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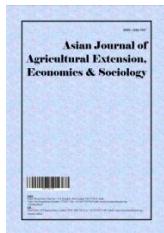
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Knowledge Level of Turmeric Farmers in Erode District of Tamil Nadu, India

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The study was focused on "Knowledge level of turmeric farmers in Erode district of Tamil Nadu" for studying the relationship between knowledge level of turmeric farmers with the profile of the respondents. For this study, Kodumudi block in Erode district of Tamil Nadu was identified. One hundred eleven respondents were selected from five villages by using proportionate random sampling method. The data were collected with the help of a well-structured and pre-tested interview schedule. Analysis was done with simple correlation and multiple regression. A positive significant relationship between occupation and knowledge level was found at five per cent level of significance. R^2 value of 0.543 revealed that fifteen independent variables explained 54.30 per cent of contribution in knowledge level. As evident from the results that the values of regression coefficient of the variables, trainings undergone had positive and significant at one per cent level of probability. A unit increase in trainings undergone would increase the knowledge level of the turmeric farmers on recommended turmeric cultivation practices by 0.649 units respectively.

Keywords: Knowledge; profile; probability; significance.

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1. INTRODUCTION

"Turmeric also known by 'Indian saffron' is an important commercial spice crop grown in India. In India, Turmeric is grown only in 6% of the total area under spices and condiments and accounts for 78 per cent of the world's total production" [1].

India consumes 80.00 per cent of its total annual output and exports about 20.00 per cent of its turmeric per annum. Turmeric is third largest spice exported from India and its production largely concentrated in southern states of India [2,3]. The major turmeric growing states are Andhra Pradesh, Tamil Nadu, Orissa, West Bengal, Maharashtra and Karnataka. In comparison with majority of other states, Tamil Nadu produces the highest turmeric yield [4,5]. Erode, Salem and Dharmapuri are the highest turmeric growing districts in Tamil Nadu. Area under turmeric cultivation is about 18432 ha with production of about 96254 tons in Tamil Nadu. (Spices Board). Due to varying weather patterns and numerous other limitations, Tamil Nadu has recently seen a dramatic fall in total production [6,7].

With this background "A study on knowledge level of turmeric farmers in Erode district of Tamil Nadu" was carried out to study the relationship between turmeric farmers profile and their knowledge level.

2. METHODOLOGY

Erode district stands first in the area under turmeric cultivation in Tamil Nadu. Among the

fourteen blocks in Erode district, Kodumudi block was purposively selected as it had highest area under turmeric cultivation [8]. Vengapur, Punjai Kollanali, Oongalur, Kollathupalayam and Kodumudi were the five villages selected for the study from Kodumudi block, having maximum area in turmeric cultivation. By using proportionate random sampling method, one hundred and eleven respondents were identified from five villages. Fifteen independent variables viz., age, educational status, occupational status, annual income, farm size, experience in turmeric cultivation, trainings undergone, extension agency contact, social participation, mass media exposure, credit orientation, economic motivation, market intelligence, awareness on post-harvest practices and ICT tool utilization behavior were selected for the study. The relationship between profile of turmeric farmers with knowledge level was selected as dependent variable. Well-structured and pre-tested interview schedule was used for data collection and analysed using simple correlation and multiple regression [9].

3. RESULTS AND DISCUSSION

3.1 Association and Contribution of Respondent's Profile with Knowledge Level

The relationship between fifteen independent variables to the knowledge level were analysed using simple correlation and multiple regression analysis. The findings were presented and discussed below. The results are presented in Table 1.

Table 1. Correlation of profile of respondent with their knowledge level

(n = 111)

S. no	Variables	"r" value
X ₁	Age	-0.123 ^{NS}
X ₂	Education	0.487
X ₃	Occupation	0.228
X ₄	Annual income	0.293 ^{**}
X ₅	Farm size	0.029 ^{NS}
X ₆	Experience in turmeric cultivation	-0.064 ^{NS}
X ₇	Extension agency contact	0.524 ^{**}
X ₈	Social participation	0.517 ^{**}
X ₉	Mass media exposure	0.414 ^{**}
X ₁₀	Trainings undergone	0.536 ^{**}
X ₁₁	Credit orientation	0.275 ^{**}
X ₁₂	Economic motivation	-0.024 ^{NS}
X ₁₃	Market intelligence	0.369 ^{NS}
X ₁₄	Awareness on post-harvest practice	0.169 ^{NS}
X ₁₅	ICT tool utilization behavior	0.433 ^{**}

* - Significant at 5% level; ** - Significant at 1% level; NS – Non Significant

3.2 Simple Correlation Analysis

The data pertaining from Table 1 revealed, a positive and highly significant relationship between education (X_2), annual income (X_4), extension agency contact (X_7), social participation (X_8), mass media exposure (X_9), trainings undergone (X_{10}), credit orientation (X_{11}), market intelligence (X_{13}), ICT tool utilization behavior (X_{15}) with knowledge level at one per cent level of significance. This might be due to the reasons that majority of the respondents had secondary school education, income level between one lakh and two lakhs, medium level of social participation, extension agency contact, mass media exposure, credit orientation, economic motivation and majority of the respondents has attended one training under turmeric cultivation.

A positive significant relationship between occupation (X_3) and knowledge level observed at five per cent level of significance. This might be owing, most of the respondents occupation was farming alone which resulted in profound knowledge on turmeric cultivation practices.

However, age (X_1), farm Size (X_5), experience in turmeric cultivation (X_6), economic motivation

(X_{12}), awareness on post-harvest practice (X_{14}) showed a non-significant relation with knowledge level.

In general, more the education (X_2), annual income (X_4), extension agency contact (X_7), social participation (X_8), mass media exposure (X_9), trainings undergone (X_{10}), credit orientation (X_{11}), market intelligence (X_{13}), ICT tool utilization behavior (X_{15}), the more will be the chances for knowing and understanding the technologies and hence, the variables showed positive and significant association.

These findings on the relationships between knowledge and contact with extension agencies, social interaction, and media exposure are consistent with those of Mutteppa [10].

3.3 Contribution of Respondents Profile with Knowledge Level

The relationship of identified fifteen independent variables to the knowledge level were identified through multiple regression analysis and the findings were presented (Table 2) and discussed below.

Table 2. Multiple regression co-efficient of profile of respondent with their knowledge level

S. No	Variables	Partial regression co-efficient	Std error	t value	(n = 111)
X_1	Age	0.031	0.023	1.381	NS
X_2	Education	0.236	0.108	2.193*	
X_3	Occupation	-0.261	0.209	-1.249	NS
X_4	Annual income	0.273	0.461	0.591	NS
X_5	Farm size	-0.036	0.147	-.243	NS
X_6	Experience in turmeric cultivation	-0.471	0.286	-1.649	NS
X_7	Extension agency contact	0.223	0.109	2.043*	
X_8	Social participation	0.169	0.072	2.331*	
X_9	Mass media exposure	0.104	0.100	1.041	NS
X_{10}	Trainings undergone	0.649	0.256	2.533**	
X_{11}	Credit orientation	-0.041	0.146	-0.279	NS
X_{12}	Economic motivation	0.016	0.036	0.453	NS
X_{13}	Market intelligence	0.124	0.090	1.379	NS
X_{14}	Awareness on post-harvest practice	-0.124	0.282	-0.441	NS
X_{15}	ICT tool utilization behavior	0.101	0.076	1.333	NS

* - Significant at 5% level; $R^2 = 0.543$

** - Significant at 1% level; $F = 7.514$

NS – Non Significant

3.4 Multiple Regression Analysis

Multiple regression analysis was carried out to determine the degree to which each variable contributed to the level of knowledge of turmeric farmers regarding the techniques of turmeric growing.

The fifteen independent variables accounted for 54.30 percent of the variation in knowledge level, according to the R² value of 0.543, and the "F" value likewise indicated a significant level of 1%. The outcomes so agree with the regression equation.

The prediction equation, which was adjusted for respondents' knowledge level, is shown below.
$$Y = 23.691 + 0.031 (X_1)^{NS} + 0.236 (X_2)^* - 0.261 (X_3)^{NS} + 0.273 (X_4)^{NS} - 0.036 (X_5)^{NS} - 0.471 (X_6)^{NS} + 0.223 (X_7)^* + 0.169 (X_8)^* + 0.104 (X_9)^{NS} + 0.649 (X_{10})^{**} - 0.041 (X_{11})^{NS} + 0.016 (X_{12})^{NS} + 0.124 (X_{13})^{NS} - 0.124 (X_{14})^{NS} + 0.101 (X_{15})^{NS}.$$

As evident from the results, the values of regression co-efficient of the variables, trainings undergone (X_{10}) was found to be positive and significant at one per cent level of probability. This suggested a unit increase in trainings undergone would increase the knowledge level of respondents on recommended turmeric cultivation practices by 0.649 units respectively. This implies that respondents who had attended training were generally knowledgeable regarding recommended turmeric cultivation practices.

The variables namely educational status (X_2), extension agency contact (X_7), social participation (X_8) were found to be positive and significant at five per cent level of probability. Based on this data, it was determined that a unit increase in educational, extension agency contact, social participation would increase the knowledge level of the turmeric farmers on recommended turmeric cultivation practices by 0.236, 0.223 and 0.169 units respectively.

Variables such as age (X_1), occupational status (X_3), annual income (X_4), farm size (X_5), experience in turmeric cultivation (X_6), mass media exposure (X_9), credit orientation (X_{11}), economic motivation (X_{12}), market intelligence (X_{13}), awareness on post-harvest practice (X_{14}), ICT tool utilization behavior (X_{15}) were found as non-significant variables respectively.

4. CONCLUSION

According to the research, the majority of turmeric farmers were educated, thus literature on modern turmeric cultivation techniques will be given to the farmers to keep them up to date on current turmeric farming practises. It is revealed that the mass media exposure of majority of the respondents were medium to high and hence, the mass media shall be utilized effectively to transfer the improved technologies in turmeric cultivation and post-harvest handlings [11,12]. For the practices in which the turmeric farmers were lacking awareness and knowledge, they must be educated through proper educational efforts. By conducting method demonstration on the complex practice, the farmer's skills could be improved. By setting up result demonstrations, the farmers might be persuaded to follow all the suggested packages of farming procedures for turmeric.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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