

## **UNDERSTANDING THE ROOT CAUSES OF POVERTY IN PAKISTAN: DEMOGRAPHIC, HOUSEHOLD AND LOCATIONAL FACTORS**

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**Abstract:** This study examines the factors contributing to poverty in Pakistan, with a focus on demographic, household, and locational characteristics. Using the PSLM survey (2014-2015), the study employs a logistic regression model to investigate the impact of different factors on poverty. The results indicate that household head education, size, age, marital status, health status, remoteness, region, and gender are significant determinants of poverty. The study recommends that the government should improve basic facilities, quality of education, employment opportunities, and health facilities in remote areas of Pakistan to reduce poverty rates.

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**Keywords:** poverty, Pakistan, demographic factors, household characteristics, locational factors, logistic regression model, household head education, household size, household age, health status, remoteness, region, gender, basic facilities, education quality, employment opportunities, health facilities.

### **Introduction:**

Poverty remains a severe problem in Pakistan, and its eradication is essential for the country's socio-economic development. Different studies have examined the relationship between poverty and various economic and social factors, such as demographics, household characteristics, and locational aspects. However, the specific factors contributing to poverty in Pakistan may be different from those in other countries, making it necessary to investigate the issue within the country's context.

In this study, we aim to investigate the impact of demographic, household, and locational factors on poverty in Pakistan by utilizing the PSLM survey (2014-2015) data. We consider variables such as household head education, size, age, marital status, health status, remoteness, region, and gender as determinants of poverty. We employ a logistic regression model to identify the significant factors contributing to poverty. The study's findings reveal that household head education, size, age, marital status, health status, remoteness, region, and gender have a significant impact on the level of poverty in Pakistan. We find that the differences in region, gender, and provinces cause a rise in poverty rates due to low health facilities, poor educational systems, low infrastructure, low employment opportunities, and low economic growth.

The study's recommendations include improving basic facilities, quality of education, employment opportunities, and health facilities in remote areas of Pakistan to reduce poverty rates. The study's findings contribute to the existing literature on poverty and provide a basis for policymakers to formulate effective poverty reduction strategies in Pakistan.

## Objectives of the Study

The major purpose of the research is to analyse the impact of demographic factors, household characteristics and locational factors on poverty in Pakistan.

## Literature Review

Phenomenon of poverty is prevalent in developing world and literature is increasing on the subject as well. Various research studies have found different economic and social factors that cause the phenomenon of poverty.

Major social and economic variables influencing poverty include location of the household, household characteristics and Household head characteristics.

The section comprises literature on the impacts of location of the household, household characteristics and Household head characteristics on poverty. Location of the household mainly includes the urban or rural locality of household. The mostly used household characteristics are household dependency ratio and household size. Household head's characteristics include education of the household head, gender of the household head, age of the household head and marital status.

The literature illustrates that there are mixed evidences regarding the impacts of location of the household on poverty. Ravallian et al. (2007) explored that increase in the cost of living standards would rise poverty rate in urban areas. Gertler and Glewwe (1990) analysed that rural and urban areas have different determinants of poverty, meaning that policies for poverty reduction should vary between the two localities. Likewise, in Woolard & Klasen (2000) found that there exist strong geographic elements to the occurrence of poverty. For Pakistan, Baulch and McCulloch (2002) found that district of the residence have significant impact on poverty status. Poverty in rural areas is higher than urban areas in Africa (The World Bank, 2001). This is mostly due of lack of infrastructure, employment opportunities, and better services in rural regions.

The literature showed that household characteristics such as higher ratio of dependency, large size of the household and marital status of household members have significant impacts on poverty. Most of the studies found positive relationship between poverty and household size (Sekhampu, 2013). Some studies concluded that growing household size reduce the household welfare (Litchfield & McGregor, 2008; Fagernas & Wallace, 2007; Mukherjee & Benson, 2003).

The literature also demonstrates evidences regarding the negative impacts of household dependency ratios on poverty. Baulch and McCulloch (1999) constituted that, higher dependency ratios of household have higher probability to be poor as compare to those having lower dependency ratios in Pakistan. Likewise, Akerele and Adewuyi (2011) revealed that a rise in the dependency ratio has exercised a harmful impact on the welfare of household in Nigeria and Tanzania. A number of studies have found impacts of marital status of household members on poverty. Such as Anyanwu (2013) found that married people enhance economic prosperity of a country, as marriage provides a bunch of economic benefits for households because it would normally add an additional earner to the household.

Household head characteristics also influence poverty significantly as depicted by literature. Household head characteristics have included education, gender, age, and marital status of the household head. The literature suggests that education of the household head has significant negative impacts on household welfare and poverty. These studies include Grootaert (1997) for Cote d'Ivoire, Serumaga and Naude (2002) for South Africa and Cheema and Sial (2012) for Pakistan, explored that household heads having lower levels of education practice higher poverty levels and household heads with higher level of education lead to lower poverty level. For instance, an increase in the level of education would reduce the probability of being poor in the above mentioned countries. Likewise, higher levels of schooling are connected with higher levels of household wellbeing in Malawi. Litchfield and Sekhampu (2013) established that the level of employment of the household head was inversely related with the likelihood of being poor in the South Africa.

Correspondingly, Benson and Mukherjee (2003) established that formal wage employment led to significantly increased in level of household’s wellbeing in Malawi.

Several studies have found mixed evidences regarding the impacts of gender of the household head on household welfare and poverty and concluded that Female headed households are more probable to be poor than male headed households. These studies include Geda (2005) for Kenya, Anyanwu (2013) for Nigeria. Similarly, Female headed households in Nigeria and Tanzania had poorer living conditions compared to male headed households (Litchfield & McGregor, 2008; Akerele & Adewuyi, 2011). For Pakistan, Baulch and McCulloch (2002) concluded that gender of household head and basic education has insignificant impact on poverty.

Age of the household head may result in more work experience, which lead to higher level of income and asset ownership, both of which improve household wellbeing. Several studies have found that age is negatively related with the chance of being poor (Grootaert, 1997; Sekhampu, 2013). Similarly, some other studies found that age is directly related with wellbeing (Datt & Jolliffe, 2005; Litchfield & McGregor, 2008; Cheema & Sial, 2012). Thus, an increase in age of the Household head may enhance household wellbeing.

**Methodology and Data**

This section discusses theoretical framework, empirical model, methodology and data source.

**Theoretical Framework Table 1**

Variables	Channel	Channel	Poverty
Remoteness ( Non remote )	↑Infrastructure and services	↑ Employment opportunities	↓ poverty
↑ Household size	↑ Economies of scale	↑ Income	↓ Poverty
↑Age of HH head	↑ Work experience	↑ Living standard	↓ Poverty
↑ Education of HH head	↑Employment opportunities	↑ Income per capita	↓ Poverty
↑ Health status of HH head	↓Medical expenditure	↑Selfemployment opportunities	↓ Poverty
↑ Marital status of HH head	↑Earning hands	↓Collective spending	↓ Poverty
Region (Urban)	↑Employment	↑ income per capita	↓ poverty
Gender (Male HH )	↑Employment opportunities	↑ income	↓ poverty

Channels for Poverty

**Empirical Model**

The researchers used different methods and techniques for the estimation of the models, Neff (2007) employed the multiple correspondence analyses contrary to probit regression. Baulch and McCulloch (2002) used proportional hazards model of poverty transitions and logit model of poverty status. Azam and Imai (2009) Used feasible generalized least square estimation technique.

In this study we have incorporated the Logistic regression technique and binary logistic regression model for the estimation of poverty model. The model is as followed.

$$P = \beta_1 + \beta_2HHS + \beta_3AHH + \beta_4EDU + \beta_5HS + \beta_6MS + \beta_7R + \beta_8PR + \beta_9HH + \beta_{10}RE + \mu \tag{1}$$

Poverty level =  $\beta_1 + \beta_2$ Household size +  $\beta_3$ Age of household

$$\begin{aligned}
 &+ \beta_4 \text{Education of household} + \beta_5 \text{Health status} \\
 &+ \beta_6 \text{Marital status} + \beta_7 \text{Region} + \beta_8 \text{Province} \\
 &+ \beta_9 \text{ender of household} + \beta_{10} \text{Remoteness} + \mu \quad (2)
 \end{aligned}$$

**Principal Component Analysis**

To lessen the dimensionality of the original data set, the idea of principal component analysis (hereafter PCA) was given by Pearson (1901) originally and developed by Hotelling (1933). PCA is a statistical method that linearly converts an original set of variables into a significantly smaller set of uncorrelated variables that corresponds to mainly information in the original set of variables.

The index of remoteness is combination of basic health unit, school, bank, road, drinking water, bus, railway and post office. The index is calculated by aggregating variables through PCA.

$$\begin{aligned}
 RE = &(0.0726)BHU + (-0.0014)SC + (-0.0058)BN + (-0.0128)RD \\
 &+ (-0.0444)DW + (-0.3581)BS + (-0.2708)RA \\
 &+ (0.6609)PO \quad (3)
 \end{aligned}$$

$$\begin{aligned}
 \text{Remoteness} = &\beta_1 \text{Basic health unit} + \beta_2 \text{school} + \beta_3 \text{bank} + \beta_4 \text{road} \\
 &+ \beta_5 \text{drinking water} + \beta_6 \text{bus} + \beta_7 \text{railway} \\
 &+ \beta_8 \text{post office} \quad (4)
 \end{aligned}$$

The above equation shows that, remoteness is the combination of basic health unit, school, bank, road, drinking water, bus, railway and post office. Results of PCA are given below.

**Table 2**

Principal Component Analysis

Variables	Component
Basic health unit	0.0726
School	-0.0014
Variables	Component
Bank	-0.0058
Road	-0.0128
Drinking water	-0.0444
Bus	-0.3581
Railway	-0.2708
Post office	0.6609

**Variable Description**

This study analyzes the impact of demographic factors, household characteristics and locational factors on poverty in Pakistan. This study focus on variable such as age of household head, education of household head, marital status, size of household, health status, region, gender, province and remoteness. These variables are selected according to availability of data and the nature of topic. We have introduced unique poverty line for estimation of poverty rate in Pakistan which is \$1.25 determined by the World Bank. Individuals living below \$1.25 per day are considered to be poor while individuals living on this line or above this line are considered to be non-poor.

**Data Source**

This study incorporates the data from the Pakistan social and living standards measurement survey (hereafter PSLM) covering period 2004-15. PSLM data deals with income approach. The study use income approach for determining poverty as per capita income has a direct relationship with poverty, i.e. a rise in per capita income lead to decline in poverty rate and vice versa. For determining poverty, Income approach is also employed by several studies (Arif, 2011; Malik, 1988).

**Empirical Findings and Discussion Regression Analysis for Poverty**

In this part, binary logistic regression model is estimated for \$1.25 a day poverty line for Pakistan and the following results are obtained.

**Logistic Regression Analysis at \$1.25 per day Poverty Line**

For analysis of poverty model, we have used binary logistic regression model using poverty at \$1.25a day poverty line (The World Bank, 2008), the following regression equation is obtained.

$$P = \beta_1 + \beta_2HHS + \beta_3AHH + \beta_4EDU + \beta_5HS + \beta_6MS + \beta_7R + \beta_8PR + \beta_9HH + \beta_{10}RE + \mu \tag{5}$$

$$\text{Poverty level} = \beta_1 + \beta_2\text{Household size} + \beta_3\text{Age of household} + \beta_4\text{Education of household} + \beta_5\text{Health status} + \beta_6\text{Marital status} + \beta_7\text{Region} + \beta_8\text{Province} + \beta_9\text{ender of household} + \beta_{10}\text{Remoteness} + \mu \tag{6}$$

Where P is our dependent variable showing Poverty level, and  $\beta$  's s expresses coefficients of following independent variables.

**Table 3**

Logistic Regression Model for Poverty at \$1.25 per Day

**Note.** \*, \*\* and \*\*\* correspondingly represent level of significance at 10%, 5% and 1%.

Variables	Coefficients	Standard Errors
Remoteness	-0.0827545***	0.0041111
HH head Education	-0.0697279***	0.0133992
Household size	-0.1642378***	0.002127
Young HHA	-1.172442***	0.097135
Middle HHA	-1.660221***	0.0884349
Old HHA	-0.9131145***	0.0817799
Marital status	-0.0748548***	0.0132289
Health status	-0.1363285***	0.0224191
Region	-0.3715258***	0.0176567
Gender	-2.887227***	0.0142295
KPK	1.485564***	0.0245341
Punjab	0.3491576***	0.0239847
Sindh	0.522812**	0.0273447
Constant	1.901461***	0.1204552

The coefficient of remoteness is negative and highly statistically significant which shows that overall individuals utilize more than three above-mentioned facilities which results non-poor. Similarly, the coefficient of HH head Education is negative and highly statistically significant. So, household heads with higher level of education experience lower poverty rate, while household heads with lower education experience higher rate of poverty. The coefficient of household size is negative and highly statistically significant. It means that as the size of household increases, potential income earner increases which are positively associated with well-being of household, proposing economies of scale in household consumption, as a result it would decrease in poverty derived from increasing household size. The coefficients of household age are negative and highly statistically significant. It implies that household age reflects increase in work experience, which is connected to increase income as a result living standard and welfare increases as a result poverty rate will decline.

Gender of household head also determines the level of poverty. The coefficient of household gender variable is negative and highly statistically significant which represents that male headed households are less likely to be poor in terms of employment opportunities which leads to increase in income and decrease in poverty status. While it is generally believed the families with female household heads are more likely to be poor due to of lack of proper planning and employment opportunities for female and low labour force participation in rural areas. The coefficients of all provinces are positive and highly statistically significant, which shows different poverty rates in all provinces.

The coefficient of marital status is negative and highly statistically significant. It means that, married people may attain the similar level of utility with less collective spending rather than individual's sum of consumption if they were living separately which improves standard of living and decrease in the rate of poverty. The coefficient of health status is negative and highly statistically significant. Thus individuals with better health can seek employment opportunities which lead to increase in income and reduce poverty.

Region variable (urban area or rural area) also depict the nature of poverty. Households living in urban areas are less poor as compare to rural areas in term of facilities, employment opportunities, infrastructure and services. Here the coefficient of region variable is negative and highly statistically significant which shows that as households moves from rural areas to urban areas they are less discriminated in terms of facilities and which leads to lower the rate of poverty. While in rural areas basic facilities, employment opportunities, infrastructure and services are less advanced as compare to urban counterpart, this is mainly because of lack of infrastructure, employment opportunities, and better services in rural localities which leads to poverty in that region.

### **Conclusion**

This study analyzes the impact of demographic factors, household characteristics and locational factors on poverty in Pakistan. Logistic regression model has been used to achieve this objective. The data for the study is obtained from PSLM survey covering period 2014 to 2015. The index of remoteness is combination of, basic health unit, school, bank, road, drinking water, bus, railway and post office. Remoteness determines the nature of poverty, individuals who utilize more than three above-mentioned facilities are considered as non-remote and non-poor, if three or less than facilities are utilized are considered remote and poor. The study has introduced unique poverty line for estimation of poverty rate in Pakistan which is \$1.25 determined by the World Bank. Individuals living below \$1.25 per day are considered to be poor while individuals living on this line or above this line are considered to be non-poor. Findings of the study revealed that household head education, household size, household head age, marital status, health status, remoteness, region and gender have significant impacts on poverty level. The study further conclude that the differences in region, gender, and provinces cause rise in poverty rate due to low health facilities, poor educational system, low infrastructure, low employment opportunities and low economic growth.

### **Policy Recommendations**

The findings of this study show that region, gender, and provinces causes increase in poverty and income inequality. It is revealed that that higher rate of poverty is related to greater income inequality and lower poverty rate is related to lesser income inequality between gender, region and among provinces of Pakistan. These differences come into existence due to lack of proper planning from the government side. Due to these differences in gender, region and among provinces causes low health facilities, poor educational system, low infrastructure, low employment opportunities and low economic growth. So, government should take some serious steps to improve basic facilities, quality education, in both the regions and provide equal employment opportunities for males and females, as well as health facilities in remote areas of Pakistan.



References

- Akerele, D., & Adewuyi, S. A. (2011). Analysis of poverty profiles and socioeconomic determinants of welfare among urban households of Ekiti State, Nigeria. *Current Research Journal of Social Sciences*, 3(1), 1–7.
- Anyanwu, J. C. (2013). Characteristics and macroeconomic determinants of youth employment in Africa. *African Development Review*, 25(2), 107–129. <https://doi.org/10.1111/j.1467-8268.2013.12019.x>
- Arif G. M., Iqbal, N., & Farooq, S. (2011). The persistence and transition of rural poverty in Pakistan, 1998–2004 (PIDE Working Papers No. 74). <https://www.pide.org.pk/pdf/Working%20Paper/WorkingPaper-74.pdf>
- Azam, M. S., & Imai, K. S. (2009). Vulnerability and poverty in Bangladesh (Chronic Poverty Research Centre Working Paper No. 141). <http://dx.doi.org/10.2139/ssrn.1531577>
- Baulch, B., & McCulloch, N. (2002). Being poor and becoming poor: Poverty status and poverty transitions in rural Pakistan. *Journal of Asian and African Studies*, 37(2), 168–185. <https://doi.org/10.1177/002190960203700208>
- Cheema, A. R., & Sial, M. H. (2012). Poverty, income inequality, and growth in Pakistan: A pooled regression analysis. *The Lahore Journal of Economics*, 17(2), 137–157. <https://doi.org/10.35536/lje.2012.v17.i2.a6>
- Datt, G., & Jolliffe, D. (2005). Poverty in Egypt: Modeling and policy simulations. *Economic Development and Cultural Change*, 53(2), 327–346. <https://doi.org/10.1086/425224>
- Fagernas, S., & Wallace, L. (2007). Determinants of poverty in Sierra Leone, 2003 (Economic and Statistics Analysis Unit Working Paper, 19). [https://www.files.ethz.ch/isn/32691/esau\\_wp19.pdf](https://www.files.ethz.ch/isn/32691/esau_wp19.pdf)
- Geda, A. (2005). Export development strategy, export success stories and lessons for Africa. The challenge for Afreximbank (Paper presented).
- Conference of African Export Import Bank Board of Governors Meeting. Harare, Zimbabwe.
- Gertler, P., & Glewwe, P. (1990). The willingness to pay for education in developing countries: Evidence from rural Peru. *Journal of Public Economics*, 42(3), 251–275. [https://doi.org/10.1016/00472727\(90\)90017-](https://doi.org/10.1016/00472727(90)90017-) C
- Grootaert, C., Kanbur, R., & Oh, G. T. (1997). The dynamics of welfare gains and losses: An African case study. *The Journal of Development Studies*, 33(5), 635–657. <https://doi.org/10.1080/00220389708422487>
- Hotelling, H. (1933). Analysis of a complex of statistical variables into principal components. *Journal of Educational Psychology*, 24(6), 417–441. <https://doi.org/10.1037/h0071325>
- Klasen, S., & Woolard, I. (2009). Surviving unemployment without state support: Unemployment and household formation in South Africa. *Journal of African Economies*, 18(1), 1–51. <https://doi.org/10.1093/jae/ejn007>

- Litchfield, J., & McGregor, T. (2008). Poverty in Kagera, Tanzania: Characteristics, causes and constraints (Poverty Research Unit at Sussex Working Paper No. 42).
- Malik, M. H. (1988) Some new evidence of poverty in Pakistan. *The Pakistan Development Review*, 27(4), 509–515. <https://www.jstor.org/stable/41239040>
- McCulloch, N., & Baulch, B. (1999). Distinguishing the chronically from the transitorily poor: evidence from Pakistan (IDS Working Paper No. 97). [https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/34\\_20/Wp97.pdf?sequence=1](https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/34_20/Wp97.pdf?sequence=1)
- Mukherjee, S., & Benson, T. (2003). The determinants of poverty in Malawi, 1998. *World Development*, 31(2), 339–358. [https://doi.org/10.1016/S0305-750X\(02\)00191-2](https://doi.org/10.1016/S0305-750X(02)00191-2)
- Neff, D. F. (2007). Subjective well-being, poverty and ethnicity in South Africa: Insights from an exploratory analysis. *Social Indicators Research*, 80(2), 313–341. <https://doi.org/10.1007/s11205-005-5920-x>
- Pearson, K. (1901). *Principal components analysis*. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, 6(2), 559–572. <https://doi.org/10.1080/14786440109462720>
- Ravallion, M., Chen, S., & Sangraula, P. (2007). New evidence on the urbanization of global poverty. *Population and Development Review*, 33(4), 667–701. <https://doi.org/10.1111/j.17284457.2007.00193.x>
- Sekhampu, T. J. (2013). Determinants of poverty in a South African township. *Journal of Social Sciences*, 34(2), 145–153. <https://doi.org/10.1080/09718923.2013.11893126>
- Sen, A. (1987). *Gender and cooperative conflicts* (United Nations University Working Paper 18). <https://www.wider.unu.edu/sites/default/files/WP18.pdf>
- Serumaga-Zake, P., & Naudé, W. (2002). The determinants of rural and urban household poverty in the North West province of South Africa. *Development Southern Africa*, 19(4), 561–572. <https://doi.org/10.1080/0376835022000019392>
- The World Bank. (2001). *World development report 2000/2001: Attacking poverty*. Oxford University Press. <https://openknowledge.worldbank.org/handle/10986/11856>
- The World Bank. (2008, August 26). World bank updates poverty estimates for the developing world. <http://rb.gy/lvyzoq>