

An Empirical Analysis of Employment Status, Nature of Employment and Poverty Incidence in Pakistan

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Abstract

This study measured poverty incidence and decomposition of poverty incidence across employment status, industry /sectors of employment and occupation of employment in Pakistan. Impact of employment status and nature of employment of household head on household poverty incidence is also analysed by employing logistic regression technique. The study used Pakistan Social and Living Standard Measurement Survey (PSLM) data set for the year 2013-14 for empirical estimations. A class of Foster-Greer-Thorbecke (1984) method is employed to estimate poverty incidence as well as decomposition of poverty incidence. The results showed that poverty incidence is about 36 percent in Pakistan in year 2013-14. Poverty decomposition results depicted that poverty significantly varies across employment status, sectors/industry of employment and occupation of employment. Employers, electricity, gas & water industry and legislative, senior official & managers group have lowest poverty incidence while sharecropper & paid employee, construction sector and elementary occupations had highest poverty incidence. The results of Logit Model indicate that age of the household head, education of the household head and general employment of the household head are inversely related to poverty while being male as head, residence of household in rural area, household size and dependency ratio are positively related to poverty incidence. Employment of the household head significantly reduces while dependency ratio immensely increases the odds of being in poverty. Therefore, sufficient employment opportunities should be provided to all for massive reduction in poverty and sustainable development of the country. Employment of the household head as share cropper, paid employed & livestock only, in construction, transport & storage sector, and in elementary occupations etc. have higher prospect of being in poverty. Thus, for fabulous reduction in poverty government should implement minimum wage policy and provide social safety nets to enhance the income of these poor workers to bring them out of poverty.

Keywords: Poverty, Employment Status, Dependency Ratio, Household Size, Pakistan

Introduction

Provision of decent and productive employment and poverty alleviation remained a central objective of policymakers in developing world, and it has attracted greater attention after the adoption of Millennium Development Goals (MDGs). Poverty, unemployment and underemployment are among the main indicators of underdevelopment. According to Ernst and Berg (2009) working poverty is most problematic in low income countries while unemployment along with working poverty is more debatable in middle-income developing countries. In developing world, majority of poor people are employed in informal economy where they earn insufficient income to uplift them from poverty. Therefore, for poverty eradication along with creation of new employment opportunities quality of existing employment should be enhanced (Bell & Newitt, 2010).

Poverty is a complex phenomenon based on a network of interlocking economic, social, political, and demographic factors. According to World Bank definition, Poverty is inability to achieve threshold of living standard and having insufficient money to purchase some necessities of life like food, education, shelter etc. Generally, uni-dimensional poverty refers to the lack of means to fulfill

basic human needs such as nutrition, clothing, housing, health care and clean drinking water etc. Therefore, poverty is said to be the fundamental issue of every human being (World Bank, 2002).

Employment Status refers to the kind of explicit or implicit agreement of employment of a specific person with other persons or organizations. Nature of Employment resides on both sectors / industry of employment and occupation of employment. Industry / sector prescribes the kind of business in which a person is employed or activity of a firm, institution, office or department. Occupation proposes the form of work done by the persons during the given time period. It is regardless of status or industry of employment of the employed person.

Employment is a principal link between economic growth and poverty alleviation. Growth employment-poverty reduction nexus strongly argues that the relation between economic growth and poverty reduction is not direct but it is rather indirect via employment channel (Islam, 2004; Osmani, 2005; Selim, 2006). Effectiveness of economic growth for poverty alleviation is largely dependent upon employment. Economic growth would be only effective to reduce poverty if it improves the quality of jobs and the access to modest earning opportunities for the poor (Hull, 2009).

Employment reduces the risk of household poverty while unemployment generally leads to low earning which in turn leads to inadequate consumption and low level of living. A research report in 2009 on OECD countries found, 37 percent of individuals were poor in jobless households and poverty in jobless households was five times higher than that for households with at least one worker. Poverty risk among jobless households is more than triple than among working households. Lack of decent employment opportunities and income inequality are the main factors behind mass poverty in most of developing and under developed economies of the world (Global Employment Trends, 2013).

United Nations (UN) organized an international conference in 2000, which is commonly known as Millennium summit. In this summit, 189 member countries of UN signed an agreement to achieve eight goals often termed as Millennium Development Goals. Labor market is initially ignored in MDGs and only gender equality is included concerning labor market under goal three. However, after identifying the importance of employment efficiency in poverty and hunger reduction, UN included employment efficiency in 2007 in revised MDGs. "Achieving full and productive employment and decent work for all, including women and young people" is a new MDG target (1B) which is given to achieve Goal 1 i.e., Eradicate extreme poverty and hunger.

According to a UNDP report in 2013, Pakistan had very low employment to population ratio and most of these people were employed in agriculture sector. The report also found that overall labor productivity has fluctuating trend in Pakistan and it was lowest -4.4 in 2008-09 and after that it has positive trend but still very low about 1.6 for year 2011-12. Pakistan Employment Trends report in 2011 find out that problem in Pakistan is not of absence of economic activity but presence of low quality and low productive nature of economic activities which is the main cause of low incomes in the country. Pakistan is regarded as lower middle economy as 55 percent of its population has earning below \$2 and 43 percent are earning between \$2 and \$6 (ILO, 2014). That's why decent and productive employment is at priority in Pakistan's national development agenda's documents such as Vision 2030 (Pakistan Employment Trends, 2011).

From above it can be deduced that labor market is highly associated with poverty in Pakistan. Therefore, to combat the menace of poverty, it is vital to explore the linkages between poverty incidence and labor market indicators in Pakistan. In previous studies, poverty has hardly linked with labor market indicators. This study is an attempt to fill this gap and to develop linkages between incidence of poverty and labor market by examining the impact of employment status and nature (occupation & sector) of employment on household poverty incidence. The present analysis is

of critical importance because poverty analysis at sectors and occupations level will be helpful to channel the resources towards poor only.

Prime objective of the study is to analyze the impact of employment status and nature of employment of household head on household poverty incidence and to identify the industry/sectors and occupations in which poverty incidence is relatively high in Pakistan. Rest of the study is organized as follows: section 2 presents poverty and employment profile of Pakistan. Review of literature is given in section 3 while data and methodology is given in section 4. Section 5 deals with results and discussion. Conclusions and policy recommendations are presented in section 6.

Poverty and Employment Profile of Pakistan

Poverty Profile of Pakistan

Poverty refers to the lack of means to fulfil the basic human needs such as nutrition, clothing, housing, health care and clean drinking water etc. Poverty in Pakistan is not a new issue. Pakistan got poverty in inheritance. According to UN's Human Development Report, Pakistan is ranked at 146th in 187 countries of the world with respect to the value of Human Development Index (HDI). It has HDI value of 0.515 in year 2012 which is lower than other South Asian countries like Sri Lanka and India. Pakistan is ranked better regarding the Multidimensional Poverty Index (MPI) in same time period than other South Asian countries. Pakistan has second highest value of MPI after Bangladesh and this is equal to 0.264. Health dimension contributes more in MPI value in Pakistan.

According to Pakistan Economic Survey, poverty incidence in Pakistan has shown cyclical trend. Poverty incidence was about 40 percent in 1963-64 and it remained at lowest (about 17 percent) in 1987-88. It went up to above 30 percent in year 2013-14. There are several reasons behind increase in poverty over this period. Earthquake disaster in 2005, war against terrorism, deteriorating law and order situation, political unrest and two successive floods in 2010 and 2011 contributed mostly in rise of poverty in Pakistan.

Employment Profile of Pakistan

Pakistan has an estimated population of 184.35 million and it stands at 6th position in most populous countries of the world (GoP, 2013). According to the labor force survey 2012-13, Pakistan has labor force of about 59.74 million. Among them 56.01 million were employed and 3.73 million were unemployed. The volume of unemployed people increases from 3.40 million in 2013-14 to 3.73 million in 2012-13. Unemployment rate is estimated about 6.2 percent in year 2012-13 and employment to population ratio and share of vulnerable employment remained about 50 percent and 59 percent respectively in same time period.

Unemployment rate has shown continuous fluctuation in Pakistan and it is still categorized in those countries which has high unemployment rate (ILO, 2014). Unemployment rate went up significantly high in 1990s. Akhtar and Shahnaz (2005) found that fiscal tightening, political unrest, low rate of economic growth and some other factors caused unemployment to rise in Pakistan. Unemployment rate has decreasing trend from year 2003 to 2009 in Pakistan but after that it started to rise again (Cheema & Atta, 2014). Highest unemployment rate in the history of Pakistan was 7.8 percent which was recorded in year 2002 and it is found ever lowest about 3.1 percent in 1987. From 1985 to 2013-14 average unemployment rate remained about 5.4 percent in the country.

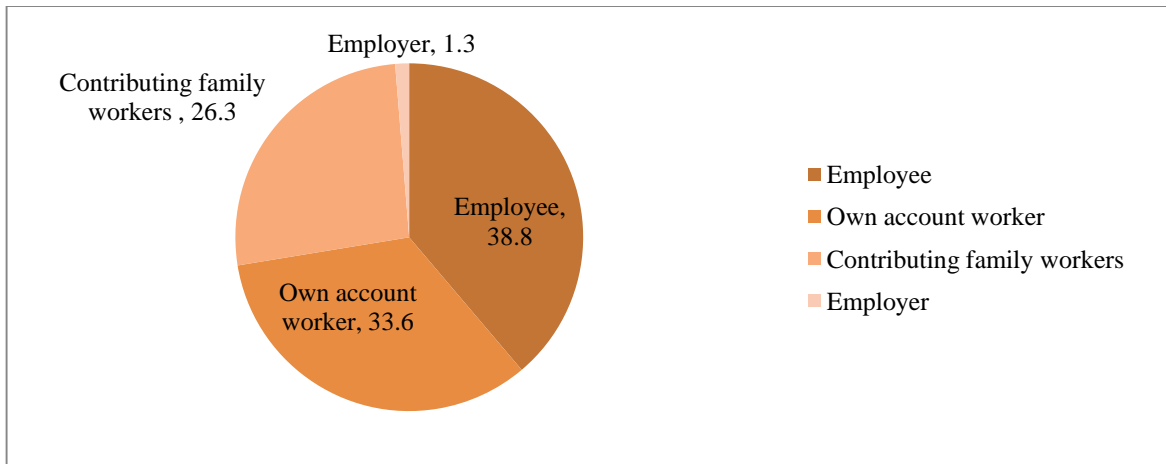


Figure 1. Labor Force by Employment Status in Percentage
Source: Labor Force survey (2012-13).

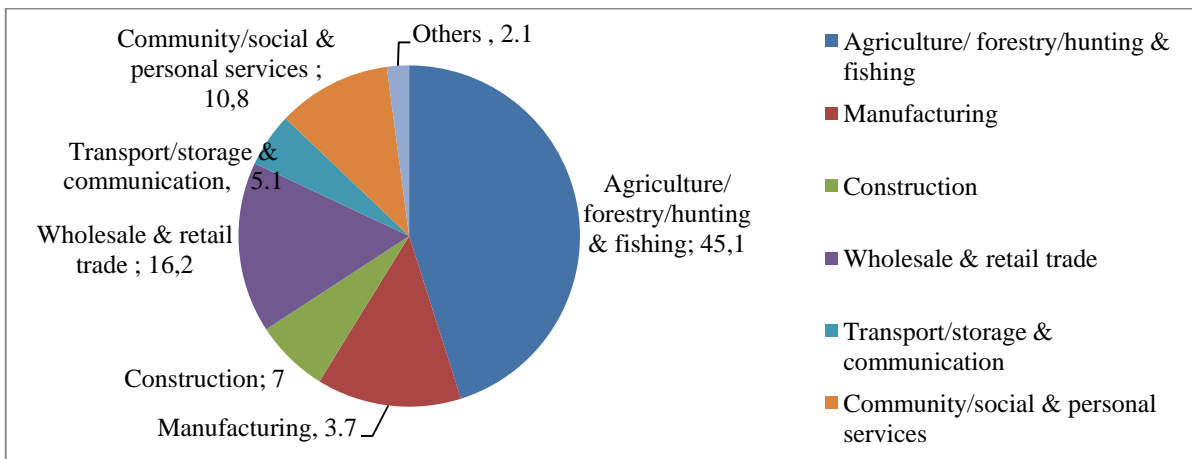


Figure 2. Labor Force in Percentage by Industry
Source: Labor Force survey (2012-13).

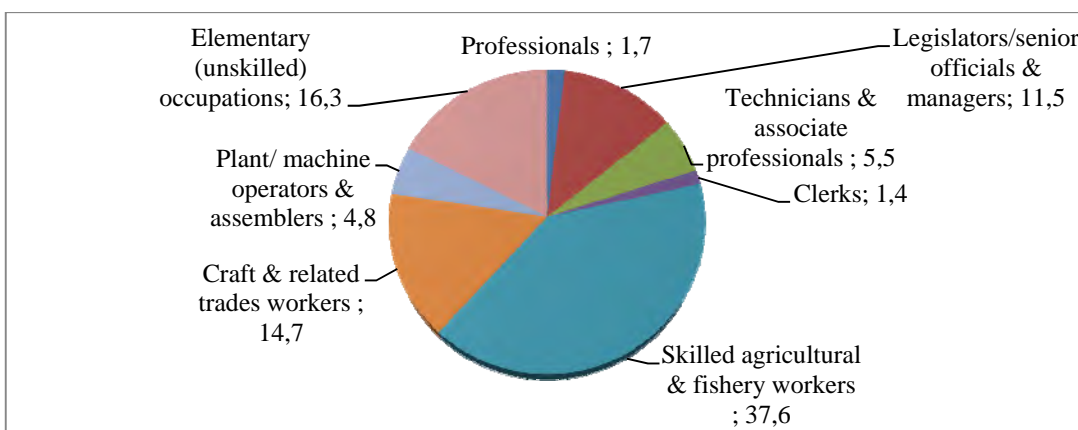


Figure 3. Labor Force by Percentage in Occupations
Source: Labor Force Survey (2012-13).

According to LFS, 2012-13 unemployment rates is 6.2 percent in the country. As shown in Figure 1, employment status shows that employee accounts for 38.8 percent, own account workers 33.6 percent, contributing family workers 26.3 percent and employer are 1.2 percent as shown in figure below.

Figure 2 shows the labor force division by industry and it is clear from the figure that most of the people about 45 percent are employed in Agriculture/forestry/hunting sector. Wholesale and retail trade is at second employing 16.8 percent of the total labor force. Transport/storage and communication sector have lowest share about five percent in total employment. Share of employment by other categories can be seen from Figure 3.

Figure 3 depicts Labor Force division by occupations is presented in the figure. Skilled agricultural, fishery workers and Elementary occupations have large share about 37 percent and 16 percent respectively. Professionals accounts for 1.7 percent and clerks 1.4 percent.

Review of Literature

Haq (2001) examined the occupational profile of poverty in Pakistan by employing Household Integrated Economic Survey (HIES) 1996-97 data set. The study found that there were comprehensive differences in the incidence of poverty and inequality among different occupational groups. Poverty incidence was relatively high in laborer, skilled agriculture and service workers while it was lowest in managerial occupations. Poverty by employment status showed that poverty incidence was highest among the unpaid family helpers followed by the employee category and the self-employed category

Chaudhry (2009) investigated the impact of socioeconomic and demographic characteristics of households on poverty in Pakistan. Ordinary Regression and Logistic Regression techniques were applied on primary data collected in the village of Betti Nala in Tehsil Jatoi, district Muzaffargarh (southern Punjab). The results of the poverty measures showed that poverty incidence, poverty depth and poverty severity were 48%, 24.7 and 14.3% respectively. The results further revealed that household size, dependency on household, participation, landholdings, and number of livestock were the major determinants of poverty incidence.

Jan et al. (2009) estimated poverty in Pakistan by challenging the official poverty rates. The researcher used data sets namely Pakistan Integrated Household Survey 2001-02 and Pakistan Social and Living Standards Measurement Survey 2004-05 for empirical estimations. Adult equivalent consumption is chosen as a welfare indicator and Tornqvist Price Index (TPI) was used to update poverty line. The results of the study exposed that fall in poverty incidence is almost two times less than reported in planning commission of Pakistan. Geographical and sectorial concentration index were also calculated to check where the poor are concentrated. It is found that rural areas, NWFP, Baluchistan and construction and agriculture sector mostly contribute to poverty incidence.

Achia (2010) examined the determinants of poverty by using Demographic and Health Surveys data instead of income, expenditure and consumption data. Logistic Regression was applied to trace out the major determinants of poverty. The result showed that poverty is high in Nairobi and Nyanza province. Protestants were more likely to be poor as compared to Catholics headed households while households headed by a Muslims were more likely to be poor as compared to Catholics households. Age of the household head, region and ethnicity were also significantly explaining the distribution of poverty.

Awan and Iqbal (2010) used Logistic Regression model to estimate the effects of socioeconomic and demographic variables on the probability of a household being in poverty in Sargodha city (Pakistan). It was found that employment in public sector, investment in human capital and access to public amenities reduce poverty while employment in informal sector, greater household

size and female dominated households increase poverty. The results also showed that poverty incidence is highest among the daily wage workers and in construction sector while lowest among the government employees.

Cheema and Sial (2010) computed the trends of poverty in Pakistan. The study employed HIES data for various years; 1992-93, 1993-94, 1996-97, 1998-99, 2001-02, 2004-05 and 2005-06. A class of Foster, Greer and Thorbecke (1984) measures were used for the estimation of poverty. The results of all Poverty measures showed increasing trend in poverty over time but this is not true for years 1993-94 and 1996-97 as poverty remained low in these years. Poverty in urban areas of Pakistan remained relatively smaller than rural areas through the entire time frame of the study.

Baiyegunhi and Fraser (2010) examined the dynamics of poverty and estimated the determinants of households' vulnerability to poverty in South Africa. The results suggested that poverty had increased between sample years and 62 percent of the sampled households were vulnerable to become poor in future. The study found significant evidence of flow in and out of poverty. Age, educational level and occupation of the household head, dependency ratio and access to credit were found the most important determinants of households' vulnerability to poverty.

Ejaz (2011) estimated the correlates of female labor force participation in Pakistan. The results of the study proposed that there exists an inverse U-shaped relationship between female labor force participation, family size and labor-saving appliances. Empowerment indicators shown that more empowered females were most likely to be employed than less empowered women. Unmarried and educated females were most likely to be economically active than married and uneducated females. Higher income of household, living in a joint family, and household's residence in urban area promotes while fertility discourages female participation in labor force.

Akerele and Adewuyi (2011) analysed the poverty profile and correlates of welfare in urban area of Ekiti State in Nigeria. The results pointed out that poverty incidence turned out to be 38.30 percent. Gender of household head, educational level of household head, household size and dependency ratio were found the key factors that affect household welfare. The study further found that educational level of household head and spouse positively affects household welfare while female headed households were more vulnerable to poverty. Dependency ratio had found negative impact on household welfare.

Akmal (2012) identified the factors that are responsible of poverty status in Pakistan. Gender, age of head of household, household size, female-male ratio, family type, dependency ratio and head work is regressed on poverty. It was found that gender of household head, dependency ratio, household size and family type is significantly related to poverty status. Dependency ratio and household size are positively while being male, education of the head and head work for income are inversely related to poverty status.

Cheema and Sial (2012) estimated poverty incidence, poverty profile and determinants of poverty. The results pointed out that headcount ratio was approximately 23 percent and age, education, owned land, household size foreign remittances, sewing machine, livestock were important determinants of poverty. Result of poverty profile indicated that incidence of poverty was highest in those households whose heads were employed in agriculture, livestock and hunting sector and lowest in those whose head's employment sector was community and social services. Poverty incidence by occupation demonstrated that it was high in those households whose heads were in elementary occupation or agriculture skilled workers (sharecropper).

Saqib and Arif (2012) estimated the determinants of time poverty and its incidence across gender, occupational groups, industries, regions, and income levels in Pakistan.. The results pointed out that 14 percent from the whole sample were time poor. Working people were more time poor

than not-working people. Time poverty in working women was 36.8 percent while this figure in not-working women was 10.2 percent. Time poverty was higher in rural areas as compared to urban areas. Services workers, machine operators and workers in elementary occupations were more time poor than the clerical, professional and agriculture workers.

Ozughalu and Ogwumike (2012) estimated the impact of employment status and nature of employment of household head on household poverty in Nigeria. For empirical analysis this study employed Binary Logistic Regression. The empirical results revealed that employment related categories of household head has significant impact poverty incidence of household. Ownership of housing unit was positively while household head's age, residence in urban sector, number of working members and educational level of household head, access to remittance and credit were negatively related to household poverty incidence. The results further showed that households whom heads were employed in professional, technical group, administration or clerical group were less likely to be poor than other professions.

Maqbool et al. (2013) examined the causes of unemployment in Pakistan. The study also explored the relationship among unemployment, foreign direct investment, GDP, inflation, population and external debt. ARDL approach is employed on time series data for the period 1976 to 2012. The empirical results indicated that GDP, inflation, FDI and population are significantly affecting unemployment in the long run. Unemployment and inflation is inversely related to each other both in short run and long run.

Cheema and Atta (2014) examined the economic determinant of unemployment in Pakistan by using time series data from 1973 to 2010. ARDL approach is employed for empirical analysis. The results pointed out that output gap, economic uncertainty and productivity are positively and significantly related with unemployment while gross fixed investment and openness of trade is negatively and significantly related to unemployment in both short run as well as long run.

Methodology

Data

This study used Foster-Greer-Thorbecke (1984) approach to measure poverty incidence and Logistic Regression (LR) is used to find out the impact of employment status and nature of employment of household head on household's incidence of poverty. This study employed Household Integrated Economic Survey (HIES) data set, a part of Pakistan Social and Living Standards Measurement (PSLM) survey 2013-14 to estimate poverty incidence, poverty decomposition and impact of employment status, sectors of employment and occupations of employment of household head on household poverty incidence in Pakistan. PSLM survey is a national representative survey, conducted by Pakistan Bureau of Statistics to monitor the progress towards Millennium Development Goals and for the implementation of the Poverty Reduction Strategy Papers (PRSP).

PSLM survey for the year 2013-14 adopted a two-stage stratified random sampling technique. At first stage enumeration blocks (E.B) in urban areas and villages in rural areas were selected while at second stage households were selected inside the sample enumeration blocks/villages. The survey uses separate sampling frames for urban and rural areas. Urban areas were equally divided in enumeration blocks and in rural areas sampling frame is done by the name villages/mouzas/dehs.

Methodology

For poverty estimation, this study selected expenditures as choice of indicator and per adult equivalent expenditure is taken as unit of analysis. The study used Rs. 3030 as per adult equivalent per month poverty line based on HIES 2013-14 data (Pakistan Economic Survey) Poverty incidence

is estimated Headcount Index (HI) which is simply the proportion of population living below poverty line to whole population. It can be written as:

$$HCI = P_i = \frac{Y_p}{n} \text{----- (1) where}$$

HCI = Headcount Index

P_i = Poverty incidence

Y_p = No. of people below the poverty line

n = No. of people in population

The advantages of using HCI are that it is easy to comprehend, simple in construction and sensitive to the number of poor.

Logistic Regression (LR) technique (proposed in the late 1960s and early 1970s) is used to find out the relationship between explained and a set of explanatory variables. The Logit approach employs a maximum likelihood estimator of parameters where the non-linear probability distribution of the random error is given (Ozughalu & Ogwumike, 2012). In binary LR dependent variable is always a dichotomous variable while independent variables are a set of continuous variables and discrete (dummy) variables. Consider a general linear model:

$$P = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots \dots \dots + \beta_n X_n + \epsilon_i \text{----- (2)}$$

where

P = Probability of an event and its value lies between 0 and 1

β₀ = Intercept of the equation

β₁, β₂, β₃ β_n = Coefficients of explanatory variables

X₁, X₂, X₃ X_n = Values of the independent variables

Suppose

P = Probability of happening of an event

1 – P = Probability of not happening of an event

As Logit is the Logarithmic Transformation of probability or natural log of the ratio of probabilities. We can express it as

$$\text{logit}(P) = \ln \left[\frac{\text{probability of happening of an event}}{\text{Probability of not happening of an event}} \right] \text{----- (3)}$$

$$\text{logit}(P) = \ln \left[\frac{p}{1-p} \right] \text{----- (4)}$$

Now if we want to get simple logistic regression model simply put right hand side of the equation 4.5 into the right of equation 4.7.

$$\text{logit}(P) = \ln \left[\frac{p}{1-p} \right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots \dots \dots + \beta_n X_n + \epsilon_i \text{----- (5)}$$

Value of P can be calculated with the following formula

$$P = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots \dots \dots + \beta_n X_n + \epsilon_i}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots \dots \dots + \beta_n X_n + \epsilon_i}} \text{----- (6)}$$

where

P=probability

e= the base of natural logarithms and its value is approximately 2.71828

β₀ = the constant of equation

β₁, β₂, β₃ β_n are the coefficients of the predictor variables

X₁, X₂, X₃ X_n are explanatory variables

ε_i = Residual term

In logistic regression the coefficients are estimated by employing Maximum Likelihood (ML) technique which is preferred over weighted least squares by many authors like Haberman

(1978) and Schlesselman (1982). This approach maximizes the likelihood of replicating data given the parameter estimates.

Present study specifics following logistic model equation as under:

$$\ln \left[\frac{p}{1-p} \right] = \beta_0 + \beta_1 \text{GHH} + \beta_2 \text{AHH} + \beta_3 \text{EHH} + \beta_4 \text{HS} + \beta_5 \text{RA} + \beta_6 \text{DEPR} + \beta_7 \text{HHEa} + \beta_8 \text{HHEb} + \beta_9 \text{HHEc} + \beta_{10} \text{HHEd} + \beta_{11} \text{HHEe} + \beta_{12} \text{HHEf} + \beta_{13} \text{HHEg} + \beta_{14} \text{HHEh} + \varepsilon_i \quad (7)$$

Hypothesis:

$$H_0 = \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = \beta_{10} = \beta_{11} = \beta_{12} = \beta_{13} = \beta_{14} = 0 \quad (8)$$

$$H_1 = \text{At least one of the betas} \neq 0 \quad (9)$$

where

$\ln \left[\frac{p}{1-p} \right]$ = Natural logarithm of odds ratio. $p=1$ shows household is in poverty, $p=0$ indicates household is not in poverty

GHH=Gender of the household

AHH=Age of the household head

EHH=Educational level of the household head

HS=Household size

RA=Residential area of the household

DEPR=Dependency ratio

HHEa=Household head employed or in work (yes =1; Otherwise=0)

HHEb=Household head Employed as Share cropper, Paid employed & Livestock only (yes=1; Otherwise =0)

HHEc=Household head Employed as Self-employed & Owner cultivator (yes=1; Otherwise=0)

HHEd=Household head Employed in agriculture, forestry and hunting sector (yes=1; Otherwise=0)

HHEe=Household head employed in Construction, Transport & storage sector (yes=1; Otherwise=0)

HHEf=Household head employed in Manufacturing, wholesale trade & retail trade sectors (yes =1; Otherwise=0)

HHEg=Household head employed in Legislative & senior official, clerks & Professionals Occupations (yes=1; Otherwise=0)

HHEh=Household employed in Elementary Occupations, Skilled agricultural workers, Plant & machine operators and assemblers (yes=1; Otherwise=0)

HHEi=Household head employed in category "Others"

ε_i =residual term

Construction of Variables

LR approach is designed to analyze the impact of employment status, sectors of employment and occupations of employment of household head on household incidence of poverty. So, poverty is set aside as dependent variable while socio economic characteristics of the household head along with employment related variables are treated as independent variables. Poor households are categorized as those households whose per adult equivalent expenditure are below (Jamal, 2013) poverty line. The explanatory variables are mixture of dummy (dichotomous) variables and continuous variables, which are extracted from data set PSLM, 2013-14. The definition and construction of explained and explanatory variables are constructed as following Tables 1 and Table 2, respectively.

Table 1. Definition of Explained Variable

Variables	Explanation
Poor=1,not poor=0	A household is considered poor whose average per adult equivalent expenditure was below Rs.2381

Table 2. Definitions of explanatory Variables

Variables	Explanation
GHH	Gender of the household head (male=1; female=0). It is treated as binary variable.
AHH	Age of the household head is measured in completed years and involved in the model as continuous variable
EHH	Educational level of the household head, measured as highest completed schooling years and it is also treated as continuous variable.
HS	Sum of the total number of members in a household is termed as household size and it is treated as a continuous variable.
RA	Residential area of the household (Rural = 1; Urban = 0)
DEPR	Dependency ratio. It is calculated by taking the ratio of household members ≤ 14 years and ≥ 65 years to household size.
HHEa	Household head employed or in work (yes =1;Otherwise=0)
HHEb	Household head Employed as Share cropper, Paid employed & Livestock only (yes =1;Otherwise =0)
HHEc	Household head Employed as Self-employed & Owner cultivator(yes=1;Otherwise=0)
HHEd	Household head Employed in agriculture, forestry and hunting sector (yes =1;Otherwise=0)
HHEe	Household head employed in Construction, Transport & storage sector (yes = 1;Otherwise=0)
HHEf	Household head employed in Manufacturing, wholesale trade & retail trade sector(yes = 1;Otherwise=0)
HHEg	Household head employed in Legis. & senior official, clerks and Professionals Occupations (yes=1;Otherwise=0)
HHEh	Household employed in Elementary Occupations, Skilled agricultural workers, Plant & machine operators and assemblers (yes=1;Otherwise=0)
HHEi	Household head employed in category "Others"

Results and Discussion

Poverty Estimation Results

Poverty incidence is calculated through headcount ratio at national level in Pakistan. The results showed that poverty incidence is about 36.02 percent. It implies that about 36 percent population of Pakistan are poor (consuming less than 2381 rupees per month) in year 2013-14. The Results are presented below in Table 3.

Table 3. Poverty Incidence in Percentage at National Level in Pakistan in 2013-14

Headcount ratio	Poor	Non Poor
Overall Pakistan	36.02	63.98

Source: Author's own calculations

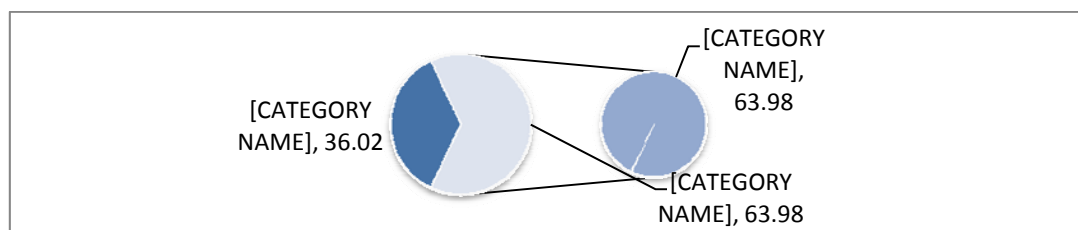


Figure 0. Poverty Incidence at National Level in Pakistan in 2013-14

Source: Author's own calculations.

Table 4. Estimated Output of Logit Model

Variable	Coefficients(β)	S.E	P values	Exp(β)
GHH	1.66	0.31	0.000	5.28
AHH	-0.03	0.00	0.000	0.97
EHH	-0.14	0.01	0.000	0.87
HS	0.24	0.01	0.000	1.27
RA	1.12	0.07	0.000	3.08
DEPR	3.19	0.16	0.000	24.26
HHEa	-1.59	0.25	0.000	0.20
HHEb	1.62	0.21	0.000	5.06
HHEc	0.73	0.22	0.001	2.09
HHEd	0.39	0.10	0.000	1.48
HHEe	0.29	0.11	0.008	1.33
HHEf	0.42	0.09	0.000	1.53
HHEg	-0.33	0.13	0.010	0.72
HHEh	0.49	0.08	0.000	1.63
Constant	-3.41	0.34	0.000	0.01

Source: Author's own calculations.

The possible factors behind increase in poverty in Pakistan in year 2013-14 are increasing energy and food pricing, worsening law and order situation, earthquake in year 2005 and two consecutive floods in year 2010 and 2011. These floods caused massive destruction in rural areas and ruin the agriculture system which is the main source of income for poor.

Poverty incidence at national level in Pakistan is given in above Figure 5. That shows about 36 percent population of Pakistan is poor and about 64 percent people are non poor in year 2013-14 at aggregate level.

Logit Model Output

Logit model is estimated to find out the impact of employment on poverty incidence. To do that poverty incidence is taken as dependent variable and employment related variables along with gender of the household head, age of household head, education of the household head, household size and region of residence of household is taken as independent variables. Results of the Logit Model are given in Table 4.

In the above table coefficients β column portrays the estimated coefficients or parameters and S.E. are the standard error of the respective coefficients. P values column represents the level of significance or probability values of associated coefficients and Exp (β) is odds ratios of the estimated parameters. The odds are calculated by taking the natural antilogarithms of corresponding estimated coefficients (β). All estimated values are written approximately to two decimal places except p values.

Overall Evaluations of the Logit Model

Table 5 addresses the Statistical soundness of model. Menard (1995) preferred likelihood ratio and score tests for the overall model evaluation. So, for the testing of overall robustness of the model likelihood ratio test is used here which has chi square statistic of 2816.22 with 14 degree of freedom and has significant p value (0.000). It implies that model is robust and explanatory variables are significantly related with dependent variable.

Table 0. Statistical Evaluation of the Logit Model

Tests	χ^2	df	P Value
Overall Model Evaluation			
Likelihood ratio test	2816.22	14	0.000
Goodness-of-fit Test			
Hosmer and Lemeshow	8.67	8	0.374
R² Indices			
Cox & Snell R ²	0.22		
Nagelkerke R ²	0.34		

Source: Author's own calculations.

The fit of a logistic model against actual outcomes is demonstrated by goodness of fit tests (Peng et al., 2002). Hosmer–Lemeshow test is used to access the goodness of fit along with two descriptive measures for this model. The Hosmer-Lemeshow test investigates whether there is a linear relationship between the explanatory variables and the log odds of the benchmark variable and its non-significance means that data fit the model well (Peng et al., 2002). Hosmer-Lemeshow test has chi square statistic 8.67 with 8 degree of freedom and its p value is $>.05$ which implies that the data fit to model well. It can be seen from Table 5.

The descriptive measures of goodness of fit pseudo R² are also presented in above table. These are Cox & Snell R² and Nagelkerke R² which have values 0.22 and 0.34, respectively. However, R² does not have the same meaning here as in linear regression. As observed by Gujarati and Porter (2009) goodness of fit does not matter much in binary Logistic Regression. The more important are the signs of estimated coefficients and their practical and statistical significance.

The output of the estimated Logit Model is presented in Table 5. Poverty is taken as dependent variable here. The results indicate that model is generally robust as almost all estimated parameters have signs according to priori expectations and are statistically significant either at one percent, five percent and ten percent level of significance.

Gender of Household Head shows that household having male as heads are more likely to be poor than female headed households but this is against priori expectation. The reason behind such results may be that female headed households are only 8.2 percent while male headed households are about 91.8 percent in overall sample. However the finding is in line with (Khalid & Akhtar, 2011) who observed that female headed households have lower poverty incidence than overall po-

verty in Pakistan at national and regional level in both 2000-01 and 2004-05 years. Cheema (2005) also have same findings for year 2001-02 but in such households female are the main earners.

Age of the Household Head shows that older people as household heads have lower chances to be in poverty and it is significant at one percent level of significance. Research literature indicated that higher age is associated with more experience and productivity which lead to higher earnings. Therefore, poverty was expected to be negatively related with age. Our result supports this statement.

Educational level of the household is found inversely related to poverty and statistically significant at one percent significance level. It is general consensus that higher education brings higher returns hence poverty incidence is expected to be low in educated persons.

Household size has found positive and significant impact on poverty incidence of the household. It is generally reported in poverty literature that household size is positively related with poverty incidence. The results are in line with study of Akmal & Riaz, (2012) and Cheema & Sial, (2012).

Residential Area of the household head has odd ratio of 3.08; implies that those household who are residing in rural areas have about two times more chances to be in poverty than households residing in urban areas. The results are in line with (Haq, 2004; Pasha & Jamal, 2001). Simply it demonstrates the fact that poverty incidence is high in rural areas of Pakistan as compared to urban areas.

Dependency ratio is positively and significantly related with poverty incidence. The odds ratio of 24.26 indicates that those household who have higher dependency ratio has 24.26 times more likely to be poor than households having lower dependency ratio. This is consistent with Hashmi et al. (2008) and Jan et al. (2009). Dependency ratio reduces the possible earning of the poor hence increases the chance of poverty incidence (Lipton, 1983). It can be justified as if a household has greater number of dependents; their per capita income is low. Due to low per capita income they have low level of consumption and welfare.

Employment of the household is inversely and significantly related to household poverty incidence. The odds ratio of 0.20 indicates that those households who have employed heads are much likely to be poor than household having unemployed heads.

Those households whose head's employment status is sharecropper, paid employee and livestock only are more likely to be poor than reference category. The odds ratio associated with this is 5.06 which show that household whose heads employment status is sharecropper, paid employee and livestock have three times more chances to be in poverty. The results are consistent with (Cheema & Sial, 2012).

Household head employed as Self-employed and Owner cultivator increases the prospects of being in poverty and statistically this is significant at 1 percent level of significance. Thus it can be said that poverty is different from overall in above category of employment status.

Employment of the household head in agriculture, forestry and hunting sector decreases the odds in favor of being in poverty but statistically this variable is equal to zero. It means that agriculture, forestry and hunting sector did not have significant impact on poverty incidence.

Employment of the household head in construction, transport & storage sector has odds ratio of 1.33, which depicts that households whose heads are employed in construction, transport & storage sector have about 1.33 times more likelihood of being in poverty than benchmark category. The results are in line with the study of Cheema and Sial, (2012) as they observed highest poverty in those households whose heads are employed in construction sector by utilizing data set of HIES 2005-06. The results are also consistent with Ali (1999) and Jan et al. (2009).

Households whose heads are employed in manufacturing, wholesale trade & retail trade sectors increases the prospects of being in poverty but this variable is statistically significant beyond one percent level of significance. It can be concluded that employment in manufacturing, wholesale & retail trade have minor impact on poverty incidence.

Household heads employment in Legislative & senior official, clerks and Professionals like occupations have odds ratio of 1.52, which shows that employment in these occupations significantly reduces the odds in favor of being in poverty. The results are also consistent with Haq (2001) and Cheema and Sial (2012) as they estimated lowest poverty in these occupations.

Household heads employed in elementary occupations, skilled agricultural workers, plant and machine operators etc. category have odds ratio of 0.72, which suggests that those household whose heads are employed in elementary occupations, skilled agriculture workers and plant and machine operators etc. have about 1.63 times more likelihood of being in poverty than categories classified as "others". The results are in line with (Cheema & Sial, 2012) who found highest poverty incidence in these occupations by decomposition of poverty incidence of household head by occupations. Haq (2001) also found higher poverty incidence in skilled agricultural and service workers.

Conclusions and Policy Recommendations

The main objective of the study was to analyze the impact of employment status of household head, industry of employment of household head and occupations of employment the household head on household poverty incidence in Pakistan. Poverty is also estimated at national level and decomposed by employment status, industry/sectors and occupations of the household head. A class of Foster-Greer-Thorbecke (1984) method is employed to estimate poverty incidence as well as decomposition of poverty incidence. The results indicated that poverty incidence is about 36 percent in Pakistan. Poverty decomposition results depicts that poverty significantly varies across employment status, sectors/industry of employment and occupations of the household head. Poverty decomposition by employment status of the household head portrays that poverty is highest (about 53 percent and 41 percent) in sharecropper and paid employee, respectively while it was lowest (about 11 percent) in those households whose head's employment status is employer. Poverty is found highest (about 42 percent in concentration sector and about 41 percent) in agriculture livestock and hunting sector while lowest poverty (about 23 percent is observed in electricity gas and water industry). Poverty disaggregation by occupations of the household head shows that poverty is highest (about 55 percent) in those households whose heads are employed in elementary occupations and lowest (about 7 percent and 11 percent) in those households whose heads are employed in legislative, senior official and managers and Professionals and Technical occupations.

The results of the Logit Model indicates that age of the household head, education of the household head, general employment of the household head are inversely related to poverty while being male as head, residence of household in rural area, household size and dependency ratio are positively related with poverty incidence. Household heads whose employment status are sharecropper, paid employee and livestock, employed in construction, transport and storage sector and employed in elementary occupations, skilled agricultural workers, and plant and machine operators like occupations increase the likelihood of being in poor implying that poverty risk is highest in these employment categories. Employment of the household head as self-employed and paid employee and employment in agricultural forestry and hunting sector, manufacturing, wholesale trade and retail trade sectors have not significant impact on poverty. Employment of the household head in Legislative and senior official, clerks and professionals and technical occupations significantly reduces the odds in favour of poverty.

Base on the fact that dependency ratio and household size have been found to be positively and significantly related to poverty incidence, therefore, family planning should be promoted to decrease the number of dependents and size of household especially in poor families. It is also suggested that efforts should be made to deliver adequate employment opportunities to all for rapid and sustainable development of the country.

Poverty incidence is found lowest in households having employment status as employer or works in legislative, senior official & managers like occupations. So, Promotion of Entrepreneurship and employability in above mentioned occupations should be given priority in employment strategies for poverty alleviation.

Highest poverty is found in households whose heads are employed as sharecropper or employed in construction sector and elementary occupations. Thus government should implement minimum wages policy and provide social safety to enhance the income of these poor workers. agriculture, forestry & hunting and manufacturing sectors are the key sectors of economy but they are contributing not significantly to reduction of poverty incidence. So, for the tremendous reduction in poverty, policies should be designed to bring innovations and revolution in these sectors. Rural area has almost double odds in favor of poverty. Thus for poverty reduction public spending should be directed towards rural areas and more investment and development should be focused in rural areas especially in agro-based industries to increase the employment opportunities and earnings of the poor. Education of household head is inversely related to poverty. Therefore, policies should be devised to promote education and skill in poor workers because human capital plays vital role in breaking the vicious circle of poverty.

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