Scientific
Research
Publishing

Characterizing the Relationship between Education and Poverty: Mediating Role of China Pakistan-Economic Corridor (CPEC)

Waseem Ullah[1], Hailiang Zhang[1], Xu Ni[2*], Asad Hussain[2*], Tamoor Malik[3], Tamoor Azam[1]

[1]School of Management and Economics, Kunming University of Science and Technology, Kunming, China
[2]Postdoctoral Station of Management Science and Engineering, Kunming University Science and Technology, Kunming, China
[3]Department of Statistics, School of Mathematics and Statistics, Yunnan University, Kunming, China
Email: *samwestmidland@gmail.com
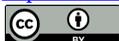
Abstract

Global poverty has roots like a tree whereas education is one factor which stands out. Lack of access to education passes poverty from one generation to another while education possesses secret ingredients to achieve economic stability in livelihoods. This paper aims to examine the impact of China Pakistan-economic corridor (CPEC) on education and poverty in Pakistan, it also provides a clearer and more nuanced picture of extreme poverty and highly stratified education system in tandem. The policies in Pakistan have other foci rather than on betterment of education and eradication of poverty matters. The study used the quantitative approach using self-administered questionnaires. Nine demographic questions have also been included in the second section of the study questionnaire. Instruments of the study were validated by factor analysis. The study included the data collected from 800 respondents in Hazara division, KPK, Pakistan. All the relationships were tested using correlation and structure equation modelling (SEM). The SEM indicated multiple confirmations like, CPEC being a new economic model can usher Pakistan's education foothold and poverty alleviation to new paradigm of evolution.

1. Introduction

"Better educated people have a greater probability of being employed, are economically more productive, therefore earn higher income". Education is re-

garded as an important determinant and aspect of rural development. In nation building, education plays a significant role. It is the fundamental right of all human beings irrespective of gender. However, in Pakistan like other walks of life, gender disparity also appears in the field of education. The impact of education on earning and thus on poverty works largely through the labor market, through education can also contribute to productivity in other areas, such as rustic farming (Orazem et al., 2007). It was previously through that the return to education (the quantified benefits of investing in education) was the highest at primary levels. This belief provides a strong case for expanding investment in primary rather than higher levels of education (Psacharopoulos & Patrinos, 2018). A curious and challenging worldview move is taking put, where poverty isn't as it was seen as need for economic resources, health and education (Appiah & McMahon, 2002). The unused concept moreover incorporates less effortlessly measured condition, such as defenselessness and need of control. For most of us who are curious about instruction, the move towards a more holistic see on poverty may be a welcome step towards the acknowledgment of the numerous potentials parts of instruction for the person, all through his or her life span, as well as for the improvement of society. Education is possibly great for paying era, but it too features a solid potential to move forward a person's self-esteem. In any case, both research and encounter appear numerous impediments that stand within the way for education's contribution to reduce poverty. A number of variables in society connects to create instruction more or less effective when it comes to moving forward life conditions of the Poor. The direct linkage between education and poverty both is connected to each other, if the ratio of educated people is more the less number of the peoples will be poor. Education gives skills and knowledge as result reduces poverty. There's an roundabout connection between education and poverty.

When the level of education increments, the number of poor people diminishes. Education causes a decrease in poverty because it increases wages of poor people by making them skilled persons. Reduction in poverty is caused by education by increasing income of poor (Awan et al., 2011).
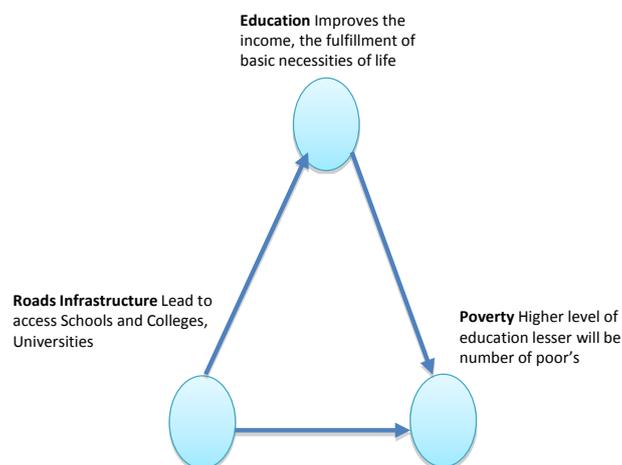
Education raises the living standard by eliminating poverty and resulting in fulfilling the basic needs of people. Fulfilment of basic needs like water sanitation, medical aid, shelter is indirectly aided by education. Family planning and fertility decisions made by women are also affected by education (Walter, 2002).

Besides, Poverty is additionally a huge obstruction, is educational achievement. Poverty influences the educational accomplishment in three measurements. The exceptionally to begin with one is from resources-side (learning and monetary assets), moment one is the era of such social weights which mangles the mentality of poor understudy and finally when poverty gets any institution it break down the instructing benchmarks (Tierney, 2015).

(Nowak & Dahal, 2016) explained the significance of well-educated labor constrain because it is considered fundamental within the dissemination and appropriation of modern innovation and used strategies of generation. It plays a vital part in creating nations like Pakistan, as: they have deficiencies of physical and human capital. The amount as well as quality of education at each level with its linkages to request for abilities is exceptionally basic for economic development (Afzal et al., 2012).

Education is additionally playing a critical part within the diminishing wage imbalances (Efendi et al., 2019). It moreover makes a difference to lower the crime rate and child labor through diminishing the poverty. Individuals commit these violations as they are not able to fulfill the essentials needs of life (Krueger & Maleckova, 2003).

Education and Rural Development in Pakistan

Education in Pakistan is overseen by the federal ministry of education and the provincial government. Whereas the federal government mostly assists in curriculum development, accreditation and in the financing of research and development (Wikipedia).

The education system in Pakistan is generally divided into six levels, preschool (age 3 to 5 years), Primary (grade one to five), middle (grades six to eight), high (grades nine to ten), leading to the SSC, intermediate (grades eleven to twelve), leading to a higher secondary school, and university programs leading to undergraduate and graduate degrees (ministry of education Pakistan). We are investigating the impact of education on rural poverty of the developing country Pakistan (Luqman et al., 2015). The importance of rural development in the discourse of development in globe is well described by a number of rural development practitioners. In developing countries where most of the population used to live in rural areas, development is important as poverty in these countries is much visible and persistent (Cuellar-Franca & Azapagic, 2012). In developing countries, there is great need for importance to rural development in order to make possible rural masses to contribute in the social as well as economic development of the developing countries (Clark, 2012). Just like other developing countries, in Pakistan rural development is important for entire national development of the country (Luqman et al., 2013). Unfortunately, rural development

remains the least priority of the state especially in Khyber Pakhtunkhwa (KPK) Hazara division.

2. Review of Literature

Pakistan is the world beneath created population nation of 216.57 million where 24% of people's lives under the poverty line, out of 24% individuals lives in poverty, 31% lives in country ranges and 13% in urban ranges. Encourage, additionally 38.8% of the national population is poor based on the multidimensional poverty index (MPI) 2.54% in the country ranges and 9.4% in urban regions (Asad & Harris, 2019).

The linkages between education and profit is additionally inspected within the human capital system by rate of return investigation, and generation work examination, at person as well as social/national levels. Rates of return are assessed utilizing either mincerian profit work (Chiswick & Mincer, 1972). The concept of the minimal effectiveness of capital that relates costs of education to the lifetime benefits, basically profit related with education. Both sorts of gauges on rates of return are accessible for a huge number of nations (Psacharopoulos, 1994).

The few gauges have appeared that education yields appealing returns, comparable to elective rates of return, both to the person and to the society at huge. So also, generation work examinations, counting Schultz and Denison's development bookkeeping conditions (Bowman, 1964) and the economic growth equations (Lucas Jr., 1988) (Barro, 1991) have summarized that education have significant and positive effects on economic growth. In spite of the fact that the beginnings of human capital hypothesis can be followed to the prior financial specialists, from (Smith, 1976) to (Marshall, 1920), it is (Schultz, 1961) who made a "human venture insurgency in financial thought" by emphasizing that part of the human capital in financial development, and numerous others with their voluminous spearheading commitments put education at a tall platform within the hypotheses of financial development, which until at that point centered on the conventional components of master-duction, viz., arrive, labor and capital.

Poor and weak people are empowered by imparting education and eliminating illiteracy, enhancing potentials and raising living standards and values (Tilak, 2002).

The instructive achievement of family head is the basic determinant of people destitution in Pakistan. An increment within the instructive level of the head of the people altogether decreases the chances of the people being poor (Anwar & Qureshi, 2002).

In addition, by educating household heads resultantly has a positive impact on their potentials as a result help and support other members to be productive by attaining knowledge (Awan et al., 2011).

Most of the population of Pakistan living in rural areas zones consequently we

must see the effect of education on poverty, how efficient the education is to reduce poverty, In rustic zones, private returns to male education have an upward slant due to higher levels of education in labor markets for non-agriculture work. Compensation to the farm-workers, who contracted for the incompetent, manual work on the cultivate is not responsive to education achievement (Otsuka & Yamano, 2008).

Compensation and efficiency in non-farm exercises rise with instruction at an expanding rate as education rises. On the hand, cultivate efficiency reacts essentially as it were to essential education (Haggblade et al., 2010). Nigeria has been through very disappointing economic condition. The country is still fighting to eradicate poverty even after years of independence. The world's poor dropped from 643.5 million to 592.7 million. According to the federal republic of Nigeria's economic recovery and growth (Ata-Agboni & Nwanisobi, n.d) report "one of the primary factors that subvert development outcomes in the past is "substandard infrastructure".

It has been concluded that in Pakistan an increase by 7.3 percent comes in the monthly earnings of an individual with increasing education every year. In this manner, it is very apparent that education can increment the winning potential of the destitute and they ended up productive.

2.1. China Pakistan-Economic Corridor Mediating Role

China has emerged as an economic power house of the 21st Century and is the largest exporting nation of the World and the second biggest economy. The remarkable achievement of GDP per head growing 17 times between 1980-2014 and lifting more than 800 million out of poverty is a feat unprecedented in human history. It would be pertinent to recall that not very far in time i.e. 1980, per capita income of China was lower than that of both India and Pakistan and since then now it has become an economic powerhouse (J. Hussain, Yuan, & Ali, 2016).

Realizing its importance as a leading economic power, China has also taken the lead in assisting other developing and emerging countries through investment, financial aid, and building infrastructure. In Africa, China has emerged as the number one official donor. President Xi Jinping has embarked upon one Belt One Road initiative that would link China to the rest of the World through new roads, railways, ports, gas pipelines and other infrastructure (J. Hussain et al., 2016). This will stretch into South and South East Asia, Middle East and from Central Asia to Europe. More recently, it has established Asian Infrastructure Investment Bank (AIIB) that would cater to the infrastructure needs of developing countries. AIIB would provide concessional loans to developing countries.

In September 2013, the great leader of People's Republic of China Mr. Xi Jinping revealed the secret of peace, prosperity and economic development for the world by announcing two strategies "silk road Economic Belt" and "Maritime silk Road" that connects two of the worlds (later third one) from south to north and east to west by sea through several contiguous bodies of water and

land through a network of roads.

CPEC is one of this initiative's most important component that would connect the seaport in Gwadar, Pakistan with the region of Xinjiang in the People's Republic of China which would give a shortest way for China to export its goods to rest of the world because the container which leaves off from the shores of shanghai takes three months to reach the Persian gulf with a distance of 4252 miles, while this distance reduces many mega projects such as the establishment of social economic zones, construction and up gradation of roads and railways that will span the length and breadth of Pakistan's will ease Pakistan's energy shortages and bring greater cohesion is south Asia, one of the world's least economically integrated regions. It is also feared that clashing geo-economic interacts may lead to unhealthy competition. China's investment in Pakistan has conveyed a big message to the other south Asian countries such as Sri Lanka, Bangladesh, Nepal to hurry and climb on board the Chinese "Belt and road initiative" to derive growth benefits. The revival of the economy in the coming period is bound to make Pakistan an attractive destination for foreign investors and will greatly help in removing socio-economic inequities of smaller provinces and in squeezing the space for anti-Pakistan elements.

China-Pakistan economic corridor is a framework of regional connectivity. CPEC will not only benefit China and Pakistan but will have a positive on Iran, Afghanistan, India, the central Asia republic and the region. The enhancement of geographical linkages having improved road, rail and air transportation system with frequent and free exchanges of growth and people to people contact, enhancing understanding through academic, cultural and regional knowledge and culture, activity of higher volume of flow of trade and businesses, producing and moving energy to have more optimal businesses and enhancement of co-operation by win-win model will result in well connected, integrated region of shared density, harmony and development. China-Pakistan economic corridor is a journey towards economic regionalization in the globalized world. It found peace, development and win-win model for all of them. China Pakistan economic corridor is hope of a better region of the future with peace, development, growth of the economy Figure 1.
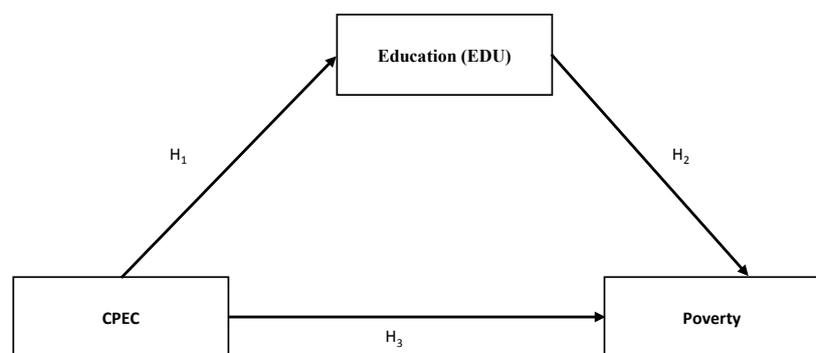
Figure 1. Conceptual framework of the study.

2.2. Hypothesis

The study examined following hypothesis:

1) China Pakistan economic-corridor (CPEC) has significant positive impact on education and literacy.

2) Education & literacy have positive impact on poverty (P).

3) China Pakistan economic corridor (CPEC) will have positive significant impact on poverty reduction (P).

3. Methodology of the Study

The study used a quantitative approach utilizing survey methodology with associational and field-based analysis. The data collection exercises were aimed at gathering information about the impact of road infrastructure development programs CPEC on poverty alleviation and its impact on education and literacy. The study inspected the relationship between poverty alleviation as the dependent variable, and education & literacy while road infrastructure development CPEC assessment measurements, as the intervening part. The study was conducted in four districts (Mansera, Abbotabad, Haripur and Battagram) of Hazara division, KPK, Pakistan. This is part of China Pakistan-Economic Corridor (CPEC) KKH phase II. Total 800 questionnaires were distributed in the area and total of 754 completed questionnaires were returned. After removing the 46-missing data, 754 usable questionnaires were analyzed.

The constructed three dimensions of Road Infrastructure development will be representing by 18 items. Eight items assess CPEC, five items assess literacy and education, Poverty alleviation will be representing by a constructed five-item scale with "1" indicates the strongly disagree and "5" indicates strongly agree. Suggested that five-point Likert would reduce the "frustration level" of respondents and increase response rate and quality. Six demographic items namely gender, age, marital status, and occupation of respondents will be included in the survey to facilitate the interpretation of the results. (Gray et al., 2007) defines unit of analysis as the element about which you are observing and collecting data, such as a person responding to a questionnaire, a school, an editorial or local business. The study variables were measured at the individual level as this unit of analysis was one integral to the research design. Each individual and each subject investigated was treated as an individual source (Sekaran & Bougie, 2016).

Three kinds of statistical analysis were conducted for his study using SPSS 21.0. First, factor analysis (CFA) was conducted to the construct validity, fit and appropriates of the instrument. Second for further screening and appropriate results we used rotation matrix, to conduct valid results. Third we used SEM and run model to interrogate the results.

3.1. Demographic Respondents

Frequencies on Districts where (n = 754)

754 completed questionnaires out of the total 800 questionnaires used in the study, were collected from Hazara division i.e. 247 (32.8%) from districts Man-

sehra, 230 (30.5%) from district Abbottabad, 153 (20.3%) from district Haripur, 124 (16.4%) from Battagram (Table 1).

3.2. Education Wise Groups

Frequency of education where (n = 754)

Out of total 754 respondents, 483 (64.1%) were heaving the degrees of graduates, 263 (34.9%) were heaving postgraduates Degrees, 8 (1.1%) were heaving doctorate Degrees, Frequencies of education show that the people with graduate degrees were in majority who provided input (data) in the study (Table 2).

3.3. Gender Wise Groups

The distribution of the respondents in both the genders. It shows that out of the total 754 respondents 525 (69.6%) were males whereas 229 (30.4%) were female. The study put its utmost endeavor's to incorporate the views of both the genders especially male because of the fact of their importance in the because of their living standards.

3.4. Age Wise Groups

Age wise groups indicated the frequencies of Age (n = 754) which elaborated that the range of the age of the respondents was 20 - 58 years. The majority of individuals who responded in the study were between 20 - 40 years. Majority of the respondents between the age of 20 - 40 can be interpreted as they are the people who are mostly concerned about Education and poverty and living standards, whom are mostly like to live in a good circumstances, their performance. They mostly look for a better life.

Table 1. Frequencies on districts (n = 754).

Districts				
Districts	Frequency	Percent	Valid Percent	Cumulative Percent
Mansera	247	32.8	32.8	32.8
Abbottabad	230	30.5	30.5	63.3
Haripur	153	20.3	20.3	83.6
Battagram	124	16.4	16.4	100.0
Total	754	100.0	100.0	

Table 2. Frequency of education.

Education				
Education	Frequency	Percent	Valid Percent	Cumulative Percent
Graduate	483	64.1	64.1	64.1
Postgraduate	263	34.9	34.9	98.9
Doctorate	8	1.1	1.1	100.0
Total	754	100.	100.0	

4. Descriptive Statistics on all 18 Items CPEC, Poverty, Education

4.1. Descriptive Statistics of China Pakistan Economic Corridor

Table 3 presents the skewness and kurtosis details of the items of "China Pakistan Economic Corridor". Kurtosis values on all the items of CPEC are in the range of 2 and −2 which signify that the data collocated from Hazara Division regarding CPEC is inacceptable range and normal. Out of all 08 items of CPEC, one item CPEC4 had the highest mean score (3.70) with the S.D (i.e. 1.247 & 1.223) which shows that taking CPEC, on the said item's respondents responded with highest deviation. Thus, the overall responses regarding CPEC in selected study area were between neutral to "agreed" and closer to the "agreed" option.

4.2. Descriptive Statistics of Poverty (P)

In Table 4, the skewness and kurtosis details of the items of "Poverty(P)". Kurtosis values on all the items of poverty (P) were in the range of 2 and −2 which indicates that the data collected from Hazara division regarding poverty is inacceptable range and normal. Out of all 05 items of poverty (P), almost all the items have mean which the little differences i.e. P9, 3.30 highest and P12, 3.30. The highest S.D found among all the items of poverty (P) was in P13 i.e. 1.209 and lowest P11 i.e. 1.175. Almost all the items on poverty (P) are closer to 04 which represents that responses on the items of (P) are more towards "agreed" in study area.

Table 3. Descriptive statistics of China Pakistan-economic corridor.

Items	N statistics	Mean statistics	Std. Deviation	Skewnestatistics	Std. Error	Kurtosis statistics	Std. Error
CPEC1	754	3.61	1.223	−.704	.089	−.438	.178
CPEC2	754	3.62	1.208	−.745	.089	−.308	.178
CPEC3	754	3.68	1.169	−.765	.089	−.175	.178
CPEC4	754	3.70	1.152	−.793	.089	−.065	.178
CPEC5	754	3.64	1.196	−.746	.089	−.269	.178
CPEC6	754	3.65	1.203	−.752	.089	−.296	.178
CPEC7	754	3.61	1.218	−.721	.089	−.376	.178
CPEC8	754	3.60	1.247	−.710	.089	−.452	.178

Table 4. Descriptive statistics of Poverty (P).

Items	N statistics	Mean statistics	Std. Deviation	Skewnestatistics	Std. Error	Kurtosis statistics	Std. Error
P9	754	3.30	1.187	−.423	.089	−.710	.178
P10	754	3.28	1.187	−.414	.089	−.723	.178
P11	754	3.31	1.175	−.32	.089	−.657	.178
P12	754	3.30	1.197	−.444	.089	−.733	.178
P13	754	3.29	1.209	−.407	.089	−.752	.178

4.3. Descriptive Statistics of Education & Literacy

Table 5 shows that the skewness and kurtosis details in the items of "Education Literacy (EL)". Kurtosis values on all the items of EL were found in the range of 2 and −2 which indicate that the data collected from Hazara division regarding EJ is inacceptable range and normal. Item EL31 has the highest Mean score i.e. 3.67 with the S.D 1.033 and lowest Mean score i.e. 3.62 is of EL29. Thus, all items of Education Literacy (EL) are agree and closed to "Agreed" to "Strongly Agreed" which represents that responses on the items of EL are either "agreed" or closer to "agreed" in Hazara division.

4.4. Factor Analysis

To conduct the factor analysis in order to verify the basic structure (Babakus & Mangold, 1992) as well as dimensionally (Sekaran) of variables of the study principle component factor analysis using the varimax rotation approach was applied. The factors of main independent variable named CPEC and dependent variables poverty(P) and education & literacy. The KMO value of sampling adequacy is .900 indicating sufficient inter-correlations with the Bartlett's test of sphericity was significant (Chi-square = 3870.109, $p < .01$). Hence the Bartlett's test of sphericity is significant value of .000 (Table 6).

4.5. Reliability Analysis

Table 7 exhibits that the coefficient alphas for all the scales are in acceptable range. Reliability analysis is the second important criterion after analysis that ensures goodness of measures. Reliability analysis using Cronbach's alpha was conducted to determine the reliability of the scales. As China Pakistan Economic-corridor included 8 items, .971, poverty (P) includes 5 items, .960, and education literacy includes 5 items, .811 respectively, exceed (Gorsuch, 1990) recommended threshold of .70. Hence, the instruments used in the study were both reliable as well as valid (as shown by the factor analysis results).

4.6. Confirmatory Factor Analysis

Structural Equation Modeling (SEM) is a multivariate statistical method which confirmatory factor analysis technique, path analysis and econometrics modeling (Joreskog, 1973).

Table 5. Descriptive statistics of Education & Literacy.

Items	N statistics	Mean statistics	Std. Deviation	Skewnestatistics	Std. Error	Kurtosis statistics	Std. Error
EL29	754	3.62	1.089	−.712	.089	−.077	.178
EL30	754	3.66	1.042	−.728	.089	.118	.178
EL31	754	3.67	1.033	−.689	.089	.108	.178
EL32	754	3.64	1.042	−.660	.089	.016	.178
EL33	754	3.63	1.091	−.634	.089	−.159	.178

Table 6. KMO and bartlett's test.

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Sampling Adequacy	.900
Bartlett's Test of Sphericity	3870.109
Approx.	153
Chi-Square Sig.	.000

Table 7. Cronalph's alpha values.

Cronalph's alpha		
Variables	No of Items	Cranach's alpha
CPEC	8	.971
Poverty	5	.960
Education & literacy	5	.811

(westland, 2010) conceded "Structural Equation Modeling" as a technique which is broadly adopted by researchers, social scientist and the practitioners. SEM also caters for the view of measurement errors which typically contain dormant variables (Raykov & Marcoulides, 2006). Another reason of using SEM is its ability to measures and test the cause and effect relationships existing between various construct in one go. In order to drill down the true relationships among the three constructs (i.e. CPEC, P, EL), the SEM technique was employed in the study. (Martin, Monks, Warren & Kaplan, 2000) stated that SEM is a class of methodologies that relationship hypotheses related to means, variances, and covariance's of the observed data as a smaller number of structural parameters in hypothesized underlying model. SEM is a wide-range statistical method/approach for hypothesis testing regarding the relationships among the observed and latent variables (Hoyle, 1995) as relationships are fixed or free.

Path Analysis among CPEC, Poverty(P) and EL

X2	X2/df	RFI	NFI	CFI	RMSEA
252.676	1.914	.982	.984	.992	.035

Fit Indices for the Measurement Models of the three Scales among CPEC, EL and P.

RFI = Residual-fit index, NFI = Normed fit index, CFI = Comparative fit index, RMSEA = Root Mean Squared Error of Approximation measurement scales assessment is conducted for the purpose of ensuring reliability, validity, and dimensionally in order to assess the properties of the measurement model. Model data fit indices have been exercised as X^2/df which was meant

To calculate that how closely they expected covariance matrix derived from the estimated model fits. According to (Kline, 1988) the relative X^2 less than 3.00 and according to (Marsh & Hocevar, 1985) less than 5.00 are considered as acceptable. As (Bollen & Long, 1993) stated that X^2/df ratio value (<5) may be treated as acceptable one. CFI i.e. comparative fit index according to (Bentler,

1990) needs to be above .90 so as with NNFI i.e. Non-Normed fit index to (Bollen, 1986) should also be around .9 for appropriate fit. RMSEA i.e. Root mean squared error of approximation which according to (Browne & Cudeck, 1993) ranges between 0 to 1 is appropriate and is considered as very good if it is less than .05 for model fitness but it is acceptable even if it is more than .05.

Structure equation model explained in the study that three variables (i.e. CPEC, Poverty and education & literacy have been tested holistically addressed the standardized estimates of structural coefficients for the proposed structural model (path model) using the SEM approach from CPEC to education and literacy (EL) having positive coefficient value. 21 ($p < .5$) has significant and positive impact, as education and literacy (EL) to poverty(P). 20 where ($p < .05$) CPEC to poverty (P) in the presence of Education and Literacy (EL). 30 which is significant and has positive impact on poverty (P) whereas ($p < .05$).

4.7. Testing Hypothesis

The data was analyzed with the goodness of fit, standardized coefficient value quantified through AMOS. The hypothesis has been tested according to the model of the study.

H1: There is a significant impact of CPEC on Education & literacy (influence).

As figure shows that there is significant impact of CPEC on education and literacy(influence) having positive path coefficient. 21 (where $p < .05$). thus, hypothesis (H1) i.e. significant impact of CPEC on education and literacy (influence) in Hazara division has been accepted.

H2: there is a significant impact of education and literacy (influence) on poverty (P).

In order to test the second hypothesis as figure shows that there is significant impact of education and literacy having positive path coefficient 20, (where $p < .05$). Thus, H2 is accepted.

H3: there is a significant impact of China Pakistan economic-corridor reduction (P).

The third hypothesis (H3) i.e. significant impact of China Pakistan economic-corridor (CPEC) on poverty. China Pakistan economic corridor (CPEC) has significant and positive impact on poverty reduction (P) with the path coefficient value at .30 ($p < .05$).

5. Discussion

Road Infrastructure plays an important role in the development of an area. This study proves that China Pakistan economic-corridor (CPEC) road has a positive and significant impact on the education in Hazara division, KPK, Pakistan. In the study, we explored that the most important contribution of road to the education of the local people. It helps to facilitate them and brings peace prosperity as well reduce poverty in the region. Road infrastructure generates a lot of new

jobs opportunities also helps for the economy of the country and individual area. Roads infrastructure increase the income of the local area residents and different economic activities, particularly in small businesses for the local residents, which eliminates poverty and improves the living standard of the local people. The findings of our study show that road infrastructure contributes enough to alleviate poverty in the poverty-stricken areas which are similar to the study of Hossain, Sattar, & Ahmed (1983). Our results suggest that road infrastructure projects such as CPEC have good affect for the local residents of the area. Road infrastructure connects the people of the area and provides new jobs, better health, education and low cost of buying commodities in this way poverty reduction occurs and living standards of the people in that area improved.

5.1. Conclusion

BRI (Belt and Road Initiative), a buzzword across the world is a century project to contact Asia, Europe, and Africa by redeveloping the ancient silk route. While CPEC being a flagship project of intercontinental belt and road initiative (BRI) lies un geo-strategic location is considered to be a game changer of the region but many projects either out of or moving slowly with unknown reasons are taking country by storm. Despite this back-burner phenomenon, it's inevitable fact that CPEC is aligning the development strategies to have more multi-faced cooperation in all fields including experience sharing on governance, policy making, poverty alleviation programs, industrial cooperation, infrastructure building, education, agriculture and sectors related to livelihood of people. This paper has thoroughly examined the impact of CPEC on education and poverty alleviation via road infrastructure in Thakot-Havalean. This research has splendidly analyzed and accumulated the perception of local residents about this mammoth project which began already in the region in the shape of mega road infrastructure. The findings of this research, based on data collection expatiate that CPEC can play a pivotal role in changing the dynamics of education and poverty situation in the region and onus is on the people of the region to realize its potential. In a nutshell, local people are excited about CPEC mingled with apprehensions and aspirations. Moreover, this study has also contributed to the existing studies on road and transport infrastructure development and poverty reduction programs.

5.2. Future Research Concerns

1) This research work should be repeated time and again to find the poverty dimensions in other districts of Hazara division's kohistan and Torghar.

2) Future research may be conducted in future to continue where the researcher stopped and to identify those in ultra-poverty and recommend poverty alleviation measures so as to bring the poor out of poverty. In particular this type of studies may be conducted in other districts under poverty line in KPK province areas where the incidence of poverty is also reported to be high.

3) There is a need for research that will create a better understanding of the linkage between growth and poverty and help to formulate policies that seeks to maximize the effect of growth on poverty.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Afzal, M., Malik, M. E., Begum, I., Sarwar, K., & Fatima, H. (2012). Relationship among Education, Poverty and Economic Growth in Pakistan: An Econometric Analysis. *Journal of Elementary Education, 22,* 23-45.

Anwar, T., & Qureshi, S. K. (2002). Trends in Absolute Poverty in Pakistan: 1990-91 and 2001. *The Pakistan Development Review, 41,* 859-878.
https://doi.org/10.30541/v41i4IIpp.859-878

Appiah, E. N., & McMahon, W. W. (2002). The Social Outcomes of Education and Feedbacks on Growth in Africa. *Journal of Development Studies, 38,* 27-68.
https://doi.org/10.1080/00220380412331322411

Asad, A. Z., & Harris, R. (2019). *The Politics and Economics of Drug Production on the Pakistan-Afghanistan Border.* Abingdon-on-Thames: Routledge.
https://doi.org/10.4324/9781315198934

Ata-Agboni, J. U. P., & Nwanisobi, B. (n.d.). *Economic Recovery Programmes of Buhari's Administration as Developmental Stage Paradigm.*

Awan, M. S., Malik, N., Sarwar, H., & Waqas, M. (2011). *Impact of Education on Poverty Reduction.*

Babakus, E., & Mangold, W. G. (1992). Adapting the SERVQUAL Scale to Hospital Services: An Empirical Investigation. *Health Services Research, 26,* 767.

Barro, R. J. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics, 106,* 407-443. https://doi.org/10.2307/2937943

Bowman, M. J. (1964). Schultz, Denison, and the Contribution of "Eds." to National Income Growth. *Journal of Political Economy, 72,* 450-464.
https://doi.org/10.1086/258931

Chiswick, B. R., & Mincer, J. (1972). Time-Series Changes in Personal Income Inequality in the United States from 1939, with Projections to 1985. *Journal of Political Economy, 80,* S34-S66. https://doi.org/10.1086/259985

Clark, D. (2012). *Adaptation, Poverty and Development: The Dynamics of Subjective Well-Being.* Berlin: Springer.

Cuellar-Franca, R. M., & Azapagic, A. (2012). Environmental Impacts of the UK Residential Sector: Life Cycle Assessment of Houses. *Building and Environment, 54,* 86-99.
https://doi.org/10.1016/j.buildenv.2012.02.005

Efendi, R., Indartono, S., & Sukidjo, S. (2019). The Relationship of Indonesia's Poverty Rate Based on Economic Growth, Health, and Education. *International Journal of Multicultural and Multireligious Understanding, 6,* 323-330.
https://doi.org/10.18415/ijmmu.v6i2.704

Gorsuch, R. L. (1990). Common Factor Analysis versus Component Analysis: Some Well and Little Known Facts. *Multivariate Behavioral Research, 25,* 33-39.
https://doi.org/10.1207/s15327906mbr2501_3

Gray, P. S., Williamson, J. B., Karp, D. A., & Dalphin, J. R. (2007). *The Research Imagination: An Introduction to Qualitative and Quantitative Methods*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511819391

Haggblade, S., Hazell, P., & Reardon, T. (2010). The Rural Non-Farm Economy: Prospects for Growth and Poverty Reduction. *World Development, 38,* 1429-1441. https://doi.org/10.1016/j.worlddev.2009.06.008

Krueger, A. B., & Malečková, J. (2003). Education, Poverty and Terrorism: Is There a Causal Connection? *Journal of Economic Perspectives, 17,* 119-144. https://doi.org/10.1257/089533003772034925

Lucas Jr, R. E. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics, 22,* 3-42. https://doi.org/10.1016/0304-3932(88)90168-7

Luqman, M., Shahbaz, B., Ali, T., & Siddiqui, M. T. (2015). Gender Disparity in Education: Agricultural & Rural Development Dilemma in the Province of Khyber Pakhtunkhwa, Pakistan. *International Journal of Agriculture & Applied Sciences, 7,* 72-77.

Luqman, M., Shahbaz, B., Khan, I. A., & Safdar, U. (2013). Training Need Assessment of Rural Women in Livestock Management-Case of Southern Punjab, Pakistan. *Journal of Agricultural Research, 51,* 99-108.

Marshall, A. (1920). *Industry and Trade*.

Nowak, A., & Dahal, G. (2016). The Contribution of Education to Economic Growth: Evidence from Nepal. *International Journal of Economic Sciences, 5,* 22-41. https://doi.org/10.20472/ES.2016.5.2.002

Orazem, P., Glewwe, P., & Patrinos, H. (2007). *The Benefits and Costs of Alternative Strategies to Improve Educational Outcomes*. Ames, IA: Iowa State University, Department of Economics.

Otsuka, K., & Yamano, T. (2008). *The Role of Rural Labor Markets in Poverty Reduction: Evidence from Asia and East Africa*.

Psacharopoulos, G. (1994). Returns to Investment in Education: A Global Update. *World Development, 22,* 1325-1343. https://doi.org/10.1016/0305-750X(94)90007-8

Psacharopoulos, G., & Patrinos, H. A. (2018). *Returns to Investment in Education*.

Schultz, T. W. (1961). Investment in Human Capital. *The American Economic Review, 51,* 1-17.

Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill Building Approach*. Hoboken, NJ: John Wiley & Sons.

Smith, A. (1976). *An Inquiry into the Nature and Causes of the Wealth and Poverty of Nations*.

Tierney, W. G. (2015). *Rethinking Education and Poverty*. Baltimore, MD: JHU Press.

Tilak, J. B. (2002). Education and Poverty. *Journal of Human Development, 3,* 191-207. https://doi.org/10.1080/14649880220147301

Walter, M. (2002). Working Their Way Out of Poverty? Sole Motherhood, Work, Welfare and Material Well-Being. *Journal of Sociology, 38,* 361-380. https://doi.org/10.1177/144078302128756732