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Correlates of Knowledge and Adoption Behaviour of Farmers with their Profile Characteristics : An Analysis of Chrysanthemum Growers in Mandya District of Karnataka

Mamathalakshmi[1], N. K. Nagabhushanam[2], M. S. Nataraju[3], H. S. Surendra[4], B. Krishnamurthy[5] and Sowmyashree G.T.[6]

ABSTRACT

The present investigation was conducted in Mandya district of Karnataka during the period 2009-2010. The chi-square value clearly showed that age, area under chrysanthemum, family size and family type had significant association at one per cent with their adoption behaviour. While the variables like occupational status, economic motivation, mass media utilization and management orientation had significant association at five per cent with their adoption behaviour. Further, study indicated that inadequate irrigation facilities, limited and irregularity of power supply, lack of finance / credit facility were the main adoption constraints perceived by the farmers in chrysanthemum cultivation.

Key words : Chrysanthemum, adoption behaviour, chi-square, constraints

INTRODUCTION

Floriculture is becoming a booming industry in the world today. Floriculture has been identified as most remunerative for replacing subsistence farming in rainfed dry land, hills, arid and coastal eco-system. Relatively higher unit of production, higher net returns, employment generation and export earning favour diversification of these crops and provide a viable option. The important flower crops grown in India are jasmine, rose and chrysanthemum which take the position of first, second and third, respectively accounting to an area of 6630, 5498 and 3752 hectares, respectively followed by crossandra, marigold, tuberose, china aster, gladiolus, orchid, gerbera and carnation. In Karnataka, Mandya district ranks second with respect to area and first place in terms of production of chrysanthemum. In the district, the crop is being grown in an area of 405 hectares with the production of 3,842 tonnes. Keeping in view of these facts, the present study pertaining to the use of modern technologies by the chrysanthemum farmers was undertaken with the specific objectives to know the personal, social, psychological and economical characteristics which influence the knowledge and adoption behaviour of chrysanthemum farmers and to study the constraints encountered by the farmers in adoption of chrysanthemum practices and marketing.

METHODOLOGY

The present research study was carried out in KrishnaRajPet and Nagamangala taluks of Mandya district, which were purposely selected for the study as chrysanthemum flower growers are more in these taluks. An ex-post-facto research design was employed for conducting the study. The data were collected from 120 randomly selected respondents by using a detailed interview schedule employing personal interview method. Collected data were scored, quantified, categorized and tabulated using statistical methods like percentage analysis, mean and standard deviation, frequencies, chi-square test and arrived the following results.

RESULTS AND DISCUSSION

The results pertaining to the profile characteristics and knowledge level of chrysanthemum farmers were delineated and the respondents were distributed according to their personal, social, psychological and economical characteristics which influence the knowledge level of chrysanthemum farmers and constraints encountered by the farmers in marketing of chrysanthemum flowers.

The results in Table I revealed that there was positive and significant and association between profile characteristics such as age, area under chrysanthemum, economic dependency, family size, family type occupational status, material possession, annual income, mass media utilization and management orientation with knowledge level of chrysanthemum farmers.

There was non-significant association observed between profile characteristics like education, land holding, social dependency, farm power status, socio-economic status, chrysanthemum growing experience, social participation, extension participation, economic

Department of Agricultural Extension, UAS, GKVK, Bangalore-560065 Karnataka

motivation, innovative proneness and knowledge level of chrysanthemum farmers.

The finding of the study are in agreement with that of Vijaya Kumar (1997), Ravi (2000), Tarde and Thorat (2006) and Hiremath (2007).

Table 1: Association between Profile Characteristics and Knowledge Level of Chrysanthemum Farmers

n=120

Characteristics	Knowledge level								
	No knowledge		Partial knowledge		Full knowledge		Total		Chi-square value
	No.	%	No.	%	No.	%	No.	%	
Age									
Young	5	10.63	20	42.55	22	46.80	47	100.00	
Middle	6	14.63	22	53.65	13	31.70	41	100.00	14.00**
Old	13	40.62	9	28.12	10	31.25	32	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Education									
Illiterate	12	20.00	29	42.50	27	37.50	68	100.00	
Primary	2	20.00	5	50.00	3	30.00	10	100.00	
Higher primary	5	35.71	5	35.71	4	28.57	14	100.00	7.25NS
High school	4	19.05	11	52.38	6	28.57	21	100.00	
PUC and above	1	14.29	1	14.29	5	71.43	7	100.00	
Total	24	20.00	51	42.5	45	37.5	120	100.00	
Land holding									
Marginal	8	18.60	19	44.19	16	37.21	43	100.00	
Small	13	26.00	21	42.00	16	32.00	50	100.00	3.28NS
Big	3	11.11	11	40.74	13	48.15	27	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Area under chrysanthemum									
Lower extent	15	35.71	14	33.33	13	30.95	42	100.00	
Medium extent	6	18.75	12	37.50	14	43.75	32	100.00	12.77*
Higher extent	3	6.52	25	54.34	18	39.13	46	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Social dependency									
Low	9	20.93	17	39.53	17	39.53	43	100.00	
Medium	11	24.44	17	37.78	17	37.78	45	100.00	2.67NS
High	4	12.50	17	53.12	11	34.37	32	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Economic dependency									
Low	6	11.32	23	43.40	24	45.28	53	100.00	
Medium	5	13.89	17	47.22	14	38.89	36	100.00	13.40**
High	13	41.94	11	35.48	7	22.58	31	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Family size									
Small	8	53.33	3	20.00	4	26.66	15	100.00	
Medium	10	11.23	42	47.19	37	41.57	89	100.00	18.07**
Large	6	37.50	6	37.50	4	25.00	16	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Family type									
Nuclear family	23	29.11	29	36.70	27	34.17	79	100.00	12.11**
Joint family	1	2.43	22	53.65	18	43.90	41	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Occupational status									
Agriculture alone	20	17.39	51	44.34	44	38.26	115	100.00	
Agriculture with Subsidiary Occupation	4	80.00	0	0.00	1	20.00	5	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Farm power status									
Low	11	19.64	22	39.29	23	41.07	56	100.00	
Medium	8	24.24	14	42.42	11	33.33	33	100.00	
High	5	16.13	15	48.39	11	35.48	31	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Material possession									
Low	12	27.90	17	39.53	14	32.55	43	100.00	
Medium	4	8.00	27	54.00	19	38.00	50	100.00	
High	8	29.62	7	25.92	12	44.44	27	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Socio-economic status									
Low	9	18.37	20	40.82	20	40.82	49	100.00	
Medium	5	13.51	20	54.05	12	32.43	37	100.00	
High	10	29.41	11	32.35	13	38.24	34	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Chrysanthemum growing experience									
Low	5	20.83	7	29.17	12	50.00	24	100.00	
Medium	15	23.44	30	46.88	19	29.69	64	100.00	
High	4	12.50	14	43.75	14	43.75	32	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Annual income									
Low	12	35.29	10	29.41	12	35.29	34	100.00	
Medium	11	17.19	32	50.00	21	32.81	64	100.00	
High	1	4.55	9	40.91	12	54.55	22	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Social participation									
Low	4	13.79	14	48.28	11	37.93	29	100.00	
Medium	15	22.06	30	44.12	23	33.82	68	100.00	
High	5	21.74	7	30.43	11	47.83	23	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Extension participation									
Low	6	17.65	15	44.12	13	38.24	34	100.00	
Medium	16	25.00	25	39.06	23	35.94	64	100.00	
High	2	9.09	11	50.00	9	40.91	22	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Economic motivation									
Low	5	20.83	12	50.00	7	29.17	24	100.00	
Medium	15	20.83	29	40.28	28	38.89	72	100.00	1.16NS
High	4	16.67	10	41.67	10	41.67	24	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Innovative proneness									
Low	6	17.65	16	47.06	12	35.29	34	100.00	
Medium	14	21.87	27	42.19	23	35.94	64	100.00	1.06NS
High	4	18.18	8	36.36	10	45.45	22	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Cosmopoliteness									
Low	3	15.79	10	52.63	6	31.58	19	100.00	
Medium	13	18.31	32	45.07	26	36.62	71	100.00	3.07NS
High	8	26.67	9	30.00	13	43.33	30	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Mass media utilization									
Low	11	39.28	5	17.85	12	42.85	28	100.00	
Medium	9	13.63	33	50.00	24	36.36	66	100.00	12.33*
High	4	15.38	13	50.00	9	34.61	26	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	
Management orientation									
Low	8	34.78	4	17.39	11	47.82	23	100.00	
Medium	7	10.76	36	55.38	22	33.84	65	100.00	13.67**
High	9	28.12	11	34.37	12	37.50	32	100.00	
Total	24	20.00	51	42.50	45	37.50	120	100.00	

NS: Non-Significant
* Significant at 5 per cent level ** Significant at 1 per cent level

The results pertaining to the profile characteristics and their adoption behaviour of chrysanthemum farmers were delineated and the respondents were distributed according to their personal, social, psychological and economical characteristics which influence the adoption behaviour of chrysanthemum farmers and constraints encountered by the farmers in adoption of chrysanthemum practices. The chi-square analysis values depicted in Table I clearly showed that vandal much as ,

age, area under chrysanthemum, family size and family type had significant association at one per cent level with their adoption behaviour. While, the variables like occupational status, economic motivation, mass media utilization and management orientation had significant association at five per cent level with their adoption behaviour. These findings get the support of findings of the study by Vijaya Kumar (1997), Ravi (2000), Shrivastava *et. al.* (2002), Sivanarayana *et. al.* (2008) and Umesh (2009) favored the present study.

Table 2: Association between profile characteristics and adoption behaviour of chrysanthemum farmers

n=120

Characteristics	Adoption behaviour								Chi-square value
	Non adoption		Partial adoption		Full adoption		Total		
	No.	%	No.	%	No.	%	No.	%	
Age									
Young	16	34.04	9	19.14	22	46.80	47	100.00	26.03**
Middle	14	34.14	12	29.26	15	36.58	41	100.00	
Old	9	28.12	22	68.75	1	03.12	32	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Education									
Illiterate	21	30.88	26	38.24	21	30.88	68	100.00	7.70NS
Primary	3	30.00	5	50.00	2	20.00	10	100.00	
Higher primary	7	50.00	3	21.43	4	28.57	14	100.00	
High School	8	38.10	6	28.57	7	33.33	21	100.00	
PUC and above	0	00.00	3	42.86	4	57.14	7	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Land Holding									
Marginal	12	27.91	17	39.53	14	32.56	43	100.00	3.84NS
Small	21	42.00	15	30.00	14	28.00	50	100.00	
Big	6	22.22	11	40.74	10	37.04	27	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Area under Chrysanthemum									
Lower extent	18	42.86	13	30.95	11	26.19	42	100.00	18.27**
Medium extent	15	46.88	13	40.62	4	12.50	32	100.00	
Higher extent	6	13.04	17	36.96	23	50.00	46	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Social Dependency									
Low	16	37.21	14	32.56	13	30.23	43	100.00	1.30NS
Medium	15	33.33	16	35.56	14	31.11	45	100.00	
High	8	25.00	13	40.62	11	34.37	32	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Economic Dependency									
Low	15	28.30	20	37.74	18	33.96	53	100.00	2.19NS
Medium	15	41.67	12	33.33	9	25.00	36	100.00	
High	9	29.03	11	35.48	11	35.48	31	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Family Size									
Small	11	73.33	2	13.33	2	13.33	15	100.00	17.05**
Medium	27	30.33	34	38.20	28	31.46	89	100.00	
Large	1	06.25	7	43.75	8	50.00	16	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Family Type									
Nuclear family	17	21.51	31	39.24	31	39.24	79	100.00	13.52**
Joint family	22	53.65	12	29.26	7	17.07	41	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Occupational Status									
Agriculture alone	39	33.91	42	36.52	34	29.56	115	100.00	5.91*
Agriculture with subsidiary occupation	0	00.00	1	20.00	4	80.00	5	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Farm power status									
Low	16	28.57	20	35.71	20	35.71	56	100.00	2.38NS
Medium	14	42.42	11	33.33	8	24.24	33	100.00	
High	9	29.03	12	38.71	10	32.26	31	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Material status									
Low	15	34.88	17	39.53	11	25.58	43	100.00	2.14NS
Medium	16	32.00	15	30.00	19	38.00	50	100.00	
High	8	29.63	11	40.74	8	29.63	27	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Socio-economic status									
Low	16	32.65	19	38.78	14	28.57	49	100.00	1.56NS
Medium	14	37.84	11	29.73	12	32.43	37	100.00	
High	9	26.47	13	38.24	12	35.29	34	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Chrysanthemum growing experience									
Low	6	25.00	10	41.67	8	33.33	24	100.00	2.80NS
Medium	25	39.06	20	31.25	19	29.69	64	100.00	
High	8	25.00	13	40.62	11	34.37	32	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Annual income									
Low	6	17.64	19	55.88	9	26.47	34	100.00	9.52NS
Medium	24	37.50	17	26.56	23	35.93	64	100.00	
High	9	40.90	7	31.81	6	27.27	22	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Social participation									
Low	10	34.48	10	34.48	9	31.03	29	100.00	0.18NS
Medium	22	32.35	24	35.29	22	32.35	68	100.00	
High	7	30.43	9	39.13	7	30.43	23	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Extension participation									
Low	12	35.29	12	35.29	10	29.41	34	100.00	1.21NS
Medium	22	34.37	22	34.37	20	31.25	64	100.00	
High	5	22.73	9	40.91	8	36.36	22	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Economic motivation									
Low	11	45.83	9	37.50	4	16.66	24	100.00	10.14*
Medium	16	22.22	28	38.88	28	38.88	72	100.00	
High	12	50.00	6	25.00	6	25.00	24	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Innovative proneness									
Low	14	41.18	10	29.41	10	29.41	34	100.00	3.61NS
Medium	16	25.00	26	40.62	22	34.37	64	100.00	
High	9	40.91	7	31.82	6	27.27	22	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Cosmopoliteness									
Low	7	36.84	7	36.84	5	26.32	19	100.00	1.70NS
Medium	25	35.21	24	33.80	22	30.99	71	100.00	
High	7	23.33	12	40.00	11	36.67	30	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Mass media utilization									
Low	8	28.57	8	28.57	12	42.85	28	100.00	10.27*
Medium	28	42.42	22	33.33	16	24.24	66	100.00	
High	3	11.53	13	50.00	10	38.46	26	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	
Management orientation									
Low	7	30.43	7	30.43	9	39.13	23	100.00	10.31*
Medium	23	35.38	29	44.61	13	20.00	65	100.00	
High	9	28.12	7	21.87	16	50.00	32	100.00	
Total	39	32.50	43	35.83	38	31.67	120	100.00	

NS: Non-Significant
* Significant at 5 per cent level
** Significant at 1 per cent level

Table 2 revealed that variables like land holding, social dependency, economic dependency, farm power status, material status, socio-economic status, chrysanthemum growing experience, annual income, social participation, extension participation, innovative proneness, cosmopoliteness non-significant association adoption with behaviour of chrysanthemum farmers. The findings of the study are consistent with the findings of Vijaya Kumar (1997), Ravi (2000), and Hiremath *et. al.* (2009).

An examination of the Table 3 highlights that the major constraints perceived by chrysanthemum farmers were, lack of finance / credit facility (rank III), problems of pests (rank IV), problems of diseases (rank V), high investment (rank VI), high cost of fertilizers(rank VII) and plant protection chemicals (rank IX). The results related to adoption constraints were consistent with the study conducted by Vijaya Kumar (1997), Ravi (2000), Vinay Kumar (2005), Raghavendra *et. al.* (2008), and Sumathi and Rathakrishanan (2008).

Table 3: Constraints faced by farmers in adoption of cultivation practices of chrysanthemum

n=120

Adoption Constraints	Score	Rank
Inadequate irrigation facilities	235	I
Limited and irregularity of power supply	234	II
Lack of finance / credit facility	185	III
Problems of pests	150	IV
Problems of diseases	140	V
High investment	123	VI
High cost of fertilizers	122	VII
Non-availability of labour for harvesting	114	VIII
High cost of plant protection chemicals	110	IX
Problem of weeds	98	X
Lack of skill on grading	97	XI
Non-availability of adequate inputs on time	65	XII
Lack of knowledge on balanced use of fertilizer	52	XIII
Lack of skill on nipping	32	XIV
Non-availability of adequate planting material	23	XV

A glance of Table 4 explains the constraints faced by farmers in marketing the chrysanthemum flower. According to the growers constraints in marketing of chrysanthemum flower were fluctuations in the prices (rank I), exploitation by the middleman (rank II) and lack of exclusive markets (rank III). In addition farmers also faced low price for the flowers (rank IV). Along with the above problems they were also facing untimely payment for the flowers (rank V), sold lack of storage facilities (rank VI) and poor packages and transportation facilities (rank VII).

On the contrary chrysanthemum flowers are perishable in nature and have to be marketed immediately so the farmers have to compromise with the available price is also one of the reasons for their marketing constraints. The results related to marketing constraints was consistent with the study conducted by Vijaya Kumar (1997), Ravi (2000), Vinay Kumar (2005), Tarde *et. al*. (2005).

Table 4: Marketing constraints faced by farmers in growing chrysanthemum

n=120

Marketing Constraints	Score	Rank
Fluctuations in the prices	230	I
Exploitation by the middleman	224	II
Lack of exclusive markets	218	III
Low price for the flowers	174	IV
Untimely payment for the flowers sold	162	V
Lack of storage facilities	116	VI
Poor packages and transportation facilities	109	VII

CONCLUSION

The results of the present study indicated that there is a positive significant relationship with many independent variables with knowledge level of farmers about chrysanthemum cultivation. This reflects that there is a need for organizing intensive educational activities such as training, demonstrations, seminars, exhibitions, field days and field visits effectively and frequently and follow-up activities by concerned authority for achieving higher level of knowledge and adoption. It was found that by and large farmers were facing problems of fluctuations in the prices, exploitation by the middleman, lack of exclusive markets, low price for the flowers, untimely payment for the flowers sold and lack of storage facilities. The efforts of the extension workers and farmers would go waste if reasonable price for the produce is not ensured. Awareness on the marketability of the product would help the farmers in getting the proper price.

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