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Relationship between the profile of mandarin growers with adoption of mandarin production technology

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Abstract

The present study was conducted on “Knowledge and adoption of mandarin production technology by the growers” was purposively conducted in Yavatmal district of Vidarbha region. The study was conducted in Digras, Babulgaon, Ner talukas. The sample constituted 120 mandarin growers from 12 villages. Ex-post facto research Design was used for present study. Data from the respondents were collected by personally interviewing with the help of structured and pretested interview schedule. Collected data were classified, tabulated and analysed by using statistical methods like frequency, percentage, mean, standard deviation, correlation coefficient. It was noticed that 55.00 percent of respondents belonged to middle age category. It was also observed that, 33.33 percent of the respondents were educated up to High school level category. It was reported that, less than, half of the respondents 44.17 percent possessed semi medium category of land holding. The findings also indicated that 83.33 percent possessed small size of orchard up to 2 ha. Maximum percentage of respondents 55.83 percent belonging to medium annual income category, 66.67 percent of the respondents belonged to medium extension contact category. It is revealed that 56.67 percent of the respondents had medium level of sources of information, Majority i.e. 68.33 percent of respondents were having medium level of risk orientation. More than half of the respondents 59.17 percent had belonging to medium social participation category; majority i.e. 65.83 percent of the respondents had medium level market orientation. It was observed from that, the results of correlation coefficient(r) showed that the independent variables namely age of respondents was negatively and significant while, social participation and market orientation has positively and significant relationship with adoption level of the mandarin growers regarding mandarin production technology. Variables like education, land holding, orchard size, annual income, extension contact, sources of information, risk orientation has positively and significant relationship with adoption of the mandarin growers regarding mandarin production technology.

Keywords: Knowledge, adoption, production, technology, mandarin

Introduction

The relationship between the profile of mandarin growers and the adoption of mandarin production technology is a crucial area of study for understanding the dynamics of agricultural innovation and efficiency in horticulture. This research explores how various characteristics of mandarin growers, such as their socio-economic background, educational level, farming experience, and access to resources, influence their willingness and ability to adopt advanced production technologies. Mandarin production technology encompasses a range of practices and tools designed to enhance productivity, improve fruit quality, and ensure sustainability. These technologies include improved irrigation systems, pest and disease management practices, high-yielding varieties, and post-harvest handling techniques. Adoption of these technologies is essential for increasing the competitiveness of mandarin growers in the global market, ensuring food security, and promoting sustainable agricultural practices. This study aims to identify key factors within the growers' profiles that correlate with higher adoption rates of these technologies. By understanding these relationships, policymakers, extension services, and agricultural developers can better tailor their programs and support mechanisms to enhance technology uptake. Ultimately, this can lead to more efficient production systems, higher incomes for farmers, and a more robust agricultural sector.

Materials and Methods

The present study was conducted in Yavatmal district, Maharashtra. Out of the sixteen talukas in the district, three talukas—Digras, Babulgaon, and Ner were purposively selected due to their significant mandarin cultivation areas. Four villages were randomly chosen from each of

these three talukas, totaling twelve villages for the study. From each selected village, ten respondents were randomly chosen, resulting in a sample size of 120 farmers. The study utilized an ex-post facto research design, and data were collected through personal interviews using a structured interview schedule. The collected data were tabulated and analyzed using statistical tools such as mean, standard deviation, percentage, frequency, and coefficient of correlation to interpret the findings.

Specific Objectives

1. To study the profile of Mandarin growers.
2. To find out the relationship between the profile of Mandarin growers with adoption of mandarin production technology

Results and Discussion

1) The Profile of Mandarin Growers

Distribution of Mandarin growers according to their Profile characteristics or variables

Table 1: Distribution of Mandarin growers according to their Profile variables or characteristics

Sr. No.	Characteristics	Frequency	Percentage
1	Age		
i	Young (Up to 27 years)	31	25.83
ii	Middle (28 years to 52 years)	66	55.00
iii	Old (53 years & above)	23	19.17
2	Education		
i	Illiterate	08	06.67
ii	Can read & write only	00	00.00
iii	Primary school level	25	20.83
iv	Middle school level	27	22.50
v	High school level	40	33.33
vi	College level	20	16.67
3	Land Holding		
i	Marginal (Up to 1.00 ha)	09	07.50
ii	Small (1.01 to 2.00 ha)	39	32.50
iii	Semi-medium (2.01 to 4.00 ha)	53	44.17
iv	Medium (4.01 to 10.00 ha)	13	10.83
v	Large (above 10.01 ha)	06	05.00
4	Orchard size		
i	Small (up to 2 ha)	100	83.33
ii	Medium (2.01 to 4 ha)	14	11.67
iii	Large (above 4.01 ha)	6	05.00
5	Annual Income		
i	Low (Up to Rs.240000)	32	26.67
ii	Medium (Rs.250000 to Rs.440000)	67	55.83
iii	High (above Rs.450000)	21	17.50
6	Extension Contact		
i	Low (up to 23)	18	15.00
ii	Medium (24 to 34)	80	66.67
iii	High (35 & above)	22	18.33
7	Sources of Information		
i	Low (up to 13)	28	23.33
ii	Medium (14 to 20)	68	56.67
iii	High (21 & above)	24	20.00
8	Risk Orientation		
i	Low (up to 21)	24	20.00
ii	Medium (22 to 26)	82	68.33
iii	High (27 & above)	14	11.67
9	Social Participation		
i	Low (up to 5)	27	22.50
ii	Medium (6 to 9)	71	59.17
iii	High (10 & above)	22	18.33
10	Market Orientation		
i	Low (up to 13)	26	21.67
ii	Medium (14 to 21)	79	65.83
iii	High (22 & above)	15	12.50

The data pertaining to Table 1 depicts Profile variables or characteristics of mandarin growers (respondents) as following.

1. Age

The age wise distribution of the respondents in Table 1 shows

that maximum percentage of the respondents 55.00 percent were found in the middle age category, followed by 25.83 percent appeared in young age category and 19.17 percent of respondents were in the old age category. Similar results were observed by Mule (2012) ^[12].

2. Education

The education wise distribution of the respondents in Table 1 shows that 33.33 percent respondents were educated up to higher school level. While 22.50 percent of the respondents were educated up to middle school level. Primary school level education was availed by 20.83 percent of the respondents followed by 16.67 percent of the respondents was educated up to collage level. Whereas, 6.67 percent of the respondents were Illiterate and No respondents were observed can read and write only category. Similar findings were reported by Dhole (2006) [13].

3. Land Holding

The data furnished in Table 1 indicated that 44.17 percent of the respondents possessed semi medium category of land holding, followed by 32.50 percent were belonged to small category, 10.83 percent were belonged to medium category, 07.50 percent were from marginal and 05.00 percent of respondents belonged to large category of land holding. The findings of the present study are similar with Kadu (2016) [7].

4. Orchard size

It shows from Table 1 that maximum percentage of respondents i.e. 83.33 percent had small size of orchard whereas, 11.67 percent respondents were having medium size of orchard followed by only 05.00 percent of the respondents were possessed large size of orchard under cultivation of mandarin crop. Similar result was found by Kadu (2016) [7].

5. Annual income

It is observed from Table 1 that 55.83 percent of the respondents were belonged to medium category of annual income followed by 26.67 percent of the respondents were from low annual income, whereas, 17.50 percent had high annual income. Thus, it was found from the result that majority of the respondents were having medium annual income. This finding is similar to the finding of Kadu (2016) [7].

6. Extension contact

It was depicted from Table 1 that 66.67 percent of the respondents belonged to medium extension contact category, while 18.33 percent and 15.00 percent of the respondents belonged to high and low extension contact category, respectively. The findings favours the findings of Bankar (2017) [14].

7. Sources of information

It was observed from Table 1 that 56.67 percent mandarin growers were using medium level of sources of information, while 23.33 percent and 20.00 percent of them uses low and high level of sources of information, respectively. The findings of the study are similar to the findings of Atar (2012) [1].

8. Risk orientation

From the above Table 1, it was observed that majority 68.33 percent of respondents were having medium level of risk orientation, while 20.00 percent who were under low category of risk orientation whereas, 11.67 percent respondents were under high category. The findings are similar to the findings of Lad (2013) [15].

9. Social participation

It is elucidated from Table 1 that more than half of the respondents 59.17 percent had medium social participation, while 22.50 percent of the respondent had low social participation and 18.33 percent of them had high social participation. This finding is similar to finding of Waghmare (2010) [16].

10. Market orientation

It is depicted from Table 1 that, majority 65.83 percent of the mandarin growers had medium market orientation followed by 21.67 percent in low market orientation category followed by 12.50 percent had high market orientation of the mandarin growers. The results in line with by Sawale (2011) [10] and Atar (2012) [1].

2) Relationship between profiles of respondents with adoption of mandarin production technology.

The present investigation an attempt was made to find out the coefficients of correlation of the selected characteristics with their adoption level of respondents about mandarin production technology. The data have been presented in Table 2.

Table 2: Relationship between profile of respondents with adoption of mandarin production technology

Sr. No.	Independent variable	Coefficient of correlation (r)
1	Age	-0.228*
2	Education	0.300**
3	Land holding	0.272**
4	Orchard size	0.374**
5	Annual income	0.463**
6	Extension contacts	0.312**
7	Sources of information	0.352**
8	Risk orientation	0.311**
9	Social participation	0.244**
10	Market orientation	0.211*

**Significant at 0.01 percent level

*Significant at 0.05 percent level

It was observed from Table 2 that, the results of correlation coefficient (r) showed that the independent variables namely age of respondents was negatively and significant while, social participation and market orientation has positively and significant relationship with adoption level of the mandarin growers regarding mandarin production technology at 0.05 level of probability. Variables like education, land holding, orchard size, annual income, extension contact, sources of information, risk orientation has positively and significant relationship with adoption of the mandarin growers regarding mandarin production technology.

1. Age and adoption

The correlation coefficient revealed that there was a negatively and significant correlation between age of respondents and adoption level of the mandarin growers regarding mandarin production technology. It has been reported that young people tends to be more receptive and adoptive for improvements, but many research workers have shown that age is not related with adoption of the production technology of different crops, it may due to they do not have decision making capacity in their family. Hence age does not influence on the adoption of production technology. It indicates that, increase in age of respondents decreeing in level of adoption of respondents. This finding is in line with

findings of Katkar (2001)^[8] and Ingale (2003)^[5].

2. Education and adoption

The correlation coefficient conspicuous that there was a positive and significant correlation between education and adoption level of the mandarin growers regarding mandarin production. It clearly indicates that, higher the education of mandarin growers higher the adoption level of the mandarin production technology. The level of education also helps to an individual to get himself acquainted with the skill that are required for undertaking the modern techniques of agriculture. This may be because education brings about desirable changes in the behaviour of knowledge, skill and attitude. This finding is similar to the findings of Pawar (2008)^[9] and Atar (2012)^[11].

3. Land holding and adoption

The correlation coefficient pointed that there was a positive and significant correlation between land holding and adoption level of the mandarin growers regarding mandarin production technology. It might be due to that, if the farmer with large size of land holding may be having better economic status as well as better education which influences their adoption. This might have led to more adoption. These findings are supported by the study of Sawale (2011)^[10] and Kadu (2016)^[7].

4. Orchard size and adoption

The correlation coefficient revealed that there was a positive and significant correlation between orchard size and adoption level of the mandarin growers regarding mandarin production technology. It indicates that, the respondents with small orchard size were found to adopt different improved practices for getting more yield and income. The similar finding was also reported by Bhosale (2004)^[3].

5. Annual income and adoption

The correlation coefficient showed that there was a positive and significant correlation between annual income and adoption level of the mandarin growers regarding mandarin production technology. The above result exhibited that, the annual income determines the economic status of the mandarin growers. They could afford to spend money timely on purchase of inputs in desired quantity and quality as required for the recommended practices. This clearly indicates that higher the annual income, higher the adoption level of mandarin production technology of mandarin. These findings are supported by the study of Pawar (2008)^[9] and Atar (2012)^[11].

6. Extension contact and adoption

The correlation coefficient revealed that there was a positive and significant correlation between extension contact and adoption level of the mandarin growers regarding mandarin production technology. This might be due to the selected respondents were having high degree of contact with extension person to get an opportunity to see different important practices and to adopt them. This finding is similar with the finding of Hinge (2009)^[4] and Sawale (2011)^[10].

7. Source of information and adoption

The correlation coefficient indicated that there was a positive and significant correlation between source of information and

adoption level of the mandarin growers regarding mandarin production technology. Sources of information increases level of information and develop self-confidence about ability to take up new and better methods. With frequent extension contacts, farmers get reinforcement to adopt new ideas. This finding is in line with findings of Atar (2012)^[11] and Jadhav (2008)^[6].

8. Risk orientation and adoption

The correlation coefficient conspicuous that there was a positive and significant correlation between risk orientation and adoption level of the mandarin growers regarding mandarin production technology. The reason could be that, farmers with more risk orientation are more prone to take risk and face the challenges to get maximum returns. This indicates that higher the risk orientation higher will be the extent of adoption. The findings are supported by the study of Sawale (2011)^[10] and Kadu (2016)^[7].

9. Social participation and adoption

The correlation coefficient showed that there was a positive and significant correlation between social participation and adoption level of the mandarin growers regarding mandarin production technology. The study indicates that, the adoption level of respondents increases with increase in social participation. The farmer who had more social participation in organization so adopt new technology as compare to other and aware about that. The findings of the study are similar to the findings of Atar (2012)^[11] and Baswante (2016)^[2].

10. Market orientation and adoption

The correlation coefficient pointed that there was a positive and significant correlation between market orientation and adoption level of the mandarin growers regarding mandarin production technology. The reason might due to that, with motivation to have more profit, farmers tend to adopt the recent practices. It indicates that adoption depends on market orientation. As market orientation increases adoption also increases. This finding is similar to the findings of Shabhir (2011)^[11].

Conclusion

It was noticed that 55.00 percent of respondents belonged to middle age category. It was also observed that, 33.33 percent of the respondents were educated up to High school level category. It was reported that, less than, half of the respondents 44.17 percent possessed semi medium category of land holding. The findings also indicated that 83.33 percent possessed small size of orchard up to 2 ha. Maximum percentage of respondents 55.83 percent belonging to medium annual income category, 66.67 percent of the respondents belonged to medium extension contact category. It is revealed that 56.67 percent of the respondents had medium level of sources of information, Majority i.e. 68.33 percent of respondents were having medium level of risk orientation. More than half of the respondents 59.17 percent had belonging to medium social participation category; majority i.e. 65.83 percent of the respondents had medium level market orientation. It was noticed from that, the results of correlation coefficient (r) showed that the independent variables namely age of respondents was negatively and significant while, social participation and market orientation has positively and significant relationship with adoption level of the mandarin

growers regarding mandarin production technology at 0.05 percent probability. Variables like education, land holding, orchard size, annual income, extension contact, sources of information, risk orientation has positively and significant relationship with adoption of the mandarin growers regarding mandarin production technology.

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