Original Research Article

A Relational Analysis of Level of Knowledge and Adoption of Mango Growers in Odisha

Abstract:

Odisha is the 8th largest producer of Mango state in India and occupies 61.00 % of total fruit cultivated areas of the state. As level of knowledge shapes the level of adoption of improved practices which in turn helps improving livelihood status of the farmers through higher production and productivity the present research has been conducted to ascertain the level of knowledge and adoption of improved farm practices by the mango farmers as well as to ascertain the association between selected socio-economic, socio-personal and communication variables with level of knowledge and adoption. The study was conducted in two purposively selected ODOP districts for Mango, i.e. Subarnapur & Angul district of Odisha. Ex-post-facto research designed was used for the studies. Ten aspects of knowledge and nine broad aspects adoption were considered for the present study. Data were collected from 180 respondents, 90 from each study district, and were classified, tabulated and analysed through statistical tools like Knowledge and Adoption Index, frequency, percentage, mean, standard deviation, correlation, multiple and step wise regression and ANOVA. It was found that majority of the respondents were having medium and semi-medium level of consolidated knowledge and adoption with no significance difference between study districts in this regard. Twelve Selected variables i.e. age, self-education, family-education, Mango farming experience, social participation, land holding, cultivable land, area under Mango, annual family income, consolidated information seeking behaviour, consolidated marketing behaviour, and consolidated adoption were found influencing the consolidated knowledge. Whereas, in case of level of adoption, all 11 variables out of the above mentioned 12 variables except consolidated level of adoption along with Mango yield index and consolidated knowledge were found having significant and strong correlation with consolidated adoption. The adjusted R^2 were found 0.788 and 0.766 respectively for regression of consolidated knowledge and consolidated adoption with selected socio-personal, agro-economic and communication variables. While doing step wise regression of consolidated knowledge with selected variables, 5 variables viz, consolidated information seeking behaviour, consolidated marketing behaviour, self-education, Mango yield index and family education appeared as most important variables that explained the variation in consolidated knowledge level. Similarly, while doing regression of consolidated adoption with selected variables, 3 variables viz., consolidated knowledge, cultivable land, Mango yield index appeared as most important variables that explained the variation in consolidated adoption.

Keywords: Knowledge, Adoption, Mango Growers, Relation, Significant

Comment [A1]: Expand it once when you use it first time

Comment [A2]: Add of

Introduction

India is the leading producer of Mango in the World and contribute a share of 50 percent of total Mango production in the world. India rank 1st in Mango production among different Mango producing countries in the world (source: nhb.gov.in/report_file/mango) and estimated to produce 21 million metric ton of Mango in fiscal year 2023 (Source: www.statista.com). Odisha is the 8th largest producer of Mango state in India (source: https://agriculturereview.com) and occupies 61.00 % of total fruit cultivated areas of the state according to 2018-19 report(Source: https://agri.odisha.gov.in). One District One Product (ODOP) Programme is an initiative under Government of India where each district of the state contributes a leading product towards Indian economy and employment generation. The two districts i.e Subarnapur and Angul district of Odisha comes under ODOP as major leading Mango producing districts(source:www.mofpi.gov.in). The Mango, being a commercial and king of fruit crop, the livelihood status of the farmers can only be increased through proper knowledge and adoption of improved production practices for which knowledge and adoption behaviour act as a crucial factor. Hence, it is important to study the Knowledge and Adoption behaviour of Mango growers. The present study was conducted to assess the following specific objectives.

1. To study the extent and consolidated level of knowledge and adoption of the respondents about improved Mango production practices.
2. To compare the knowledge and adoption level of the respondents between two study districts.
3. To study the relationship between selected characteristics of respondents with their knowledge and adoption level.

Methodology

Ex-post-facto research designed was used for the present study. The study was conducted in two purposively selected ODOP districts, as leading Mango growing areas i.e. Subarnapur and Angul district of Odisha. From each district two blocks were selected purposively namely, Sonepur and Ullunda block from Subarnapur district and Athmallik and Kishorenagar block from Angul district on the basis of maximum area and production of Mango and from each block clusters of villages were selected randomly. 45 numbers of respondents were selected randomly among the Mango growers from each cluster of villages totalling to 180 respondents for the study. Knowledge and adoption level of the respondents were studied under different aspects based on the package of practices prevailing in the study area and review of literature, viz., varieties, land preparation, propagation, planting, irrigation, manures and fertilizers application, use of growth regulator, plant protection measures, yield and harvest and post-harvest management. Under each aspects certain question were framed based on the context of the study and prevailing practices in the study area and the respondents were asked to give answer against each question with a rating of 3 point continuum scale i.e. no knowledge, partial knowledge and full knowledge and no adoption, partial adoption and full adoption with corresponding score of 0,1 and 2 respectively(Modified Hardikar,1998, 3-point scale based on the context of the study) in order to access their knowledge and adoption level. These aspects and questions were incorporated in the interview schedule for data collection. The data were collected from the respondents by using personal interview schedule. Collected data were classified, tabulated and analysed through statistical tools like, Index, frequency, percentage, mean, standard deviation, correlation, multiple regression, step wise regression and ANOVA. The index value of each aspect under knowledge and adoption level of individual respondents were calculated by using the following formula.

Comment [A3]: ranks

Index = Score obtained/Score maximum × 100

The consolidated knowledge and adoption level of individual respondent were calculated by taking average of all indices of aspects under level of knowledge and adoption as formula described below.

Consolidated Knowledge or adoption = sum of all indices under different aspects/Numbers of aspects

The index value was categorised into 4 groups i.e. low, semi-medium, medium and high with corresponding index value of 0-25, 25.1-50, 50.1-75 and 75.1-100 respectively. The relational statistics were calculated by using SPSS.

To compare the knowledge and adoption level the following null hypothesis have been formulated.

H01: There is no significance difference of knowledge level between two study districts' respondents.

H02: There is no significance difference of adoption level between two study districts' respondents.

Results and Discussion

The extent of knowledge of the respondents has been presented in table 1. The results are presented in two major categories against each aspect of knowledge level i.e. Major 1 (having highest concentration of respondents) and Major 2 (having second highest concentration of respondents.

From the table.1 it can be observed that majority of the respondents had semi-medium level of knowledge (major 1) followed by medium level of knowledge (major 2) about the Mango varieties in case of Subarnapur district, Angul district and total respondents with slight exception in case of Subarnapur district where respondents had high level of knowledge regarding varieties as major 2 category.

While considering the land preparation and propagation practices it can be observed that majority of respondents had medium level of knowledge followed by high level of knowledge in case of Subarnapur district, Angul district and total respondents.

While considering the planting practices it was found that majority of respondents had medium level of knowledge (major 1) followed by high level of knowledge (major 2) in case of Angul district and total respondents where as in case of Subarnapur district most of the respondents (major 1) were found having high level of knowledge followed by medium level of knowledge (major 2). While considering irrigation practices it was found that majority of respondents were having high level of knowledge followed by semi-medium level of knowledge in case of Subarnapur district and total respondents, where as in case of Angul district most of the respondents (major 1) were found having semi-medium level of knowledge followed by high level of knowledge (major 2).

From the table it is also evident that majority of the respondents had semi-medium level of knowledge (major 1) followed by low level of knowledge (major 2) about manures and fertilisers in case of Subarnapur district and Angul district with slight exception in case of Subarnapur district where respondents had medium level of knowledge regarding manures and fertilisers as major 1 category. In case of total majority of respondents were found having semi-medium level of knowledge (major 1) followed by medium level of knowledge (major 2) about manures and fertilisers.

While considering use of growth regulator it can be observed that majority of respondents had low level of knowledge (major 1) followed by semi-medium level of knowledge (major2) in case of Subarnapur district, Angul district and total respondents.

Comment [A4]: actual percentage of farmers should be iven in results instead of just saying majority and followed by

It is also observed that majority of the respondents had semi-medium level of knowledge (major 1) followed by low level of knowledge (major 2) about plant protection measures in case of Angul district and total respondents, where as in case of Subarnapur district most of the respondents (major 1) were having low level of knowledge followed by semi-medium and medium level of knowledge (major 2) about plant protection measures.
While considering the yield and harvest and post-harvest management it was found that majority of respondents had high level of knowledge followed by medium level of knowledge in case of Subarnapur district, Angul district and total respondents.

Table.1: Extent of Knowledge of the Respondents about different Mango production practices

Level of knowledge on different practices	Subarnapur		Angul		Total	
	Major 1 (%)	Major 2 (%)	Major 1 (%)	Major 2(%)	Major 1 (%)	Major 2 (%)
Varieties	Semi-medium (35.56)	Medium (31.11) & High(31.11)	Semi-medium (38.89)	Medium (37.78)	Semi-medium (37.22)	Medium (34.45)
Land preparation	Medium (65.56)	High (34.44)	Medium (82.22)	High (17.78)	Medium (73.89)	High (26.11)
Propagation practices	Medium (38.89)	High (33.33)	Medium (51.11)	High (28.89)	Medium (45.00)	High (31.11)
Planting practices	High (53.33)	Medium (45.56)	Medium (56.67)	High (42.22)	Medium (51.11)	High (47.78)
Irrigation	High (50.00)	Semi-medium (32.22)	Semi-medium (45.55)	High (37.78)	High (43.89)	Semi-medium (38.89)
Manures and fertiliser application	Semi-medium (34.44) & Medium (34.44)	Low (31.12)	Semi-medium (37.78)	Low (32.22)	Semi-medium (36.11)	Medium (32.22)
Use of growth regulator	Low (63.33)	Semi-medium (31.11)	Low (64.44)	Semi-medium (30.00)	Low (63.89)	Semi-medium (30.55)
Plant protection measures	Low (34.44)	Semi-medium (31.11) & Medium (31.11)	Semi-medium (40.00)	Low (33.33)	Semi-medium (35.55)	Low (33.89)
Yield	High (57.78)	Medium (25.56)	High (60.00)	Medium (22.22)	High (58.89)	Medium (23.89)
Harvest and post- harvest management	High (54.44)	Medium (25.56)	High (42.22)	Medium (30.00)	High (48.33)	Medium (27.78)

Table.2 represents the extent of adoption of respondents about 9 Mango production practices in 2 categories i.e. major 1 and major 2. While considering the varieties, propagation practices and harvest and post-harvest management it was found that majority of respondents had semi-medium level of adoption as major 1 category followed by medium level of adoption as major 2 category in case of Subarnapur district, Angul district and total respondents.

Comment [A5]: There is no clarity in the table. It is good to give the percentage of respondents in all the four categories along with frequency

Comment [A6]: major 1 and 2 classification is not explained in methodology

While considering the land preparation and planting practices it was found that majority of respondents had medium level of adoption (major 1) followed by semi-medium level of adoption (major 2) in case of Subarnapur district and total respondents where as in case of Angul district most of the respondents (major 1) were having semi-medium level of adoption followed by medium level of adoption (major 2).

While considering the irrigation, manures and fertilisers application, use of growth regulators and plant protection measures it was found that majority of respondents had low level of adoption as major 1 category followed by semi-medium level of adoption as major 2 category in case of Subarnapur district, Angul district and total respondents.

Table.2. Extent of adoption of respondents about improved Mango production practices

Extent of adoption of different practices	Subarnapur		Angul		Total	
	Major 1 (%)	Major 2 (%)	Major 1 (%)	Major 2(%)	Major 1 (%)	Major 2 (%)
Varieties	Semi-medium (46.67)	Medium (35.56)	Semi-medium (45.56)	Medium (30.00)	Semi-medium (46.11)	Medium (32.78)
Land preparation	Medium (57.78)	Semi-medium (30.00)	Semi-medium (51.11)	Medium (45.56)	Medium (51.67)	Semi-medium (40.55)
Propagation practices	Semi-medium (62.22)	Medium (35.56)	Semi-medium (63.33)	Medium (36.67)	Semi-medium (62.78)	Medium (36.11)
Planting practices	Medium (48.89)	Semi-medium (35.55)	Semi-medium (40.00)	Medium (35.56)	Medium (42.22)	Semi-medium (37.78)
Irrigation	Low (66.67)	Semi-medium (22.22)	Low (77.78)	Semi-medium (22.22)	Low (72.22)	Semi-medium (22.22)
Manures and fertiliser application	Low (86.67)	Semi-medium (10.00)	Low (82.22)	Semi-medium (17.78)	Low (84.44)	Semi-medium (13.89)
Use of growth regulator	Low (93.33)	Semi-medium (4.45)	Low (100.00)	Semi-medium (0.00)	Low (96.67)	Semi-medium (2.23)
Plant protection measures	Low (88.89)	Semi-medium (8.89)	Low (93.33)	Semi-medium (6.67)	Low (91.11)	Semi-medium (7.78)
Harvest and post-harvest management	Semi-medium (47.78)	Medium (34.44)	Semi-medium (67.78)	Medium (26.67)	Semi-medium (57.78)	Medium (30.56)

Table 3 represents the consolidated level of knowledge and adoption of improved Mango growing practices of the farmers on the basis of knowledge index (KI) and adoption index (AI) as calculated by using the formula as given in methodology section. From table 3 it is evident that majority of the respondents of both the districts and total respondents had medium level of knowledge about different improved mango cultivation practices (38.89%, 44.45% and 41.67% respectively for Subarnapur district, Angul district and total respondents) followed by semi-medium level of knowledge (31,11%, 32.22% and 31,67% respectively for Subarnapur district, Angul district and total

respondents). The mean Knowledge Index was found to be 62.81, 61.12 and 61.97 respectively for Subarnapur district, Angul district and total respondent. The results of these findings are supported to some extent by Meti (1998), Bheemappa (2001), Ramasubramanian and Manoharan(2002),Shashikiran et.al,.(2020), Kumar et al., (2022) and Kemekar.,P. and Salunkhe.S.R, (2023).

While looking into the level of adoption it was found that majority of the respondents had semi-medium level of adoption of different improved mango cultivation practices (73.33%, 68.89% and 71.11% respectively for Subarnapur district, Angul district and total respondents) followed by low level of adoption (13.33%, 18.89% and 16.11% respectively for Subarnapur district, Angul district and total respondents). The mean Adoption Index was found to be 39.19, 36.33 and 37.76 respectively for Subarnapur district, Angul district and total respondent which are much lower than the Knowledge Index implying that although the respondents are having reasonably higher level of knowledge about improved Mango production practices that are not reflected in their level of adoption. The results of these findings are supported by Islam et al., (2021) to some extent.

Table.3: Consolidated knowledge and adoption level about improved Mango production practices among the respondents

Knowledge / Adoption Index (KI / AI)	Knowledge level						Adoption level					
	Subarnapur (90)		Angul (90)		Total=180		Subarnapur (90)		Angul (90)		Total=180	
	F	%	F	%	F	%	F	%	F	%	F	%
0-25 (Low)	0	0.00	0	0.00	0	0.00	12	13.33	17	18.89	29	16.11
25.1-50 (Semi-Medium)	28	31.11	29	32.22	57	31.67	66	73.33	62	68.89	128	71.11
50.1-75 (Medium)	35	38.89	40	44.45	75	41.67	11	12.23	11	12.22	22	12.22
75.1-100 (High)	27	30.00	21	23.33	48	26.66	1	1.11	0	0.00	1	0.56
Mean	62.81		61.12		61.97		39.19		36.33		37.76	
SD	15.26		15.38		15.34		11.77		10.73		11.35	

Table 4. represents the analysis of variance of knowledge and adoption level of respondents between two study districts i.e. Subarnapur and Angul district. The F-value were found 0.543 and 2.863 and P value were found 0.462 and 0.092 respectively for the variables consolidated knowledge and consolidated adoption. Here both the P value > 0.005, which indicates that there is no significant difference among group means. Hence the null hypothesis accepted and alternative hypothesis rejected and it can be concluded that there is no significant difference of knowledge and adoption level of respondents between two study districts. This result is quite expected since same packages of practices were implemented under ODOP (One District One Product) programme, more or less same type of facilities regarding Mango cultivation available that reflects towards more or less same type of adoption and also there was no significant difference in geographical condition in both the study districts.

Table.4: Comparison between knowledge and adoption level of respondents

ANOVA (level of significance =.005)					
	Sum of Squares	df	Mean Square	F	P value

Consolidated knowledge	Between Groups	128.954	1	128.954	.543	.462
	Within Groups	42280.442	178	237.531		
	Total	42409.397	179			
Consolidated adoption	Between Groups	367.618	1	367.618	2.863	.092
	Within Groups	22852.355	178	128.384		
	Total	23219.973	179			

Comment [A7]: you should indicate in the table against the value whether it is significant or not

Table.5. represents the association of socio-personal, agro-economic and communication variables with consolidated knowledge and consolidated adoption level of respondents. It was found that out of the 17 selected variables, 12 variables i.e. age, self-education, family-education, Mango farming experience, social participation, land holding, cultivable land, area under Mango, annual family income, consolidated information seeking behaviour, consolidated marketing behaviour, and consolidated adoption were found influencing the consolidated knowledge and other 5 variables i.e. family size, income from Mango, Mango trees per acer, Mango yield index and consolidated constraints were found having no association with consolidated knowledge. These 12 variables had significant and strong correlation with consolidated knowledge.

On the other hand, except consolidated adoption, 11 variables out of the above mentioned 12 variables were found having significant and strong correlation with consolidated adoption and along with two other variables namely, consolidated knowledge and mango yield index. This result is quite expected because increase in age leads to decrease in memory and grasping power and increase in health-related issues as a result the knowledge and adoption regarding different packages of practices decrease. Increase in self-education, family-education, Mango farming experience, social participation, land holding, cultivable land, area under Mango, annual family income, information seeking behaviour, marketing behaviour and adoption level lead to increase in knowledge level. Similarly, increase in self-education, family-education, Mango farming experience, social participation, land holding, cultivable land, area under Mango, annual family income, Mango yield index, information seeking behaviour, marketing behaviour and knowledge lead to increase in adoption level of respondents regarding different package of practices. The results of these findings are supported by the findings of Patil et al., (1999), Singh et al., (2010), Sumathi & Rathakrishnan, (2008), Yadava et al., (2007) and Kumar et al., (2022) to a great extent.

Table.5: correlation of selected variables with knowledge and adoption level

Comment [A8]: change case

Selected characteristics	Pearson Correlation(r), N=180	
	Consolidated Knowledge	Consolidated Adoption
Age	-.255**	-.181*
Self-education	.737**	.597**
Family education	.374**	.294**
Family size	.027	.062
Mango farming experience	.503**	.364**
Social participation	.469**	.378**
Land holding	.181*	.260**
Cultivable land	.198**	.299**
Area under Mango	.169*	.236**
Average Annual family income	.264**	.275**
Income from Mango	.118	.119

Mango trees per acre	-.035	-.058
Mango yield index	.052	.175*
Consolidated information	.827**	.742**
Consolidated Marketing behaviour	.511**	.374**
Consolidated Constraints	.032	-.006
Consolidated Knowledge	1	.862**
Consolidated Adoption	.862**	1

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

Comment [A9]: you can indicate as NS for nonsignificant variables

Table 6. represents the results of regression analysis of consolidated knowledge with selected socio-personal, agro-economic and communication variables. The adjusted R^2 was found .788 which indicates 78.00% of variation in the dependent variables i.e. consolidated knowledge was explained by the 16 selected independent variables viz, age, self-education, family education, family size, Mango farming experience, social participation, land holding, cultivable land, area under Mango, annual family income, income from Mango, Mango trees per acer, Mango yield index, consolidated information seeking behaviour, consolidated marketing behaviour and consolidated constraints.

Table.6: Regression of consolidated Knowledge with selected characteristics

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-18.829	9.870		-1.908	.058
	age	-.038	.059	-.027	-.652	.515
	Self-education	.602	.252	.156	2.391	.018
	Family education	.612	.261	.107	2.343	.020
	Family size	-.147	.215	-.027	-.684	.495
	Mango farm experience	.223	.103	.089	2.165	.032
	Social participation	-.117	.459	-.010	-.255	.799
	Land holding	-.202	.151	-.117	-1.340	.182
	Cultivable land	.179	.119	.137	1.503	.135
	Area under Mango	.020	.719	.003	.027	.978
	Average Annual family income	1.018E-06	.000	.028	.449	.654
	Income from Mango	-3.496E-06	.000	-.040	-.367	.714
	Mango trees per acre	.043	.043	.042	1.013	.313
	Mango yield index	.063	.026	.146	2.380	.018
	Consolidated information	.530	.071	.465	7.455	.000
	Consolidated marketing behaviour	.854	.190	.269	4.504	.000

Comment [A10]: change case

	Consolidated constraints	.151	.083	.068	1.818	.071
a. Dependent Variable: consolidated knowledge						
R Square		Adjusted R Square				
.807		.788				

Table.7 depicts the results of step wise regression of consolidated knowledge with the selected socio-personal, agro-economic and communication variables. From step-wise regression 5 variables viz,. consolidated information seeking behaviour, consolidated marketing behaviour, self-education, Mango yield index and family education came out as most important variables that explained 78.00% (adjusted R^2 = .784) variation in consolidated knowledge level. Out of these 5 variables 1 variable i.e consolidated information was found out as most important variable explaining 68.00% (adjusted R^2 = .682) variation in consolidated knowledge level.

Table.7: Step wise regression of consolidated knowledge with selected variables

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.827[a]	.683	.682	8.68466
2	.860[b]	.740	.737	7.89431
3	.875[c]	.766	.763	7.50116
4	.885[d]	.782	.777	7.26274
5	.889[e]	.790	.784	7.15516
a. Predictors: (Constant), consolidated information				
b. Predictors: (Constant), consolidated information, consolidated market				
c. Predictors: (Constant), consolidated information, consolidated market, self-education				
d. Predictors: (Constant), consolidated information, consolidated market, self-education, Mango yield index				
e. Predictors: (Constant), consolidated information, consolidated market, self-education, Mango yield index, family education				

Table.8. represents the results of regression analysis of consolidated adoption with selected socio-personal, agro-economic and communication variables. The adjusted R^2 was found .766 which indicates 76.00% of variation in the dependent variables i.e consolidated adoption was explained by the 17 selected independent variables viz,. age, self-education, family education, family size, Mango farming experience, social participation, land holding, cultivable land, area under Mango, annual family income, income from Mango, Mango trees per acer, Mango yield index, consolidated information seeking behaviour, consolidated marketing behaviour, consolidated constraints and consolidated adoption.

Table.8: Regression of adoption with selected characteristics

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.195	7.758		.541	.589
	age	.053	.046	.051	1.155	.250
	Self-education	-.091	.199	-.032	-.455	.650
	Family education	-.010	.206	-.002	-.049	.961
	Family size	-.086	.167	-.021	-.513	.609
	Mango farm experience	.017	.081	.009	.211	.833
	Social participation	-.237	.357	-.028	-.665	.507
	Land holding	-.047	.118	-.036	-.394	.694
	Cultivable land	.175	.093	.182	1.880	.062
	Area under Mango	-.240	.559	-.047	-.429	.669
	Average Annual family income	-1.432E-06	.000	-.053	-.811	.419
	Income from Mango	5.910E-06	.000	.091	.798	.426
	Mango trees per acre	.019	.033	.025	.583	.561
	Mango yield index	.055	.021	.173	2.641	.009
	Consolidated information seeking behaviour	.136	.064	.162	2.128	.035
	Consolidated marketing behaviour	-.131	.156	-.056	-.836	.405
	Consolidated constraints	-.005	.065	-.003	-.080	.936
	Consolidated knowledge	.584	.061	.789	9.584	.000
a. Dependent Variable: consolidated adoption						
R Square			Adjusted R Square			
.788			.766			

Table.9 depicts the results of step wise regression of consolidated adoption with the selected socio-personal, agro-economic and communication variables. From step-wise regression 3 variables viz,. consolidated knowledge, cultivable land and Mango yield index came out as most important variables that explained 77.00% (adjusted R^2 = .772) variation in consolidated adoption level. Out of these 3 variables 1 variable i.e. consolidated knowledge was found out as most important variable explaining 74.00% (adjusted R^2 = .742) variation in consolidated adoption level.

Table.9: Step wise regression of consolidated adoption with selected variables

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.862[a]	.743	.742	5.78633
2	.872[b]	.761	.758	5.60291
3	.881[c]	.776	.772	5.43916
a. Predictors: (Constant), consolidated knowledge				
b. Predictors: (Constant), consolidated knowledge, cultivable land				

c. Predictors: (Constant), consolidated knowledge, cultivable land, Mango yield index

Conclusions

From the study it can be concluded that majority of the respondents had semi-medium to high level of knowledge regarding different package of practices and low to medium level of adoption regarding different package of practices. Majority of the respondents had medium level (50.1-75 index value) of knowledge and semi-medium level (25.1-50.00 index value) of adoption in case of Subarnapur district, Angul district and total respondents. There were no significant difference of knowledge and adoption level of respondents between two study districts. In correlation analysis out of the 17 selected variables 12 variables i.e. age, self-education, family-education, Mango farming experience, social participation, land holding, cultivable land, area under Mango, annual family income, consolidated information seeking behaviour, consolidated marketing behaviour, and consolidated adoption were found having significant and strong correlation with the consolidated level of knowledge with adjusted R^2 = .788. Except consolidated adoption, 11 variables out of the above mentioned 12 variables were found having significant and strong correlation with consolidated level of adoption and additionally consolidated knowledge and Mango yield index were found having strong association with consolidated level of adoption with adjusted R^2 =.766. While calculating step wise regression of consolidated level of knowledge, consolidated information seeking behaviour was found out as most important variable explaining 68.00% (adjusted R^2 = .682) variation in consolidated level of knowledge. Similarly, while calculating step wise regression of consolidated level of adoption, consolidated level of knowledge was found out as most important variable explaining 74.00% (adjusted R^2 = .742) variation in consolidated adoption level. The study suggest that extension should have taken up more intensive efforts towards enhancement of level of knowledge and consequent level of adoption of improved Mango growing practices.

References

Bheemappa, A. (2003). Entrepreneurship development in Agriculture. *Yojana* **47**(12): 19-20.

Hardikar, D.P. (1998). Perfection of development programme derived by women beneficiaries of Ratnagiri District. Unpublished Ph.D. Thesis. University of Dhawrad.

Islam, Alimul, Bose,D.K., and Alam,N. (2021). "Impact of Training Program on Adoption Behavior of Mango Growers in Faizabad District of Uttar Pradesh". *Asian Journal of Agricultural Extension, Economics & Sociology* 39 (2):76-81. https://doi.org/10.9734/ajaees/2021/v39i230531.

Kemekar., P and Salunkhe., S.R (2023). Knowledge of farmer first programme beneficiaries about demonstrated technologies. Gujarat journal of extension education. Vol.35: Issue 1.PP 51-55. doi: 10.56572/gjoee.2023.35.1.0013

Kumar,G., Yadav R.N., Doharey R. K., Yadav V, and Kumar M. 2022. "Knowledge Level of Mango Orchardists in Relation to Different Practices of Mango in Meerut Districts Uttar Pradesh, India". *Asian Journal of Agricultural Extension, Economics & Sociology* 40 (11):38-44. https://doi.org/10.9734/ajaees/2022/v40i111683.

Meti, S.K. (1998). Technology reach perception, knowledge, adoption and attitude towards improved agriculture technology by small and marginal farmers in

Tungabhadra Command Area. Ph. D. Thesis, University of Agricultural Sciences, Dharwad.

Patil, V.G.; Mahadik, R.P. and Patil, A.S. (1999). Entrepreneurial behaviour of littlegourd growers. *Maharashtra Journal of Extension Education* **XVIII**: 240-243.

Ramasubramanian and Manoharan (2002). Knowledge and adoption behaviour of mango growers. Madras Agricultural Journal, 89(10-12):582-585. https://doi.org/10.29321/MAJ.10.A00265.

Shashikiran., Sankangoudar.S, Hiremath.D (2020). Knowledge level of farmers about organic farming practices. Journal of Pharmacognosy and Phytochemistry, 9(5):817-820.

Singh.K, Singh.G.P., and Priyadarshi.A (2010). Extent of adoption of improved practices of Mango production by Mango growers in Muzaffarnagar district of Uttar Pradesh. Indian Research Journal of Extension Education, 10(3):107-113.

Sumathi.P, and Rathakrishnan.T (2008). Adoption of improved practices in mango cultivation by small and big farmers in Dharmapuri district. Madras agricultural journal, 95:239-241.

Yadava. R N, Singh. D, Sharma. T. D. (2007) Relationship between extent of adoption of improved mango cultivation practices and socio-economic features of Mango orchardists of western Uttar pradesh. Progressive Agriculture, 7(31-33).

Report of the MANGO-NHB. retrieved from https://nhb.gov.in/report_files/mango/mango.htm

Office Memorandum dated 14.03.2024. Approved List of One District One Product (ODOP) under PMFME Scheme-reg. retrieved from www.mofpi.gov.in

Top 10 Mango Producing Countries & States in India. retrieved from https://agriculturereview.com/mango-producing-countries-and-states-in-india

Production volume of mango across India FY 2012-2023.Published dated Aug 24, 2023. retrieved from https://www.statista.com/statistics/1039683/india-production-volume-of-mango

Odisha Agriculture Statistics 2018-19. Government of Odisha, Department of Agriculture & Farmers' Empowerment. District wise estimates of area under different fruit crops 2018-19. retrieved from ODISHA AGRICULTURE STATISTICS 2018-19.pdf https://agri.odisha.gov.in