

# IMPACT OF LITERACY WITH INEQUALITY ON PURCHASING POWER PARITY IN PAKISTAN

Hira Habib, Muhammad Arshad Dahar and Irfan Ahmad Baig

Division of Continuing Education, PMAS Arid Agriculture University, Rawalpindi

Corresponding Author's Email: [drarshad1969@uaar.edu.pk](mailto:drarshad1969@uaar.edu.pk)

**ABSTRACT:** *This study finds out the impact of literacy with inequality on purchasing power parity in Pakistan. Economic development measures through Purchasing power parity that tells the in-depth economic growth with living condition of each person in the country. Literacy is a very effective component that contributes in better progress of a country, decrease unemployment and increase productivity with skilled human capital; increase the welfare of society. Pakistan is a patriarchal society where women's status is socially, economically and politically low and suffers all sorts of discrimination. Economic growth and purchasing power parity increase when the rate of education increase and inequality reduces in the society. The purpose of this study is to investigate how the literacy rate with inequality influences on purchasing power parity and level of development. Regression method is used in this study and Ordinary Least Square technique applies for analysis. Yearly data of 11 years covering from the period (2005-2015) is used to test the relationship between literacy with inequality and purchasing power parity. The data is obtained from IFS, Pakistan bureau of statistic and HDI. the literacy and inequality influence on purchasing power parity. The study concludes that if the literacy rate is increased then the purchasing power parity also increased. Purchasing power parity not only influence to increase the income level through literacy, but also influences to decrease the poverty and inequality. This leads to development in economy.*

**Keywords:** Economic development, Inequality, Purchasing power

## INTRODUCTION

Education is a form of learning from which the information, skills, value & ethics, belief or faith and habits of one group transferred to the other generation through telling a story or history, discussion and argument, teaching and research. Education takes place under the guidance of the other. Formal education divided into five stages which are Preschool, Primary, Secondary, College, and University.

Education helps to make a person's personality stronger and strengthens the rights of all human beings. To access the best quality education is the right of all human beings without any unfairness. It is a duty of every Government to give free and compulsory education to the public; especially higher and technical education on merit must be equally accessible to all. Educational inequality is one of the most recognizable reasons of income inequality in the society. Secondly, with inequality up to the poverty line increase the extreme income disparities. Also inequalities in society keep strongest the political power of rich and economic bargaining power.

Moreover the high inequality in the society leads to decrease the overall saving in the economy. Although rich may have high amount or spend their money on luxury goods, gold, jewelry, expensive houses, and foreign tour. Such kind of investment cannot add to the nation productive resource. Therefore, literacy or education is an important tool through which the socioeconomic status of society improves. Compare the world's living standard and economic activities are very useful in many ways. For foreign direct investment, investors analyze the market size, prices and productivity of that country before investing in that country [1].

The Exchange rate of a country's unit of currency is the amount of another country's currency but ca useful to define the real worth of output. Purchasing power parity is an economic indicator that defines the real worth of output by transforming the local currency into a general international currency as USD (US Dollar).

Economic development measures through GDP- Per Capita Purchasing power parity that tells the in depth economic growth with living condition of each person in the country. Almost half of the world lives in misery condition. They have

insufficient food, they are suffering from disease. Their economic life is primitive and stagnant [1].

There is need to increase the quality education system in weak income and less developed countries because in developing and under developing economies the employees come from poor education system and this influence greatly on income and productivity leads to lower GDP growth rate. That's why the return of investment in education is very low in these countries. However, there is requirement of effort to increase the future economics of human potential for rapid economic growth [2].

Pakistan has the highest illiteracy rate and 2nd largest out of school population after Nigeria with growing an average 5 percent GDP growth rate a year, it is not Sufficient to with faster growing population.

The statistics report of INDEXMUNDI that the Government of Pakistan spends on education average 2.45% of GDP from 1982 to 2012. In 2013 and 2014 the government spending on education allocated 1.8% and 1.9% of GDP respectively [3].

Developing countries like Asia, Africa, Middle East, South America, Eastern Europe and the post-soviet states that are presented by the low standard of living condition and other development deficiency. The best ways to extrude the people of these countries from this worst situation is to give them advance education and proficiency for their survival in the world without gender differentiation [4]

There are seven developing countries worldwide investing less on education than Pakistan, according to the Human Development Report [4]. According to the report of UNESCO and ASER that the Ministry of Education in Pakistan allocated 8% resources on Pre and Primary education, 8% resources on Secondary education, 60% resources on tertiary education and 24% resources on other education level. The literacy rate in Pakistan is 54.5% and the literacy rate is too high in urban area than rural area and higher among male than female because of inequality [5-7].

However, Government target to improve the expenditure allocation on primary education from 2.00 to 4.00 of GDP till 2018 so Pakistan has to increase its investment on education for increasing Per Capita income, living conditions and

productivity which leads to the expansion of economic growth and development. Inequality is the difference in social status, income distribution and opportunity between people or group [6].

The public welfare definitely related to the per capita income, but not related to the inequality. Firstly, intense income inequality leads to income inefficiency, the higher the inequality, the smaller number of the population that qualify for a loan or other credit and when the low-income individual cannot apply for a loan than they generally cannot educate their children or start and expand the business [2].

Finally, extreme inequality generally viewed as unfair, but perfect equality can also be a danger to some extent, because the perfect inequality difference between experienced and inexperienced people showed due to their income. Lorenz curves is a common way to measure the inequality, the entire figure of Lorenz curve enclosed in a square, and a diagram line drawn from the below left edge of the box to the above right edge. Gini coefficient is ranging from 0-1, therefore 0 shows perfect equality and 1 shows perfect inequality in Lorenz diagram [1].

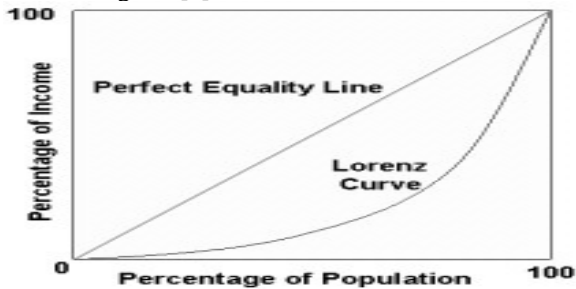


Figure 1: Gini Coefficient in Lorenz Curve

### Objectives of study

1. To find out the effect of literacy rate on purchasing power parity
2. To find out the effect of inequality on purchasing power parity
3. To find the variation due to independent variables.

### LITERATURE REVIEW

Education and Literacy level in a country is a mirror of its skilled labor force. Quality and quantity of education in a society or country directly effects to the human capital. Skilled labor force is the demand of today's world.

Literacy is an essential component of human development. Absence of literacy or state of illiteracy creates great obstacles for human development [8].

In this technological world, illiteracy leads to slow the economic growth and activity. Literacy is a very effective component that contributes in better progress of a country, decrease unemployment and increase productivity with skilled human capital; increase the welfare of society. Thus, Carbonaro explained in this study that there is a positive and significant relationship between literacy and purchasing power. Accordingly, UN organizations make strategic plan to raise the schooling and adult literacy programs by 2015 under UNESCO [9, 10].

However, it's a good decision to realize this fact and fight against illiteracy and promote the literacy. China and Tanzania are now the fastest growing and developing economies. In 1970's, governments of both countries realized that to change the educational policies leads to increase the people's life style and economic efficiency. In china, Government spending in education was increased in those areas where they believe that they get remarkable return. In Tanzania, education policy was totally changed and now it has skilled oriented, academic excellence institutions that improve the human capital [11].

Percentage of literacy has been increased in some countries, although there is a difference in education system of every country. Here the question arises that why some countries attained better results? This question comes in the mind of Le Metais and Tabberer who identify the reason of different outcome in education from different countries. They compare every single aspect of education including their system, policies, values etc and then they realize that different education system and government investment priority in other sector instead of education sector and this may create problem of low literacy rate [12].

Park and Kyei examine the literacy skill among adults in 19 countries, focusing on the literacy gap of formal education with a high level of formal education and low level of formal education. They realize that literacy gap of less educated and higher educated in United States, Canada, Chile and Slovenia is larger than the Germany, Netherland and Denmark. The main reason of this difference in former countries is the skill that is low in lower level of formal education, but in higher levels of schooling they gave the extra skills, experiences and opportunities to their students. Additionally, some highschoools introduce the skill enhancing programs and employment experiences [13].

Mazumdar examined 56 countries categorized by the Human Development Index. He found that purchasing power parity and initial literacy rate, create great impact on current literacy rate [8].

United Nation Development Programme describes that the human development is the process of conversion of peoples' choices from need base products to luxury products, in short enlarging choices. Human development is a plan to give better lifestyle by increase life expectancy, education and purchasing power parity. Research shows that purchasing power parity and skill-oriented education is necessary for better living standards [14].

Tabitha and Roy describes that Gender Related Development Index create variation in the Human Development Index. The life expectancy component assume that equal health opportunity for both men and women. Same potential achievement of both men and women shows the equality in literacy and education. When it's come to the purchasing power parity same earning in common currency shows the balance in both male and female purchasing power parities. Gender Empowerment Measure (GEM) index is also used to shows the equity in gender and it measures the men and women equally active in economic and political activities [15].

Skill-oriented education is the major instrument for human resource development. It has opportunities for women to

achieve education because it has become a universal human right. Many empirical studies state that the women education remarkably rise in their wages and return to education in many developing and under developing countries. Additionally the women's education can improve the child education and survival, in short women education push up the human development [16-18].

Klasen explored that lower female education negative relation to the economic efficiency and development because uneducated females cannot nutrient their children properly and cannot help them in learning and this may create malnutrition problem in children's [19].

World Bank differences in gender education occur in about all under progress countries. There has been a noticeable increase in gender disparities in education in less earning countries from the last thirty years [16,18,20].

Gender disparities are now considerable image for the analysis and diminishing of poverty because of its terrible impacts on a number of important development goals. Girl's has less approach to get education is influenced because of poverty. Recent evidence from West Africa suggests that inequality in people approaches to get education negative impact on poverty [21].

According to the survey of Pakistan Bureau of Statistics the literacy rate within ten year and older population of ten years and older has approximately 61 percent (higher in urban area) and gender differentiation in education recorded 33 percent (high literacy rate among males) in 2013-14. Finest rate of literacy has been recorded in Punjab and Sindh. Islamabad (86 percent) in Punjab, Karachi (83 percent) in Sindh, Abbottabad (74 percent) in Khyber Pakhtunkhwa and Quetta (70 percent) in Balochistan are the top ranked districts. The districts at the bottom are Rajanpur (39 percent) in Punjab, Thatta (37 percent) in Sindh, Tor Garh (27 percent) in Khyber Pakhtunkhwa, and Dera Bugti (16 percent) in Balochistan [22,23].

As far as gender based differences are concerned, the greatest gender disparity is found in Khyber Pakhtunkhwa and Balochistan which is 38 and 37 percent, respectively; while in Punjab and Sindh, percentage of gender difference is 20 and 32 percent respectively. In Khyber Pakhtunkhwa where Hangu (75 percent male and 20 percent female) and 55 percent of gender disparity found in Hangu and in Balochistan Sherani (56 percent male and 3 percent female) which is 53% gender disparity. Whereas the lowest enrolment of female recorded is in Kohistan (6 percent) in Khyber Pakhtunkhwa and Dera Bugti (1 percent) in Balochistan [22, 24, 25].

Pakistan is a patriarchal society where women's status is socially, economically and politically low and suffers all sorts of discrimination due to the poverty. According to UNDP gender disparity is increasing day by day in all social sectors of Pakistan. Rank of Pakistan in term of Gender-related Development Index 120 in 146 countries and 92 in 94 countries in term of Gender Empowerment Measurement Ranking [14,26].

Siddique described the gender issues and removal of poverty in Bangladesh. The study concludes that the diminishing of poverty is possible with empowering women and educating them. Research studies confirm that inverse relationship

occur between the number of birth and level of education of these women. Educated women are well aware about health. Participation of women in all sectors is very low. Vocational education should be provided for women to remove poverty [27].

Stromquist argue that starvation and its consequences for education in Latin America. The study examines features of world policies that educational discrimination in both male and female exists in society. Researcher explained that the policies followed by the Latin American government are based on gender equivalence, but the problem of gender discrimination is still persisting [28].

According to Castello and Domenech, skilled human inequality has inversely related to the economic growth. They consume the data of Barro and Lee study; the data serve the fact about the completion of school education and average years of schooling. In that study they distributed educational accomplishment level in Quintiles and Gini co-efficient of human capital inequality was calculated. The observation show that change in variables of human capital inequality is strongest across the countries than within the countries. The findings suggest that the low investment in education sector is the top reason of inequality and low per capita income [29]. Nasir investigate this fact in his study that skills increase by quality education and practice and the impact skilled human capital is on the income of regular wage employees. He takes data of school completion from household 1995-96. He has been used Human capital model developed by Mincer and Becker in this study. He reveals the fact that each additional schooling year effect on return to wage earner by 8% approximately. Each additional year spend in labor market increase the wages and experience of both male and female. Asian Development Bank Male workers are more skillful in literacy and numeracy and this is the reason they earn more than female [30,31].

Gender inequality in education straightly and significantly affects on economic progress. Chaudhry argued that the gender differentiation affects the economic progress. In this study researcher used secondary data for regression analysis. Literacy rate, enrolment ratio, literate female and male have positive and significant relationship with economic progress. It was found that gender un-equivalence in primary education reduces economic growth. The results in this study are consistent with those of Klasen [19,32].

Economic growth and purchasing power parity increase when the education rate increase and inequality will reduce in the society. The purpose of this study is to check the how literacy rate with inequality influence on purchasing power parity and level of development.

## MATERIAL AND METHODS

Model

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2$$

$\beta_0$  = Constant

$\beta_0 \beta_1$  = Parameters

$Y$  = Purchasing Power Parity

$X_1$  = Literacy

$X_2$  = Inequality measured through Gini Index

## Methodology

Regression is used to estimate the relationship between PPP, Inequality and literacy. Regression used to check the impact of one dependent variable on two independent variables. By using education we estimate and predict the effect of independent variables on dependent variable.

OLS (Ordinary Least Square) method used to estimate the equation above mentioned in the model

**1. Constituents of Variables**

→ *Dependent variable*

- **Purchasing power parity** is an economic indicator that defines the real worth of output by transforming the local currency into a general international currency as USD (US Dollar).

→ *Independent variables*

- **Literacy** literate people are those who get the point easily and also read and write simple statement.
- **Inequality through Gini index** Gini coefficient is ranging from 0-1, therefore 0 shows perfect equality and 1 shows perfect inequality in Lorenz diagram.

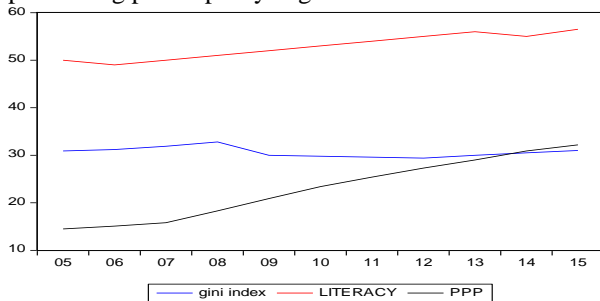
**Data Collection**

Yearly data of 11 years covering from the period (2005-2015) is used to test the relationship between literacy with inequality and purchasing power parity. The data is obtained from IFS, Pakistan bureau of statistic and HDI.

**RESULTS AND INTERPRETATIONS**

**Results**

The trend line of Gini index (inequality), literacy and purchasing power parity is given below.



**Figure 2: Trend Line of Gini Index, Literacy and Purchasing Power Parity**

Gini index increases from 2005 to mid of 2007 due to growing telecom and software industry in Musharraf era but as historically whole benefit goes to business class and the people who have money to invest

In 2008 due to great depression the whole world affected and Pakistan suffering from other crisis like political instability, inflation and many others which makes the worst economic situation and business class was greatly affected by these crises and this may lead to decrease in inequality which is now gradually increase.

Literacy rate has growing trend shows red line in figure which is due to investment of international organization and other national organizations.

The economy of Pakistan is the 26<sup>th</sup> largest in the world in term of purchasing power parity and 42<sup>nd</sup> in nominal GDP. The trend of PPP gradually increase which is shown in figure.

**Table 1: Estimation of Equation by Using Eviews**

Method: Least Squares

Sample: 2005-2015

| Variable           | Coefficient | Std. Error         | t-Statistic | Prob. |
|--------------------|-------------|--------------------|-------------|-------|
| C                  | -115.0798   | 22.71577           | -5.066074   | 0.00  |
| Literacy           | 2.472944    | 0.198012           | 12.48889    | 0.00  |
| Gini_Index         | 0.239277    | 0.497740           | 0.480728    | 0.64  |
| R-Squared          | 0.963712    | Mean dependent var | 22.98       |       |
| Adjusted R-Squard  | 0.954641    | S.D. dependent var | 6.48        |       |
| S.E. Of Regression | 1.381001    | F-statistic        | 106.23      |       |
| Sum Squared Resid  | 15.25732    | Prob(F-statistic)  | 0.00        |       |

**Interpretation**

$$Y(\text{ppp}) = \beta_0 + \beta_1 (\text{Literacy}) - \beta_2 (\text{Gini Index})$$

$$= -115.08 + 2.47 - 0.24$$

- Results show that 1 unit increase in independent variable X1 (literacy rate) will lead to increase in 2.47% in dependent variable (ppp) by keeping other variable constant and 1 unit increase in in dependent variable X2 (Gini Index) will lead to decrease 0.24% independent variable (ppp).
- There is a positive relationship between Y and X1
- There is a negative relationship between Y and X2
- R-squared show the variation in dependent variable due to independent variable which is 0.96%. As r-squared increase the S.E (standard error) and RSS will decrease.
- F-statistics are significance because the p value of F-stat is less than 5% that is 0.00000. So literacy and Gini index jointly influence on dependent variable.

**CONCLUSION**

As the results shows that the literacy and inequality influence on purchasing power parity. If the literacy rate is increased then the purchasing power parity also increased. Purchasing power parity not only influences to increase the income level of people through literacy, but also influences to decrease the poverty and inequality among peoples. This leads to development in economy. R-squared (0.96%) shows a strong relationship between PPP, literacy and Gini index (inequality).

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