Journal of Social Transformation & Education
Journal Homepage: http://journals.theapra.org/index.php/JSTE

Research Article

An analysis of out of schoolchildren factors: A case study of Pakistan

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Submission: 16 December 2020 Revised: 22 January 2021 Accepted: 19 February 2021

ABSTRACT

The role of human capital in the form education is imperative in the pace of national economic development of any country. In Pakistan, several children are not going to school, which is a matter of great concern. Therefore, this study aims to explore factors determining children not going to schools in Pakistan. This study is based on secondary data taken from the World Bank (2019), for the period 2002 to 2017. The results show that Gross Domestic Product (GDP) per capita and population growth are significantly correlated with child labor, while GDP per capita is negatively and population growth is positively correlated with child labor. There is insignificant and positive correlation of inflation with child labor. The study concludes that poverty is the root cause of out of schoolchildren in Pakistan. The study suggests that government should play its role in controlling population growth by adopting various appropriate measures. Inflation should also be controlled especially in case of those commodities used by poor people. Government intervention is also necessary to raise GDPPC by adopting various measures such as free education, vocational training, and provision of loans to poor families. Government can also adopt awareness campaign through media.

Keywords: *Child Labor, Child Schooling, Poverty, Household Average Income, Pakistan*

1. INTRODUCTION

Education is a very profitable investment in human capital, which increases the productivity of the physical capital. In a knowledge economy, education can be considered as the new currency by which nations maintain economic competitiveness and global prosperity. Education is one of the most critical investments of time and money we can make and which is true for countries around the world (Duncan, 2013). Because of such a great importance of education, United Nations Millennium Development Goals (MDGs) of universal primary education made promise in 2000 that every boy and girl would get a primary education by the end of 2015 (Watt, 2014). This UN's MDGs has encouraged many nations to increase educational spending. But the work is not easy and many countries are falling short these goals, because almost 61 million children are not going to school around the globe who are of primary age and half of them are in countries which are not only poor but are also in conflict zone. In many cases students stop going to school so early that they cannot read, write or count well due to lack of basic literacy and numeracy skills (Duncan, 2013). Despite the inclusion of article 25A in the constitution of Pakistan i.e. "the state has to provide free and compulsory education to all children whose age is from 5 to 16 years, in

such a manner as may be determined by law", no any progress has been recorded in this respect and provinces yet need legislation to implement it (Khan, 2015). Ailaan (2015) provided that 25.02 million children, who are between the age of 5 and 16 are not in schools. According to the report Baluchistan follows FATA regarding low enrollment of children in schools and percentage of out of school girls is more than boys. The rate of out of schoolchildren in Baluchistan is 66%, in FATA 62%, in Sindh 51%, Punjab is with rate of 47% and KP with 34%. Same statistics for Gilgit Baldistan is 48%, for AJK is 43% and for ICT is 16%. These statistics can be shown with the help of schedule and diagram as follow

Table 1. Out of School Children (OOSC) by Region

Province/Region	OOSC (%)
Balochistan	66
FATA	62
Sindh	51
Punjab	47
KPK	34
GB	48
AJK	43
ICT	16

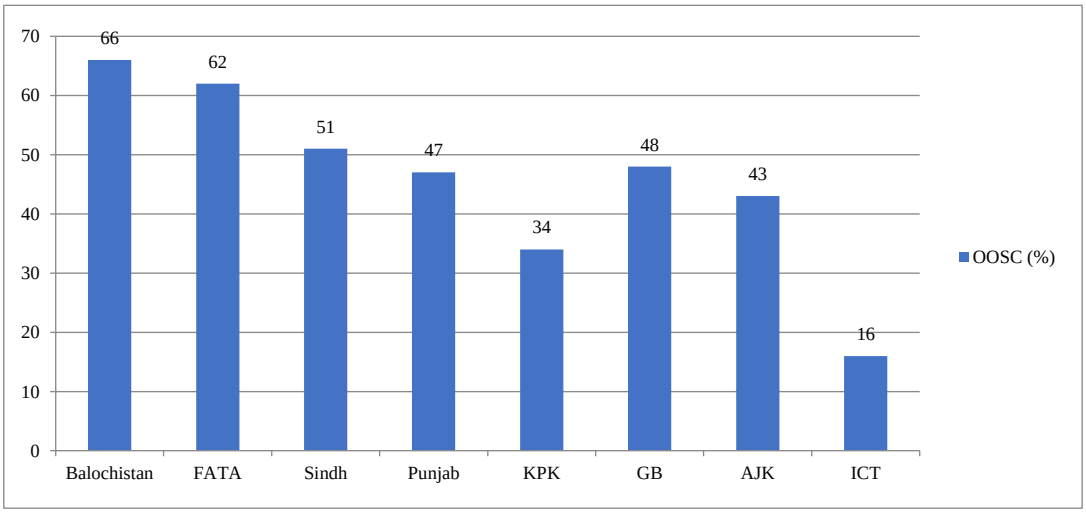

Fig. 1. Out of School Children by Region

Currently, 5.06 million children are not going to school, who are of primary school age. At the middle level the number is 6.51 m, and this number is 4.97m and 6.29m at high and higher secondary levels respectively. This report also shows an increase in enrollment in classes 1-12 by 5.21% between 2012-13 and 2016-17, where the share of public sector is increased from 63% to 64% along with significant improvement in physical facilities during the last four years , but according to the official figures more improvement is still needed in this respect (Abbasi, 2019). Educational crisis in Pakistan is mainly due to incompetence of government, and this situation is further worsened due to Corruption in government departments (Khan, 2015). It is the fact that poverty is the main reason for low enrollment in schools. Poor children are forced by their parents to not go to school and to engage them in other works to earn for their lives. But it is also a fact that these people can be lifted from

poverty through a right education which can be served. These two facts show that poverty is both cause and effect of lack of access to education. It's a quality education, which will transform a country from poverty to prosperity like Republic Korea (Duncan, 2013). Table 2 shows Out of School Children within various income groups (%)

Table 2. OOSC within various income groups (%)

income group	%age of OOSC
Poorest	57
Poor	37
Middle	26
Upper middle	16
Rich	10

Education of a child starts from his home and parents; especially mother is served as first teacher. So, education becomes necessary for both men and women in order to have a healthy and educated society. But, unfortunately, percentage of out of school girls is more than boys. 49% of girls compared to 40% of boys are out of school, in spite of the fact that educated parents, both mother and father, can easily motivate their children towards education right from childhood (Abbasi, 2019). Out of School Children gender and region (%) data/information are given in Table 3.

Table 3. Out of School Children gender and region (%)

Provinces	Boys	Girls
AJK	40	45
Baluchistan	61	72
FATA	47	78
GB	43	54
ICT	19	12
KPK	20	50
Punjab	44	50
Sindh	45	58

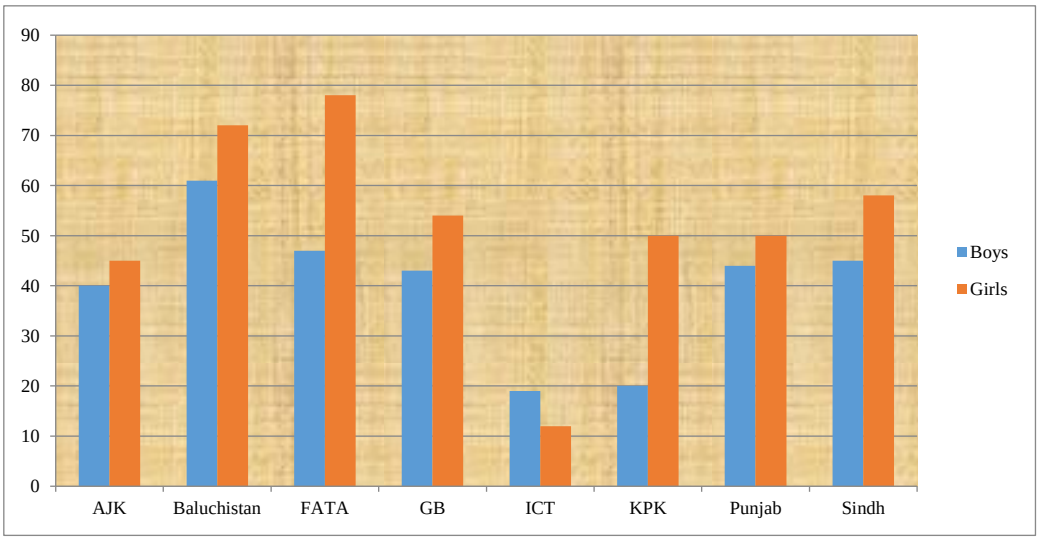

Fig. 2. Out of School Children gender and region (%)

In economic discussions education does not mean just obtaining a degree. Education strategy should emphasize on: Invest early. Invest smartly. Invest in learning for all.

Invest early means to acquire foundation skills in childhood, which will keep their lifetime building on sound footing. **Invest smartly** implies that emphasis should not only be on school attendance, number of teachers employed or construction of more and more buildings but quality education should also be the focus and in fact it is this quality education which provides basis for development and has deep rooted effects on labor productivity, trade, technology, health, poverty, income distribution and family structure. It is this smart investment in education which changes the fortune of a nation. **Invest in learning for all** means that there should be minimum barriers in the way of education for girls, disable children and ethnolinguistic minorities (King, 2011).

Child labor is the burning issue not only in Pakistan but around the world. Normally, Children try to manage their time among education, leisure, market work and home production. If the income of household is enough to rear the children, then children allocates time between education and leisure (Brown, Deardorff &Stern, 2002). But among various reasons poverty is the most prominent one, which compels the parents to engage their children in some sort of work. Which is evident from the studies of Zaidi (2013), Benz (2012), Duncan (2013), Mahmood *et al.* (1994), Qureshi *et al.* (2014). Poverty not only affects the health of the children but their right of being educated is also snatched from them. (Ibrahim *et al.,* 2019).

Child workers are exploited by the employers by not rewarding their work equivalent to the adult workers (Mahmood *et al.,* 1994). They are psychologically hindered due to continuous insult, abusement and physical torture by their employers. What children learn will serve and hence such children will serve all these socially, morally, mentally and physically unhealthy activities in future and the problem will remain as such. Thus the need of time is to break this circle by educating the children. For which parents should be motivated through electronic media, social media or through social campaigns, because future of a child depends on decisions taken by the parents or guardian that either their children will go to school or will go for work. Government of Pakistan is trying its best by facilitating its citizens through free education and in some cases parents are also compensated financially. Evidence of all this is the inclusion of article 25A in constitution, but still there is no progress. Which shows that problem is not just that parents are not able to afford education expenditure of their children, but the poverty is present to such an extent that parents are not able to fulfill even their basic needs and tend to engage their children in some work by viewing that already degree holders are unemployed. Due to which parents do not want to waste time and money for just getting degree. Thus the essence is that parents not only need financial compensation but also the surety that their children will be able to become beneficial at least for themselves in future. And this can be done not only through purifying the education system but also by improving all the institutions of the country.

The broad aim of this study are to find the relationship of GDP per capita with child labor; to find the affect of inflation on child labor and/or school enrollment; to find the relationship

between population growth and child labor, and to provide guidelines to the government regarding increase in school enrollment and reduction in child labor.

The significance of this study can be judged by the fact that it is the education which converts human resources into human capital, which provides foundation for development. A balanced education system has significant influences at micro level on an individual family by increasing productivity and generates individual income per capita and at macro level on a nation, by promoting economic development. Thus, for sustainable development need of the time is substantial investment in human capital, which will raise productivity and creativity of people and promote entrepreneurship and technological advances. And this can be made possible not only by increasing enrollment of children in schools but also by acquiring knowledge and skill through quality education (Ozturk, 2001). The studies of Azam and Ahmed (2015), Baker et al. (2014), Muhammad (2016) also mentions that human capital is important for economic prosperity. It's the human mind which can make possible all the development achievements like agricultural innovations, health advances, efficient public administration and also private sector growth. Education is the basic tool which can make possible the achievement of all these benefits by unleashing the potential of the human mind (King, 2011). Some tasks like computer programing need more educated workers because literacy and critical thinking are the basic necessity of such tasks. Therefore many countries especially developed countries allocate huge amount for education to improve economic performance (Radcliffe, 2018).

Children and adults can transform their societies, if they are equipped with the education focusing on the values, attitude and behaviors, which is necessary for learning that how to live together in a world characterized by diversity and pluralism. Which in turn will make possible the international peace necessary for the beneficial international links and trade. (UNESCO, 2017). A labor force equipped with quality education will be able to enjoy higher wages in the long run as compare to the situation when they had not invested in education i.e. education and earnings shows positive relationship. This fact can be shown with the help of following diagram

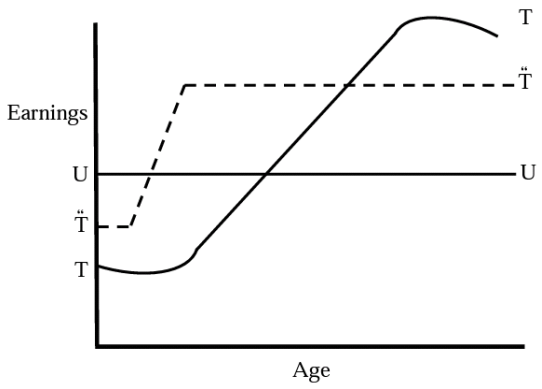

Fig. 3. Positive relationship between education and earnings

Source: *Dubhslaine (2006)*

In this Fig. 3, UU is a straight line which shows that earnings of those workers will remain same throughout their career who are not investing in education because education is the

pre requisite for higher paid employment.TT line shows that those workers who invest in education will be able to enjoy higher wages in the long run. The line T"T" shows an adjustment of the life income into the loss of earning during the education and the cost of education. It still exceeds the income of the uneducated workers UU.(Dubhslaine,2006)

2. LITERATURE REVIEW

Importance of education to the economy can be explained with the help of two theories

1)Human Capital Theory __ developed by neoclassical economists Theodore Schultz (1960) and Gary Becker (1993).

2)The Signalling Theory __ developed by Michael Spence (1973)

According to the Human Capital Theory, a country needs human capital accumulation for having economic growth. It shows a positive relationship between education and economic development. While according to Signalling Theory education level is an indicator of behavioral trait that employers are looking for. Education develops analytical skills and cognitive abilities and enables children to analyses information in order to utilize this acquired knowledge (Dubhslaine, 2006)

Watt (2014) investigated that millions of children are out of school, across the globe because, they are girls. In many countries, girls are not sent to the school because of poverty, cultural factors or security. 48.5 million children worldwide are not in schools just because of wars and conflicts. About 150 million children are disable around the world. 80% of them are from developing countries, where education policy has no incentive for such children. They belong to poor countries. Child marriage is another big issue, especially in developing countries, and girls are more victimized than boys. It is estimated that 15 million girls are married before the age of 18 and hence are more likely to live in poverty. Natural disasters such as earthquakes, floods and diseases can badly affect education for millions. Teachers are too few relative to the requirement. There is also lack of qualified teachers. Child labor is the main and biggest reason for children to be away from schools. 11% of all children in the world are engaged in child labor instead of learning. In most areas of developing countries there is no school at all and many are not properly equipped. Because of poor sanitation particularly girls are reluctant to go to school as they have to face lack of privacy, unavailability of sanitary disposal facilities and water shortage.

Ullah (2019) pointed out various reasons for children not going to school among which child labor due to poverty is the most prominent one. Another important issue is that there are no enough schools to fulfill the requirements of growing population. There is no awareness about the importance of education. Education quality is low, which is unable to be served competitively. There is no responsible behavior of politicians. Wadera, Choudhry, nawabs don't allow children for education. Already degree holders are unemployed. That's why parents don't want to waste time and money for just getting degree and then do nothing, because due to low quality teaching students are compelled to cramming and don't understand what they are memorizing and hence are unable to serve what they learnt. Furthermore, there is no career counseling, limited fields are offered and outdated syllabus

is being taught to students. That's why there is no respect of degree. In Pakistan, education is taken as a profitable business where high fees is charged, which is away from the approach of poor students. There is no security because of terrorism in Pakistan, and the main target is schools and universities, which created a fear in the society and children are not allowed to schools by their parents. Lack of safe transportation is also a major reason for teacher and students' absentee.

According to International Labor Organization (ILO) "child labor is the work that deprives children of their childhood, potential and dignity and that is harmful to physical and mental development." (Ibrahim *et al.,* 2019). Ibrahim et al. (2019) reported quantitative data through cross sectional studies, conducted in low and middle income countries, and found that child labor, compared to the control group or general population, is associated with poor health, malnutrition, poor growth, higher incidence of infectious and system specific diseases, behavioral and emotional disorders. This shows failure of policies not only to eliminate child labor but also to make it safer. Although child labor is decreased but those children, who are still engaged in child labor, are with low quality of life. Parents are the single largest employer of children when they employ their children in the household, family enterprise, family farm etc. in order to keep the family intact and families turn to internal markets because parents face problems when non-family members are employed. Which is also an additional obstacle to optimal human capital acquisition (Brown *et al.,* 2002)

Zaidi et al. (2013) conducted cross sectional study in district Rawalpindi for the period January to September 2008. Information on demography and work details was recorded for 700 children between the age of 4-18 years and found that poverty as well as having large families are the core reasons for the child labor and hence are away from school. Further-more they are underpaid for their work done. Benz (2012) provides in article an analysis of poor condition of the public school education system in Pakistan because it has been politically neglected since 1947. Population growth is faster than the government's efforts of increasing the number of institutions, teachers and resources. As a result, there is growing education supply gap in Pakistan, which can be judged by the high number of out of schoolchildren. This situation has created an opportunity for private education sector and education has become commodified and commercialized, where rules of market economy has made it profit oriented enterprise.

Qureshi et al. (2014) used Probit Model for the analysis of tradeoff between child labor and schooling in order to understand the effect of income deprivation measures and other non-income factors such as demographic and parental background information for Pakistan using Pakistan Panel Household Survey 2010 data set. The study empirically resolve that child labor is outcome of poverty and hence decreasing probability of school enrolment. Further demographic information such as increase in sibling size create financial problems and results in more child labor and hence low enrollment in school. In other words, number of siblings is positively correlated with child labor and negatively with child schooling. Children are normally engaged in construction work, domestic work, small-scale industries and agriculture. Agriculture is the most common child occupation worldwide. One-third of

children of developing countries are unable to complete even 4 years' education (Srivastava,2011)

Das et al. (2006) tried to report, after a survey of rural public and private primary schools, learning levels of students and school gaps in Pakistan in order to investigate the achievements of students as measured through test scores and found largest gaps in schools and low absolute learning among students. There is also a gap between good and bad government schools. There is five times the gap between children with literate and illiterate mothers. There are also gaps between rich and poor students, male and female students. If a child has no financial or other such problems and still he refuses to go to school, then the child may be a victim of bullying. Approximately 160000 students don't go to school every day just because of being bullied. Similarly, if the curriculum is not challenging then children get bored and are reluctant to go to school. After illness, if a child finds it difficult to catch up, then he may try every tactic to be away from school. But all these problems are temporary and can be easily handled by parents and teachers (Learning Liftoff, 2015)

Ahmed, Haider and Khan (2012) tried to collect cross sectional data from 100 families through field survey. The determinants of child labor were analyzed by using the binary choice model. Both OLS and logistic regression were used and found significant and negative correlation of guardian's education and his average income with child labor, while insignificant and positive correlation of child age and family size with child labor.

Mahmood, Javaid and Baig (1994) estimated that between the age of 5 and 14 a child is either. (a) in school, (b) Working in a work place or home, (c) Physically disable to go to school or work, By having estimates for (a) enrollment and (b) disability we can get residual estimate for, (c) Working.

Further, it is investigated that factors which determine child labor on supply side are (a) Poverty (b) children's acquisition of skills for employment, which is not provided by schools (c) dropouts.

While factors that determinants child labor on demand side are (a) wage rate for child labor is lower than adult labor (b) child labor are found more subordinate to employers (c) employer gains a skilled laborer at a lower training cost.

In addition to it, paper diagrammatically proved that poor households, who are with low adult employment, will engage their children in child labor in order to earn additional income. Thus, households will have a higher demand for children. It predicts that low growth regions will tend to have high fertility and vice versa.

Dessy (2000) favors to make compulsory school laws i.e. for the parents, make it compulsory to send their children to school and not to work. As a result, parents will decide to have low fertility. They will trade off quality for the quantity of children. Thus, this compulsory school law will lead to a high education and low fertility equilibrium.

Schools act as early intervention against child labor. Economic development is the need of time to control child labor, as economic development brings deep rooted changes in the country, among which some are awareness among masses and making education

affordable and enforces such laws which favor anti child labor. Government should put emphasis on the rehabilitation of these children and economic conditions of families of these children should be improved. Discriminations should be eliminated to have quality with equity (Srivastava, 2011). Without government intervention reforms in education sector cannot be ensured, which is also cleared by the study of (Dubhslaine, 2006), whose words can be quoted as "The purpose of government interference in the education market is that there are positive externalities associated with investment in education. The government should consider all benefits to make a Pareto optimal allocation of investment in education". Many other factors also affect social welfare, as endorsed by Muhammad (2019), Khan and Khan (2018), Khan et al. (2019ab), Azam et al. (2002), Khan et al. (2020) noted that inflation discourage social welfare.

Literature review of this study explains various reasons for low attendance of children in schools of different areas. Among which child labor due to poverty is the main reason. This study will also keep this point that main reason for child labor or out of school children is poverty, but most of the studies used primary data. In contrast, this study will try to make use of secondary data.

3. DATA AND METHODOLOGY

This chapter will first of all try to explain theoretical framework and analytical framework. Next the study will establish an econometric model or will conduct empirical technique, which will show dependency of child labor, represented by out of school children, on various variables. Description of these variables will be in next section. Section 3.5 will give details of data collection and its resources.

3.1. Theoretical framework

Mahmood *et al.* (1994) estimated that there are both supply side and demand side determinants of child labor. But in past many studies stressed on models which considered supply side determinants. The most prominent one is the basic model of household decision making, which is also discussed by this study.

3.2. Basic Model of Household Decision Making

In this respect the work of Schultz (1997), Becker (1981), Rosenzweig and Evensson (1997), Cigno asnd Rosati (2000), performed their roles to develop theoretical model of child labor. Their studies assumed that utility maximization of a household is the function of number of children, schooling per child, parents' leisure time, leisure time per child and a composite consumption good.

Following are the uncompensated cross-elasticities in this model regarding child labor

- Household income raises with the increase in father's wage. As a result, there will be decrease in child labor and increase in education.

- An increase in the mother's wage will have the opportunity cost of each birth, leading to the fall in optimal family size, which in turn will raise investment in education. Mother's work is a substitute of child labor, leisure and education.
- An increase in child's wage will not only reduce his time spent in school but will also result in an increase in birth rate in order to have more earners. In this way there will be increase in child labor. Further there will be tradeoff between quantity and quality of children.
- Impact of increase in child's wage depends on whether leisure and education are compliments or substitutes. If they are compliments, then demand for education will fall with the rise in the cost of leisure or fall in wage. However, if they are substitutes then demand for education will raise with rise in the wage or fall in cost of leisure.
- An increase in family assets will increase income and hence will reduce child labor (Brown et al., 2002)

3.3. Analytical Technique

This research paper can use logistic regression as well as Ordinary Least Squares (OLS). The data may suffer from hetertoskedasticity due to high variation in between the data. If the paper use secondary data then OLS method will be used but in case of primary data logit model will be used. R-square, F-statistic and chi-square outcomes of OLS can be compared with the result of Wald chi-square statistic of logit. Both Wald test of logit and F-test or t-test of OLS have same role. In this study the outcomes are in the form of out of schoolchildren, for which OLS model is used, whose mathematical form is

$$Y_t = \beta_o + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \mu \quad (1)$$

3.4. Empirical Technique

In order to find the factors which determines the child labor or out of school children in Pakistan, take some variables. These variables include GDP per capita, population growth and inflation. In equational form these determinants can be written as

$$OOSC_t = \beta_o + \beta_1 GDPPC_t + \beta_2 PG_t + \beta_3 INF_t + \mu \quad (2)$$

Where,

OOSC =Out of school children

GDPPC= Gross domestic product per capita

PG= Population growth

INF= Inflation

μ = Random variable

β's = regression co-efficient

Subscript "t" shows time series data is used

Equation (2) shows that out of school child variable depends upon or is determined by

1. GDP per capita. There is a negative relationship between out of school children and GDP per capita i.e. with the increase in per capita income the ratio of out of school children decreases If income is enough to fulfill the basic needs of family, then there will be no child labor. But poor families, who are unable to earn even for their basic needs, will choose work for their children and not the school.
2. Population growth shows a positive relationship with the out of schoolchildren i.e. with the increase in population growth number of out of schoolchildren increases. A large family due to population growth, relative to income, will force the parents to engage their children in work, as they will be unable or find hard to feed these increased number of dependents compare to the income.
3. The last variable of the above model is inflation, which shows a positive relationship with out of schoolchildren i.e. with the increase in inflation relative to income will make it hard for the parents to send their children to school due to high expenditures. To meet these high expenditures, poor parents will be compelled to engage their children in some sort of work.

Error term (μ) shows that the variable out of schoolchildren is not only determined by these three determinants. Other determinants, which can affect the dependent variable, are captured by the disturbance term μ.

3.5. Model specification

The general form of OLS equation represented by Eq. (1) is now transformed to the ARDL form as follow

3.6. Long run ARDL model

$$OOSC_t = a_0 + \sum_{i=1}^{p} \delta_1 GDPPC_{t-1} + + \sum_{i=0}^{q_1} \delta_2 PG_{t-1} + \sum_{i=0}^{q_2} \delta_3 INF_{t-1} + \varepsilon_t$$

3.7. Short run analysis

$$OOSC_t = \mu + \sum_{i=1}^{p} \phi_i GDPPC_{t-1} + + \sum_{i=0}^{q} \Omega_j PG_{t-j} + \sum_{i=0}^{q} \varpi_l INF_{t-l} + \varepsilon_t$$

$\phi\Omega\varpi$ are the short run dynamic coefficients of the model's convergence to equilibrium.

3.8. Data and sources of data

The data for all the variables used in model 2 i.e. out of school children, GDP per capita, population growth and inflation is a secondary data, which is taken from WDI, World Bank (2019). . The data for out of school children is taken to represent child labor, for GDP per capita is taken to represent poverty. Population growth as compare to the resources represents burden on the resources i.e. for this study high population growth relative to the increase in number of schools and recruitment of teachers shows burden on schools, due to which many children cannot be enrolled at all. The variable inflation shows purchasing power of people i.e. due to high inflation rate poor families find it hard to meet their routine expenditure and are forced by their financial position to choose work for their children and not the school.

4. RESULTS AND DISCUSSION

Table 4 shows the variations and maximum and minimum values of the data. According to the above data, the maximum percentage of out of schoolchildren was 41, which was recorded in 2002; similarly, in 2016 it was at minimum level of 22 percent out of total primary age. Highest growth in GDP per capita seen in 2005, which was 5.2 percent, while the minimum value was recorded in 2010, which was in negative. Inflation in Pakistan was at his peak in 2008, which was 20.2 according to the WDI which was reduced to 2.52 in 2015. Similarly, maximum growth of population was recorder in 2002, which was 2.41 while 2.05, was the minimum growth recorded in 2018.

Table 4. Descriptive Statistics

	OSC	GDPPCG	INF	PG
Mean	29.35769	2.252439	8.116810	2.200832
Median	28.50517	2.467959	7.598684	2.197034
Maximum	41.09527	5.222981	20.28612	2.417010
Minimum	22.22314	-0.601298	2.529328	2.055880
Std. Dev.	5.237313	1.720372	4.726937	0.111399
Skewness	0.806735	-0.081038	0.986593	0.269897
Kurtosis	3.067362	2.210106	3.610679	1.819553
Jarque-Bera	1.847210	0.460560	3.022026	1.193424
Probability	0.397085	0.794311	0.220686	0.550619

Table 5. Augmented Dickey-Fuller (ADF)

Variables	Trend and intercept				Order of Integration
	Level		First Difference		
	t-values	p-values	t-values	p-values	
OSC	-2.597941	0.2851	-4.298933	0.0205	I(1)
PG	-2.658367	0.2645	-6.136442	0.0013	I(1)
GDPPC	-3.882814	0.0462	-	-	I(0)
INF	-2.069657	0.5225	-5.242683	0.0043	I(1)

Results of ADF test indicates that OSC, PG and INF is non-stationary at level, and become stationary after converting to the first difference. GDP per capita growth is stationary at level. These results leads us to use ARDL for the regression.

Table 6. ARDL bond test

Test Statistic	Value	k
F-statistic	5.347383	3

	Critical Value Bounds	
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

bond test is necessary to identify cointegration among all variables. This test found that variables are associated with each other in long run.

Table 7. ARDL Short Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OSC(-1))	0.597611	0.583512	1.024162	0.3637
D(GDPPCG)	-2.125617	1.368410	-1.553347	0.0453
D(GDPPCG(-1))	-1.685538	1.073467	-1.570181	0.1915
D(INF)	-0.265413	0.368199	-0.720842	0.5109
D(PG)	442.945062	299.252562	1.480171	0.0129
D(PG(-1))	517.305401	233.442312	-2.215988	0.0310
CointEq(-1)	-1.781666	0.830744	-2.144663	0.0086

Above results indicates the speed of adjustment from disequilibrium to the equilibrium which is quite fast.

Table 8. ARDL long run results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPPCG	-0.325103	0.828871	0.392224	0.0149
INF	0.036256	0.261699	0.138541	0.8965
PG	14.404904	13.393140	1.075544	0.0427
C	-5.513747	24.356616	-0.226376	0.8320

ARDL long run results indicate that GDP per capita growth is affecting OSC negatively, which means that with the increase in income the ratio of out of schoolchildren is decreased. Population growth shows a positive relation with the OSC i.e. with the increase in population number ratio of out of schoolchildren is increased. Inflation is insignificant.

Table 9. Breusch-Godfrey Serial Correlation LM Test

F-statistic	4.773419	Prob. F (2,2)	0.1732
Obs*R-squared	12.40189	Prob. Chi-Square (2)	0.0020

LM test shows no serial correlation in data. Because p value is less than 5%

Table 10. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.294799	Prob. F (10,4)	0.9467
Obs*R-squared	6.364414	Prob. Chi-Square (10)	0.7838
Scaled explained SS	0.495074	Prob. Chi-Square (10)	1.0000

Above test indicates that model is homoscedastic and there is no issue of heteroskedasticity, because the p value is more than 5%.

5. CONCLUSION AND POLICY RECOMMENDATION

The results of econometric model of this study shows that greater the GDP per capita , lower the inflation and lower the population growth, lesser will be the child labor and out of school children. While on the other side, lower the GDP per capita, higher inflation and population growth rates then more ground will be paved for child labor and hence low enrollment of children in schools, because poor parents will be unable to fulfill even their basic needs. From this discussion an essence can be drawn that poverty is the root cause of all the problems because a poor person is unable to fight against inflation. If the family size of a poor person increases as a result of a high population growth rate, then that poor person will face more financial difficulties as compare to those whose financial position is

sound. Thus, poor parents will engage their children in child labor to earn additional income.

High population growth is one of the major problems of Pakistan. Thus, population should be controlled by adopting various measures such as family planning, avoiding early marriages and educating parents. This will go a long way in solving the problems as school children ratio can be controlled and schools will be able to provide better services. Government should make such policies that inflation should increase in a controlled manner and prices of those commodities should be controlled by the government which are the part of poor families consumption, so that they may not feel financial burden and prefer school for their children, not the workshop. Child labor can also be discouraged by introducing schemes of free education, under which steps of giving free books, uniform and monthly stipends can be undertaken so that parents may not feel education of their children an additional burden. Government can also intervene by opening vocational training centers to develop skills in people so that they may start business of their own. Further, loans should be given to the unemployed or poor people to start a sort of work for their selves, so that income or additional income could be generated for them. To make people realize through media that poverty is in fact due to low education level and it's the right education which can lift them from poverty.

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