CHAPTER - 1
INTRODUCTION

1.1 Introduction

Unemployment as a Global Problem

Labour as a human capital is one of the most important factors of production. An economy having high rate of unemployment is said to be operating inside its production possibility frontier. It leads to loss of human resource and locks people in poverty. Unemployment perpetuates the vicious circle of poverty. Okun (1965) in his famous law established a relationship between unemployment and output loss which states that 1 percent increase in the unemployment rate results in an annual 2.5 per cent decrease in the rate of real GDP growth rate. World Summit of the United Nations General Assembly (2005) confirmed the importance of the Decent Work Agenda for attainment of the Millennium Development Goals (MDGs). Its outcome statement declared: “We strongly support fair globalization and resolve to make the goals of full and productive employment and decent work for all, including women and young people, a central objective of our relevant national and international policies as well as our national development strategies, including poverty reduction strategies, as part of our efforts to achieve the Millennium Development Goals.”

Unemployment is a global issue and global unemployment is expected to rise by nearly 2.3 million in 2016. Emerging economies are expected to face an increase in unemployment of 2.4 million in 2016 but, in developed economies; this number is expected to decline slightly. (World Employment Outlook, Trends 2016, ILO)

Employment generation and improvement in working conditions uplift people and communities out of vicious circle of poverty and enhance livelihood security. But, this happens only when work is decent, productive, fair wages and underpinned by rights. Decent work contributes directly to poverty eradication and reduction in income inequalities. It is a comprehensive policy framework in which job creation is a globally accepted goal with gender equality, guarantee of right to work and social security. It is defined as ‘productive work in which rights are
protected, which generates an adequate income with adequate social protection. It also means sufficient work in the sense that all should have access to income earning opportunities. It marks the high road to economic and social development, a road in which employment, income and social protection can be achieved without compromising workers’ rights and sound standards.’ (Somavia, 1999)

**Unemployment in India**

An important objective of development planning in India has been to provide increasing employment opportunity to the unemployed as well as to the new addition to the labour force. The future challenge is not only to generate more employment but also to increase the average productivity in all jobs. It was assumed that growth would automatically solve the problem of unemployment. However, past experience indicates that a high rate of growth is a necessary, but not a sufficient condition to solve the problem of unemployment. The annual growth rate of 8-9 percent may provide only a partial solution to this problem due to the low employment elasticity in India. Both individuals and society suffer on account of unemployment. As regards cost of unemployment in case of individuals, these are in the form of lost jobs, consequent loss of earning and low level of standard of living, loss of morale and self-respect and disorganization of the family. For the society, the cost is in the form of output lost, unutilized human resources and its distributional impact; generally the poor are hit harder than the rich. It is, in this way not merely an economic but also a big human problem. India presently, suffers mainly from structural unemployment which exists in both open and disguised form. Overtime, the share of agriculture including allied activities in GDP has gone down from 54.6 percent in 1950-51 to 17.4 per cent of GDP in 2014-15 but, the share of agriculture in employment is 48.9 per cent of the workforce (Economic Survey of India, 2015-16). This has created a GDP- Employment imbalance. Consequently, the agriculture sector is overburdened and lagging behind the overall growth of the economy.

The Twelfth Five Year Plan emphasizes on ‘faster, more inclusive and sustainable growth’. This broad vision of the plan includes several inter-related aspects such as rapid growth that reduces poverty, access to health and education services especially for the poor, social justice, employment opportunities for the
weaker sections underpinned by the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and good governance. Poverty in India is widespread. Poverty reduction has been a major goal of development planning since its introduction in India. The 2014 Global Hunger Index Report place India at the 55th place. No doubt, India has improved its ranking yet its hunger status is still classified as “serious” according to this Index.

The overall rate of unemployment in India is not so high because the poor cannot afford to be unemployed. They have to work even at lower wages to survive. The Bureau of Labour Statistics (2015-16) has estimated that the unemployment rate is 5 per cent (5.1 per cent in rural areas and 4.9 per cent in urban areas) as compared to 4.9 per cent (4.7 per cent in rural areas and 5.5 per cent in urban areas) in 2014-15. The figure is significantly higher among females compared to males. Female unemployment rate is 8.7 per cent whereas for males it is 4.3 per cent. The States and Union Territories with highest unemployment rates are as follow- Tripura (19.7 per cent), Sikkim (18.1 per cent), Lakshadweep (16.1 per cent), Andaman and Nicobar Island (12.7 per cent) and Kerala (12.5 per cent).

The massive and chronic unemployment in India is termed as Non-Keynesian (J.M. Keynes) type of unemployment as the lack of effective demand is not a typical problem in India. The solution to the problem of unemployment is not only through increase in aggregate demand (AD) but mainly through expansion of productive capacity. The share of organized sector in absorption of additions to the labour force is expected to remain small in the near future (Ghose, 2004). Therefore, a major portion of labour force will have to be absorbed in the unorganized non-agriculture sector as agriculture is already overcrowded. Since 1960s, India has adopted public work programs which apart from many other objectives, serve to provide self- employment and wage employment to unskilled workers. No doubt, these public work programs have benefited the poor workers by increasing their purchasing power, yet these programs have been criticized mainly on the ground of poor performance and limited success.
1.2  A Paradigm Shift: MGNREGA

The Central Government launched NREGA- a job guarantee scheme enacted by legislation on August 25, 2005. It aims to provide a legal guarantee for at least 100 days employment in a financial year to unskilled labour in rural areas. It was renamed as MGNREGA (Mahatma Gandhi Rural Employment Guarantee Act) on 2nd October 2009. MGNREGS is an effective initiative of the Central Government to provide livelihood security in the agriculture lean season in rural areas.

1.2.1  Coverage:

The Act was adopted in three phases. In its first phase, it was introduced in the most backward 200 districts of India on 2nd February 2006; in 2007-08, it was extended to an additional 130 districts. The Act has been covering the whole country since 1st April 2008.

The Act provides a legal right of work to the work seekers. It is demand driven program rather than the allocation based employment programs like earlier programs. It has the potential to transform the rural economy through productive assets creation. Thus, it is not only a safety net to poor but also a development effort. The role of MGNREGS is classified as protective, preventive and promotive. Some of the important features of the scheme are as follows:

• MGNREGA provides a time bound guarantee of 100 days of employment to each rural household that demands unskilled manual work in a financial year.
• The adult members of a rural household, willing to do unskilled manual work, are required to make registration by writing or orally requesting the local Gram Panchayat.
• The job card should be issued within 15 days of application.
• Work should be provided with in 5 km radius of the village and within 15 days of application for work. In case, work is provided beyond 5 km, additional wages of 10 per cent of the minimum wage are payable to the beneficiaries.
• Wages are to be paid according to the Minimum Wages Act, 1948. There is provision of same wage rate to male and female candidates.
• At least one third of the total beneficiaries should be women.

• If Gram Panchayat cannot provide employment, then daily unemployment allowance at the rate of one third of the minimum wages has to be paid.

• Provision of facilities at work sites such as pure water, sheds, first aids and crèches etc.

• The works that can be done under MNREGA include water and soil conservation, afforestation, land development works, rural connectivity, flood control and protection such as construction and repair of embankment, digging of percolation tanks and small irrigation projects.

• Wage and material ratio has to be maintained at 60:40. No contractors and machinery is allowed.

• The Central Government bears the 100 per cent wage cost of unskilled manual labour. But the liability of payment of unemployment allowance is on the states.

• All the accounts and records relating to the scheme should be available for public scrutiny.

Permissible works under MNREGS:

• Drought proofing including plantation and afforestation

• Water conservation and water harvesting

• Land development and rural connectivity drinking water

• Irrigation facilities to SC/ST

• Fisheries, coastal areas, Bharat Nirman Rajiv Gandhi Sewa Kendra

To strengthen the positive synergy between MGNREGS and agriculture and allied rural livelihoods, to respond to the demands of the States for greater location specific flexibility in permissible works and to help improve the ecological balance in rural India and to provide a cleaner, healthier environment for the rural population, it has been decided to expand the list of permissible works as under:
1.2.2 Goals of MGNREGS:

The short term objective of MGNREGS is to provide employment opportunities to the unskilled labour. The long term objectives include livelihood security and transformation of rural economy through productive assets creation. It aims to empower women through providing work in vicinity and reducing migration.

1.2.3 Performance of MGNREGS at National level:

175.11 crore persondays have been generated under MGNREGS in the financial year 2015-16. The share of SC and ST beneficiaries is 22.69 percent and 17.82 per cent respectively. Further, 55.84 per cent of total persondays has been generated for women.

The experience of MNREGA reveals that it has slowed down inter-state migration, improved wages and additional employment opportunities are being created. But critics point out that this Act has high cost burden – it is estimated that it costs 5 percent of the GDP. Further, the productivity of labourer under MGNREGS is very low and therefore creation of durable assets has remained a distant dream.
1.2.4 MGNREGS in Haryana

In Haryana also, MGNREGS was launched in three phases. On 2nd February 2006, the scheme was launched in two districts viz. Mahendergarh and Sirsa. It was extended to two more districts, Ambala and Mewat, on 1st April 2007. The scheme has been covering all the districts under the scheme with effect from 1st April 2008.

MGNREGS has generated 48.48 lakhs persondays to 1.68 lakhs households during the financial year 2015-16. The share of SC and others beneficiaries is 49.91 percent and 50.09 per cent respectively. Further, 45.17 per cent of total persondays has been generated for women.

But, it is criticized on the ground of sustainability due to weak assets creation under the scheme.

1.3 Hypotheses:

The study will test the following hypotheses to analyze the working of MGNREGS:

1) Ho: contribution of MGNREGS in generating employment has been nil (not significant).

H1: contribution of MGNREGS in generating employment has been significant.

2) Ho: The impact of MGNREGS has been uniform throughout the State.

H1: The impact of MGNREGS has not been uniform throughout the state.

3) Ho: MGNREGS has contributed to asset creation.

H1: MGNREGS has not contributed to asset creation.

1.4 Objectives of the Study

The main objective of the present study is to analyze and compare the impact of MGNREGS in terms of employment generation and asset creation in different parts of rural Haryana. In view of this, the following sub-objectives have been set for the present study:

1. To explore the extent and nature of employment and unemployment in rural areas of Haryana.
2. To assess the role of MGNREGS in generating additional employment opportunities for unskilled workers in rural areas.

3. To analyze the performance of MGNREGS in terms of **efficiency, equity** and **accountability**.

4. To critically examine the role of public institutions in the implementation of MGNREGS.

5. To suggest policy measures for future improvement in the functioning of MGNREGS.

### 1.5 Study Area

The present study has been carried out in Haryana State. It is the 16th largest state in northern India located between 27°37' to 30°35’ latitude and between 74°28’ to 77°36’ longitude. The total geographical area is 44,212 sq km with total population 21,144,514. Haryana is a landlocked state in northern India. It is located between 27°39' to 30°35’ N latitude and between 74°28' and 77°36' E longitude. The altitude of Haryana varies between 700 to 3600 ft (200 metres to 1200 metres) above sea level. An area of 1,553 km² is covered by forest. Haryana has four main geographical features.

- The Yamuna-Ghaggar plain forming the largest part of the state
- The Shivalik Hills to the northeast
- Semi-desert sandy plain to the southwest
- The Aravalli Range in the south

### 1.6 Data Sources:

The present study is based on both primary as well as secondary data.

The secondary data is obtained from various issues of Statistical Abstract of Haryana, Economic Survey of Haryana, NSSO 62nd, 64th and 68th Rounds Reports, Labour Bureau Reports, Census 2001 and 2011, Gram Panchayat (GP) records, DRDA office records and official site of NREGA. The primary data is collected with the help of detailed pre-tested schedule and focus group discussions with the respondents.
1.7 Research Design:

To find out the impact of MGNREGS in rural Haryana, the study carried out at zonal level. The study is done in total number of forty villages of eight districts of four administrative zones of Haryana. The four administrative zones are Ambala, Gurgaon Hisar and Rohtak. Two districts from each zone have been selected and one block from each district is identified to select the sample villages. Five villages from each block are chosen on the basis of information gathered from Block Development Office regarding work done and going on during survey period. Fifteen beneficiaries of MGNREGS from each village are contacted at worksite to collect the information contained in the detailed schedule. To assess the impact of MGNREGS at village level, five non-beneficiaries of MGNREGS from each village are also contacted to collect the information. Total twenty persons are selected from each village. The sample size is of eight hundred respondents including six hundred beneficiaries and two hundred non-beneficiaries.

Schedule

The primary data has been collected with the help of a detailed schedule and focus group discussions with the respondents. In order to collect relevant information from the respondents, two schedules were designed in a well defined structure and were pre-tested (Appendices-1 and 2). The two distinct types of respondents are (1) Beneficiaries of MGNREGS (2) Non-beneficiaries of MGNREGS.

From the beneficiaries of MGNREGS, the following information is collected:

- **Household details:** All the demographic details of the household were collected to analyze the socio-economic level of the respondents.
- Mechanism of job card registration, issuance of job cards, information of work demanded and work provided, household completed 100 days etc.
- Impact on income, wages and migration
- Impact on women beneficiaries: economic and social
- Impact on village level assets
- Participation of beneficiaries in work selection process
Selection of districts: Two districts from each administrative zone of Haryana were selected on the basis of highest and lowest persondays generated. To select a representative sample, the study has used a stratified multistage random sampling technique. To begin with the four administrative division of state of Haryana have been treated as four strata for the purpose of selecting a representative sample of respondents. The four administrative zones presently comprise twenty one districts. The division wise break up of districts is as follows:

Ambala Division: Ambala, Kaithal, Kurukshetra, Panchkula, Yamunanagar

Gurgaon Division: Gurgaon, Faridabad, Mahendergarh, Mewat, Palwal, Rewari

Hisar Division: Bhiwani, Fatehabad, Jind, Hisar, Sirsa

Rohtak Division: Jhajjar, Karnal, Panipat, Rohtak, Sonipat

In the first stage, eight districts of Haryana two from each division were selected by using stratified random sampling. These selected districts are:

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Administrative Zone</th>
<th>Selected District</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ambala</td>
<td>Ambala , Kurukshetra</td>
</tr>
<tr>
<td>2</td>
<td>Gurgaon</td>
<td>Mahendergarh, Mewat</td>
</tr>
<tr>
<td>3</td>
<td>Hisar</td>
<td>Hisar, Sirsa</td>
</tr>
<tr>
<td>4</td>
<td>Rohtak</td>
<td>Karnal, Panipat</td>
</tr>
</tbody>
</table>

Selection of Block and Villages: At the second stage, one block from each of the eight districts was selected on the basis of the information about where work was going on during the survey period (information sought from DRDO, ABPO and mates).

At the third stage, five Gram Panchayats were randomly selected from each of the selected block. (Appendix-3)

Selection of Beneficiaries: At the fourth stage, fifteen respondents were selected from each of the village. Work sites were visited to contact beneficiaries and Focus Group Discussion (FGD) was organized to collect information. A sample of 800 respondents both beneficiaries and non-beneficiaries of MGNREGS were contacted to collect the required information.
1.8 Methodology

Keeping in view the objectives of the study, appropriate statistical techniques such as mean, range, annual growth rate have been used for relevant variables. The statistical tools- paired sample t-test, log-ordinary least square (Log-OLS) and Data Envelopment Analysis (DEA) have been applied to analyze data. Bar diagrams, Line graphs and pie charts are used for the graphical presentation of the analysis.

Paired Sample t-test

Paired sample t-test is a statistical technique that is used to compare two population means in the case of two samples that are correlated. It is used in ‘before-after’ studies, or when the samples are the matched pairs, or when it is a case-control study. We have used paired t-test to test the hypothesis.

Steps:

1. **Set up hypothesis:** We set up two hypotheses. The first is the null hypothesis, which assumes that MGNREGS has generated significant employment opportunities in rural areas. The alternative hypothesis is MGNREGS has not generated significant employment opportunities in rural areas.

2. **Select the level of significance:** After making the hypothesis, we choose the level of significance at 5 per cent.

3. **Calculate the parameter:** To calculate the parameter we use the following formula:

   \[ t = \frac{\bar{d}}{\sqrt{s^2/n}} \]

   Where \( \bar{d} \) is the mean difference between two samples, \( s^2 \) is the sample variance, \( n \) is the sample size and \( t \) is a paired sample t-test with \( n-1 \) degrees of freedom. An alternate formula for paired sample t-test is:

   \[ t = \frac{\sum d}{\left[ \frac{\sum d^2 - \frac{\left( \sum d \right)^2}{n}}{n-1} \right]^{1/2}} \]
4. **Testing of hypothesis or decision making:** After calculating the parameters, we compare the calculated value with the table value. If the calculated value is greater than the table value, then we will reject the null hypothesis for the paired sample t-test. If the calculated value is less than the table value, then we will accept the null hypothesis and say that there is no significant mean difference between the two paired situations.

**Assumptions:**

1. Only the matched pairs can be used to perform the test.
2. Normal distributions are assumed.
3. The variance of two samples is equal.
4. Cases must be independent of each other.

**Logarithmic Ordinary Least Square (OLS)** is used to analyze the impact of MGNREGS on agricultural wage rate. We defined the function as follows:

\[
\log Y_i = \beta_0 + \beta_1 \log X_i + \beta_2 \log L_i + e_i
\]

Yi= Nominal Wage  
A= constant  
Xi= GDP in Agriculture for ith year (2009-10 to 2015-16)  
Li= Employment Generated in MGNREGS for ith year (2009-10 to 2015-16)

The OLS regression model is extended to include multiple explanatory variables by simply adding additional variables to the equation. The form of the model is the same as with a single response variable (Y), but this time Y is predicted by multiple explanatory variables (X1 to X3).

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \]

\( \alpha \) indicates the value of Y when all values of the explanatory variables are zero. Each \( \beta \) parameter indicates the average change in Y that is associated with a unit change in X, whilst controlling for the other explanatory variables in the model. We have transformed this model in logarithmic form as follows:
Use of logarithmic transformations of variables

Logarithmically transforming variables in a regression model is a very common way to handle situations where a non-linear relationship exists between the independent and dependent variables. Using the logarithm of one or more variables instead of the un-logged form makes the effective relationship non-linear, while still preserving the linear model. Logarithmic transformations are also a convenient means of transforming a highly skewed variable into one that is more approximately normal. (In fact, there is a distribution called the log-normal distribution defined as a distribution whose logarithm is normally distributed – but whose untransformed scale is skewed.)

Log-log model: $\log Y_i = \beta_0 + \beta_1 \log X_i + \beta_2 \log L_i + e_i$

The interpretation is given as an expected percentage change in $Y$ when $X$ increases by some percentage. Such relationships, where both $Y$ and $X$ are log-transformed, are commonly referred to as elastic in econometrics, and the coefficient of $\log X$ is referred to as an elasticity.

So in terms of effects of changes in $X$ on $Y$ (both unlogged):

- multiplying $X$ by $e$ will multiply expected value of $Y$ by $e^B$
- To get the proportional change in $Y$ associated with a $p$ percent increase in $X$, calculate

  \[ a = \log\left(\frac{100+ p}{100}\right) \text{ and take } e^{AB} \]

Data Envelopment Analysis (DEA), a non-parametric technique, is used to calculate the relative efficiency scores for the eight districts under the study.

DEA is a non-parametric method of finding out the best production frontier on the basis of inputs and outputs. In DEA best practice efficiency frontier is computed. Efficiency of a decision making unit is then computed according to the relative distance of it from that frontier. The efficiency of eight districts of Haryana in implementation of MGNREGS is calculated on the basis of district level secondary data obtained from the official website www.nrega.nic.in for the seven years starting from 2009-10 to 2015-16. Data Envelopment Analysis (DEA) is used to calculate the relative efficiency scores of each district. The districts are taken as
the decision making unit (DMU) as the implementing agencies function under the overall guidance of the state. The change in their performance level over the years is also studied by comparing the efficiency scores for the different years. There are two approaches to measure the technical efficiency of a DMU, one input oriented and second output oriented. Input oriented approach defines technical efficiency by comparing the observed level of inputs with the minimum level of input that could produce the observed level of output. Output oriented approach considers the DMU as efficient which achieves the maximum level of output among the DMUs using same input bundles. A benchmark technology is constructed from the observed input-bundles of the DMU’s in the sample on the basis of some general assumptions about the production technology without specifying a functional form (Neogi, 2008). Input and output oriented efficiency measures are equivalent under constant returns to scale assumption and estimates the same frontier. The choice of the model depends on the variables on which the DMU has control. Here we apply output oriented efficiency measures with constant returns to scale using Microsoft office Excel. Thus, in efficiency analysis using the DEA technique, it is most important to define the inputs and the outputs. Each DMU (district), is assumed to maximize its output 1) total person days generated, by using inputs 1) wage expenditure and 2) material expenditure. There are 8 districts, each with two inputs and one output. Here, the 8 districts are indexed by \( j = 1 \) to 8, two inputs by \( i=1 \) to 2 and one output by \( y=1 \). The relative efficiency score of a test DMUs or the benchmark is obtained by solving the following model:

**Data Envelopment Analysis: DEA Function**

Max \( \phi \)

Subject to

\[
\sum_{j=1}^{n} \lambda_j x_{ij} \leq x_{12}, \ (i=1,2); (j=1,2...m)
\]

\[
\sum \lambda_j \gamma_j \geq \phi \gamma 1/12
\]

\( \lambda_j \geq 0 \) (Constant Returns to scale)

\( \sum \lambda_j = 1 \) (Variable Returns to Scale)
Three equations to solve:

Max \( \phi \)

\[
\lambda_1 M_1 + \lambda_2 M_2 + \ldots + \lambda_8 M_8 \leq M_8
\]

\[
\lambda_1 L_1 + \lambda_2 L_2 + \ldots + \lambda_8 L_8 \leq L_8
\]

\[
\lambda_1 Y_1 + \lambda_2 Y_2 + \ldots + \lambda_8 Y_8 \leq \phi \ Y_8
\]

\( \lambda_j \geq 0 \)

Thus, \( \phi \) is the function to maximize.

- \( M \) is material expenditure for eight districts.
- \( L \) is labour expenditure for eight districts.
- \( Y \) is output (persondays generated under MGNREGS) for eight districts.

\[
T_F^C = \frac{Y_{12}}{\phi Y^{1/12}} \leq 1
\]

\[
\sum \lambda_j = 1, \quad \lambda_j \geq 0
\]

If Variable Returns to sale:

\( T_E^C \neq TVR^S \)

Then, Scale Efficiency = \( \frac{T_E^C}{TVRS} = 1 \)

**Average Annual Growth Rate**: Given the time series data, we have computed average annual growth rate by fitting a linear function to the data.

A linear trend equation is defined as:

\( Y = a + bt \)

The values of the parameters and \( b \) in the equation are estimated by using Ordinary Least Square (OLS) method. The average annual growth rate is computed by using formula:

\[
LGR \ (g \%) = \frac{b}{Y}.100
\]
Where \( b \) = estimated regression coefficient of \( Y \) on \( t \)

\( Y \) = Average value of \( Y \).

1.9 Chapter Scheme

To develop the study in a systematic manner, the present study consists of six chapters. The first chapter is an introductory chapter which includes main issues, hypotheses, objectives and methodology of the study. Chapter 2 reviews the existing literature related to the present study. Chapter 3 analyzes the nature and extent of rural unemployment in Haryana. Chapter 4 is an attempt to understand the functioning of MGNREGS in terms of **efficiency, equity** and **accountability** in Haryana at aggregate level. Chapter 5 examines the functioning of MGNREGS in Haryana at Zonal (disaggregate) level. Chapter 6 is the concluding chapter of the study suggesting policy implications.