



TO STUDY THE EFFECT OF UNEMPLOYMENT IN SEVERAL SECTORS USING STATISTICAL METHODS

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ABSTRACT

There are few studies on unemployment duration in developing countries. This is the first study on duration aspect of unemployment in India. We use the result of the Household Labor Force Surveys of 2000 and 2001 to construct a cross-section of durations of unemployment spells. We analyze the determinants of probability of leaving unemployment or the hazard rate. The effects of the personal and household characteristics and the local labor market conditions are examined. Non-Parametric and parametric estimation methods are used. Unobserved heterogeneity was not significant. Two alternative definitions of unemployment are considered. The analyses are carried out for men and women separately. Our results indicate that women are experiencing higher unemployment durations than men. Age has a negative and education has a positive effect on the hazard rate. The effect of the local unemployment rate is large and negative. Duration dependence of the exit rate from unemployment is different for men and women. For men, there is slight U-shaped duration dependence, while for women there is no duration dependence.

KEY WORDS: Graphical Representation, Testing of Hypothesis, ANOVA, Level of significance

INTRODUCTION

Unemployment is a common economic malady faced by each and every country of the world, irrespective of their economic system and the level of development achieved. But the nature of unemployment prevailing in underdeveloped or developing countries sharply differs to that of developed countries of the world. While the developed countries are facing unemployment, mostly of Keynesian involuntary and frictional types but the underdeveloped or developing countries like India are facing structural unemployment arising from high rate of growth of population and slow economic growth.

Structural unemployment may be open or disguised type. But the most serious type of unemployment from which those undeveloped countries like India are suffering includes its huge underemployment or disguised unemployment in the rural sector. Unemployment is a serious problem. It indicates a situation where the total number of job vacancies is much less than the total number of job seekers in the country. It is a kind of situation where the unemployed persons do not find any meaningful or gainful job in spite of having willingness and capacity to work. Thus unemployment leads to a huge wastage of manpower resources.

India is one of those ill-fated underdeveloped countries which is suffering from a huge unemployment problem. But the unemployment problem in India is not the result of deficiency of effective demand in Keynesian term but a product of shortage of capital equipment's and other complementary resources accompanied by high rate of growth of population. Present unemployment problem in India is mostly structural in nature. Unemployment in India remains a subject of concern since it was first recognized in 1950s. During that period; the Government of India had only few initiatives of employment generation until the first Five Year Plan was drafted in the year 1950-1951. This plan laid the foundation for overall and sectorial development in a medium term prospective for achieving the goal of employment growth and increasing the labor force.

For the first time, in the Seventh Five Year Plan (1985-1990), employment was placed at the core of development strategy. In the Ninth Five Year Plan (1997-2002), employment was identified as one of the three important dimensions of state policy with others being quality of life and regional balance. The Eleventh Five Year Plan (2007-2012) mainly focused on 'inclusive' growth and conceived employment as the key element of the same. Thus unemployment has received great importance in the development agenda of India since Independence.



OBJECTIVES

- To study meaning of Unemployment in Kolhapur district.
- To study the nature of Unemployment Problem in Kolhapur district.
- To study Causes of Unemployment Problem Kolhapur district.
- To study about remedial Measures to Solve Unemployment Problem.
- To study about employment Policy and Schemes.
- To study of growth of Employment in Recent Years.
- To study of global Economic Recession and its Impact on Unemployment Problem in India.

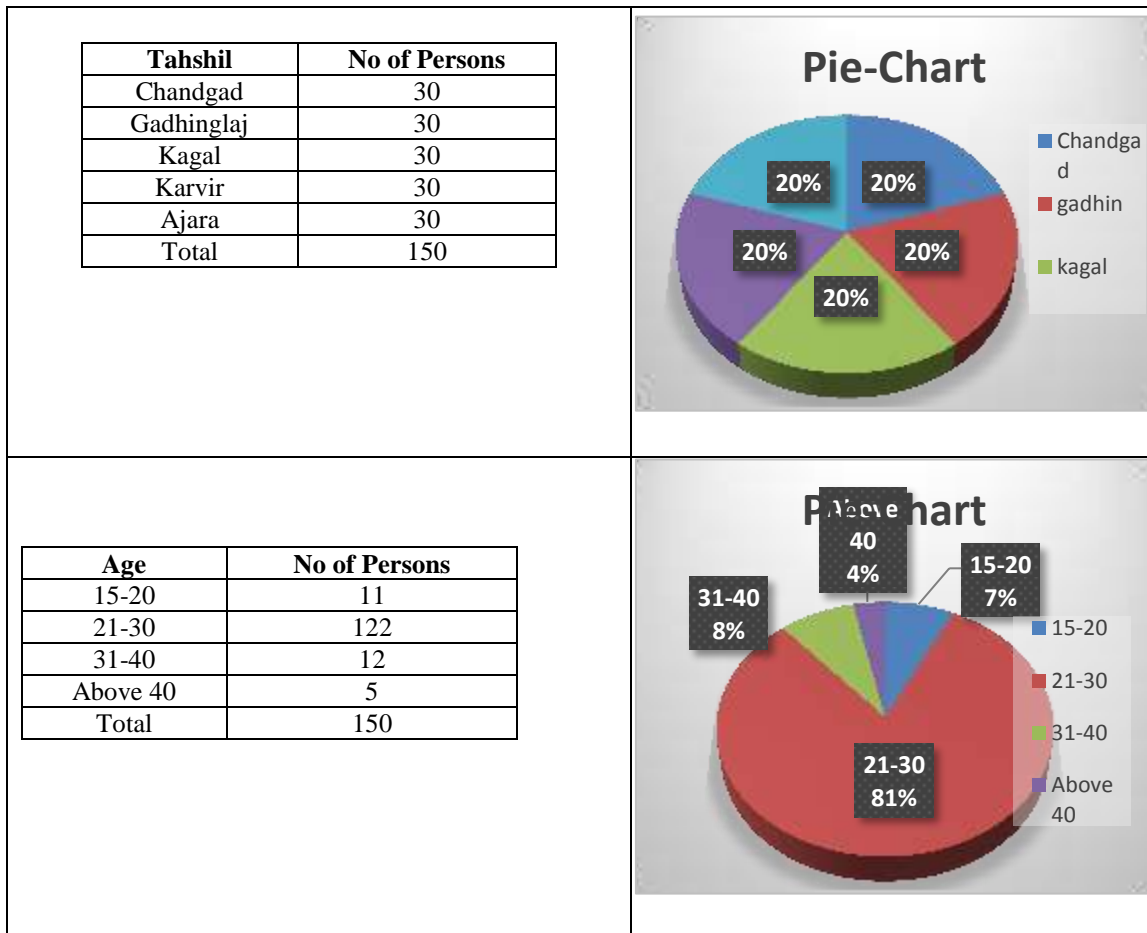
STATISTICAL SOFTWARE

MS – EXCEL
MS – WORLD

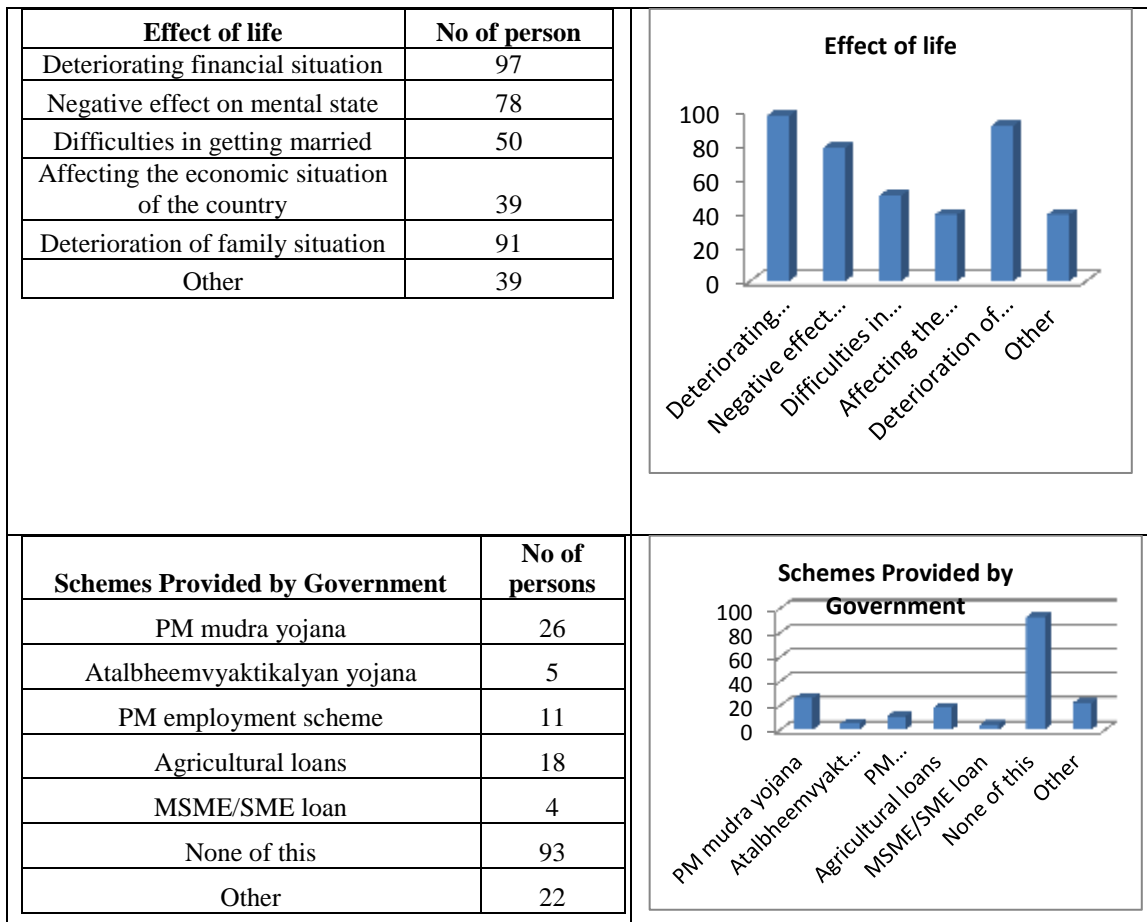
STATISTICAL TOOLS

1. Graphical Tools: Bar diagram, Multiple Bar diagram, Pie chart
2. Test: Chi-Square Test, Z test for Proportion
3. ANOVA

GRAPHICAL REPRESENTATION



<table border="1"> <thead> <tr> <th>Employment status</th> <th>Frequency</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Employee</td> <td>53</td> <td>35%</td> </tr> <tr> <td>Unemployed</td> <td>97</td> <td>65%</td> </tr> <tr> <td>Total</td> <td>150</td> <td>100%</td> </tr> </tbody> </table>	Employment status	Frequency	Percentage	Employee	53	35%	Unemployed	97	65%	Total	150	100%	<p>Pie-Chart</p> <table border="1"> <thead> <tr> <th>Employment Status</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Employee</td> <td>35%</td> </tr> <tr> <td>Unemployed</td> <td>65%</td> </tr> </tbody> </table>	Employment Status	Percentage	Employee	35%	Unemployed	65%						
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TESTING OF HYPOTHESIS

Chi-Square Test

1) Test for Independence between Area and Gender

Hypothesis:

Ho: There is independence between Area and Gender.

H1: There is no independence between Area and Gender.

Test statistic

$$\chi^2_{cal} = \sum(Oi2/Ei) - N$$

$$\chi^2_{cal} = 3.841$$

$$\chi^2_{cal} < \chi^2_{tab}$$

2) Test for independence

Hypothesis:

H0: There is no correlation between area and type of family

H1: There is correlation between area and type of family

Test Statistic:

$$\chi^2_{cal} = \sum(Oi2/Ei) - N = 9.7116$$

$$\chi^2_{tab} = 3.8414$$

$$\chi^2_{cal} > \chi^2_{tab}$$

3) Test for Independence between Gender and Education Status

Hypothesis

Ho: There is independence between Gender and Education Status

H1: There is no independence between Gender and Education Status



Test Statistic

$$\begin{aligned}\chi_{cal}^2 &= \Sigma(Oi2/Ei) - N \\ &= 8.6082176 \\ \chi_{tab}^2 &= 3.841458821\end{aligned}$$

$\chi_{cal}^2 > \chi_{tab}^2$, Hence, we reject Ho

4) Test for Independence between Gender and Employment status

Hypothesis

Ho: There is independence between Gender and Employment status

H1: There is no independence between Gender and Employment Status

Test Statistic:

$$\begin{aligned}\chi_{cal}^2 &= \Sigma(Oi2/Ei) - N \\ &= 10.4408 \\ \chi_{tab}^2 &= 3.841459\end{aligned}$$

$\chi_{cal}^2 > \chi_{tab}^2$, Hence, we reject Ho

Proportion Test

5) Test for proportion

Ho: There is no effect of unemployment on family, social and economic life

H1: There is effect of unemployment on family, social and economic life

The test statistic

$$\begin{aligned}Z &= \frac{\hat{p} - P_0}{\sqrt{\frac{P_0(1-P_0)}{n}}} \\ |Z| &= 4.6197 \\ Z_{tab} &= 1.64\end{aligned}$$

$Z_{cal} > Z_{tab}$,

6) Test for proportion

H0: There is no negative effect of unemployment on family life

H1: There is negative effect of unemployment on family life

The Test Statistic

$$\begin{aligned}Z &= \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}} \\ |Z| &= 2.1648 \\ Z_{tab} &= 1.64\end{aligned}$$

$Z_{cal} > Z_{tab}$,

7) Test for Proportion

H0: There is no negative effect of unemployment on mental health

H1: There is negative effect of unemployment on mental health

The Test Statistic

$$\begin{aligned}Z &= \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}} \\ |Z| &= 2.1668 \\ Z_{tab} &= 1.64\end{aligned}$$

$Z_{cal} > Z_{tab}$,

8) Test for Proportion

H0: There is no effect of unemployment on leads to intoxicated

H1: There is effect of unemployment on leads to intoxicated



The Test Statistic

$$Z = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

$$|Z| = 1.6027$$

$$Z_{tab} = 1.64$$

$Z_{cal} < Z_{tab}$,

9) Test for proportion

H0: There is no effect of unemployment on suicide rate rise

H1: There is effect of unemployment on suicide rate rise

The Test Statistic

$$Z = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

$$|Z| = 1.9798$$

$$Z_{tab} = 1.64$$

$Z_{cal} > Z_{tab}$,

10) ANOVA

H01: There is no significance effect of education

H11: There is significance effect of education And

H02: There is no significance effect of type of work prefer to do when unemployment

H12: There is significance effect of type of work prefer to do when unemployment

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Education	1747.583	3	582.5278	8.013374	0.016067	4.757063
type of work when unemployment	354.5	2	177.25	2.438288	0.167872	5.143253
Error	436.1667	6	72.69444			
Total	2538.25	11				

For Education

$F_{cal} > F_{tab}$ and $P_{value} = 0.01606 < 0.05$

For type of work when unemployment

$F_{cal} < F_{tab}$ and $P_{value} = 0.1678 > 0.05$

11) Mann-Whitney Test

To test equality of means of urban and rural area over both types of family

Hypothesis

H₀: Unemployment in urban area and rural area over both types of family are same

H₁: Unemployment in urban area and rural area over both types of family are not same

R₁ = Sum of ranks of sample and R₂ = Sum of ranks of sample

Test Statistics,

$$U_1 = n_1 n_2 + \frac{n_1(n_1+1)}{2} - R = 1$$

$$U_2 = n_1 n_2 - U_1 = 3$$

$$U = \min(U_1, U_2) = 1$$

$$U' = \max(U_1, U_2) = 3$$



Critical value

$$z = \frac{|U - \frac{n_1n_2}{2}|}{\sqrt{\frac{n_1n_2(n_1+n_2+1)}{12}}}$$

$Z_{cal} = 2.3237$; $Z_{tab}=1.96$ and $Z_{cal}>Z_{tab}$

Major Findings

- There is independence between Area and Gender
- There is correlation between Area and Type of Family
- There is no independence between Gender and Education Status
- There is no independence between Gender and Employment Status
- There is effect of unemployment on family, social and economic life
- There is negative effect of unemployment on family life
- There is negative effect of unemployment on mental health
- There is no effect of unemployment on leads to intoxicated
- There is no effect of unemployment on suicide rate rise
- There is significance effect of education
- There is no significance effect of type of work when unemployment
- Unemployment in urban area and rural area over both types of family are not same

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