P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating (2025): 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 7; July 2025; Page No. 865-869

Received: 25-04-2025
Accepted: 29-05-2025

Indexed Journal
Peer Reviewed Journal

Socio-economic factors and perceptions influencing contract farming adoption among onion farmers in Bhavnagar District of Gujarat

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DOI: https://www.doi.org/10.33545/26180723.2025.v8.i7l.2227

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Abstract

This study investigates the socio-economic characteristics, selling preferences, and perceptions of farmers in Bhavnagar District, Gujarat, with a focus on onion farmers and their views towards contract farming. Using a descriptive research design, the study surveyed 150 farmers from Mahuva and Talaja talukas, employing a structured questionnaire for primary data collection, supplemented by secondary data from existing literature. The findings reveal that the majority of respondents are male (98%), with most farmers aged between 31 and 50 years. Farmers predominantly cultivate white onions (52%) and have extensive experience in farming (37.33% with over 15 years of experience). APMCs remain the dominant platform for onion sales (77.33%), while a significant portion of payments is received promptly, within one day (71.33%). Regarding contract farming, the study identifies key factors influencing its adoption, such as assured prices, guaranteed markets, and fixed pricing structures. However, low willingness to engage in contract farming was observed, with only 4.66 percent expressing interest. The primary source of information about contract farming comes from informal networks, including friends and neighbors (69.33%). The study also highlights farmers' perceptions, indicating that contract farming is viewed positively in terms of improving market linkages and agricultural practices, but its impact on poverty reduction and food security is less emphasized. These findings suggest the need for more effective extension services, better contract terms, and educational campaigns to increase farmer participation in contract farming. By addressing key concerns related to financial security, market access, and pricing stability, contract farming can be further promoted as a viable agricultural practice in the region.

Keywords: Farmers, onion, contract farming, perception, adoption

Introduction

Contract farming is a system where farmers and buyers (often agro-processing firms) enter into agreements that outline the terms of production, including prices, quality, and supply schedules. This practice has gained significant attention as a means to enhance agricultural productivity and provide a structured market for farmers (Singh & Sahu, 2019) [8]. The adoption of contract farming is influenced by several socio-economic factors, including access to credit, market conditions, and the level of technological adoption (Kumar & Raghav, 2018) [3]. In India, where smallholder farmers dominate agricultural production, the potential of contract farming to improve farm income and reduce market risks has been widely discussed (Jha, 2020) [2]. However, the decision to engage in contract farming varies significantly across regions and crop types, with factors such as education, income levels, and farming experience playing critical roles (Prakash & Verma, 2017) [6]. This study focuses on onion farmers in Bhavnagar District, Gujarat, to examine how socio-economic characteristics and perceptions shape their attitudes toward contract farming. The research aims to provide insights into the factors that promote or hinder the adoption of contract farming and to identify areas for improvement in the implementation of such schemes in the region. The objectives of the study are as follows.

- To study the socio-economic profile of onion farmers.
- To study the perception of onion farmers towards contract farming
- To identify the factors influencing the adoption of contract farming among onion famers

Research Methodology

The research methodology for this study follows a descriptive research design, which allowed for the identification of various attributes affecting consumer buying behavior. The study was conducted in Bhavnagar District, Gujarat, and employed a non-probability purposive sampling method to select a sample of 150 farmers cultivating onion from Mahuva and Talaja talukas of Bhavnagar, Gujarat. The data collection was carried out through both primary and secondary sources. Primary data were gathered from the farmers using a structured questionnaire, while secondary data were collected from research papers, journals, reports, and company websites. The structured questionnaire served as the primary

instrument for data collection. The data were analyzed using simple statistical tools, including averages, frequency distribution, means, Likert-type rating scales to achieve the study's objectives.

Results and Discussion

Table 1: Socio-economic and personal characteristics of the onion farmers

Gender of Respondents		
Gender	**Frequency**	**Percentage**
Male	147	98
Female	3	2
Total	150	100
Age of Respondents (years)		
Age Group (in Years)	**Frequency**	**Percentage**
Below 20	4	2.67
21 - 30	13	8.67
31 - 40	59	39.33
41 - 50	57	38.00
Above 50	17	11.33
Total	150	100.00
Education of Respondents		
Education Level	**Frequency**	**Percentage**
Illiterate	9	6.00
Primary School	52	34.67
SSC	46	30.67
HSC	35	23.33
Graduate	7	4.67
Post Graduate	1	0.67
Total	150	100
Marital Status		
Marital Status	**Frequency**	**Percentage**
Married	139	92.67
Unmarried	11	7.33
Total	150	100
Farming Experience		
Years	**Frequency**	**Percentage**
0 to 5	17	11.33
6 to 10	31	20.67
11 to 15	46	30.67
Above 15	56	37.33
Total	150	100
Farmers onion cultivation experience		
Onion cultivation experience (Years)	**Frequency**	**Percentage**
0 to 5	4	2.67
6 to 10	21	14.00
11 to 15	73	48.67
Above 15	52	34.67
Total	150	100
Types of onion cultivated		
Types of onion (Colour)	**Frequency**	**Percentage (%)**
White	78	52.00
Red	53	35.33
Pink	19	12.67
Total	150	100
Types of farmer		
Types of farmer	**Frequency**	**Percentage**
Marginal	34	22.67
Small	59	39.33
Semi medium	32	21.33
Medium	18	12.00
Large	7	4.67
Total	150	100
Annual Income		
Income (lakhs)	**Frequency**	**Percentage**
1-2	16	10.67
3-4	29	19.33
5-6	46	30.66
6-7	41	27.34
Above 7	18	12.00
Total	150	100

Table 1 depicts the socio-economic and personal characteristics of vegetable farmers in Bhavnagar District. The study found that the majority of respondents were male (98%), while only 2 percent were female. In terms of age distribution, most farmers belonged to the 31-40 years (39.33%) and 41-50 years (38%) age groups, followed by those above 50 years (11.33%), 21-30 years (8.67%), and below 20 years (2.67%). Regarding education levels, 6 percent of farmers were illiterate, while the majority had received primary school education (34.67%), followed by SSC (30.67%), HSC (23.33%), graduates (4.67%), and postgraduates (0.67%). Most respondents were married (92.67%), with only 7.33 percent being unmarried. Farming experience varied, with 37.33 percent having over 15 years of experience, 30.67 percent between 11-15 years, 20.67 percent between 6-10 years, and 11.33 percent with less than five years of experience. Similarly, onion crop cultivation experience showed that 48.67 percent of farmers had 11-15 years of experience, 34.67 percent had more than 15 years, 14 percent had 6-10 years, and only 2.67 percent had up to five years of experience. The majority of farmers cultivated white onions (52%), followed by red (35.33%) and pink (12.67%). In terms of farm size, small farmers constituted the largest group (39.33%), followed by marginal (22.67%), semi-medium (21.33%), medium (12%), and large farmers (4.67%). Annual income distribution indicated that 30.66 percent of farmers earned between ₹5-6 lakh, 27.34 percent between ₹6-7 lakh, 19.33 percent between ₹3-4 lakh, 12 percent above ₹7 lakh, and 10.67 percent between ₹1-2 lakh. These findings provide insights into the demographic and economic profile of onion farmers in the study area.

Table 2: Selling platform preferred by onion farmers

Selling platform of onion	Frequency	Percentage (%)
APMC	116	77.33
Trader	9	6.00
Local Market	3	2.00
FPO/FPC	15	10.00
Other	7	4.67
Total	150	100

The study analyzed the selling platforms preferred by onion farmers in Bhavnagar District, Table 2 shows that the majority (77.33%) preferred selling their produce through Agricultural Produce Market Committees (APMCs). A smaller proportion of farmers (10%) opted for Farmer Producer Organizations/Farmer Producer Companies (FPO/FPC), while 6% sold their onions to traders. Only 2 percent of farmers utilized local markets, and 4.67 percent relied on other selling platforms. These findings indicate that APMCs remain the dominant choice for onion farmers, likely due to better price realization, market access, and structured selling mechanisms. However, the presence of FPOs/FPCs suggests a growing interest in alternative marketing channels that may offer better returns and reduced dependency on intermediaries.

Table 3: Farmers receive payments of sold onion in how many days

No. of days taken for receiving full payments	Frequency	Percentage (%)
Within a Day	107	71.33
2 to 3	12	8.00
3 to 7	25	16.67
More Then 7	6	4.00
Total	150	100

Table 3 depicts the time taken for farmers to receive full payments for their sold onions. The findings indicate that the majority of farmers (71.33%) received their payments within a day, highlighting the efficiency of immediate transactions in the onion market. Additionally, 8 percent of farmers received payments within 2 to 3 days, while 16.67 percent had to wait between 3 to 7 days. A smaller proportion (4%) experienced delays of more than 7 days. These results suggests that while most farmers benefit from prompt payments, a segment still faces delays, which could impact their financial planning and cash flow. Improving payment processes and ensuring timely transactions could enhance the economic stability of farmers.

Table 4: Source of information to farmers about contract farming

Source of information about contract farming	Frequency	Percentage (%)
Extension Sources/Institution	2	1.33
Agricultural Extension Officer	3	2
Progressive Farmer	3	2
FPO/NGO	21	14
Friends/Neighbours	104	69.33
TV/ News Paper	17	11.33
Total	150	100

Table 4 highlights the sources of information that farmers rely on for learning about contract farming. The findings reveal that the majority of farmers (69.33%) received information through friends and neighbors, emphasizing the significant role of informal social networks in disseminating agricultural knowledge. Additionally, 14 percent of farmers gained insights from Farmer Producer Organizations (FPOs) or Non-Governmental Organizations (NGOs), while 11.33 percent relied on television and newspapers. Only a small percentage of farmers received information from agricultural extension officers (2%), progressive farmers (2%), or institutional extension sources (1.33%). These results indicate that formal extension services have limited reach in educating farmers about contract farming, highlighting the need to strengthen institutional efforts and extension programs to improve awareness and participation in contract farming initiatives.

Table 5: Perception of farmers towards contract farming

Sr. No.	Statement	SA	Agree	Neutral	Disagree	SD	Total	CS	Mean	Rank
1	It improves agricultural practices	48	31	36	25	10	150	532	3.55	2
2	It increases labour efficiency	46	19	37	29	19	150	494	3.29	6
3	It improves family labour utilizations	35	31	32	32	20	150	479	3.19	7
4	It increases household income	37	29	28	27	29	150	468	3.12	8
5	It reduces poverty and improves food security of household	29	21	39	32	29	150	439	2.93	13
6	It creates market linkages and market	51	30	38	22	9	150	542	3.61	1
7	It creates employment opportunities	31	19	39	41	20	150	450	3.00	12
8	It improves overall livelihoods of family	21	25	33	37	34	150	412	2.75	15
9	It increases use of agricultural inputs and enhances production	49	27	33	29	12	150	522	3.48	3
10	It reduces the production of other than contract farming crops.	22	24	34	27	43	150	405	2.70	16
11	It increases smallholder farmer's know-how and improve climate adaption	22	27	31	33	37	150	414	2.76	14
12	It improves agricultural practices and use of agro-chemical	36	25	34	29	26	150	466	3.11	9
13	Increases the participation of female headed households and keeps the rights of women.	33	27	27	40	23	150	457	3.05	11
14	It increases the user rights of smallholder farmer.	46	22	31	38	13	150	500	3.33	5
15	It improves the way agro-processing firms plans, preforms and monitors its activities.	47	24	29	36	14	150	504	3.36	4
16	The price is set by the Agro-processing firms.	38	22	29	35	26	150	461	3.07	10

Cumulative Score (CS) = Maximum Scale × No. of Farmers (Strongly Agree: 5, Agree: 4, Neutral: 3, Disagree: 2, Strongly Disagree: 1)
Mean = Cumulative Score (CS) / Total No. of Farmers (150)

Table 5 examine the farmers' perceptions of contract farming based on various factors. The highest-ranked perception was that contract farming creates market linkages and market access (mean = 3.61, rank 1), followed closely by improving agricultural practices (mean = 3.55, rank 2) and increasing the use of agricultural inputs and enhancing production (mean = 3.48, rank 3). Farmers also recognized that contract farming improves the way agro-processing firms plan, perform, and monitor activities (mean = 3.36, rank 4) and enhances the user rights of smallholder farmers (mean = 3.33, rank 5). Moderately ranked perceptions included increasing labor efficiency (mean = 3.29, rank 6), improving family labor utilization (mean = 3.19, rank 7), and increasing household income (mean = 3.12, rank 8). Farmers also acknowledged that contract farming improves agricultural practices and the use of agro-chemicals (mean = 3.11, rank 9) and that prices are set by agro-processing firms (mean = 3.07, rank 10). On the other hand, the lowest-ranked perceptions included reducing the production of non-contract farming crops (mean = 2.70, rank 16), improving overall livelihoods of families (mean = 2.75, rank 15), and enhancing smallholder farmers' know-how and climate adaptation (mean = 2.76, rank 14). Additionally, reducing poverty and improving food security (mean = 2.93, rank 13) and creating employment opportunities (mean = 3.00, rank 12) were perceived as less significant. These findings indicate that farmers primarily view contract farming as beneficial for improving market access, agricultural practices, and production efficiency. However, its impact on livelihoods, food security, and climate adaptation appears to be less strongly perceived. Strengthening these weaker aspects through better policy support, training programs, and inclusive contract agreements could enhance farmers' overall experience and participation in contract farming.

Table 6: Factors influencing the adoption of contract farming

Sr. No.	Factors	SA	Agree	Neutral	Disagree	SD	CS	Mean	Rank
1	Provision of production management services	5	38	74	22	11	454	3.03	5
2	Access to credit/credit linked input supply	11	49	41	37	12	460	3.07	4
3	Access to improved/appropriate technology	0	10	35	36	69	286	1.91	12
4	Skill transfer	0	11	29	39	71	280	1.87	13
5	Guaranteed and fixed pricing structure	7	42	70	24	7	468	3.12	3
6	Reduce in pre- and post-harvest losses due to monitoring & advice of the CF company	0	11	31	33	75	278	1.85	14
7	Reduce transaction cost	1	7	47	42	53	311	2.07	11
8	Better quality produce	0	8	68	32	42	342	2.28	9
9	Insurance based contract	2	41	70	24	13	445	2.97	6
10	Shield against market fluctuations	4	35	78	14	19	441	2.94	7
11	Assured market	6	46	71	17	10	471	3.14	2
12	Assured prices	14	41	56	32	7	473	3.15	1
13	High profitability	2	15	24	78	31	329	2.19	10
14	Diversification	0	14	23	35	78	273	1.82	15
15	Fixed income	1	26	55	48	20	390	2.60	8

Cumulative Score (CS) = Maximum Scale × No. of Farmers (Strongly Agree: 5, Agree: 4, Neutral: 3, Disagree: 2, Strongly Disagree: 1)
Mean = Cumulative Score (CS) / Total No. of Farmers (150)

Table 6 analyze the various factors influencing the adoption of contract farming among farmers. The findings indicate that the most significant factor was assured prices (mean = 3.15, rank 1), followed closely by an assured market (mean = 3.14, rank 2) and a guaranteed and fixed pricing structure (mean = 3.12, rank 3). Access to credit and credit-linked input supply (mean = 3.07, rank 4) and provision of production management services (mean = 3.03, rank 5) were also important considerations. On the other hand, factors such as diversification (mean = 1.82, rank 15), reduction in pre- and post-harvest losses due to monitoring and advice (mean = 1.85, rank 14), skill transfer (mean = 1.87, rank 13), and access to improved technology (mean = 1.91, rank 12) were ranked lowest, indicating that these aspects had a lesser impact on farmers' decisions to adopt contract farming. Additionally, factors like fixed income (mean = 2.60, rank 8), shield against market fluctuations (mean = 2.94, rank 7), and insurance-based contracts (mean = 2.97, rank 6) played a moderate role in influencing adoption. These findings suggest that farmers are primarily driven by financial security, market assurance, and pricing stability when considering contract farming, whereas aspects related to technology, skill transfer, and diversification hold less significance in their decision-making process. Strengthening these lower-ranked factors through better extension services and policy interventions could further enhance contract farming adoption.

Conclusion

The study provides valuable insights into the socio-economic profile of onion farmers and their perceptions of contract farming in Bhavnagar District, Gujarat. The findings highlight that most farmers were male, middle-aged, and have substantial farming experience, with a preference for white onion cultivation. Market access remained a critical factor, with APMCs being the primary selling platform, ensuring prompt payment for the majority. Farmers relied heavily on informal networks for information on contract farming, while formal extension services had limited influence. The study also revealed that farmers perceived contract farming as beneficial for improving market access, agricultural practices, and production efficiency, but its impact on food security and livelihoods was viewed with less enthusiasm. The key factors influencing contract farming adoption among farmers included assured prices, guaranteed markets, and financial security, whereas the aspects such as skill transfer, access to technology, and diversification ranked lower in importance. To enhance participation in contract farming, policymakers and stakeholders should focus on strengthening extension services, improving financial and technical support, and addressing concerns related to production risks and market fluctuations.

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