



## Study on Identifying Factors Affecting Unemployment in Sri Lanka

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### ABSTRACT

Unemployment is often used as a measurement of the health of the economy. The main objective of this study is to determine the factors that affect the unemployment in Sri Lanka. In this study economic and personal factors are considered separately. Economic factors were analyzed using secondary data from 1990 to 2014. Unemployment rate is considered as the dependent variable and Gross Domestic Production, inflation rate, annual birth rate and annual death rate were considered as the independent variables. Personal factors were analyzed using the micro data set of labour force survey 2013. Descriptive analysis, chi-square tests, multiple regression analysis and binary logistic regression analysis were used for the analysis. The multiple regression analysis and binary logistic regression were used to identify the economic and personal factors that affect the unemployment in Sri Lanka, respectively. Multiple regression showed that the gross domestic production and annual birth rate were significantly affected the unemployment rate in Sri Lanka. Results of the chi-square tests showed that there were relationships between unemployment with gender, age, marital status, educational level, attendance at schooling or other educational institution, Sinhala literacy, Tamil literacy and English literacy. Binary logistic regression showed that gender, age, marital status, educational level, attendance at schooling or other educational institution and English literacy significantly affected the unemployment in Sri Lanka.

**KEYWORDS:** Economic Factors, Personal Factors, unemployment

### 1 INTRODUCTION

Unemployed means that, persons available and/or looking for work, and who did not work and taken steps to find a job during last four weeks and ready to accept a job given a work opportunity within next two weeks. Unemployment is a great problem for the economic development of a country. If the economy maximized efficiency, everyone would be employed at some wage. This study is focused on identifying the economic and personal factors that are affecting the unemployment in Sri Lanka.

### 2 LITERATURE REVIEW

The modern definition of unemployment emerged in the late 1930s from research conducted at the Works Progress Administration and the Census Bureau. Under this definition, people who are not working but are actively searching for work are counted as unemployed. Though the equating of “unemployment” with “active

search” fits naturally in a modern search-theoretic framework, the idea was sharply criticized at the time for not conforming to existing theoretical constructs (Card, 2011).

Forstater (2002) stated that the unemployment, the failure to obtain employment that earns wages or salaries paid in money, thus has a dire impact on the jobless, and is also associated with tremendous social and economic costs for the society as a whole. Whereas in neoclassical economics, market systems possess an inherent tendency to full employment, in Post Keynesian economics unemployment is seen as a normal feature of capitalist economies. Unemployment causes permanent losses of output of goods and services. The unemployed are faced with financial insecurity, resulting in poverty and indebtedness.

In a study on Determinants of Unemployment in Limpopo Province in South Africa, Kyei & Gyekye (2011) found out that GDP does not have a significant relationship

with unemployment. Meaning that irrespective of how much Limpopo economy grows; it will not be able to turn around the unemployment situation in the province, which is already worrying. Equally striking is the fact that the male population and the youth do not have significant relationships with unemployment in Limpopo.

Biagi & Lucifora (2005) have investigated about the effects of demographic and educational change on the labour market position of workers, by gender, cohort and education, in a number of European countries. Results show that demographic and educational shocks are qualitatively different for young (adult) workers as well as for more (less) educated people. While adult workers and more educated individuals, in general, experience lower unemployment rates, changes in the population age structure appear to be positively related to young workers' unemployment rates.

### 3 RESEARCH QUESTION

This research was mainly focused on identifying the factors that affect the unemployment of Sri Lanka. Identifying factors related to the unemployment is useful to the country. Every year Department of Census and Statistics conducts the labour force survey by selecting 25000 housing units. As a developing country unemployment rate is an important measure. Personal and economic factors affect the increase or decrease of unemployment rate. This research will be a timely topic because the unemployment is a major problem to be discussed.

### 4 METHODOLOGY

To analyze the economic factors that impact on the unemployment, annual data of unemployment rate in Sri Lanka, GDP (in  $10^{10}$  Sri Lankan rupees), birth rate, death rate and inflation rate were collected from 1990 to 2014, from annual reports of the Department of Census and Statistics and the Central Bank. A multiple regression model

was fitted to find out the economic factors that affect the unemployment in Sri Lanka.

To analyze the personal factors, micro data set of Labour Force Survey (LFS) 2013 was collected from the Department of Census and Statistics and binary logistic regression was used to find out the personal factors that impact the unemployment rate.

Under the preliminary analysis a bar chart and a pie chart were drawn to understand the distribution of each variable properly. Chi-square test was done to identify the significant relationship between the dependent variable and independent variables separately. Correlation test was carried out to find out whether there is a linear relationship between unemployment rate and each independent variable, by testing the appropriate hypothesis.

## 5 RESULTS AND DISCUSSION

To identify the impact on the unemployment analysis was conducted separately for the economic factors and personal factors.

### 5.1 Economic Factors Analysis

Distribution of unemployment rate with years is shown in Fig. 1.

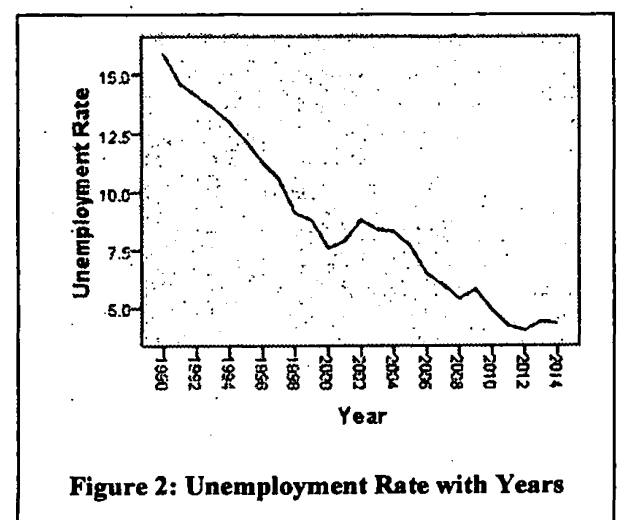


Fig. 1 depicts decreasing pattern of the unemployment rate in Sri Lanka from 1990 to 2014. The highest unemployment rate in Sri Lanka, which was above 15%, was recorded in 1990 and lowest was recorded in 2012.

A multiple regression model was fitted to find out the economic factors that affect the unemployment in Sri Lanka. Here the independent variables are Gross Domestic Production, inflation rate, annual birth rate and annual death rate and the dependent variable is unemployment rate.

The summary of the multiple regression analysis is shown in Table 1.

Table 1: Summary of Multiple Regression

Model	Unstandardized Residuals ( B )	Sig. P
Constant	-20.421	0.009
Birth Rate	16.028	0.000
GDP	-0.005	0.007

According to Table 1, it is clear that GDP and birth rate are significant at 5% level of significance. Further the following model can be derived for economic factors.

$$\text{Unemployment Rate} = -20.421 + 16.028 * \text{Birth Rate} - 0.005 * \text{GDP (in } 10^{10})$$

According to the model summary of the multiple regression analysis, R squared value stands at 0.833, which indicates that 83.3% of variation can be explained from the model, and therefore this is a good model for prediction.

### 5.2 Personal Factors Analysis

In identifying the significant personal factors affect the unemployment, unemployment was considered as the dependent variable, which is categorical and it is considered as employed or not. The independent variables, personal factors, considered for this study are gender, age, ethnic group and religion, marital status, educational level, attendance at schooling or other institution, Sinhala literacy, Tamil literacy and English literacy.

The chi-square tests were used to identify the relationship between unemployment in Sri Lanka and independent variables.

### Hypotheses

H<sub>0</sub>: There is no relationship between unemployment and personal factors

H<sub>1</sub>: There is a relationship between unemployment and personal factors

The summary of the hypothesis testing is shown in Table 3.

Table 2: Hypothesis Testing Summary

	P value	Results
Gender	0.000	Reject H <sub>0</sub>
Age	0.000	Reject H <sub>0</sub>
Ethnic Group	0.151	Accept H <sub>0</sub>
Religion	0.074	Accept H <sub>0</sub>
Marital Status	0.000	Reject H <sub>0</sub>
Educational Level	0.000	Reject H <sub>0</sub>
Attendance at Schooling or other Educational Institution	0.000	Reject H <sub>0</sub>
Sinhala Literacy	0.017	Reject H <sub>0</sub>
Tamil Literacy	0.000	Reject H <sub>0</sub>
English Literacy	0.000	Reject H <sub>0</sub>

As illustrated in Table 2, it can be concluded that there are relationships between the unemployment and the personal factors except for ethnic group and religion at 5% level of significance.

The summary of the binary logistic regression was presented in Table 3.

Table 3: Final Step of the Variables in the Equation

Factor	B	Sig.	Exp(B)
Gender (1. Male)	-.753	.000	.471
Age		.000	
Age (1. between 15-25)	3.053	.000	21.187
Age (2. Between 26-40)	1.933	.000	6.912
Age (3. Between 40-60)	1.105	.001	3.020
Marital Status		.000	
Marital Status (1- Never Married)	.448	.116	1.565
Marital Status (2- Married)	-.675	.017	.509

Marital Status (3- Widowed)	-.293	.409	.746
Marital Status (4- Divorced)	.160	.744	1.174
Edu. Level		.000	
Edu. Level (1. Passed Grade 5 or below)	-.140	.695	.869
Edu. Level (2. Passed Grade 6-12)	.546	.096	1.727
Edu. Level (3. Passed A/Ls)	1.035	.002	2.816
Edu. Level (4. GAQ)	1.793	.000	6.006
Edu. Level (5. Degree)	.535	.137	1.707
Edu. Level (6. Post Graduate degree)	-.077	.891	.925
Schooling or other		.000	
School or other now (1. School)	-.392	.261	.676
School or other now (2. University)	.107	.713	1.113
School or other now (3. Other edu: institute)	.547	.002	1.728
School or other now (4. Vocational or other)	1.108	.000	3.028
Literacy English (1. Able to read & write)	.180	.017	1.197
Constant	-5.070	.000	.006

**Hypotheses:**

H<sub>0</sub>: The factor does not affect the dependent variable.

H<sub>1</sub>: The factor affects the dependent variable.

From Table 3, the binary logistic Regression model can be derived as

$$\text{Log}_e (P (\text{Unemployed})/P (\text{Employed})) = -5.070 - 0.754 (\text{Gender (1)}) + 3.053 (\text{Age (1)}) + 1.933 (\text{Age (2)}) + 1.105 (\text{Age(3)}) - 0.675 (\text{Marital Status(2)}) + 1.035 (\text{Educational Level(3)}) + 1.793(\text{Educational Level (4)}) + 0.547(\text{Attendance at Schooling or other Institution (3)}) + 1.108 (\text{Attendance at Schooling or other Institution (4)}) + 0.18 (\text{English Literacy(1)})$$

**6 CONCLUSION**

When economic factors are considered, unemployment in Sri Lanka have

relationships with GDP, inflation rate, birth rate, but the multiple regression equation identified GDP and birth rate affect the unemployment. And according to the chi-square tests and binary logistic regression analysis, among ten factors there were six factors which significantly affect the unemployment. Those factors are gender, age, marital status, educational level, attendance at schooling or other educational institution and English literacy.

This research focused on the economic and personal factors that affect the unemployment in Sri Lanka by considering two types of data sets. And it will be helpful to introduce solutions for minimizing the unemployment rate in Sri Lanka.

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