Analyzing the Labor Force Participation Pattern for Secondary Employment and fit a model to predict monthly income of a family by their Main Employment

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ABSTRACT

This research study attempts to identify the labor force participation pattern for secondary employment and also to develop a model to predict monthly income of a family by main employments of all family members. Data collected by the Department of Census and Statistics through the Labor Force Survey has been utilized for the study. Secondary Employment data from the above survey of year 2008 is used for descriptive analysis. A data set pertaining to 546 households in Galle district is used for the multiple regression analysis. Although data on Secondary Employment is collected by the above survey, the published data were not made available by the Department of Census and Statistics. Statistical methods of descriptive statistics, frequency tables and multiple regression analysis have been performed with the aid of software SPSS 16.0 and MS Excel. Findings of this study reveal that only 9.69% of respondents are engaged in Secondary Employment. Majority include males. For Secondary Employment, rural sector records the highest proportion which amounts to 91.9%. It is observed that the majority of secondary employees are belongs to the education level of below grade 10. The model developed by the researcher to prédict monthly household income from main employment of all family members, explains 78.5% of the variation on the dependent variable.

KEYWORDS: Labour Force, Main Employment, Secondary Employment

INTRODUCTION

Population of Sri Lanka, age more than 10 years old is divided into two parts by considering their contribution to the economic activities of the country as economically active and economically inactive. Economically active population is considered as labor force. The labor force of the country could be divided into two categories such as employed labor force and unemployed labor force. The measure of Labor force in a country is one of the main economic indicators which is used to make economic decisions and also for Planning and Implementations. The current data on Labor Force are generally used to;

- Identify the status of employment, unemployment and underemployment of the country with its trends
- Measure the magnitude and distribution of employment opportunities needed at any point of time or over a given period of time
- Monitor the progress of employment development programs
- Evaluate the impact of such programs on unemployment and underemployment, income and the satisfaction of the basic needs

As per the labor force survey, 10% of the sample is engaged in secondary employment. It may be higher than the actual scenario. Most of the people do not reveal their secondary employment because,

- It is considered as a less important activity
- They are reluctant to disclose information
- Disclosing such information creates disadvantages for them
- There is no legal authority to monitor

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secondary employment

Respondents do not reveal secondary employment data as they consider main employment is more important and productive in comparison to secondary employment. If the income received and time spent for secondary employment is very low it is not considered as secondary employment.

General public do not have enough awareness about the importance of secondary employment to the Gross National Production (GNP). Therefore responsibility of respective authorities is to educate the general public in this regard.

LITERATURE REVIEW

When reviewing world research literature researcher was able to found that, Cain (1967) stated that people will move to secondary employment when they feel insecurity about the main employment. On the other hand, Guest (2000) mentioned that people are more likely to shift to secondary employment when their income from main employment is not enough to feed the family.

General practice is, when a man becomes unemployed; his wife is more likely to get an employment. In Britain, when a man becomes unemployed, his wife is less likely to get employment than if he is employed. In particular she is less likely to enter even a part-time employment (Guest, 2000). Both of these mechanisms come into effect when the husband has been unemployed for 13 months or more and is normally receiving means-tested benefit. As per the research done by Guest (2000) in Germany this is a smaller group. Most German unemployed receive insurance benefit.

Guest (2000) found that number of employees in a household is the most influential factor on determining household income. It matches with Cain's (1967) findings and can be concluded that, if less number of employees are there in a household, they may more likely to move Secondary Employment in addition to the main employment.

According to Nanayakkara (2008) people engage in Secondary Employment not because of economical reasons but, due to social, cultural and personal reasons as well.

METHODOLOGY

This is a cross sectional study. Study is a mixture of Exploratory and correlation nature. Quantitative techniques are used in the study. Secondary data has been used.

Multiple Regression Analysis

Multiple Regression analysis is a statistical tool that allows examining how multiple independent variables are related to a dependant variable. Researcher used a multiple regression model to explain the impact on monthly household income from main employment based on selected independent variables. This model would be a powerful tool for making predictions. Thus adjusted R square value would be used to draw the conclusions.

Adjusted R square value gives the most useful measure of the success of the model. If, for example have an Adjusted R square value of 0.75 that means the model has accounted 75% of the variance in the dependent variable.

DATA COLLECTION AND ANALYSIS

As this research is mainly based on secondary data, it plays a vital role in this study. Data on Secondary Employment by gender, districts, major industries, etc which is relevant to this study has been extracted from the results of the Labor Force survey (2008). These data represent 7 provinces including 17 districts in Sri Lanka excluding districts in Northern and Eastern provinces. For the purpose of fitting a model to predict monthly household income from the main employments of all family members, Labor Force survey data pertaining to 546 households in Galle district have been used.

The Labor Force survey has been carried out on selected households by means of a survey schedule completed by a well trained statistical officer of the Department of Census and Statistics. The total household income from main employment mentioned above is considered as the dependant variable of this study. Independent variables have been identified from the survey schedule. Initially 24 independent variables have been selected.

The researcher made estimations on the following rates by means of Labor Force survey data (2008).

Equation 01: Participation rate of secondary employment

Participation rate of secondary employment = ((Secondary employment population) / (Main employment population)) * 100

Equation 02: Monthly secondary income rate

Monthly secondary income rate = ((Average monthly income of secondary employment) / (Average monthly income of main employment)) * 100

Equation 03: Employment rate

Employment rate = ((Employed population) / (Labor force population)) * 100

Equation 04: Unemployment rate

Unemployment rate = ((Unemployed population) / (Labor force population)) * 100

RESULTS AND DISCUSSION

The working age population which include age 10 years and above, contributed 84.06% of the whole population. Highest working age population is reported from Gampaha district. The percentage of economically active and economically inactive population of the working age population is 49.8% and 50.2% respectively. Economically inactive including full time academics, people engaged in household duties, retired and infirmed or disables. In the economically active population 64.9% are males and in the economically inactive population 69.4% are females. The proportions of employed and unemployed in the Labor Force are 94% and 6% respectively. The highest employment rate of 96.6% is reported from the Anuradhapura district and highest unemployment rate of 9.2% is reported from Matara district.

Only 9.69% of respondents are doing secondary occupation of which 77.7% are males. Highest participation rate of secondary employment of 21.5% is reported from Anuradhapura and lowest of 3.8% is reported from Gampaha. Highest number of secondary employees is reported from Uva province while lowest from Sabaragamuwa. Rural sector reported 91.9% of secondary employees. Of the secondary employees 62.5% are heads of households. Considering the marital status of the secondary employees 84.3% are married. 60% of secondary employees are over 40 years. Considering the level of education of secondary employees 73.1% are below grade 10 and only 2.5% are degree holders. 62% of secondary employees are engaged in agriculture industry and 53.4% of secondary employees are skilled agriculture and fishery workers.

Those engaged in secondary employment, only 2.2% are working more than 50 hours per week and 34% are working around 10-19 hours per week. For monthly wage earners, average monthly income of main and second occupation is Rs. 12616 and Rs. 4161 respectively. The respected figure for the daily wage earners is Rs. 6540 and Rs. 3911. Therefore monthly secondary income rate is higher in the daily wage earners and it is 59.8%. Monthly wage earners monthly secondary income rate is 32.98%.

Multiple Regression analysis is used to fit a model to predict monthly income of a family based on income of all members who have main employment opportunity. Dependent variable is taken as "total monthly income of a family by main employments" and 24 independent variables are used initially. The

independent variable "no. of Employees" has the highest impact (Pearson Correlation coefficient is 0.717) on dependant variable.

Table 1: Model summery

R	R Squared	Adjusted R Square	Std. Error of the Estimate
0.887	0.787	0.785	8243.347

Adjusted R Squared value is 0.785. That means 78.5% of variation in total monthly income of a family from the main employment can explained by this model. The model is given below.

$$Y = 9033.754\ X_1 + 4884.221\ X_2 + 6392.216\ X_3 + 1558.411\ X_4 + 5042.080\ X_5$$

Where;
Y - Total monthly household income by Main Employments
X_1 - No. of Employees
X_2 - No. of workers entitled for annual paid leave or leave encashment

X_3 - No. of government workers
X_4 - No. of computer literacy persons
X_5 - No. of semi government workers

As independent variables are significantly explain the variance of dependent variable this can be a better model for this regression.

The Adjusted R Squared value is very significant.

Thus, conclusion can be made as 78.5% of the variation in the total monthly income of the family from the main employment is explained by the significant independent variables in that model.

CONCLUSION

According to the information on secondary employment, the percentage of people who are engaged in a secondary employment is 9.7%. A respondent is considered as having a secondary employment only if he or she is engaged in a secondary occupation during the specified reference period. Therefore the chance of getting included in to the secondary employment category is rare. Hence in the actual situation the expected figure for the participation rate of secondary employment should be much higher than the above figure of 9.7%. Therefore more attention should be paid in future surveys when collecting data on secondary employment.

The highest numbers of Secondary Employees are heads of households. It shows their responsibility for family feedings. The majority of people, who are engaging in

Secondary Employment, are married. Most of them are own account workers. Percentage of paid employees is lower and their salary group is Rs.1000 - 5000. After reaching the age of 30 the percentage of population engaged in a secondary employment increases rapidly. This might be due to their additional expenditure on family commitments and other problems.

Table 2: Coefficients of the model

Variable	Unstandardized Coefficients		t	Sig	95% Confidence Interva for B	
	B	Std. Error			Lower Bound	Upper Bound
No. of Employees	9033.754	350.326	25.787	0.000	8345.583	9721.926
No. of workers Entitled for annual paid leave or leave encashment	4884.221	1107.570	4.410	0.000	2708.538	7059.904

Percentages of population who are engaged in a secondary employment are having education level of grade 6 -10. The average secondary working hours for males is 20 and 17.4 hours for females per week. The highest average hours of working in secondary employment per week is reported from Badulla district. It is estimated as 19.4 hours and Badulla is an agriculture based district. The average wages earn per month from the secondary employment is Rs.4161/- on month basis and Rs.3911/- on daily basis. Agriculture sector base secondary employed people generate more income compared to other sectors.

In addition to that, the used Multiple Regression model explained 78.5% of the variance of total monthly income of households from main employment. 24 independent variables are selected initially. Out of which 19 independent variables are not significant, hence those are rejected by the model by leaving only five independent variables. Out of these five independent variables left in the model, the highest impact on dependant variable is observed by the independent variable "no. of employees". Its coefficient records the highest value of 9033.754. This variable records the highest correlation on dependant variable of 0.717 as well. Coefficients of all the five remaining independent variables in the model as given by Table 2, shows a very high significance. Therefore this model can be used to get a more accurate and strong idea about the monthly household income from Main Employment.

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