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Relationship between Development and Poverty in Pakistan

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ABSTRACT

Aim of the Study: This study investigates the relationship between Income level and poverty rate in Pakistan.

Methodology: The analysis based on regression estimates by using the time series data from 1960 to 2019. A single equation model has been developed and regression analysis is done in linear from using ordinary least square (OLS). Pre-estimation test (Test of stationary) is used before regression, and Post- estimation test (Test of Phillips-Perron test) is used after regression. Researchers used per capita income as dependent variable and check the role of per capita income in economy.

Findings: The outcome demonstrates that the poverty rate and per capita income are negatively correlated. The outcome provides proof that Pakistan's poverty rate is significantly impacted by per capita income.

Conclusion: The study gave important conclusion that income level and poverty has negative relationship. It means that for increase the income level there is a need that the poverty rate should decrease.

Keywords: Development, Poverty, Pakistan, Relationship.

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Introduction

Background of the Study

Not having enough money to cover one's basic expenses for clothing, food, and shelter is what is meant by poverty. But poverty goes far beyond simply not having enough money. This is how the World Bank definition of poverty puts it. Everyone wants to get out of poverty. While a greater median age is linked to a lower poverty rate, higher minority populations are related with higher rates of poverty. It makes logical that poverty rates are correlated with the state of the economy as a whole. The data also shows that a bigger proportion of the population with a college degree is connected with lower rates of poverty. Opportunities for employment and income growth increase in tandem with economic expansion. Higher income levels and more robust labor markets typically assist low-income families in rising beyond the poverty line. Increased income lowers the nation's poverty rate (Khawak el al., 2018).

One of the main issues that Pakistan still hasn't addressed is poverty, which is a growing concern that is being discussed and contested in both established and developing nations. This includes standards beyond national boundaries. It obstructs social progress and economic expansion and breeds pessimism about the consequences of cultural, market-oriented, and other variables. the absence of convergence between current concerns and economic growth. Social, economic, and development policies are the root cause of poverty as well as economic development. Food insecurity, inadequate infrastructure, and the antediluvian HDI are all associated with poverty in rural communities. In a related issue, the World Bank found in a report on poverty that Pakistan got 0.537 points on the ability to meet basic requirements in a UNDP study on poverty and human development in Asia (2014). Pakistan was rated 146th out of 187 countries on the index. One of the most contentious concerns nowadays is how to alleviate poverty. Some of the reasons for this include inadequate access to finance and savings, low nutritional values, limited access to intellectual institutions, and general incapacity among policy makers and academics. The goal of the poverty reduction program from the 1950s to the 1980s was to boost the proportion of impoverished people participating in the economy through better macroeconomic performance. Researchers have found that although the impoverished are frequently employed in the unorganized sector, they are not yet taken into account in economic models, government plans, or policy (Robinson, 2001).

The total amount of money received by all people or families within a nation is referred to as personal income. Salary, wages, and bonuses from jobs or self-employment, dividends and distributions from investments, rental income from real estate holdings, and profit-sharing from businesses are all examples of compensation that falls under the category of personal income (www.investopedia.com). The total worth of a nation's annual production of all newly created commodities and services is known as its national income. Macroeconomics begins with an understanding of how national revenue is generated (www.investopedia.com). GDP distribution within Pakistan's key sectors in 2020. Approximately 22.69 percent of Pakistan's GDP in 2020 came from agriculture, 17.69 percent from industry, and more over half came from the services sector of the economy. (www.statista.com) Pakistan's population of 220 million people is divided by its national revenue of 1.039 trillion dollars per year. In 2020–21, the nominal GDP per person is $1543.

The concepts "development," "growth," and "poor" are closely associated. According to Meier and Rauch (2000), economic development is the process by which a nation's real per capita income rises over an extended period of time, subject to the requirements that the number of people living below a "absolute poverty line" does not rise and that the distribution of income does not become more unequal. Growth and a steady or declining rate of poverty are prerequisites for this process.

Regression-based analysis of poverty, growth, and development has been extensively studied (Meier and Rauch, 2000). When asked to predict the results of different government actions, economists in developing nations most commonly employ development, growth, and poverty analysis. The literature (Meier and Rauch, 2000) makes it clear that the transition of growth to development has traditionally been sluggish in the world's varied economies. Once growth has commenced, the inquiries arise as to how it aligns with the phases of economic expansion and advancement.

The paper's goal is to examine the relationship between poverty, growth, and development in Pakistan's historical experiences and offer fresh ideas for the nation's development plans. In summary, the analysis is predicated on Pakistan's economic progress during the past sixty years of history, as well as how the country's poor position has changed as a result of this expansion.

The secondary data gathered from numerous national and international publications forms the basis of the analysis. The paper is structured as follows: part one covers the issue's introduction; section two reviews the literature on the relationship between development, growth, and poverty; section three includes the theoretical underpinning for methodology; and The higher level of per capita income is contingent upon the disparity between the two growth rates, meaning it must exceed GDP. Gy, then, represents the change in per capita income as a percentage.

The relationship between poverty and development has been found to be both positive and negative (Kuznet, 1955, 1963, etc.; Meier & Rauch, 2000, etc.). Different indicators are employed to identify poverty at different levels in emerging economies, according to a variety of evidence (SPDC 2004 etc.). Absolute poverty, according to Todaro and Smith (2006), is defined as the quantity of persons with low income who are unable to obtain enough resources to meet their basic necessities. It might be quantified by the quantity, or "headcount." H, of people whose household or individual incomes are below the federal poverty threshold, Yp. We define the headcount index when we take the head account as a fraction of the total population, N.

Problem Statement

Numerous studies on the connection between Pakistan's poverty rate and income level have been done in the past. Various determinants that are likely to influence poverty and income level in various contexts have been identified by these studies. In Pakistan, a study of this kind using up-to-date data is necessary. In Pakistan, where there is already a great deal of economic uncertainty, the dynamic of income level is quite important. Because of the economy's volatility, it is now essential for every participant to keep a specific amount of money on hand for emergency situations. The readers will be able to comprehend the aspects influencing this crucial component in the chosen economy thanks to this study.

Objectives of the Study

The aim of this article is to examine the relationship between poverty, growth, and development in Pakistan based on its historical experiences and to propose new approaches for development planning in the nation. In other words, the analysis is predicated on Pakistan's economic progress during the past sixty years of history, and how that development has affected the nation's poverty rate.

Hypotheses of the Study

H0 = There is no relation of PCI with Poverty

H1 = There exist relation of PCI with Poverty

Organization of the Study

This paper is divided into seven sections. A succinct introduction, including background, goals, and hypothesis, is given in it. The pertinent theoretical and empirical research on the connection between per capita income (PCI), poverty, and economic growth is presented. The econometric model is one of the technique sections. Data sources, variable formation, and estimation methods. Discussion of interpretations of empirical results, and conclusion of is centered on empirical data.

Review of Literature

A study on the response of income level distribution to poverty: empirical evidence from Pakistan was carried out by Khawak et al. (2018). The analysis shows that people's responses to spending levels are not all the same. The most important influence of different income share consumption exerted by Pakistan's total population is the poverty headcount ratio of $1.90 per day.In order to conduct research analysis, the author employed time series secondary data that was acquired from the World Bank's consumer pricing handbook and covered the years 1987 to 2013. Using Stata 12, the poverty headcount ratio, and income as variables, they employed a multiple variable regression model for analysis and interpretation.

Afzal et al. (2010) regarding the connection between economic development, education, and poverty. The data shows a substantial correlation between economic growth and education and poverty. Education plays a pivotal role in mitigating poverty and enhancing the socioeconomic standing of individuals and the community. The current study employed time series data for Pakistan from 1971–1971 to 2009–2010 on education, real domestic product, poverty, and physical capital. These data were gathered from Pakistan Economic Survey publications. The author of this article employed physical capital, economic growth, poverty, and education as variables. They employed the ARDl approach to integration, the TY

AGC technique, time series data, and the unit root test. Pro-poor growth and education are also recommended by the research in Pakistan.

Iqbal et al. (2018) conducted a study on the relationship between human development and economic growth in Pakistan. The results of this study demonstrate the empirical significance of both economic growth and human development. Pakistan must make consistent efforts to prioritize and advance human development in order to meet the formidable task of rapidly increasing economic growth. Regression findings are obtained using econometric techniques such as Unit Root Tests, Autoregressive Distributed Lag (ARDL) Cointegration Technique, and Error Correction Model (ECM). The time series data used by the author spans from 1972 to 2014. As variables, life expectancy, the overall literacy rate, and democracy are utilized as stand-ins for human development.

An empirical investigation of the relationship between poverty, inflation, and economic growth in Pakistan was carried out by Chain et al. (2011). They come to the conclusion that trade openness and investment in poverty reduction are positively impacted by inflation and negatively impacted by economic growth. The purpose of the study was to look at how inflation and economic growth can contribute to Pakistan's high rate of poverty. In order to confirm the existence of a long-term relationship among the variables of poverty, inflation, investment, and trade openness over the period of 1972–2008 (global eco indicators), the study incorporated an ARDL bound testing technique to co-integration. The ARDL bound testing method used in this work by ADF, P-P, and ADF, GLS (1971–2008). Three fixed-effects econometric techniques were employed in this method: ADF, p-p, and ADF, GLS.

Similarly, Aideed et al. (2019) found a correlation between Pakistan's GDP per capita and government spending on education. Analysis shows that there is a short-term cointegration between Pakistan's GDP per capita and state spending on education. The long-term, considerable positive impact of public education spending on Pakistan's GDP per capita. The Auto-Regressive Distributive Lag (ARDL) method is the foundation of this investigation. Annual time series data were gathered for the years 1971 through 2017.

Anam et al. (2012) conducted research on the relationship between Pakistan's poverty triangle and the country's rise in equality. The authors summarize the close relationship that exists in Pakistan between poverty, inequality, and growth. The purpose of this study is to look into how changes in Pakistan's growth, inequality, and poverty triangle throughout the years have affected the country's long- and short-term carbon emissions patterns (1980-2011). This study uses poverty, income inequality, poverty reduction, and the environment as variables. The unit root test, AD, cointegration test, and OLS test (1980_2011) were employed by the authors.Compile data from World Bank-published World Development Indicators and Pakistan Economic Survey issues (2012).

In a similar vein, Tahir et al. (2014) investigated the effect of Pakistan's GDP growth rate on poverty. The findings of this study demonstrate that GDP growth has little impact on poverty and that growing GDP growth rates are unable to generate additional jobs in the economy because of the shortcomings of poverty eradication policies by the use of secondary data. The poverty ratio is estimated using Pascal's net and the Growth Elasticity of Poverty Model.

Similarly, in 2018, Khan & Majeed, oversaw a study on Pakistani economic growth data and poverty traps. As a final point, the study's empirical findings point to a strong, persistently negative, and considerable negative impact of poverty on growth. The study aims to establish self-perpetrating systems that enforce economic progress in order to address poverty traps to examine the connection between economic expansion and poverty. The study uses annual data from 1975 to 2016 to examine how Pakistan's poverty affects economic growth. Economic growth, poverty, poverty traps, and inequality as a variable. The generalized method of moments (GMM) OLS (FMOLS), dynamic ordinary least square (DOLS) estimation, and the ARDL approach to co integration were all employed by the author in this work.

In a similar vein, Nazir et al. (2010) found that growing a nation's stock market and market capitalization in an emerging economy like Pakistan can lead to economic growth. The information was gathered from a variety of sources. For example, the Pakistani Board of Investment's official website, Business and Finance Review, and The Daily Jang Business Magazine were the sources of FDI statistics for the study period. For "spurious regression results," the author employed the Dickey-Fuller test and the ADF test. Stock market development, economic growth, market capitalization, liquidity, human development index as variables.

Ahsin et al. (2015) found in another study that there is a statistically significant and positive correlation between FD and economic growth. On the other hand, M2 is statistically insignificant and negative, whereas BDL are positive but statistically insignificant. Time series data from 1980 to 2012 for banks in Pakistan have been used. The data relating to four indicators—Broad Money (M2), Domestic Credit to Private Sector, Domestic Credit to by Banking Sector, and Banks Deposit Liabilities (BDL)—all taken as percentages of gross domestic product—were subjected to statistical analysis, which included the Johansen cointegration, Granger causality tests, and Augmented Dickey–Fuller tests. These tests measured the level of Financial Development (FD) contributed by the banking sector. The variables that are employed are financial development, banking sector expansion, and economic development.

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.

Similarly, Pradhan and Mahesh (2016) examined how poverty is affected by remittances from abroad in 25 of the world's emerging economies. They came to the conclusion that, for a nation, receiving remittances from abroad could be a boon in catching the poverty bird in less developed nations. Additionally, an investigation was conducted into how these developing economies' overall remittance receipts affected the decrease of poverty. The findings clarified the inverse or negative correlations between foreign remittances and poverty; in other words, remittances from abroad have a negative effect on poverty since a greater GDP per capita indicates a smaller or nonexistent ratio of the number of people living in poverty.

In addition to the topic, Ali & Tahir (1990) study’s 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) FROM (1944-45) to (1963-64).

Mahood et al. (2010) provide a summary of the findings indicating a negative correlation between government spending and poverty. They conduct research on the relationship between budgetary deficits in the short and long terms. It results from poverty, large government spending, and collecting. The study's objective is to determine how government spending and poverty analysis in Pakistan relate to one another. The study uses time series data from 1976 to 2010 to examine the relationship between government spending and poverty. The authors' variables were poverty and government spending. The ADF series has a unit root, and the authors utilized this to test it. The information gathered for the Annual Data Series from 1976 to 2010 came from different Pakistan Economic Survey issues.

Riza et al., (2010) conducted a study on the correlation between inflation and economic growth. Analysis shows a positive correlation between real GDP and CPI and inflation and economics. Conducted a study that analyzes the short-term relationship between inflation and economic growth and examines how inflation affects Pakistan's economic growth. The study's objective is to determine how inflation affects Pakistan's economic growth analysis. Using yearly sets of real GDP and CPI data covering the years 1972–2011. 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)

Abdul et al. (2008) conducted a study on the influence of remittances on poverty and economic progress. Research shows that remittances have a major and favorable impact on economic growth. The elimination of poverty is strongly and statistically significantly impacted by remittances. The study concentrated on the significance of remittance inflow and its implications for Pakistan's economic development and poverty alleviation. Remittances, growth, and poverty were the variables used by the authors. The authors analyzed the effect of remittance inflow on poverty and economic growth in Pakistan using the ARTDL technique. 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).

Share et al. (2016) conducted a review on the relationship between poverty and economic growth. economic and technological advancements in the economy. conclusion that while growth helps reduce poverty, it is insufficient. The rate and pattern of growth, the absorptive ability of the poor, how poverty is measured, and growth's impact on poverty all influence how much poverty is reduced by growth. The variables in this study article are pro-poor and pro-growth policies, economic growth, and the trickledown effect. This study aims to analyze the causal relationship between growth and poverty by reviewing and synthesizing pertinent literature in the field. 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.

Similarly, Pekovic (2017) investigated how international remittances affected poverty in Serbia at the rural and provincial levels. Analysis shows that rather than focusing on the poverty index, the effects of international remittances are more likely to reduce the severity and depth of poverty. It was discovered that poverty has decreased as a result of sending and receiving international remittances. It was said that the decrease in remittances from outside would cause poverty to rise in Serbia's rural areas.

In 2012, Asghar et al. conducted research on Pakistan's rural poverty, economic growth, and government spending. It has been determined that certain specific initiatives must be taken to safeguard the nation's integrity. These steps are urgently needed and could hasten economic progress. The authors of this study included economic growth, poverty, and government spending as variables.Given that rural Sindh appears to be more vulnerable than other parts of the nation, this study attempts to explain the relationships between poverty and the aforementioned variable in other Pakistani provinces. For the empirical result, the authors employed OLS techniques.

Methodology

Introduction of Method

Methodology is a science of method including analysis, surveying, deduction and inferences. It is an attempt to valuate, rational behind the selected strategy and provide validation of why it is appropriate and solving selected problems. It is the process by which, researchers evaluate tools that produce knowledge. In this study the researchers used Ordinary Least Square (OLS) method to estimate the economic model to check the significance of parameters, researchers used t-statistics. Goodness of fit to check explanatory power of independent variables. Estimation has been carried out by the computer software “Stata”.

Theoretical Model

Income level= f [poverty rate] I

Yt = f (HCI) II

Yt is a function HCI

Yt= β0+= β1HC III

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)

Yt= β0+= β1HCI

Econometric Model

Yt= β0+β1HCI+Utiv

Estimation Technique

In this thesis, we have used OLS, and GMM 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

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: *Determents of economic performance, (Pakistan data*).

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

The amount of money earned per person in a country or geographic area is measured by its per capita income. The average income per person in a given location may be found using per capita income, which can also be used to assess the population's standard of living and overall quality of life. A country's per capita income is determined by dividing its national income by the number of its citizens.

Economic Growth

When comparing one period of time to another, economic growth is defined as a rise in the production of commodities and services. It can be calculated in real terms (adjusted for inflation) or nominal terms. Although alternative metrics are occasionally employed, gross national product (GNP) or gross domestic product (GDP) is the traditional measure of aggregate economic growth.

Real Growth

The rate at which a country's Gross Domestic Product (GD) increases or decreases from year to year is known as real economic growth. The market worth of all the goods and services produced in a nation during a specific time period is its GDP.

Nominal Growth Rate

GDP (gross domestic product) as assessed at the going rate of exchange is known as nominal GDP. Inflation-related price fluctuations are included in nominal GDP, which is different from real GDP in that it indicates the rate at which prices are rising in an economy.

Poverty

Not having enough money to cover one's basic expenses for clothing, food, and shelter is what is meant by poverty. But poverty goes far beyond simply not having enough money. This is how the World Bank definition of poverty puts it. Everyone wants to get out of poverty.

Absolute Poverty

Tend to focus on day to day survival.

Relative Poverty

Refers to a family's financial situation when their income is not high enough to match the average standard of life in their community.

Situational Poverty

People or families can be poor due to some adversities like, a serious illness, Earthquakes, Floods etc.

Generational Poverty

Living in a poverty foe last two generations.

Rural Poverty

The term "rural poverty" describes poverty that exists in rural areas, taking into account the social, economic, and political elements that contribute to this poor.

Urban Poverty

Urban poverty to the set of economic and social difficulties that are found in industrialized cities and that are the result of a combination of processes such as estiabination of comfortable living standards, the increase of individualism, processes of social fragmentation, and the dualization of the labor.

Descriptive Statistics

To investigate the connection between Pakistani poverty and income level. Data from 1960 to 2019 were used. The World Development Index (WDI) and the Pakistan Economic Survey provided the data.

Table 2: *Descriptive statistics*.

Variable	Obs	Mean	Std. Dev.	Min	Max
Poverty Rate	60	30.03233	8.6737788	15.25	46.53
Pci |	60	549.7722	312.6118	165	1368.37

Data Source

Utilizing secondary data from 1960 to 2019 from a variety of sources, including the World Development Index (WDI), the Pakistan Economic Survey, the Human Development Index (HDI), the Pakistani statistical yearbook, various publications from the State Bank of Pakistan, and the World Development Report (WDI). The HDI will be used as a stand-in for decreasing poverty.

Empirical Finding

Pakistan has demonstrated remarkable economic progress during the last 75 years. In terms of development, boosting growth, and reducing poverty, it is amazing. The country's overall economic situation has improved throughout time as a result of the numerous economic policies that successive governments have undertaken. In order to begin addressing the issues of development, growth, and poverty, it is convenient to compare the level of these indicators that the nation acquired in 1947 with the level that was discovered last year (2020). However, we have the relationship between the two macroeconomic indicators below for study.

In every economy per capita income and poverty play a very vital role and too in Pakistan. The reduction or elimination of poverty is the focus of development. There are connections between poverty and other underdevelopment issues. Although individuals in rural areas typically live in safer and healthier environs, there are often low incomes and limited access to health, education, and many other services. The most effective strategy for lowering poverty and raising living standards in developing nations is economic expansion. Therefore, in order to reduce poverty, growth's rate and pattern are important. At the heart of any effective approach to reduce poverty must be actions that encourage swift and steady economic growth. If the salaries of the lowest paid increase more quickly than the average wage, economic growth will lessen income disparity. Growth in the economy generates work opportunities, which lower the unemployment rate.

For socioeconomic development and poverty reduction to occur, an environment that is maintained sustainably is necessary. The natural environment provides ecosystem goods and services that boost economic growth, encourage the development of jobs, lessen poverty, strengthen safety nets, and lessen inequality. There are more prospects for job and income growth as the economy expands. Stronger job markets and greater income levels typically assist low-income families in rising over the poverty line. That is, declining rates of poverty are associated with declining rates of unemployment or rising rates of income. Increased rates of heart disease, diabetes, hypertension, cancer, infant mortality, mental illness, under nutrition, lead poisoning, asthma, and dental issues are just a few of the health hazards that are linked to more poverty.

To see the association of income level and poverty in Pakistan. Tracing the such relationship between these indicators in Pakistan economy, by using chapter three methodology, researchers 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. In this chapter first we have presented the importance of per capita income growth and poverty reduction in Pakistan. Second, there are two ways to analyze the results: a debate at the macro and micro levels. Researchers have offered individual variables and t-

statistics of individual variables at the micro level, while we have presented the macro level econometric results, such as R square, Adjusted R square, and F statistic.

Interpretation of the Results

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.

Researchers have sixty observations for the poverty rate, with a minimum value of 15.25 and a maximum value of 46.53. The poverty rate's mean value is 30.033, and its standard deviation value is 8.674, indicating the reliability of the Hand Count Index (HCI) variable.

Table 2: *Observations of 60 poverty rates*.

Variable	Obs	Mean	Std. Dev.	Min	Max
Poverty Rate	60	30.03233	8.6737788	15.25	46.53
Pci |	60	549.7722	312.6118	165	1368.37

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 withPoverty. 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 betweenPer capita income and poverty rate in the Pakistan economy.

It demonstrates that a one-unit change in poverty will result in a 9.45-dollar change in per capita income. Based on the Classical Sign Criteria, this outcome was reached. When paired with the dependent variable of per capita income, the only independent variable of poverty has statistical significance.

Model Summary

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= 0.0678

Adj R^2 = 0.0527

Df= 58 1

F= 4.28

F statistic = 0.0430

The analysis's model summary reveals that, with an R2 of 0.04 percent and simultaneous significance determined by (F-statistic F-statistic = 0.0430 and f-significance = 0.000), our model is even ill-fitted.

a) Goodness of fit

R-Square displays the model's goodness of fit. It demonstrates the extent to which the model's chosen explanatory variable accounts for the variance in the dependent variable. R2's goodness of fit value is poor. The model is even not well fitted, according to the regression estimations, as the R-square value is just 7% (R-square = 0.0687).

b) Adjusted R square

Regression is well-fitted when the adjusted R square value is high, which is achieved by adjusting R square with the degree of freedom. It is calculated by dividing the degree of freedom (N-K) by the goodness of fit. The modified R square has a value of 0.05 percent, or 0.0527.

Table 3: *ANOVA*

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

a. Dependent variable PCI

b. Predictors (constant) HCI

F-Test

The total significance of the association between the dependent and independent variables is indicated by the F-test value. It illustrates the connection between variation that is explained and variation that is not. From that vantage point, our calculated regression appears to have a significant F value. The simultaneous significance revealed by the model has also been evaluated using the F-statistics and its significance (F test = 4.281 and F sig = 0.000). The outcome demonstrates that the dependent variables are significantly and strongly impacted by our independent variable.

Degree of Freedom

The phrase "degree of freedom" refers to the total number of observations and independent variables (sample size). It implies that as observations increase, results become more and more perfect. The formula (N-K), where N is the number of observations and K is the number of variables, is used to calculate it.

Conclusion

It is clear that rising incomes have a favorable influence on employment and, consequently, a detrimental effect on poverty. For instance, the experiences of a small number of economies, primarily from East Asia (four in total), have raised doubts about the link and "trickle-down" impact among many economists, most of whom are neoclassical. According to Field (1984), these economies have had rapid economic expansion together with notable improvements in employment and income distributions as well as a decline in absolute poverty. The nature of poverty and the means by which it is eliminated differ throughout nations; therefore, a study of global poverty and the means by which it is eliminated cannot be predicated on the experiences of wealthy nations. Because of this, advanced nations have a propensity to focus on their own needs and ignore the short-term fluctuations in the economy (Ragnar Nurkse, 1907–2007).

As a result, according to Myrdal, developing nations should modify our inherited economic theory to suit their unique issues and objectives rather than accepting it at face value (Myrdal 1970). According to Kuznets (1955), there is a direct correlation between a nation's per capita income and the equality of its income distribution, meaning that when per capita income rises, the income distribution initially gets

worse before eventually improving from extremely low levels. Analyses of cross-sectional data that support the Kuznets' theory include those from Ahluwalia, Carter, Chenery, Oshima (1962), and Pauket (1973) (1979). Saith (1983), Anand and Kanbur (1993), Papanek and Kyn (1987), and Streeten (1994) are a few research that refute the Kuznets.

It is conceivable for pro-poor policies to have a trickle-down effect. One of the possible causes of uneven development in developing nations is a lack of money. In most nations, the primary factor reducing poverty is growth in per capita income. Studies by Tendulkar and Jain (1995) and Ravallion and Datt (1996) provide empirical support for this. Data from more than 70 countries were presented by Dollar and Kraay (2000, 2001, and 2002) to support the idea that faster rates of real gross domestic product (GDP) per capita growth are linked to faster rates of poverty reduction. Additionally endorsing the role of economic growth in reducing poverty are Deaton and Dreze (2001) and Bhagwati (2001).

Furthermore, provinces with higher growth rates had a faster fall in poverty, according to Agrawal's (2008) study on economic growth and poverty reduction in Kazakhstan using provincial data. Growth contributed significantly to the decrease in poverty by boosting employment and real earnings. The lives of many impoverished people worldwide have improved and extreme poverty has been reduced thanks in large part to economic progress. There is no denying this.

The study gave important conclusion that income level and poverty has negative relationship. The analysis was completed by time series data of sixty year that is form (1960-2019), Ordinary least square (OLS) econometric technique is used to estimate the model. 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. The co-efficient of poverty level has negative sign, which is evident that for higher income level the accentual condition is to reduce the poverty rate.

Recommendation

The research recommends that income level and poverty has a negative relation with each other. To enhance poverty reduction in Pakistan economy, more and more income and economic growth would be needed. So all policies aim to reduce poverty in the country. A Nation cannot be developed without economic growth, so government of Pakistan should pay more attention to enhance the income level of the people and economic growth, which will be helpful to reduce poverty. Like Peoples Pregame, Poverty Reduction Strategy Paper (PRSP), Benazir Income Support Programme (BISP) and Kamyab Jawan Program (KJP), the government of Pakistan should take further programs measure to reduce poverty in the country.

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Conflict of Interest

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Reference

Abdul, Q. Arif, M. Umaima. (2008) Impact of remittances on economic growth and poverty evidence from Pakistan, Pakistan institute of development economic Islamabad MAPRA paper No: 22941, posted 28 May

Afzal, M. Malik, E. Begum, I. Sarwar, K. Fatima, H. (2010)Relationship between poverty and economic growth. *Pakistan development Review,1*(22), 23-45.

Agarwal A.K. (2008) Genomic and genetic approaches for the identification of antifungal drug targets *8*(1), 2-15

Ahluwalia, C. and Chenery (1979) Growth and poverty in developing countries. *Journal of Development Economics, 6*(3), 299-341.

Ahsin Shahid, Hibba Saeed & S. Muhammad Ali Tirmizi. (2015) Economic development and banking sector growth in Pakistan, *Journal of Sustainable Finance & Investment, 5*(3), 121-135, DOI: 10.1080/20430795.2015.1063976

Aideed, A. A. (2019). Relationship between government expenditure on education and GDP per capita in Pakistan. *ARDL approach to cointegration, 55*(1), 77-103.

Akhtar (1974). Monetary Velocity and Per Capita Income in Pakistan, 1951–67. *Pakistan Economic and Social Review, 12*(3), 289-299.

Ali, N. Hussain, H. (2017). impact of foreign direct investment on the economic growth of Pakistan. *American journal of economic,7,* 163-170

Ali, S. Tahir, S. (1990). Dynamics of growth, poverty and inequality in Pakistan. *Pakistan development review 38*(4), 837-858.

Anam, S. Zaman, K. Gul, S. (2012). The relationship between growth inequality-poverty Arab economic and business. *Amsterdam 10*(1), 57-71.

Ashar, N. Awan, A. Rahman, H. (2012). Government spending, economic growth and rural poverty in Pakistan. *Pakistan journal of social science (PJSS), 32*(2), 469-483.

Bada, X. (2016). Collective remittances and development in rural Mexico: A View from Chicago's Mexican hometown associations. *Population, Space and Place, 22*(4), 343355.

Banuri, T. (eds) and Bigg. (eds) (2002). Financing for sustainable Development. https://www,iied.org/9122iied

Bashir, A. Amir, A.(2019). Relationship between government expenditure on education and GDP per capita in Pakistan: An ARDL approach to cointegration. *Advances and Applications in Statistics, 55*, 77-103.

Chani, I. Pervaiz, Z. Jan, S. Ali, A. Chadury, A. (2011). Relationship between poverty, inflation and economic growth, National collage of business administration and economic MAPRA paper 34290

Chowdhury, M. (2016). Financial development, remittances and economic growth: Evidence using dynamic panel estimation. *The Journal of Applied Economic Research, 10*(1), 35-54.

Daron, A., Simon, J. A. Robinson (2001). The colonial origins of comparative development: An empirical investigation. *American economic review 91*(5), 1369-1401.

Dollar, David and Aart K. (2001). *Growth is good for the poor*, Washington D.C.: The World Bank, Working Paper No. 2587.

Donou-Adonsou, F., & Sylwester, K. (2016). Financial development and poverty reduction in developing countries: New evidence from banks and microfinance institutions. *Review of Development Finance, 6*(1), 82-90

Dreze (2001) School Participation in Rural India. *Review of Development Economics, 5*(1), 1-24.

Edward B, Barbier(2010). Poverty, development, and environment. *Environment and Development Economics 15*(6), 635-660.

Gillette H Hall, Harry A. P. (2012). *Indigenous peoples, poverty, and development*. Cambridge University Press.

Hashem, P. Til, S. L. Vanessa S. (2009). Forecasting economic and financial variables with global VARs. *International journal of forecasting 25*(4), 642-675.

Husain Ishrat (2023). Development Path ways (Book) issi. Org.pk

Iqbal, K. (2018). Human development and economic growth in Pakistan.

Irma A. and Nobuhiko F. (1980). Income Inequality and Development during the Indian Economic Review New Series, 27, 329-345.

Jagdish Bhagwati and T. N. Srinivasan(2001) Trade and Poverty in the Poor Countries. *The American Economic Review, 92*(2), 301-311.

Jamal, Haroon.(2014).Growth and Income Inequality Effects on Poverty: The Case of Pakistan (1988-2011).Social Policy and Development Centre (SPDC). MPRA Paper No. 59897

Jandhyala BGz Tilak.(2010).Higher Education, Poverty and Development**.** *Higher education review 42* (2), 23-45

K,Rizwana. I,Syed . M,Abdul .Z, Khalid, T,Syed.E,Shakira (2016). 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, 6*(1), 71-81.

Karikari, N. K., Kwasi, S. M., & Simon, K. (2016). Do remittances promote financial development in Africa? *Springer Plus, 5*(1), 1-21

Kerry S McNamer (2003), Information and Communication Technologies, poverty and development: Learning from experience. The World Bank, 2003

Khan, A., E. Satter, R. (2010). Trade,Growth and Poverty;a case study of Pakistan. TheIslamic university of Bahawalpur, Pakistan. MAPRA paper, No: 20904,

Khan, H. Bibi, S., Javaid, A. (2017). Solving Poverty through Management: Experience in Pakistan. Department of Management of Sciences. *European Online Journal of Natural and Social Sciences*, 6(4), 637-645.

Khan, N. Majeed, T. (2018). Poverty Traps and Economic Growth: Evidence from Pakistan. *Business and economic review ,10*(4),121-142

Khawak, S. Hassan,A. Asif,J. Zainab,F. (2018),How income level Distribution Responds to Poverty: empirical evidence from Pakistan. *GSJ: 6*(3), 2320-9186.

Magray, M & Singh, S. (2017). China Pakistan Economic Corridor(CPEC) its impacts on Pakistan economy. *International Journal of Innovative research and Advanced studies (IJRAS), 4*(7) ISSN 2394-4404

Mahood. Rashid. Sadiq. Sara (2010). The Relationship between Government Expenditure and Poverty, A co integration analysis. *Romanian journal of fiscal policy (RJEP),* ISSN: 2069-0983, 1, 29-37

Martin Ravallion, Gaurav Datt (1996). How Important to India's Poor Is the Sectorial Composition of Economic Growth? *The World Bank Economic Review, 10*(1), 1-25.

Muhammad Baber, Muhammad Nadeem Ayub Bhutta and Abid Rasheed(2020).Empirical Analysis of Relationship between Poverty Reduction and Governance in Pakistan. *Paradigms, 14*(1).

Muntah, S., Khan, M., Haider, N., Ahmad, A. (2015), Impact of foreign direct Investment on Economic growth of Pakistan. *American Research Journal of Business and Management, 1*(1), 7-11.

Nazir, S. Nawaz, M and Gilani, U (2010). Relationship between Economic growth and stock market development. *African Journal of Business Management 4*(16), 3473-3479.

Oshima (1962) Economic Development and Cultural Change. *Ecovov development, 10*(3)

Pasha, Hafiz A (2017), Development Priorities for the Government, *Development Advocate Pakistan, 5*(3)

Pasha, Hafiz A, Pro-Poor Growth and Policies: The Asian Experience. *Pakistan Development Review, 11*(4), 301-318.

Paul Streeten (1994). Human Development: Means and Ends. *American Economic Review, 84*(2), 232-37.

Pekovic, D. (2017). Effects of Remittances on Rural and Regional Poverty in the Republic of Serbia. *Economic Themes, 55*(1), 105-120.

Pradhan, B. K., & Mahesh, M. (2016). Impact of remittances on poverty: an analysis of data from a set of developing countries. *Economics Bulletin, 36*(1), 108-117.

Qurat Ul Ain Memon, Shoaib Ahmed Wagan, Dong Chunyu,Luan Jingdong (2018).An Analysis of Poverty Situation of Landless Peasants: Evidence from Sindh Pakistan.269-281

Ragnar Nurkse (1907-2007): Classical Development Economics and its Relevance for Today (Pp.183-202)

Reeves, M. (2017). Crypto currency-Remittance Transfers Futuristic Technologies & Poverty Alleviation. Economics Student Theses and Capstone, 56, 1-45

Sayyed. A, Hafiz. A, Jawad (2018). HOW INCOME LEVEL DISTRIBUTION RESPONDS TO POVERTY"EMPIRICAL EVIDENCE FROM PAKISTAN. *GSJ: 6*(3), 2320-9186

Simon Kuznets (1955) Economic Growth and Income Inequality. *The American Economic Review, 45*(1), 1-28.

Skare, M. Druzeta, P. (2015). Poverty and Economic growth a review. *Technological and Economic development of economy, 22*, 156-175

Tahir, H. Perveen, N. Ismail, A. Sabir, H. (2014). Impact of GDP growth rate on poverty of Pakistan: A quantitative approach . *Euro-Asian journal of economics and finances, 2*, 119-126.

Tahir, S.H., Perveen, N., Ismail, A., Sabir, H.M. (2014), Impact of GDP growth rate on poverty of Pakistan: A quantitative approach. *Euro Asian Journal of Economics and Finance, 2*(2), 119-126.

Tendulkar and Jain (1996) Nature and Poverty. *Economic and Political Weekly, 31*(10), 617-629.

APPENDICES

APPENDIX -A

Phillips-Perron test for unit root

	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(rho)	-7.728	-19.062	-13.372	-10.754
Z(t)	-2.029	-3.567	-2.923	-2.596

MacKinnon approximate p-value for Z(t) = 0.2740

The null hypothesis of a unit root is rejected at the 0.05 significance level...The critical value for regression with trend and intercept is -7.728. The critical value for regression with intercept is no trend is -2.029.

The null hypothesis of a unit root is rejected at the 0.1 significance level. The critical value for regression with trend and intercept -19.026. The critical value for regression with intercept and no trend -3.569

APPENDIX –B

Unit Root Tests

It is necessary to examine the unit root properties of time series data before estimation so as to preclude the problem of spurious regression. Ordinary least squares (OLS) estimation of regressions in the presence of non-stationary variables gives rise to spurious regressions if the variables are not co-integrated (Granger and Newbold, 1974). The results of the Dickey-Fuller unit root tests are presented in below table. The results in the table show that all the variables are stationary in their first differences.the test Statistic value is -1.841 which is greater than Critical value -3.567.

Dickey-Fuller test for unit root

Test	**1% Critical Statistic**	**5% Critical Value**	**10% Critical Value**	**Value**
Z (t)	-1.841	-3.567	-2.923	-2.596

MacKinnon approximate p-value for Z (t) = 0.3602

APPENDIX -C

T test povertyrate == 2

One-sample t test:

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
povert~e	60	30.03233	1.119781	8.673788	27.79166	32.27301

Mean = mean (povertyrate) t = 25.0338

Ho: mean = 2 degrees of freedom = 59

The t-statistic is 25.0338 with 59 degrees of freedom. The corresponding two-tailed p-value is .0000, which is less than 0.05. We conclude that the mean of variable write is different from 2...

a) Variable – This is the variable for which the test was conducted.

b) Obs – The number of valid (i.e., non-missing) observations used in calculating the t-test.

c) Mean – This is the mean of the variable.

d) Std. Err. – This is the estimated standard deviation of the sample mean. If we drew repeated samples of size 60, we would expect the standard deviation of the sample means to be close to the standard error. The standard deviation of the distribution of sample mean is estimated as the standard deviation of the sample divided by the square root of sample size.

e) Std. Dev. – This is the standard deviation of the variable.

f) 95% Confidence Interval – These are the lower and upper bound of the confidence interval for the mean. A confidence interval for the mean specifies a range of values within which the unknown population parameter,

ANOVA Table

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

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

Model summary

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.262[a]	.069	.53	304.266

a. Predictors (constant), HCI

Coefficients

Model	unstandardized coefficients		standardized coefficients	1	Sig.
	B	Std. Error	Beta		
(constant)	833.548	142.668	.262	5.843	.000
HCI	9.449	4.567		-2.069	.043

a. Dependent Variable : PCI

DATA SHEET

Years	Hand Count Index poverty rate %	Per capita income pci $
1960	39.15	165
1961	39.2	185
1962	40	200
1963	40.24	220
1964	40.5	235
1965	43	255
1966	44.5	270
1967	43	290
1968	44.5	305
1969	42.25	325

1970	44.5	340
1971	46.53	360
1972	45.2	375
1973	44.1	395
1974	29.3	410
1975	28.1	430
1976	28	445
1977	27	465
1978	28	480
1979	30.68	500
1980	30	363
1981	29.11	383
1982	25.01	357
1983	23.5	371
1984	24.47	356
1985	20.2	353
1986	16.22	352
1987	17.32	386
1988	16	388
1989	15.25	377
1990	22.11	409
1991	22.4	420
1992	20.8	476
1993	28.6	495
1994	29.9	493
1995	30.8	473
1996	31	438
1997	30.6	446
1998	32.6	429
1999	31.2	503
2000	34.5	501
2001	29.5	503
2002	28.2	579
2003	25.4	656
2004	23.9	736
2005	22.3	750
2006	20.1	765
2007	20.2	614
2008	20.3	623
2009	20.4	700
2010	20.5	800
2011	36.3	1062.08
2012	36.8	1093.64
2013	34.7	1106.84
2014	38.8	1148.67
2015	28.6	1253.5
2016	24.3	1264.98
2017	24	1356.94
2018	24	1368.37
2019	24.3	1186.31