



Knowledge acquisition behaviour of vegetable growers in Chikkamagaluru District

Chethana AT^{1*}, Krishnamurthy AT², Basavaraj Beerannavar², Mallikarjuna HB³, Nataraj SK⁴

¹ Research Scholar, Department of Agricultural Extension, College of Agriculture, Shivamogga, UAHS, Shivamogga, Karnataka, India

² Associate Professor, Department of Agricultural Extension, College of Horticulture, Mudigere, UAHS, Shivamogga, Karnataka, India

³ Assistant Professor, Department of Agriculture statistics, College of Agriculture, Shivamogga, UAHS, Shivamogga, Karnataka, India

⁴ Assistant Professor, Department of FLA, College of Horticulture, Mudigere, UAHS, Shivamogga, Karnataka, India

Abstract

The study was conducted during the year 2019-20 in Chikkamagaluru district of Karnataka state with a sample size of 120 respondents. Simple random sampling procedure was used to select the respondents. The data was collected with the structured of interview schedule. The results indicated that majority of the vegetable growers belonged to the medium category of Knowledge acquisition (61.67 %). Whereas, interpersonal source were the major sources of knowledge management for the major chunk of the respondents. The socio economic profile of the vegetable growers revealed that, majority of the respondents belonged to middle age group (54.17 %), primary school education (25.83 %), small land holding (45.00 %) and medium annual income (86.67 %). Whereas, majority of the respondents had medium extension participation (57.50 %), medium extension contact (69.17 %), medium mass media utilization (68.00 %), medium social participation (75.50 %), medium cosmopolitaness (68.33 %), medium innovativeness (57.50 %), medium risk orientation (61.67 %) and medium management orientation (56.67 %).

Keywords: knowledge acquisition

Introduction

Karnataka is one of the progressive states with great potential for horticultural development. The state is blessed with ten agro-climatic regions suitable for a growing variety of fruits and vegetables round the year. The horticultural crops grown in Karnataka can be grouped into four broad categories, viz., 1) Fruits, 2) Vegetables, 3) Spices/plantation crops and 4) Commercial flowers. Apart from these, cultivation of potential value crops like, aromatic and medicinal herbs have also been taken up in certain areas. Karnataka stands 8th place in vegetable crops with an area of 483.20 hectares with a production of 8394.15 Metric tonnes. In Karnataka, Chikkamagaluru district having more vegetable crops with a production of 3, 70,191 metric tonnes and on an area 19,342.4 hectares. Dharwad, Belgaum, Kolar, Hassan, Chitradurga, Haveri, Vijayapura and Bangalore (Rural) are the major vegetable crops growing districts with crops like onion, potato, tomato, chilli, brinjal, gourd varieties and cole crops. (Horticultural Statistics at a Glance, 2018).

Knowledge plays a significant role whenever change, innovation and growth are being pursued in a competitive and complex field. Agriculture today is just such a field. Leveraging knowledge is thus a critical input in the transformation of Indian agriculture from subsistence to market-oriented economic sector. A demand-driven agricultural knowledge management system facilitates access to and adoption of appropriate technologies and processes from research and development institutions.

Knowledge is concerned with ways of exchanging knowledge among those who can develop it and those who can use it. The lack of exchange of knowledge among and between farmers, and those who produce the farm-relevant knowledge, has often been

regarded as the key issue in pro-poor agricultural development. For that reason, many agricultural extension and development programmes, run by both governments and international donor agencies, have focused on diffusing knowledge to farmers who, in turn, were expected to gain from applying this knowledge in their production practices and it is rapidly growing into a mature management discipline with its own set of tools and methods that have been validated at various settings in both public and private institutes around the world, (Ondari-Okemwa, 2006) [7]. When undertaking a knowledge initiative, it is useful to review tools and methods employed by others and see if some of these will apply or adaptable to a situation at hand. The following section highlights some of the tools available for each stage of a knowledge process, including acquisition, storing, retrieving, and evaluation and sharing of knowledge.

The problems of vegetable growers are numerous; however, lack of market infrastructure and price fluctuation seems to be a major bottleneck in the sustained development of vegetable production. The vegetable marketing problems in rural areas have not been studied systematically even though several studies have been conducted in the country. Presently, the development of marketing infrastructure to solve the problems of vegetable growers in rural areas is the primary concern of the government. Intensified efforts are needed to identify the specific problems related to vegetable production and marketing.

Methodology

The study was conducted in the Chikkamagaluru district of Karnataka state. In Chikkamagaluru, Chikkamagaluru, Kadur and Tarikere taluks were selected based on the highest area under

the cultivation of vegetables. Further, two hoblis from each taluk were selected based on the highest area coverage of vegetables. Two villages from each hoblis were selected by considering the highest area under the cultivation of vegetables. Thus, the total number of villages selected for the study is twelve. From each selected villages ten respondents were selected by using a simple random sampling technique. Thus, the total samples selected for the study were 120 respondents. A criterion for selection of farmers as respondents that, a farmer should have successfully cultivated the vegetables at least from the last three years.

Objectives

1. To assess the Knowledge acquisition behavior of vegetable growers

Result

Knowledge acquisition behavior of vegetable growers

The result presented in Table 1 revealed that, majority 61.67 per cent of the vegetable growers belonged to medium Knowledge acquisition category with respect to improved vegetable cultivation practices, followed by high 20.83 per cent and low 17.50 per cent categories.

Table 1: Acquisition of knowledge by the vegetable growers (#)

Sl. No.	Category	Criteria	Frequency	Percentage
1	Low	Less than (Mean-SD)	21	17.50
2	Medium	Between (Mean±SD)	74	61.67
3	High	More than (Mean +SD)	25	20.83
		Mean	21.67	
		SD	6.92	

Number of vegetable growers are 120

Informal source

It was observed from the Table 2 that, 64.17 per cent of the vegetable growers acquired the required knowledge regularly from elder family members, followed by friends and peer groups (47.50 %), neighbors and relatives (43.33 %), progressive and successful farmers (20.00 %), opinion leaders (19.17 %), and local institution members (11.67 %) were consulted regularly. Further, the vegetable growers also acquired the required knowledge occasionally in order from progressive and successful farmers (49.17 %), opinion leaders (40.00 %), friends and peer groups (30.83 %) and neighbors and relatives (26.67 %), elder family members (22.50 %), local institution members (17.50 %). Whereas, local institution members were never consulted by the majority (70.83 %) of the respondents for acquisition of required knowledge, followed by opinion leaders (40.83 %), progressive and successful farmers (30.83 %), neighbors and relatives (30.00 %), friends and peer groups (21.67 %) and elder family members (13.33 %).

Developmental department's sources

The data presented in the Table 2 indicates that majority of the vegetable growers acquired the required knowledge regularly from Horticultural Officer (57.50 %), followed by Assistant Horticultural officer (45.00 %) and Agriculture officer (17.50 %), Assistant Director of Horticulture (5.00 %) Whereas, 31.67 per cent of the respondents contacted the Agriculture Officer occasionally to acquire the required knowledge, followed by the Assistant Horticultural Officer (25.83 %), Assistant Director of

Horticulture (20.83 %), Horticultural Assistant (15.83 %), Deputy Director of Agriculture (6.67 %), and Joint Director of Agriculture (3.33 %) Further, majority (96.67 % and 93.33 %) of the vegetable growers never consulted the Joint Director of Agriculture / Horticulture, and Deputy Director of Agriculture / Horticulture respectively, followed by Assistant Director of Horticulture (74.17%), Agriculture Officer (50.83%), Assistant Horticultural Officer (29.17 %), and Horticultural assistant (26.67 %) respectively.

State Agricultural University (SAU's)

It was noticed from the results Table 2 that, the vegetable growers also seek the required knowledge regularly from Krishi Vigyan Kendra (29.17 %) and Agriculture/Horticultural Research Stations (11.67 %). Further it was found that, majority of the respondents contacted occasionally to Krishi Vigyan Kendra (45.83 %) and Agriculture/Horticultural Research Station (27.50 %). On the other hand, high majority (60.83 %) of the vegetable growers never contacted the Agriculture / Horticultural Research Station and Krishi Vigyan Kendra (25.00 %) respectively.

Print and Electronic media sources

It could be observed from the Table 2 that, majority (48.33 %) of the vegetable growers acquired the required knowledge from television followed by newspaper (28.34 %), mobile phone messages (16.66 %), Watt's app (10.83 %), farm publications (8.34 %), face book (5.83 %) and internet (1.67 %) regularly. Whereas, other means such as radio was not used by none of the respondents regularly. Newspaper was viewed occasionally by the respondents (38.33 %) of the vegetable growers to acquire the necessary knowledge about the vegetable growing, followed by farm publications (33.33 %), television (31.67 %), watt's app (20.00 %), internet (24.16 %), mobile phone messages (21.67 %), face book (27.50 %), and radio (17.50 %). Further, it is interested to from the results that, 82.50 per cent of the vegetable growers never used radio as a means to acquisition of knowledge, followed by internet (74.17 %), watt's app (69.17 %), face book (66.67 %), mobile phone messages (61.67 %), farm magazines/publications (58.33 %), newspapers (33.33 %), and television (20.00 %) of the vegetable growers were not used for acquisition of knowledge.

Participation in Extension activities

The result presented in the Table 2 revealed that, majority (30.00 %) of the vegetable farmers were participated regular in krishimelas, followed by trainings (25.00 %), exhibitions (22.50 %), exposure visits/study tours (12.50 %), demonstrations (6.66 %). Further it was found that, 28.33 per cent respondents participated occasionally in krishimelas followed by trainings (27.50 %), demonstrations (26.67 %), exhibitions (25.00 %), exposure visits/study tours (18.33%). Further, exposure visits/study tours were never consulted by the majority (69.17 %) of the respondents for acquisition of required knowledge, followed by the demonstrations (66.67 %), exhibitions (52.50 %), trainings (47.50 %) and krishimelas (41.67 %).

Private consultancy source of information

The data presented in the Table 2 depicted that, majority (60.00 %) of the farmers acquired knowledge regularly with respect to improved cultivation practices of vegetable by agro input dealers

and private consultancy services (8.33 %). Whereas, 40.00 per cent of the respondents acquire the knowledge occasionally from Agro input dealers and private consultancy services (16.67 %) respectively. Further, 75.00 per cent of the farmers never acquire the knowledge from private consultancy services respectively.

Other sources

The data presented in the Table 2 revealed that, majority 12.50 per cent of the respondents acquired knowledge regularly through non-governmental organizations with respect improved cultivation practices of vegetable further 18.33 per cent of respondents acquired knowledge occasionally and 69.17 per cent of respondents never acquire knowledge with respect to vegetable cultivation practices respectively,

Personal, socio-economic, communication and psychological characteristics of the respondents

Age

The data in Table 13 observed that, 54.17 per cent of respondents were belonged to the middle age group followed by old age group (35.83 %) and young age group (10.00 %) with respect to improved cultivation of vegetables respectively.

Education

It is observed from the findings in table 13 revealed that 25.83 per cent of the respondents were educated up to primary school, followed by graduate and above (20.83 %), PUC (20.00 %), high school (13.33 %), illiterates (12.50 %) and middle school (7.50 %) respectively.

Farming experiences

The data presented in table 13 revealed that 69.16 per cent of the vegetable growers had medium level farming experience followed by high (19.17%), low (11.67 %) level of farming experience with respect improved cultivation practices of vegetables respectively.

Land holding

The distribution of respondents according to land holding as presented in Table 13 revealed that, 45.00 per cent of the vegetable growers belonged to small holding category, followed by 31.67 per cent belonged to medium land holding category, 17.50 per cent belonged to marginal land holding category, and only 5.83 per cent of them were big land holding.

Table 2: Acquisition of knowledge by the vegetable growers (#) about the improved cultivation practices

Sl.No.	Way/means for acquisition of knowledge	Regular		Occasional		Never	
		F	%	F	%	F	%
Informal source							
1	Elder in the Family	77	64.17	27	22.50	16	13.33
2	Friends/Peer groups	57	47.50	37	30.83	26	21.67
3	Neighbor/Relatives	52	43.33	32	26.67	36	30.00
4	Progressive/successful farmers	24	20.00	59	49.17	37	30.83
5	Local institutions members	14	11.67	21	17.50	85	70.83
6	Opinion leaders	23	19.17	48	40.00	49	40.83
Developmental departments							
1	AA/HA	69	57.50	19	15.83	32	26.67
2	AAO/AHO	54	45.00	31	25.83	35	29.17
3	AO	21	17.50	38	31.67	61	50.83
4	ADA/ADH	6	5.00	25	20.83	89	74.17
5	DDA/DDH	0	0.00	8	6.67	112	93.33
6	JDA	0	0.00	4	3.33	116	96.67
State Agricultural University(SAU's)							
1	Krishi Vignan Kendra	35	29.17	55	45.83	30	25.00
2	Agriculture/Horticultural Research Stations	14	11.67	33	27.50	73	60.83
Print and electronic media							
1	Television	58	48.33	38	31.67	24	20.00
2	Radio	0	0.00	21	17.50	99	82.50
3	News paper	34	28.34	46	38.33	40	33.33
4	Farm publications	10	8.34	40	33.33	70	58.33
5	Internet	2	1.67	29	24.16	89	74.17
6	Mobile phone messages	20	16.66	26	21.67	74	61.67
7	Watts app	13	10.83	24	20.00	83	69.17
8	Facebook	7	5.83	33	27.50	80	66.67
Participation in Extension activities							
1	Krishimelas	36	30.00	34	28.33	50	41.67
2	Exhibitions	27	22.50	30	25.00	63	52.50
3	Exposure visits/study tours	15	12.50	22	18.33	83	69.17
4	Trainings	30	25.00	33	27.50	57	47.50
5	Demonstrations	8	6.66	32	26.67	80	66.67
Private consultancy source of information							
1	Private consultancy services	10	8.33	20	16.67	90	75.00
2	Agro input dealers	72	60.00	48	40.00	0	0.00
Other sources							
3	NGO's	15	12.50	22	18.33	83	69.17

f = Frequency P = percent

Number of vegetable growers are 120

Annual Income

It is evident from Table 13 that, 86.66 per cent of the vegetable growers belonged to medium income category, followed by high income (9.17 %) and (4.17 %) respondents belonged to low income category.

Extension participation

It was apparent from Table 13 that, 57.50 per cent of vegetable farmers belonged to medium extension participation category, followed by low (22.50 %) and high (20.00 %) categories.

Extension contact

By looking at Table 13, it was found that, 69.17 per cent pf vegetable growers had medium extension contact, followed by high (20.00 %) and low (10.83 %) extension contact respectively.

Mass media participation

With respect to mass media utilization of the farmers, result depicted in table 13 clearly shows that, 68.00 per cent of the farmers belonged to medium mass media utilization category, followed by high (20.00 %) and low (13.33 %) respectively.

Social participation

The data presented in Table 13 that, (72.50 %) of vegetable growers were belonged to medium social participation category, whereas, high 15.83 per cent and 11.67 per cent of the vegetable

growers belonged to low social participation category respectively.

Cosmopolitaness

It could be observed from table 13 showed that 68.33 percent of the respondents had medium level of cosmopolitaness followed by low (16.67 %) and high (15.00 %) level of cosmopolitaness, respectively.

Innovativeness

It is noticed in Table 13 that, more the fifty per cent of the respondents (57.50 %) had medium level of innovativeness followed by high (22.50 %) and low (20.00 %) level of innovativeness.

Risk orientation

The data presented in Table 13 showed that, 61.67 per cent of vegetable growers oriented towards medium risk, followed by high (20.83 %) and low (17.50 %) risk with respect to improved cultivation practices of vegetables.

Management orientation

It could be observed from Table 13 that, 56.66 per cent of vegetable growers belonged to medium management orientation category, followed by low (24.17 %) and high (19.17 %) management orientation categories.

Table 3: Personal, socio- economic, communication and psychological characteristics of the respondents (#)

z	Characteristics	Vegetable growers	
		Frequency	Per cent
I	Personal and socio-economic characteristics		
	Age		
	Young (Less than 35 years)	12	10.00
	Middle (Between 36-50 years)	65	54.17
	Old (More than 51 years)	43	35.83
	Education		
	Illiterate	15	12.50
	Primary (1 - 5 th)	31	25.83
	Middle school(6 th - 7 th)	9	7.50
	High school (8 th - 10 th)	16	13.33
	PUC (11 th - 12 th)	24	20.00
	Graduate and above	25	20.83
	Farming experience		
	Low (Mean-SD)	14	11.67
	Medium (Mean±SD)	83	69.16
	High (Mean+SD)	23	19.17
	Mean	26.05	
	SD	11.92	
	Land holding		
	Marginal farmers (<2.50ac)	21	17.50
	Small farmers(2.51-5.00ac)	54	45.00
	Medium farmers(5.01-10.00ac)	38	31.67
	Big farmers(>10.01ac)	7	5.83
	Annual income		
	Low (<Rs. 50,000)	5	4.17
	Medium (Rs. 50,000-1,00,000)	104	86.66
	High (>Rs. 1,00,000)	11	9.17
II	Communication characteristics		
	Extension participation		
	Low (Mean-SD)	27	22.50
	Medium (Mean±SD)	69	57.50

	High (Mean+SD)	24	20.00
	Mean	5.30	
	SD	3.27	
Extension contact			
	Low (Mean-SD)	13	10.83
	Medium (Mean±SD)	83	69.17
	High (Mean+SD)	24	20.00
	Mean	7.30	
	SD	2.59	
Mass media participation			
	Low (Mean-SD)	16	13.33
	Medium (Mean±SD)	80	68.00
	High (Mean+SD)	24	20.00
	Mean	12.67	
	SD	2.97	
Social participation			
	Low (Mean-SD)	14	11.67
	Medium (Mean±SD)	87	72.50
	High (Mean+SD)	19	15.83
	Mean	3.62	
	SD	1.97	
Cosmopoliteness			
	Low (Mean-SD)	20	16.67
	Medium (Mean±SD)	82	68.33
	High (Mean+SD)	18	15.00
	Mean	2.79	
	SD	1.33	
III	Psychological Characteristics		
Innovativeness			
	Low (Mean-SD)	24	20.00
	Medium (Mean±SD)	69	57.50
	High (Mean+SD)	27	22.50
	Mean	7.23	
	SD	2.74	
Risk Orientation			
	Low (Mean-SD)	21	17.50
	Medium (Mean±SD)	74	61.67
	High (Mean+SD)	25	20.83
	Mean	3.57	
	SD	1.06	
Management orientation			
	Low (Mean-SD)	29	24.17
	Medium (Mean±SD)	68	56.66
	High (Mean+SD)	23	19.17
	Mean	10.23	
	SD	2.19	

Number of vegetable growers are 120

Discussion

Knowledge acquisition behavior of vegetable growers about the improved cultivation practices

Informal source

The result presented in Table 1 revealed that, majority 61.67 per cent of the vegetable growers belonged to medium knowledge acquisition category.

It was clear from the Table 2 that, majority of the respondents regularly consulted interpersonal sources like elder family members, friends and peer groups, neighbors and relatives for acquisition of knowledge management with regard to improved cultivation practices of vegetables. All these sources are personal localite sources, involving face to face contact and easily accessible. Another reason might be high credibility and

authenticity attached to the source. These might the probable reasons for above findings.

Developmental department's sources

With respect to developmental department sources the data presented in the Table 2 indicates that majority of the vegetable growers acquired the required knowledge regularly from Horticultural Officer (57.50 %), followed by Assistant Horticultural Officer (45.00 %) and Agriculture Officer (17.50 %). Farmers are frequently visited the Horticulture Department and RSK to purchase the agriculture inputs like seeds, fertilizer, plant protection chemicals and avail the benefits of various government schemes which are meant for empowerment of farmers. These might be the probable reasons for above findings.

State Agricultural University (SAU's)

It was noticed from the results table 2 that, the vegetables growers also thought the required knowledge regularly from Krishi Vigyan Kendra (29.17 %) and Agriculture/Horticultural Research Stations (11.67 %). This is because of Krishi Vigyan Kendra and Agriculture / Horticultural Research Stations acts as a catalyst between research station and clientele as the mandate of these two extension institutions are to be transmitted the technologies which are evolved by the research stations to farming community by organizing suitable extension programmes. These might be the reasons for above findings.

Print and Electronic media sources

It could be observed from the Table 2 that, majority (48.33 %) of the vegetable growers acquired the required knowledge from television followed by newspaper (28.34 %) and mobile phone messages (16.66 %) regularly. This might be due to vegetable growers possessed and subscribe the television, radio and newspaper respectively. None of the respondents used the internet sources due to lack of knowledge, non-availability of internet services in remote area and difficulty in accessing the internet.

Participation in Extension activities

The result presented in the Table 2 revealed that, majority (30.00 %) of the vegetable farmers were participated in Krishimelas, followed by trainings (25.00 %), exhibitions (22.50 %) and exposure visits/study tours (12.50 %) regularly. The probable reasons for above findings might be due to their interest in extension activities, which directly helps them to get information on relevant innovations, technologies and skills which help them to seek information by participating in the extension activities organized by the agencies involved in the extension activities. Extension participations is very important through which farmers can update their knowledge about improved cultivation practices of vegetables.

Private consultancy source of information

The data presented in the Table 2 depicted that, majority (60.00 %) of the farmers acquired knowledge regularly with respect to improved cultivation practices of vegetable by agro input dealers and private consultancy services (8.33 %). The probable reasons might be that, input dealers, majority of the respondents are personally visit their fertilizer shops to purchase agricultural inputs like seeds, fertilizers and plant protection chemicals at the time of visit and during such visit informal discussion might have taken place about agriculture practices and extension personnel of private company, who personally visit the farmer's fields for promotion of their products *viz.*, seeds, fertilizers and plant protection chemicals were another important source consulted by the vegetable growers.

Other sources

The data presented in the table 2 revealed that, majority 12.50 per cent of the respondents acquired knowledge regularly from non-government organizations. The probable reasons might be that, they are easy accessible means of acquisition and meeting frequently in the villages, at the time of their visit the informal chatting may takes place among the farmers about the improved

cultivation of vegetable crops. The findings of the study are in consonance with Ravindrakumar (2006) [10].

Personal, socio-economic, communication and psychological characteristics of the respondents

Age

The apparent reason might be that, majority 54.17 per cent of respondents belonged to the middle age (35 to 50 years) group. Farmers of middle age are more caring and manage, to have more family responsibilities and are more capable than young and older age groups. Further, middle aged farmers own more physical strength than younger ones. The results are supported by the results of Ravindrakumar (2006) [10].

Education

The apparent reason might be that, majority 25.83 per cent of the respondents educated up to primary school. In general, the major parts of the respondents were educated. This could be due to awareness of the farmers about education in once life and also accessibility of better educational facilities in the rural areas. This finding are supported with the study conducted by Madhushekar (2009),

Farming experiences

Table 13 shown that, 43.34 per cent of respondents were belonged to medium farming experience category. Farming experience mainly depends upon age and education of the farmer. Majority of farmers belonged to middle aged and old age category and they might have started farming in their young age itself. Majority respondents complete up to primary school after they are involving farming activities. So majority of respondents had high farming experience. Since agriculture is the main occupation of large majority and the need of support of family members. The finding of this study gets the support of findings conducted by Madhushekar (2009).

Annual Income

Table 13 indicated that, 45.00 per cent of respondents belonged to medium income group between (50,000-1, 00,000). The probable reason may be that small and medium land holding of farmer's dependency mainly on agriculture and also due to having dry lands, which might have caused to obtain medium level of annual income. The finding is in line with the study of Gour and Bishnoi (2011) [2].

Land holding

The distribution of respondents according to land holding as presented in Table 13 revealed that, 45.00 per cent of the vegetable growers belonged to small land holding category, followed by 31.67 per cent belonged to medium land holding category, 17.50 per cent belonged to marginal land holding category, and only 5.83 per cent of them were big land holding. This could be assigned to tradition of land from their ancestors who might have transferred from generation to generation. This results are in line with the study conducted by Gour and Bishnoi (2011) [2].

Extension participation

Table 13 revealed that, majority (57.50 %) respondents belonged to the medium extension participation category respectively. The possible reasons for above findings might be due to their pursuit in extension activities, which directly helps them to get knowledge on relevant innovations, technologies and skills which help them to seek information by participating in the extension activities organized by the agencies involved in the extension activities. Extension participations is very important through which farmers can update their knowledge about vegetable cultivation. The results are in line with the results obtained by Madhushekar (2009).

Extension contact

Table 13 revealed that, majority (69.17 %) belonged to medium extension contact category. The possible reasons might be the eagerness of vegetable growers in solving their problems and better exposure with officials working in extension organization and also their interest, faith and belief in the extension services provided by the Karnataka state department of Agriculture and State Agriculture universities. The results are in conformity with the findings of Thiranjaganowda (2005).

Mass media participation

Table 13 shown that, majority 43.33 per cent of respondents belonged to medium mass media participation category. The probable reasons for above findings might be that, mass media are the proven channels for quick dissemination of relevant information to a widely dispersed and large number of people in a shorter period. Mass media contact enhances the ability of farmers to get more knowledge about a technology or innovation and in turn widens the mental horizon of the farmers to accept and adopt the practices. Mass media provides information on experiences of successful farmers through various channels like television, radio, newspaper, Farm Magazines, Mobile messages by extension agencies, Internet, Watts's app. Which reinforces confidence in other farmers to take up similar activities or try out new innovations. The finding is in line with the study of Hossain *et al.* (2011).

Social participation

Table 13 revealed that, majority (72.50 %) were belonged to medium social participation categories. Majority of the respondents never participated in the events of taluka panchayat and zilla panchayat. As these organizations exist at taluka and district level respectively. Hence, majority of them might have felt difficult to attend the meetings as well as the participation is open for members only and hence this kind of results. The findings of the study are in consonance with Sandesh (2004) ^[11].

Cosmopolitanness

Table 13 revealed that, majority (68.33 %) belonged to medium cosmopolitanness categories. The possible explanation could be the vicinity of the villages nearby district and taluk headquarters which are well connected by roads and transportation facilities. Moreover, farmers come to headquarters for input purchase, entertainment and general purchase. Further, more cosmopolitanness of an individual will have greater contact with the outside world. This might influence the farmer to acquire the knowledge of new ideas regarding improved vegetable

cultivation practices. The above findings got support from the study conducted by Raghavendra (2005) ^[8].

Innovativeness

Table 13 shows that, majority 57.50 respondents belonged to medium innovativeness category. Innovativeness refers to the degree to which an individual is relatively earlier in adopting the new ideas when compared to other member in society. The results revealed that, majority of respondents belonged to high to medium category. The reason might be that, since majority respondents belonged to medium extension participation, extension contact and mass media participation category and were 'middle age' such of the characteristics naturally might have influenced to accept the innovations quite earlier than the other members. The findings of the study are line with the findings of Rathod *et al.* (2013) ^[9].

Risk Orientation

Table 13 shows that, majority 57.50 respondents are oriented towards medium risk orientation category. Risk bearing capacity of farmers is related to accepting and adopting the technologies. The results indicated that majority of the respondents belonged to medium to high risk orientation categories. The risk bearing capacity of individuals depends upon the personal and psychological characteristics of the individuals. Majority of vegetable growers are middle aged, medium income categories and medium innovativeness were the possible reasons for respondents to possess medium risk orientation categories. The findings are in conformity with the findings of Naveen (2012) ^[5].

Management orientation

It could be observed from Table 13 that, 58.33 per cent respondents belonged to medium management orientation categories. This might be due to the fact that, the field extension personnel of private companies were working with many prospective farmers in different areas and those interactions might have helped the farmers to reorient their management orientation. Then personal explosive of the farmers to various professional situations like group discussion meeting, exhibitions, field days, krishimela *etc.*, might have also contributed to development of medium level of management orientation. The findings are in accordance with the studies conducted by and Ningareddy (2005) ^[6].

Conclusion

- The findings indicated that relatives, neighbors, family members and friends were the main means used by the respondents for knowledge acquisition. With regard to a modern channel like the internet is very meager, since this is an era of liberalization, globalization and privatization (under the contest of GATT and WTO regime) there is a need to create awareness among the farmers for their knowledge management.
- The majority of the respondents less utilization mass media, the policy makers and administrators should take care to design capacity building programmes regarding internet and agriculture-based website, agriculture portals and making easy accessibility of these sources at the village level.
- Further, their access to the most competent source of information, such as contact with extension personnel of

state Horticulture and Agriculture Departments and Scientists of the Agriculture University was found to be relatively low. This could be enhanced by developing a regular programme of interaction between the farmers and officials of developmental departments.

- Findings related to the storage of farm knowledge in the form of literature and clipping of newspaper, CD, pen drive revealed that the farmers used it sparingly. On the contrary, they mostly relied on memorization, which is not desirable to store the technical information for a longer time. This tends to imply that the farmers might not have access to the relevant literature which is available with the extension personnel of the Department of Agriculture and Agriculture University. Since the printed words are more authentic and credible and can be preserved safely for a longer time, the efforts could be made by the extension functionaries to motivate the farmers to subscribe the publications brought out by the university and agriculture department, so that they may preserve the same and use the information in future.
- Farmers participation in field days, field trips and training programme were less, hence farmers may also be encouraged to participate in their extension activities in the university premises and progressive farmers' fields (Demonstration plot) which provide an opportunity to the farmers to have a dialogue with the subject matter specialists of horticulture department and scientists of agricultural university.

References

1. Anonymous, Horticultural Statistics at a Glance, 2018.
2. Gour M, Bishnoi I. Communication behaviour of women vegetable growers in Varanasi. *J. Commun. Studies.* 2011; 29(1):31-38.
3. Hossain KZ, Islam MR, Bhuiyan MH, Wazed MA, Rahman MM. Farmers communication behaviour in receiving information on improved rice production technologies. *International Conference on Communication for Development in the Information Age: Extending the Benefits of Technology for All.* 07-09 January 2003 BHU.
4. Madhusekhar BR. a study on marketing behaviour of chilli growers in Guntur district of Andhra Pradesh. - Acharya N. G. Ranga Agric. Univ., Hyderabad, Andhra Pradesh, 2009.
5. Naveen. Study on Entrepreneurial Behavior of Pomegranate Growers in Chitradurga District of Karnataka, M.Sc. (Agri.), Thesis, Univ. Agric. Sci., Bangalore, Karnataka (India), 2012.
6. Ningareddy. A study on knowledge, extent of participation and benefits derived by participant farmers of the watershed development programme in Raichur district of Karnataka state. M.Sc. (Agri.) Thesis, Univ. Agric. Sci., Dharwad, 2005.
7. Ondari-Okemwa E. Knowledge management in a research organization: International Livestock Research Institute (ILRI). University of Cape Town, Rondebosch, South Africa, 2006.
8. Raghavendra R. Knowledge and adoption of recommended cultivation practices of cauliflower in Belgaum of Karnataka. M. Sc. (Agri.) Thesis, Univ. Agric. Sci., Dharwad, 2005.
9. Rathod MK, Tidke GR, Mandve RP. Impact of front line demonstration on adoption of seed treatment in soybean. *Indian Res. J. Ext. Edu.* 2013; 13(2):72-77.
10. Ravindra kumar. Information management behaviour of khol crop growers of Belgaum district of Karnataka state. M. Sc. (Agri.) Thesis, Univ. Agric. Sci., Dharwad, 2006.
11. Sandesh HM. Study on a profile of Kannada farm magazine readers in Karnataka. M. Sc. (Agri.) Thesis, Univ. Agric. Sci., Dharwad. Sciences, Dharwad, 2004.
12. Thiranjangowda BT. A study on cultivation and marketing pattern of selected cut flowers in Belgaum district of Karnataka. M. Sc. (Agri.) Thesis, Univ. Agric. Sci., Dharwad, 2005.