Research Note

Predictors of Variation in Role Performance of Scientists Working in KVKs

Rahul Dundesh Bellagi[1]*, H.B. Patel[2], Chethan Patil N.D.[1], Manunayaka G.[1] and Pavithra V.[1]

ABSTRACT

Role performance is in reality not influenced by any of the independent variable singly. It is found to be influenced by more than one of these independent attributes jointly through their reciprocal and interactive relationship. The study on scientists working in KVKs (Krishi Vigyan Kendra) of Gujarat was carried out considering all 30 KVKs in the state. A total of 97 responses were collected through mailed questionnaire which includes 11 independent variables. Achievement motivation, job stress and training received were predicted to account for more variation in their role performance.

Keywords: Extent of variation, KVKs scientists, Role performance

INTRODUCTION

Technology transfer work is carried out by various KVKs, NGOs SAUs and from the government of Gujarat. But the farming community does not get benefit from available farm technology at the desired rate and level. Knowing the contribution of farm scientists to the transfer of farm technology and understanding the various factors associated with this process was the main objective of present study. Scientists working in KVKs play an important role in transferring technology to farmers in their respective areas. Despite having so many technologies for the development of farmers, they are unable to meet the expected productivity and production of the required target in order to meet the demand of the fast-growing second largest populated countries in the world. This is because there is inappropriate connection between the researchers-extension agents-farmers. As such scientific evaluation was conducted to find out extent of variation in role assessment of scientists working in Gujarat KVKs and to understand the various disadvantages of the system which may help connect the missing links between scientists and farmers in technology transfer to the farming community.

METHODOLOGY

All 30 KVKs from all over Gujarat state made the population for the study. An exploratory design as suggested by Kerlinger (1976) was used for the study. From each KVKs 3-4 scientists were randomly selected based on their availability from which 97 responded to the standardized questionnaire via Google form and personal contacts with the nearby KVKs. A scale developed by Kumar and Kaur (2014) with due modifications was used to evaluate the role assessment of scientists working in KVKs. The data was collected via mailed questionnaire using Google forms as a platform for easy access to the answers. The statistical tools used were step wise regression value, and multiple regression value. The step-wise regression (multiple regressions) analysis was employed to predict the dependent variables and consequences by independent variables. In the stepwise method, the regression analysis was started with

[1,3,4]Ph.D. Scholar, Dairy Extension Division, ICAR-National Dairy Research Institute, Karnal, Haryana
[2]Associate Director of Extension Education, Anand Agricultural University, Anand, Gujarat
*Corresponding author email id: rahulbellagi@gmail.com

regression of Y and X_1, …, …, …, X_K taken singly. The variable giving the highest accountability in the sum of squares of Y is first selected. Then the bivariate regression in which X_i appeared was worked out. The variate, which gives the highest additional accountability in the sum of squares in Y after fitting X_i variable, was selected. All the tri-variate regression that includes both X_1 and X_2 were computed. The analysis was continued till the last vitiate of which additional contribution was the least of all variables. The prediction equation used as:

$$Y = a + b_1X_1 + b_2 X_2 + b_3 X_3 + …, …, …, b_{kXk}$$

Where,

Y = Dependent variable

a = Intercept

b_1, …,…, …,b_k = Partial regression coefficients of respective independent variables

X_1, …, …, …, X_k = Independent variables

"F" test was used to test the significance of the partial regression coefficient.

RESULTS AND DISCUSSION

Results observed from the Table 1 represent that 49.60 per cent of the total variation in the level of role performance was explained through 11 variables considered for the regression equation. The unexplained variation was 50.40 per cent, which may be due to extraneous factors. From the regression analysis, it was concluded that out of 11 variables, three variables namely achievement motivation, job stress, and in-service training had a significant effect on role performance of scientists working in KVKs of Gujarat. Regression coefficient indicated that one-unit change in age would affect 0.296 units change in role performance, one unit change in job satisfaction would lead to 0.403 change in role performance and a unit change in job stress would lead to change in 0.365 role performance of scientists working in KVKs. Results further revealed that 49.60 per cent of the total variation in the level of role performance was explained through 11 variables considered for the regression equation. The unexplained variation was 50.40 per cent, which may be due to extraneous factors. From the regression analysis, it was concluded that out of 11 variables, three variables namely achievement motivation, job stress, and training received had a significant effect on role performance of scientists working in KVKs.

The relationship between the independent and dependent variable was expressed in terms of correlation co-efficient ('r') derived. The co-efficient of multiple determinations (R^2) gives the average amount of change in the dependent variable when all independent variables were taken together and were tested with the 'F' test

Table 1: Role performance of scientists with respect to independent variables working in KVKs

S.No.	Independent variables	Role performance index		
		Standardized coefficient(b)	't' value	Sig.
X_1	Age	0.296*	2.134	0.036
X_2	Educational qualification	0.076	0.785	0.435
X_3	Cadre	0.152	1.300	0.197
X_4	working experience in	0.114	0.888	0.377
X_5	In-service training	0.183	1.898	0.061
X_6	Organizational Participation	0.126	1.586	0.116
X_7	Publication behavior	0.014	0.143	0.887
X_8	Interpersonal communication	0.029	0.348	0.729
X_9	Job satisfaction	0.087	0.808	0.421
X_{10}	Achievement motivation	0.403**	4.114	0.000
X_{11}	Job stress	0.365**	3.599	0.001

* Significant at the 0.05 level; ** Significant at the 0.01 level; $R^2 = 0.496$

Table 2: Step-wise multiple regression analysis of Role performance index of KVK scientists with independent variables

Model	Independent variables	Multiple correlation coefficient (R)	Coefficient of Determination (R^2)	Partial regression coefficient (b)	Standard partial regression coefficient (SPRC)	Rank
	Constant			62.36	-	-
1	Achievement motivation	0.483	0.233	1.07	0.48	1st
2	Job stress + Achievement motivation	0.642	0.413	0.33	0.43	2nd
3	Training + Job stress + Achievement motivation	0.664	0.441	0.14	0.17	3rd

for their significance. Partial regression co-efficient (b) represents the change in dependent variable for a unit change in the independent variable and it was tested with 't' test for its significance. The various independent variables had their own units of measurement which did not permit a comparison of the partial 'b' values. To facilitate the comparison, the partial 'b' values were converted into standard partial 'b' values which were free from the units of measurements. The independent variables were than ranked on the basis of standard partial 'b' values to find out their relative importance in predicting the dependent variable. It can be inferred that 23.3 per cent variation is explained by achievement motivation towards role performance. However, achievement motivation and job stress together accounts 41.30 per cent towards role performance; Achievement motivation, job stress and in-service training accounted for 44.10 per cent change in role performance. The R^2 values at each stage of step up regression were found to be significant at 0.01 level of significance. The partial 'b' values of these three variables were converted in to standard partial 'b' values which were 0.483 for achievement motivation, 0.426 for job stress, and 0.174 for training received. The 't' values or partial 'b' values were significant in case of all the three independent variables. It can be inferred from the above results that the variables *viz.,* achievement motivation, job stress, and in-service training together contributed 66.40. Standard regression coefficient was observed from Table 1 that 0.48 for achievement motivation, -0.43 for job stress and 0.17 for training received were arranged sequentially and ranked. The following model was applied to explain the relative importance of independent variable in explaining the role performance.

$$Y = 62.36 + 1.07\ X_{10} - 0.34X_{11} + 0.14X_5$$

Where, Y is Role performance, X_{10} is Achievement motivation, X_{11} is Job stress and X_5 is Training received

CONCLUSION

Achievement motivation, job stress and training received were predicted to account for more variation in their role performance. The probable reason for considering these three variables as the most important among all the 11 independent variables to have better role performance may be that the scientists belonged to young to middle age group had high very less work experience and it is necessary for scientists to undergo various trainings in order to increase their professional skills which obviously motivates KVKs scientists to perform better role to increase their academic score and career advancement. At the same time it is observed from the Table 1 that KVKs scientists perform better when they are stress free, therefore it can be inferred that scientists have to be given proper guidance by authorities, providing required facilities and through proper channel can reduce the stress condition.

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