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A study on association between socio-personal, socio-economic and communication pattern characteristics with knowledge level of respondents about PMFBY

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Abstract
Agriculture and allied sector contributes approximately 13.9% of India's GDP but still Indian agriculture is facing many challenges, which hinder the potential of agricultural production. In these challenges natural calamities like hail, drought, floods, cyclone and typhoon are very severe because they are out of control for human being, but we can mitigate the loss from these calamities with the help of crop insurance. The present study was conducted in Jaipur district of Rajasthan as this district had highest number of registered farmers under Pradhan Mantri Fasal Bima Yojana (PMFBY) as compared to other districts of the state. Findings of the study revealed that that in case of beneficiary farmers, knowledge had positive and significant relationship with education (4.02**), mass media exposure (3.44**) and extension agency contact (4.27**) at one per cent level of significance, whereas, occupation (2.46*), annual income (2.40*) was significantly associated with knowledge level of the beneficiary respondents at five per cent level of significance.

Keywords: Association, age, Jaipur, variable and significant

Introduction
Crop insurance is a method by which farmers can stabilize farm income, investment and guard against the idea of crop insurance in India was conceptualized as far back as 1920, when Chakravarti proposed an Agricultural Insurance Scheme based on rainfall approach (Vyas and Singh, 2006) [4]. The Pradhan Mantri Fasal Bima Yojana was launched by Hon'ble Prime Minister of India Sh. Narendra Modi Ji on 18 February 2016 which replaced the existing two schemes namely National Agricultural Insurance Scheme as well as Modified National Agricultural Insurance Scheme. This new crop insurance scheme is in line with One Nation–One Scheme theme. PMFBY contributes to self-reliance and self-respect among farmers, since in cases of crop loss they can claim compensation as a matter of right. Therefore, realizing the importance of crop insurance as a tool for managing risk and uncertainties in the field of agriculture, the present study was conducted with the objective to measure association between Socio-personal, Socio-economic and Communication Pattern Characteristics with knowledge level of respondents about PMFBY.

Materials and Methods
The present investigation was conducted in Jaipur region of Rajasthan as this region had highest registered farmers under Pradhan Mantri Fasal Bima Yojana as compared to other regions of the state. Jaipur region comprises of four districts namely i.e. Ajmer, Jaipur, Dausa and Tonk. The Jaipur district was selected purposely on the basis of highest number of registered farmers under Pradhan Mantri Fasal Bima Yojana among all the districts of the region. Three tehsils namely Chomu, Kotputli, and Kisangarh-renwal were selected purposely on the basis of highest registered farmers under Pradhan Mantri Fasal Bima Yojana. Further, two villages from each tehsil namely Nangal Bharda and Astikalan from Chomu; Nangal Panditpura and Rai Karanpura from Kotputli, Badhal and Itawa from Kisangarh renwal were selected purposely on the basis of highest number of registered farmers under PMFBY for the present investigation. The proportionate random sampling method was used to select the respondents and they were called as beneficiary of PMFBY because they have benefited under PMFBY.

Further, equal number of non-beneficiary respondents from the same villages were also selected randomly who have not benefitted under Pradhan Mantri Fasal Bima Yojana and they were called as non-beneficiary respondents. Total 180 respondents i.e. 90 beneficiary and 90 non-beneficiary respondents were selected from selected villages for the present investigation. Thus, the total sample size from the selected six villages was 180 respondents. Twelve variables namely age, caste, education, Social Participation, Occupation, Annual income, Land holding, Source of Irrigation, Mass media exposure, Information seeking behavior, Information sharing behavior and Extension agency contact were identified as the important variables which might affect the knowledge towards Pradhan Mantri Fasal Bima Yojana. The data were collected with the help of pretested semi-structured interview schedule. Analysis of the data was done with the help of different statistical tools like t-test as well as multiple regression analysis with the help of SPSS.

Results and Discussion

As per the multiple regression analysis, the data presented in Table 1 reveals the regression relationship of dependent variable i.e. knowledge on 12 antecedent variables pertaining to the respondents. Through multiple regressions, data were critically analyzed to work out the separates as well as combined relative influence of selected independent variables on the knowledge level of Pradhan Mantri Fasal Bima Yojana. All the twelve selected independent variables viz. age, caste, education, social participation, occupation, annual income, land holding, source of irrigation, mass media exposure, information seeking behavior, information sharing behaviour and extension agency contact fitted with the knowledge level of the respondents in Multiple Regression equation. The findings have been presented in Table 1.

The value of coefficient of determination (R^2) in case of beneficiary respondents has been found as 0.71. The value of (R^2) shows that 71 per cent variation in the dependent variable was due to twelve antecedent variables taken for the present investigation, remaining 29 per cent variation in the knowledge was due to other factors outside the purview of this investigation. Hence, the dependency relationship of knowledge on each selected characteristics can now be studied with the help of 't' value. A critical examination of the data presented in Table 1 reveals that in case of beneficiary farmers, knowledge had positive and significant relationship with education (4.02**), mass media exposure (3.44**) and extension agency contact (4.27**) at one per cent level of significance, whereas, occupation (2.46*), annual income (2.40*) was significantly associated with knowledge level of the beneficiary respondents at five per cent level of significance. Thus, the regression analysis in Table 1 depicts that education, occupation, annual income, mass media exposure and extension agency contact emerged as the most important predictors of knowledge level of the beneficiary respondents. Hence, the null hypothesis was rejected and alternative hypothesis was accepted.

It was also prominent to note that some socio-personal, socio-economic and communication characteristics such as age, caste, social participation, land holding, source of irrigation, information seeking behavior and information sharing behaviour have not shown significant contribution to the multiple regression analysis and were non-significantly associated with the knowledge level of beneficiary respondents.

Table 1: Association between Socio-personal, Socio-economic and Communication Pattern Characteristics with Knowledge Level of Respondents about PMFBY

S. No.	Variables	Beneficiary Respondents (n=90)			Non-beneficiary Respondents (n=90)			Pooled (n =180)		
		b value	Standard error	t value	b value	Standard error	t value	b value	Standard error	t value
A.	**Socio-personal Characteristics**									
1.	Age	0.09	0.13	0.69^{NS}	0.06	0.04	1.05^{NS}	0.07	0.08	0.87^{NS}
2.	Caste	2.42	2.28	1.06^{NS}	1.10	0.91	1.21^{NS}	1.76	1.59	1.10^{NS}
3.	Education	1.97	0.49	4.02**	1.31	0.57	2.29*	1.64	0.53	3.09**
4.	Social participation	2.66	1.62	1.64^{NS}	0.17	1.60	0.11^{NS}	1.41	1.61	0.87^{NS}
B.	**Socio-economic Characteristics**									
5.	Occupation	2.91	1.18	2.46*	0.73	2.29	0.32^{NS}	1.82	0.95	1.39^{NS}
6.	Annual income	3.30	1.37	2.40*	1.94	1.15	1.68^{NS}	2.62	1.26	2.07*
7.	Land holding	2.13	1.54	1.38^{NS}	0.70	0.80	0.87^{NS}	0.74	1.16	0.63^{NS}
8.	Source of Irrigation	0.74	3.00	0.24^{NS}	0.24	1.71	0.14^{NS}	2.96	2.31	1.27^{NS}
C.	**Communication Pattern**									
9.	Mass media exposure	2.13	0.62	3.44**	0.66	0.24	2.75**	1.39	0.41	3.09**
10.	Information seeking behavior	0.35	0.53	0.66^{NS}	0.17	0.21	0.80^{NS}	0.69	0.36	1.90^{NS}
11.	Information sharing behavior	0.48	1.22	0.39^{NS}	0.15	0.62	0.25^{NS}	0.86	0.91	0.94^{NS}
12.	Extension agency contact	1.41	0.33	4.27**	0.50	0.18	2.78**	0.95	0.25	3.52**
	$R^2 = 0.71$				$R^2 = 0.70$			$R^2 = 0.67$		

R^2= Coefficient of multiple determinations, NS = Non significant

** = Significant at 0.01 level of probability, * = Significant at 0.05 level of probability

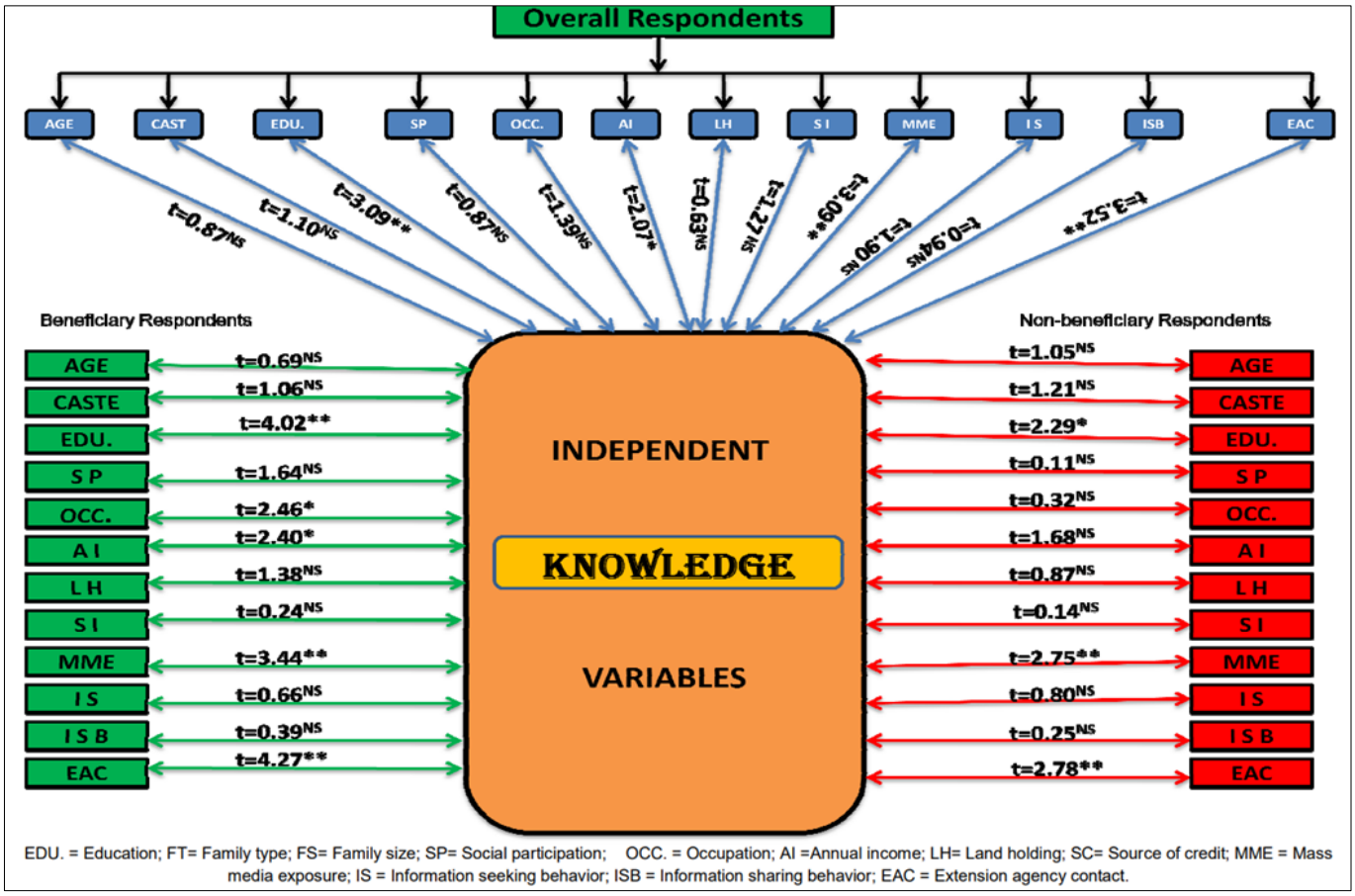

Fig 1: Association between socio-personal, socio-economic and communication pattern characteristics with knowledge level of respondents about PMFBY

This indicates that there was no association found with knowledge level of the beneficiary respondents with these selected characteristics about Pradhan Mantri Fasal Bima Yojana. Thus, the null hypothesis was accepted and alternative hypothesis was rejected. In case of non-beneficiary respondents the value of coefficient of determination (R^2) was calculated as 0.70 which means seventy per cent variations in the dependent variable due to the 12 independent variables taken for the present investigation, remaining 30 per cent variation in the knowledge was due to other factors outside the purview of this investigation. The data in Table 1 shows that there was significant association found between the knowledge level of non-beneficiary farmers with mass media exposure (2.75**) and extension agency contact (2.78**) at one per cent level of significance. While education (2.29*) was significantly associated with knowledge level of the non-beneficiary respondents at five per cent level of significance. Thus, the alternative hypothesis was accepted and null hypothesis was rejected. Therefore, regression analysis suggested that the dependent variable knowledge level in case of non-beneficiary farmers mainly persuaded by the contributing factors like education, mass media exposure and extension agency contact whereas some other factors like age, caste, social participation, occupation, annual income, land holding, source of irrigation, information seeking behaviour and information sharing behaviour had shown non-significant association with the knowledge level of non-beneficiary respondents. Therefore, the null hypothesis was accepted and alternative hypothesis was rejected.

Further, in case of overall respondents the coefficient of determination (R^2) was calculated as 0.67 which means sixty seven per cent variations due to these 12 independent variables selected for the present investigation and remaining 33 per cent variation in the knowledge was due to other factors outside the purview of this investigation. The data in Table 1 also illustrates that there was significant association found between the knowledge level of overall respondents with education (3.09**), mass media exposure (3.09**) and extension agency contact (3.52**) at one per cent level of significance. Whereas annual income (2.07*) was found significant at five per cent level of significance.

The variables such as age, caste, social participation, occupation, land holding, source of irrigation, information seeking behaviour and information sharing behaviour were non-significantly associated with the knowledge level of overall respondents. Hence, the null hypothesis was accepted and alternative hypothesis was rejected. Thus, from the above findings it can be concluded that education, occupation, annual income, mass media exposure and extension agency contact were the important predictors of knowledge level of the beneficiary, non-beneficiary and overall respondents. The findings are in conformity with the findings of Ali (2013) [1] and Duhan & Singh (2017) [2] who reported that education had positive and significant relationship with the knowledge of the farmers willing to pay for index based crop insurance.

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