



Factors influencing the Risk Attitude of Vegetable Farmers in Kerala

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ABSTRACT

Vegetables play a major role by providing nutritional, economic security and producing higher returns per unit area. But vegetable farmers have to face diverse kinds of climate, biological, price and financial risks. An important factor in understanding the behavioural and managerial decisions of farmers is to understand their attitude towards risk. This study investigated the risk attitude of vegetable farmers in special agricultural zones, socio-economic characteristics of farmers and identified the factors which influences the risk attitude. A survey was conducted by involving 270 respondents from 6 agro ecological units. Purposive as well as simple random sampling techniques were adopted for the study. The data were collected with the help of structured interview schedule and processed into frequency, percentage, correlation analysis to draw the conclusion. Results showed that majority of the farmers were in medium risk attitude category and the factors such as area under vegetable cultivation, education, annual income, irrigation potential, extension participation, social participation and innovative proneness were positively and significantly related with the risk attitude of vegetable farmers.

Key Words: Analysis, Attitude, Correlation, Farmers, Risk, Vegetable.

INTRODUCTION

Vegetable serves as a dual function of cash and food crops, contributing significantly to household income and food security. Due to high market value and profitability, vegetable can generate high income for the farmers (Tsegay, 2010). In addition, vegetables have higher productivity, shorter maturity cycle and provide greater income leading to improved livelihoods. On the other hand, vegetable crops are subjected to high price and market risks with changing consumer demands and production conditions. Vegetable farmers have to work in an environment intricate by different kinds of risks and uncertainties that are always encouraged by natural environment, market irregularities and social uncertainties (Ellis, 2000). Changes in climatic

conditions inherent in agricultural production cause random production shocks. Hence, vegetable production is a highly risky investment activity.

In Kerala state, the total area under the cultivation of vegetables during 2019-20 was 41,053 ha which represents 4.30% area of total food crops. The total area under vegetables has decreased by 1.81% in the year 2019-20 than the previous year 2018-19 (Anonymous, 2019). Despite heavy government investment in terms of provision of infrastructure and input incentives, vegetable production since the last decade has not shown a significant improvement. Farmers' attitude is expected to partially contribute to this problem. The risk attitude of farmers highly influences their production and investment behaviour. Farmers have

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Table 1. Selected items with t values for the attitude scale.

Sr. No.	Item	T value
1.	I concentrate mainly in one or two vegetable crops at a time	4.26
2.	I usually engage in more than one enterprise (-)	6.26
3.	I have thorough and well-documented control on my crop production activities	9.10
4.	I collaborate with other farmers to share risk (-)	3.14
5.	My farmed acreage is mostly consisting of less risky crops (-)	8.12
6.	I continue growing same remunerative crops year after year (-)	4.10
7.	I do not complement my farm income with non-farm income	4.36
8.	I engage in less risky enterprises based on my past experiences (-)	14.02
9.	I plant only high yielding and resistant crop varieties in my farm for higher returns (-)	4.19
10.	I do not consider myself to be a low-cost producer of vegetables	9.94
11.	I practice mixed farming as it ensures continuous income from farming (-)	3.13
12.	I am more likely to resort to crop diversification and multiple cropping as it reduces risk of sole cropping (-)	4.32
13.	I often experiment with new agricultural practices and technologies	13.79
14.	I am always one among the first in my area to adopt a new technology	16.50
15.	I use crop insurance policy as it can be a shock absorbing mechanism (-)	5.38
16.	I discuss issues related to my farm operation with professional advisor (-).	3.07
17.	I attend all workshops and trainings to learn more about vegetable cultivation	2.34
18.	I prefer “playing it safe” when growing vegetable crops and selling produce (-)	13.30
19.	I tend to avoid risk choices when making on farm decisions even though this may result in lower returns (-)	7.26
20.	I do not think about the consequences when doing farming out of passion	4.55
21.	I am hesitant to adopt agricultural innovations, until I see their advantages and disadvantages from farmers around me (-)	3.94
22.	I am concerned about existing profit more than several predicted and non-guaranteed profit (-)	14.01
23.	To implement my farm plan goals, I take risks more than others	10.79
24.	I adopt technologies which are famous among fellow farmers	6.49
25.	I do not produce to the highest possible quality if it means higher costs (-)	4.33
26.	I do not stop trying even if failures come my way	3.07
27.	I continue vegetable farming thinking that even if I suffer huge loss one-time, next time I will be able to overcome it.	8.29
28.	I am able to minimize the consequence of risk in vegetable cultivation by proper planning	8.29

Factors influencing the Risk Attitude

Table 2. Distribution of vegetable farmers based on their attitude scores.

SAZs	AEU	High (> 97.86)		Medium (69.77 to 97.86)		Low (<69.77)		Total N
		N	%	N	%	N	%	
Kollengode	22	18	40	27	60	0	0	45
Chittoor	23	2	4.44	43	95.55	0	0	45
Pazhayannur	15	2	4.44	22	48.88	21	46.66	45
Kanjikuzhy	1	15	33.33	28	62.22	2	4.44	45
Devikulam	17	8	31.11	37	82.22	0	0	45
	14	0	0	43	95.55	2	4.44	45
Mean = 74.43 SD = 13.38								

different attitude towards risks, and each perceives the same risk source differently. It is influenced by socio-economic factors and life experiences.

Hence, knowledge of attitude of farmers towards risk is important in designing strategies and formulating policies for agricultural development (Ayinde *et al*, 2008). Therefore, the study was proposed to analyse the risk attitude of vegetable farmers of Kerala and to ascertain how farmers risk attitude influenced by various factors.

MATERIALS AND METHODS

The study was conducted in the Special Agricultural Zones (SAZs) for vegetables in Kerala. Blocks of Devikulam in Idukki district, Kanjikuzhy in Alappuzha districts, Pazhayannur in Thrissur district and Chittoor- Kollengode in Palakkad district were identified as SAZ for vegetables. With the help of study conducted by Kerala Agricultural University and Kerala State Planning Board, 6 Agro Ecological Units (AEUs) were identified representing 5 SAZ blocks. Panchayaths having maximum area under vegetable cultivation covering all the AEUs were selected. A total of 45 vegetable farmers from the 6 AEUs in the blocks were purposively included for the study thus making a total of 270 vegetable farmers as respondents for the study.

An attitude scale was constructed for the study using the Summated Rating scale method

as developed by Likert (1932) to measure the risk attitude of vegetable farmers in SAZs. For this study attitude was operationalised as the farmers' intentions to evaluate a risk situation in a favorable or unfavorable way. The scale was developed in a stepwise manner. The final scale consisted of 28 statements which were arranged in random (Table 1).

The statements were introduced to a sample of 270 vegetable farmers who were asked to designate their degree of favourableness or unfavourableness for each statement on a five-point continuum ranging from strongly agree, agree, undecided, disagree and strongly disagree and scores of 5, 4, 3, 2 and 1, respectively was assigned for positive statements and scoring was reversed for negative statements. The independent variables *viz.*, age, education, vegetable farming experience, annual income, area under vegetable cultivation, vocational diversification, irrigation potential, extension participation, innovative proneness and social participation were selected based on discussion with extension experts and review of literature as socio economic characteristics of farmers. Data were collected with the help of a structured interview schedule by personally interviewing the respondents. Statistical techniques employed in this study included, frequency, simple percentage and correlation coefficient analysis.

Table 3. Distribution of respondents based on their profile characteristics.

Sr. No.	Independent variable	Frequency	Percentage
1.	Age		
	Young	18	6.66
	Middle	149	55.18
	Old	102	37.77
2.	Education		
	Illiterate	0	0
	Primary school	16	5.92
	Middle school	125	46.29
	SSLC (10 th)	90	33.33
	Intermediate	22	8.14
	College level	17	6.29
3.	Vegetable farming experience		
	Low level (up to 5 years)	18	6.66
	Medium level (6 to 15 years)	140	51.85
	High level (>15 years)	112	41.48
4.	Annual Income		
	Low	9	3.33
	Medium	230	85.18
	High	31	11.48
5.	Area under vegetable cultivation		
	Up to 2.5 acres	213	78.88
	2.51-5.00 acres	40	14.81
	5.01-7.50 acres	8	2.96
	>7.51 acres	9	3.33
6.	Vocational diversification		
	Only vegetable farming	88	32.59
	Other major crops + vegetable farming	100	37.03
	Vegetable farming + labour	69	25.55
	Vegetable farming + services	13	4.81
7.	Irrigation potential		
	Physical water scarcity	68	25.18
	Economic water scarcity	146	54.07
	Little or No water scarcity	56	20.74
8.	Extension participation		
	Low	50	18.51
	Medium	175	64.81
	High	45	16.66

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9.	Innovative proneness		
	Low	33	12.22
	Medium	176	65.18
	High	61	22.59
10.	Social participation		
	Poor social participation	8	2.96
	Moderate social participation	246	91.11
	Good social participation	16	5.92

RESULTS AND DISCUSSION

Risk attitude of vegetable farmers

The respondents rated each item in the scale, thus conveying their attitudes towards risk and these ratings were summed up to yield a score for the individual which was a method of measuring farmer's attitude (Fakoya *et al*, 2007). The respondents were classified based on their attitude scores and the results are presented in Table 2.

The data (Table 2) revealed that majority of the vegetable farmers fall in medium category of risk attitude irrespective of the SAZs. Vegetable farming being a risky business, farmers adopt various risk management strategies to overcome it. The results obtained were in agreement with those of Wissink (2012). However, it was evident that Kollengode had a greater percentage (40%) of farmers in the high-risk attitude category compared to other SAZs and 46.66 per cent of vegetable in Pazhayannur were in low-risk attitude category. This signifies that farmer in Pazhayannur were more risk averse and used various risk management strategies to overcome risks.

Distribution of respondents based on their profile characteristics

The socio-economic characteristics of the farmers were collected and the distribution of respondents based on those details is presented in Table 3.

As portrayed in the table more than half (55.18%) of the vegetable farmers were in the age range of 35-55 yr. The finding was in accordance

with the findings of Sreeram (2013). Predominance of the middle-aged group of vegetable farmers might probably be due to the fact that they constituted large section in the society and are willing to work hard than the category of old age group and more experienced than the young age group. In terms of education, majority (46.29%) had gone up to middle school followed by respondents educated up to 10th standard (33.33%). Most of the respondents had started farming from a young age which might be a possible reason for their low educational background. It was observed that 51.85 per cent of the respondents had medium farming experience followed by 41.48 per cent of farmers with high farming experience. These findings were in agreement with Wanole *et al* (2017). Majority (85%) of the vegetable farmers had annual income in the medium range. It was evident that majority (78.88 %) of the farmers belonged to a category having area up to 1.0 ha for vegetable cultivation. This might be due to the increase in fragmentation of land holdings leading to decrease in operational holdings.

The data revealed that 37.03 per cent of farmers were engaged in farming of other major crops such as rice, mango, coconut along with vegetable cultivation whereas 32.59 per cent of farmers engaged only in vegetable farming as a vocation. Also 25.55 per cent of the vegetable farmers worked as labour and 4.8 per cent were engaged in other services such as business along with vegetable farming. Diversification in vegetable farming is a risk management strategy to overcome the risk and uncertainty associated with vegetable farming.

Table 4. Correlation between the studied variables and risk attitude of vegetable farmers

Sr. No.	Independent variable	“r” values
1.	Age	- 0.127*
2.	Education	0.207**
3.	Vegetable farming experience	0.041 ^{NS}
4.	Annual Income	0.453**
5.	Area under vegetable cultivation	0.509**
6.	Vocational diversification	- 0.218**
7.	Irrigation potential	0.482**
8.	Extension participation	0.485**
9.	Innovative proneness	0.713**
10.	Social participation	0.195*

**significant at 1% level of probability * significant at 5% level of probability ^{NS} Non significant

Majority (54.07%) of vegetable farmers had an irrigation potential of economic water scarcity followed by 25.18 per cent and 20.74 per cent of physical water scarcity and little or no water scarcity. The data also showed that majority of the vegetable growers (64.81%) were in medium category of extension participation (64.81%), innovative proneness (65.18%) moderate level of social participation (91.11%). Since the selected respondents were active members of farmer's clusters and VFPC and having frequent contact with various extension officials and exposure to trainings might have improved their innovative spirit. The findings were in accordance with Vidyadhari (2007).

Factors influencing the risk attitude of vegetable farmers

The results of simple correlation analysis were taken into consideration for analysing the influence of farmer's characteristics on the risk attitude of farmers. The results of correlation analysis are presented in Table 4.

Correlation analysis revealed that out of ten variables, six namely area under vegetable cultivation, education, annual income, irrigation potential, extension participation and innovative

proneness were positively and significantly related with risk attitude of vegetable farmers at 1 per cent level of significance and variable social participation positively significant at 5 per cent level of significance.

The variables *viz.*, area under vegetable cultivation, education, annual income had positive significant correlation which implies that farmers with larger area, high income and education are more likely to take risks and challenges in farming. The results were in agreement with the findings of Thakor and Mehta (2018) and Kharlukhi (2021). Irrigation potential also positively influences risk attitude of farmers which suggests a vegetable farmer having adequate irrigation source will be more enthusiastic with regard to farming. Also, variables extension participation, social participation and innovative proneness were found to have positive and significant correlation with risk attitude. This was justified by the results of Sarker *et al* (2009). This signifies that these variables are important in influencing the risk attitude of the vegetable farmers.

The variable vegetable farming experience did not show any relationship with the dependent variable. whereas a significant negative correlation

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between the age of farmers and their risk attitudes was found out. The present results supported the findings of Shams and Fard (2017) which assert that younger farmers have higher risk attitudes and are more willing to take risk in comparison with old farmers. Also, a significant negative correlation was found between vocational diversification and risk attitude. Diversification is a risk management strategy therefore a farmer who adopts diversification is risk averse in nature.

CONCLUSION

The agricultural production, in general and vegetable production, in particular is a risky enterprise. It was concluded that majority of vegetable farmers were in the medium category of risk attitude which suggest majority are moderate risk takers. The results of correlation analysis suggested that area under vegetable cultivation, education, annual income, irrigation potential, extension participation, innovative proneness and social participation had positive and significant correlation with risk attitude of vegetable farmers whereas age and vocational diversification had a negative and significant correlation. The factors that positively influence risk attitude should be given more priority during formulation of policies and schemes for vegetable farmers.

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Received on 26/11/2021

Accepted on 15/2/2022