

Factors Affecting Consumption Expenditure of Farmers in Jaipur District of Rajasthan

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ABSTRACT

The present study was undertaken for impact of alternate income sources on consumption expenditure of farmers in Jaipur district of Rajasthan. Jaipur district of Rajasthan was purposively selected based on Jaipur is the capital of Rajasthan, Jaipur has highest population. Twenty-five farmers were selected randomly in each category. Thus, a total number of selected farmers were hundred. The influence of these factors on food consumption expenditure (FCE), non-food consumption expenditure (NFCE) and total consumption expenditure (CE) across farm households was assessed using the quantile regression analysis. The results of quantile regression revealed that in study area NFA income, Income from farming, AA and NFA, family size and land holding size were the major contributing factor for 75th CE, while for the family 50th and 25th CE, the AA income, Income from farming, An additional member in the family, total CE increased by ₹ 1648.59, ₹ 2189.39 and ₹ 2852.82 for 25th, 50th and 75th quantiles, respectively.

Keywords: Factor affecting, Consumption expenditure, Quantile regression

Agriculture is the primary sector of the Indian economy. The data provided by the 2001 census of India discloses that about 69 per cent of the total workers were involved in agriculture and allied activities (Bhakar *et al.* 2007) in the year 1981, while in the year 1991, the share of agriculture in total employment to some extent declined to 68 per cent, and nearly 70 per cent of the rural and 8 per cent of the urban families still depend on it for employment and income (Bhakar *et al.* 2007). Jaipur is capital of Rajasthan State, India. Jaipur district has a total area of 11,143 km². Jaipur district had a population of 6,626,178 in 2011, out of which 3,468,507 were male and 3,157,671 were female (Census, 2011).

The plot clearly reveals the tendency of the dispersion of food expenditure to increase along with

its level as household income increases. The spacing of the quantile-regression lines also reveals that the conditional distribution of food expenditure is skewed to the left: the narrower spacing of the upper quantiles indicating high density and a short upper tail and the wider spacing of the lower quantiles indicating a lower density and longer lower tail (Hao & Naiman, 2007). The agricultural household consumption patterns were changing along with rising incomes, with greater share of high value commodities in the food basket along with processed foods. Level of income changes from farm and non-farm activities is linked to changes in demand for

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food and non-food items as well as consumption expenditure (Areef, 2021).

Household food consumption expenditure is a critical issue in most developing countries (Obayelu, 2009). Several studies have focused on analyzing factors associated with consumer income and choices. The level of household income is often a determinant of expenditure and largely a reflection of differences in living standard. The proportion of household expenditure on food is usually very significant and can be used in assessing general household's consumption in many developing economies. There is also a higher propensity of households with higher income to spend a bigger proportion of the food budget on a diversified diet thus improving the nutritional status of the household members. This is especially meaningful in developing countries where food expenditure accounts for a relatively large share of household income.

Consumption may be simply defined as the total demand for all consumer goods and services. (Anyanwu, 1995) defined consumption as the spending by households on goods and services such as clothing, food items, entertainment, health services and acquisition of assets among others. The term "consumption" originates from Lord Keynes psychological law which says that men are disposed as a rule on the average to increase their consumption as income increases but not by as much as the increase in income.

Using the MMRP (Modified Mixed Reference Period) method of measurement of MPCE (Monthly Per Capita Consumer Expenditure), average MPCE in 2011-12 was estimated as ₹ 1430 in rural India and ₹ 2630 (about 84% higher) in urban India. The poorest 5 per cent of India's rural population had an average MPCE of ₹ 521. The poorest 5 per cent of the urban population had an average MPCE of ₹ 700. The top 5 per cent of the rural population, ranked by MPCE, had an average MPCE of ₹ 4481 - about 8.6 times that of the bottom 5 per cent. The top 5 per cent of the urban population had an average MPCE of ₹ 10,282 - about 14.7 times that of the bottom 5 per cent (NSSO, 2011-12).

These small farmers are facing the problems of low income, low investments and low returns. Besides this, the major difficulties of these farmers are both

under-nutrition and malnutrition, surplus family labour and the tenure of un-economic size of land, which keep them below the poverty line (Pandey and Kaushal 1980). Farm size, level of education, number of earners, family size, social obligations and level of mechanization were found to be the important factors influencing farm family expenditure (Nandal, 1972). While with increase in per capita income decline cereal consumption is expected to some extent, it is important to note that cereals are considered to be among the best source of energy and they also provide important nutrients to the body but they lack some micronutrients such as Vitamins and minerals (Gopalan *et al.* 2009).

METHODOLOGY

Sampling Technique

To fulfil the objective of the study multistage stratified random sampling procedure was used for the selection respondents. In first stage, Jaipur district was selected purposively because Jaipur is the capital of Rajasthan and has highest population (6,626,178 Census, 2011) in the state. In the second stage, Out of twenty-one tehsils, Chomu tehsil was selected randomly. In the third stage, two villages from selected thesils were randomly selected i.e. Sultanpura and Bhasi. In fourth stage, from each selected village 50 respondents were randomly selected. Thus making a total sample size of 100 for a study. For the purpose of the study respondent were classified in four categories i.e. farm income, non-farm activities (NFA), allied activities (AA) and overall farm income, NFA, AA. Twenty-five farmers were selected randomly in each category. Thus, a total number of selected farmers were hundred. Both primary and secondary data were used for the present study. Primary data were collected from previous agriculture year (2021-22) through personal interview schedule method and secondary data were collected from Directorate of Economics and Statistics, Pant Krishi Bhawan, Jaipur Rajasthan.

ANALYTICAL TECHNIQUES

Quantile regression

The quantile regression analysis was used to identify factors influencing the magnitude of consumption

expenditure (CE), food consumption expenditure (FCE) (cereals, pulses, fruits, vegetables, milk etc.) and non-food consumption expenditure (NFCE) (consumer durables, education, health, marriage, electricity etc.) across. While the OLS method provides a cause and effect relationship between, dependent and independent variables, the quantile regression focuses on the relationship across different quantiles. Koenker and Hallock (2001) viewed the quantile regression as a location method focusing on cause and effect relationship across ascending ordered cut points called quantiles. The present study aims at quantifying differential changes in the CE/NFCE/FCE as influenced by selected independent variable for different groups across different quantiles. Moreover quantile regression serves as a robust methodology in the presence of huge outliers which indicate presence of heteroscedasticity in the data. The Bresch-Pagan test applied on the OLS regression model reveals presence of heteroscedacity in the data, thereby making quantile regression model more applying.

The first step towards obtaining the quantiles is to arrange the data on CE/FCE/NFCE in the ascending order. The first 25 per cent of the observation was categorized as 25th quantile, 50 per cent observation as 50th quantile and 75 per cent observation as 75th quantiles. Thus the pth quantile denotes the value CE/FCE/NFCE below which the proportion of the sample is p (Hao and Naiman, 2007). CF, NFCE and FCE will be taken as the dependent variables and regressed separately with the identified independent variables.

The functional form will be specified as below:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, D_1, D_2, D_3) \dots (1)$$

Where,

Y_1 = Annual Consumption expenditure (₹)

Y_2 = Annual Non-food consumption expenditure (₹)

Y_3 = Annual food consumption expenditure (₹)

X_1 = Family income from Agriculture (₹)

X_2 = Family income from allied activities (₹)

X_3 = Family income from non-farm activities (₹)

X_4 = Family income from farm, AA and NFA (₹)

X_5 = Family size of family (No.)

X_6 = Agricultural land-holdings of family (ha)

X_7 = Age of the family head (Year)

X_8 = Education of the family head (Year)

D_1 = Gender of family head ($D = 1$ for male headed family, $D = 0$ for female headed family).

D_2 = Family belonging to other backward caste (OBC) category.

D_3 = Family belonging to SC/ST category.

RESULTS AND DISCUSSION

The results of quantile regression revealed that in study area NFA income, Income from farming, AA and NFA, family size and land holding size were the major contributing factor for 75th CE, while for the family 50th and 25th CE, the AA income, Income from farming, AA and NFA and family size were the major influencing factors. Family size determining factor for increasing CE among all the groups. An additional member in the family, total CE increased by ₹ 1648.59, ₹ 2189.39 and ₹ 2852.82 for 25th, 50th and 75th quantiles, respectively.

An income increase of ₹ from AA, the CE for 50th quantiles went up ₹ 55 and non-food consumption expenditure for 75th and 50th quantile by ₹ 88 and ₹ 74, respectively. Thus, the result shows that AA income and Income from farm, NFA and AA contributed towards increased consumption expenditure of 50th expenditure while NFA income influenced 75th CE groups. The increase in farm land holding size decreased the food consumption expenditure by ₹ 2571.49. It can be inferred that as the landholding size of the farmers increases, the food consumption expenditure requirement of the family is met from own land, thus reducing the FCE.

An increase in NFA, AA and income from farming, AA, NFA income influenced positively the family size with 75th and 50th NFCE. Contradictory relationship was seen between land holding size and NFCE and farm income and NFCE for the 75th quantile. As the farm income increased by ₹ 100, the non-food expenditure for 75th quantile increased by ₹ 4, while NFCE for 75th quantile increased by ₹ 2145.36 per annum with increased in the farm land holding. It shows that inverse relationship between

Table 1: Quantile Regression Coefficients

Factors	Consumption Expenditure			Food Consumption Expenditure			Non Food Consumption Expenditure		
	25 th Quantiles	50 th Quantiles	75 th Quantiles	25 th Quantiles	50 th Quantiles	75 th Quantiles	25 th Quantiles	50 th Quantiles	75 th Quantiles
Income from farming	0.04	0.02	0.001	0.08	0.12	0.01	0.04	0.34	0.04**
Income from AA	0.14	0.55**	0.40	0.67	0.47	0.32	0.59	0.74**	0.88**
Income from NFA	0.38	0.64	0.87**	1.84	1.70	0.56	0.97	1.22**	1.58**
Income from farming, AA and NFA	0.74**	1.02**	1.26**	2.43	2.78**	0.85	1.48	2.15**	2.32**
Family Size	1648.59**	2189.39**	2852.82**	-842.48	1345.52**	1834.20**	9962.39	12148.20**	11277.99
OBC (DUMMY 1)	1859.27	965.12	-3256.56	-5829.97	1245.02	2636.59	9289.65	-1385.52	-3823.85
SC/ST (DUMMY 2)	-1476.82	-2395.63	-2892.49	-9482.24	-9622.95	2158.63	-825.21	-957.24	-1145.52
Land holding size	-952.25	6638.52	8205.62**	-2885.56	-2319.28	-2571.49**	1689.69	389.85	2145.36**
Age of HH	-1628.42	-2715.64	-2163.08	736.79	-585.71	-348.40	-1247.85	-1726.46**	-376.75
Gender of HH	-3285.65	-2964.83	4025.72	-7338.65	-11862.22	-14396.66	-3387.59	-1489.29	3827.14
Education of HH	-1182.92	635.47	-1826.48	-785.21	-248.59	3927.35	-584.11	-1378.47	-7762.25
Constant	71059.45	911344.55	62763.25	35214.54	51842.89	40252.78	78256.36	85321.50**	45824.59

Source: Research survey (2021-22).

*Significance at 10%, **Significance at 5%, *** Significance at 1%

the farm income and NFCE. Age of the family head also negatively influenced the 75th NFCE groups. Similar results were reported by (Mohan *et al.* 2016).

SUMMARY AND CONCLUSION

The results of quantile regression revealed that in study area NFA income, Income from farming, AA and NFA, family size and land holding size were the major contributing factor for 75th CE, while for the family 50th and 25th CE, the AA income, Income from farming, An additional member in the family, total CE increased by ₹ 1648.59, ₹ 2189.39 and ₹ 2852.82 for 25th, 50th and 75th quantiles, respectively. The increase in farm land holding size decreased the food consumption expenditure by ₹ 2571.49. As the farm income increased by ₹ 100, the non-food expenditure for 75th quantile increased by ₹ 4, while NFCE for 75th quantile increased by ₹ 2145.36 per annum with increased in the farm land holding. Inverse relationship found between the farm income and NFCE. Age of the family head also negatively influenced the 75th NFCE groups.

In AA income influenced the increase in CE and NFCE of top quantile. Increase in non-farm income resulted in increase of CE and FCE of lowest quantile. The results of quantile regression revealed that in study area NFA income, Income from farming, AA and NFA, family size and land holding size were the major contributing factors. Family size determining factor for increasing CE among all the groups. That inverse relationship found between the farm income and NFCE. Age of the family head also negatively influenced the 75th NFCE groups.

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