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Commercial Vegetable Growers' Socio-economic Status on Usage of Social Media in Odisha, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Social media can be a fantastic agricultural intervention tool, providing dependable information and knowledge to farmers who are not yet addressed at the appropriate time. Extension must be implemented using the newest technology in a world where knowledge drives change in order to persuade and assist farmers. Social media is like a revolution in todays' time in every aspect and

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sector resulting in why the study was made. The socioeconomic characteristics of the commercial vegetable growers of Khordha and Puri districts of Odisha was scheduled in order to determine the level of access, information towards their utility of social media for agricultural purpose. For this survey, 90 respondents in total were chosen at random. Pre-structured interview schedules were used to gather the data, and relevant statistical analysis was carried out to determine the respondents' socio-economic profile. The majority of vegetable growers, or 56.67% of the population, were found to be middle-aged; 60% of farmers had families of fewer than five people; 51.11 percent of farmers belonged to the general caste; and 36.67% had completed middle school. It was also discovered that majority (55.56%) of the respondents were marginal farmers with less than 2.5 acres of land, the majority (40.00%) had yearly incomes ranging from (50,000 to 100,000) thousand and 32.22 percent were members of only two organisations. In terms of extension contacts, the data revealed that agricultural input merchants were the most prevalent among vegetable growers, with majority of them (63.33%) having a medium level of extension contacts. 90% of farmers were classified as having a medium level of social media access.

Keywords: Commercial; socio-economic profile; social media; statistical analysis; vegetable growers.

1. INTRODUCTION

Agriculture as the primary sector of the Indian economy which provides livelihood to more than 50 % of the population is dependent on public extension system for transmission of lab technologies to the land system [1]. India had become a food-scarce nation, but the public extension system had helped it become a food-sufficiency nation. With the modernisation and globalisation era in the development process, the extension system needs revolutionized change to facilitate right information on latest technologies to extension agents, farmers and all the stakeholders at the right time. But in the present scenario, the public extension system is adversely affected by insufficient human resources, limitation of infrastructure and lack of capacity building which have created hindrance in providing location specific and need based technologies to the farmers. The predicament is dire in India, where each of the 2879 farmers has access to only one extension agent [2]. The lack of timely information has created gap in the knowledge level of the farmers in applying modern technologies in their land for better production and better income. This void can be filled in some way by the application of information and communication technology (ICT) in broadcasting of timely information to policy makers, extension agents, and farmers. Farmers and experts require updated and relevant information for sustainable agricultural output, which is a critical issue for the country. These days, information and communication technology facilities have a significant impact on how information is sourced and delivered [3]. Newspapers, television, and magazines have long dominated industrial media for agricultural information sharing. However, in recent years, all Indian demographics have seen increases in technological knowledge, computer literacy, and smart phone and internet usage. More than 100 information and communication technology (ICT)-based initiatives, such as e-Choupal, e-aqua, Digital Green, and others, have been developed in India for agricultural and rural development. Many of them have received national and worldwide recognition for their innovative rural development approaches [4].

Major modifications have occurred for agricultural advisory services (AAS) in the twenty-first century, particularly the requirement for collaboration across several stakeholders (government, business, and nonprofit), as well as the capacity to function as a unit. These services aim to become less "top-down" and more participatory. Social media's ability to increase mobile phone subscriptions and decrease data costs which can help AAS reach more productive farmers [5]. Social media is also one of the most participatory channels of extension due to the high level of user participation. This makes data, information, and knowledge sharing easier, faster, and more economical. It also makes collaboration and demand-based rural advising systems possible. Farmers are constantly in need of information about infestations, equipment, safeguarding crops, precipitation and precipitation patterns, new seed, and expenses [6]. Crop selection, resource efficiency, yield, and revenue optimisation are all aided by this. Social media is a very relevant and helpful tool for extension agents to communicate with peers and clients due to these chances.

One major weakness in extension services that has long been recognised is the lack of connection with farmers [7]. Social media offers

many ways to solve this problem. Social media use is clearly hampered by Personal (lack of enthusiasm for social networking, gloomy outlook) or organisational constraints, infrastructure (target clients' or extension staff's lack of internet connectivity), and policy (organisational regulations that limit the use of social media for work-related purposes) shortcomings. Social media's ability to succeed hinges on how committed community members and extension workers are to utilising social media for promotion [8]. This is because there are many obstacles to overcome, including the limited access to ICTs and internet resources in rural locations, appropriateness for only educated and on the internet clients, some farmers and extension workers are not aware of social media or are not ready to adopt it, a violation of personal privacy, material Piracy as well as unrelated information. Rural dwellers are using social media more and more in spite of these problems [3].

2. MATERIALS AND METHODS

The current research was conducted in the state of Odisha. Odisha was purposefully chosen for a variety of reasons. As an agrarian economy, Odisha employees around 73 per cent of its population in farming who contribute around 30 per cent to the Net State Domestic Product. Several stages of sampling were followed for the present study. Khordha and Puri districts were selected and from each two blocks were selected that is Jatni and Khordha from Khordha district and Nimapara and Pipili from Puri district. Total 9 Gram Panchayats were selected randomly for the study. Two-gram Panchayat from Jatni, Khordha and Pipili and three-gram panchayats form Nimapara were selected randomly. The selected Gram Panchayats were- Harirajpur and Panchupali from Jatni block; Kurudhamal and Gada Haladia from Khordha block; Orakal and Pubasasana from Pipili block; Tulasipur, Gada Amareswara Prasad and Dhanua from Nimapara block. For the study, an ex post facto research design was used. To assess the data and reach logical conclusions, statistical techniques including frequency, percentage, standard deviation, mean, and correlation matrix were employed.

3. RESULTS AND DISCUSSION

3.1 Age (X_1)

Age as a social factor has been an important subject of social study used by the researchers on many situations relating to farm research. There is a saying that “young farmers are better adopters of new technologies than older farmers. At the same time, older famers have more experience in their environment than younger farmers” [9]. The age distribution of the respondents has been presented in Table 1 results showed that majority 56.67 % (51 numbers) of the people belongs of the middle-aged member respondents, For the variable (X_1) the obtained mean score is 2.30 followed by 36.66% (33 numbers) of the old-aged category and 6.67% (6 numbers) of the young-aged category.

3.2 Family Size (X_2)

The family size of the respondents was studied and presented in the Table 2, the majority of respondents 60.00% (54 numbers), belonged to small families with up to four people. For the variable (X_2), the obtained mean score is 1.51. These were followed by medium families, which have between five and eight members, with 28.89% (26 numbers), and large families, which have ten or more members. The number of small families increased along with the number of recipients who had nuclear families.

3.3 Caste (X_3)

Our society is mostly caste structured which has considerable influence on adoption as well as rejection of improved technology. It also indicates the relative position of person in the society [10]. The caste distribution of the respondents has been reflected in the following Table 3 after analysis, the majority of responders, as seen in the above table, i.e., 51.11 per cent (46 numbers) belonged to General category, the obtained mean score for variable (X_3) is 3.22 followed by 31.11 per cent (28 numbers) from OBC category, 11.11 per cent & 6.67 per cent (10 & 6 numbers) from SC and ST category respectively. This showed minor societies use fewer social media in vegetable production.

3.4 Education (X_4)

Educational background had been categorized in the study starting from “can read only” to “college and above” and distribution of the respondents reflected in the Table 4 after analysis, it was found that 36.67 per cent respondents were in middle school, 32.23 per cent were in high school followed by college and above (13.33%),

primary school (13.33%). Majority of the respondents were found to be educated. Thus, the mean score obtained for variable (X_4) is 3.78.

3.5 Size of Landholding (X_5)

Yaseen et al. (2016) studied the factors inhabiting ICTs usage among farmers: comparative analysis from Pakistan and China that most of the household farmers had less than 12 acres of land i.e. 59.00 percent and rest 41.00 per cent of the farmers had more than 12 acres of land [11]. It was discovered from the Table 5 that 55.56 percent of the respondents were marginal farmer having land holding less than 2.5 acres, the obtained mean score for variable (X_5) is **2.56** followed by small farmers (33.33%) having 2.51 to 5 acres land and 11.11 per cent of the respondents were large farmers. Most of the vegetable growers who are accessing to social media were small and marginal farmers.

3.6 Average Annual Income (X_6)

Aldosari et al. (2017) studied that on farmers perceptions regarding the use of information and communication technology (ICT) in Khyber Pakhtunkhwa, Northern Pakistan that most of the contact farmers i.e. 36.60 per cent were having the monthly income range of rs.16000 to Rs.20000 followed by Rs.11000 to Rs.15000 income of the farmers i.e. 24.00 per cent and only 2.70 per cent of the farmers were having monthly income range from (Rs.1000 to Rs.5000) [12]. The result obtained from the Table 6 revealed that majority of the respondents i.e., 40.00 per cent (30 numbers) were having annual income between Rs. 50000 to Rs.100000, the obtained mean score for variable (X_6) is **2.33**. 33.33 per cent (36 numbers) had annual income between Rs. 1,00,000 - 3,00,000 while 17.78 per cent (16 numbers) had income level below Rs.50,000. Only 8.89 per cent (8 number) respondents were having annual income above 3,00,000.

3.7 Social Participation (X_7)

According to the data in the Table 7, 32.33% of respondents were members of two organisations, whilst 26.67% of respondents were members of just one. Of the respondents, 17.78 percent had memberships in more than two organisations, whereas 23.33 percent did not have any affiliations. The social participation of the vegetable producers who used social media was quite good. Tomar et al. (2016) revealed that on association between socio-demographic profile and extent of use of ICT among farmers, maximum number of farmers had medium level of social participation (65.83%) followed by 20.83 per cent having low level of social participation and rest 13.34 per cent have high level of social participation [13].

Table 1. Respondent distribution according to age (n = 90)

S. No.	Category	Frequency	Percentage
1.	Young (30 and below)	6	6.67
2.	Middle Aged (31 to 50)	51	56.67
3.	Old (Above 50)	33	36.66

Table 2. Respondent distribution according to family size (n = 90)

Sl.	Category	Frequency	Percentage
1.	Small (5 or below)	54	60.00
2.	Medium (6-10)	26	28.89
3.	Big (Above 10)	10	11.11

Table 3. Respondent distribution according to caste (n = 90)

Sl.	Category	Frequency	Percentage
1.	Scheduled Caste	10	11.11
2.	Scheduled Tribe	6	6.67
3.	Other Backward Caste	28	31.11
4.	General	46	51.11

Table 4. Respondents' distribution according to level of education (n = 90)

Sl. No.	Category	Frequency	Percentage
1	College and above	12	13.33
2	High School	29	32.23
3	Middle School	33	36.67
4	Primary School	12	13.33
5	Can read only	4	4.44

Table 5. Respondents' distribution according to the amount of land they own (n = 90)

Sl.	Category	Frequency	Percentage
1.	Large farmers(>5acres)	10	11.11
2.	Small farmer (2.51acres–5acres)	30	33.33
3.	Marginal farmer(<2.5acres)	50	55.56

Table 6. Distribution of respondents based on their annual income (n = 90)

Sl. No.	Category	Frequency	Percentage (%)
1.	Up to 50,000	16	17.78
2.	50,000-100,000	36	40.00
3.	1,00,000-3,00,000	30	33.33
4.	3,00,000-5,00,000	8	8.89

Table 7. Respondent distribution based on social participation (n = 90)

Sl. No.	Category	Frequency	Percentage (%)
1.	No Membership in any organisation	21	23.33
2.	Membership in only one organisation	24	26.67
3.	Membership in only two organisations	29	32.22
4.	Membership in > two organisation	16	17.78

3.8 Cosmopoliteness (X_8)

According to the Table 8, 37.78% of respondents went outside once a month, followed by once a week (21.11%) and once every two weeks (18.89%).

3.9 Extension Contact (X_9)

Patidar [14] Transfer of technology depends upon frequent contact with friends and neighbours. Well structure extension network exists in the state Department of Agriculture. The extension agents visit regularly to the farmers and interact in various farm activities. So, it is expected that respondents or the farmers of the study area must come in contact with extension agencies and friends and neighbours regularly. An attempt was made to find out the extent of contact of the sample respondents with extension agencies working in the area under study, the results as indicated in the Table 9 the respondents had more contact with agri input dealers (mean score=2.40) followed by district/block level officials (2.03) and financial institution (1.80). Due to more localite nature of the farmers the agri input dealer was dominating the extension contact of the farmers in terms of facilitating information mostly on insect and disease management. Contact with entrepreneurial organizations found least contacted by the farmers (1.62).

3.10 Extension Participation (X_{10})

The Table 10 revealed that the respondents were attending meeting regularly (mean score=2.39) followed by training (2.03) and demonstration (1.84). The least extension participation was found with the field days with mean score of 1.66.

3.11 Social media Readiness (X_{11})

It was found that 67.78 per cent of the respondents were using mobile to access social media followed by Table 11a (25.56%). 2.22 and 4.44 per cent found using desktop and laptop for

accessing social media respectively. Dominance of smart phone had enhanced easiness to use social media by the respondents.

According to the Table 11b, 90% of respondents had a medium degree of social media access, while 4.4% had a low level of social media access. Only 5.56 percent of those polled had extensive social media use. The effectiveness of social media use has increasingly encouraged more vegetable growers to use it for getting need-based information at any time and from any location with reliable internet access.

Table 8. Respondent distribution based on how frequently they visit places outside of the village (n = 90)

Sl. No.	Category	Frequency	Percentage (%)
1.	Twice or more in a week	10	11.11
2.	Once in a week	19	21.11
3.	Once in a fortnight	17	18.89
4.	Once in a month	34	37.78
5	Rarely	10	11.11

Table 9. Distribution of respondents based on their extension contact (n = 90)

Extension professionals	Mean score	Rank
State Agricultural Department	1.67	VI
KVK	1.78	IV
District/block Level Officials	2.03	II
Agricultural Input dealer	2.40	I
Private Companies	1.71	V
Financial Institution	1.80	III
Entrepreneurial Organization	1.62	VII
NGOs	1.71	V

Table 10. Respondent distribution based on extended participation (n = 90)

Extension Activities	Mean score	Rank
Meeting	2.39	I
Training	2.03	II
Demonstration	1.84	III
Krushi mela	1.69	IV
Campaign	1.69	IV
Field Days	1.66	V

Table 11a. Respondent distribution based on mode of social media use

Sl.	Devices	Frequency	Percentage
1	Mobile	61	67.78
2	Laptop	4	4.44
3	Tablet	23	25.56
4	Desktop	2	2.22

Table 11b. Respondent distribution based on social media access

Sl. No.	Category	Frequency	Percentage (%)
1	Low	5	5.56
2	Medium	81	90
3	High	4	4.44

Table 12. Socioeconomic correlation matrix

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}
Age	1										
Family size	.033	1									
Caste	-.135	-.135	1								
Education	-.424**	-.162	.236*	1							
Land Holding	-.305**	.247*	.097	.244*	1						
Annual Income	-.196	.105	.121	.211*	.585**	1					
Social Participation	-.147	.118	-.075	-.091	.075	.120	1	.452**	.087	.016	-.039
Cosmopoliteness	-.181	.090	-.268*	-.029	.180	.106	.452**	1			
Extension Contact	-.157	-.095	.089	.217*	.249*	.193	.087	.106	1		
Extension Participation	.063	.103	-.016	-.100	.016	-.098	.016	.078	.307**	1	
Social media Readiness	-.042	.127	-.046	.075	.039	.089	-.039	.030	.204	.170	1

***. Correlation is significant at the 0.01 level (2-tailed)*

**. Correlation is significant at the 0.05 level (2-tailed)*

The correlation matrix, as reflected in the Table 12, has revealed that, Education and land holding are negatively highly significant (r= -.424**, r= -.305**) to age. Apart from that age is non-significant to all other variables. Family size is positively significant (r= .247*) to land holding. Other variables are non-significant to family size. Caste is positively significant (r= .236*) to education and negatively significant (r= -268*) to cosmopoliteness. For the variable X_4 i.e. Education is positively significant to land holding, annual income and extension contact. Their r values are 0.244*,0.211* and 0.217* respectively. Land holding is positively highly significant (r=.585**) to annual income and positively significant (r= .249*) to extension contact. Social participation is positively highly significant (r= 0.0.452**) to cosmopoliteness. Extension contact is positively highly significant (r= 0.307**) to extension participation.

4. CONCLUSION

The current study focused on determining the respondents' socioeconomic characteristics. It was discovered that the majority of commercial vegetable producers i.e., 56.67%, belonged to the middle-aged population, 60% of the farmers had families of less than five members, 51.11 % belonged to the general caste, and 36.67 % had education level up to middle school. It was also discovered that the majority (55.56%) of respondents were marginal farmers with less than 2.5 acres of land, the majority (40.00%) had yearly incomes ranging from (50,000 to 100,000) thousand and 32.22 percent were members of only two organisations. In terms of extension contacts, it was shown that agricultural input merchants were the most prevalent among vegetable growers, with the majority of them (63.33%) having a medium level of extension contacts.90% of farmers were classified as having a medium level of social media access. Education and land holding were found to be negatively correlated to age, which meant with increase in age the educational qualification decreased. Family size was positively correlated to land holding i.e with increase in family size there was increase in land holding. Caste was found to be positively significant to education and negatively significant to cosmopoliteness which means caste impacted education whereas it didn't affect their cosmopoliteness. Education was positively significant to land holding, annual income and extension contact. Land holding is positively highly significant to annual income and positively significant to extension contact. Social participation is positively highly significant to cosmopoliteness. Extension contact is positively highly significant to extension participation.so, it was concluded that the socio-economic parameters of the commercial vegetable growers of Odisha directly or indirectly hampered their social media usage.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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