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Poverty Level and Income Inequality among Rural People In Bangladesh: A Case Study Of Natore District

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Abstract
Income and consumption expenditures of households are closely interrelated and replicate the concepts of well-being and wealth. The growth of household per capita consumption expenditure plays a vital role to reduce poverty, improving welfare and promoting human development. According to the Asian Development Bank, Bangladesh's economy increased about 7.1% in 2016, which is the fastest expansion over the past 3 decades (BBS, 2017). Although over the past few years, household income and consumption expenditures in Bangladesh have increased remarkably, there is still a significant gap between urban and rural households. Urban households are enjoying higher income and consumption. According to HIES (2010), the incidence of poverty in national, urban and rural areas were 31.5, 21.3 and 35.2% respectively. These indicate that there is a significant gap in living standard among people and the people from rural areas are suffering the most. This suggests that more attention should be given to the development of rural people. Eradicating rural poverty through effective policies and economic growth remains a challenge for the government. Likewise, illiteracy, rapid population growth, and low-income sources are the key problems in the rural areas. Therefore, only poverty reduction cannot always represent household's overall welfare. Besides, food consumption, non-food expenditures like expenditure for education, health, clothing etc also could be a welfare indicator for the household. In addition, higher level of per capita income, education, smaller family size and lower dependency ratio are found to be more effective in increasing consumption expenditures of rural household. In development research, it deals with how people can earn promising income and improve standard of living. In this context, Income and Expenditure Survey of rural people is crying need to improve the standard of living of the rural community. The data of this survey are the primary source of data for various socio economic indicators of living pattern of people in different portion of village at Natore district. This information is to use for planning, policy formulation, decision making, research and exercise by government and non-government organizations, academics, researchers and scholars.

Keywords: Socio-Economic Condition of Rural People, Income Inequality, Consumption Expenditure, Gini Coefficient, Poverty, Economic growth

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I. Introduction

Income inequality is severe deliberation of wealth or income in the hands of a small section of the population. It is often described as the opening between the richest and the rest of the community. Bangladesh has remained a country with significant income inequality with all its manifestations even 50 years after independence. A small section of the society enjoys most of the country's wealth depriving the larger sections of the community. Income share held by the highest 10 per cent increased from 21 per cent in 1984 to 27 per cent in 2010. Income share held by the lowest 10 per cent declined from 4.13 per cent to 3.99 per cent (The Financial Express, 2019).

Bangladesh has achieved a high growth rate in recent decades, during which its annual gross domestic product (GDP) growth rate is 8.0 percent in 2019 (Trading economics, 2019). The major challenge throughout the world is to reduce or control economic inequality and this economic inequality arises through the distribution of income, consumption, wealth or assets. Household level information of Bangladesh recommends that the distribution of income is much more unequal than the allocation of consumption. In Bangladesh top 5% income people has taken over of 95% of total income, which indicates an uneven distribution of wealth (Chowdhury and Hossain, 2019).

Along with many encouraging achievements, an important area of concern for Bangladesh economy is the rise in inequality in income allocation. After all, the vision of economic freeing through alleviation of economic inequality was one of the motivating forces of our liberation war. Unfortunately, there has been an increase in the degree of inequality in income distribution from the mid-1980s. Income inequity is measured by the GINI coefficient and it has been substantially used as a measure of income inequality in the last few

decades. As per the latest Household Income and Expenditure Survey (HIES) of Bangladesh Bureau of Statistics (BBS) 2016, the country's Gini coefficient, which is the economic measure of equality, stood at 0.482 in 2016, up from 0.458 in 2010 (The Financial Express, 2019). Historically Gini stood at 33.12 in 2010 from 33.22 in 2005. The Gini coefficient was 25.88 in 1984 and went up to 33.46 in 1996. The Gini coefficient is measured on a scale of 0 to 1; the closer it is to 1 the higher the inequality is in the society (Bangladesh Migration Statistics, 2019).

Bangladesh had a plan to share equally the rich-poor gap by 2015 as part of the Millennium Development Goals. It's the one of the MDGs that was overachieved and before time. Macroeconomic and social indicators show that Bangladesh has been at an advantage as an independent nation though it is far behind in achieving its primary goal of lessening economic and political inequality. Macroeconomic growth contributed to higher national income, but rising income inequality needs to be tackled. Geographically centralized industrialization has contributed to a higher flow of domestic migration, and the added workforce helped the national economy set the trend of growth over the past years.

Bangladesh is one of the most prospective economies in the 21st century but the frequency of poverty and income inequality is very high among South Asian countries. This high economic growth is not sufficiently helpful a large part of the people because of the rising inequality where the GINI index increased from 2010 to 2016, which clearly indicates inequality rises in Bangladesh.

Income and Expenditure Survey of Households are the core activities of the Bangladesh Bureau of Statistics (BBS). As we know, a wide range of socio-economic information is contained at the household level that has strapping influence in the decision making process for the government. It is to be widely used across the world, particularly in the low and middle income developing countries, for evaluating poverty level and the living standard of the people at large. Considering its importance, the national governments and the international agencies have been determined for the improvement of survey methodology and to establish of HIES technical standard.

The most recent Household Income and Expenditure Survey released by Bangladesh Bureau of Statistics in 2016 found that the income share of the poorest 10 per cent of the household population received 1.01 per cent of the total national income in 2016 which was only 2 per cent in 2010. In contrast, the richest 10 per cent of the population owned 38.16 per cent of the national income in 2016 which was 35.84 per cent in 2010 (Khan, 2018). This means the rich are increasing their income and wealth day by day.

The economic trend shows that Bangladesh is now the 31st largest economy in the world in terms of purchase power parity and will become the 28th by 2030. It is expected that Bangladesh will be the 23rd largest economy in the world by 2050 as a developed nation (The Daily Star, 2017). Indeed, it indicates that the country is heading through a dramatic growth. However, this growth succession may become meaningless if ultimately we turn out to be a country having a 'growth without equity'.

The Government of Bangladesh is well familiar about the sensitivity of economic inequality and income distribution as well as economic disparity due to historical background of the country. Accelerating GDP growth will allow the economy to come through continuing reducing income inequality and increasing income share of the poor people which eventually improve the level of poverty.

Simultaneously, Bangladesh has been suffering in extreme poverty last few decades. Bangladesh has achieved remarkable progress to alleviate poverty in the last decade and the government of Bangladesh has taken numerous steps to fight against poverty. The poverty rate for Bangladesh in 2016 was 24.3% that is about 101% less than the year of 2000 and the extreme poverty rate for 2016 was 12.9% that's is 165% lower than 2000 (Chowdhury and Hossain, 2019). The international extreme poverty rate was 13.8 percent (18.5% in 2010) in the same year, which is higher than Bangladesh extreme poverty rate. Between 2010 and 2016 poverty fell significantly but this rate has slowed down in recent years. Poverty fell faster rate in rural areas than in urban areas and rural poverty rates declined from 35.2 to 26.4 percent, while urban poverty rates decreased from 21.3 to 18.9 percent. The rate of economic growth is outstanding since 2010 with a GDP growth rate on average 6.8% per year between the periods of 2010 to 2018 (The World Bank, 2017). Despite the high, the rate of poverty reduction is reasonably slow, which in the indication of the unequal distribution of income. Uneven household consumption growth of Bangladesh is the main reason of slower rate of poverty reduction. As a result, accelerating economic growth could not be able to reduce poverty at time same rate.

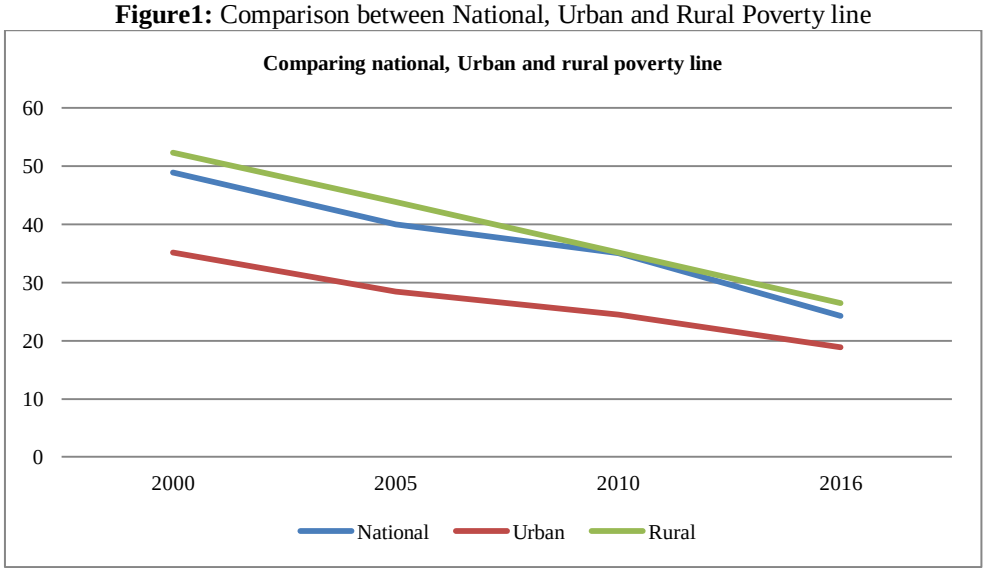
Table 1: Poverty Headcount Rates (%)

	Upper Poverty Line				**Lower Poverty Line**			
	2000	2005	2010	2016	2000	2005	2010	2016
National	48.9	40	35	24.3	34.3	25.1	17.6	12.9
Urban	35.2	28.4	24.5	18.9	19.9	14.9	12.4	10.8
Rural	52.3	43.8	35.2	26.4	37.9	28.6	23.4	19.8

Source: HIES 2000, 2005 and 2016; using poverty line estimated with HIES (2010) and deflated to adjust for inflation during 2000-16.

National poverty (upper poverty line) headcount rate has declined by 101 percent (or 24.6 percentage point) between 2000 and 2016. In 2016, almost 1 in 4 (24.3%) Bangladeshi live in under poverty line, while more rural population than urban live under poverty thought rural poverty rates (33.3%) decline faster rate than urban poverty rates (29.6%) (The World Bank, 2017).

Figure1: Comparison between National, Urban and Rural Poverty line



Source: HIES, 2000, 2005, 2016

According to HIES (2016), using the upper poverty line, per capita income of the poor in nominal terms at the national level is Tk.2765, Tk.2114 in the rural areas and Tk. 5188 in the urban areas in 2016. On an average, the per capita income of the poor recorded nearly 117.5 percent increase in 2016 over that in 2010 using upper poverty line. On the other hand, in 2016 using upper poverty line, per capita expenditure of the poor is Tk. 1784 at national level, Tk.1719 in the rural areas and Tk.2028 in the urban areas which was Tk.1246, Tk.1200, and Tk.1458 respectively in 2010. Thus the average income increase has been nearly 43.2 percent in 2016 over the year 2010.

Historically, incidence of poverty is high among the illiterates, shows 13.3% point reduction of HCR (head count rate) among the illiterates during the period 2010 to 2016. Alternatively in 2016, in the rural areas, the HCR of female headed households is 11.3% where it is 15.3% for the male headed households. In urban areas, these rates are 8.0% for female headed households as against 7.5% for male headed households (BBS, 2016).

This survey provides valuable data on household income, expenditure, consumption, savings, housing condition, education, health and sanitation, water supply and electricity, etc. The survey data can also be used for compilation of national accounts of the household sectors, analysis of poverty situation and other information on household related characteristics. It is also used to help for monitoring the progress of poverty mitigation.

II. Objectives

The objective of this study is to find the relationship among poverty, inequality, and growth. The particular objectives of this field survey are to**:**

- To measure the income inequality and poverty among rural people by Gini coefficient.
- To analyze the standard of living of rural people in study area.
- To evaluate the pattern of health purpose expenditures of the rural people.

III. Literature Review

Here the successive rounds of Household Income and Expenditure Survey (HIES) accepted out by the Bangladesh Bureau of Statistics are the primary source of data on the distribution of income and poverty situation in Bangladesh.

According to statistical tools, the Household Expenditure Survey is practiced over hundred years. The first family budget survey was conducted in Japan in 1925 covering 4785 households. Thus, during the early part of the 20th century, this sort of survey spread over many parts of the world covering various sections of population (HIES, 2010). Household Expenditure Survey (HIES-2010) was first conducted in our part of the

world, now comprising Bangladesh. After independence, Household Expenditure Survey was first carried out in 1973-74. HIES data collected for the years 1974-75 and 1975-76 were not published. Some selected tables of the surveys 1976-77, 1977-78 and 197879 were published in the Statistical Yearbooks of 1980, 1982 and 1983-84 respectively. Detailed reports could not be published due to delay in data processing. In HES 1981-82 provision was made to collect data on several socio-demographic characteristics to correlate consumption and expenditure pattern with different segments of population. Since 1973-74 up to 1981-82 data were collected using recall method. A combination of both recall and diary methods were introduced during HES 1983-84. For this purpose, two types of schedules were introduced. One was called "Diary" to collect data on food and beverage consumed by the household on daily basis for one month by locally recruited person designated as "Diary Keeper". The other was called "Schedule" to collect non-food expenditure with varying reference period by the BBS field staff at the end of the month. Almost similar methodology was followed in the subsequent surveys held during 1985-89, 1988-86, 1991-92 and 1995-96 (HIES, 2010).

The economic growth in recent years has been far from comprehensive. The official statistics shows that the country experienced significant GDP growth rate since 2013; the GDP growth in recent years has been the highest in the country's history (The Daily Star, 2017). Bangladesh has achieved a high growth rate in recent decades, during which its annual gross domestic product (GDP) growth rate is 7.0 percent and expected to be 7.2 percent by the end of the quarter. It is projected that GDP annual Growth rate is around 7.00 percent in 2020, according to Trading Economics global macro models and analyst expectations. The major challenge throughout the globe is to reduce or control economic inequality and this economic inequality arises through the distribution of income, consumption, wealth or assets. Household level information of Bangladesh suggests that the distribution of income is much more unequal than the distribution of consumption (Chowdhury and Hossain, 2019).

Income inequality between the rich and the poor increased considerably in the last two and a half decades, posing a warning to poverty reduction and accelerating growth. People living in rural areas spend beyond their means every month, according to the preliminary report on the Household Income and Expenditure Survey (HIES) 2016 .The HIES, which is one of the core report of BBS published every five years, also showed that the overall monthly expenditure of a family increased more than its income between 2010 and 2016.During the period, the monthly income of a household grew 39 percent while expenditure rose 40 percent (The Daily Star, 2017). In rural areas, a family spent Tk 14,156 per month in 2016 against the income of Tk 13,353, according to the latest HIES. The HIES 2016 was carried on 46,076 households, which is almost four times the sample taken in HIES 2010. BBS in HIES 2016 found that the monthly expenditure of a rural family shot up 47 percent in 2016 from Tk 9,612 in 2010.The monthly expenditure of households in both urban and rural areas was higher than their monthly consumption between 2010 and 2016. It could be because of expenses like weddings, accidents and other requirements (HIES 2010).

Over the last two decades, poverty situation of Bangladesh is remarkably changed. Although it reduces to almost half, but the difference between rural and urban population in terms of income and poverty situation is still prominent (HIES, 2010). Therefore, more attention is needed to focus on rural economic development. Identifying appropriate way of poverty reduction as well as improving welfare is the main aim to analyze rural livelihood. In development research, it deals with how people can earn promising income and improve standard of living. It is well recognized that farm households' engagement in non-farm activities is a pathway out of poverty in rural areas of developing countries (IFAD, 2011). In the process of gradually decreasing labor employment in agriculture, income diversification outside agriculture can play a crucial role in the development of rural economy (Salam, S. et.al. 2019).

A study by Khan A. Matin from (2017) tried to explain the relationship between economic growth and inequality in Bangladesh. The paper used Gini coefficient to measure inequality changes from time to time. It concluded that growth is inevitable without passing through inequality in a one of the phases of economic growth.

IV. Research Methods

The Gini index or Gini-coefficient is used by us to see the income inequality among the rural people. The Gini index or Gini coefficient is one kind of methods which is a statistical measure of distribution developed by the Italian statistician Corrado Gini in 1912. The coefficient ranges from 0 (or 0%) to 1 (or 100%), with 0 representing perfect equality and 1 representing perfect inequality. Values over 1 are theoretically possible due to negative income or wealth. A higher Gini index indicates greater inequality, with high income individuals receiving much larger percentages of the total income of the population (Investopedia).

The Lorenz curve is used to find inequality between income and household expenditure among people. The Gini is based on the Lorenz curve, which plots cumulative proportions of the total income of the population in y-axis and cumulatively share of the population from the lowest to highest income in x-axis. The Gini can take values between zero and one and the line drawn at 45 degrees or the diagonal of the Lorenz curve

represents a distribution with zero Gini value, which indicates equal, or zero level of inequality of the distribution.

A. Sample Design:

A stratified random sampling technique was followed in drawing sample of income and expenditure of household in rural area under the framework of Integrated Multipurpose Sample (IMPS) design developed on the basis of the sampling frame based on the Population and Housing Census 2011 of Kotchandpur Upazila.
Under stratified sampling, The population is divided into several sub-populations(strata) that are individually more homogeneous than the total population and then we select items from each stratum to constitute a sample.
Our sample of size n=37 households to be drawn from a population of size N=300 households which is divided into three strata (village) of size N_1=120, N_2=110, and N_3=70
Adopting proportional allocation, we got sample sizes as under for the different strata (village):
From strata with N_1=120, we have P_1=37(120/300) =15.
From strata with N_2=110, we have P_2=37(110/300) =13.
From strata with N_3=70, we have P_3=37(70/300) =9.
Thus, using proportional allocation, the sample sizes of different strata are 15, 13, and 9 respectively.

B. Data collection:

The study was relied on research questionnaire. Data collection based on primary data collection. In this report, 37 households were selected from three particular villages of Natore district. Sample households were categorized into rural households, income source is agricultural and non-agricultural activities, expenditures are food expenditure, non-food expenditure, education and health expenditure, consisting of 37 households respectively. Data were collected through household survey.

V. Results

Socio-economic condition of rural people:
Distribution of respondents regarding their socio-economic characteristics (n=37).

Table 2: Size of Family

Family size	Frequency	Percentage
Small	24	65
Large	13	35
Total	37	100

Source: Field Work

Table 3: Housing Condition

Housing Condition	Frequency	Percentage
Katcha	18	49
Pucca	10	27
Semi-Pucca	9	24
Total	37	100

Source: Field Work

Table 4: Toilet Condition

Toilet Facilities	Frequency	Percentage
Unsanitary	10	27
Sanitary	27	73
Total	37	100

Source: Field Work

Table 5: Condition of Health

Health Status	Frequency	Percentage
Good	18	49
Bad	19	51
Total	37	100

Source: Field work

According to HIES 2016, average household size is 4.06 which was 4.50 in 2010 and in rural areas it was 4.11 and 4.53 respectively. At the national level, the highest 49.33% of the heads of household lived in house made of CI sheet/ wood in the walls, 30.50% of the households were found living with wall made of brick/cement. In rural areas, about 55.73% of the heads of households reside in houses with wall made of CI sheet/wood and 89.41% households were found living with material made of CI sheet/ wood. Additionally 61.37% toilets are sanitary while 35.67% are unsanitary in total and in rural areas these are 53.27% and 42.98% respectively. It is observed that, in 2016, at the national level 25.61% households reported to have access to sanitary latrine, 35.76% with pucca toilet, 22.28% households with kancha toilet. In the rural areas, 19.32% households reported to have sanitary latrines, while 41.73% households in the urban areas had sanitary toilets.

We can see from table 2, among these 37 households, 65% of household size is small and 35% of that is large. In table 3, housing condition of 49%, 27%, and 24% are katcha , pucca , and semi-pucca respectively. In table 4, 73% toilets are sanitary while 27% are unsanitary. In table 5, health condition of 49% people are good but 51% people are suffering from various diseases.

Standard of Living:

Standard of living depends on many factors whose are per capita income, equal distribution of income, expenditure level, education status, health condition of people, toilet facilities, housing structure etc.

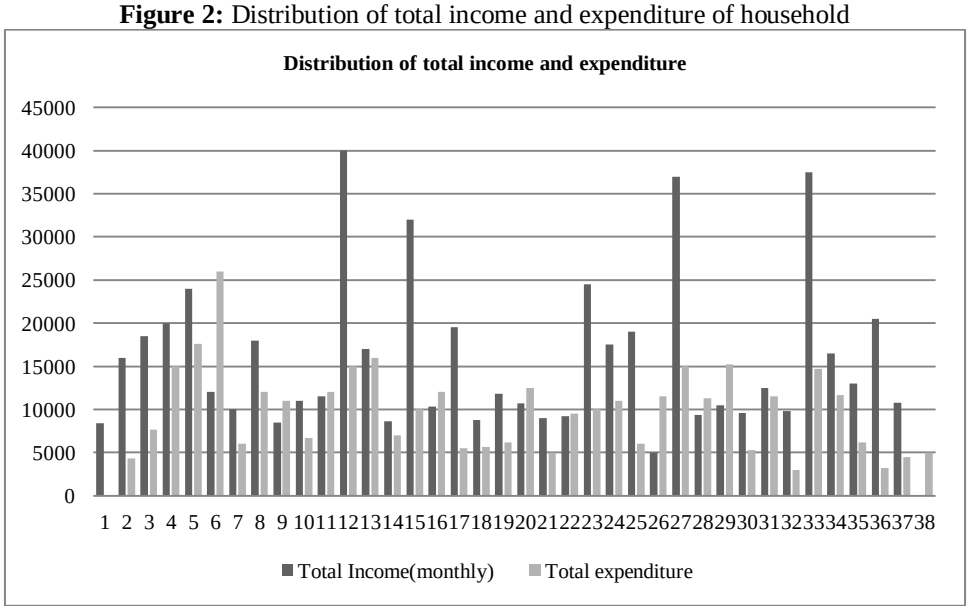
From above socio-economic conditions, we can see that the quality of life appears to have improved. The overall housing condition appears to be good. 49 percent of the households reported to have used brick/cement in the walls of main dwelling structure. Use of brick/cement has increased in rural areas. Access to safe sources of drinking water also improved.

Access to electricity and mobile phones has increased remarkably. A phenomenal increase is observed in case of mobile phone use. It has increased to 95 percent.

Health is universally regarded as an important index of human development and constitutes one of the basic needs of the population. Access to health care facilities is a basic right of all citizens. From above table 5, we can see that the health of 51% people is bad. They are suffering from various diseases.

Pattern of income and expenditure distribution:

Figure 2: Distribution of total income and expenditure of household

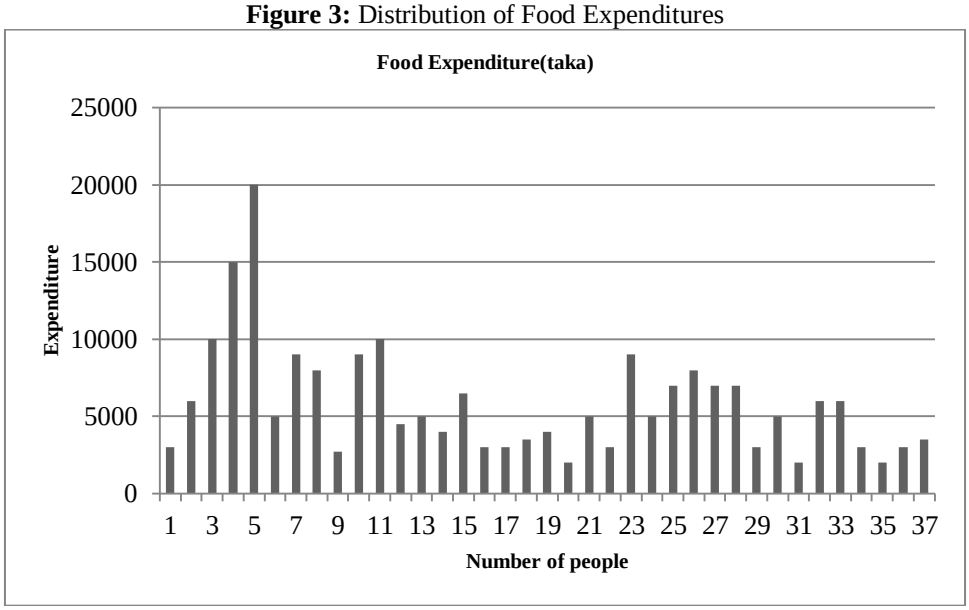


Source: Field work

From above figure 2, we can see that, the deviation of income distribution among the household is very high. But the expenditures are almost same for the entire household. The highest income of household is 40000TK and the highest consumption expenditure is 26000TK.

Pattern of food expenditures:

Figure 3: Distribution of Food Expenditures

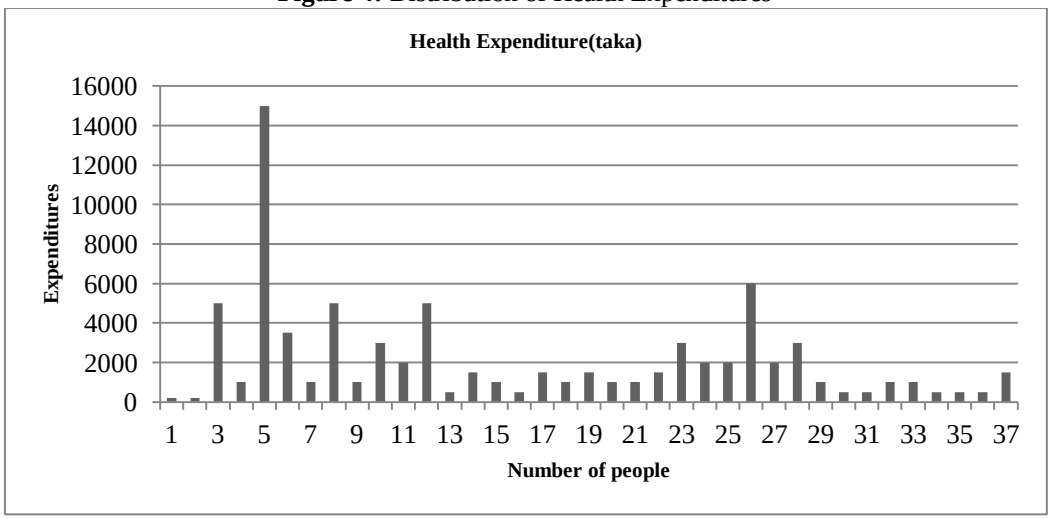


Source: Field work.

Food expenditure is an important determinant of measuring the living standard of country's people. From above figure 3, we can say that people who have higher income spend more. As a result of lower income, the poor cannot meet their basic needs sufficiently.

Pattern of Health expenditures

Figure 4: Distribution of Health Expenditures



Source: Field Work

From above figure 4, we can see that the health conditions of rural people are not so good. They suffer from various diseases and most of their income spends in health. According to HIES, the main population are suffering from chronic diseases like gastric ulcer, arthritis, asthma, high/low blood pressure. In rural areas, 20.63% suffered from gastric ulcer followed by 14.19% from rheumatic fever and 11.03% from asthma/ respiratory disease.

Gini Co-efficient

The Gini index or Gini coefficient is a statistical measure of distribution which is developed by the Italian statistician Corrado Gini in 1912 who used as a gauge of economic, measuring income distribution or less commonly, wealth distribution among a population. Gini coefficient (Gini) is one of the widely used indicators to measure the depth of inequality of an income distribution. The Gini is based on the Lorenz curve, which plots cumulative proportions of the total income of the population in y-axis and cumulatively share of the

population from the lowest to highest income in x-axis. The Gini can take values between zero and one and the line drawn at 45 degrees or the diagonal of the Lorenz curve represents a distribution with zero Gini value, which indicates equal, or zero level of inequality of the distribution. The Lorenz curve shown in Figure 1 is based on the monthly total household income values reported in this research. The mean income disparity between households in rural area is 0.39.

- **Gini Coefficient of Per capita income in Bangladesh:**

We have also information available for Gini coefficient on per capita income for the period 2000-2016. The values of the Gini coefficient of per capita income are similar to those obtained for household income. The overall change during the period is also shown in table 6. Rural income inequality as given by Gini coefficient has increased from .393 in 2000 to 0.454 in 2016, but there is some decline in the Gini coefficient in the urban area from 0.497 in 2000 to 0.498 in 2016.

Table 6: Gini Index Per Capita Income: 2000-2016

Year	National	Rural	Urban
2000	0.451	0.393	0.497
2005	0.467	0.428	0.497
2010	0.458	0.431	0.452
2016	0.482	0.454	0.498
Change during 2000-16	0.031	0.061	0.001

Source: BBS

Table 7:

Household serial No	Income	%of Household	%of Income	%of household/100	%of income/100	cumulative% of household	cumulative% of income
0	0	0	0	0.027	0.008	0.027	0.008
1	5000	2.70	0.85	0.054	0.014	0.081	0.022
2	8400	5.40	1.42	0.081	0.014	0.162	0.037
3	8500	8.10	1.44	0.108	0.014	0.270	0.051
4	8600	10.81	1.46	0.135	0.014	0.405	0.066
5	8800	13.51	1.49	0.162	0.015	0.567	0.082
6	9000	16.21	1.53	0.189	0.015	0.756	0.097
7	9200	18.91	1.56	0.216	0.015	0.972	0.113
8	9400	21.62	1.59	0.243	0.016	1.216	0.130
9	9600	24.32	1.63	0.270	0.016	1.486	0.146
10	9800	27.02	1.66	0.297	0.017	1.783	0.163
11	10000	29.72	1.70	0.324	0.017	2.108	0.181
12	10300	32.43	1.75	0.351	0.017	2.459	0.199
13	10500	35.13	1.78	0.378	0.018	2.837	0.217
14	10700	37.83	1.82	0.405	0.018	3.243	0.235
15	10800	40.54	1.83	0.432	0.018	3.675	0.254
16	11000	43.24	1.87	0.459	0.019	4.135	0.274
17	11500	45.94	1.95	0.486	0.020	4.621	0.294
18	11800	48.64	2.00	0.513	0.020	5.135	0.314
19	12000	51.35	2.04	0.540	0.021	5.675	0.335
20	12500	54.05	2.12	0.567	0.022	6.243	0.357
21	13000	56.75	2.21	0.594	0.027	6.837	0.385
22	16000	59.45	2.72	0.621	0.028	7.459	0.413
23	16500	62.16	2.80	0.648	0.028	8.108	0.442
24	17000	64.86	2.89	0.675	0.029	8.783	0.471
25	17500	67.56	2.97	0.702	0.030	9.486	0.502
26	18000	70.27	3.06	0.729	0.031	10.21	0.533

27	18500	72.97	3.14	0.756	0.032	10.972	0.566
28	19000	75.67	3.23	0.783	0.033	11.756	0.599
29	19500	78.37	3.31	0.810	0.034	12.567	0.633
30	20000	81.08	3.40	0.837	0.034	13.405	0.668
31	20500	83.78	3.48	0.864	0.040	14.270	0.709
32	24000	86.48	4.08	0.891	0.041	15.162	0.750
33	24500	89.18	4.16	0.918	0.054	16.081	0.805
34	32000	91.89	5.44	0.945	0.062	17.027	0.868
35	37000	94.59	6.29	0.972	0.063	18	0.931
36	37500	97.29	6.37	1	0.068	19	1
37	40000	100	6.80	0	0	19	1
Total	587900						0.39

Source: Field work

Figure 5: Lorenz curve for Household Income

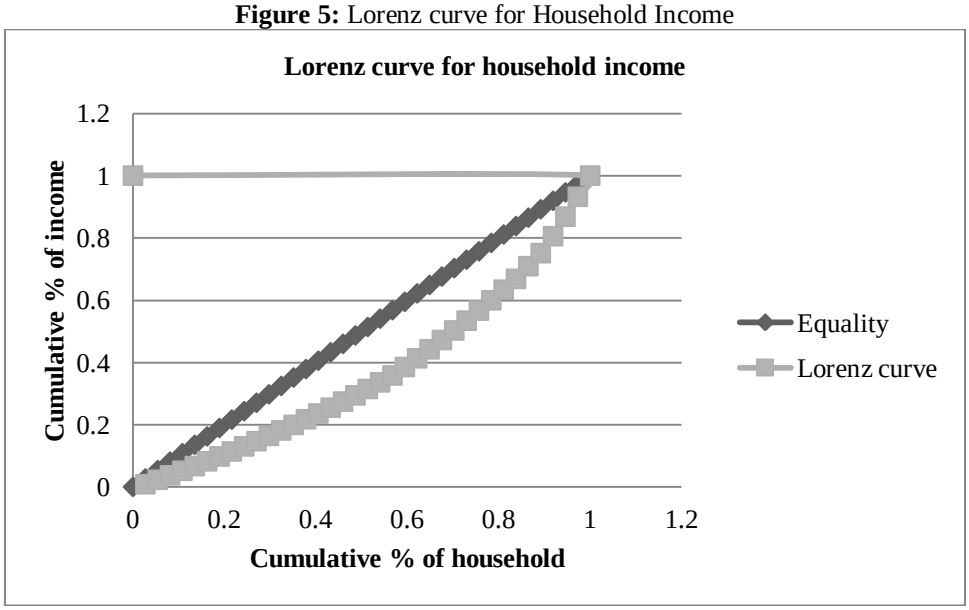


Table 7 presents the Gini coefficients of household income in rural area. The figure reveals that, there is a considerable inequality among the household's income in rural area. The mean income disparity between households in rural area is 0.39.

World Bank estimates that the Gini-coefficient in Bangladesh was 32.40% in December 2016.

According to latest Household Income and Expenditure survey (HIES) of Bangladesh Bureau of Statistics (BBS), the country's Gini-coefficient, which is the economic measure of equality, stood at 0.482 in 2016, up from 0.458 in 2010. But in 2018, this increased to 49.5.

Table 8: Mean, Minimum, Maximum value and Standard deviation monthly Income and Expenditure of Household

	Mean	**Minimum**	**Maximum**	**Standard deviation**
Wages and salaries	4.96	0	17000	5.78
Agricultural activities	9.81	0	40000	7.24
business	1.10	0	20000	3.88
Total income	15.88	5000	40000	8.74
Food expenditure	5.88	2000	20000	3.71
Non-food expenditure	2.37	700	9000	1.90
Education expenditure	1.68	0	7000	1.91
Health expenditure	2.10	200	15000	2.63
Total expenditure	9.93	3000	26000	4.88

Source: Field Work

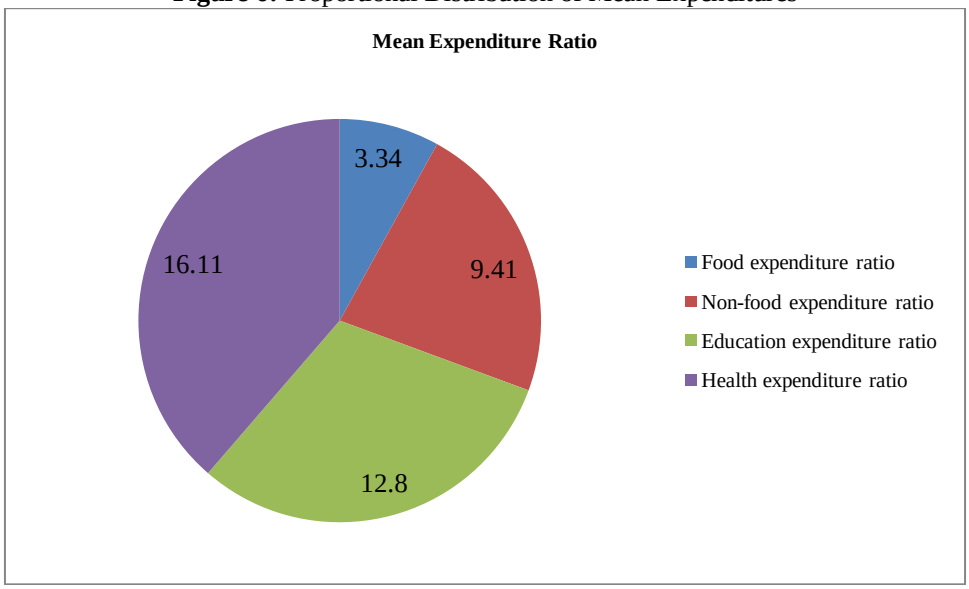
From above table, we can see that the maximum income of household is 40000 and the maximum total expenditure is 26000. The mean value of total income is 15889.19. The average food expenditure of household is 5883.78 and non-food expenditure is 2371.62.The average education expenditure is 1681.08 and health expenditure is 2105.40.The mean value of total expenditure is about 9936.48.

Table 9: Proportional Distribution of Expenditure

	Mean	Minimum	Maximum	Standard deviation
Food expenditure ratio	3.34	0.62	8.88	2.00
Non-food expenditure ratio	9.41	0.76	24.50	5.58
Education expenditure ratio	12.80	0.00	41.00	11.87
Health expenditure ratio	16.11	0.83	80.00	15.94

Source: Field Work

Figure 6: Proportional Distribution of Mean Expenditures



Source: Field Work

Table 9 shows that the average food expenditure ratio is 3.34 while the non-food expenditure ratio is 9.41.The average education expenditure is 12.80 and the average health expenditure ratio is 16.

VI. Discussion:

The survey findings reveal that the quality of life appears to have improved. The overall housing condition has improved relative to 2010. In this report, we can see that (table-3) housing condition is pucca of 27 percent. Use of brick/cement has increased in rural area. Access to safe sources of drinking water also improved. Access to electricity and mobile phones has increased remarkably. Households with access to electricity increased to 100 percent. A phenomenal increase is observed in case of mobile phone use. It has increased to about 95 percent. The concentration of income has increased. The Gini co-efficient of income has increased to 0.39 from 0.32 in 2016 by the estimation of the World Bank. Several factors are likely to have contributed to declining poverty and generally improving level of living. The average monthly household income in 2010 is estimated at Tk. 9,648 in rural area. But in this report, the average monthly household income is Tk15889.19. It is therefore useful to look at the expenditure side as well. In 2010, the average monthly household expenditure is estimated at Tk. 11,200 at the national level, Tk. 9,612 in rural area and Tk. 15,531 in urban area. But in this report, the average monthly household expenditure is 9936.48 in rural area. Access to education has increased.

VII. Conclusion and Policy Implication

We wanted to see the living standard and income pattern of rural people through this survey. We use the Gini-index to measures the income inequality among the rural people. The result reveals that the mean income disparity between households in rural area is 0.39 and it implies that income inequality is low. So there

is a considerable equality among household's income in rural area. Some steps should be taken as redistribution of income and wealth in favor of the poor where possible such as safety net programs. It has to be supported by strong political commitment and leadership. The policy instruments include addressing weaker labor market institutions, inadequate social protection systems, poor-quality education, inadequate access to credit etc. There is need of focused attention on three key elements of economic policy to make economic growth: greater investment in building human capital of the poor, prudent use of safety nets, and policies to make growth freshman/greener. Besides, we have to improve transportation system for making better condition of rural area in Natore district of Bangladesh.

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