

Determinants of farmers preference for informal contract farming system for chillies

■ K. DIVYA, S.D. SIVAKUMAR AND K. MAHENDRAN

Received : 10.02.2014; Revised : 26.02.2014; Accepted : 22.03.2014

ABSTRACT

A study was conducted to analyse the determinants of farmers' preference for contract farming for chillies in three districts of southern Tamil Nadu. A sample size of 160 respondents were selected from eight villages which included both contract and noncontract farmers. The extent of irrigated land area available with the farmers and experience in farming was found to influence farmers' preference towards contract farming system for chillies in the study area. The constraints in contract farming of chillies were identified as increase in production cost, less land under irrigated condition and firms were not meeting the contractual obligations in buying the last picked chillies because of low quality.

KEY WORDS : Contract farming, Chillies, Discriminant analysis

How to cite this paper : Divya, K., Sivakumar, S.D. and Mahendran, K. (2014). Determinants of farmers preference for informal contract farming system for chillies. *Internat. J. Com. & Bus. Manage*, 7(1) : 122-125.

India is the largest producer and consumer of chillies in the world contributing about 36 per cent of the total world production. It ranked first in terms of international trade and exported 20 per cent of total production. In 2010-11, Andhra Pradesh was the largest producer of chillies in India and the states' share was 30 per cent of the total area under chillies, followed by Karnataka (20 %), Orissa (6 %) and Tamil Nadu (8 %) (*www.spiceboard.in*). Chillies were mostly consumed and exported as chilli powder, dried chillies, pickled chillies and oleoresins from chillies. Improvement in quality and productivity of Indian chillies will enable India to increase export of chillies and chilli products, effectively meeting export market competition.

Contract farming referred to the contractual

arrangement between farmers and a company, whether oral or written, specifying one or more conditions of production and marketing (Roy, 1963). The new agricultural policy of the Government of India aimed at promoting growth of private sector participation in agribusiness through contract farming. This approach is expected to accelerate technology transfer, capital flow and provided assured markets for crops. It provided better income to farmers and generated more employment for labour through introduction of new technologies. Contract farming as a system was considered to affect the producers positively or negatively depending on the context of the economy (Singh, 2000).

In the study area, processing firms had direct contract with farmers. The association with farmers were informal, with no written contracts, but were based on oral confirmation of harvested product delivery by farmers and purchase by processors. Farmers were provided with new technologies and inputs, which otherwise would not have reached the farmers (Glover, 1987; Eaton and Shepherd, 2001). To ensure the quality of the produce, processing firms provided a set of 'Good Agricultural Practices' (GAP) to the identified farmers, to cultivate chillies and to produce dry chilli as per the specifications. This package ensured

MEMBERS OF THE RESEARCH FORUM

Correspondence to:

K. DIVYA, Department of Agricultural and Rural Management, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA
Email: divyatnau@gmail.com

Authors' affiliations:

S.D. SIVAKUMAR AND K. MAHENDRAN, Department of Agricultural and Rural Management, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA

better use of resources with emphasis on minimum use of pesticides. For a processor or distributor, contracts are more flexible in the face of market uncertainty, make smaller demands on scarce capital resources, and impose less of an additional burden of labour relations, ownership of land and production activities on management (Buch-Hansen and Marcussen, 1982). Also, food processors can minimize their overhead costs per unit of production by operating their plants at or near fully capacity as contracting practices gives assured and stable raw material supplies from farms.

All farmers cultivating chillies did not opt for contract farming since it involved adaptation of additional practices and following since it involved additional practices and guidelines as per the specification of processors. Processors cum exporters also continued to have contract with farmers in subsequent years only if they supplied produce that met the quality specifications. Therefore, an attempt was made to analyse the socio economic factors discriminating contract and noncontract farmers for chillies cultivation in the three major chillies growing area in southern Tamil Nadu.

METHODOLOGY

The study was conducted in Ramanathapuram, Thoothukudi and Virudhunagar districts as these districts accounted for 65.74 per cent of area under cultivation of chillies in Tamil Nadu. Four blocks from three districts were selected based on prominence of contract farming. In each block, two villages were selected randomly and the contract and non contract farmers were selected at random at the rate of 10 from each village. Thus, a random sampling technique was used to select 160 sample farmers.

Processing firms had direct contract with farmers. The association with farmers were informal, with no written contracts, but were based on oral confirmation of harvested product delivery. Farmers with assured irrigation alone were considered to register with the contract system.

Socio-economic factors discriminating the contract and non contract farmers:

Linear discriminant function was employed to identify the socio-economic factors which led to discrimination

between contract and non-contract farmers. Discriminant function analysis (DFA) a ‘classification’ technique was introduced by Fisher (1936) and reviewed by Huberty and Huessein (2003). Through discriminant analysis, farmers could be classified into two or more mutually exclusive and exhaustive groups on the basis of a set of independent variables (Olarinde, 2010). DFA was used when there were observations from pre-determined groups with two or more response variables for each observation (Teknomo, 2006). Discriminant analysis could be done with nominal dependent variable and independent variables that could be nominal, ordinal, interval or ratio (Klecka, 1980).

The functional and estimable forms of the discriminant function are given below:

$$Z = f(X_1, X_2, X_3)$$

$$Z = b_0 + b_1X_1 + b_2X_2 + \dots + b_5X_5 + U$$

- where,
- Z= Contract farming or not
 - X₁= Age (years).
 - X₂= Education status (No of years of schooling).
 - X₃= Experience in farming (years).
 - X₄= Primary occupation in Agrl/Others.
 - X₄= 1, if primary occupation of farmers is agriculture, X₄= 0, if otherwise.
 - X₅= Irrigated land of the farmers (acres).
 - b₀, b₁, b₅= Co-efficients to be estimated, U=Error term.

ANALYSIS AND DISCUSSION

The mean and standard deviation of the included variables are presented in Table 1. The contract farmers possessed higher education status, experience, land under irrigated condition and primary occupation of agriculture.

Initially, to test the mean differences between the selected groups, Wilk’s lambda (U-statistics) and its P-value were estimated for the selected variables (Table 2).

When the value of Wilk’s lambda approaches one, it could be inferred that there was no significant difference between the means of two groups. The estimated value of Wilk’s lambda approached one for many variables except irrigated land (acres) and experience in farming. It showed

Table 1: Mean and standard deviation of selected variables					
Sr. No.	Factors	Contract farming		Non -contract farming	
		Mean	Standard deviation	Mean	Standard deviation
1.	Age (years)	46.99	10.02	46.39	10.04
2.	Education status (No. of years of schooling)	8.11	3.89	6.86	2.81
3.	Experience in farming (years)	29.45	10.03	25.14	8.72
4.	Primary occupation Agrl/Others	1.19	0.393	1.14	0.347
5.	Irrigated land(acres)	1.67	0.457	0.92	0.64

that the contract and non contract farmers differed widely in relation to these factors. The correlation co-efficient between discriminating variable and dependent variable is presented in Table 3.

The pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions has been shown in Table 3.

Irrigated land had highest correlation co-efficient (0.539) followed by experience in farming (0.185). On the other hand, education status (0.148), primary occupation (0.054) and age (0.024) had the lowest correlation co-efficient. It revealed that the age and education status did not contribute to the variation in cultivation of chillies under contract farming system.

Constraints faced by farmers in adopting contract farming:

Contract farmers were asked to rank constraints in adopting contract farming. The response was analyzed by using Garrett's ranking technique and the results are presented in Table 4.

An increase in production cost (70.00) due to adoption of Good Agricultural Practices was the most important constraints faced by contract farmers. The other constraints ranked by the contract farmers were less land area under irrigated condition (64.33) and firms were not buying the last picked chillies (45.26) because of low

quality. Similarly contract growers in Punjab and Haryana also faced many problems like undue quality cut on produce and high rejections by firms, delayed deliveries at factory, delayed payments, low price, and pest and disease attack on the crop (Bhalla and Singh, 1996; Singh 2000; Rangi and Sindhu, 2000; and Dileep *et al.*, 2002; Satish, 2003).

Conclusion:

The study revealed that extent of land under irrigated condition available with farmers and experience in farming has been identified as the major factors discriminating the contract from non-contract farmers. It could be recommended that, the firms may concentrate on more experienced farmers having higher land area under irrigation. The government can facilitate contract farming in feasible areas. The farmers under contract farming have expressed certain problems like increase in production cost, less land area under irrigated condition and sometimes the contracting firms were not buying the last picked chillies because of low quality. These issues need to be addressed by the companies in the interest of sustaining long term relationship with the farmers. The government should also enact suitable measures to make contract farming a balanced means of benefitting both the farmers and processors.

Table 2 : Wilk's lambda(U- Statistics) of selected variables

Factors	Wilk's lambda	P- value
Age (years)	0.999	0.706
Education status (No of years of schooling)	0.967	0.021**
Experience in farming (years)	0.949	0.004*
Primary occupation Agrl/Others	0.995	0.395
Irrigated land (acres)	0.688	0.000*

* and ** indicate significance of values at P=0.01 and 0.05, respectively

Table 3 : Correlation between discriminating variables and canonical discriminant function

Factors	Correlation co-efficient
Irrigated land(acres)	0.539
Experience in farming(years)	0.185
Education status(No of years of schooling)	0.148
Primary occupation Agrl/Others	0.054
Age(years)	0.024

Table 4: Constraints faced by farmers in contract farming (n=80)

Sr. No.	Constraints	Mean score	Rank
1.	Increase in production costs due to adoption of GAP	70.00	I
2.	Less area under irrigation	64.33	II
3.	Not buying low quality/last picked chillies	45.26	III

REFERENCES

- Buch-Hansen, M. and Marcussen, H.S. (1982). Contract farming and the peasantry: Cases from Western Kenya", *Rev. African Polit. Eco.* **23**: 9-36.
- Dileep, B. K., Grover, R.K. and Rai, K.N. (2002). Contract farming in tomato: An economic analysis', *Indian J. Agric. Eco.*, **57**(2): 197-210.
- Huberty, C.J. and Hussein, M. K. (2003). Some problems in reporting use of discriminant analysis. *J.Exp. Edu.*, **71**:177-191.
- Klecka, W.R. (1980). Discriminant analysis series: Quantitative applications in the social sciences. SAGE publications inc. California, U.S.A.
- Olarinde, L.O., Tahirou A., Kamara, A., Binam, J. and Adekunle, A. (2010). Using a linear discriminant analysis approach of baseline conditions to develop household categories in the Sudan Savannah, Nigeria. *J. Food, Agric. & Environ.*, **8**(2): 805-812.
- Rangi, P.S. and Sidhu, M.S. (2000). A study on contract farming of tomato in Punjab. *Agric. Mktg.*, **42**(4): 15-23.
- Roy, E.P. (1963). *Contract farming-USA*, The Interstate Printers and Publishers, Inc. Danville, Illinois, USA.
- Satish, P. (2003). Contract farming as a backward linkage for agro processing- Experiences from Punjab.
- Singh, J. (2003). Contracted green peas dumped in open market', *The Tribune*, Chandigarh, March 28, 15.
- Singh, S. (2000) Contract farming for agricultural diversification in the Indian Punjab: A study of performance and problems. *Indian J. Agric. Eco.*, **35** (3): 241-261.

WEBLIOGRAPHY

- Teknomo, K. (2006). Discriminant Analysis Tutorial available online at <http://people.revoledu.com/kardi/tutorial/LDA>.
www.spiceboard.in.

7th
Year
★★★★★ of Excellence ★★★★★