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Study the relationship between adoption level and Scio-economic profile of trained and untrained farmers of northern Karnataka, India

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Abstract
The present study was conducted in Northern Karnataka. Vijayapur and Bagalkot districts were selected purposively as the training has been organized by the KVKs and AEECs of both UAS Dharwad and UHS Bagalkot. The list of trained framers will be obtained from these centers. Depending upon area of activities where the farmers are trained based on that 30 trained and 30 untrained farmers were selected randomly from respective district. Thus, the sample size is 120 farmers. The data was collected by personal interview method. Research findings reported that the independent variables like education, extension participation and mass media participation shows highly significant and positive relationship with adoption level at 0.01 level of probability. Farming experience and cossmopolitness shows positive and significant relationship with adoption level in four different components of training at 0.05 level of probability. Other variables like age, land holing and annual income showed non-significant relationship with adoption level in both trained and untrained farmers.

Keywords: Adoption, age, education, occupation, land holding

Introduction
Indian agriculture is very important industry therefore it acquired a strategic position in our economy. There is a huge need for revolution in Indian agriculture from persistence to modern system of scientific agriculture. Farming system of India has begun to shift from traditional to modern method of farming, primarily due to rapid development of agriculture technology. This sound transition in agricultural technology leads to knowledge gap among extension employees and farmers because of the complicated nature of different agricultural technologies. The quick transformation of industrial agriculture seeks of accomplishment of skills/abilities/insights on the part of farmers and extension employees for effective and efficient use.

Training is a fundamental and important thing in birding the gap between invention of innovations at agricultural research station and the proper adoption by farmers of those innovations/technologies.

A farmer training is a comprehensive learning experience in which “learning by doing” and “seeing is believing” are among the fundamental principles of extension. The training conditions in the mind of the farmer/respondents can efficiently generate dissonance that can hopefully lead to acceptance. Therefore, the significance of farmer training to fill the land-to-lab gap is no longer a matter of doubt. Training is an important key element in which it helps the farmers to practice various new techniques in scientific manner.

Farmer to Farmer training programme was started in the year 2014-2015 by Government of Karnataka with the aim of bringing the other farmers into mainstream of agriculture, motivating the other farmers to adoption of progressive farmers’ own innovations and also technologies developed by the universities in the field of agriculture and allied field, which are adopted by progressive farmers in their own field condition.

Farmer to Farmer training is a process of providing the training by progressive/awardee farmer to other farmers, often through creation of resource called as farmer trainer.

While progressive/awardees farmers, are known by ‘farmer-trainer’ as a common term, the progressive farmers are known by some other names (e.g. community knowledge worker,

farmer-promoter) may involve in different roles.
Farmer to Farmer training help in building effective, farmer centred extension system and empowering farmers as change agents for improving the livelihoods in their communities.

Key principles
Extension leader/person should play key role in selecting farmer-trainers, monitoring and evaluating them. This makes the programme more accountable to community that they serve.
Farmer trainers/progressive/awardees are 'of the community'; they communicate in local language and are more sensitive to local cultures, mannerisms, farming practices and farmers' need.
Progressive/farmer-trainer should be selected on the basis of their skills and interest in sharing information about their various farming practices which can also help the other farmers to go for good farming and attain the better livelihood.
Farmer-trainer generally serves as a complement to existing extension system, rather than substitute for them.
Training is a critical input which will help farmers to practice various agriculture and allied field practices scientifically.

Methodology
The study was conducted purposively in Vijayapur and Bagalkot districts of Northern Karnataka during the year 2017-19 in order to fulfil the objectives of the study. Six talukas were selected from the both the districts based on highest number of trained farmers from each taluk and from same talukas untrained farmers also selected for the study. From each selected taluk 10 trained from the list provided by AEECs and KVK of both the taluk and 10 untrained farmers were randomly selected. Sixty trained and 60 untrained farmers were selected. Thus, a total sample of 120 farmers will be considered for the study.
Besides frequencies, percentages and means, various descriptive and inferential statistics were used to analyse the data, on the different aspects of the study. The data were analysed with the help of SPSS software. The categories of low, medium and high were computed on the basis of mean and standard deviation. The relationship of selected independent variables with the dependent variables was analysed with the help of Pearson's product moment correlation co-efficient. The significance of correlation co-efficient (r) was tested against the value of 'r' in the table of significance at n2 degree of freedom. If the calculated value of 'r' was greater than the table value of r at 0.01 or 0.05 level of probability, the relationship was considered to be significant

Karl Pearson's coefficient(r)
Pearson coefficient was use to measure the relationship between the some independent variable with the dependent variable. Symbolically the formula is as follows

$$r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\sum x^2 - \frac{(\sum x)^2}{n}} \sqrt{\sum y^2 - \frac{(\sum y)^2}{n}}}$$

Where,
r = Correlation co-efficient
x = Score of independent variables
y = Score of dependent variable
n = Number of observations

Result and discussion
Relationship between independent variables with adoption of four components of training
The results presented in the Table 1 stated that independent variables *viz.*, education, extension participation and mass media participation exhibited positive and significant relationship at one per cent level while farming experience and cosmopoliteness at five per cent level, whereas age, land holding and annual income exhibited non-significant relationship with adoption level of trained farmers.
With respect to untrained farmers the independent variables like, education and extension participation exhibited positive and significant relationship at one per cent level and variables like farming experience, mass media participation and cosmopoliteness exhibited positive and significant relationship at five per cent level, whereas age, land holding and annual income positive and non-significant relationship with adoption level of four different components of training.

Table 15: Relationship between independent variables with adoption of four components of training

n=120

Independent variable		Trained (n1=60) 'r'	Untrained (n2=60) 'r'
Age	IFS	0.238^{NS}	0.246^{NS}
	Organic Farming	0.195^{NS}	0.203^{NS}
	Dairy Management	0.132^{NS}	0.142^{NS}
	Vermicomposting	0.110^{NS}	0.128^{NS}
Education	IFS	0.342^{**}	0.294^{**}
	Organic Farming	0.345^{**}	0.285^{**}
	Dairy Management	0.391^{**}	0.343^{**}
	Vermicomposting	0.373^{**}	0.323^{**}
Land holding	IFS	0.119^{NS}	0.114^{NS}
	Organic Farming	0.099^{NS}	0.094^{NS}
	Dairy Management	0.108^{NS}	0.102^{NS}
	Vermicomposting	0.111^{NS}	0.106^{NS}
Farming experience/ Work experience	IFS	0.411^{*}	0.405^{*}
	Organic Farming	0.356^{*}	0.351^{*}
	Dairy Management	0.389^{*}	0.382^{*}
	Vermicomposting	0.401^{*}	0.394^{*}
Annual income	IFS	0.180^{NS}	0.145^{NS}
	Organic Farming	0.229^{NS}	0.201^{NS}

	Dairy Management	0.190^{NS}	0.156^{NS}
	Vermicomposting	0.209^{NS}	0.176^{NS}
Extension participation	IFS	0.410**	0.366**
	Organic Farming	0.416**	0.354**
	Dairy Management	0.433**	0.365**
	Vermicomposting	0.480**	0.386**
Mass media participation	IFS	0.301**	0.239*
	Organic Farming	0.290**	0.224*
	Dairy Management	0.303**	0.238*
	Vermicomposting	0.299**	0.239*
Cosmopolitness	IFS	0.269*	0.187*
	Organic Farming	0.259*	0.176*
	Dairy Management	0.276*	0.194*
	Vermicomposting	0.216*	0.134*

r = Corrélation coefficient, NS = Non significant

** – Significant at the 0.01 level, * – Significant at the 0.05 level

Age and adoption

Age has showed non-significant association with adoption level of various farming practices *viz.*, IFS, organic farming, dairy farming and vermicompost technology of both the categories of trained and untrained farmers. Age of person doesn't matters with adoption level. In general people with any age group can go for adoption because it's totally depends on their interest and knowledge level of individuals in various farm practices. Hence, this might be a probable reason for non-significant association independent variable age with dependent variable called adoption. The above findings were in conformity with Kharatmol (2006) [4] and Jadhav (2014) [2].

Education and adoption

Formal education level of trained and untrained farmers was found significantly related with adoption of farm practices *viz*., IFS, organic farming, dairy farming and vermicompost.

Hence the possible reason might be that, education had an influence on extent of adoption because educated farmers believed in new farm practices of agriculture which are superior over conventional agriculture and some of the practices require certain amount of scientific knowledge and skills to adopt, which can easily accepted by farmers who had better formal education than who lack of it and those farmers are better formal education are ready to take risk to develop his socio economic status and also those new practices will brings sustainability in agriculture. Therefore, farmers who had higher or better education gained latest information, resulting in the adoption of IFS, organic farming, Dairy farming and vermicompost. This might be a probable reason for significant relationship was observed with education and adoption, for both trained and untrained farmers. The above findings were in agreement with the research findings of Kharatmol (2006) [4] and Lokesh (2012) [6].

Land holding and adoption

Land holding of the farmers showed non-significant association between adoption level was evident from the Table 15 implying that land holding did not contribute significantly in enhancing the adoption level of farmers. The possible reason for the above results might be any technology engaged in different farming activities requires adequate knowledge/information to implement/adopt new practice regardless of owned land holding. Land holding might have not affected its adoption/implementation by small or a large farmer because of there is a huge need to the increasing costs of production. The above findings were in line with Jadhav (2014) [2].

Farming experience and adoption

The medium to low farming experienced farmers were eager to know the new farm practices of IFS, organic farming, dairy farming and vermicomposting. Majority of farmers in this study comes under medium age group. So farmer were having medium experience and that leads medium level adoption because they have under gone training and they were showing positive attitude towards IFS, organic farming, Dairy farming and vermicoposting. The results in the study indicated that positively significant relationship with extent of adoption of IFS, organic farming, dairy farming and vermicompost and farming experience/working experience perceived attribute. Similar trends were observed in the findings of Naik (2016) [7].

Annual income and adoption

Annual income of farmers showed a non-significant association between adoption level. The probable reason for the non-significant relationship might be due to the fact that organic farming requires less inputs but except labour charge. Where in adoption of recommended practices of IFS, dairy farming and vermicomposting farmers depending on financial assistance provided by credit institution and concern departments. Adoption of these practices are income independent implying that irrespective of small or large income, both the trained and untrained farmers with wide income range can practice these farming operations. The findings are in conformity with Channal (1995) [1] and Naik (2016) [7]

Extension participation and adoption

A significant relation was founded between extension participation and extent of adoption by trained and untrained farmers. The possible reason could be that farmers, who had participated in field days, training programme, extension meeting, krishi meala and education tours *etc*., might have encouraged them to take useful action that is adoption. The other reason could be, that extension participation provides opportunity for contrived experience and interaction with farmer trainer who is progressive/awardee farmer thus it's leading to higher adoption. Similar trends were observed in the findings of Lokesh (2012) [6] and Jadhav (2014) [2].

Mass media participation and adoption

Mass media participation significantly associated with adoption level of the farmers. Significant is due to their participation/exposure to different mass media sources like radio, newspapers, television, whatsapp group, might have helped the farmers to gain recent information. The revolution

in mass media provided variety of opportunities for repeated exposure of farmer to new technology which motivated them to take further interest to learn latest innovation in agriculture and allied fields. Hence, farmers who had grater mass media exposure had exhibited higher adoption of recommended practices, irrespective of trained and untrained farmers. This is in line with Kanavi (2006).

Cosmopoliteness and adoption

A significant association between cosmopoliteness and adoption level of farmers was observed. Farmers with high level of cosmopoliteness were high adopters and vice-versa. The same is not the case with untrained farmers. The reason why a situation could be ascribed is that Cosmopoliteness plays a significant part in adoption behaviour of the farmers. The rationale is that higher contact with the large society/community could have broadened the intellectual horizon of farmers, thereby helping them to adopt latest farm practices. This implies that Cosmopoliteness of untrained farmers had no association with the adoption level. The above findings were supported by Kikon (2010) [5].

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