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Relationship between Income Level and Poverty in Pakistan

Rashid Nasir*, Dr. Sardar Javaid Iqbal Khan**, Sardar Adil Iqbal Khan***
**M-Phil Economics Scholar, International Islamic University, Islamabad*
***Prof.Dr, Kashmir Institude of Economics, King Abdullah Campus, University of Azad Jammu & Kashmir, Muzafffarabad, AJ&K, Pakistan*
****M-Phil Economics Scholar, Applied Economics Research Centre (AERC), Karachi University*

Abstract: This paper analyses the relationship between Income level and poverty in Pakistan. The results relay on regression estimates by using the time series data for the period of fifty-nine year. By using the OLS technique a single equation model has been regressed. For the accuracy of results, two tests have been performed, one is Pre-estimation test (Test of stationary) used before regression, and two is Post- estimation test (Test of Phillips-Perron test) used after regression. We have used per capita income as dependent variable and check its relation with poverty in the Pakistan economy.

Aim of the paper is to analyze the existing relation between income level and poverty in Pakistan. The error correction model is used to estimate the relationship between income level and poverty. The estimates show that there is negative relationship between income level and poverty in the economy over the period.

Keywords: Income Level, Poverty
JEL Classification: Q01, C1

Introduction

Perspective of the paper

About the poverty, the World Bank defined as: Poverty is a situation in which people have not the basic needs. Poverty is a state or condition in which a person or community lacks the financial resources and essentials for a minimum standard of living (https://www.investopedia.com). Poverty is one of the emerging problems being discussed and debated in various developed and developing countries including standards across countries is one of the fundamental unresolved issue in Pakistan. The lack of proper convergence in living issues in economic development. The existence of poverty is also due to suboptimal planning and economic development at macro level.

To understanding how national income is created is the starting point for macroeconomics (www.investopedia.com). Distribution of Gross Domestic Product (GDP) across economic sectors of Pakistan in 2020. In 2020, agriculture contributed around 22.69 percent to the GDP of Pakistan, 17.69 percent came from the industry, and over half of the economy's contribution to GDP came from the services sector and nominal GDP was $1543 in 2020-21 (https//www.statista.com).

Income level and poverty terms are inversely related to each other. According Meier and Rauch (2000) economic development as the process whereby the real per capita income of a country increases over a long period of time-subject to the stipulation that the number below an 'absolute poverty line' does not increase, and that the distribution of income does not become more unequal.

The objective of the paper is to analyze the relation between income and poverty over past hesis experience of Pakistan and suggested important views for the poverty reduction in the country. The Null hypothesis of the paper is poverty and income has no relation, while Alternative hypothesis is that poverty and income has negative relation. The analysis is based on the secondary data collected from various national and international publications as were available.

Review of Literature

The section is allocated for a comprehensive literature review to see the past studies about the relationship between income level with poverty.

The relation between the poverty and income found negative (Meier, & Rauch 2000 etc.) also negative (Kuznet, 1955, 1963 etc.) for developing economies, various evidences show that different measures are used to indicate poverty at different level (SPDC 2004 etc.).

According to Todaro and Smith (2006) absolute poverty as the number of people, who are unable to command sufficient resources to satisfy basic needs, mean low level of income. It may be measured by the number, or 'headcount'. H, of those whose in dividual/household incomes fall below the absolute poverty line, Yp. When the head account is taken as a fraction of the total population, N. Khawak et al. (2018), have conducted a study on how income level distribution responds to poverty: empirical evidence from Pakistan. The

analysis reveals mixed responses of individuals towards spending level. The poverty headcount ratio $1.90 a day has the most significant impact of various income share consumption exercised by overall population of Pakistan. The author used time series secondary data ranges from 1987-2013 extracted from the World Bank data on inflation and consumer price manual is taken for research analysis. They analyzed and interpreted by using multiple variable regression models with State 12, Poverty headcount ratio, income as variables. As per Afzal, M. Malik,E. Sawar,k. Fatima , H (2010) about the relationship between poverty and economic growth and education. The analysis provides that poverty has strong linkage with education and economic growth. Education helps in reducing poverty and improving the social economic status of both the individual as well as the society. The present research has used time series data on education real domestic product, poverty and physical capital for the time span of 1971-71 to 2009-10 in case of Pakistan. This data were collected from various issues of Pakistan economic survey. In this article the author used education, poverty, physical capital and economic growth as variable. They used time series data, unit root test, ARDl approach to cointegration and TY AGC approach. The studies also recommend pro-poor growth and education in Pakistan. Another study by Iqbal et al. (2018), study on Human development and economic growth in Pakistan. The findings of this paper illustrate a significant empirical relevance of human development and economic growth. Pakistan is facing the great challenge of accelerating economic growth and it requires the sustained efforts to focus and promote human development. Econometrical methods like Unit Root Tests, Autoregressive Distributed Lag (ARDL) Co integration Technique and Error Correction Model (ECM) are used for regression results. The authors time series data ranging from 1972 to 2014. Life expectancy, total literacy rate and democracy are used as proxies of human development used as variables. Chain, I. Pervaiz, Z. Jan,S. Ali, A. chaodury, A(2011), relationship between poverty , inflation and economic growth. Nation College of business administration and economic .Have conducted a study on the relationship between poverty, inflation and economic growth empirical analysis in Pakistan. They concludes that economic growth has negative and inflation has positive impact on poverty investment and trade openness in poverty reduction. The aims to investigate the role of economic growth and inflation in explaining the prevalence of poverty in Pakistan. The study include ARDL bound testing approach to co- integration confirms the existence of long run relationship among the variables of poverty , inflation , investment and trade openness over the period of 1972 –2008(world eco indicators).In this study ARDL bound testing approach by ADF, P-P and ADF, GLS (1971- 2008). Aideed et al. (2019) relationship between government expenditure on education and GDP per capita in Pakistan. Analysis that Short term cointegration among public expenditure on education and GDP per capita in Pakistan has been found in the study. The long term positive significant influence of public expenditure on education on GDP per capita in Pakistan. This study is based on the Auto-Regressive Distributive Lag (ARDL) approach. The data was collected annual time series data for the period 1971 to 2017. Anam, S. zaman,k. Gul, s.(2012),Administered a study on the relationship between growth in equality – poverty triangle in Pakistan. The authors summing up that strong co– relation between growth, in inequality and poverty in Pakistan. The aim of this study is to investigate the effect of long run and short run carbon emissions pattern due to change in growth, inequality and poverty triangle in Pakistan over the time period (1980-2011). In this research paper mica growth, income equality, poverty, environment as variable. The authors used unit root test, AD, co integration test, OLS test (1980_2011).Accumulate date from various issue of economic survey of Pakistan and world development indictors which is published by World Bank (2012). Tahir et al. (2014), Studied the impact of GDP growth rate on poverty of Pakistan. The consequences of this study shows that the GDP growth has minor effects on the poverty and rising GDP growth rate could not create more jobs in the market due to policy failures, poverty eradication policy. By using secondary data. Growth Elasticity of poverty model and Pascal net are used to estimate the poverty ratio.

Likewise, Khan, N. Majeed, T (2018),Administered a study on the poverty traps and economic growth evidence from Pakistan. Final note that the empirical finding of this study suggest a strong a consistently negative and strong significant impact of poverty on growth. The objective of the study is to poverty traps create self- perpetrating mechanisms that impose economic growth. To check the relationship between poverty and economic growth. The study investigates the impact of poverty on economic growth in Pakistan using annual data for the period 1975 to 2016. Poverty traps, poverty, economic growth, inequality as variable. The author used in this study ARDL approach to co integration, generalized method of moments (GMM) OLS (FMOLS) and dynamic ordinary least square (DOLS) estimation, techniques. Nazir, et,al. (2010), analysis that economic growth can be attained by increasing the size of the stock markets of a country as well as the market capitalization in an emerging market like Pakistan. The data have been collected from different sources available. For instance, FDI data for the study period were collected from the official website of the Pakistani Board of Investment, Business and Finance Review and The Daily Jang Business Magazine. The author used ADF test, Dickey–Fuller test for “spurious regression results. Stock market development, economic growth, market capitalization, liquidity, human development index as variables. Another study by Ahsin et al.(2015),conclude the results revealed that a positive and statistically significant relationship exists between FD

and economic growth. However, BDL are positive but statistically insignificant, and M2 is negative and statistically insignificant. Time series data of Pakistani banks from 1980 to 2012 have been employed. Statistical analysis including Augmented Dickey–Fuller, Johansen cointegration, ordinary least square (OLS) regression, and Granger causality tests have been applied on the data relating four indicators (i.e. Broad Money (M2); Domestic Credit to Private Sector; Domestic Credit to by Banking Sector; and Banks Deposit Liabilities (BDL) – all taken as percentage of gross domestic product] which measured the level of financial development (FD) contributed by banking sector. Economic development; banking sector growth; financial development used as variables. Similarly, Akhtar. (1974), Monetary Velocity and Per Capita Income in Pakistan. Analysis that income velocity of money is a negative function of per capita real income. The development of banking on velocity has dominated its positive effect. Income velocity increases in response to improvements in agriculture which both generate a larger surplus to be traded in the monetized market and increase the monetization of the rural economy. The role of per capita real income in the determination of velocity cannot be fully ascertained without a detailed examination of various institutional and other influences on velocity within particular economies. The data was collected during the period 1951-67. Likewise, Pradhan and Mahesh (2016), analyzed the impacts of foreign remittances on poverty for the twenty five developing economies of the world. They concluded that foreign remittances for a country could consider a blessing in order to catch the bird of poverty in the lower developing countries. Further it was tried to examine the effects of total remittances receives on poverty reduction in these developing economies. Result explained the negative or inverse relationships among the foreign remittances and poverty, hence foreign remittances has negative impacts on poverty because a higher GDP per capital suggests minor or lower poverty head count ratio. In addition to the topic, Ali, S .Tahir,S (1990), about dynamics of growth , poverty and inequality in Pakistan. The analysis show result that poverty and inequality has positive relationship, while growth and poverty has negative relationship. Their objective of the study was to find the micro foundations of the dynamical relations between these three variable. The authors used OLS method on the data. The present study attempts to answer the question about long run relationship between growth, poverty and inequality in the context of Pakistan by time series on poverty measure. Furthermore, In this research paper the authors use poverty , economic growth, expenditure , house hold income as variable for house hold income and expenditure survey (HIES). Similarly, Mahood, Rashid, sadiq, sara, (2010), the relationship between government expenditure and poverty. Summarize the result that negative relationship between government expenditure and poverty. They adopt a study on the long run as well as short run relationship between the fiscal deficits. Which is outcome of high government expenditure, collection and poverty .The aim of the study to check the relationship between government expenditure and poverty analysis in Pakistan. The study attempts to check the relationship between government expenditure and poverty basis on the time series data from 1976 to 2010.The authors used government expenditure, poverty as variable. The authors used unit root test, ADF series has unit root. The data collected on the Annual data series between 1976 and 2010 are collected from various issue of Pakistan Economic Survey. Another study by Riza, H. Javid,R. Naqvi M (2010), Relationship between inflation and economic growth. Analysis that inflation and economics is positive relationship between CPI and real GDP. Conducted a study discusses the impact of inflation on the economic growth of Pakistan and estimates the short run between inflation and economic growth. The aim of the study to check the impact of inflation on economic growth analysis in Pakistan. Using annual data set on real GDP and CPI for the period of 1972 to 2011. The authors used inflation, economic growth as variable. Error correction Models (ECM) and integration initially. ADF, consumer price index. In this study the authors collected data from 1972 to 2011. The data was taken from hand book of statistic 2010 and economic survey (2011-12). A study done by Abdul, Q.Arif, M.Umima (2008), impact of remittances on economic growth and poverty. Pakistan institute of development economic Islamabad MAPRA paper 22941. Analysis that remittances effect economic growth positively and significantly. Remittances have a strong and statistically significantly impact on poverty reduction. The study focused on the importance of remittances inflow and its implication for economic growth and poverty reduction in Pakistan. The authors used remittances, growth, and poverty as variable. The authors used ARTDL approach for analysis the impact of remittances inflow on economic growth and poverty in Pakistan. In this research paper the authors collected data from the period 1973-2007.The data was gathered from Pakistan institute of development economic, Islamabad (2008). Another study done by Share, M.Druzeta,P(2016),poverty and economic growth review .Technological and economic development of economy .conclude that growth is good for poverty alleviation but it is not enough . The extent to which growth reduce poverty depends upon how we measure poverty, and upon absorptive capacity of the poor, the pace and pattern of growth. In this research paper poverty, economic growth, trickledown effect, pro-poor and pro-growth policies as variable .The objective of this study is to review and attempt a synthesis of the relevant literature on growth versus poverty ,and to analysis the causal link between the two phenomena . The authors collected data from 15 April 2015 to November 2015 from technological and economic development of economy. The authors used OLS and ARDL approach for analysis the result of poverty and economic review. Likewise, Pekovic

(2017), worked to search the effects of foreign remittances for the rural and regional level poverty for Serbia state. Analysis the Result impacts of foreign remittances are higher in order to decrease to depth and severity of poverty instead of poverty index. It was found that the contribution and receiving of foreign remittances has reduced the poverty. It was stated that the reduction of foreign remittances would result the in increasing the poverty in the rural area of Serbia state. In this study by Asghar, N.Awan, A.Rehman,H. (2012), Government spending , economic growth and rural poverty in Pakistan . Pakistan journal of social science. Analysis that there is a need to protect integrity of the country by taking some gold steps which is need of the hour and may be helpful in raising the pace of economic development. In this research paper the authors used government spending, poverty, economic growth as variable .This study tries to interpret the poverty linkages with the said variable in different provinces of Pakistan as rural Sindh seems to be more vulnerable than other regions of the country .the authors used OLS techniques for empirical result. The date was collected from 1970 to 2010 from Pakistan journal of social science. Another done by Ali,N.Hussain,H. (2017), impact of foreign direct investment on the economics growth of Pakistan . American journal of economics. Analyses the result of the study reveal that FDI has a positive impact on the economic growth of Pakistan. The current paper attempts to analysis the impact of foreign direct investment (FDI) on the economic growth of Pakistan. The study utilizes time series data over the period of 1991-2015 sources of American journal of economics. The study used correlation and multiple regression analysis techniques for analysis of data. The authors recommend that government should bring reforms in the domestic market to attract more FDI in Pakistan. In this study by Khan, Ali, E.Satter. Rashid (2010), Trade, growth and poverty: a case of Pakistan .the Islamic university of Bahawalpur Pakistan MAPRA 20904.Analysis that international trade can play an important role towards growth and ultimately alleviation of poverty. From the policy perspective government should focus on trade .The authors used unit root test, ADF, AIC, co integration test ECM and Wald test statics for regression results. In this study the author used trade openness, economic growth, poverty as variable. The paper analysis the causality between the trade, growth and poverty for Pakistan using annual time series data from 1973-2009. A study by Tahir, H. Perveen, N.Ismail, ASabir, H(2014), impact of GDP growth rate on poverty of Pakistan. A quantitative approach. Euro-Asian journal of economics and finances. Conclude that the GDP growth elasticity in terms of poverty was to the current poverty level in Pakistan. Again, rising unemployment lacks of opportunities for the highly less elastic i.e. a major change in GDP growth rate puts minor change in poverty. The main objective of this study was to measure the impact of GDP growth rate on poverty of Pakistan. The authors used a quantitative approach secondary data pertaining from 1980 to 2012 were collected from economic surveys of Pakistan, ministry of finance, Federal Bureau of statistics and planning commission of Pakistan. Another research paper by Magray, M and singh,S (2017), China Pakistan economic corridor(CPEC) its impacts on Pakistan economy. This paper Analysis the step that should be taken to favors this scenario and warns about the consequences of poorly –managed implementation of the CPEC such as aggravating divisions within Pakistan and heightening tensions between Islamabad other regional players. CPEC, Development, Economy as variable. The data collected from economy survey of CPEC. China –Pakistan Economics Corridor is a bilateral economic benefit to both nations .one of its kinds, the report comments on the future prospects for both Pakistan and china, and observes the challenges faced by the project .The study would help understanding CPEC, the obstacles in the way and what recommendations there are for its better and smoother implementation. Tehsin, M.khan, A.Hassan, T (2013), CPEC and sustainable economic growth for Pakistan. Analysis that this economic program me has both strategic and economic components. Pakistan should leverage the economic advantage through CPEC not only to develop its infrastructure and tide over energy and water shortage crises, but also to improve human capital and regional connectivity. The aim of the study is to ascertain the benefits of (CPEC) to sustainable economic growth for Pakistan .It is suggested that the trajectory of sustainable economic growth could originate through a process similar to Rostow, s economic trade off. In this paper the authors used sustainable economic growth, poverty, CPEC as variable. Likewise, Rizwana et al. (2019),the Impact of Foreign Remittances and Financial Development on Poverty and Income Inequality in Pakistan: Evidence from ARDL - Bounds Testing Approach. Journal of Asian Finance, Economics and Business. Analysis the result that in the short-run, remittances increases poverty and income inequality, which further translated into its long-run impact. The result confirmed the inverted U-shaped relationship between per capita income and income inequality, while the second order coefficient of per capita income substantially decline poverty incidence in a country. In the long-run, the results disappeared and it's turned into U-shaped relationship between income inequality and country's per capita income. . Foreign Remittances, Poverty, and Income Inequality the author used as variables. The author collected time series data from world economic data base and several economic surveys of Pakistan. The author used study used descriptive statistics, correlation matrix, Unit root test and ARDL-Bounds testing approach for regression result. In addition to, Chowdhury (2016), examined the relationship among the financial development, foreign remittances and economic growth of the economies of thirty three highest remittances receiving countries of the world for the period of 1979 to 2011 using the panel dynamic estimations. It was

found through the empirical investigations that financial development could not be considered as a complement or substitutes of foreign remittances for the connection of economic growth and remittance connection. Further with the help of growth equations the research suggested the positive and significant relationship among the remittances and economic growth of the economies of highest remittances receding countries of the world. Similarly, Bada (2016), investigated the collective relationship among the foreign remittances and economic development for the rural Mexico. The research discussed the fluctuations agendas for the United States based home town associations specifically in the rural Mexico. It was analyzed that either these fluctuations have any impacts on the decisions of local government in order to strengthen and develop the decisions of local government. It was found that government of both local and provisional level was seeking interested for the attachment of economic immigrant in the shape of foreign remittances either for sub-national states levels, municipal corporation levels or even at village level. Likewise, Kousar et al. (2019), Conduct a study on the Impact of Foreign Remittances and Financial Development on Poverty and Income Inequality in Pakistan. The author's analysis the results short-run, remittances increases poverty and income inequality, which further translated into its long-run impact. The result also confirmed the inverted U shaped relationship between per capita income and income inequality, while the second order coefficient of per capita income substantially decline poverty incidence in a country. In the long-run, the results disappeared and it's turned into U-shaped relationship between income inequality and country's per capita income. The study used Unit root test and ARDL-Bounds testing approach. Pakistan economy over the period of 1980 to 2016. Time series data have been collected from world economic data base and several economic surveys of Pakistan. The authors GDP,INF and poverty as variables.

Another study done by Karikari, Kwasi, and Simon (2016), scrutinized either the foreign remittances work for the promotion of financial development of the fifty developing countries of Africa for the period of 1990 to 2011. Further it was tried to investigate and establish the functional relationship among foreign remittances and their effects on financial and credit availabilities to the public, private, banking and other financial institutions for the contribution of economic growth and development projects in the economy. Panel fixed effect and random effect models under Vector error correction mechanism has been employed for empirical estimations. It was found that the foreign remittances have encouraged the financial improvement and development in the short run.

In addition, Reeves (2017), worked for the crypto currency foreign remittances being transferred for advancement of technology and mitigation of poverty for the eighteen African countries named Angola, Cabo Verde, Ethiopia, The Gambia, Ghana, Guinea-Bissau, Kenya, Lesotho, Mali, Mauritania, Mozambique, Nigeria, Rwanda, Senegal, Sudan, Togo, Uganda, and Zambia for the period of 1993 to 2012. The selection of these specific eighteen countries was because of their similar economic characteristics. It was concluded that employing the crypto currency such as bit coin throughout transaction of remittance could severely alter the poverty. It was recommended for the developing countries to adopt the methodologies of crypto currency mechanism for the remittances transfers. Similarly, Donou-Adonsou and Sylwester (2016), searched the relationship among the financial development and reduction level of poverty in the developing countries of the world. A panel study has been conducted for the seventy one developing countries and evidence form the banking sectors over the period of 2002 to 2011. For empirical estimations panel fixed effect model using 2SLS methodology has been employed. Result explains that banking sector while employing the head count ratio has reduced poverty in the sample developing countries. Government of Pakistan Economic Survey (2007-08), reported that the GDP growth performance over the last Six years has been impressive nature-ranging from 5.8 percent to 9 percent. It posted a robust Growth of 5.8 percent in 2007-08, as against 6.8 percent in 2006-07. When viewed the Medium-term perspective, Pakistan's growth performance is still striking, with real GDP Growing at an average rate of 7 percent per annum over the period five years (2004-08). In addition to, Jamal, Haroon et al, (2014), analysis the result an attempt is also made to determine the relative contribution of economic growth and distribution of income to changes in poverty. This research assesses the distributional characteristics of growth in Pakistan by applying statistical techniques suggested in the empirical literature on poverty and income inequality various episodes of growth are considered during the period 19882011. The findings of the research will facilitate policy makers to evaluate growth strategies in terms of pro-poorness or growth with equity. Poverty Decomposition, Income Inequality, Pro-Poor Growth, Pakistan. The data was collected from various economic survey. Moreover, Munath et al. (2015), indicated that the impacts of FDI on economic growth. By applying multiple regression model on annual data this study analyses the impact of FDI on the economic growth, external debt, inflation, and remittance. The study shows that FDI plays a critical role for the economic development of the country. The results also suggest that external debt has negative impact on the development of the country. Likewise, Khan et al. (2017),Author's analysis that there is a positive correlation between the human development index and small business credit, which is conducive to all previous expectations .Thus, this evidence provides support for the "positive impact" of the debate and provides some

guidance on how policy reform should focus on strengthening the performance of the Pakistani microfinance sector. This paper uses the 1985-2015 time series data to assess the relationship between the human development index as a representative of poverty and its socioeconomic characteristics and microfinance visits. Microfinance, poverty, HDI, WDI the author used as variable. Similarly, Panizza (2002), and Kamal (2002), there is a close relationship between economic development and provision of essential services in Pakistan Ahmed and Amjad (1984). Economic growth is considered to be an essential Prerequisite for poverty reduction in Pakistan, Zaidi (2005). Pakistan's economic record for the past fifty years is both impressive and disappointing. It is impressive because economic Growth rates and per capita incomes have more than doubled despite a quadruple increase in Population, and have surpassed other countries in the region.

Methodology

Methodology is very simple, we used Ordinary Least Square (OLS) method to estimate the economic model to check the significance of parameters, we have used t-statistics, F test and goodness of fit to check explanatory power of independent variables, and model respectively . Estimation has been carried out by the computer software "Stata". In literature, different studies have presented different theories of income level and poverty rate. Since the days of Keynes, income level has been regarded as the chief determinant of poverty rate. However, the exact nature of poverty rate and income level relationship has remained a controversial subject. To study the relationship between Per capita income and poverty, the following methodological review of literature. Khawak et al. (2018), have conducted a study on how income level distribution responds to poverty: empirical evidence from Pakistan. The analysis reveal mixed responses of individuals towards spending level. The poverty headcount ratio $1.90 a day has the most significant impact of various income share consumption exercised by overall population of Pakistan. The author used time series secondary data ranges from 1987-2013 extracted from the World Bank data on inflation and consumer price manual is taken for research analysis. They analyzed and interpreted by using multiple variable regression model with Stata 12, Poverty headcount ratio, income as variables. In addition to the topic, Ali, S .Tahir,S (1990), about dynamics of growth , poverty and inequality in Pakistan. The analysis show result that poverty and inequality has positive relationship, while growth and poverty has negative relationship. Their objective of the study was to find the micro foundations of the dynamical relations between these three variable. The authors used OLS method on the data. The present study attempts to answer the question about long run relationship between growth, poverty and inequality in the context of Pakistan by time series on poverty measure. Furthermore, In this research paper the authors have used poverty , economic growth, expenditure , house hold income as variable for House Hold Income and Expenditure Survey (HHIES).

Theoretical Model

Income level = f [poverty rate] I

$Yt = f(HCI)$ II

Yt is a function HCI

$Yt = \beta 0 + \beta 1 HCIt$

Where:

Yt	=	income level
HCI	=	Poverty rate
B1,β2	=	Parameters.
B0	=	Intercept
U	=	Error term.
t	=	time (1960 -2019)

Mathematical Model

The Mathematical Models written as:

Yt = f (HCI t)

$Yt = \beta 0 + \beta 1 HCIt$

Econometric Model

$Yt = \beta 0 + \beta 1 HC\,It + Ut$

Estimation Technique

We have used OLS technique to test the Pakistan data. Pre-estimation test (Test of stationary) is used before regression, and Post- estimation test (Test of Phillips-Perron test) is used after regression.

Data

Description of Data

The focus of the study is towards the analysis on the Pakistani economy by utilizing the maximal number of annual observations. As elucidated before, the preserved hypothesis relates to be that there exists a long run relationship among the variables. Furthermore, the variables sources are shown in (Table 1) and all are articulated in logs for the period 1960-2019. In order to meet the objectives of the study, ARDL approach has been employed in the study proposed by Pesaran et al (2009).

Description of the Variables

Table.1

Variables	Proxy	Data source
Dependent variables Income level	GDP per capita	WDI, Economic survey& statistical yearbook of Pakistan
Poverty	Hand Count Index	WDI, Economic survey and Human Development Index (HDI)& statistical yearbook of Pakistan

Percapita Income: Per capita income is a measure of the amount of money earned per person in a nation or geographic region. Per capita income can be used to determine the average per-person income for an area and to evaluate the standard of living and quality of life of the population. Per capita income for a nation is calculated by dividing the country's national income by its population.

Poverty: Poverty is about not having enough money to meet basic needs including food, clothing and shelter. However, poverty is more, much more than just not having enough money. The World Bank origination describes poverty in this way .poverty is a situation people want to escape.

Descriptive Statistics

To examine the relationship between income level and poverty in Pakistan. We have used data from 1960 to 2019. The data have been collected from World Development Index (WDI) and Economic Survey of Pakistan.

Variable	Obs	Mean	Std. Dev.	Min	Max
Poverty rate	60	30.03233	8.673788	15.25	46.53
Pci |	60	549.7722	312.6118	165	1368.37

Data Source:

By using secondary data from 1960-2019 through different sources like various issues of the Pakistan Economics Survey, Statistical Yearbook of Pakistan, State Bank of Pakistan various publications, various issues of the World Development Report and World Development Indictor (WDI).

Finding

In this section, first, we have a brief introduction regarding Pakistan's performance in income level and poverty reduction, and second presented evidences and empirical finding on the basis of the model formulated in the earlier third section.

Pakistan's economic record for the past seventy five years is very impressive. It is impressive concerning income level enhancement and poverty reduction. Over the period various successive governments have pursued various economic policies to bring an improvement in the country's overall economic condition. Concerning the issue of income level growth and poverty reduction. A convenient starting is to compare the level of such indicators as the country inherited in 1947 and the level as found in the year (2020), but we have followed the two macroeconomics indicators relation for analysis. In every economy per capita income and poverty play a very vital role and too in Pakistan. Development deals with the alleviation (or the eradication) of poverty. Poverty is inter-related to other problems of underdevelopment. ... In rural areas there is often low income, poor access to education, health and many other services but people usually live in healthier and safer environments. Economic growth is the most powerful instrument for reducing poverty and improving the quality of life in developing countries. Thus, both the pace and pattern of growth matter for reducing poverty. A successful strategy of poverty reduction must have at its core measures to promote rapid and sustained economic growth. Economic growth will reduce income inequality if wages of the lowest paid rise faster than the average wage. Economic growth creates job opportunities, which reduce the level of unemployment. A sustainably managed environment is a Prerequisite for socio-economic development and poverty reduction. The natural environment

Supplies ecosystem goods and services that Provide income, support job creation, poverty alleviation, contribute to safety nets and reduce Inequity. As the economy grows, then it creates opportunities for employment and income growth. Stronger labor markets and higher income levels tend to help the families living in poverty to move above the poverty threshold. That is, lower poverty rates coincide with decreases in unemployment or increases in income. Further poverty is associated with a host of health risks, including elevated rates of heart disease, diabetes, hypertension, cancer, and infant mortality, mental illness, under nutrition, lead poisoning, asthma, and dental problems.

For the such relationship of income level and poverty in Pakistan. The relationship between these indicators is negative in the Pakistan economy, which is in line with economic theory. By using section three methodology, we have collected the data on these variables and used an econometric technique known as Ordinary Least Square (OLS), which provides results and satisfied our objective. The interpretation of results are in two forms i.e. macro level and micro level discussion. At macro level, we have presented the econometric results i.e R square, Adjusted R square and F statistic and, then at micro level, we have presented individual variables and t-statistics of individual's variables.

Results Discussion

In the section, we have presented an estimated model results discussion, which methodology is specified in the previous section three, time series data have taken for determining the relationship of Per Capita Income (PCI) with poverty in Pakistan. We have used Ordinary Least Square (OLS) method for the regression analysis to finding the relation of poverty with per capita income in Pakistan. By taking time series data from 1960 to 2019 from different sources (mention in the data section).

Descriptive Statistics

To examine the relationship between income level and poverty in Pakistan. We used data from 1960 to 2019. The data have been collected from World Development Index (WDI) and Economic Survey of Pakistan. The following table shows that for per capita income, we have sixty observation which minimum value is 165 Dollar and maximum value is 1368.37 Dollar, the mean value of per capita is 549.773, while the stander deviation value is 312.611 which shows that over variable is reliable.

For the poverty rate, we have sixty observations, which minimum value is 15.25 number and maximum value is 46.53 number, the mean value of poverty rate is 30.033, while the stander deviation value is 8.674 which shows that Hand Count Index (HCI) variable is reliable.

Variable	Obs	Mean	Std. Dev.	Min	Max
Poverty rate	60	30.03233	8.673788	15.25	46. 53
Pci |	60	549.7722	312.6118	165	1368.37

Our results are in line with economic theory, because economic theory says that with the reduction in poverty, people get rid of poverty and their income goes up from the previous level**.**

It is clear from the results that per capita income is negatively significant with Poverty. If poverty rate decreases by one percent on average the per capita income Increases by 9.45Dollar. So the regression result shows that there is negative relationship between Per capita income and poverty rate in the Pakistan economy.

It shows that if one unit change in the poverty so per capita income will be change by the rate of 9.45 Dollar. This result is on the basis of Classical Sign Criteria. The sole independent variable poverty is statistically significant with the dependent variable per capita income.

PCI = f (HCI)
PCIt = β0 + β1HCIt +Ut
PCI =(833.55) + (-9.45) HCI +U
Parameters:β0=833.55, β1=-9.45
Std error =: β0=0142.69 : β1=4.57
T statistic = β0 = 05.54 : β1 =-2.07
Prob t = : β0 = 0.000 : β1 = 0.04
R^2= 0.678
Adj R^2 = 0.527
Df= 58 1
F= 4.28
F statistic = 0.0430
DW= 1.89

The model summary of this analysis shows that our model is good fitted because the value of R^2 is 0.687 and model also shows simultaneous significance, which have assessed from (F-statistic F-statistic = 0.0430 and f-significance = 0.000).

R-Square shows the goodness of fit of the model. It shows that how much variation in the dependent variable is due to the selected explanatory variable of the model. The value of goodness of fit R^2 is sufficient. The regression estimates indicate that the model is good fitted because the value of R-square is 07 percent (R-square = 0.687).

Adjusted R square is used to adjust R square with the degree of freedom, when its value comes high then regression is good fitted. It is computed by dividing the goodness of fit with the degree of freedom (N-K). The value of adjusted R square is 0.5 percent (Adjusted R square = 0.527).

ANOVA Table

Model		Sum of square	D. f	Mean Square	F-Statistic	F- Sig
1	Regression	396316.450	51	396316.450	4.281	043[b]
	Residual	5369527.053	8	92578.053		
	Total	5765843.503	59			

a. Dependent variable PCI
b. Predictors (constant) HCI

The value of F-test shows the overall significance of the relationship between dependent and independent variables. It represents the relationship between explained variation and unexplained variation. From that point of view large F value is a positive indication for our estimated regression. The model also reveals simultaneous significance, which we have assessed through the F-statistics and its significance (F test = 043 and F sig = 0.000). The result shows that our independent variable has strong and significant effect on the dependent variables.

The term degree of freedom represents the number of independent variables and number of observation (sample size). It means more and more observations leads to the perfection of the results. It is calculated by the formula (N-K), where N is number of observations and K is number of variables.

Conclusion and Recommendation

Conclusion

The relation between poverty and income level is negative. Income growth per capita is the main source of reduction in poverty in most countries. This has been supported empirically by the studies of Tendulkar and Jain (1995), and Ravallion and Datt (1996). Dollar and Kraay (2000, 2001, and 2002) showed data from over 70 countries supporting the view that high growth rates of real gross domestic product (GDP) per capita are associated with a more rapid reduction in poverty. The role of economic growth in poverty reduction has also been supported by Deaton and Dreze (2001), Bhagwati (2001). Furthermore, in a study on economic growth and poverty reduction in Kazakhstan using provincial data, Agrawal (2008) found that provinces with higher growth rates achieved a faster decline in poverty. Reduction in poverty was largely due to growth, which led to increased employment and higher real wages. Economic growth has been vital for reducing extreme poverty and improving the lives of many poor people around the world. This paper also convey us various important conclusion that income level and poverty has negative relationship.

According to regression analysis, income level and poverty rate are negatively related to each other. If there is decline in poverty so income level goes up. It mean that for increase the income level there is a need that the poverty rate should decrease sufficiently. The co-efficient of poverty level has negative sign, which is evident that for higher income level the accentual condition is based on the reduction of poverty rate in Pakistan. The econometric results are in line with the economics theory.

Recommendation

On the basis of the above conclusions the paper recommends that income level and poverty has a negative relation with each other, to enhance income level, poverty reduction is essential in the Pakistan economy, more and more income programs to reduce poverty and target poverty would be needed. So all

policies aim should be pro-poor and trickledown effect in the country. A nation cannot be achieved high level of income without poverty reduction, so government of Pakistan should pay more attention to enhance the income level of the people through the complementary and supplementary policies at various level and sections of the population. Which helpful to reduce poverty.

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