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Socio- behavioral indicators of onion farmers in selected districts of North Karnataka

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Abstract

The present study was conducted using *Ex-post facto* research design to assess the socio-behavioral characteristics of onion growers in the Northern Dry Zone of Karnataka. Sample was elicited from 270 onion growers in three major onion growing districts namely Vijayapur, Baglkote and Gadag. Socio-behavioral characteristics such as extension contact, social participation, mass media exposure, access to e-tools, innovativeness, scientific orientation, risk orientation *etc* play an important role in influencing farmers inturn influence sustainability of onion cultivation. The study revealed that higher per cent of onion growers regularly consulted friends/relatives/neighbouring farmers, also participated in Krishi/Totagarika melas for obtaining information related to sustainable onion cultivation. While, both in mass media participation and access to e-tools, TV occupied the prime place among onion growers. Further, a majority of onion growers possessed medium levels of extension contact, social participation, mass media exposure. Most respondents also exhibited moderate levels of innovativeness and risk-taking ability, scientific orientation and achievement motivation towards sustainable onion cultivation. These characteristics significantly influenced their knowledge and sustainable onion production practices. The findings emphasize the need for strengthening extension services, farmer training programs and information dissemination mechanisms to improve farmers' socio-behavioral competencies. Enhancing these indicators can contribute to increased productivity, higher income and sustainable development of onion cultivation in the Northern Dry Zone of Karnataka.

Keywords: Socio-behavioral characteristics, social participation, innovativeness, scientific orientation, risk orientation, achievement motivation

Introduction

Agriculture continues to be the backbone of the rural economy in Karnataka, providing livelihood opportunities to a large proportion of the population. Among the horticultural crops, onion (*Allium cepa*) occupies a prominent position due to its economic importance, wide culinary use, export potential. Karnataka is one of the leading onion-producing states in India and the Northern Dry Zone, comprising districts such as Bagalkote, Vijayapura and Gadag, contributes significantly to onion production because of its favorable agro-climatic conditions. Despite its commercial importance, onion cultivation in this region is often characterized by fluctuating market prices, climatic uncertainties, pest and disease incidence, and varying levels of technology adoption. Added to this, sustainable onion cultivation is highly influenced by socio-behavioral characteristics of farmers. These indicators, such as extension contact, social participation, mass media exposure, innovativeness, risk orientation play a crucial role

in influencing farmers to take up sustainable onion production practices and overall farm performance. The main aim of research study was to assess the sustainability of onion cultivation and part of this was to know socio-behavioural characteristics of onion growers in the study area.

Socio-behavioral indicators help researchers and extension agencies to understand farmers' attitudes, perceptions and responses towards sustainable onion production practices. Higher levels of extension contact, information access, innovativeness, achievement motivation *etc.* have been associated with better knowledge and adoption of sustainable onion production practices, whereas limited awareness and low level of behavioural indicators often hinder technological advancement among growers. Understanding these socio-behavioral dimensions is essential for designing effective extension strategies, capacity-building programs and policy interventions aimed at improving productivity, sustainability and income among

onion growers. With this background, the present study was taken up to know the socio-behavioural characteristics of onion growers.

Materials and Methods

The study was conducted in three districts of the Northern Dry Zone of Karnataka with *ex- post facto* research design. The districts were purposively selected based on the highest average area under onion cultivation over the preceding four years, namely Bagalkote, Vijayapura and Gadag. Within each selected district, two taluks were identified using the same criterion of area under onion cultivation. Subsequently, three villages were randomly chosen from each taluk. From every village, fifteen onion-growing farmers were selected through random sampling. This sampling procedure resulted in a sample of 90 farmers per district and a total sample size of 270 respondents for the study. Data were collected with structured, pre-tested interview schedule in a personal interview method mode with the respondents. The data collected for the study were analyzed using descriptive statistical measures such as frequency, percentage, mean and standard deviation and indices also.

Results and Discussion

The data presented in Table 1a reveals that 55.55 per cent of onion growers regularly and 34.07 per cent occasionally consulted friends, relatives, and neighbouring farmers to obtain information related to sustainable onion cultivation practices. This source of information ranked first with the highest overall extension contact index of 81.73.

Similarly, 37.40 per cent of the respondents regularly and 49.62 per cent occasionally consulted progressive farmers for obtaining information on sustainable onion cultivation. This component secured the second rank with an overall extension contact index of 74.81.

Further, 19.62 per cent of the onion growers regularly and 70.74 per cent occasionally consulted input agencies/dealers for the same purpose. This source ranked third with an overall extension contact index of 72.84. The higher preference for friends, relatives, neighbouring farmers, progressive farmers, and input dealers may be attributed to their easy accessibility, immediate availability, and frequent interactions with farmers. In addition, input dealers often provide cultivation advice along with agricultural inputs and extend credit facilities, making them an important source of information for onion growers.

Among the formal extension agencies, horticulture officers ranked fourth with an overall index of 70.00, followed by agro-advisory services through mobile SMS (68.15; V rank), bank officers (67.04; VI rank), scientists from UHS/UAS/KVKs (65.31; VII rank), extension workers from NGOs (63.95; VIII rank), and personnel from the Department of Agriculture/RSK (62.10; IX rank). Horticultural assistants (HA) also recorded an index of 62.10 and shared the ninth rank, while Assistant Directors of Horticulture (ADH) ranked tenth with an overall index of 59.26.

The findings presented in Table 1b indicate that 45.18 per cent of the onion growers possessed a medium level of extension contact, followed by 32.96 per cent with a high level and 21.85 per cent with a low level of extension

contact. The predominance of medium to high extension contact may be attributed to the farmers' interest in learning and updating themselves on improved onion cultivation technologies through interactions with friends, relatives, and progressive farmers. Furthermore, the widespread use of mobile phones, WhatsApp, agro-advisory services, and other digital communication tools such as e-audio, e-video, and image-sharing platforms may have enhanced their access to agricultural information. This could be due to the relatively higher educational status of the respondents, as more than 50.00 per cent had attained education above the high school level. The present findings are in conformity with those reported by Sasane (2010) ^[9] and Ekale *et al.* (2015) ^[2].

The data presented in Table 2a indicate that 74.07 per cent of the onion growers regularly and 20.00 per cent occasionally participated in Krishi/Totagarika Melas to update their knowledge on sustainable onion cultivation practices. This component secured the first rank with the highest overall extension participation index of 74.57.

It is further observed that 14.07 per cent of the respondents regularly and 58.88 per cent occasionally participated in agricultural exhibitions conducted to enhance farmers' knowledge and awareness. This activity ranked second with an overall participation index of 63.83.

Similarly, 11.11 per cent of the onion growers regularly and 61.11 per cent occasionally attended training programmes aimed at improving their knowledge and skills related to onion cultivation. This component ranked third with an overall participation index of 62.35. The higher participation in Krishi/Totagarika Melas, exhibitions, and training programmes may be attributed to the opportunities these activities provide for gaining awareness, acquiring firsthand information, interacting with scientists and progressive farmers, and learning about improved cultivation practices. Such benefits might have encouraged farmers to actively participate in these extension activities.

The remaining extension participation activities were ranked in descending order as follows: demonstrations with an overall participation index of 61.11 (IV rank), field days with an index of 60.99 (V rank), campaigns with an index of 59.63 (VI rank), discussions/meetings with an index of 59.63 (VI rank), field visits with an index of 58.89 (VII rank), and educational tours with an index of 47.71 (VIII rank).

The findings presented in Table 2b reveal that 43.33 per cent of the onion growers belonged to the medium level of extension participation category, followed by 36.30 per cent and 20.37 per cent who belonged to the high and low levels of extension participation, respectively. The predominance of medium to high levels of participation may be attributed to the growers' keen interest in sustainable onion cultivation and their willingness to acquire updated knowledge and firsthand information through various extension programmes. Participation in activities such as Krishi/Totagarika Melas, exhibitions, and training programmes enables farmers to gain practical knowledge, hands-on experience, and direct interaction with scientists, progressive farmers, fellow growers, input suppliers, and other agricultural stakeholders. These platforms also facilitate exposure to advanced technologies and improved agricultural practices prevailing in their region. The findings

of the present study are in agreement with those reported by Venkataramulu (2003).

The findings pertaining to mass media participation are presented in Table 3a. The results indicate that a majority (97.77%) of the onion growers possessed a television, followed by mobile phones (89.23%) and internet facilities (46.29%). With regard to the regular use of mass media for obtaining agricultural information, 11.11 per cent of the onion growers reported using mobile phones, followed by the internet (10.74%) and newspapers (9.62%). On the other hand, a vast majority of the respondents occasionally accessed agricultural information through television (92.22%), followed by the internet (91.85%) and newspapers (67.78%).

It is noteworthy that 89.30 per cent of the onion growers never used radio as a source of agricultural information. Further, 31.85 per cent of the respondents regularly viewed agricultural news on television, while 30.74 per cent regularly referred to newspapers for the same purpose.

Based on the overall mass media participation index, television and newspapers jointly secured the first rank with an index score of 70.00 each. Mobile phones and the internet shared the second rank with an index score of 62.00, while farm magazines ranked third with an index score of 54.00. The higher utilization of television and mobile phones may be attributed to their easy accessibility, user-friendliness, and widespread availability among farmers. Although these media are primarily used for entertainment and communication purposes, they also serve as important channels for disseminating agricultural information. The relatively higher use of the internet may be associated with the educational status of the respondents, as more than one-fourth of the onion growers had attained PUC, graduate, or higher levels of education.

The data presented in Table 3b reveal that half (50.00%) of the onion growers belonged to the medium level of mass media participation category, followed by 34.81 per cent and 15.19 per cent who belonged to the high and low participation categories, respectively. The predominance of medium to high levels of mass media participation may be attributed to the widespread ownership and subscription to television, mobile phones, and internet services among the respondents.

The overall participation index further indicates that a large proportion of onion growers accessed agricultural information through television, newspapers, mobile phones, and internet-based platforms. Mass media plays a crucial role in disseminating timely information and updates on agricultural technologies, thereby enabling farmers to remain informed about recent developments in the sector. Among the various media sources, television emerged as the most widely possessed and utilized medium. Its audio-visual nature makes it an effective communication tool capable of attracting and retaining the attention of viewers across different age groups. The findings of the present study are in accordance with those reported by Nagadev and Venkataramaiah (2007) ^[6] and Vijaykumar (2012) ^[12].

An examination of the data presented in Table 4a reveals that, with respect to the overall accessibility score of e-tools, television secured the first rank with an index score of 64.00. This was followed by mobile messages/WhatsApp applications, which ranked second with an index score of

63.00, and mobile calls, which ranked third with an index score of 62.00. The higher accessibility of these e-tools may be attributed to their ease of use, widespread availability, and user-friendly nature. In the present digital era, televisions and mobile phones have become essential components of daily life. In addition to communication and entertainment purposes, mobile phones are increasingly being used by farmers to contact extension personnel, capture photographs of crops affected by pests and diseases, and share them with agricultural experts and extension agencies for timely advice and recommendations.

The findings presented in Table 4b indicate that 38.53 per cent of the onion growers belonged to the medium category of e-tool accessibility, followed by 31.85 per cent and 29.62 per cent who belonged to the low and high categories, respectively. Thus, nearly 68 per cent of the respondents were found to have medium to high accessibility to e-tools. The predominance of medium to high accessibility levels may be due to the increasing penetration of digital technologies and the educational background of the respondents, many of whom had attained graduate-level and higher education. Although these e-tools are widely used for communication and entertainment, they also serve as important sources of agricultural information. Farmers may utilize these digital platforms to access recent technological advancements, obtain advisory services, and adopt improved cultivation practices in their fields. The findings of the present study are in line with those reported by Vasanthi (2020) ^[10].

The data presented in Table 5 reveals that more than half (56.67%) of the onion growers belonged to the medium category of innovative proneness, while 25.56 per cent and 17.77 per cent belonged to the high and low categories, respectively. The predominance of medium innovative proneness among the respondents may be attributed to their educational background, which enabled them to acquire and adopt new agricultural technologies, particularly in onion cultivation. Agriculture, especially onion cultivation, has become increasingly challenging due to factors such as climate variability, pest and disease incidence, rising input costs, and market fluctuations. Consequently, a majority of the onion growers, who belonged to the middle-age group, may have shown greater interest in adopting innovations and following improved practices demonstrated by progressive and fellow farmers. Furthermore, factors such as exposure to mass media, extension contact, extension participation, and accessibility to information sources might have positively influenced their innovative proneness. The findings of the present study are in conformity with those reported by Nagesh (2005) ^[7], Kolur (2007) ^[3], and Naik (2008) ^[8].

Scientific orientation refers to the degree to which farmers adopt and practice scientific principles and recommended technologies in their farming activities. The data presented in Table 6 indicate that 60.00 per cent of the onion growers possessed a medium level of scientific orientation, followed by 27.41 per cent and 12.59 per cent who exhibited high and low levels of scientific orientation, respectively. The predominance of medium scientific orientation among the respondents may be attributed to the traditional importance of onion cultivation in the study area. Farmers were observed to follow a combination of traditional knowledge

and scientifically recommended practices in onion production. The medium level of education among the respondents might have facilitated a certain degree of exposure to scientific methods and technologies; however, limited educational attainment among some growers may have restricted their access to advanced knowledge, skills, and scientific innovations. As a result, many farmers continued to rely on conventional cultivation practices while selectively adopting modern technologies. The findings of the present study are in agreement with those reported by Maraddi (2008) [5].

The results presented in Table 7 indicate that a majority (69.92%) of the onion growers exhibited a moderate level of risk orientation, followed by 18.51 per cent and 11.57 per cent who possessed low and high levels of risk orientation, respectively. The predominance of moderate risk orientation among the respondents may be attributed to their personal and socio-economic characteristics, such as age, education, landholding size, and income. As a majority of the onion growers belonged to the middle-age group and possessed a medium level of education, they were more likely to adopt a balanced approach toward risk-taking in farming activities. Furthermore, medium-sized landholdings and relatively low income levels might have constrained farmers from undertaking high-risk ventures, thereby encouraging a moderate level of risk orientation. In general, farmers with larger landholdings and higher income levels tend to exhibit greater willingness to take risks, whereas those with smaller landholdings and limited income are often more cautious in

their decision-making. The findings of the present study are in agreement with those reported by Nagesh (2005) [7], Chidnand (2008), and Madhushekhar (2009) [4].

The data presented in Table 8 reveal that 45.55 per cent of the onion growers possessed a moderate level of achievement motivation, followed by 34.45 per cent and 20.00 per cent who exhibited high and low levels of achievement motivation, respectively. Achievement motivation refers to the internal drive that encourages an individual to perform effectively and attain success in the tasks they undertake. The predominance of moderate achievement motivation among the respondents may be attributed to the nature of onion cultivation, which involves considerable uncertainty and risk due to its susceptibility to weather fluctuations, pest and disease outbreaks, and market price volatility. Despite these challenges, farmers continue to cultivate onion as an important commercial crop, reflecting their desire to improve productivity and income.

In addition, factors such as age, landholding size, and income level may have influenced the achievement motivation of the respondents. A considerable proportion of the onion growers belonged to the older age group, possessed marginal to small landholdings, and had relatively low annual income, which may have limited their aspirations and capacity to undertake highly ambitious farming activities. The findings of the present study are supported by the studies conducted by Saha (2008) and Shwetha (2016).

Table 1a: Extension contact of onion growers n=270

Sl. No.	Extension personnel	Frequency of contact			Overall score	Rank
		Regular	Occasional	Never		
		f (%)	f (%)	f (%)		
1	Friends/ relatives/ neighbouring farmers	150 (55.55)	92 (34.07)	28 (10.38)	81.73	I
2	Progressive farmers	101 (37.40)	134 (49.62)	35 (12.98)	74.81	II
3	Input agencies/ dealers	53 (19.62)	191 (70.74)	26 (09.64)	72.84	III
4	Horticulture Officer	65 (24.07)	152 (56.29)	53 (19.64)	70.00	IV
5	Agro advisory services through mobile SMS	92 (34.07)	136 (50.34)	42 (15.56)	68.15	V
6	Bank officer	37 (13.70)	199 (73.70)	34 (12.60)	67.04	VI
7	Scientists of UHS/ UAS/ KVKs	30 (11.11)	199 (73.70)	41 (15.19)	65.31	VII
8	Extension workers from NGOs	32 (11.85)	184 (68.14)	54 (20.01)	63.95	VIII
9	Agril. Dept /RSK personnel	14 (05.18)	205 (75.92)	51 (18.90)	62.10	IX
10	Horticulture Assistant (HA)	13 (4.81)	213 (78.88)	44 (16.31)	62.10	IX
11	Asst. Director of Horticulture (ADH)	09 (03.33)	192 (71.11)	69 (25.56)	59.26	X

** Values in parentheses indicate percentage

Table 1b: Distribution of the onion growers according to their extension contact n =270

Sl. No.	Category	Vijayapura	Bagalkote	Gadag	Overall
		f (%)	f (%)	f (%)	f (%)
1	Low (<22.49)	18(20.00)	26(28.88)	15(16.66)	59(21.85)
	Medium (22.50 – 26.14)	42(46.66)	42(46.66)	38(42.22)	122(45.18)
	High (26.15 and above)	30(33.33)	22(24.44)	37(41.11)	89(32.96)
	Mean	24.32			
	SD	04.31			

Table 2a: Extension participation of onion growers n =270n

Sl. No	Extension activities	Frequency of participation			Overall score	Rank
		Regular	Occasional	Never		
		f (%)	f (%)	f (%)		
1	Krishi/totagarike mela	200 (74.07)	54 (20.00)	16 (05.93)	74.57	I
2	Exhibitions	38 (14.07)	159 (58.88)	73 (27.05)	63.83	II
3	Training programme	30 (11.11)	165 (61.11)	75(27.78)	62.35	III
4	Demonstration	10 (03.70)	204 (75.55)	56 (20.75)	61.11	IV
5	Field days	02 (0.74)	243 (90.00)	25 (09.26)	60.99	V
6	Campaigns	06(02.22)	201 (74.44)	63 (23.34)	59.63	VI
7	Discussions/ meetings	16 (05.92)	181 (67.03)	73 (27.05)	59.63	VI
8	Field visits	16 (04.81)	175 (64.81)	79 (29.38)	58.89	VII
9	Educational tours	03 (01.11)	108 (40.00)	159 (58.89)	47.71	VIII

** Values in parentheses indicate percentage

Table 2b: Distribution of onion growers according to their extension participation n =270

Sl. No.	Category	Vijayapura	Bagalkote	Gadag	Overall
		f (%)	f (%)	f (%)	f (%)
1	Low (<15.54)	13(14.44)	22(24.44)	20(22.22)	55(20.37)
	Medium (15.55 -17.35)	38(42.22)	42(46.66)	37(41.11)	117 (43.33)
	High (>17.36)	39(43.33)	26(28.88)	33(36.66)	98 (36.30)
	Mean	16.45			
	SD	02.14			

Table 3a: Mass media participation of onion growers n=270

Sl. No.	Name of mass media	Subscribed/ Possessed f (%)	Type of information / programmes	Frequency of use			Overall score	Rank
				Regular f (%)	Occasional f (%)	Never f (%)		
1	TV	264 (97.77)	Agriculture	12 (04.44)	249 (92.22)	09 (03.33)	70.00	I
			News	86 (31.85)	175 (64.81)	09 (03.33)		
			Entertainment	08 (02.96)	255 (94.44)	07 (02.59)		
2	News Paper	30 (11.11)	Agriculture	26 (9.62)	183 (67.78)	60 (22.22)	70.00	I
			News	83 (30.74)	138 (63.70)	49 (18.14)		
			Entertainment	27 (10.00)	203 (82.22)	40 (14.81)		
3	Mobile	241 (89.23)	Agriculture	30 (11.11)	95 (35.19)	145 (53.70)	62.00	II
			News	51 (18.89)	129 (47.78)	90 (33.33)		
			Entertainment	45 (16.67)	179 (66.29)	46 (17.03)		
4	Internet	125 (46.29)	Agriculture	29 (10.74)	92 (91.85)	149 (55.19)	62.00	II
			News	49 (18.15)	126 (46.67)	95 (35.19)		
			Entertainment	44 (16.29)	175 (65.92)	51 (18.89)		
5	Farm magazine	14 (05.18)	Agriculture	10 (03.70)	150 (55.56)	110 (40.74)	54.00	III
			News	8 (2.96)	145 (53.70)	67 (24.81)		
			Entertainment	5 (01.85)	06 (02.22)	259 (95.92)		
6	Radio	14 (05.18)	Agriculture	8 (2.96)	21 (7.78)	241 (89.30)	36.00	IV
			News	03 (01.11)	06 (02.22)	261 (96.66)		
			Entertainment	01 (00.37)	05 (01.85)	264 (97.77)		

** Values in parentheses indicate percentage

Table 3b: Distribution of onion growers according to mass media participation n = 270

Sl. No.	Category	Vijayapura	Bagalkote	Gadag	Overall
		f (%)	f (%)	f (%)	f (%)
1	Low (< 34.45)	18(20.00)	13(14.44)	10(11.11)	41.00(15.19)
	Medium (34.46 – 37.84)	47(52.22)	45(50)	43(47.77)	135.00(50.00)
	High (> 37.85)	25(27.77)	32(35.55)	37(41.11)	94.00(34.81)
	Mean	36.20			
	SD	3.89			

Table 4 a: Onion growers' access to e-tools n =270

Sl. No.	e-tools	Accessibility to e-tools			Overall score	Rank
		Accessibility f (%)	Skill to operate f (%)	Used to gather Agril. Information f (%)		
1	Television	264.00 (97.77)	206.00 (76.30)	50.00 (18.51)	64.00	I
2	Mobile Call	205.00 (75.93)	205.00 (75.93)	80.00 (29.63)	62.00	III
3	Messages / WhatsApp	152.00 (56.30)	150.00 (55.51)	49.00 (18.15)	63.00	II
4	Apps	112.00 (41.48)	96.00 (35.56)	80.00 (29.63)	38.00	VI
5	e-audio/ video/ images	95.00 (35.18)	76.00 (28.15)	49.00 (18.15)	50.00	IV
6	You tube	125.00(46.29)	105.00 (38.89)	75.00 (27.78)	47.00	V
7	Radio	14.00 (05.18)	14.00 (05.18)	06.00 (02.22)	36.00	VII
8	Website	35.00 (12.96)	35.00 (12.96)	26.00 (9.63)	33.00	VIII
9	e-news paper	32.00 (11.85)	30.00 (11.11)	5.00 (1.82)	25.00	IX
10	e-books	10.00 (3.70)	10.00 (3.70)	0(0)	25.00	IX
11	e-magazine	10.00 (3.70)	10.00 (3.70)	0(0)	24.00	X
12	e-mail	29 (10.74)	25.00 (9.25)	2.00 (0.74)	20.00	XI
13	Face book	73 (27.03)	49.00 (18.15)	09.00 (33.33)	19.00	XII
14	Twitter	35 (12.96)	26.00 (9.63)	2.00 (0.74)	13.00	XIII

** Values in parentheses indicate percentage

Table 4b: Distribution of onion growers according to access to e-tools n =270

Sl. No.	Category	Vijayapura	Bagalkote	Gadag	Overall
		f (%)	f (%)	f (%)	f (%)
1	Low (< 54.85)	35(38.88)	23(25.55)	28(31.11)	86(31.85)
	Medium (54.85-59.88)	38(42.22)	31(34.44)	35(38.88)	104(38.53)
	High (> 59.89)	17(18.88)	36(40.00)	27(30.00)	80(29.62)
	Mean	36.20			
	SD	3.89			

Table 5: Distribution of onion growers according to their innovative proneness n =270

Sl. No.	Category	Vijayapura	Bagalkote	Gadag	Overall
		f (%)	f (%)	f (%)	f (%)
1	Low (< 22.50)	12(13.33)	16(17.78)	20(22.22)	48.00(17.78)
	Medium (22.50 – 25.12)	45(50.00)	53(58.88)	55(61.11)	153.00(56.66)
	High (> 25.12)	33(36.67)	21(23.34)	15(16.67)	69.00(25.56)
	Mean	23.81			
	SD	03.08			

Table 6: Distribution of onion growers according to scientific orientation n=270

Sl. No.	Category	Vijayapura	Bagalkote	Gadag	Overall
		f (%)	f (%)	f (%)	f (%)
1	Low (<12.89) < (Mean - 0.425SD)	10(11.11)	12(13.33)	12(13.33)	34(12.59)
	Medium (12.89 – 14.37) (Mean ± 0.425SD)	48(53.33)	56(62.22)	58(64.44)	162(60.00)
	High (> 14.37) (Mean + 0.425SD)	32(35.55)	22(24.44)	20(22.22)	74(27.41)
	Mean	13.63			
	SD	1.74			

Table 7: Distribution of onion growers according to risk orientation n=270

Sl. No.	Category	Vijayapura	Bagalkote	Gadag	Overall
		f (%)	f (%)	f (%)	f (%)
1	Low (< 15.89) < (Mean - 0.425SD)	15(16.66)	17(18.88)	18(20.00)	50.00(18.51)
	Medium (15.89 – 16.95) (Mean ± 0.425 SD)	65(72.22)	60(66.66)	63(70.00)	188.00(69.62)
	High (> 16.95) (Mean + 0.425SD)	10(11.11)	13(14.44)	9(10.00)	32.00(11.87)
	Mean	16.42			
	SD	1.24			

Table 8: Distribution of onion growers according to achievement motivation n=270

Sl. No.	Category	Vijayapura	Bagalkote	Gadag	Overall
		f (%)	f (%)	f (%)	f (%)
1	Low (< 28.76)	16(17.77)	18(20)	20(22.22)	54(20.00)
	Medium (28.76– 32.34)	41(45.55)	43(47.77)	39(43.33)	123(45.55)
	High (> 32.34)	33(36.66)	29(32.22)	31(34.44)	93(34.45)
	Mean	30.5			
	SD	04.21			

Conclusion

The study revealed that onion growers in the Northern Dry Zone of Karnataka primarily relied on interpersonal sources such as friends, relatives, and neighbouring farmers for obtaining information related to sustainable onion cultivation. Participation in Krishi and Totagarika Melas was also found to be an important avenue for accessing agricultural information. Among mass media and digital communication tools, television emerged as the most preferred source of information. These findings indicate that interpersonal networks, agricultural fairs, and television can serve as effective channels for disseminating scientific and sustainable onion production technologies. Therefore, policymakers, researchers and extension personnel should strategically utilize these platforms to enhance the reach and adoption of improved agricultural practices.

The study further showed that a majority of onion growers possessed medium to high levels of behavioural characteristics. Most respondents exhibited moderate levels of extension contact, social participation and mass media exposure. Likewise, their innovativeness, risk-taking ability, scientific orientation and achievement motivation were found to be at medium levels, reflecting a positive attitude towards adopting sustainable onion cultivation practices. These behavioural attributes provide a strong foundation for promoting new technologies and interventions. Hence, strengthening extension services, improving information dissemination mechanisms, and encouraging farmer participation in extension activities can further enhance the adoption of sustainable onion cultivation practices and contribute to increased productivity and livelihood security among onion growers.

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