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Health Status, Income and Expenditure Level in Rural Haryana

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Introduction

Welfare and wellbeing of the people has been the main concern for every country. Until last few decades, it was believed that the condition of the people can be improved with the help of economic growth. Economic growth was defined as sustained increase in the amount of goods and services per head of the population. But, soon it was realized that a mere increase in output per capita may not lead to substantial improvement in living standard or wellbeing of people. At the most it may be necessary but not sufficient for better life of the people because per capital output can increase in a sustained manner without, improving the material welfare of the people with lowest income, eradicating the mass poverty, reducing illiteracy, eliminating disease, reducing inequalities and poor nourishment.

The concept of economic development that implies progressive change in the income and consumption structure of a country or society in terms of reducing inequality, removing poverty, elimination of malnutrition, disease, illiteracy and unemployment, has been accepted as an appropriate objective to aspire for. Government of India, on its part has been floating and implementing a number of special schemes to the lot of its citizens (Sharma and Chakravarty, 2015).

Majority of Indian Population lives in rural areas. That is why rural Government of India has always kept development aspect in focus since independence. Hence, it is very essential to know the level of income and expenditure of rural household. The present study also finds out level of health in rural Haryana.

Objective of the Study

To measures the income and expenditure inequality among the rural households;

To examine the health condition of households in rural Haryana.

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Research Methodology

The study is based on primary survey collected from six districts of Haryana. To select the sample size, study used multistage sampling technique. Out of 21 districts of Haryana, the study selected six districts on the basis of sampling. These are Sonipat, Rohtak, Mewat, Mahendragarh, Jhajjar, and Faridabad.

To fulfill the objective, Gini- Coefficient was used to measure the income and expenditure inequality among the rural households. If all people have non-negative income (or wealth, as the case may be), the Gini coefficient can theoretically range from 0 to 1; it is sometimes expressed as a percentage ranging between 0 and 100. In practice, both extreme values are not quite reached. If negative values are possible (such as the negative wealth of people with debts), then the Gini coefficient can theoretically be more than 1. Normally the mean (or total) is assumed to be positive, which rules out a Gini coefficient less than zero. A low Gini coefficient indicates a more equal distribution, with 0 corresponding to complete equality, while higher Gini coefficients indicate more unequal distribution, with 1 corresponding to complete inequality.

To examine and measure health status of children and adults or quality of life of households, the simple tools and techniques i.e. percentage, and Body Mass Index and Z score were used.

Z-Score

Z-Score was used as a measure of **malnutrition** (health status) of children under five years. Children are the victim of malnutrition if their Z score value is higher than the percentage of the median. It is a more statistically uniform approach to define malnutrition.

$$Z\ Score = \frac{Measured\ Value - Median\ of\ Refrence^{2}\ Population}{Standard\ Deviation\ of\ Reference\ Population}$$

$$Percentage\ of\ the\ Median = \frac{Measured\ Weight\ of\ Childern}{Meadian\ weight\ of\ the\ Reference\ Population}\ X\ 100$$

[2] Reference is used to compare a child's measurement with median for children of same sex and age for height, weight for height and age for weight.

To calculate the malnutrition status of children, the Anthro Software developed by Department of Nutrition, World Health Organization, Geneva (Switzerland) was used and to define nutritional status based on Anthropometric[3] indices, the cutoff values were used.

Table 1

Classification of Malnutrition for Weight for Height, Height for Age, and Weight for Age based on Z- Scores

Classification	Z Score Value
Adequate Malnutrition	-2 < Z Score < +2
Moderate Malnutrition	-3 < Z Score < -2
Severe Malnutrition	Z Score < -3

Here, the weight for height index was used to measure wasting or acute malnutrition; height for age was used to measure stunting or chronic malnutrition, and weight for age was used to measure the underweight. According to WHO, if the value is above +2 Z score in weight for height it shows that the child is overweight. On other hand, below -2 Z score weight for age shows that the child is under-weight.

Table 2

Classification of Malnutrition for Weight for Height, Height for Age, and Weight for Age based Percentage of Median.

Classification	Weight for Height (In percent)	Height for Age (In percent)	Weight for Age (In percent)
Adequate	90-120	95-110	-
Middle	80-89	90-94	-
Moderate	70-79	85-89	60-80
Severe	<70	< 85	< 60

Body Mass Index (BMI)

[3] Anthropometry is the measurement of population of the human body.

The most useful measure of **malnutrition** in adults is the body mass index (BMI). BMI is measurement for human shape based on individual weight and height. It is defined as the individual's body mass (kg.) divided by the square of their height.

$$Body\ Mass\ Index = \frac{Mass\ (kg.)}{\text{Height}^2\ (m^2)}$$

Table 3

Classification of Adult Malnutrition based on Body Mass Index

Classification	Cut off point based on BMI
Under-Weight	From less than 18.5
Normal	From 18.5 to 25
Over-weight	From above 25

BMI of less than 18.5 as underweight may indicate malnutrition, an eating disorder or other health problems while BMI greater than 25 is considered overweight and BMI of 18.5 to 25 may indicate optimal weight (Alkire and Foster (2007).

Results and Conclusion of the Study

The data collected through primary survey of 300 households pertaining to their income and expenditure has been grouped and presented in the form of frequency distribution through Table 3 and 4 respectively. The data has been classified into six class intervals of income and expenditure and corresponding number of households along with their percentage has been shown within brackets.

Table 3

Frequency Distribution of Households by Income (Rs./ month)

Income	Mewat	Mahendragarh	Jhajjar	Faridabad	Sonipat	Rohtak	Total
Less-than 5000	16 (32)	8 (16)	11 (22)	6 (12)	5 (10)	4 (8)	40 (13)
5000-10000	17 (34)	14 (28)	14 (28)	8 (16)	7 (14)	13 (26)	83 (28)
10000-15000	7 (14)	4 (8)	4 (8)	5 (10)	2 (4)	9 (18)	31 (10)
15000-20000	4	9	3	15	7	4	42

	(8)	(18)	(6)	(30)	(14)	(8)	(14)
20000-25000	3	1	2	4	1	3	14
	(6)	(2)	(4)	(8)	(2)	(6)	(5)
Above 25000	3	14	16	12	28	17	90
	(6)	(28)	(32)	(24)	(56)	(34)	(30)
Total	50	50	50	50	50	50	300
	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Source: Primary Survey,

Note: Brackets contain percentages

Taking the six sample distracts together, around 30 percent of these households earn more than Rs. 25,000 per month, followed by 28 percent Rs. 5000 to Rs. 10,000 per month and 14 percent between Rs. 15,000 and Rs. 20,000 per month followed in turn by 13 percent earning less than Rs.5000 per month and just ten percent earning Rs. 10,000 to 15,000 per month while only 5 percent earn Rs. 20,000 to 25,000 per month. This shows quite a big range in their earnings and a wide variation and disparities in their income distribution.

This is also true in terms of district-wise distribution as well though with slightly different variation patterns in each case and across districts. For instance, those earning above Rs. 25,000 belong respectively to Sonipat (56 percent) followed by Rohtak (34 percent), Jhajjar (32 percent), Mahendergarh (28 percent), Faridabad (24 percent) and Mewat (6 percent). Likewise, those earning the least i.e. less than Rs. 5,000 per month are distributed district wise thus Mewat(32 percent), followed by Jhajjar (2.25 percent), Mahendragarh (16 percent) , Faridabad (12 percent) , Sonipat (10 percent) and Rohtak(8 percent). It may be noted that the largest number of households are earning above Rs. 25,000 per month (30 percent) overall, similarly the next larger group is those of earning Rs. 5000 to Rs. 10,000 per month (28 percent) overall, with Mewat (34 percent) followed by Mahendragarh and Jhajjar (28 percent), Rohtak (26 percent), Faridabad (16 percent) and Sonipat (14 percent) households.

However, the smallest group of households are those of earning Rs. 20,000 to Rs. 25,000 per month (just 5 percent) overall, with its largest chunk in Faridabad (8 percent individually with in the district) followed by Mewat and Rohtak (6 percent each individually with in the district) and likewise by Jhajjar (4 percent), Mahendragarh and Sonipat (2 percent each). As regards those

earning Rs. 10,000 to Rs. 15,000 per month and 15,000 to 20,000 P.M. their overall percentage is 10 and 14 respectively with express variations within each district.

It may be interesting to examine, therefore, the status of expenditure made by different households in these districts overall and within each district.

Table 4

Frequency Distributions of Households by Expenditure (Rs./ month)

Expenditure	Mewat	Mahendragarh	Jhajjar	Faridabad	Sonipat	Rohtak	Total
Less than 5000	19	12	12	6	6	5	60
	(38)	(24)	(24)	(12)	(12)	(10)	(20)
5000-10000	16	15	14	8	8	17	78
	(32)	(30)	(28)	(16)	(16)	(34)	(26)
10000-15000	5	4	5	9	9	5	37
	(10)	(8)	(10)	(18)	(18)	(10)	(12)
15000-20000	5	5	5	13	6	5	39
	(10)	(10)	(10)	(26)	(12)	(10)	(13)
20000-25000	3	3	2	2	4	4	18
	(6)	(6)	(4)	(4)	(8)	(8)	(6)
Above 25000	2	11	12	12	17	14	68
	(4)	(22)	(24)	(24)	(34)	(28)	(23)
Total	50	50	50	50	50	50	300
	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Source: Primary Survey

Note: Brackets contain percentages

Table 4 presents household expenditure in respect of the six sample districts of Haryana. It indicates that 26 percent of the overall households spend in the range of Rs. 5000 to 10,000 per month followed by 23 percent over Rs. 25,000 p.m. and 20 percent less than Rs. 5000 per month. Just 13 percent spend between Rs. 15000 and Rs. 20,000 per month while 12 percent spend Rs. 10,000 to 15,000 per month and only 6 percent from Rs. 20,000 to Rs. 25,000 per month.

In short it may be observed that 46 percent of the total households spend only up to Rs. Ten thousand per month and taking it as the norms the remaining 54 percent spend more than that per month, with 20 percent among them spending less than Rs. 5000 per month. Raising the norm upto Rs. 15000 per month the percentage of overall households spending up to this level is 58 percent and raising it further to Rs. 25,000 per month their percentage rises to 77 percent of the total households with the remaining 23 percent households spending above Rs. 25,000 per month. Analyzing the data district-wise and across districts the scenario gets very interesting. For instance, in Mewat district 38 percent of its households spend less than Rs. 5000 per month followed by 24 percent each in Mahendragarh and Jhajjar districts, 12 percent each in Faridabad and Sonipat and 10 percent in Rohtak district. Quite interestingly, raising the expenditure to Rs. 10,000 per month the scenario gets much more meaningful and indicates that Mewat district with 70 percent forms the belong to this major chunk followed by 54 percent in Mahendragarh, 52 percent in Jhajjar, 44 percent in Rohtak and 28 percent each in Faridabad and Sonipat districts respectively. Again raising the expenditure extent to Rs.15000 per month the picture becomes even more crisp and lucid that 80 percent in Mewat district belong to this group, followed by 62 percent each in Mahendragarh and Jhajjar, 54 percent in Rohtak and 46 percent each in Faridabad and Sonipat districts respectively. The picture changes further with the level of expenditure up to Rs. 20,000 per month in that 90 percent households belong to this group in Mewat district followed by 72 percent each in Mahendragarh, Jhajjar and Faridabad districts, 64 percent in Rohtak and 58 percent in Sonipat districts. Similarly 8 percent each in Sonipat and Rohtak districts spend up to Rs. 25,000 per month, followed by 6 percent each in Mewat and Mahendragarh and 4 percent each in Jhajjar and Faridabad districts. However, the highest expenditure of above Rs.25, 000 per month is found to be in Sonipat 34 percent, followed by Rohtak 28 percent, Jhajjar and Faridabad 24 percent, Mahendragarh 22 percent and lastly Mewat

district 4 percent. Again the district wise analysis would be equally revealing as shown in the above interpretation also.

Table: 5

Frequency Distributions of Households by Income and Expenditure Inequality with the help of Gini- Coefficient

District	Income	Expenditure
Mewat	0.26	0.29
Mahendragarh	0.29	0.33
Jhajjar	0.38	0.37
Faridabad	0.41	0.45
Sonipat	0.43	0.49
Rohtak	0.50	0.44
Total	0.48	0.49

Source: Primary Survey

Table 5 depicts the level of inequality among the households of six selected districts of Haryana calculated on the basis of income and expenditure with the help of Gini-Coefficient of income inequality which is less than 0.5 for all the districts, except for Rohtak district. In case of Rohtak, this figure is 0.5, which shows that inequality in terms of distribution of income is the highest in Rohtak district followed respectively by Sonipat 0.43, Faridabad 0.41, Jhajjar 0.38, Mahendragarh 0.29 and Mewat 0.26. Similarly the Gini-Coefficient in terms of inequality in expenditure places Sonipat at top with 0.49 followed by Faridabad (0.45) Rohtak (0.44), Jhajjar (0.37), Mahendragarh (0.33) and Mewat (0.29) respectively.

Table: 6

Frequency Distributions of Households by of Level of Health

District	Under Weight	Normal	Over Weight	Total
Mewat	32	13	05	50
	(64)	(26)	(10)	(100)
Mahendragarh	17	29	04	50
	(34)	(58)	(8)	(100)
Jhajjar	16	21	13	50
	(32)	(42)	(26)	(100)
Faridabad	12	09	29	50
	(24)	(18)	(58)	(100)
Sonipat	09	18	23	50
	(18)	(36)	(46)	(100)
Rohtak	07	17	26	50
	(14)	(34)	(52)	(100)
Total	93	107	100	300
	(31)	(36)	(33)	(100)

Source: Primary Survey

Note: Brackets Contain Percentage and percentage figures may not add exactly to hundred due to rounding off.

Table 6 presents the picture of health norms in the sample districts in terms of populace being normal under-weight or overweight. The overall position is almost equally distributed with 36 percent households being normal on the health standards, 33 percent overweight and 31 percent underweight. Analyzing the healthy normal group of households 58 percent belong to Mahendragarh district, followed by Jhajjar 42 percent, Sonipat 36 percent, Rohtak 34 percent, Mewat 26 percent and Faridabad 18 percent. The status of overall intra district underweight population of households indicates that Mewat predominates with 64 percent underweight followed by Mahendragarh 34 percent, Jhajjar 32 percent, Faridabad 24 percent Sonipat 18 percent and Rohtak 14 percent underweight people. On the other hand, the highest (58 percent)

status of overweight households belongs to Faridabad, followed by Rohtak 52 percent, Sonipat 40 percent, Jhajjar 26 percent, Mewat 10 percent and Mahendragarh 8 percent. Thus, there is also big variation in the level of being health intra district wise in that the largest population of underweight households is found to be Mewat 64 percent and that of overweight in Faridabad 58 percent while the largest chunk of normal weight households is in Mahendragarh 58 percent.

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