occupation of the Population in Sampled Villages

The distribution of population of selected villages according to their occupation has been estimated and presented in the Table 4.37. As the table revealed, overall 60.84 per cent of total population are engaged in agriculture followed by agriculture + industry (19.80 per cent), industry + service (9.69 per cent), industry (5.56 per cent) and self business (4.11 per cent) in cluster 1. In cluster 2, 71.30 per cent of population was engaged in agriculture, 19.93 per cent was engaged in agriculture + industry, 5.26 per cent were engaged in self business and 3.51 per cent were engaged in industry.

The table 4.37 also indicates that higher proportion of workers is engaged in agriculture in less urbanized district while more people are found engaged in non agricultural sectors in district with higher level of urbanization. This might be due to the fact that the district with higher level of urbanization provides more diversified employment opportunities than district with low level of urbanization. Moreover, people residing in more urbanized area may be equipped with more technical expertise than the people in less urbanized area.

Table: 4.37
Distribution of Population of Sampled Villages as per their Main Occupation

Occupation	Mahendergarh		Rewari		Gurgaon		Overall	
	Clusters		Clusters		Clusters		Clusters	
	1	2	1	2	1	2	1	2
Agriculture	79.61	92.31	69.57	90.00	33.33	31.58	60.84	71.30
Industry	-	-	-	-	16.67	10.53	5.56	3.51
Agriculture + Industry		7.69	26.08	10.00	33.33	42.10	19.80	19.93
Industry + Service	8.05	-	4.35	-	16.67	-	9.69	-
Self business	12.34	-	-	-	-	15.79	4.11	5.26
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

4.4.4 Effect of Urbanization on Employment, Wages and Livelihood

The effect of urbanization on employment, wages and livelihood has been estimated and shown in Table 4.38 & Table 4.39. As perusal of the table 4.38 indicates that, 80.79 per cent and 19.21 per cent of total workers are engaged in main work and marginal work, respectively in cluster 1. In cluster 2, 74.38 per cent & 25.62 per cent of total workers are engaged in main work and marginal work, respectively. The proportion of workers engaged in main work increased with rise in the level of urbanization while proportion of workers engaged in marginal work decline with the rise in the level of urbanization. Out of total workers, 13.11 per cent and 34.12 per cent are engaged in farm sector in cluster 1 and cluster 2, respectively. The percentage of total workers engaged in farm sector reduced with the increase in urbanization. Majority of total workers engaged in farm sector are cultivators. On the other hand 87.13 per cent and 66.09 per cent of total working population are found engaged in non-farm sector in cluster 1 and cluster 2, respectively. Out of total non-farm workers, 86.06 per cent and 63.80 per cent are other workers in cluster 1 and cluster 2, respectively. Majority of other workers are engaged in other services followed by manufacturing, processing, services & repairs and trade and commerce. In cluster 1 and cluster 2, 39.73 per cent and 27.48 per cent of other workers, respectively were engaged in other services. In more urbanized area higher proportion of other workers were found to be engaged in other services.

Table: 4.38
Distribution of Workers Engaged in Farm and Non-farm Sector across Various Districts

Particulars	Mahendergarh		Rewari		Gurgaon		Overall	
	Clusters		Clusters		Clusters		Clusters	
	1	2	1	2	1	2	1	2
Employment								
Main Workers	595.25 (62.77)	666.20 (65.28)	970.75 (78.48)	843.97 (69.43)	1746.09 (91.20)	1104.51 (86.33)	1104.03 (80.79)	871.56 (74.38)
Marginal Workers	353.09 (37.23)	354.34 (34.72)	266.21 (21.52)	371.63 (30.57)	168.41 (8.80)	174.86 (13.67)	262.57 (19.21)	300.28 (25.62)
Farm Sector								
Cultivators	192.05 (20.20)	484.37 (47.35)	120.52 (9.72)	350.08 (28.74)	104.61 (5.45)	190.25 (14.84)	139.06 (10.18)	341.57 (29.15)
Agril. Labourers	47.20 (4.96)	48.13 (4.70)	32.92 (2.65)	78.37 (6.43)	40.15 (2.09)	48.42 (3.78)	40.09 (2.93)	58.31 (4.98)
Total Farm Worker	239.25 (25.16)	532.50 (52.05)	153.44 (12.37)	428.45 (35.18)	144.76 (7.55)	238.67 (18.62)	179.15 (13.11)	399.87 (34.12)
Non-Farm sector								
Household Industry Workers	6.33 (0.67)	20.54 (2.01)	9.96 (0.80)	20.60 (1.69)	27.50 (1.43)	39.37 (3.07)	14.60 (1.07)	26.84 (2.29)
Other Workers	705.25 (74.17)	469.99 (45.94)	1077.04 (86.83)	768.95 (63.13)	1746.01 (91.02)	1003.91 (78.31)	1176.10 (86.06)	747.62 (63.80)
Mining & Quarrying	-	-	-	-	-	-	-	-
Manufacturing, Processing, Services	190.16 (20.00)	135.08 (13.20)	255.03 (20.56)	208.18 (17.09)	318.17 (16.59)	238.55 (18.61)	254.45 (18.62)	193.94 (16.55)

& Repairs								
Construction	75.06 (7.89)	49.50 (4.84)	62.16 (5.01)	71.26 (5.85)	90.51 (4.72)	45.62 (3.56)	75.91 (5.55)	55.46 (4.73)
Trade and Commerce	48.63 (5.11)	25.36 (2.48)	178.90 (14.42)	127.81 (10.49)	300.85 (15.68)	205.35 (16.02)	176.13 (12.89)	119.51 (10.20)
Transport, Storage & Communication	83.73 (8.81)	28.84 (2.82)	115.57 (9.32)	42.23 (3.47)	180.79 (9.42)	99.04 (7.73)	126.70 (9.27)	56.70 (4.84)
Other services	307.67 (32.36)	231.21 (22.60)	465.38 (37.52)	319.47 (26.23)	855.69 (44.61)	415.35 (32.40)	542.91 (39.73)	322.01 (27.48)
Total Non-Farm Worker	711.58 (74.84)	490.53 (47.95)	1087.00 (87.63)	789.55 (64.82)	1773.51 (92.45)	1043.28 (81.38)	1190.70 (87.13)	774.45 (66.09)
Total worker	950.83 (100.00)	1023.03 (100.00)	1240.44 (100.00)	1218.00 (100.00)	1918.27 (100.00)	1281.95 (100.00)	1369.85 (100.00)	1174.33 (100.00)

Figure in parentheses indicate percentage to total worker.

As the table 4.39 indicates, the average wage received by barber, carpenter and mason has been found as Rs. 33.10, Rs. 599.11 and Rs. 634.62, respectively in cluster 1 while in cluster 2, it was found to be Rs. 31.64 for barber, Rs. 576.57 and Rs. 614.86 for mason. The wages for various works has increased as we move from less urbanized area to more urbanized area. This rise in wages indicates better earning opportunity in urban area and consequently providing better living condition in urban area.

Table: 4.39
Wages and Prices of Essential Commodities in Sample Villages *

Particulars	Mahendergarh		Rewari		Gurgaon		Overall	
	Clusters		Clusters		Clusters		Clusters	
	1	2	1	2	1	2	1	2
Wages for Different Work								
Barber (Rs./person)	29.44	26.92	30.65	30.50	39.21	37.50	33.10	31.64
Carpenter (Rs./day)	553.85	538.89	593.48	557.50	650.00	633.33	599.11	576.57
Mason (Rs./day)	607.69	566.67	622.50	619.57	673.68	658.33	634.62	614.86
Prices of Commodities								
Milk (Rs./ltr.)	52.48	50.70	48.33	45.92	59.17	58.16	53.33	51.59
Wheat (Rs./Kg.)	16.47	16.22	16.44	16.45	16.50	16.59	16.47	16.42
Egg (Rs./dozen)	81.39	78.60	82.67	73.85	92.00	90.32	85.35	80.92
Pulses (Rs./Kg.)	79.87	77.60	78.33	78.08	82.50	85.79	80.23	80.49

*The wages and prices of essential commodities have been collected through primary survey.

This increase in wages could occur due to the fact that urbanization creates more employment opportunities along with higher wages for same work as compared to rural/less urbanized area. Not only wages increased due to urbanization but prices of commodities have also been increased. The people in urban area had to pay higher prices for same commodities than their counterpart in less urbanized area. The price of milk, wheat, egg and pulses were found to be Rs. 53.33, Rs, 16.47, Rs. 85.35 and Rs. 80.23, respectively in cluster 1 while it was Rs. 51.59, Rs, 16.42, Rs. 80.92 and Rs. 80.49 for milk, wheat, egg and pulses, respectively in cluster 2.

4.4.5 Status of Migration in Sampled Villages

The migration pattern of people in the sampled villages have also been assessed and presented in the Table 4.40. As perusal of the table 4.40 indicates that 54.38 per cent of population has migrating to urban area for occupation purposes and remaining proportion of population are migrating for education purposes in cluster 1. In cluster 2, 50.40 per cent of population has migrating towards urban area for education and 49.60 per cent of population has migrated for occupation purposes. The proportion of population migrating to urban area for education purposes increases with the decrease in the level of urbanization while migration for occupation purpose increases with the increase in urbanization. This may be due to the fact that people residing in less urbanized area may migrate to urban area to get higher education due to better educational facilities in urban area. In case of occupation, the more people are able to migrate due to their higher educational qualification attained in urban area. Nature of migration of majority of population was daily in both clusters. The percentage of population migrating daily has been found 54.55 and 49.22 for cluster 1 and cluster 2, respectively. In less urbanized region, the nature of migration of majority of population has been found seasonal followed by monthly. The people residing in less urbanized area (cluster 2) have high tendency to migrate to urban area than people of more urbanized area (cluster 1). The majority of occupational migration has observed for skilled (42.66 per cent) works followed by unskilled works (33.61 per cent) and semi-skilled (23.73 per cent) works in cluster 1. In cluster 2, majority of migration are observed for unskilled works (50.62 per

cent) followed by skilled works (32.24 per cent) and semi-skilled works (17.14 per cent). The high migration was observed in skilled works in both clusters.

Table: 4.40
Migration Pattern of People in Sampled Villages

Particular	Mahendergarh		Rewari		Gurgaon		Overall	
	Clusters		Clusters		Clusters		Clusters	
	1	2	1	2	1	2	1	2
Reasons for Migration								
Education	68.24	59.56	37.25	42.48	31.36	49.15	45.62	50.40
Occupation	31.76	40.44	62.75	57.52	68.64	50.85	54.38	49.60
Both	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Nature of Migration								
Daily	17.24	7.69	82.61	68.21	63.81	71.48	54.55	49.22
Weekly	21.51	18.26	-	5.45	18.35	12.73	13.29	12.30
Monthly	43.45	12.08	8.69	10.58		15.79	17.38	12.82
Seasonal	8.49	56.43	8.70	15.76	16.67	-	11.27	24.06
Yearly	09.39	4.81-	-	-	1.17	-	3.51	1.60
Major Works								
Skilled	32.19	19.53	42.31	35.63	53.48	41.57	42.66	32.24
Semi-Skilled	27.3	12.31	20.41	10.16	23.47	28.96	23.73	17.14
Unskilled	40.51	68.16	37.28	54.21	23.05	29.47	33.61	50.62

4.4.6 Perception of Village Head Regarding the Effect of Urbanization

The head of selected villages were asked to provide their opinions on the effect of urbanization on their villages. The results of the opinion of village heads have been presented in Table 4.41 and Table 4.42. The perusal of table 4.41 indicates that 98.55 per cent and 97.44 per cent of village head in cluster 1 and cluster 2, respectively, believed that their villages have proximity to urban area. The majority of village head in both clusters believed that urbanization has created better marketing facilities in their villages

and provided better service to the villages. The job opportunity has increased due to urbanization and thus opportunity to earn more income has also increased. Majority of them also reported that urbanization has not resulted in the establishment of NGOs/SHGs in their villages. Although, the facilities have increased in the villages due to urbanization but more improvement is required. The effects of urbanization on the above factors were more in those areas which was near to urban centre than areas away from urban centre.

Table: 4.41
Perception of Village Head about the Effect of Urbanization on Village

District	Clusters	Perception	Proximity to Urban Area	Better Market	Better Services	Better Job Opportunity	Income Earning Opportunity	Any NGO /SHG	Lack of Facilities
Mahendergarh	1	Yes	100	53.85	46.15	69.23	69.23	30.77	84.62
		No	0	46.15	53.85	30.77	30.77	69.23	15.38
	2	Yes	92.31	88.89	66.67	55.56	77.78	22.22	88.89
		No	7.69	11.11	33.33	44.44	22.22	77.78	11.11
Rewari	1	Yes	95.65	80	75	80	85	20	95
		No	4.35	20	25	20	15	80	5
	2	Yes	100	73.91	73.91	78.26	78.26	13.04	86.96
		No	0	26.09	26.09	21.74	21.74	86.96	13.04
Gurgaon	1	Yes	100	100	100	100	100	26.32	57.89
		No	0	-	-	-	-	73.68	42.11
	2	Yes	100	66.67	50	50	66.67	-	66.67
		No	-	33.33	50	50	33.33	100	33.33
Overall	1	Yes	98.55	77.95	73.72	83.08	84.74	25.7	79.17
		No	1.45	22.05	26.28	16.92	15.26	74.3	20.83
	2	Yes	97.44	76.49	63.53	61.27	74.24	11.75	80.84
		No	2.56	23.51	36.47	38.73	25.76	88.25	19.16

Table: 4.42
Perception of Village Head about Jobs Created by Urbanization and Role of Agency in Village Development

District	Clusters	Type of Work Available (%)			Role of Agency in Village Development (%)	
		Skilled	Semi-skilled	Unskilled	Government	Private
Mahendergarh	1	18.15	21.49	60.36	57.36	42.64
	2	14.92	23.18	61.9	47.37	52.63
Rewari	1	31.52	25.12	43.36	55.56	44.44
	2	23.08	29.68	47.24	53.85	46.15
Gurgaon	1	37.21	30.27	32.52	52.17	47.83
	2	28.76	34.51	36.73	65	35
Overall	1	28.96	25.63	45.41	55.03	44.97
	2	22.25	29.12	48.62	55.41	44.59

The table 4.42 reveals that majority of works created by urbanization was unskilled (45.41 per cent) type followed by skilled (28.96 per cent) and semi-skilled (25.63 per cent) in cluster 1 while in cluster 2, the majority of works created was unskilled (48.62 per cent) type followed by semi-skilled (29.12 per cent) and skilled (22.25 per cent). The skilled type work created increased with the increase in level of urbanization while unskilled works created reduced with increase in urbanization. It can also be observed that in cluster 1 & 2, government sector has played a very important role in the development of villages.

4.4.7 Conclusion

More people reside in villages located away from urban centre (cluster 2) as compared to villages located near to urban centre (cluster 1) in all sampled district. The literacy rate has been found slightly higher in overall cluster 1 than cluster 2 for both male and female population. Majority of population is engaged in agriculture work in both the clusters of all three districts except Gurgaon due to high industrial activities near urban centre. But overall agriculture has been the major work for the

people of cluster 2. More workers were employed in farm works in cluster 2 (34.12 per cent) than in cluster 1 (13.11 per cent). In cluster 1, 87.13 per cent of total workers and 66.09 per cent of total workers in cluster 2 are engaged in non-farm sector in case of overall clusters. The proportion of working population engaged in non-farm sector has increased with increase in urbanization level. The wage rate and prices are higher in overall cluster 1 as compared to cluster 2. Majority of population have migrated to urban area either due to education purposes or occupational purposes. The people residing in less urbanized area have high tendency to migrate to urban area than people of more urbanized area. The high migration has been observed in skilled works for cluster 1 while in cluster 2 high migrations was observed for un-skilled works. Village heads have also favored that urbanization has created opportunities for their village development. In this regard, it can be concluded that in all three districts the most urbanized district i.e. Gurgaon is creating the opportunities for the rural people.