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Role of Education in Poverty Mitigation in Pakistan: Evidence from Southern Punjab

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ARTICLE INFO	ABSTRACT
Article History:Received:May 12, 2022Revised:June 26, 2022Accepted:June 26, 2022Available Online:June 28, 2022	Poverty is one of the most common and challenging issues of the world, especially for the developing economies. Development pace will never be speedier until this issue is resolved before hand. In case of Pakistan, poverty is still persistent and increasing due to multifactor. The current study endeavors to investigate the multi-dimensional relation between educational attainment level
Reywords: Poverty Education Households Age of Household Head Assets Employment Status Spouse Participation Area Remittances	and its impact on the household poverty in South Punjab, Pakistan. For this purpose 800 households are selected as a sample. Ordinary Least Square and Binary Logistic methods are used. It transpired from the outcomes that variables that have positive impact on poverty include size of the household and family system. On the other hand, age of the head of household, education of the head of household, natural log of assets of the household, employment status of the household head, spouse participation in income generation, area of residence of the
Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.	household, foreign remittances and unemployment status are adversely affecting. This study is endowed with regional and divisional level comparison. It emerged from the result that amongst the three, Dera Ghazi Khan (DG Khan) is the most vulnerable. Family size, family system and employment status have adversely affected the economic face of this division. It is recommended that effective family planning regime, along with improved education attainment level and urbanization of the rural areas of this vicinity be strongly focused on priority basis.
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1. Introduction

It is a common phenomenon that difference in income level exists in every country of the world. Researcher and economists of all times have made extensive efforts to dig out the core reason of this income inequality and how some countries have brought themselves out of this crucial scenario while other remained unchanged. Pakistan is not the only country other countries across the globe are also facing this situation where two extremes exist in the same economy. Amartya Sen, an Indian Economist, has made great contribution in the field of development economics, especially on poverty, its dimensions and approaches to address it (Sen, 1979, 1985). Economists of the current time are now evolving new approaches regarding poverty based on the theories presented by Sen. They further added ill-health, inadequate health facilities, unavailability of shelter and other basic needs (Chambers, 1995).

Pakistan has consistently faced the pressure of poverty and income inequality since it came into being, except for some periods where the economy flourished (Amjad & Kemal, 1997; Arif, 2000). Poverty declined in the 1970s and 1980s, but it again rose till date due to bad governance, political instability, lethargic economic growth, decrease in the inflow of remittances, downsizing in the employment sector other allied issues.

Poverty is a multidimensional and complex phenomenon, where its severity varies from sector to sector (urban, rural), gender to gender (male, female), and region to region (province, division level). Previous studies have clearly shown that poverty in rural sector is more challenging than in the urban sector. Similarly, gender based poverty is also not simple to tackle.

Out of total Pakistan's population, approximately 55 percent belongs to the Punjab province. And amongst this 55 percent, 46 percent population is poor. The Southern Punjab is poorer as compared to the upper Punjab. Measuring the real poverty is the main focus of this research, so that it may help the policy makers to redirect the scarce resources to overcome this dilemma. Keeping in view the current issue, main objectives of this study are to identify the role of education and its impact on the poverty in Southern Punjab, Pakistan and to evaluate whether poverty is affected by the social indicators of development at Divisional level.

2. Literature Review

This segment comprised of the research already conducted on the aforementioned issue at local and international levels. Lanjouw and Ravallion (1995) worked on realizing the relation between family size and poverty that how large family size was mostly found poor. They used the primary data based on household survey from Pakistan. Their outcome was surprisingly different showing as the size of the family increased, poverty decreases as the cost elasticity of living reached to the value 0.6.

Amjad and Kemal (1997) used data from household integrated economic survey from year 1963-1993, as used by Malik (1988), taking the caloric intake method. They deduced that poverty was largely and adversely affected by many interrelated factors such as malnutrition, illiteracy and bad health (Gillani, Shafiq, Bhatti, & Ahmad, 2022). Their results also depicted that poverty declined from 1984 – 1988, but percentage of people moving from poor to very poor raised in years 1988 – 1991.

World Bank (2000) report showed a downward trend in the poverty profile of Pakistan from year 1987 to 1993. This downfall continued to 1997. Their major emphasis was on the policies that continued in that time frame and the result was consistent economic and political stability.

M. A. I. Ahmad (2001) pointed the shortcomings in the stereotype methods opted for the poverty alleviation. He suggested that political up thrust was necessary in shrinking the gap between the haves and have-nots. He was of the view that government should intervene in development by applying progressive plan for development. Otherwise the poverty gap would have been catastrophic and irreversible.

Azid, Aslam, and Chaudhary (2001) worked on the eradication and alleviation of the poverty through economic participation of the females. They elucidated that female labor force and female's participation in the earning reduced the poverty of their household manifolds. The used the primary data. Their results showed positive relation between female participation and economic progress and reducing the poverty.

Nisar, Anwar, Hussain, and Akram (2013) worked on the poverty at household level and other factors that were causing the economic inequality among the households. They used the data of Pakistan Social and Living standard Measurement 2008-2009, where they categorized the non-poor, transient and chronic poor on their consumption expenditure. They concluded that gender of the head of the household, land and livestock as assets, spouse participation in earning and improved education could help to reduce the transient / temporary poverty (T. I. Ahmad, Shafiq, & Gillani, 2019).

Celidoni and Procidano (2015) used the probability approach of (Zhang & Wan, 2008) of falling in poverty those who were at the transient stage of poverty. They used the quantities of information about indexes precision. They utilized the data from British Household Panel Survey. They proposed that 54 % of the transient poor were pronged to be at poor in their future by following their current earning pattern in comparison to the price change and living cost.

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Jayamohan and Kitesa (2014) made their investigation on cross sectional gender and poverty data from years 1999 – 2000 and 2004 – 05. They used OLS, Logit - Probit and Quantile models. Their results showed a downfall of poverty incidence in Ethiopia for both female and male headed households. But in female headed households, income shortfall and severity of poverty was more observed in general.

Azeem, Mugera, and Schilizzi (2018) tried to draw the fine line between poverty and vulnerability of a household. Monetary poverty (MP), multi-dimensional poverty (MDP), vulnerability to monetary poverty (VMP) and vulnerability to multidimensional poverty (VMDP) were their measures to estimate household poverty. They used sample of 90,000 households from the Punjab province of Pakistan. Their results implied that 18% of the households were bearing (MDP) and multidimensional measures were necessary to overcome the said issue.

R. Ahmad and Faridi (2020) used cross sectional data for determining the poverty in South Punjab via household survey. Their study was at divisional level and exhibited that households were likely to be poor due to variables such as higher dependency rate due to large household size, unemployed household head and family system. They suggested that increased educational attainment level, improved employment opportunities and urbanization were some of the measures to reduce poverty (Kashif, Shehzadi, & Arshad, 2020; Nasim, Bashir, & Hussain, 2022).

Koomson, Villano, and Hadley (2020) examined the poverty and its vulnerability in the households of Ghana and how it curtailed through the financial inclusion. They used the Ghana Living Standard Survey Data of year 2016 - 17. Their results demonstrated that around 23% of the population was poor and 51% were vulnerable to poverty. Financial inclusion and financial aid help to overcome this issue more in rural area as compared to the urban areas.

3. Data and Methodology

This part deals with the sources of data, technique used for sampling, poverty line used in the study, specification of the models and describing the variables.

3.1 Source of Data and Technique for Sampling

800 households were selected as a sample from the 3 Divisions of the South Punjab (Pakistan), through the formula given below:

$$SS = \frac{\frac{z^2 * p(1-p)}{e^2}}{1 + \left(\frac{z^2 * p(1-p)}{e^2 N}\right)}$$

Source: https://www.wallstreetmojo.com/sample-size-formula/

In South Punjab there were 4931013 households registered in 2017's estimation (Pakistan Bureau of Statistics, 2017). Proportionate sampling was conducted, where the greater number of households, the sample size was greater as compared to the other two divisions. All information was collected through simple questionnaire filled by the head of the households.

Household heads were the respondents. Information was collected through the questionnaire developed by the author, on the basis of literature reviewed, variables used in the previous studies on the said topic.

3.2 Poverty Line

Poverty line gives the basic yardstick to identify between poor and non-poor. Here poverty line is drawn as by the definition of the World Bank, which says that \$1.95 per day is must for one person's minimum requirement for the day. Converting this poverty line to the US dollar's current conversion to Pakistani rupees gives Rs. 9,652/= for a month (\$1 = Rs.165). Any household will be considered poor if their monthly income is less than this amount.

3.3 Specification of Model and Description of Variables

To determine and verify the poverty of the households of the Southern Punjab, Logistic Regression was used. Poverty is also a determinant that will help to clarify the economic, demographical and social structure of any household. To determine the economic and social

demographical structure of any household, poverty is another determinant that is used to analyze the socio-economic scenario. Following is the poverty's operational model;

POV = (HHAGE, EDUHH, SIZHH, LNASTS, EMPM,) SPPR, AREA, FMSYS, REMT, UNEMP

The above formula can be converted into an Econometric form as:

$$POV = f \begin{bmatrix} \chi_0 + \chi_1 HHAGE + \chi_2 EDUHH + \chi_3 SIZHH + \\ \chi_4 LNASTS + \chi_5 EMPM + \chi_6 SPPR + \chi_7 AREA + \\ \chi_8 FMSYS + \chi_9 REMT + \chi_{10} UNEMP + \chi_i \end{bmatrix}$$

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Variables		Description of Variables					
	D	Dependent Variable					
POV	Poverty Incidence	It describes the financial status of the Household =1 if HH earns less than Rs. 8600 / month =0 if HH earns more than Rs. 8600 / month					
	Independe	ent Variables (Explanatory)					
HHAGE	Age of the household Head	Age of the Head of the HH in years					
EDUHH	Educational Level of the Head of the HH	It explicates the educational status of Head of the HH in years (Years of Education)					
SIZHH	Size of the Household	It inquires about the numbers of members in a household					
LNASTS	Value / Worth/ Cost of Asset's Log	It comprises of all the valuables of the HH like properties, vehicles, home, appliances etc.					
ЕМРМ	Number of Actual Earning Persons in HH	Actual number of earners in HH					
SPPR	Job Status of Better Half	It talks about the occupational status of the spouse = 1 if Working = 0 (If not) Otherwise					
AREA	Area of Household	= 1 for Urban = 0 for Rural					
FMSYS	Family Status of the Household	Family Status either living nuclear or combined = 0 for nuclear = 1 for combined It inquires about the inflow of capital money under the head					
REMT	Foreign Remittances	of Remittances					

Source: Author's own calculations

4. Analysis of Data

Descriptive and Econometric techniques have been used to analyze the data.

4.1 Descriptive Analysis

Poverty index (PI) level of the household is between 0.00 to1.00 depicting absence and presence of poverty in the household respectively. Mean value of the (PI) revealed that 40 percent of the households were poor in the Southern Punjab, while 60 percent were relatively better than the poor ones. Ages of the heads of the households were between 22 to 91 years. Educational attainment of the household was valued from 0.00 to 18.00 years (illiterate to post graduate degrees). Household size (SIZHH) valued from 2.00 to 19.00 showing minimum two members and maximum number of members in some families were up to 19 members in Southern Punjab. Natural log of assets (LNASTS) valued between 7.70 and 18.17, while the deviation value was 1.54 which was guite high and showing unegual distribution of assets and wealth in the sample area i.e. Southern Punjab. (EMPM) interpreted the number of employed members in the household, whose minimum was 0.00 and maximum was 7.00 showing complete unemployment to maximum number of earners in the family. Here 45 percent of the sample population were unemployed and were financially dependent on the other earners in their families. (SPPR) presented the spouse participation in the earning and family's financial activity, whose value was between 0.00 to 1.00, showing no participation and active earner respectively. Household's area of residence (AREA) showed whether the household was located in rural or

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urban area, valuing from 0.00 to 1.00 respectively. 45 percent of the sampled population belonged from the urban areas or cities, while 55 percent resided in rural vicinity. Another significant variable is the family system (FMSYS) whose value lied from 0.00 to 1.00 showing nuclear or independent family or combined family respectively. Mean value showed that 48 percent of the sample families were joint or combined in their set up. (REMT) is abbreviation of remittances in our study, valued from 0.00 to 1.00. Its mean value 0.13 depicted that 13 percent of the sample households were getting foreign remittances.

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
ΡΟν	0.40	0.00	1.00	0.00	0.49	0.40	1.16
HHAGE	49.11	49.00	91.00	21.00	11.55	0.02	3.06
EDUHH	9.88	10.00	18.00	0.00	4.61	-0.45	2.47
SIZHH	6.20	6.00	19.00	2.00	2.16	1.39	6.99
LNASTS	14.31	14.61	18.17	7.70	1.54	-0.36	3.00
ЕМРМ	2.02	2.00	7.00	0.00	1.17	1.27	4.90
SPPR	0.22	0.00	1.00	0.00	0.42	1.33	2.76
AREA	0.45	0.00	1.00	0.00	0.50	0.21	1.04
FMSYS	0.48	0.00	1.00	0.00	0.50	0.10	1.01
REMT	0.13	0.00	1.00	0.00	0.34	2.15	5.63

Table 2: Descriptive Statistical Analysis of Southern Punjab

Source: Author's own calculations

4.2 Correlation Analysis

To deal with the issue of multicollinearity and assess the degree of variable's association, correlation analysis was used. Criterion for multicollinearity was set as 0.80 or above value of correlation coefficient would depict multicollinearity. Correlation between variables will be taken as weak, moderate and strong if probability values were equal or less than 0.30, 0.31 - 0.80, and 0.81 and above respectively. Probability value also suggested the significance and insignificance, valuing 0.10 or less as significant or greater than 0.10 as insignificant.

Table 3: Correlation Matrix of Southern Punjab

Variables	POV	HHAGE	EDUHH	SIZHH	LNASTS	EMPM	SPPR	AREA	FMSYS	REMT
PI	1.000									
HHAGE	-0.082	1.000								
EDUHH	-0.477	-0.045	1.000							
SIHH	0.195	0.278	-0.139	1.000						
LNASTS	-0.305	0.067	0.172	-0.002	1.000					
ЕМРМ	-0.187	0.247	0.058	0.461	0.095	1.000				
SPPR	-0.269	0.079	0.163	0.169	0.147	0.497	1.000			
AREA	-0.161	-0.020	0.295	-0.048	0.020	-0.013	0.070	1.000		
FMSY	0.194	0.117	-0.083	0.422	-0.021	0.199	0.060	-0.018	1.000	
REMT	-0.225	0.074	0.103	-0.006	0.106	0.093	0.071	0.066	-0.043	1.000
Source: Authority	or's own c	alculations								

Source: Addition 5 own calculations

5. Econometric Analysis 5.1 Binary Logistic Determinants of Poverty at Household level of Southern Punjab

Table 4 provides the poverty estimates from South Punjab, enlisting the variables, coefficient, standard error values, z-statistic, probability and marginal effect. A sample size of 800 households were selected, out of which 478 households were non poor and 322 were poor, with dependency 1.00 and 0.00 respectively. This became 40.25 percent households were facing the threshold of poverty and 59.75 were not poor. McFadden R-squared valued 0.399, with LR coefficient valued 431.3197, with highly significant probability of 0.000. Values of Log likelihood and Deviance were -323.5500 and 647.1000 respectively.

Household poverty was the dependent variable which was measured with the dummy variable, and independent variables included household head age (HHAGE), education of the household head (EDUHH), household size (SIZHH), Asset's natural log (LNASTS), household head employment status (EMPM), spouse participation (SPPR), area of residence (AREA), family system (FMSYS) and remittances (REMT). It transpired from the results that on poverty, (SIZHH), (FMSYS) and (UNEMP) had positive influence as equivalent to the results verified by Chaudhry and Rahman (2009); Khatun (2015); Poston et al. (2010) and Girma and Temesgen (2018). Rest of all variables had negative relation. (AREA) was the only insignificant variable while others were significant. These outcomes were also matched with the outcomes of

Serumaga-Zake and Naudé (2002) and Skeldon (1997). These results are also analogous to the outcomes of the Iqbal and Akhtar (2015); Khatun (2015) and Shirazi (1995).

Table 4: Poverty Estimates of Southern Punjab							
Variable	Coefficient	Standard Error	z-Statistic	Probability	Marginal Effects		
Constant	6.689618	1.103992	6.059483	0.0000			
HHAGE	-0.034555	0.009629	-3.588768	0.0003	-0.005		
EDUHH	-0.193918	0.025645	-7.561748	0.0000	-0.041		
SIZHH	0.425081	0.067496	6.297863	0.0000	0.091		
LNASTS	-0.394696	0.067864	-5.815988	0.0000	-0.146		
ЕМРМ	-0.546803	0.119058	-4.592739	0.0000	-0.119		
SPPR	-1.034831	0.303851	-3.405715	0.0007	-0.225		
AREA	-0.109135	0.205597	-0.530822	0.5955	-0.312		
FMSYS	0.722703	0.214001	3.377096	0.0007	0.203		
REMT	-1.461909	0.382828	-3.818709	0.0001	-0.459		
UNEMP	1.158352	0.209167	5.537922	0.0000	0.291		
McFadden R-sq	Juared	0.399	Log likelihoo	bd	-323.5500		
LR statistic		431.3197	Deviance		647.1000		
Prob (LR statis	tic)	0.000000					
Obs with Dep=0		478	Total obs		800		
Obs with Dep=	1	322					
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Table 4: Poverty Estimates of Southern Punjab

Source: Author's own calculations

5.2 Binary Logistic Determinants of Poverty at Household level in Bahawalpur Division

Table 5 is comprised of five columns enlisting the variables, coefficients, standard error, z-statistic and probability. 290 households were taken as the sample, out of which 173 were non poor and 117 poor. This means that 40.34 percent were poor and 59.65 were above the severity. Goodness of fit of the model was indicated by the McFadden R-square, valuing 0.439. Log likelihood was -109.657 and deviance was 219.3141. Model was found significant statistically probability of LR as 0.000 and LR-Statistic as 171.829.

Table 5: Poverty Estimates of Bahawalpur Division

Constant 10.15486 2.177374 4.663810 0.0000 HHAGE -0.003559 0.016753 -0.212445 0.8318 EDUHH -0.149297 0.048504 -3.078033 0.0021 SIZHH 0.541661 0.112444 4.817167 0.0000 LNASTS -0.778646 0.148637 -5.238567 0.0000 EMPM -0.804153 0.234639 -3.427191 0.0006 SPPR -1.068864 0.645683 -1.655400 0.0978 AREA 0.347470 0.379541 0.915501 0.3599 FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.00000 703 Total obs 290 Obs with Dep=0 173 Total obs 290	Variable	Coefficient	Standard Error	z-Statistic	Probability
HHAGE -0.003559 0.016753 -0.212445 0.8318 EDUHH -0.149297 0.048504 -3.078033 0.0021 SIZHH 0.541661 0.112444 4.817167 0.0000 LNASTS -0.778646 0.148637 -5.238567 0.0000 EMPM -0.804153 0.234639 -3.427191 0.0006 SPPR -1.068864 0.645683 -1.655400 0.0978 AREA 0.347470 0.379541 0.915501 0.3599 FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.00000 173 Total obs 290 Obs with Dep=0 173 Total obs 290	Constant	10.15486	2.177374	4.663810	0.0000
EDUHH -0.149297 0.048504 -3.078033 0.0021 SIZHH 0.541661 0.112444 4.817167 0.0000 LNASTS -0.778646 0.148637 -5.238567 0.0000 EMPM -0.804153 0.234639 -3.427191 0.0006 SPPR -1.068864 0.645683 -1.655400 0.0978 AREA 0.347470 0.379541 0.915501 0.3599 FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.000000 733 290 Obs with Dep=0 117 117 117	HHAGE	-0.003559	0.016753	-0.212445	0.8318
SIZHH 0.541661 0.112444 4.817167 0.0000 LNASTS -0.778646 0.148637 -5.238567 0.0000 EMPM -0.804153 0.234639 -3.427191 0.0006 SPPR -1.068864 0.645683 -1.655400 0.0978 AREA 0.347470 0.379541 0.915501 0.3599 FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.000000 290 Obs with Dep=0 173 Total obs 290	EDUHH	-0.149297	0.048504	-3.078033	0.0021
LNASTS -0.778646 0.148637 -5.238567 0.0000 EMPM -0.804153 0.234639 -3.427191 0.0006 SPPR -1.068864 0.645683 -1.655400 0.0978 AREA 0.347470 0.379541 0.915501 0.3599 FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.000000 173 Total obs 290	SIZHH	0.541661	0.112444	4.817167	0.0000
EMPM -0.804153 0.234639 -3.427191 0.0006 SPPR -1.068864 0.645683 -1.655400 0.0978 AREA 0.347470 0.379541 0.915501 0.3599 FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.00000 173 Total obs 290	LNASTS	-0.778646	0.148637	-5.238567	0.0000
SPPR -1.068864 0.645683 -1.655400 0.0978 AREA 0.347470 0.379541 0.915501 0.3599 FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.00000 173 Total obs 290	ЕМРМ	-0.804153	0.234639	-3.427191	0.0006
AREA 0.347470 0.379541 0.915501 0.3599 FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.00000 700 290 Obs with Dep=0 117 117 290	SPPR	-1.068864	0.645683	-1.655400	0.0978
FMSYS 0.071697 0.358547 0.199965 0.8415 REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.00000 700 290 Obs with Dep=0 117 117 290	AREA	0.347470	0.379541	0.915501	0.3599
REMT -1.851911 0.667053 -2.776258 0.0055 UNEMP 0.943208 0.368810 2.557436 0.0105 McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.00000 Total obs 290 Obs with Dep=0 117 117 117	FMSYS	0.071697	0.358547	0.199965	0.8415
UNEMP 0.943208 0.368810 2.557436 0.0105 McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.00000 Total obs 290 Obs with Dep=0 117 117 290	REMT	-1.851911	0.667053	-2.776258	0.0055
McFadden R-squared 0.439 Log likelihood -109.6571 LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.000000 Total obs 290 Obs with Dep=0 117 117	UNEMP	0.943208	0.368810	2.557436	0.0105
LR statistic 171.8292 Deviance 219.3141 Prob (LR statistic) 0.000000 Total obs 290 Obs with Dep=0 173 Total obs 290	McFadden R-s	quared	0.439	Log likelihood	-109.6571
Prob (LR statistic) 0.000000 Obs with Dep=0 173 Total obs 290 Obs with Dep=1 117 117 117	LR statistic		171.8292	Deviance	219.3141
Obs with Dep=0 173 Total obs 290 Obs with Dep=1 117 11	Prob (LR stati	istic)	0.000000		
	Obs with Dep	=0	173	Total obs	290
	Obs with Dep	=1	117		

Source: Author's own calculations

It transpired from the outcomes that (SIZHH), (AREA), (FMSYS) and (UNEMP) had positive influence on our variable poverty in Bahawalpur Division, while other variables had negative impact, negative relation with the poverty. Insignificant variables included (HHAGE), (AREA) and (FMSYS), rest of the variables were highly significant.

5.3 Binary Logistic Determinants of Poverty at Household level in Multan Division

From Multan Division, 260 households were selected as total sample, of which 97 households had dep. value = 1 and 166 households had dep. value = 0. Here 63.84 percent households were non poor and 36.15 percent were poor. Table 6 is comprised of five columns enlisting the variables, coefficients, standard error, z-statistic and probability. McFadden R-

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square value was 0.526 which indicated the goodness of the fit of the model. -80.5647 was the value of log likelihood and deviance valued 161.1295. Overall significance of the model was highly significant as the LR-statistic was 179.1056, with probability of LR 0.000. The results demonstrated that variables like (SIZHH), (FMSYS) and (UNEMP) were the positively affecting our explanatory variable poverty, while rest of the others had negative relation with poverty here in Multan Division. Also all the variable values were significant, except for (AREA), (FMSYS) and (REMT) as they were insignificant.

Variable	Coefficient	Standard Error	z-Statistic	Probability
С	8.228728	2.348304	3.504116	0.0005
HHAGE	-0.086573	0.021680	-3.993294	0.0001
EDUHH	-0.284254	0.066926	-4.247297	0.0000
SIZHH	0.484462	0.164059	2.952967	0.0031
LNASTS	-0.265289	0.141000	-1.881479	0.0599
ЕМРМ	-0.880953	0.279906	-3.147314	0.0016
SPPR	-2.142602	0.827093	-2.590520	0.0096
AREA	-0.237763	0.418985	-0.567473	0.5704
FMSYS	0.783788	0.484120	1.618997	0.1054
REMT	-0.829040	0.754092	-1.099388	0.2716
UNEMP	1.352792	0.485283	2.787633	0.0053
McFadden R-	squared	0.5264	Log likelihood	Total obs
LR statistic	-	179.106	Deviance	Total obs
Prob(LR stati	stic)	0.000000		Total obs
Obs with Dep	=0	166	Total obs	260
Obs with Dep	=1	94		
Source: Author's ou	wn calculations			

Table 6: Pover	v Estimates	of Multan	Division
	.,	• • • • • • • • • • • • •	

urce: Author's own calculations

5.4 Binary Logistic Determinants of Poverty at Household level in Dera Ghazi Khan Division

From Dera Ghazi Khan Division, 250 households were selected as total sample, of which 111 households had dep. value = 0 and 139 households had dep. value = 1. Here 55.6 percent households were poor and 44.4 percent were non poor. Table 7 also comprised of five columns, including variables, coefficient, standard error, z-statistic value and finally the probability column. It transpired from the results that size of the household (SIZHH), family system (FMSYS) and the unemployment (UNEMP) had positive influence on our explained variable poverty, while (HHAGE), (EDUHH), (LNASTS) and (REMT) had negative affect and relation with poverty in D. G. Khan Division.

Table 7: Poverty Estimates of DG Khan Division

Variable	Coefficient	Standard Error	z-Statistic	Probability
Constant	4.550202	1.744445	2.608396	0.0091
HHAGE	-0.028925	0.016381	-1.765805	0.0774
EDUHH	-0.196355	0.040296	-4.872848	0.0000
SIZHH	0.441336	0.122610	3.599506	0.0003
LNASTS	-0.323201	0.099489	-3.248597	0.0012
ЕМРМ	-0.293086	0.184920	-1.584934	0.1130
SPPR	-0.871156	0.457563	-1.903903	0.0569
AREA	-0.233306	0.351225	-0.664263	0.5065
FMSYS	1.177562	0.398890	2.952094	0.0032
REMT	-0.975907	0.710605	-1.373347	0.1696
UNEMP	1.514989	0.364746	4.153545	0.0000
McFadden R-s	squared	0.362081	Log likelihood	-109.5406
LR statistic	-	124.3498	Deviance	219.0812
Prob (LR statistic)		0.000000		
Obs with Dep	=0	139	Total obs	250
Obs with Dep	=1	111		

All variables were highly significant here in D. G. Khan, except (AREA) and (REMT). The goodness of the fit of the model was indicated by the McFadden R-square and its value was 0.362. Log likelihood valued as -109.5406 and Deviance of 219.0812. Overall significance of the model was interpreted by the value of the LR-statistic, which was 124.3498 and the value of the probability of the LR was 0.000 proving our model to be statistically significant.

6. Conclusion

The aim of this research is to interrogate and investigate factors that help to reduce poverty in the study area i.e. south Punjab. It is a household survey based study. It transpired from the results that variables such as size of the household, family system, area of residence, household's employment status, presence of the disease has positive impact on the poverty intensity and vulnerability. Whereas other factors that reduce its projection includes age of the household head, educational level of the head of the household, foreign remittances, number of earners in the household, assets owned by the household and spouse participation in earning.

Amongst the three divisions, Dera Ghazi Khan (D. G. Khan) is the poorest as the poverty percentage is up to 44.4%. Factors that are positively affecting the poverty here include size of the household, family system and employment status. Area of residence and foreign remittances are the highly insignificant variables. Area of the household remains consistently insignificant in all three divisions, whereas family system and remittances are the variables that are found in two divisions.

This study is limited due to multiple factors including sample size, area of the sampling, time taken to conduct the survey, and limited financial resource. To be more precise, sample size should be increased as it is obvious that more the sample size, greater it will be towards accuracy. Area where sampling was done was also small as it took only 3 divisions of the South Punjab. For future study, spectrum of area should also widen. Total time taken to conduct this work was not sufficient, as this was a part of mere research. To overcome the issue of poverty, ample time is necessary to make deep rooted study. Financial hazard was also a pebble of the shoe as this survey was conducted by the author in her limited available resources. On the basis of conclusion and limitations, following policies are recommended:

- It is suggested that size of the household should be controlled through effective family planning as this variable has hugely participated in the socio-economic vulnerability of the family and the society as well. For this reason, educating the urge of this issue at household level.
- Basic health facilities should be available to every household regardless of their area of residence. For this purpose, free inter-city and intra-city medical camps should be regularized, where new doctors under the command of senior doctors should make visit after every two weeks. This will not only reduce the rural to urban medical based migration but will also help to urbanize the rural sector.
- Along with producing job opportunities in services sector, entrepreneurship should also be encouraged by providing the handsome atmosphere by the government and private sector.

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