The Impact of Demographic Factors, Household Characteristics and Locational Factors on Poverty in Pakistan

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Abstract

Poverty refers to lack of basic necessities such as shelter, food, and clothing. Poverty is widely observable in Pakistan; therefore, its measurement and analysis deserve claim on our attention. The aim of this study is to examine the impacts 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 of 2014 to 2015. Findings of the study revealed that household head's education, household size, household head age, marital status, health status, remoteness, region and gender have significant impact on poverty level. The study finds 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. Findings of the study recommend that government should take measures to improve basic facilities, quality of education, employment opportunities and health facilities in remote areas of Pakistan.

Keywords: poverty, household, health, employment

Introduction

The notion of poverty basically refers to situation when people are deprived of basic needs namely shelter, food and clothing. Existence of poverty in a locality shows hunger and undernourishment. The World Bank (2000) define poverty as "A pronounced deprivation in well being." Well being shows the approach to the commodities in general. According to Amartya Sen capability approach (1987), well-being basically results from capability

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to function in a society. The real freedoms are the capabilities that people have to realize their potential doings and beings.

According to the statistics by UN millennium project internationally, Asia and Africa have ninety percent of the total poor people of the world. Whereas, developed nations comprise less than one percent of the poor living in the world. The statistics reports that globally one billion people are surviving only on less than 1$/day. The data also revealed that 2.7 billion people across globe are living on less than 2$/day. 114 million children remain unable to get primary Schooling. Six million children expire each year due to malnutrition. 2.6 billion People lack public health, access to clean drinking water, and suitable sewage removal.

The aim of economic progress is to improve the socio-economic welfare of the people. Economic welfare mainly depends on fair distribution of national earnings, reducing poverty and enhancing the living standards of the poor. In Pakistan, majority of the populations suffer from the severe problem of poverty, which leads to hunger and malnourishment. In spite of decent increase in national income, the poverty continues to exist. Statistics of International Food Policy Research Institute (IFPRI), found that district of the residence, education of household head, secondary education, dependency ratio and household size have significantly impacted poverty status, while sex of household head and basic education have insignificant impact.

Interest towards poverty alleviation has grown in the past three decades. But for Pakistan, no such studies have been conducted to analyse the impact of demographic factors, locational factors and household characteristics on poverty. So, it is important to study the phenomena of poverty on the basis of the latest available data in the country.

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 inversly 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
Channels for Poverty

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	↑Self-employment 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

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.

$$P = \beta_1 + \beta_2 HHS + \beta_3 AHH + \beta_4 EDU + \beta_5 HS + \beta_6 MS + \beta_7 R + \beta_8 PR + \beta_9 HH + \beta_{10} RE + \mu \quad (1)$$

$$\text{Poverty level} = \beta_1 + \beta_2 \text{Household size} + \beta_3 \text{Age of household} + \beta_4 \text{Education of household} + \beta_5 \text{Health status} + \beta_6 \text{Marital status} + \beta_7 \text{Region} + \beta_8 \text{Province} + \beta_9 \text{ender of household} + \beta_{10} \text{Remoteness} + \mu \quad (2)$$

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.

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

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

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.

$$P = \beta_1 + \beta_2 HHS + \beta_3 AHH + \beta_4 EDU + \beta_5 HS + \beta_6 MS + \beta_7 R + \beta_8 PR + \beta_9 HH + \beta_{10} RE + \mu \quad (5)$$

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

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

Table 3

Logistic Regression Model for Poverty at $1.25 per Day

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

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

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.

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Appendix

Definition of Variables and their Data Source

Variable	Definition	Source
Income per capita/ income inequality	How much money in cash, did he/she earn during last year	PSLM (2014-15)
Region	Whether the household live in rural or urban area	PSLM (2014-15)
Province	In which province the household is residing in Pakistan	PSLM (2014-15)
Size of household	What is the size of household	PSLM (2014-15)
Remoteness	0=Remoteness, 1= non- Remoteness	PSLM (2014-15)
Health status	Was he/she sick or injured the last two weeks	PSLM (2014-15)
Household head's gender	Male, Female	PSLM (2014-15)
Age of HH	Young age (15 - 35 years), middle age (36 – 60 years), old age (61 - 99 years)	PSLM (2014-15)
Marital status	Married, unmarried	PSLM (2014-15)
Education status	Individual can read and write, and solve basic Mathematics	PSLM (2014-15)