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Women Empowerment and Techonology Diffusion - A Study on Skill Training Programme of Rubber Board of India

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ABSTRACT

The 17 SDGs and 169 targets seek to rebuild a new universal agenda and envision to realise the human rights of all and to achieve gender equality and empowerment of all women (United Nations, 2015). Ending all discrimination against women is indispensable for future because it is already proven that empowering women helps economic growth and development. This paper tries to analyse the impact of skill development training programme offered by Rubber Board of India on women empowerment. 240 women respondents who participated in various technical training session organised by Rubber Board of India has taken as sample. As evidenced by the facts presented in the paper better technology usage has a significant impact on women's empowerment. Hence all the extension services delivered by the Rubber Board have significant positive relationship with technology adoption and women empowerment in natural rubber cultivation in Kerala

Keywords: Women, Natural rubber, Training, Women empowerment, Technology

INTRODUCTION

The agenda for 2030 Sustainable Development Goal is not only to ensure global prosperity but also to addresses the issue of removal of poverty and inequality. There has been an urgent action required to resolve it now and it is essential to set some tactics for Sustainable Development Goals 2030 (SDGs) (Esquivel, 2016; Pogge& Sengupta 2015). An immediate transformative step we necessity to take in order to commence the collective journey without anyone left behind. Among the 17 SDGs we seek to rebuild a new agenda and aims to realise the human rights of all and to realize gender equality and women empowerment (United Nations, 2015). Ending all gender disparity is indispensable for the future because it is already proven that empowering women helps economic growth and development (Dhar, 2019).

Recently, women empowerment spot into the limelight and there has been a bidirectional relationship between development and gender empowerment. In one direction, improving the ability of women to access and control over resources can play a major role in the development and in another direction gender inequality which hinder development (Esther Dufli, 2012). According to World Bank report, improving the ability of women to access the constituents of development in particular education, training, earning opportunities, expansion of choice, building self-confidence, increased access and control over resources,

skill acquisition, etc, should be the focus to achieve the gender equality in present situation. There are several literatures which stated the issues related to the previously mentioned components and it is widely accepted that these strength-oriented approach is crucial for women empowerment especially in developing country like India (Conrad-Joseph WulekaKuuder, Mariam Essel, Rikiatu Husseini, Evelyn KuusozumeYirbekyaa, 2020).

In India there may be "too many goals, too little focus" for the meaningful policy making and has experienced a substantial transformation in all spheres of the economy since independence (Eden, L., & Wagstaff, M. F. , 2021) (Selin, H., 2015). One of the major reflectionthat can be found is the position of women in the society and their participation in social as well as economic assets. Though they have always worked, whether in paid jobs, or in the home, and often in both, but their work is generally unrecognized and under valued (Desai, S. B., Dubey, A., Joshi, B. L., Sen, M., Shariff, A., & Vanneman, R., 2010). The annual report of Ministry of Labour and Employment 2017-18 acknowledged the problem, nothing that encouraging more women to join the workforce is critical to nation's ability to benefit from the so-called demographic dividend (Ministry of Labour & Employment, 2017-18). Women will account for a substantial proportion of the working age population and therefore active participation of women in the labor force is of almost importance to realize the full benefits of demographic dividend and increasing the labor force participation (LFPR) for women is vital for achieving high growth of employment and overall economic growth. A major question that the women are currently addressing is that does their active participation in economic as well as social life are the fundamental rights to allowing them to have control over their society and life and what are the major challenges in women empowerment in present society. In order to address the issue of low female participation rate (LFPR) and WPR (worker population ratio) the government haslaunched various legislation- based schemes and welfare programmes where its emphasis was on female participation and empowerment. In order to improve the condition, the government has announced several women employment programmes like Pradahan Mantri Kausal Vikas Yojana, National Skill Development Mission, SWADHAR greh, and Support to Training and Employment Programme (STEP). This paper examined the effectiveness of skill development training programme offered by Rubber Board of India on women empowerment.

Technology and Women Empowerment

Some prominent theorists especially the Neo-classical and the Marxist feminist approaches explain gender differences with respect to human manpower such as education, training, technology adoption and diffusion etc., which sway the productivity and empowerment level. The importance of theme-based human resource development programmes implemented by the Rubber Board of India was examined by Prince Sebastian (2009).He attempted to assess how training programmes such as seminars, group meetings, annual campaigns, and tappers training affected plantation management, productivity, product quality, technology acceptance, and skill development.A study was undertaken in India that employed a stratified random selection method to find the study region and divided the participants into two groups: smallholders who had attended training programmes and growers who had not. According to the survey, there is a considerable difference in productivity between the two targeted groups, with a 13 percent rise among individuals who participate in Rubber Board's training programmes. Another paper by Sunny Varghese and A. N. Jayaprakash (2006) try to describe the overall performance of the Rubber Plantation Development Scheme during the tenth plan period. They pointed out that the 10th plan's schemes prioritised rubber expansion through new planting, particularly in non-traditional locations, as well as productivity improvement.Other extension activities, such

as training for establishing economic viability of rubber production through promotion of supplementary income generating and its adoption, have also received a boost from the strategy. Finally, the paper attempts to summarise the result level study. A sufficient level of literature review is concentrated on gender related issues and challenges across the world. According to a thorough examination of the literature, there are few studies on the influence of training on women's empowerment, and there is little study on the dissemination of technology and human resource development among women. To fill this vacuum, this study made an attempt to know the effectiveness training on technology adoption and women empowerment

Methodology

Primary data and secondary data were used for the study. Primary data was collected with the help of questionnaire, andit was distributed among 240 women. The sample respondents were those who participated the various technical training session organised by Rubber Board of India and Rubber Producer's Societies (RPS's). The secondary data was collected from Economic survey, Indian Rubber Growers Guide(various Years), Indian Rubber Statistics (2016, 2017 and 2018) etc. The sampling method used in the study was convenient sampling because the sample is taken from a group of people who are easy to contact or to reach. The study used Likert scale questions (N.K Malhotra, 2005).

Exploratory Factor Analysis was applied and it have extracted the emphasized factors, which summarize the most important information in the variable. The numerical numbers that show the magnitude and direction of a factor's influence on a measured variable (F .J Floyd & K.F Widaman, 1995). The aim of this study was to find underlying variables, or factors, that explain the pattern of correlations within a set of observable personal variables that may influence the human resource development of natural rubber growers especially women growers. The purpose of data reduction is to remove redundant (highly correlated) variables from the data file, perhaps replacing the entire data file with a smaller number of uncorrelated variables. In this study, the consequent effects of various training sessions conducted by Rubber Board of India on technological diffusion and human resource development among women rubber growers in India. This tool is ascertained using a measurement instrument under Likert framework consisting of 12 statements. Further, statements were reduced to 8 based on the communalities in the extraction. Four statements were excluded from the analysis frame because of the low extraction values (Communalities with values more than 0.5 may be taken as important as a thumb rule when the sample size is sufficiently large). It is observed that the communalities after deleting four statements show sufficiently large values suggesting that the statements are equally important for the contemplated problem. The aim of this study was to find underlying variables, or factors, that explain the pattern of correlations within a set of observable personal variables that may influence the human resource development of natural rubber growers.

Training

The Rubber Board of India as an apex institution in natural rubber sector has hosted several programmes for the expansion of area under cultivatione specially in rubber small holdings, because the current productivity (1437 kg per ha) is much lower than the potential productivity of more than 3500 kg per ha. Thus, it is essential to provide grassroots level extension activities particularly in far flung areas. It has been successfully carried out by the Board's extension officers commendably over the past several decades. The task of the extension machinery aiming at capacity building and self sufficiency of growers especially small growers in production and productivity is onerous. They deliver a range of extension services and among them the Human Resources Development (HRD)

aspect of extension support of the Rubber Board has a crucial role in improving the productivity of plantations as well as diffusion of technology. HRD programmes are focused on all aspects of agriculture, productivity enhancement, processing, and product manufacturing. A scientific perspective toward agriculture can be instilled in farmers' minds by meeting them individually or by organising seminars, workshops, demonstrations, and campaign programmes. The Rubber Institute offers more than 40 distinct training programmes. In total the participation rate of women is comparatively low when it compared to man.

The following table shows the major heads in which all the programmes has been arranged.

Table No: 1	
Title	**Objective**
Skill Training Programmes	1. Tappers Skill Development Schools (TSS) 2. Tappers' Intensive Skill Improvement Programme (TISP)
Visit Cum Training	*Sasthradarshan* is a one-day visit with training for small growers who want to learn about scientific methods of rubber production, primary processing rubber technology, and related topics while visiting the RRII.
Annual Mass Contact Programme	Weekly tapping, controlled upward tapping, rain guarding, soil protection and water collecting technique, RubSIS, skill enhancement in harvesting to assure cheap cost of production, higher output, and greater profit, intercropping, and other topics are covered in campaign meetings.
Source: Rubber Growers Guide 2019	

Human resources development aspect of the RPD scheme was significant and it aims to bring capacity development among Women small growers. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is depicted in the below table, which has generated a value of .681 which above the generally acceptable minimum of (.50). This reveals that the acceptable cut-off 0.50 for performing the factor analysis.

Table-2 KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
Bartlett's Test of Sphericity	Approx. Chi-Square	166.110
	df	28
	Sig.	.000

Source : Primary Data

The results of two tests, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity, are used to determine whether the association between variables is significant. Kaiser-Meyer-Olkin (KMO) measure to varies between 0 and 1, and values closer to 1 are better. Here in this case the values closer of Sampling Adequacy shows the value of test statistics as 0.801 which means factor analysis for selected variable is appropriate. The Bartlett's Test of Sphericity generally test the null hypothesis that the correlation matrix is an identity matrix. In this case the test was significant with chi square value= 166.110, df= 28 and p<.005 and hence the hypothesis is rejected.

Table No: 3 -Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.198	27.460	27.460	2.197	27.460	27.460	2.175	27.191	27.191
2	1.507	18.862	46.322	1.509	18.862	46.322	1.530	19.131	46.322
3	0.964	12.031	58.354						
4	0.844	10.562	68.916						
5	0.732	9.194	78.107						
6	0.661	8.264	86.376						
7	0.594	7.453	93.832						
8	0.491	6.169	100.000						

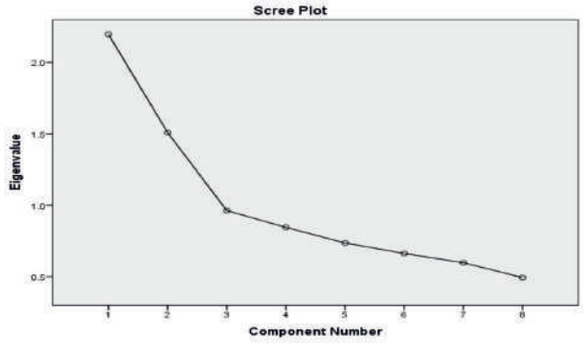
Extraction Method: Principal Component Analysis.

Source: Primary Data

The above table 3 it abscrred that 46.322% variation in the responses on 8 variables can be reduced to 2 different factors using the standard procedure to consider those factors having Eigen values greater than 1.

The screen plot is almost parallel to X axis after the second item and overall 8 statements comes under these two factors. In the below table, the variables having high loading are indicated. These variables are collected and organised based on their loadings.

Figure No: 1



Source: Primary Data

Table No:4-Rotated Component Matrixa

	Component	
	Effectiveness of Training	Challenges
Technology adoption	.716	
Training on agromanagement practices	.702	
Field Training	.700	
Training on additional Income Generation	.590	
Training on usage of new clones	.569	
Difficult to adopt the sugessions		.778
Arrangement of training		.701

Source: Primary Data

In the above table No: 4,the variables having high loadings are indicated. These variables are collected and organised based on their loadings. Based on the common thread seen among the statements in each group, appropriate names were suggested after discussion with experts. Thus the information contained in the responses may imply the information contained in factors named as, effectiveness of training and challenges of different training programmes conducted by Rubber Board of India.

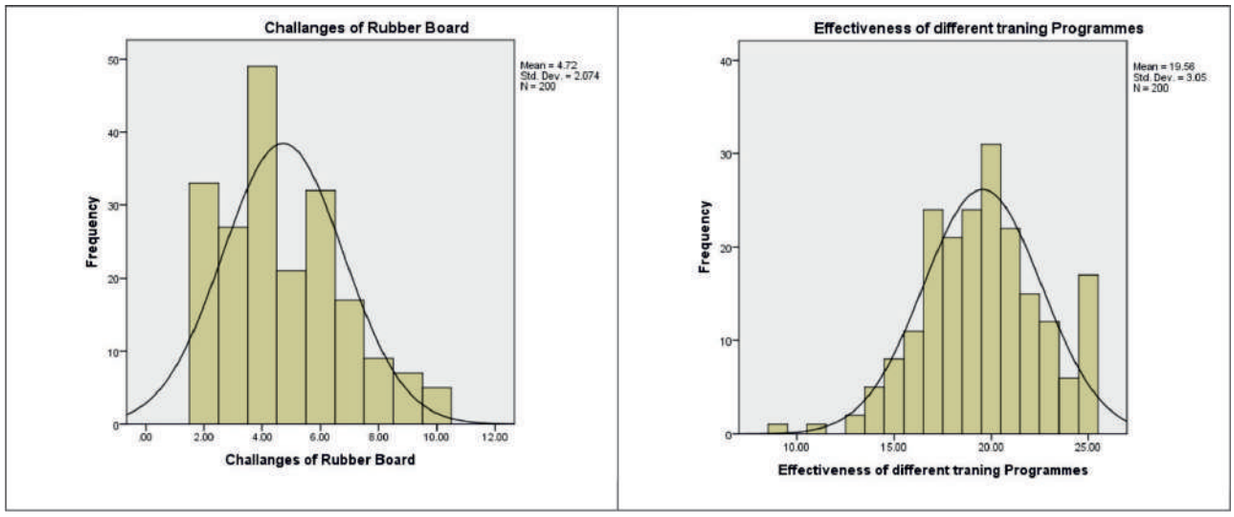
In the statistical framework a measure of normality is essential to analyse the distribution of data. This assumption can be examined by the distribution of scores at an item level and distribution of scores within combination of two items. The below figure represents that, both

are normally distributed and centred around.

Table 5: Statistics		
	Effectiveness of different training Programmes	**Challenges of Rubber Board**
Mean	19.5550	4.7200
Std. Deviation	3.05016	2.07440
Minimum	9.00	2.00
Maximum	25.00	10.00
Source: Primary Data		

Two factors were thus generated by following the procedures explained in the initial paragraph of this paper/rescarch. Table no: 5 explains about the basic statistics of all the two factors such as effectiveness of different training programmes and challenges of Rubber training sessions

Figure No: 2



In the above figure 2, we can see that all statements related to the effectiveness of various skill development training programmes among women. These were grouped in two, the former explains the effectiveness of programmes in technological diffusion among women and the later explains the challenges of the execution of training programme.

- The first set of five statements related to the benefits of training, which showed a high mean score value of 19.55 and the SD was 3.05.
- The next set components related to the present challenges and problems in training programme. It involves three statements, the mean value given was 4.72 which was relatively low and the SD was 2.07.

Various training programmes conducted by the Rubber Board has highest significant relationship on technology adoption among women natural rubber growers in Kerala. It evident from the data provided above that better adoption of technology to a large extent influences the women empowerment. Hence all the extension services delivered by the Rubber Board have significant positive relationship with technology adoption and women empowerment in natural rubber cultivation in Kerala. Besides, in the case of technology adoption, a long way towards the achievement of self-sufficiency among women rubber growers ?

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