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A study on relationship of socio-economic variables with knowledge and adoption of rural women in Bihar

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Abstract
This study was conducted in the Samastipur district of Bihar, focusing on women's participation in home and farm activities within the social, cultural, and economic contexts of the area. Participation varies from reason to reason and family to family, depending on caste, class, and socio-economic status. The contributions of women in the production of vegetables and fruits, poultry, livestock, fish cultivation, tree planting, crop processing, beekeeping, and mushroom cultivation make a significant impact on the total family income. A test was developed to measure the knowledge of respondents about beekeeping, mushroom cultivation, tomato sauce making, guava jelly making, and lemon squash making, assessed using a schedule developed for the study. The extent of adoption of recommended scientific practices for beekeeping, mushroom cultivation, dairy farming, and the preparation of tomato sauce, guava jelly, and lemon squash was measured in terms of correct and incorrect adoption. The degree of adoption and age, as well as the degree of knowledge and caste, marital status, family type, occupation, yearly income, landholding, house type, membership in organisations, and media exposure, were found to be significantly correlated.

Keywords: Farm activities, Bihar, mushroom cultivation, adoption, correlation, occupation

Introduction

Agriculture is the major sector for poverty alleviation. But this sector fails to do many countries because of women face constraints that reduce the productivity. Women have had a crucial role in both farming and the family. Women's status has fluctuated over time, and currently, their place in society is determined by the norms of social organisation. The word empowerment is the key topic now. The empowerment of women is the central importance to political thinkers, social scientists, and reformers. Agro-based businesses have paved the way for rural women's economic independence and development. Socioeconomic opportunity, property rights, political representation, social equality, personal rights, family development, market development, community development, and national development all improved because of women's economic advancement. Women's participation in home and farm activities in social, cultural, and economic conditions in the area. It varies from reason to reason, family to family cast, class, and socio-economic status. Women of rural areas work as agricultural labour and their contribution in the production of vegetables and fruits, poultry, livestock, fish cultivation tree planting, crop processing, bee keeping,

mushroom cultivation. In the present scenario of globalization, liberalization and privatization in agricultural sector, the sustainable development and empowerment of farm women is considered as a key factor for development of any country. Women play a variety of tasks in the home and in agriculture, yet their labour is underestimated and underappreciated. They have access to innovative agricultural technologies that provide them with a stable income. They have not yet been affected by science or technology. Their workload is backbreaking since they continue to use traditional tools, skills, and indigenous technologies. Women therefore play a vital role in agriculture, participating in all aspects of agricultural operations and working in related fields. They directly contribute significantly to the creation of family income, which raises their families' social standing. The ICAR has created KVKs across the nation by providing for interdisciplinary scientific teams. The organisation plays a part in knowledge management, technology backstopping, and stakeholder advisory services for farmers, farm women, young people in rural areas, and extension agents. To improve the well-being of farm women by increasing output, productivity, and profitability, the KVK, Samastipur

has implemented several interventions, including training in beekeeping, mushroom cultivation, vermicomposting, and other capacity building programs. To improve the wellbeing of rural women, KVK Samastipur has implemented a few initiatives, including training in beekeeping, mushroom cultivation, vermicomposting, and other capacity building programs.

This study also throws light on the obstacles faced by the rural women in adoption of agro-based enterprises.

Materials and Methods

The Krishi Vigyan Kendra in Birauli, Samastipur district, Bihar, was the site of the study. Bihar state's Samastipur district was chosen for the research. Samastipur district's Pusa and Kalyanpur blocks are divided into landless, marginal, small, and medium-sized farmers according to the size of their landholdings. This study looked at how women farmers participate in the agricultural industry, how they make decisions, and how they adopt new agricultural technologies. Due to the availability of sufficient women who attended the Krishi Vigyan Kendra training on the chosen enterprises, ten villages—six from Pusa block and four from Kalayanpur block—were purposefully chosen. Twelve trainees were identified from each village, for a total of 120. For this study, an ex-post facto research design was used. A pretested interview plan was used to help gather data from the chosen respondents. With the aid of statistical tools such as frequency, percentage, mean, standard deviation, Pearson correlation, and others, the data was analysed using statistical tests and procedures.

Knowledge of agrobased enterprises

In the present study knowledge refers to the condition of being aware of something. It is cognitive processing of information which includes recall, recognition,

understanding, application and evaluation of facts and concepts. It is the amount of correct information of individual trainees passes. Yes and No type questions were selected, the respondents were also asked multiple choice categories that is correct and incorrect. Marks for correctly answered questions were used to determine each respondent's knowledge score. Every right response received a score of 1, while every wrong response received a score of 0. There was total 27 questions.

1. Adoption of agrobased enterprises

Adoption in this context refers to "use adoption," which includes both the acceptance of new technologies or practices in theory and their practical implementation in a farm setting. Questions of the yes/no variety were chosen. Additionally, the respondents were asked to select whether their response was correct or incorrect in a multiple-choice format. Each respondent's adoption score was determined by allocating points for accurately responding to questions. For every correct answer '1' score was given and for every incorrect answer '0' score was given. There was total 27questions.
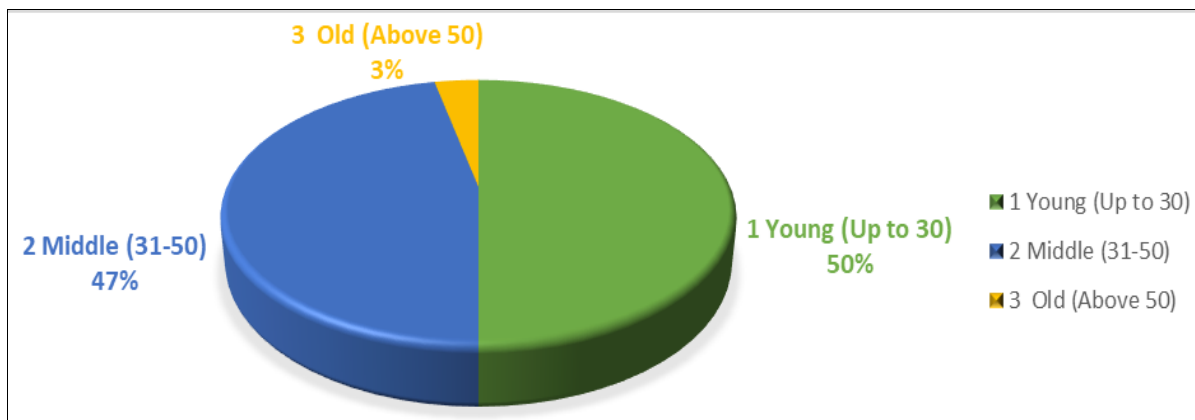
Results and Discussion

1. Measurement of Socio-economic and educational profile of the women of agro-based enterprises.

a. Age

Following that, the respondents' ages were split into three groups: Young (60), Middle (56), and Old (4).

| S. No	Age group (years)	Frequency	Percentage
1.	Young (up to 35)	60	50.00
2.	Middle (36-55)	56	46.67
3.	Old (Above 55)	4	03.33
	Total	120	100.00

b. Caste

Caste of the respondents had been divided into four different categories i.e., Schedule tribe, Schedule caste, Other backward caste and General, out of which no one respondents belong to schedule tribe, (12) respondents belong to schedule caste, (44) respondents belong to other backward caste and (64) respondents belong to general

category.

| S. No	Caste Category	Frequency	Percentage
1.	Schedule caste (Sc)	12	10.00
2.	Other Backward Caste (OBC)	44	36.66
3.	General	64	53.34
	Total	120	100.00
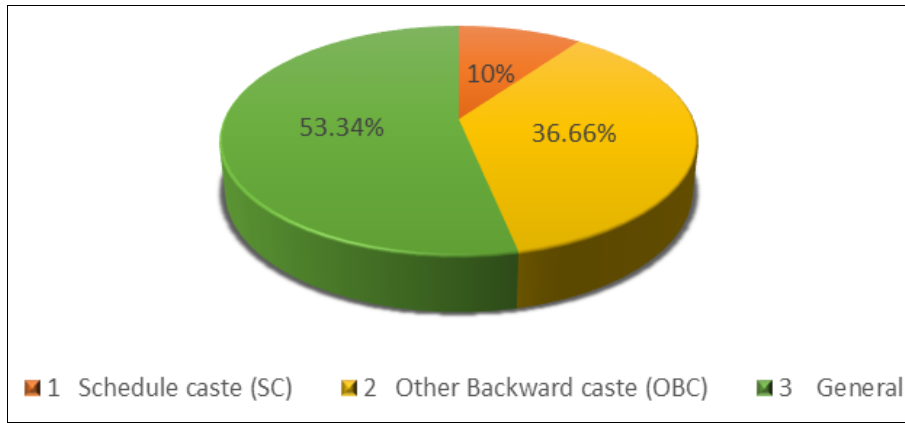
c. Education

Education refers to level of literacy or formal education of rural women which affects the manner in which gathers information and relates herself to environment, level of education of respondents had been divided into five different categories i.e., Illiterate, Primary school, Middle school, High school and Graduate, out of which (28) were completed their high school, (35) were completed their middle school, (22) were completed their primary school, (7) were from graduate and (28) respondent were illiterate.

| S. No	Educational level	Frequency	Percentage
1	Illiterate	28	23.34
2.	Primary School	22	18.33
3.	Middle School	35	29.16
4.	High School	28	23.33
5.	Graduate	7	5.84
	Total	120	100.00
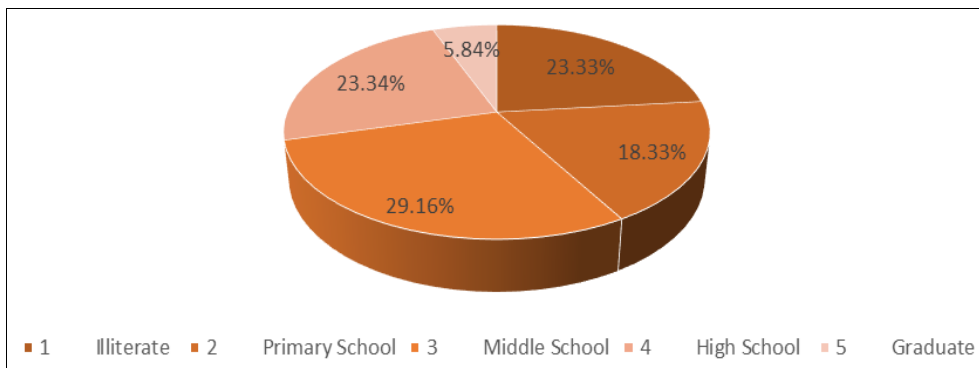
d. Marital status

It refers to the marital status of the rural women during the time of investigation, marital status of respondents had been divided into four different categories i.e., Unmarried, Married, Widow and divorced, out of which 116 respondents were married, 4 respondents were unmarried, and no one respondents were widow and divorced.

| S. No	Marital status	Frequency	Percentage
1.	Unmarried	4	03.33
2.	Married	116	96.67
	Total	120	100.00
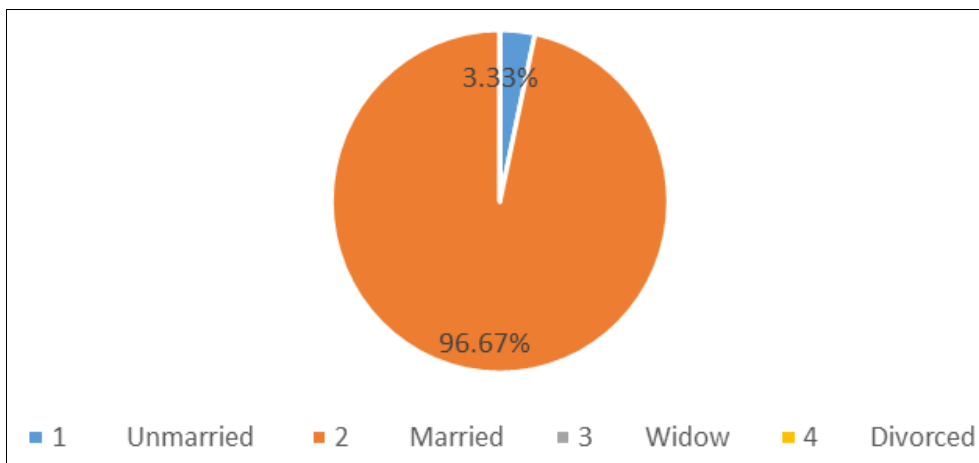
e. Family size

It is the total number of family members, including the spouse and kids. The respondents' family sizes were separated into three groups, namely, there were three different family sizes: small (up to five members), medium (five to eight members), and large (more than nine members). Of these, 69 respondents had five to eight family members, 30 had up to nine or more, and 21 had up to five.

S. No	Family size	Frequency	Percentage
1.	Up to 5 (small)	21	17.50
2.	5 to 8	69	57.50
3.	More than 9 (large)	30	25.00
	Total	120	100.00
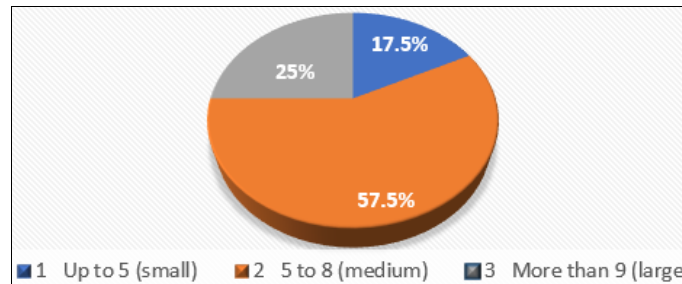
f. Family type

Same as above, family type of respondents had been divided into two different categories i.e., Nuclear and Joint, out of which 70 respondents had joint family and 50 respondents had nuclear family.

S. No	Family type	Frequency	Percentage
1.	Nuclear	50	41.66
2.	Joint	70	58.34
	Total	120	100.00
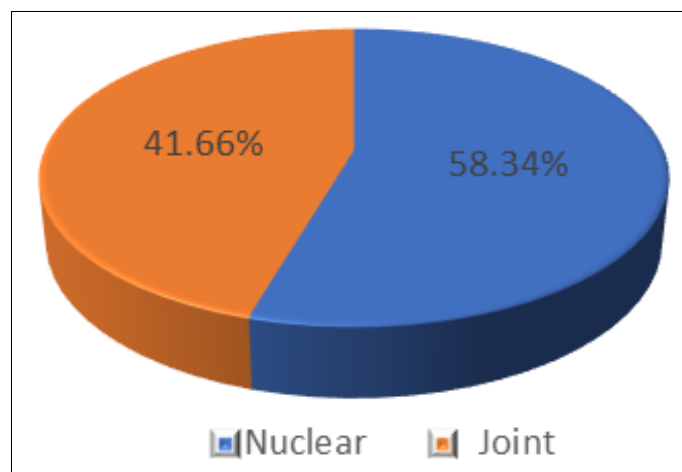
g. Occupation

Same as above, family occupation of the respondents had been divided into five different categories i.e., Unemployed, Self-employed, Labourers, farming and any other, out of which 80 respondents were self-employed, 10 respondents were labourers, 10 respondents were engaged in farming, 10 respondents were in any other occupation and no one was self-employed.

| S. No	Occupation	Frequency	Percentage
1.	Unemployed	0	0
2.	Self- employed	80	66.66
3.	Labourers	20	16.66
4.	Farming	10	8.34
5.	Any other	10	8.34
	Total	120	100.00
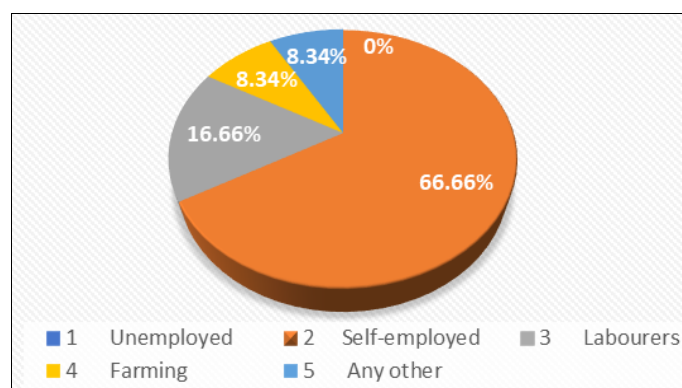
h. Annual income

Same as above, annual income of the respondents had been divided into three different categories i.e., Low (up to Rs 50,000), Medium (Rs 50,000 to 100,000) and High (Above Rs 100,000), out of which 50 respondents had medium income, 38 respondents had low income and 32 respondents had high income.

S. No	Annual income	Frequency	Percentage
1.	Low (up to 50,000/-)	38	31.67
2.	Medium (Rs 50,000/- to 100,000/-)	50	41.67
4.	High (Above Rs 100,00/-)	32	21.66
	Total	120	100.00
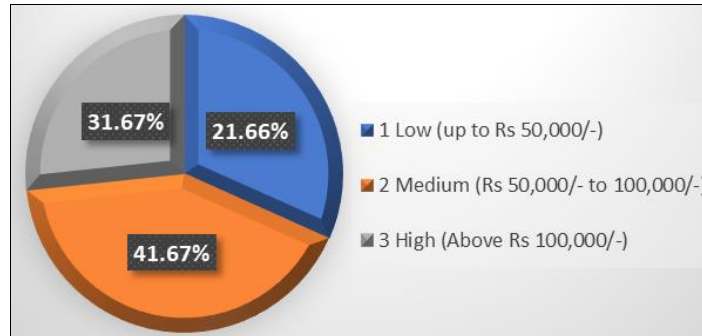
i. Landholding

As mentioned above, the respondents' land holdings were separated into five categories: no land, marginal land (up to 2.5 acres), small land (2.6 to 5 acres), medium land (5 to 10 acres), and large land (above 10 acres). Of these, 77 respondents had marginal land, 27 had small land, 9 had medium land, and none had large land.

S, No	Landholding	Frequency	Percentage
1.	No land	7	5.84
2.	Marginal (up to 2.5 acres)	77	64.16
3.	Small (2.6 to 5 acres)	27	22.50
4.	Medium (5 to 10)	9	7.50
	Total	120	100.00
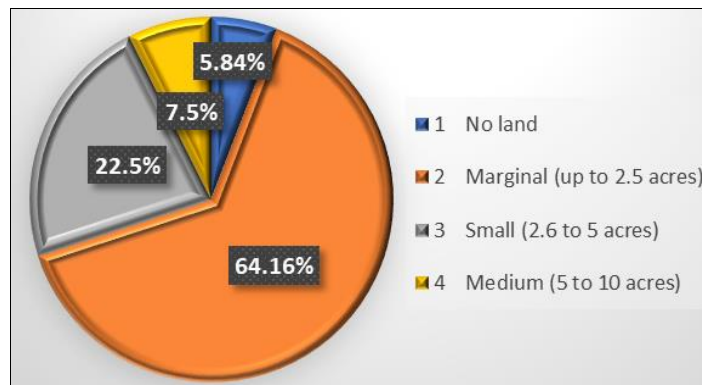
j. Type of house

Same as above, type of house had been divided into three different categories i.e., Hut,Semi-cemented and Cemented house, out of which 70 respondents had cemented house, 35 respondents lived in semi-cemented house and 15 respondents lived in hut.

| S. No.	Type of House	Frequency	Percentage
1.	Hut	15	12.50
2.	Semi-Cemented	35	29.16
3.	Cemented	70	58.34
	Total	120	100.00
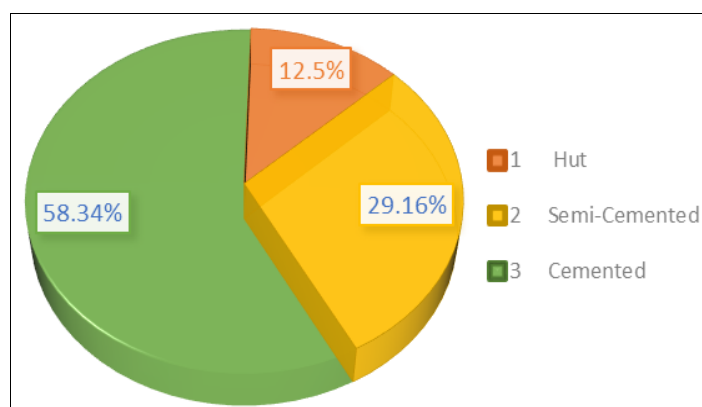
k. Organizational membership

Organisational membership had been divided into three different categories i.e., Not member of any organisation, Member of one organisation, Member of more than one organisation, out of which 84 respondents were member of one organisation, 19 respondents were not member of any organisation and 17 respondents were member of more than one organisation.

| S. No	Organizational membership	Frequency	Percentage
1.	Not membership of any organization	19	15.84
2.	Member of one organization	84	70.00
3.	Member of more than one organization	17	14.16
	Total	120	100.00
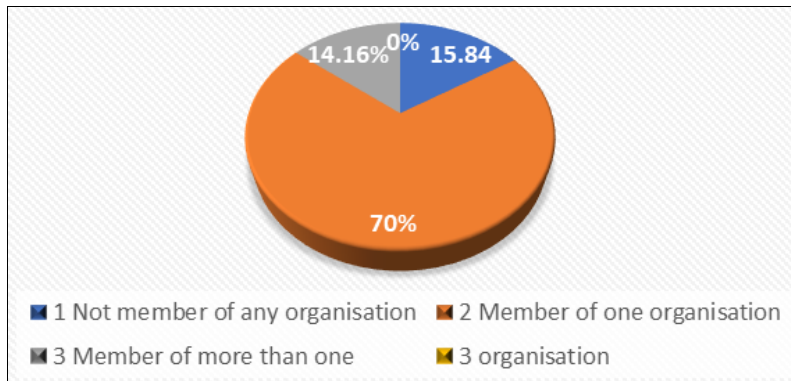
l. Mass media exposure

Mass media exposure had been divided into four different categories i.e., Radio, Radio + Television, Radio +Television+ Mobile and Radio+ Television+ Mobile+ Newspaper out of which 80 respondents were using the Radio+ television + mobile, 31 respondents were watching the Radio+ television + mobile, 5 respondents were reading the radio + mobile + television + newspaper and 4 respondents were listening the radio.

S. No	Mass media exposure	Frequency	Percentage
1.	Radio	4	3.34
2.	Radio + Television	31	25.83
3.	Radio + Television + Mobile	80	66.66
4.	Radio + Television + Mobile + Newspaper	5	4.17
	Total	120	100.00
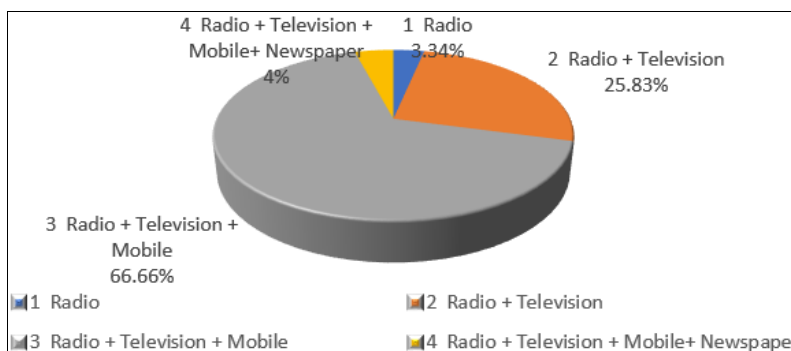
m. Cosmopoliteness

The three categories of cosmopoliteness were Low, Medium, and High. Of these, 59 respondents had a medium level of interaction with people outside their village, 56 had a low level, and 5 had a high level of contact with people outside their village.

S. No.	Cosmopoliteness	Frequency	Percentage
1.	Once in a month	56	46.66
2.	Once in a week	59	49.17
3.	Twice or thrice in a week	5	4.17
	Total	120	100.00
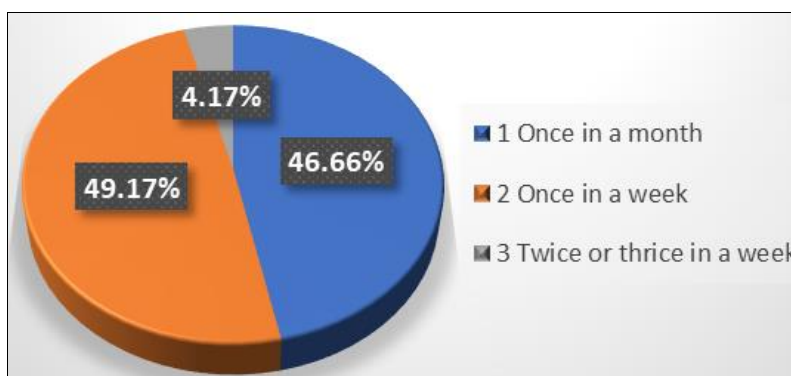
Table 1: Relationship of socioeconomic variables with adoption and knowledge

S. No	Socioeconomic variables	Adoption	Knowledge	
1.	Age	0.0735	0.0217	
2.	Caste	0.705	0.0132 NS	
3.	Education	0.832	0.0646 NS	
4.	Marital status	0.188	0.0476 NS	
5.	Family size	-0.728 NS	-0.113 NS	
6.	Family type	0.792	0.0006 NS	Table value of r (.05) =0.179
7.	Occupation	0.729	0.160 NS	
8.	Annual income	0.820	0.127 NS	
9.	Land holding	0.718	0.107 NS	
10.	Type of house	0.718	0.031 NS	
11.	Organizational membership	0.651	0.161 NS	
12.	Mass media exposure	0.609	0.073 NS	
13.	Cosmopoliteness	0.750	-0.004 NS	

**Correlation is significant at 0.05 level
*Correlation is non- significant at 0.05 level
At the 5% level of significance, the calculated value of r is greater than the table value of r.
Table value of r=v (degree of freedom) & v= n- 2.

An appraisal in table no 4.19 shows the relationship of socioeconomic variables on their knowledge and adoption of agrobased enterprises of respondents.

Results
Relationship of socioeconomic variables with adoption
Age
It is clear from the table that age was positively significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It means that there was a positive relationship exists between age and adoption.

Caste
It is clear from the table that caste was positively significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It means that there was a positive relationship exists between caste and adoption.

Education
It is clear from the table that education was positively significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It means that there was a positive relationship exists between education and adoption.

Marital status
It is clear from the table that marital status was positively significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It means that there was a positive relationship exists between marital status and adoption.

Family size
It is clear from the table that family size was negatively significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It indicates that there is a negative correlation between adoption and family size. There was negative effect of family size at their adoption level.

Family type
It is clear from the table that family type was positively

significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It indicates that there is a favourable correlation between adoption and age.

Occupation
It is clear from the table that occupation was not significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It signifies that there was a no association existed between occupation and adoption. It means no effect of occupation on adoption.

Annual income
It is clear from the table that annual income was positively significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It indicates that there is a favourable correlation between adoption and yearly income.

Land holding
It is clear from the table that land holding was not significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It indicates that there was no connection between adoption and land ownership. It means no effect of land holding on adoption.

Type of house
The table makes it evident that adoption was favourably correlated with the type of home. At the 0.05 level of significance, their computed value exceeds the table value. It indicates that there was a favourable correlation between adoption and home type.

Organizational membership
It is clear from the table that organizational membership was positively significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It indicates that adoption and organisational membership have a beneficial association.

Mass media exposure
The chart makes it evident that exposure to the media has a positively significant relationship with adoption. At the 0.05

level of significance, their computed value exceeds the table value. It indicates that exposure to the media and adoption have a good association.

Cosmopoliteness

It is clear from the table that cosmopoliteness was positively significant with adoption. At the 0.05 level of significance, their computed value exceeds the table value. It indicates that cosmopoliteness and adoption have a beneficial link.

Relationship of socioeconomic variables with knowledge.
Age

It is clear from the table that age was positively significant with knowledge. At the 0.05 level of significance, their computed value exceeds the table value. It means that there was a positive relationship exists between age and knowledge.

Caste

It is clear from the table that occupation was not significant with knowledge. At the 0.05 level of significance, their computed value exceeds the table value. It indicates that there was no connection between caste and education. It means no effect of caste on knowledge.

Education

It is clear from the table that education was not significant with knowledge. At the 0.05 level of significance, their computed value exceeds the table value. This indicates that knowledge and education are unrelated. It means no effect of education on knowledge.

Marital status

It is clear from the table that marital status was not significant with adoption. At the significance level of 0.05, their computed value is less than the table value. It indicates that knowledge and marital status are unrelated. It means no effect of marital status on knowledge.

Family size

It is clear from the table that family size was negatively significant with knowledge. At the significance level of 0.05, their computed value is less than the table value. It indicates that there is a negative correlation between knowledge and family size. There was negative effect of family size at their knowledge level.

Family type

It is clear from the table that family type was not significant with adoption. At the significance level of 0.05, their computed value is less than the table value. It indicates that there was no connection between knowledge and family type. It means no effect of family type on knowledge.

Occupation

It is clear from the table that occupation was not significant with adoption. At the significance level of 0.05, their computed value is less than the table value. It indicates that there was no connection between knowledge and occupation. It means no effect of occupation on knowledge.

Annual income

It is clear from the table that annual income was not significant with knowledge. At the significance level of 0.05, their computed value is less than the table value. It indicates that there was no correlation between knowledge and yearly income. It means no effect of annual income on knowledge.

Land holding

It is clear from the table that land holding was not significant with knowledge. At the significance level of 0.05, their computed value is less than the table value. It indicates that there was no connection between knowledge and land ownership. It means no land holding on knowledge.

Type of house

It is clear from the table that type of house was not significant with knowledge. At the significance level of 0.05, their computed value is less than the table value. It indicates that there was no connection between knowledge and the sort of home. It means no effect of type of house on knowledge.

Organizational membership

It is clear from the table that organizational membership was not significant with knowledge. At the significance level of 0.05, their computed value is less than the table value. In other words, there was no correlation between knowledge and the type of house. It means no effect of organizational membership on knowledge.

Mass media exposure

It is clear from the table that mass media exposure was not significant with knowledge. At the significance level of 0.05, their computed value is less than the table value. It indicates that exposure to the mainstream media and expertise are unrelated. It means no effect of mass media exposure on knowledge.

Cosmopoliteness

It is clear from the table that cosmopoliteness was negatively significant with knowledge. At the significance level of 0.05, their computed value is less than the table value. It indicates that knowledge and cosmopoliteness have a negative association. There was negative effect of cosmopoliteness at their knowledge level.

Conclusion

The extent of adoption was found to be significantly correlated with age, caste, marital status, family type, occupation, annual income, landholding, house type, organisational membership, mass media exposure, and cosmopoliteness. Additionally, a non-significant correlation was found between the extent of adoption and family size. It was discovered that age and knowledge level are significantly correlated. Additionally, it was noted that caste, marital status, education, family size, family type, occupation, annual income, landholding, house type, membership in an organisation, exposure to the media, and cosmopoliteness do not significantly correlate with knowledge level.

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