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EXPLORING THE INCIDENCE AND CORRELATES OF RURAL POVERTY IN PAKISTAN

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Abstract. The study seeks to measure incidence of poverty and explore correlates of rural poverty in district Bhakkar - Pakistan. The study employed the Foster-Greer-Thorbecke (FGT) class of decomposable poverty measure as an analytical tool to decompose poverty against various household groups and their characteristics. Analysis of data collected from 300 households showed that household size, dependency ratio, gender, age and educational attainments of household head, female-male ratio, participation rate, landholding size and ownership of livestock and physical assets were found to be correlated with the household poverty status. Poverty headcount, gap and severity indices in the area worked out to be 64%, 31% and 19% respectively. The results were consistent with findings of the literature. The study suggests investment on socio-economic conditions as a remedy to reduce poverty.

Keywords: Poverty, Poverty Line, Foster-Greer-Thorbecke (FGT) indices, Correlates of poverty

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I. INTRODUCTION

THEORETICAL AND PRACTICAL RELEVANCE

Poverty remains one of the most daunting challenges Pakistan has been facing since its inception in 1947, having bearings on the socio-economic development of the country. Over time Pakistan has adopted various development models and strategies to tackle poverty, but the threat still looms large. Estimates depict 29.5% of the population living below the poverty line (Pakistan Economic Survey, 2015-16). Given the population estimate of 186.2 million for 2013-14, it implies that 55 million people in Pakistan live below the poverty line. The situation is worst for the rural areas with 35.6% of the population living under poverty line. Pakistan Multidimensional Poverty Index for 2016 measures an overall poverty headcount as 38.8% with 54.6% of total population in rural areas living below the poverty line. This shows the enormity of the challenge and need for informed policy measures to effectively control poverty.

Pakistan implemented various development models to spur economic growth and reduce poverty. Haq (1976), for example, noted that emphasis during 1948-55 was on import substitution industries, 1960-65 witnessed a shift to export expansion, in 1966-67 focus was shifted towards industry from agriculture, population control policies remained dominated during 1967-68 and during 1971-75 GNP growth model was replaced by growth with re-distribution, aiming to share the benefits of growth with the masses. The decades of 1980s and 1990s were dominated by Structural Adjustment Programme (SAP), emphasizing on deregulation of economy and privatization of state owned enterprises. First decade of twenty first century witnessed the emergence of Poverty Reduction Strategy Papers (PRSPs). The development strategy for 2015-30 has been ushered in the form of Sustainable Development Goals (SDGs), with poverty alleviation being at the top.

The literature, however, suggests that none of the development models succeeded in bringing the number of poor down. For example, 1960s witnessed tremendous increase in agriculture, but the index of rural poverty rose from 42% in 1963-64 to 55% in 1969-70 (Irfan & Amjad, 1984). The decrease in rural poverty index during seventies was largely owed to the remittances sent by the expatriates. Kemal and Naseem (1994) noticed negative effects of SAP for employment, poverty and

governance. The poverty headcount ratio of 24% in 1987-88 rose to 30% in 1998-99 (Naseem, 2012). There was also ample evidence suggesting rise in the poverty during the 1990s period (Amjad & Kemal, 1997; Ali & Tahir, 1999; Jafri, 1999; Arif, 2000). The World Bank (2010) estimated that poverty headcount remained between 34.5% to 17.2% from 2001-02 to 2007-2008. The decrease in poverty was taken with a grain of salt, leading to revision of official poverty line in 2012, and poverty headcount was estimated as 29.5 % in 2015. Gable, Lofgren and Osorio (2015) argued that, if maintaining the current pace of GNI growth, the projected incidence of poverty in the year 2030 in Pakistan would be 6%. The prevalence and continuation of the poverty concept remains a challenge for both academia and policy makers. It calls for identification of factors associated with poverty and devise an indigenous strategy to take on the challenge.

Besides its local context, prevalence of poverty has a global spectrum. World Bank (2016) noted that across globe as many as 900 million people were obliged to live in extreme poverty. In South Asia, in Bangladesh 39.6 million (24.3%), in Bhutan 0.06 million (8.2%), in India 273 million (21.9%), in Nepal 6.8 million (25.2%), in Pakistan 46 million (24.3%) and in Sri Lanka 0.847 million (4.1%) people are languishing below national poverty lines[1]. Responding to policy interventions, poverty keeps on shifting its center of gravity across regions. In 1981, China was the center of gravity and in 1990 it was shifted to India, gradually shifting across Arabian Peninsula. In 2015, it was noted that center of gravity of poverty was shifted to African continent. Projected estimates indicate that currently the center of gravity is in South Sudan, a country beleaguered by fragility and high poverty rates[2]. Given its global dimension, poverty measurement and reduction has been the focus of development strategy at global level for last at least three decades. For example, erstwhile Millennium Development Goals (MDGs) and its successor Sustainable Development Goals (SDGs), sustainable development agenda 2030 of United Nations declare poverty alleviation as a goal number one to be achieved by the global community through

[1] https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7 AA2972D68AFE/ global_POVEQ_SAR.pdf (Retrieved on 03 March 2019)

[2] http://blogs.worldbank.org/developmenttalk/shifting-gravity-global-poverty (Retrieved on 03 March 2019)

contextually focused and global outlook policies and programs. Similarly, Poverty Reduction Strategy Papers (PRSPs) of International Monitory Fund (IMF) and Global Poverty Monitoring Reports of World Bank all provide a strong testimony to the fact that combating poverty has acquired the central stage in the development policy at local and global level. It has also been noted that studies conducted to understand various dimensions and correlates of poverty, at national and international level, suggest that factors such as landholding size, dependency ratio, household size and educational attainments of the households proved to have significant relationship with poverty status of rural households.

It is worth taking note that most of poverty studies conducted in Pakistan are based on secondary data collected through Household Integrated Economic Surveys (HIES) carried out by Pakistan Bureau of Statistics. HIES approach limited number of households, for example, HIES 2015-16 targeted covers 24,238 households across country[3]. The small sample size, therefore, put limits on generalizability of findings of poverty studies carried out on the bases of data collected through HIES. It has also been noticed there is a dearth of studies conducted on rural poverty by focusing on Union Council and village level households. The present study is different from previous studies in that it is based on primary data collected directly from rural households in the study areas. The study follows a systematic sampling design covering two tehsils and all three topographic areas of district Bhakkar. The study is also novel in the sense that it measures incidence of poverty and decomposes it across household characteristics and studies correlates of rural poverty using FGT Indices. Measuring indices of rural poverty by using primary household data is rare in previous studies. The present studies, therefore, carries features that distinguishes it from studies already conducted in Pakistan in gauging the breadth and depth of rural poverty. The study has limitation in that, owing to paucity of time and resources, it has been restricted to 300 households in district Bhakkar alone. It may have implications in relation to generalizability of study. However, the study

[3] http://www.pbs.gov.pk/content/household-integrated-economic-survey-hies-2015-16 (Retrieved on 12 March 2019)

expected to have greater generalizability to areas of Pakistan having similar socio-economic and demographic characteristics.

II. REVIEW OF LITERATURE

The literature on poverty is divided into two major strands (Aikaeli, 2010). While the first strand claims poverty to be a cultural or behavioral incident, the second strand views poverty under the light of structural or economic paradigm. The first strand aligns itself to the classical economic theory and defines poverty as a consequence of an individual's failure to make rational choices. This seems probably derived from the eugenics movement of 19th century whereby the genetic makeup determines the status of an individual in the society (Gordon, 2003). It is held that dysfunctional values of the poor are responsible for their poverty. The standpoint is, however, criticized on the ground that it highlights the symptoms, not the causes of poverty. The structural debate draws on neoclassical (Liberal/Keynesian) economic theory, which highlights the role of market externalities and individual differences such as potential, skills and resources across individuals determining their status in the society. The approach acknowledges inequality of economic opportunities and location disadvantages significantly affecting income levels of individuals. Put simply, the poverty level of an individual cannot only be attributed to their individual characteristics, without taking into account location's socio-economic characteristics (Holzer, 1991). The level of median income, availability and access to economic opportunities and inequality have also been identified as important factors underlining incidence of poverty (Keynes, 1936; Ellwood & Summers, 1985; Abramovitz, 1996).

This study locates itself in structural paradigm and holds that the social, economic and demographic characteristics have bearing on the income (or welfare) level of the households. There is a considerable number of studies, at national and international level, related to structural strand of poverty. Shirazi (1995) deduced that both educational level of a household's head and rate of participation of a household were negatively related to household poverty, while household size was positively correlated to the household's poverty status. A.A. Hashmi, Sial, M.H. Hashmi and Anwar (2008) suggested that factors such as education of a household's head, ownership of livestock, household size, dependency

ratio, landholding size, and ownership of physical assets had a strong impact towards determining the poverty status of a household. Arif and Farooq (2012) undertook multivariate analysis of the panel datasets and revealed that household size and dependency ratio were found to have significant positive relationship with protracted poverty, while, factors exhibiting negative relationship with chronic poverty included ownership of land and livestock, housing structure and availability of room. Khan, Rehman and Haq (2015) concluded that, among others, household size, female-male ratio and participation rate turned out to be the significant factors associated with the rural poverty. Akhtar et al. (2015) utilized the Household Integrated Economic Survey datasets to estimate the headcount ratio, poverty gap and squared poverty gap of rural poverty.

The view point that socio-economic conditions and household composition play an important role towards determining the poverty status of households has also been supported by international literature on developing countries. Datt and Jolliffe (1999) found that level of education, participation rate, household size, child dependency ratio and old age of head of a household were among the determinants of poverty in Egypt. Bogale, Hagedom and Korf (2005) noted that landholding size, education level and livestock ownership were the determinants of rural poverty in Ethiopia. T.G. Apata, O.M. Apata, Igbalajobi and Awonivi (2010) showed that factors including level of education and female headed households were among important factors associated with rural poverty in Nigeria. Aikaeli (2010) concluded that education of head of a household, participation rate; landholding size and gender of household head were among the determinants of rural poverty in Tanzania. Bahta and Haile (2013) revealed that education level, landholding size, household size and child dependency ratio were among the determinants of poverty in Eretria. Muhammadhussen (2016) also demonstrated that, among others, livestock ownership, family size and land possession were important towards calculating rural poverty in Ethiopia.

It is evident that most of the studies discussed in this section are based on secondary data collected through HIES by government agencies. Only a few are based on primary data collected by the researcher(s) directly from households in target areas. It has also been noted that focus of most of studies was on identification of household characteristics important in determining the poverty status of households

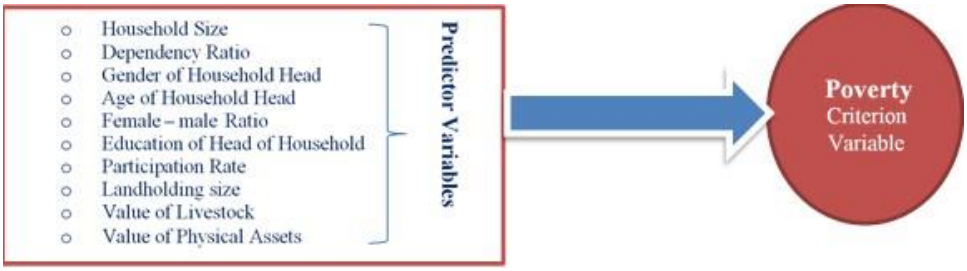
using multiple linear regression model. There is also dearth of studies measuring incidence of rural poverty using primary data directly collected from sampled households. The present study was designed to fill these gaps and analyze household socio-economic and demographic features having correlation with poverty status of rural households. The study focusses on district Bhakkar and measures incidence of rural poverty using FGT Indices and then carries out bivariate analysis to identify correlates of rural poverty in district Bhakkar.

III. THEORETICAL FRAMEWORK

Based upon the discussion in the literature review, following theoretical framework for the present study was drawn with poverty as dependent variable and household size, dependency ratio, gender of household head, age of household head, female – male ratio, education of head of household, participation rate, landholding size, value of livestock and value of physical assets as independent variables having impact on poverty.

FIGURE 1

Theoretical Framework



It can be seen from the above theoretical framework that relationship between independent and dependent variables is clearly supported by literature and variables used by previous studies in local as well as in comparable developing countries. There is clear evidence in the literature that suggests that economic, social and demographic characteristics of a household play important role towards determining its poverty status. The increased demographic burden increases the likelihood of a household to fall into poverty trap, while an improvement in economic status leads to a positive impact on a household's well-being. There is

enough evidence suggesting that factors associated with rural poverty are diverse and complex in nature. It is important to note that the rural areas in developing countries are generally characterized by location disadvantages, such as less than desirable availability and access towards social as well as economic infrastructure. The economic literature on poverty, therefore, clearly suggests that structural and economic realities are important towards defining the poverty status of a household. The theoretical framework of the present study grounded itself in structural paradigm of poverty theory and attempts to test the relationship between socio-economic characteristics of households and its poverty status.

IV. EMPIRICAL RESULTS AND DISCUSSION

PROFILE OF STUDY AREA

Bhakkar District is located in the west of the province of Punjab Pakistan. According to the Human Development Index (HDI) Report on districts of Pakistan, based on data for the year 2013, Bhakkar is ranked as "underdeveloped" district with HDI 0.48. It has four tehsils namely Mankera, Kallurkot, Bhakkar, and Darya Khan and 42 Union Councils (UCs) where Tehsil has been conceptualized as an administrative division in Pakistan whereby a city acts as an administrative center for towns and villages, whereas Union Council has been conceptualized as a third tier of Local Government in Pakistan and is headed by a chairperson along with number of elected councilors. UC can span an area of a large village also covering surrounding areas and small villages. As the census estimate of 1998 population of the district comprises 1,051,456 persons, of which 83.96% live in rural areas. Average household size in the district is 6.61 persons per household. Literacy rate is 51%, while unemployment rate has been estimated as 6.8%, with average annual growth rate of 2.72%. As per Multiple Indicator Cluster Survey (MICS) for 2007-08, 39% people in the district have been classified as underweight, out of which 12% people are facing extreme underweight conditions. Cheema, Khalid and Patnam (2008), based on MICS 2003-04 data, found out that people living below the poverty line constitute 58% of rural population in Bhakkar. Topography wise district Bhakkar can be classified in three main areas including riverain area irrigated mostly by tube wells, secondly the plain area irrigated both by tube wells and canal, and thirdly the desert area which is mainly rain fed. Agricultural produce

and livestock represent two main sources of income in the rural areas of Bhakkar.

SAMPLING DESIGN

Multi-stage implicit stratified cluster sampling design was used to draw a sample of 300 households. Two tehsils namely Bhakkar and Mankera were selected at the first stage. The underlying logic was that Bhakkar tehsil represents both riverain and plain area, while Mankera tehsil represents the desert area. At second stage, three UCs, one each from riverain, plain and desert areas were selected. At the third stage, a total of twelve villages, with four from each UC, were randomly selected. At the fourth stage of sampling, 300 households with 25 from each village, were randomly selected. It is pertinent to mention here that unit of data collection was a household for this study. It is worth taking note that one of the contributions of this study lies in its sampling design. Review of existing studies on the topic in district Bhakkar hardly provide any evidence that poverty measurement and its correlates have been studied at Union Council level, that too by collecting primary data directly from households. Sample collected from three Union Councils, each representing one of three topographical areas of the district lends it more credence and representativeness of the characteristics of the poverty prevalent in the district

DATA COLLECTION

Following cross–sectional survey design, 300 households were randomly selected for data collection on a multi-topic questionnaire. The questionnaire, originally designed in English language, was translated into Urdu language before initiating data collection. This translation was duly vetted by a linguistic expert. The questionnaire was divided into three main sections for collecting data on demographic, economic and social characteristics of the households sampled. In sum there were 50 questions: 13 related to demographic characteristics, 21 on economic characteristics and 16 on social characteristics of the households surveyed. The respondents were also invited to propose remedies to overcome poverty. It was ensured that respondents were heads of the sampled households. The data collection lasted total four months from April–July 2016.

SELECTION OF VARIABLES

Criterion and predictor variables discussed in theoretical framework section have been identified based on previous poverty studies conducted at national and international level. The variables included in the present study have sufficient grounding in literature available on poverty measurement at national and international level.

ANALYTICAL MODEL

The socio-economic and demographic profile of the district was developed using descriptive statistics. The absolute poverty of rural households was measured using Foster-Greer-Thorbecke (FGT) indices of poverty (Foster, Greer & Thorbecke, 1984). Following FGT expression was used in the present study to measure headcount, poverty gap and poverty squared gap/poverty severity indices:

$$P = 1 / N \sum^{N}{}_{i} (z\text{-}yi/z)^{\alpha}$$

Where N denotes the total number of households in the sample, Z denotes poverty line, yi is per capita income per month and α is the parameter and its values 0, 1 and 2 gives poverty headcount, poverty gap and poverty squared gap/poverty severity indices respectively.

Also for this study the household size was adjusted by utilizing the Adult Equivalent (AE) Scale as used for Organization for Economic Cooperation and Development (OECD) countries (World Bank, 2005). Following formula was used in the present study to obtain the AE Scale:

$$A.E. = 1 + 0.7 (N_{adult} - 1) + 0.5 N_{Children}$$

POVERTY LINE

The concept of poverty line employed in the current study assumed that poverty has a discrete characteristic that could be represented by a single measure. Officially, the poverty line of Pakistan stands at Rs. 3030 (or US$ 28.91) per person per month (where 1 US$ = 104.800 PKR). As per Pakistan Economic Survey 2015-16 this poverty line was determined in 2015 following the Cost of Basic Needs (CBN) approach and this same poverty line has been utilized for analyses in the present study. The dependent variable in this study represents rural income at the rate of Rs.

3030 (or US$ 28.91) per adult equivalent per month which was decomposed against various household characteristics and against various categories within a household.

V. RESULTS

Descriptive analysis of the sample revealed some important socio-economic features of rural households in Bhakkar. The results showed that average age of the head of households was 45 years with only 2% of household heads having age equal or less than 24 years. This showed that the generally held belief about early marriages in rural areas was not lent support by the results of data analysis. Also the average household size was equal to 6.5 persons per household for the sample, quite close to the average household size of 6.6 persons reported in official reports for the district[4]. Literacy rate of head of households was 53%; however, only 02% went on to receive education equivalent to bachelors or above. This finding was also close to the overall 56% literacy rate of the district. The mean income of households included in the sample turned out Rs. 209,824 (or US$ 2,002.137) per household per annum. Since the household size stood at 6.5 persons per household in the sample, it meant that annual per capita income works out to be US$ 308.021, which is significantly less than national per capita GNI of US$ 1,440[5]. Average landholding size in sample was 4.21 acres per household. It showed that majority of farmers in the sample consisted of small land holders. 76% farm sizes were found between the range of 01 to 7.5 acres. This finding was in close proximity to official estimate stating that 79% private farms in Punjab ranged from 0.5 to 7.5 acres as per census of agriculture in 2010.Descriptive analysis also highlighted that Hakeems (Physician utilizing traditional remedies) provided healthcare to 42% of sample whereas doctors provided healthcare to 38% of population. In general, 70% households had access to medical facilities. Majority of sample households (94%) were satisfied with the quality of drinking water available. Access to Latrine in their own premises was available to 58% of the sample households. No proper sewerage is available in the area. Majority of the households (70%) had used baked bricks as the main

[4]. http://www.pbs.gov.pk/ (Retrieved on June 18, 2017)

[5]. http://data.worldbank.org/country/pakistan?view=chart (Retrieved on June 18, 2017)

construction material for the houses. Room occupancy stood at 3.3 persons per room. It is highlighted that in most of the cases, results of the present study are found to be in agreement with national statistics.

INCIDENCE OF POVERTY

The incidence of poverty in the areas is measured using FGT Indices namely poverty headcount, poverty gap and poverty severity. The results of analysis are presented in the tables below.

TABLE 1

Incidence of Poverty

Description	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
Total Sample	64	31	19
Tehsil Bhakkar	61	30	18
Tehsil Mankera	70	35	21

The results showed that, in a sample of 300 households, comprising 2378 individuals, 64 % people were found to have been living below poverty line. The poverty headcount was in close proximity with the incidence of poverty reported in Pakistan Multidimensional Poverty Index Report for 2016, which estimates the incidence of poverty in district Bhakkar between 50% - 59.9%. Slightly higher incidence of poverty might be because the sample was drawn from rural population alone; rural poverty is usually on higher side compared to urban poverty. Poverty gap index was 31%, which signified that cash transfers equal to 31% of poverty line was required to enable the poor to escape the poverty. Poverty severity index was 19 %, which showed that income inequality among the poor was 19 percent.

Results for tehsils showed that in tehsil Bhakkar 61% people were below poverty line, poverty gap index was 30% and poverty severity index was 18%. In tehsil Mankera, 70% people were below poverty line, poverty gap index was 35% and poverty severity index turned out to be 21%. It was evident that incidence of poverty was on higher side in tehsil Mankera. This could be explained by the fact that tehsil Mankera mainly comprised desert plains and agriculture was mainly rain fed, resulting in low per acre yield, leading to low household income.

CORRELATES OF POVERTY

In order to study its correlates, the rural poverty was decomposed by household characteristics with the help of FGT indices. The results of analysis are presented in Table 2 to Table 11.

TABLE 2

Decomposition of Poverty by Household Size

Household Size	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
2	33	12	5
3	50	21	10
4	50	19	8
5	62	31	19
6	61	30	19
7	66	35	22
8	36	18	11
9	70	33	21
10 & above	77	36	22

The results showed that in households with 10 and above members, 77% individuals were below poverty line, poverty gap index was 36% and poverty severity index was 22%. It was evident that poverty indices were highest among the households having greater number of people. It was, therefore, justified to deduce that household size was found to have a positive relationship with poverty status of a household. Hence, it was an important correlate of rural poverty.

TABLE 3

Decomposition of Poverty by Dependency Ratio

Dependency Ratio	Poverty Incidence(α_0)	Poverty Gap(α_1)	Poverty Severity(α_2)
0.00 to 0.33	51	21	11
0.34 to 0.67	65	32	19
0.68 to 1	85	55	38

The results suggested that increase in dependency ratio resulted in increase in poverty headcount, gap and severity indices. It was clear that dependency ratio was positively correlated with poverty status of a household. This showed that dependency ratio of a household was an important factor having bearings on the poverty status of a household.

TABLE 4

Decomposition of Poverty by Gender of Household Head

Gender of Household Head	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
Female	69	33	20
Male	64	31	19

The results showed that poverty incidence, gap and severity was on higher side in female headed households compared to household headed by males. The trend supported that the households having females as their heads were expected to have a greater probability of being poor. However, it may be interesting to note that difference in poverty level between female headed house and male headed households was not found to be very significant.

TABLE 5

Decomposition of Poverty by Age of Household Head

Age of Household Head	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
Up to 24	55	41	31
25 to 64	64	30	17
65 & above	72	44	31

The results showed that poverty headcount, gap and severity was high in households where age of head of household was 65 years and above compared to households with heads aging between 25 to 64 years. Poverty gap and severity was also found to have been high in households with their heads aging up to 24 years compared to households with heads aging between 25 to 64 years. Results largely supported that the households having their heads within the age bracket of 25 to 64 years had a lesser probability of being poor and households having their heads ≤ 24 years or ≥ 65 years of age had a greater probability of being poor. This showed that there was relationship between age of the head of household and its poverty status.

TABLE 6

Decomposition of Poverty by Female – Male Ratio

Female – Male Ratio	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
0.00 to 0.5	62	26	14
0.51 to 1.00	63	31	19
1.01 to 1.5	70	36	22

The results showed that higher female – male ratio resulted in increase in poverty headcount, poverty gap and poverty severity. This revealed a positive relationship between female – male ratio and poverty indices. The results indicated that the bigger the female-male ratio of a household, the higher the probability of its being poor.

TABLE 7

Decomposition of Poverty by Education of Head of Household

Education of Level	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
Illiterate	67	37	23
Primary	65	31	18
Middle	73	36	22
Matriculation	50	15	07
Intermediate	53	26	14
Bachelor & above	53	20	09

The results showed that poverty measures were highest among the households headed by persons having no formal education. Generally, it was observed that educational attainment of the head of a household had a negative relationship with its poverty status. The analysis supported that higher educational attainments of the head of a household resulted in decreased probability of its being poor.

TABLE 8

Decomposition of Poverty by Participation Rate

Participation Rate	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
0.00 to 0.33	68	35	21
0.34 to 0.67	62	29	17
0.68 to 1	55	25	14

The results showed that higher the participation rate, the lower the value of poverty indices. Poverty headcount, gap and severity was found to be higher among households having lower participation rate. The relationship between participation rate and poverty showed that participation rate of a household is negatively correlated with poverty status of the household.

TABLE 9

Decomposition of Poverty by Landholding Size

Landholding Size (Acres)	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
Landless	79	44	28
1 to 2.5	72	41	27
2.6 to 5	74	27	13
5.1 to 7.5	58	20	9
7.6 to 10	30	11	6
10.1 & above	12	6	3

The results showed that landless households were the group where the poverty measures were highest. The trends of poverty among landowning households depicted a negative relationship between landholding size and the poverty measures. The results showed that landholding size was an important correlate of household poverty.

TABLE 10

Decomposition of Poverty by Value of Livestock in PKR

Value of Livestock (in Rs.)	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
Up to 150000	67	37	24
151000 to 300000	70	33	19
301000 to 450000	64	27	15
451000 to 600000	40	6	1
601000 & above	12	6	3

The results showed that generally the increase in monetary value of livestock resulted in decrease of poverty measures of a household. The analysis established a negative relationship between monetary value of livestock and poverty status of a household.

TABLE 11

Decomposition of Poverty by Value of Physical Assets in PKR

Value of Physical Assets	Poverty Incidence (α_0)	Poverty Gap (α_1)	Poverty Severity (α_2)
Up to 150000	72	36	21
151000 to 300000	45	17	8
301000 to 450000	0	0	0
451000 to 600000	43	16	7
601000 & above	5	0.06	0.007

The results showed a trend that higher the monetary value of physical assets of a household, the lower the poverty measures. This revealed a negative relationship between value of physical assets of a household and its poverty status.

VI. DISCUSSION

Results of descriptive analysis revealed that most of the socio-economic characteristics of households included in the sample were in close proximity with those of reported in national statistics (such as Pakistan Multidimensional Poverty Index, 2016). For example, estimates of household size, literacy rate, and mean farm size were found to be in close agreement with that of reported in the surveys conducted at national or sub-national level. This lends credence to the representativeness of the sample and generalizability of findings of the study. The incidence of rural poverty showed that 64% of total population in the sample lived below the poverty line. The figure was much higher than the national estimates, which on the basis of 2013-14 data, reported the incidence of rural poverty in the country as 35.6%. Similarly, results of FGT Indices showed that household size, dependency ratio, gender of head of household, age of household head, female – male ratio, educational attainments of head of household, participation rate, landholding size, livestock ownership, and possession of physical asset were found to have been correlated with poverty status of rural households in the district. The results are in congruence with findings of the similar studies conducted in

the developing countries (such as Datt and Jolliffe, 1999; Bogale, Hagedom and Korf, 2005; Apata, et al., 2010; Aikaeli, 2010; Bahta and Haile, 2013; Muhammadhussen, 2016). This further strengthened our standpoint that poverty is a structural (or economic) phenomenon and not a mere outcome of the choices of an individual.

The results have two major implications. First, it interpreted that incidence of rural poverty in the country was on the rise since 2013-14. The situation is even deteriorating in the underdeveloped districts, where the incidence of rural poverty was measured more than double the national head count ratio. Second, the study supported our premise that location disadvantages play important role in determining the poverty status of the households; the incidence of rural poverty in the study district was high, being an underdeveloped district. Put another way, socio-economic factors form important correlates of rural poverty. The findings have significant practical implications vis-à-vis formulation of evidence based public policy targeted at improving HDI of the country. The sample demonstrated a reasonably good representative character in terms of its outcomes. The findings of the study can, therefore, be safely extrapolated to other districts in the country having similar socio-economic profiles. The study, however, had its limitation in terms of empirical analysis like analyzing the statistical significance of the combined effect of the poverty correlates on the poverty status of the sampled households.

VII. CONCLUSION AND POLICY IMPLICATIONS

CONCLUSION

The results showed that rural poverty was on the rise, and situation was even worse in underdeveloped districts. The household size, dependency ratio, gender of household, age of household head, female – male ratio, educational attainments of head of household, participation rate, landholding size, livestock ownership, and possession of physical asset were turned out to be the correlates of rural poverty in the district. The results were found to be comparable with the findings of the literature available on the subject. Overall, the results supported the premise that poverty was a context specific phenomenon and socio-economic

structures did play important role in defining the poverty status of households.

POLICY RECOMMENDATIONS

The study offered two sets of policy recommendations to combat the rural poverty. The first set of recommendations was based on suggestions sought from the respondents through survey questionnaire. The second set of recommendations was proposed based on suggestions made by the respondents as well as results of the FGT indices. The priorities, identified by the respondent, to fight the menace of poverty, are summarized as under:

Economic Empowerment

Measures respondents suggested to pull themselves out of poverty were included: provision of metaled roads, electricity, interest free loans to set up small businesses, skills trainings for youth, creation of employment opportunities, set up industrial units, extending financial assistance and increase in minimum wages of laborers.

Development of Social Infrastructure and Safety Nets: Measures specifically suggested to improve the social indicators were included: provision of healthcare, proper sewerage system, quality education, scholarship for students, adult literacy programs, financial assistance for ultra-poor and old age people, transparency and meritocracy in public offices and developing and maintaining a database of poor and deserving families at UC level.

Development of Agriculture and Livestock Sector

Priorities identified by the respondents regarding agriculture and livestock sector were included: provision of subsidy on agricultural inputs, development of barren lands, provision and improvement of irrigation system, provision of high yielding varieties of seed, improved access to agricultural extension services, competitive rates for agricultural produce and provision of veterinary services.

Women Empowerment

The respondents suggested that there should be women specific initiatives. Measures identified to empower women were included: provision of skills trainings, sewing machines, establishment of quality educational institutions and scholarships for girl students.

Priority actions suggested by the respondents provided a raw estimation of what was expected of public policy makers to reduce poverty in the area. However, in view of the findings of the FGT Indices, the study offered the following set of recommendations for consideration of public policy makers to address the challenge of rural poverty:

i. Rural economy largely depends on agriculture, there was a need to invest more on this sector to create more job opportunities and thereby reducing dependency ratios. Ensuring extension services, better management of natural resources, provision of suitable technologies and expansion of livestock would lead to improvement in productivity of agricultural labour force, which, in turn, would result in increase in rural income. More land equipped for irrigation would mean more employment opportunities – increased participation rate and decrease in dependency ratio. There was a strong and clear evidence that sustained investment to enhance agricultural productivity had a large impact on poverty reduction (Fan 2008; Fan, Hazell & Thorat, 1999, Fan, L. Zhang & X. Zhang, 2002).

ii. More investment on improving social infrastructure particularly provisions of education would ensure more opportunities for rural youth, leading to better accumulation of physical assets, leading to reduction in rural poverty.

iii. Expand off-farm employment opportunities, encourage entrepreneurship and improve overall infrastructure and characteristics of rural economy to induce structural changes. It was important to note that more than half the rural workers were employed away from farms. Therefore, development of non-farm sector could be a possible way to reduce rural poverty (Farooq, 2014). This would again help improve participation rate and lower the dependency ratios.

iv. Special initiatives may be launched to create decent employment opportunities for land poor, landless and vulnerable groups of society such as women, youth and other marginalized ethnic groups. This may be achieved by providing skills trainings and small loans, enabling the youth and women to set up their own small business. This would help the rural youth to build their resource base and cross the poverty threshold.

v. Poverty reduction programs and strategies, at local and national levels, need be aligned with targets fixed under Pakistan Vision 2025 and international commitments, for example, SDGs. This would lend synergy and sustainability to poverty reduction initiative launched at local level with targets at national level and would facilitate monitoring as well.

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