CHAPTER-3

Research Methodology

3.1 Data Description

This research study is conducted on the basis of secondary data. The study used the last three years data such as gender wise participation, cast wise employed person, age wise registered and employed person, no. of registered person, job cards issue, employment demanded, employment offered, rural connectivity, land development, micro irrigation, traditional water bodies, water conversation and water harvesting, flood control, drought proofing, provision of wage rate, registered family and person, available fund and expenditure fund, complete work and incomplete work, etc. The data divided into three financial years viz. 2010-11, 2011-12 and 2012-13. The secondary data on selected variables have been collected from Ministry of Rural Development, Department of Rural Development Agencies in Mahendergarh District, site of Haryana Rural Development, etc.

3.2 Methods of Analysis

This study employed the OLS (Ordinary Least Square) method used on selected variables such as gender wise participation, cast wise employed person, no. of registered person, no. of job card issue, employment demanded and employment offered and age wise registered and employed person, and work projection in last three years of MNREGS in Mahendergarh district. The simple regression model has been employed to analyse the impact of female participation on employment creation of MNREGS.

3.3 Definition of Ordinary Least Square Method:-

Ordinary Least Square (OLS) or Linear Square is a method for estimating the unknown parameters in a linear regression model. The method minimizes the sum of squares vertical distances between the observed responses in the dataset and the responses predicted by the linear approximation.

Semi-Log: The exponential equation is given by

$LnYi = \alpha + \beta X + Ui$this is fitted using OLS method

Here Yi = Dependent variables in i^{th}year ($i= 1, 2, 3 \ldots N$)

α = Intercept, β = Regression coefficient, Ui = Residual term

The parameters α and β are estimated by the least square method.

The significance of the regression coefficients of the model has been tested by usual P-Value. The coefficient of determination has also been calculated for the model.

3.4 OLS Method Use in Excel:-

There are many steps use in excel.

Step 1: Firstly, to check whether the installation of Excel has loaded the DATA ANALYSIS ADD-INS. After, the pulls down the TOOLS menu. This will allow running regressions and doing other statistical options.

Step 2: Secondly, to run a regression need a data file. The data is likely in column. It needs to designate a column for the dependent variable and the independent variables.

Regression typically looks like this:

$LnYi = \alpha + \beta X + Ui$

Y is the dependent variablein i^{th}year (i= 1, 2, 3…N)

X is the independent variable

α is the Intercept term

β is the Regression coefficient on the variable of X

U is a Residual term

Step 3: In order to run a regression, we need to get the variables we want in to columns. Creates these series as their own columns. Once these series are put in a column, we can run the regression.

Step 4: To run the regression, you need to go to the TOOLS menu and click DATA ANALYSIS, from the list that pops up, scroll down and choose REGRESSION. This pops up a screen that asks for a dependent variable (Y) and independent variable (X). To select each variables, type in

the cell range, or click the little box in the upper right corner of the range space, go the data click and drag the mouse over the desired range.

Step 5: Do this for both the Y and X variables. Next choose output options. The result on a new worksheet by ply. Once you have selected the output, choose OK and the regression runs. You get sent to the output page and see the regression output.

Step 6: The top part of the regression output includes diagnostic statistics such as R-Squared.

Step 7: These items are found at the bottom of the table. The bottom rows of the table provide the output for each variable in the regression. After each variable name note down in a new table. The first row is the intercept value. The next row is the coefficient value on the first X variable. The p-value gives the significance level of the coefficient estimates.

Step 8: Click OK to complete the important process. Now, you get intercept value and its p-value, coefficient value and it p-value and R-Squared.

Step 9: After complete process a new table draw in excel with intercept value and it p-value and coefficient value and it p-value and R-Squared.

R-Square:

R-Squared is a statistical measure of how close the data are to the fitted regression line. It is known as the coefficient of determination, or the coefficient of multiple determinations for multiple regressions. The definition of the R-squared is fairly straight forward; it is the variation that is explained by a linear model.

R-Squared= explained variation/total variation

R-Squared is always between 0 and 100%. 0% indicates that the model explains none of the variability of the response data around it. 100 per cent indicates that the model explains all variability of the response data around its mean. In generally, the higher the R-Squared, the better the model fit our data.

P-Value:

In the statistical significance testing the p-value is the probability of obtaining a test statistics at least as extreme as the one that was actually observed, assuming that the null hypothesis is true. The p-value can be interpreted in terms of a hypothetical repetition of the probability of the study. P-value is the probability value.