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## **The Impact of Participatory Management on Productivity Enhancement of Pluckers in the Tea Plantation Sector in Sri Lanka: A Case Study on the Joint Employee Management Committee (JEMC) System in the Great Western Estate**

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**ABSTRACT.** *Improvement of labour productivity is the major challenge faced by the tea industry of Sri Lanka. Participatory management is considered as an important management tool to improve worker productivity.*

*The Great Western tea estate has been practising participatory management techniques since 1993. The management introduced suggestion schemes, quality circles (QCs) and joint employee management committees (JEMC) to obtain a higher level of worker participation in managing the affairs of the estate with a view to improve the worker productivity. A study was carried out with 40 pluckers to measure the impact of increased level of participation through organisational commitment and productivity of pluckers of the estate.*

*The productivity of pluckers improved through the increased level of participation with the introduction of JEMC, but the level of participation did not have a significant impact on organisational commitment.*

### **INTRODUCTION**

Tea industry is of vital importance to Sri Lanka's economic well being due to its contribution as the prime net-foreign exchange earner and its huge capacity to absorb substantial portion of the labour force (about 20% of the national labour force). The major driving forces contributions to the competition in the tea industry are cost of production, productivity, quality and price. Raising productivity in the tea plantation sector is a major challenge to the Sri Lankan economy in general since the productivity of tea industry is far behind in comparison with the other competitors in the world tea trade. Productivity is an expression of how efficiently and effectively goods and services are being produced (APO News, 1999).

Labour productivity has declined significantly over the past few decades as a result of weak, beauracratics, and inefficient management after nationalisation of plantations in 1975 (World Bank, 1995). This, together with low yields, have resulted in higher cost of production for Sri Lankan tea among major competitors. Plucking is the most important

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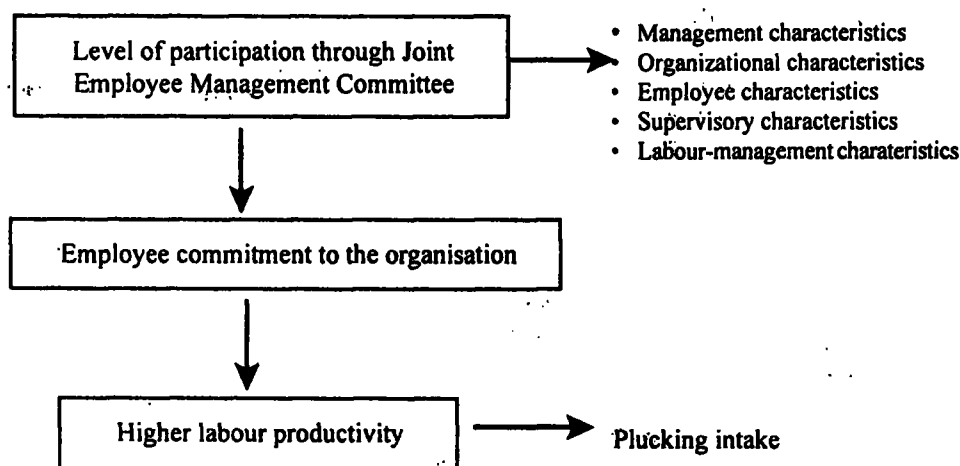
activity among all the operations involved in tea manufacturing since more than 60% of the labour force in the tea plantation engage in plucking and 75% of the labour cost is for plucking.

As a means of improving the productivity of employees, many organizations adopt different strategies. Among them, participatory management and employee involvement plays a major role. As defined by Marchington *et al.* (1992) employee involvement consists of 'those practices, which are initiated principally by management and are designed to increase employee information about, and commitment to, the organization'. Jayawardane (1996) suggested that greater involvement lead to greater commitment and higher productivity. Joint Employee Management Committee (JEMC) system is one of the most extensive forms of employee participation and involvement. The self-regulating capacity, increased accountability, and cross training associated with the implementation of this work design have been reported to result in enhanced problem-solving ability, improved quality, increased efficiency, higher productivity, and improved worker attitudes and satisfaction (Goodman *et al.*, 1988).

The objectives of this study were to: (1) measure the impact of increased level of participation of pluckers through Joint Employee Management Committee (JEMC) on commitment and productivity of pluckers in the tea estate, (2) examine the relationship between level of participation and organizational commitment to plucker productivity.

### Conceptual framework

In the study, it was assumed that increased level of participation through JEMC will enhance employee commitment to the organization, which will result in increased labour productivity. The interrelationship is shown in:



## METHODS

### Description of the case

Great Western Estate, which is the focal unit of investigation of this study is one of the 18 estates managed by the Talawakelle Plantations Limited (TPL). The estate is geographically located in Talawakelle, in the Nuwara Eliya District. It has a workforce of 1,056 comprising of 959 families. Prior to 1993, this estate was the most unproductive and dilapidated of the 18 estates managed by TPL. It had a shoddy factory and a neglected, disgruntled workforce.

The Great Western Estate has pioneered in introducing the "Japanese Style Management Systems" into the plantation industry. The management policy of the estate was based on renovation of physical facilities and a paradigm shift in human resource management. Its human resource policy has been based on greater worker participation and maintaining an organised workplace using the Japanese "5S" system. As part of the participatory methods of management, the estate introduced Joint Employee Management Committee (JEMC) to facilitate partnership and co-operation in 1996. The estate has won various awards for value addition, the implementation of quality control and productivity systems *etc.* Within three years, Great Western took a giant leap forward and has now become a model tea estate equipped with model production standards and a model tea factory and also a committed workforce in a more peaceful worker-management environment.

### Sample selection and design of the study

A sample of 40 pluckers represented by JEMC members and non-members from the four divisions of the estate were selected for this study. The specific research design employed in this study is an Ex-post facto design with a survey focus.

### Definition of variables

**Independent variable:** Level of participation was used as the independent variable and was measured by a five-item scale adapted from the original six-item scale Readiness Assessment Questionnaire developed by Belcher (1987). The modified questionnaire included five sub sections as shown in the Table 1.

**Intervening variable:** Organisational commitment was used as the intervening variable. The original 15-item questionnaire developed by Mowday *et al.* (1979) was used without any modification to measure the organisational commitment, which was the intervening variable. Each scale item was scored from 1 to 5. Scoring range below 45 was categorised as unsatisfactory and over 45 as satisfactory.

**Dependent variable:** Plucking intake, which is directly related to employee productivity, was used as the dependent variable.

**Table 1. Sub sections and the relevant scores of satisfactory and unsatisfactory level of participation.**

Sub section	No. of questions	Maximum score	Minimum score	Satisfactory	Unsatisfactory
Management characters	9	45	9	Over 27	Below 27
Organisational characters	8	40	8	Over 24	Below 24
Employee characters	3	15	3	Over 9	Below 9
Supervisory characters	5	25	5	Over 15	Below 15
Labour-management characters	4	20	4	Over 12	Below 12
Overall level of participation	29	145	29	Over 87	Below 87

### Method of data analysis

Performance of the estate in relation to yields and employees collected from the estate records for 1993 to 1999 was analysed to study the improvements due to the introduction of participatory management. A series of regression analyses were carried out to measure the impact of employee participation on employee commitment and plucking intake.

## RESULTS AND DISCUSSION

### Performance of the estate in relation to crop and employees

Crop production had increased from 357,760 kg in 1993 to 519,939 kg in 1999 with a slight drop in 1995 (Table 2). Yield has increased from 832 kg/ha in 1993 to 1,323 kg/ha in 1999. The trend of factory worker output followed more or less similar pattern to yield trend. Labour outturn has been increasing from 82% in 1993 to 85% in 1999. Labour Productivity Index (LPI) has been increasing from 91 in 1993 to 269 in 1999 due to the joint effect of higher prices and better revenue labour output. The percentage of labour cost has decreased from 1993 to 1998 and gone up in 1999 to 43.88% due to increase in labour wages in that year.

### Productivity of pluckers

Plucking intake increased from 11.02 kg/plucker in 1993 to 16.49 kg/plucker in 1999 with a slight reduction in 1998 due to yield reduction and also due to new recruits, and men pluckers (Fig. 1). A significant reduction of the percentage of pluckers below norm could be observed during 1993/99 periods with the introduction of JEMC.

Table 2. Performance of the estate (1993-1999).

Year	Crop (kg)	Yield (kg/ha)	Factory output (kg/lab)	Labour outturn (%)	LPI*	Plucking intake (kg/plucker)	Labour cost** (%)
1993	357,760	832	50	82	91	11.02	47.59
1994	457,600	1100	53	80	150	13.05	44.75
1995	451,733	1073	47	80	158	14.26	49.47
1996	458,016	1101	51	80	193	16.00	42.42
1997	514,140	1230	59	83	218	15.40	39.36
1998	460,840	1124	52	84	268	13.95	36.67
1999	519,939	1323	52	85	269	16.49	36.80

\* Labour productivity index (LPI) developed by Sivaram and Herath (1996) is calculated by multiplying the revenue labour output (total crop production divided by total man days used in tea production) with net sale average of tea.

\*\* Labour cost as a percentage of total cost of production.

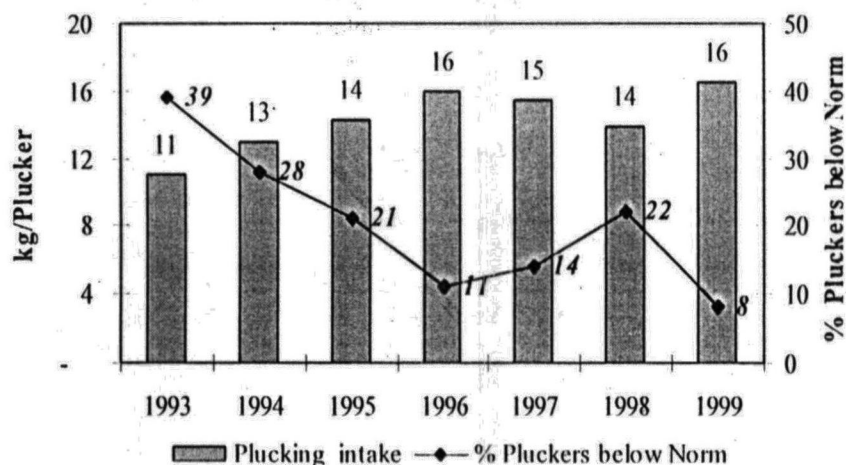


Fig. 1. Plucking intake and % pluckers below.

#### Level of participation of pluckers

Out of 40 pluckers, 7 were unsatisfactory with the level of participation while the balance 33 had a satisfactory level of participation (Table 3). In relation to the management characteristics, only 2 pluckers were dissatisfied with the level of participation. Majority of the pluckers was satisfied about the regular management meeting with the JEMC, feedback and suggestions pertaining to work, information sharing *etc.*

Table 3. Distribution of pluckers.

Sub section	Number		
	Unsatisfactory	Satisfactory	Total
Management characteristics	2	38	40
Organisational characteristics	5	35	40
Employee characteristics	5	35	40
Supervisory characteristics	2	38	40
Labour-management characteristics	7	33	40
Overall level of participation	7	33	40
Organisational commitment	6	34	40

Regarding organisational characteristics, 5 pluckers were unsatisfactory about the level of participation (Fig. 2). However, pluckers have been rewarded for higher plucking intake and for attendance. Some of them did not feel that their involvement in decision-making process was sufficient and satisfactory. They felt that they were not given due recognition. But everybody was satisfied that they could communicate with the management directly. Five pluckers expressed their dissatisfaction on the level of participation in relation to employee characteristics and their contribution towards decision-making and sharing information with their superiors. Majority of pluckers viewed that supervisors have helped the pluckers to perform their job by acting as a facilitator and a teacher. Seven pluckers who were not satisfied about the labour management characteristics in participatory management, expressed that the management did not routinely share information with unions despite the fact that unions are represented in the JEMC. But there is a representation of unions in the JEMC.

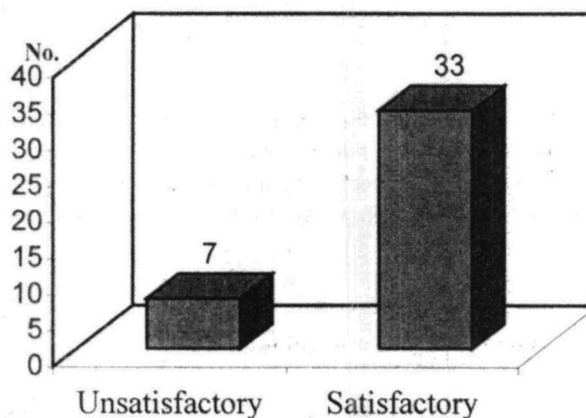


Fig. 2. Level of participation of pluckers.

### Organisational commitment

Thirty-four pluckers had a satisfactory level of commitment to the organisation while the remaining 6 had unsatisfactory level of commitment (Table 3 and Fig. 3). During the interviews, it was revealed that pluckers were satisfied with the new developments taking place in the estate. Employee participation in decision making process, clear communications about organisational intentions, activities and performance, and a sense of cohesion among employees at all levels obtained through JEMC have allowed employees to utilise their abilities and satisfy their basic needs. This may be the core reason for them to become committed to the estate.

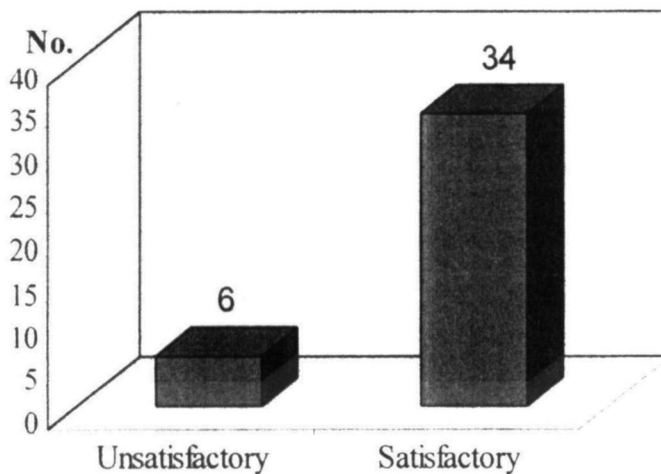


Fig. 3. Organizational commitment.

However, some of the members in the sample who had conflicting interests in respect of the career, stagnation in career development, and different opinions regarding the worker participation felt that they had been left behind during the process of introducing the new management concept. This may have led to their unsatisfactory commitment to the organisation.

### The impact of level of participation on plucking intake

It was hypothesised that increased level of participation of pluckers lead to an increase in plucking intake. Results of the regression analysis are shown below. As hypothesised, level of participation had a positive impact on plucking intake (significant at  $<0.0001$ ). The co-efficient of determination ( $R^2$ ) is 0.57, which indicates that 57% of the variation of plucking intake can be explained by the change in level of participation.

Dependent variable (Y)	Independent variable (X)	Adjusted R <sup>2</sup>	P value
Plucking intake (kg/plucker)	Level of participation	0.57*	0.0001
Model: $Y = 19.25 + 7.45 X$			
* Significant at < 0.0001		N = 40	

These results suggest that when employees have the opportunity to get involved in decision-making, they feel a sense of ownership which motivates them to make a greater contribution to the organisation. The increase in plucking intake subsequent to the introduction of JEMC leads concrete support to further validate these results.

#### Organisational commitment and plucking intake

The nature of the relationship between organisational commitment and pluckers' productivity was tested using the hypothesis that enhanced organisational commitment would lead to increased plucking intake. There is a significant association between plucking intake and organisational commitment (significant at <0.0001) as indicated in the results below. The level of organisational commitment can explain 57% of the variation of plucking intake. The results indicate that when pluckers build a sense of ownership and identification with the organisation, they tend to develop an emotional attachment to their work. This attachment in turn was resulted in increase plucking intake.

Dependent variable (Y)	Independent variable (X)	Adjusted R <sup>2</sup>	P value
Plucking intake (kg/plucker)	Organisational commitment	0.57*	0.0001
Model: $Y = 18.68 + 7.94 X$			
* Significant at < 0.0001		N = 40	

#### Level of participation and organisational commitment

A regression analysis was carried out to test the hypothesis that increased level of participation enhances organisational commitment. Though the co-efficient of determination (R<sup>2</sup>) is 0.72 as shown in the results below, it is not significant. Hence there is no sufficient evidence to say that a significant relationship exists between organisational commitment and level of participation.

Dependent variable (Y)	Independent variable (X)	Adjusted R <sup>2</sup>	P value
Organisational commitment	Level of participation	0.72	0.13
Model: $Y = 0.285 + 0.68 X$			
N = 40			



These results therefore raise a question on the assumption made in this study that increased level of participation leads to greater organisational commitment. Out of 40 pluckers in the sample, only 8 of them were involved in joint management activities. Interviews revealed that the workers of the estate did not elect the majority of the members of the JEMC and during the early stages of implementing the participatory management programme, the estate management had a direct involvement in identifying the worker representatives to the JEMC. As noted by several interviewees some JEMC members who had volunteered for the cause were weak in establishing an effective link between the JEMC and the workers.

In summary, the organisational commitment of the pluckers did not seem to have increased as a result of improved sense of participation since they were not participating in the activities themselves.

The study also revealed the possible influence of several factors other than participation on pluckers' organisational commitment. Most of the estate workers are forced to stay in the estate because of limited job opportunities outside the estate but not because of their lack of commitment towards the organisation. As noted by Luthans *et al.* (1987), the availability of alternatives after making the initial choice to join the organisation will also affect subsequent commitment. Under such circumstances workers tend to protect the organisation, which supports their livelihood. However, this situation also leads to frustration among some of the workers and drives them only towards the economic interest rather than the commitment to the organisation while disregarding the fate of the organisation.

### Major findings

The participatory management practices at Great Western had contributed to the improvement of productivity. This is reflected in the increased plucking intake in particular and also improved factory labour output, LPI and reduced labour cost (as a percentage of total cost of production) in general. There is a positive impact of organisational commitment on the plucking intake.

However, there was no significant relationship between the level of participation and organisational commitment of pluckers at the Great Western Estate. The findings also reveal that when workers have very limited opportunity to have a say in electing their representatives to the formal participatory mechanism, namely the JEMC, increased participation will not necessarily lead to greater commitment. An existence of a situation among some workers who are frustrated due to low wages, low job status, career stagnation and limited job availability drives them towards economic benefits rather than much commitment.

### CONCLUSIONS

The findings of this study will contribute to the development of theory and practices related to participatory management with special reference to the tea plantation sector of Sri Lanka. While supporting the existing theories, the results imply the need for

refining the existing theories and current management practices. Therefore, the implication of the research could provide interest for both researchers and practitioners.

From a theoretical point of view, this study has provided further support to previous research findings that employee involvement and participation have a positive impact on employee attitudes and productivity. However, the findings also suggest the need to develop an alternative conceptual model that can incorporate the influence of other variables such as employee satisfaction and motivation on labour productivity.

Where managers are concerned, the level of participation in relation to the management, organisation, employee, supervisory and labour management characteristics should be taken in to account when implementing JEMC in an estate. These characteristics reflect the estate's readiness to support a successful participatory management process. Adequate training should be provided for managers with the skills demanded by the participatory management to help them in changing their attitudes and also for other employees to act as voluntary leaders in JEMC/QCs.

The trend towards greater employee participation through JEMC in the estate could be viewed as a managerial response to cater to the rising expectations of the workforce and to face the increased competition in the global tea market.

#### **Limitations of the study**

The findings have little relevance in explaining the impact of participation on productivity of the entire estate since data on individual productivity were available only for pluckers to carry out the regression analysis. Since only one tea estate was utilised in the study, generalising these results for other estates would be inappropriate.

#### **Suggestions for future research**

Future research should be conducted to identify the causal relationship between the level of participation and worker productivity through other intervening variables such as employee satisfaction and motivation. Since the present study is limited to one tea estate future research should attempt to replicate of the study in order to make generalisations for the entire plantation sector in Sri Lanka.

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