

## Motivation of Rubber-Tapper Labour Productivity in Kalutara District

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### ABSTRACT

Rubber industry in Sri Lanka is one of the main foreign exchange earnings in Sri Lankan economy. Improving labour productivity by motivating tappers is of great importance since tapper plays a major role in the rubber industry. This study was carried out to find out the motivational factors influencing labour productivity of rubber tappers in Kalutara district. Primary data were collected through a pre-tested structured questionnaire by means of face to face interviews with 100 respondents selected using multi stage sampling technique. Both descriptive and inferential statistics were used to analyze data. Multiple Linear Regression was applied to find out extrinsic and intrinsic motivational factors affecting labour productivity of tappers. Satisfaction of work, responsibilities and appreciation were taken as intrinsic motivational factors while wage, fringe benefits and personal growth were taken as extrinsic motivational factors. Results revealed that satisfaction of work, fringe benefits, responsibilities and wage factors are significantly affect labour productivity of tappers. Therefore, the study confirms that both intrinsic and extrinsic motivational factors have significant impact on tapper productivity.

**KEYWORDS:** Extrinsic motivational factors, Intrinsic motivational factors, Labour productivity, Rubber industry

### INTRODUCTION

Rubber is one of the prime export agricultural crops that bring a considerable amount of foreign exchange to the country. Sri Lanka is the world's 6<sup>th</sup> largest exporter and the 8<sup>th</sup> largest natural rubber producing country which offers many types, forms and grades, such as Ribbed Smoked Sheet (RSS), Technically Specified Rubber (TSR), crepe, centrifuged latex and specialty rubbers (Anon, 2011a). Sri Lanka contributes 2.5 % of global rubber production (Anon, 2011b).

Among the plantation economies, Sri Lanka has the 3<sup>rd</sup> largest estate workforce, next only to India and Brazil in 21<sup>st</sup> century, but this estate workforce has changed dramatically in last few years (Sivaram, 2000). In rubber industry, skilled tappers are the most important asset to run the industry, since the yield of latex is directly influenced by the commitment of tappers. Unless the well committed tappers are present, the optimum level of rubber latex will not be collected hence leads to low rubber production. Therefore, improving the labour productivity of tappers is important in rubber industry.

Human resource management is of strategic importance considering the industries that are labour intensive such as rubber industry. The effective management of human resource is the key towards achieving the higher workforce productivity. Further, motivation is one of the main factors which applied in most of the industries to retain their work force and improve their productivity. According to Hafiza *et al.*, (2011), motivation

can be extrinsic or intrinsic. Extrinsic motivation factors are tangible factors that are external to the job or task performed by the worker. External factors can be in terms of salary/wage, incentives, bonuses, promotions *etc.* Intrinsic factors are intangible factors or psychological factors such as appreciation, meeting the new challenges, positive and caring attitude from employer *etc.* Motivation of tappers in the rubber plantations is of great significance since motivation increases the productivity and consequently reduces cost of production.

The main objective of this study was to find out the extrinsic and intrinsic motivational factors influencing labour productivity of tappers. The specific objective was to find out how labour productivity of tappers varies among different demographic factors.

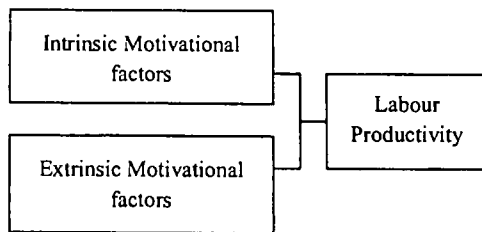
### METHODOLOGY

#### *Theoretical Framework*

Labour productivity can be defined as real output per unit of labour input. Typically, the labour input is measured in terms of hours worked (Gomez-Salvador *et al.*, 2006). The Multiple Linear Regression analysis was utilized to identify the motivational factors affecting labour productivity. The labour productivity was taken as the response variable while intrinsic and extrinsic motivational factors were taken as independent variables.

Figure 1 illustrates the theoretical framework carried under this project. Satisfaction of work, responsibilities and appreciation were the factors that considered

as intrinsic motivation while wage, fringe benefits and personal growth were taken as extrinsic motivational factors.



**Figure 1. Theoretical Framework**

#### Data Collection

The primary data were collected through a survey using a structured questionnaire from a sample of 100 respondents which were selected using multi-stage sampling method. There are 36 Rubber Development Officer's (RDO) divisions in Kalutara district. Ten RDO divisions were selected randomly among 36 RDO divisions. In second stage, two Grama Niladhari (GN) divisions were selected randomly among each and every selected RDO divisions. Five respondents were selected randomly from selected each GN divisions as third stage. Data were collected through pre-tested questionnaire by means of face to face interviews with tappers during the period of February 2013 to March 2013. The socio-economic characteristics and extrinsic and intrinsic motivational factors were measured using the questionnaire. Five point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to measure responses of motivational factors.

#### Data Analysis

Data were analyzed using SPSS 16.0 Windows version. Descriptive analysis was performed to find out how labour productivity varies among demographic factors. Gender, age, marital status, educational level, wage level and experience were considered as demographic characters. Further, Multiple Linear Regression model was developed among the labour productivity of tappers and motivational factors in order to identify the motivational factors affecting labour productivity. In here, Likert scale regarding extrinsic and intrinsic motivational factors was converted into an index with the purpose of performing the regression analysis. Each and every intrinsic and extrinsic factor contained a list of statements and the indices for all the motivational factors were developed as follows:

$$MFI = \frac{\sum_{i=1}^n S_i}{n \times L_{max}}$$

Where,

- $MFI$  = Motivational Factor Index  
 $S_i$  = Score obtained by the  $i^{\text{th}}$  statement  
 $n$  = Number of statements used to measure each factor  
 $L_{max}$  = Maximum value in the Likert scale

Moreover, the labour productivity was measured as kilograms of latex tapped per hour.

## RESULTS AND DISCUSSION

### Descriptive Statistics

The percentage representation of each socio economic factor is summarized in Table 1. Among the total respondents, 79 % was female and 62 % of them were over 50 years of age. Most of the female tappers have obtained only primary education (57 %). Therefore, results revealed that the females were dominated in tapping of rubber trees.

**Table 1. Socio-demographic background of respondent tappers**

Parameters	Percentages (%)
<b>Gender</b>	
Male	21
Female	79
<b>Age</b>	
18-30 Yrs	6
31-50 Yrs	11
>50 Yrs	83
<b>Marital Status</b>	
Married	91
Unmarried	5
Widow	4
<b>Education Level</b>	
No Education	4
Up to Primary	58
Up to O/L	32
Up to A/L	6
<b>Income Level</b>	
Rs.1,000-5,000	11
Rs.5,000-10,000	65
> Rs.10,000	24
<b>Experience</b>	
1-5 Yrs	7
6-15 Yrs	33
>15 Yrs	60

For clear comparative purpose, each socio-economic factor was compared with labour productivity using Box-plots.

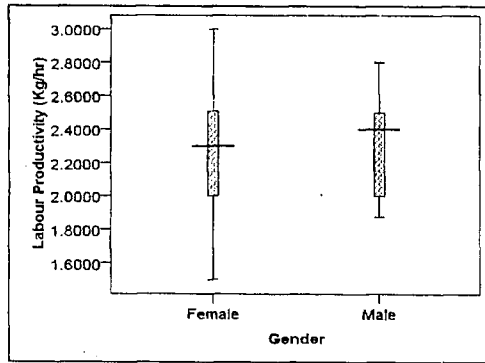


Figure 2. Labour productivity and gender

Variation of labour productivity among gender represents in Figure 2. It can be clearly identified that the labour productivity of males (2.36kg/hr) was higher than females (2.26kg/hr).

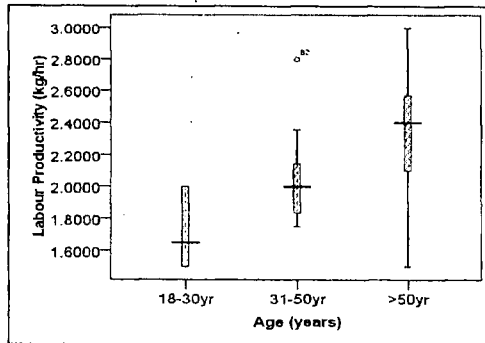


Figure 3. Labour productivity and age

Older tappers showed higher productivity than younger tappers (Figure 3). Number of trees tapping per hour will be increased with the experience and it may be the reason for this result.

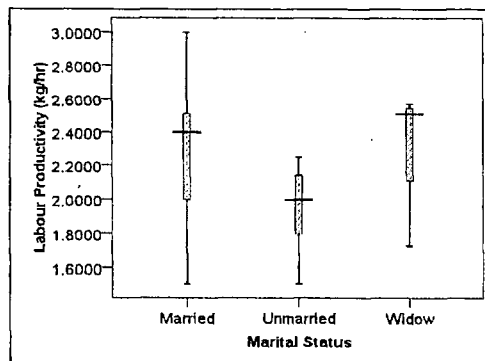


Figure 4. Labour productivity and marital status

It is clearly illustrated that unmarried tappers had the lowest labour productivity and it increased among married and widow tappers

respectively (Figure 4). In particular, younger people tend to move out into cities, not always for higher wages, but for better social recognition which is not associated with estate work (Sivaram, 2000). Therefore, job dissatisfaction of unmarried young tappers may result low labour productivity.

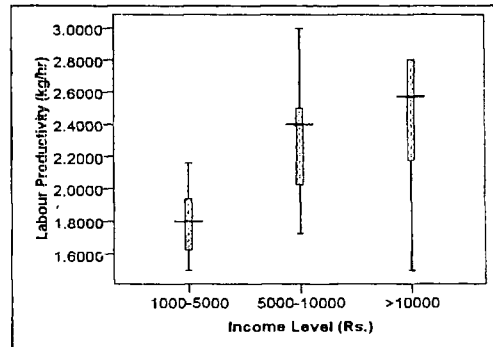


Figure 5. Labour productivity and income level

According to Figure 5, it can be identified that the labour productivity increased with the income level of tappers.

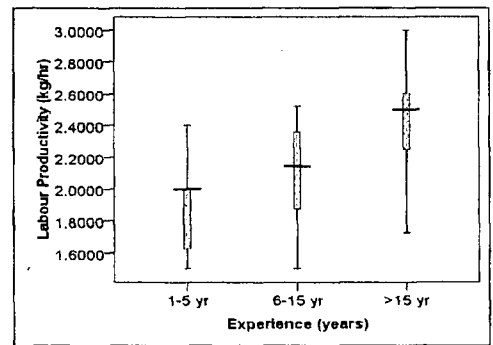


Figure 6. Labour productivity and experience

Figure 6 indicated that the labour productivity increased with the experience of tappers. Skills development with the experience may result in tapping abilities and because of this reason amount of trees tapped per hour can be increased. Therefore, kilograms of latex tapping per hour will be increased.

**Relationship among Labour Productivity and Motivational Factors**

Table 2 represents the results of Regression analysis of motivational factors affecting to the labour productivity. Results revealed that the regression model was highly significant (p-value = 0.000).

Among the motivational factors which influence labour productivity; coefficients of factors of satisfaction of work, fringe benefits, responsibility and wage were significant (Table 2).

**Table 2. Relationship among labour productivity and motivational factors**

Motivational Factors (Index)	Coefficient	p-value
Satisfaction of work	0.728**	0.019
Responsibility	0.833*	0.064
Appreciation	0.021	0.977
Wage	0.397*	0.055
Fringe Benefits	0.489**	0.035
Personal Growth	0.039	0.451
Constant	0.178	0.713

\*\*Significant at 5% level, \*Significant at 10% level. Adj.  $R^2 = 64.3\%$ .  $p$ -value of regression model = 0.000.

The regression coefficient of satisfaction of work index (0.728) revealed that the labour productivity will be increased with the increment of satisfaction of work and it was significant at five percent level of significance (Table 2). Job satisfaction in any industry leads to higher efficiency and effectiveness among workers. Hence, it increases the productivity level.

Responsibility index was positively influenced to labour productivity and it was significant at ten percent level. When tappers are given clear tasks and responsibilities regarding the job, it will create a positive impact for labour productivity. Having proper understanding about job tasks and related responsibilities may avoid possible conflicts among co-workers and management which are likely to be occurred within the work place.

According to the regression coefficient of the appreciation index, it can be identified that appreciation positively affected on labour productivity and it was not significant. Appreciating, support and fair treatment practised by the management and co-workers create higher satisfaction in tappers. It will also help to create a good working environment for tappers to carry out their tasks without any interruption.

The index of wage showed significant at ten percent level and it was positively related with labour productivity. This implies that the productivity of tappers will be increased, if the salary scale is fair enough to cover up their expenses and if additional allowance is given for additional latex tapped.

Fringe benefit index indicated a positive coefficient with labour productivity and significant at five percent level. It reveals that the labour productivity is increased with the increment of the satisfaction level of fringe benefits which are offered for the tappers. Employees would generally prefer increase in

fringe benefits. Therefore, the higher satisfaction level for welfare facilities such as housing, health, adult and youth welfare, occasional welfare facilities *etc.* lead to higher labour productivity.

The results reveal that the satisfaction regarding personal growth and labour productivity was positively related since the coefficient of personal growth parameter was positive. Hence, the activities concerning the personal growth of tappers such as training programmes and career development programmes can positively influenced with labour productivity since it can create a higher job satisfaction. However, the majority of tappers were older, married and less educated (Table 1). Therefore, the personal goals and objectives are less and skill development programs may not be required by them since they have less opportunity to change their job or career. Thus it may be the reason for insignificance of this index.

## CONCLUSIONS AND POLICY IMPLICATIONS

Results obtained from the demographic variables reveal that the labour productivity was higher among well experienced tappers than young generation. Therefore, younger tappers should be given proper training and skill development programs and they should be encouraged to get the technical knowledge on rubber tapping. The labour productivity was less among well educated tappers than less educated ones and unmarried tappers. Heaps of personal objectives of well educated and unmarried tappers regarding their future life will create a background of changing the job and dissatisfaction about tapping. Hence, there should be a proper program to retain educated and unmarried tappers by giving career development programs. Reasonable salary scheme should be maintained for all tappers to get high productivity since results revealed that higher income generates higher labour productivity.

Based on the result of regression analysis, it can be identified that all the intrinsic and extrinsic motivational factors were positively related with labour productivity. Satisfaction of work, responsibility given by management, wage and fringe benefits offered for tappers were highly affected motivational factors to labour productivity.

Results suggest that, the proper working environment should be maintained, thus the tappers feel the higher job security and satisfaction. In addition to that, clearly explained job tasks should be provided to tappers according to skills and abilities of

tappers, since it will act as a motivator for tappers to increase labour productivity.

Further, wage is one of the major motivation factors in any industry. The results of the study prove that it is true for rubber sector as well. Hence, offering an appropriate salary scheme for tappers will result higher labour productivity. In addition to basic salary, allowances given for additional tapping and Employees Trust Fund (ETF) and Employees Provident Fund (EPF) will be an added advantage for motivating tappers. As the wage is potentially a powerful tool for labour motivation, the labours can only be intrinsically motivated to perform an activity when they are fully satisfied with the pay they are getting.

Finally, it can be suggested that the fringe benefits given for tappers should be maintained properly to motivate them and get higher labour productivity accordingly. For this reason, welfare facilities such as housing, health, youth, adult, education, occasional *etc.* should be developed and maintained properly to motivate them since fringe benefits plays major role at some circumstances than monetary benefits.

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