DISASTROUS IMPACT OF CORRUPTION, POLITICAL INSTABILITY AND EXPROPRIATION RISK ON QUALITY OF EDUCATION: EVIDENCE FROM ASIAN COUNTRIES

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Abstract. Corruption, political instability and expropriation risk have been identified as negative aspects that may have negative impacts in several aspects including education quality. This study has been designed in accordance with the same purpose. In this regard, the author collected data from Asian countries consisting of 30 years from reliable sources. This collected data was analysed and scrutinized by using some appropriate tests such as unit root test, cointegration test, coefficient estimation test and Granger casualty test for various purposes. The results of these tests have been presented in the study in various tables. These results show that the above mentioned three aspects i.e. corruption, political instability and expropriation risk along with the control variable, population have significant impact on quality of education. In addition, casual relationships have also been found in these variables. In the last, the author has discussed some theoretical, practical and policy making implications of this study. These implications are not only for researchers but also for educational institutes and government officials. The author has also recognized some of the limitations in regard of this study and has also presented some suggestions and recommendations that may be used to improve the quality of research by the other researchers.

Keywords: corruption; political instability; expropriation risk; quality of education; Asia

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1. Introduction

Education is the backbone of economic, political and social growth of any country. No nation can accomplish feasible monetary improvement without significant interest in human capital. Education improves individuals' comprehension not only of themselves but also of world. It improves the quality of life and prompts benefits social advantages to people and society. Education is considered a basic human right. Despite the importance of literacy, the Transparency International 2017 showed alarming statistics. According to the Transparency International 66% of the countries have literacy rate below the average score that is 43. Among them worst situation is in Central Asian countries having 34 an average score of literacy. Quality education is influenced by a number of factors like corruption, political instability and exportation risk (Roser & Ortiz-Ospina, 2016). Significant research supports the argument that rampant corruption discourages entrepreneurship, impedes productivity, undermines financial stability, encourages poverty, reduces the chances of economic aid, reduces business administration efficacy and crumble the law (Saeed, 2009; Luzgina, 2017; Osipov et al., 2018). The United nations described corruption as the most important threat to economic, educational and social development (Chapman, 2005). The issue of corruption is faced by both developed and non-developed countries (Dimant & Schulte, 2016). Disastrous impacts of corruption are also involved in decreasing quality of education (Beekman, Bulte, & Nillesen, 2014), inequality (Justesen & Bjørnskov, 2014), loss of skilled people (Dimant, Krieger, & Meierriecks, 2013), decline in sport sector (Saeed, 2009) (Dimant & Deutscher, 2015). The lower education status in the country is highly attributed to driving force for corruption (Šumah, 2018).

Asia is region of the world with least political instability as most of the developing countries are in the state of war. This condition increases the expropriation risk to the investors investing in the public and private education sector (Bhattacharya, 2009; Glaeser, La Porta, Lopez-de-Silanes, & Shleifer, 2004). Due to political instability Afghanistan has lowest literacy rate of only 31% and literacy rate goes down at alarming level of 17% in females as per UN 2017 report. In Iraq, after the war in southern province of Basra the literacy rate has declined by two third of before the war. In Syrian refugee, most of the kids under 12 of age have never attended school in their life. It is found that the number of enrolled students in primary education is not much affected due to these factors as higher education. But as far as quality of education is concerned, it is effected in both departments (Wofford & Tibi, 2018). Risk expropriation of various Asian countries: highest risk score in countries having most political instability Afghanistan, Syria, Yemen, Iran, Iraq 7, then countries with moderate risk are China, Nepal, Pakistan 5, India, Qatar and Malaysia having 3 risk score. This shows that political stability influences expropriation risk. It will have an impact on the literacy rate and quality of education (see figure 1).

Figure 1. Transparency international corruption prescription index 2018

Level of quality of education is declining in Asia due to various factors like corruption, political instability and expropriation risk. This problem is not only in Asia but in other continents as well. If this factor would not be resolved quickly it will further deteriorate the situation and will become root cause of other social issues. Previous studies have been done in assessing factors influencing quality of education in different regions of the world. In this study, we will discuss the impact of these factors especially in Asia. So, following are the objectives of present study:

1. To analyse the impact of corruption on the quality of education.
2. To analyse the impact of political instability on the quality of education.
3. To analyse the impact of expropriation risk on the quality of education.

In the present study, we discuss the impact of corruption, political instability and expropriation risk in prospective of Asia. This study will help to undines the areas where special attention needs to be focus to eradicate the negative impacts of factors under study in reference to quality of education.

2. Literature Review

Glaeser et al., (2004) proposed a theory that includes three points. One is that individuals of a country are the source of growth than different institutions, so more investment must be done on the human capital to ensure the economic development. Second, only the implementation of effective policies by the government in all sectors can bring economic well-being and decreasing poverty. Third is to make improvements in political institutions. In this theory, emphasis has been given to the investment in individuals by providing basic human necessity like the quality of education (Glaeser et al., 2004).

a. Impact of Corruption on the Quality of Education

Acemoglu & Robinson et al; performed a study to assess the relationship between the history of corruption and its influence on education. The results of this study indicate that the basic socio-historical system of governance of a nation is firmly rooted in rampant corruption. The assertion is consistent with a wide range of empirical systemic evidence suggesting that historical influences that differ from policy to reserve may have long-term effects on socioeconomic development and globalization. (Acemoglu & Robinson, 2012). The results of the study were close to that of Glaeser et al., (2004). The theory of Glaeser et al., (2004) also showed that highest enrolment in elementary schools is directly proportional to the increase in GDP of the country per capita in decades after. Acemoglu & Robinson et al., finds same patterns among 78 countries. Historical levels of education and corruption these countries from 1870-2010 was taken into account. By correlating these levels, the study found a significant link between higher level of corruption and lower levels of education. Brand, 2010; suggested the importance of quality education that it inspires people to uphold democratic ideals and makes them analyse the actions of the government's regulating bodies (Odhiambo, 2011; Patrinos, 1990; Pfeffer, 2015). Training thus enhances the capacity of people to choose capable leaders, address the issues they must vote on, serve as a welfare check on potential violations, track procedural abilities and uncover corrupt politicians, employs of different department and bureaucracy (Brand, 2010). Park & Mercado et al; studied the effect of monetary incorporation, alongside other control factors, on destitution and salary disparity. Our outcomes show that per capita pay, rule of law, and statistic qualities altogether influence budgetary incorporation in creating Asia. Besides, we locate that money related consideration fundamentally diminishes neediness (Park & Mercado, 2015). Thus, above mentioned studies highly relate the impact of corruption on the quality of education in the country as these factors are in inverse relation with each other.

H1: Corruption has significant impact on quality of education

b. Impact of political instability on the quality of education

A study conducted by Reddy, (2005) to check impact of higher education on the political instability. Tertiary education in warfare-affected environments poses various problems exacerbated both explicitly and implicitly by warfare that can be clustered into four main themes: structural devastation, relocation of the workforce, military conflict-related conditions, and the economy's low vulnerability. First, it is normal during military conflict to damage the existing infrastructure and resources of institutions of higher learning. Throughout the extreme scenario of Iraq, 84% of universities were burnt, pillaged and demolished in the post-invasion anarchy (Reddy, 2005). Davies, (2004) also studied the effect of political instability with quality of education in war affected zones in Asia. Universities in Iraq, Afghanistan, Syria and Libya have already been turned into future military installations and were on the frontline line of battle in several situations. The study suggests that structural rehabilitation is indeed a significant challenge faced by several post-war university education institutions that were the main field of international support (Davies, 2004). Collier et al., (2011) evaluated that mortalities and populace relocations are the most immediate cultural expenses of common wars and can debilitating affect advanced education networks.

Students, teachers and other staff members might be enlisted to become non-military personnel causality or sending them in war. War can also trigger enormous scale displacement of profoundly gifted people including scholastics (Chauvet & Collier, 2008). Milton & Barakat et al., estimated the alarming statistics that Afghanistan has lost an additional 20,000 analysts and scholars after decades of war (Milton & Barakat, 2016; Tierney, 2011).

Piasentin, (2016) and IIEP (2010) assess that after WFFWCTS of war on the quality of education. They found that Brutality toward academics and elevated levels of forced displacement can continue in the second comment-conflict period, like those seen in Iraq, where the outbreak of sectarian conflict in 2006 intensified what had already been a huge-scale educational 'brain drain,' displacing an approximate 5,000 scholars. In addition, internal migration may pose logistical problems, including targeting learners with unequal levels of education and congestion in capitals (Piasentin, 2016). (IIEP 2010). Babury & Hayward et al. and Oweini et al (2013) studied that considered that notwithstanding deterrents looked in 'typical' advancement circumstances, advanced education in strife influenced settings must arrangement with new difficulties. These incorporate psychological wellness issues from war-related injury (Babury & Hayward, 2013; Oweini, 1998), fast disintegration of instructive quality because of the seclusion of the scholarly community from the outside world (Benedek, 1997) redirection of wartime use from social parts to military and compassionate circles, and diminished enrolment levels expedited by limitation of development, terminations of establishments, and preparation of understudies by equipped gatherings (Hanafi & Arvanitis, 2015; Leach, 2007; Nicolai, 2004). From above mentioned studies, a very strong relation between political instability and quality of education is developed.

H2: Political instability has significant impact on quality of education

c. Impact of Expropriation Risk on Quality of Education

Hajzler & Rosborough et al., investigate the effect of expropriation on the investment in the educational sector. They took data of the last decade and analyse it. The study found that in war zone regions of Asia there has been an increase of expropriation activities by governments against investors. Whereas, developed countries like China, Malaysia and India have low expropriation rate by the government. The study also suggests that there are two types of expropriation. On is direct and other is indirect expropriation. And now a day there is indirect expropriation like policies and regulatory takings. Although some of this is explained by a significant increase in direct investment generally (Hampton, 1993; Patrinos, 1990). While the nature of the expropriators (Rastogi & Roy, 2016). Investment is often constrained by two forms of political risk: expropriation and corruption. Pond et al., assesses the role of expropriation and corruption in investment in education. (Pond, 2018). They inspect the job of government defilement in remote direct venture when agreements are not completely completed and face the danger of seizure. Utilizing a novel dataset on overall confiscations of FDI over the 1990-2014 periods, study locates a positive connection between these components. The above-mentioned studies suggest that expropriation leads to less investment in educational sector thereby, implicating the quality of education.

H3: Expropriation risk has significant impact on quality of education

3. Methodology

a. Data

The author has collected suitable data for the research process in accordance with this particular study from different countries of Asian region. This data is collected for the time period of 30 years and form the most reliable and authentic databases i.e. World Bank and Global Economy. According to the study, the variables for which the data

has been gathered include corruption, political instability, expropriation risk and quality of education in a country. Along with these variables, two control variables i.e. population and literacy rate have also been included.

b. Model Specification

The measurement units of the variables must be defined in order to proceed in the research process therefore the author has mentioned the notations according to the variables of the study and their measurement units have also been discussed. The dependent variable, quality of education EDU has the measurement unit of satisfaction level of the students. The first independent variable, corruption CORR can be measured by using an index called as corruption perception index. The next independent variable, political instability POL is measured in terms of an index named as political stability index. The last independent variable, expropriation risk EXP has also been measured through an index named as expropriation risk index. All these indices must be carefully understood according to their ranges. The measurement unit of first control variable, population POP is million of people while that of the other control variable, literacy rate LIT is the percentage of educated people in the country. In the last, the regression equation has been presented by the author as follows:

$$EDU_{it} = \alpha + \beta_1 CORR_{it} + \beta_2 POL_{it} + \beta_3 EXP_{it} + \beta_4 LIT_{it} + \beta_5 POP_{it} + \varepsilon_{it}$$

In the above given equation, education has been represented by EDU, corruption has been represented by CORR, political instability has been represented by POL, expropriation risk has been represented by EXP, literacy rate has been represented by LIT, population has been represented by POP, while error has been represented by ε_{it} .

c. Estimation Procedure

After collecting data and allocating different respective measurement units to all the variables involved in the study, the author has then analyzed the gathered data by using some techniques and tests. These include panel unit root test, panel cointegration test, coefficient estimation test and Granger Casualty test. These tests have different properties and are used for various purposes as discussed in detail in this section.

i. Panel Unit Root Test

Panel unit root tests are used for the purpose of exploring the order of integration of the variables as well as their scholastic properties. This is an important step in the research process because the variable with particular order of integration can only move further in the next step of the research (Levin, Lin, & Chu, 2002). The unit root test involves two hypotheses i.e. null and alternate hypothesis. The null hypothesis refers to the presence of unit root and non-stationary state of the data while alternate hypothesis refers to the absence of unit root and stationary state of the collected data. Based on these hypotheses, the results of the unit root tests are evaluated and interpreted effectively. The old and traditional unit root tests caused some issued of size and power. To resolve these issues, LLC and IPS unit root tests were extracted from augmented Dickey Fuller tests. LLC and IPS tests are mostly used in order to find and study the scholastic properties of the collected data. The author has used IPS unit root test in accordance with the equation presented below:

$$\Delta y_{i,t} = a_i + \rho y_{i,t} - 1 + \sum_{j=1}^{pi} a_j \Delta y_{i,t-j} + \varepsilon_{i,t}$$

Here $\Delta y_{i,t}$ is the difference that $\Delta y_{i,t}$ shows for i^{th} country for the specific time period of t .

ii. Panel Cointegration Test

Panel cointegration tests are used for the purpose of investigating the presence of any cointegrated relationship between the variables as well as any long run equilibrium relationship between them. These tests also involve null and alternate hypothesis with the null hypothesis pointing towards the absence of cointegrated relationships between variable while alternate hypothesis pointing towards the presence of cointegrated relationships between the

variables (Im, Pesaran, & Shin, 2003). These two hypotheses are the basis on which the results of cointegration test are evaluated. The most commonly and usually used tests in this regard are Kao and Pedroni cointegration tests. These tests identify the fact the whether there is any cointegrated or long run relationship between the variables or not. The result of this test involves some values that show the rejection or acceptance of the null or alternate hypothesis. These tests actually involve two approaches i.e. within dimension approach and between dimension approach. The within dimension approach involves four test statistics values while between dimension approach involves three test statistic values. These values and their significance levels indicate that whether the null hypothesis is rejected or not. According to the type of data collected, the author has applied Pedroni cointegration test in this particular study. The following equation has been used by the author in this regard:

$$y_{i,t} = \alpha_i + \delta_{i,t} + \beta_1 X_{1,i,t} + \beta_2 X_{2,i,t} + \cdots + \beta_n X_{n,i,t} + \varepsilon_{i,t}$$

iii. Coefficient Estimation Test

The next test that is used in the research process is coefficient estimation test and the basic motive behind the usage of this test is to measure the relationship that occurs between the variables included in this particular study. Two most common and popular tests that are used for this purpose are FMOLS and DOLS coefficient estimation tests (Pedroni, 2001). It was observed in the past studies that simple OLS tests caused some problems such as serial correlation existence and endogenous variable existence. These problems needed to be solved and thus FMOLS and DOLS were introduced that are actually the modified forms of the simple OLS test. The author has used FMOLS coefficient estimation technique in this particular study and to indicate and measure the magnitude of the impact that independent and control variables have on quality of education i.e. dependent variable. The author has used this test in accordance with the following general equation of FMOLS:

$$\hat{\beta}_{FM} = \left(\sum_{i=1}^N \sum_{t=1}^T (x_{i,t} - \bar{x}_i)^2 \right)^{-1} \sum_{i=1}^N \left(\sum_{t=1}^T (x_{i,t} - \bar{x}_i) \widehat{EDU}_{i,t} - T \hat{\delta}_{\varepsilon u} \right)$$

In this equation, $\widehat{EDU}_{i,t}$ is the transformed variable of quality of education due to endogeneity correction while $\hat{\delta}_{\varepsilon u}$ represents the serial correlation correction by FMOLS.

iv. Granger Casualty Test

Granger Casualty tests are used in order to investigate the presence of casual relationships between the variables involved in this study. These tests also involve null and alternate hypothesis (Dumitrescu & Hurlin, 2012). The null hypothesis shows the absence of casualty while the alternate hypothesis shows the presence of casualty among the variables. This casualty may be unidirectional but may also be bidirectional in nature. Causal relationships can be identified by using Granger casualty test according to the following equations:

$$x_t = \sum_{i=1}^{\infty} a_i x(t-i) + c_1 + \mu_{1(t)}$$

$$x_t = \sum_{i=1}^{\infty} a_i x(t-i) + \sum_{j=1}^{\infty} b_j y(t-j) + c_2 + \mu_{2(t)}$$

4. Empirical Analysis

a. Results of Panel Unit Root Test

The author had applied the IPS unit root test for the panel data so that the order of integration and stochastic properties of the collected data could be found out. The results of this test are given in the table 1. According to these results, all the variables are accepting the null hypothesis, but political instability and literacy rate have not

accepted the null hypothesis. But as most of the variables have accepted the null hypothesis therefore it can be stated that there is unit root in this series and the data is stationary. When the first difference series is observed, all the variables appear to have rejected the null hypothesis which clearly indicates the fact that there is no unit root in this first difference series and the data is stationary here. The non-stationary to stationary shift can be explained on the basis of first difference application.

Table 1. Panel Unit Root Test – IPS

Variable	Level	1 st Difference
EDU	-1.8263 (0.183)	-4.2836*** (0.012)
CORR	-2.7632 (0.916)	-6.9836** (0.012)
POL	-3.3862** (0.012)	-11.193*** (0.000)
EXP	-1.0283 (0.234)	-10.283*** (0.000)
POP	-4.2836 (0.826)	-12.132** (0.001)
LIT	-3.3862** (0.183)	-13.927*** (0.000)

In this table, * represents that the rejection is one percent significant, ** shows that rejection is five percent significant, *** shows that rejection is ten percent significant

b. Results of Panel Cointegration Test

The author had applied the cointegration test for panel data in order to investigate the cointegrated relationships between the variables. The detailed results of this test have been presented in the table 2 given below. According to this table, there are different test statistics values related to within and between dimension approaches.

In the first approach i.e. within dimension it can be seen that out of the total four values, three values have rejected the null hypothesis which indicates the presence of cointegrated relationships between variables.

In the exact same fashion, out of the total three values of test statistics in between dimension approach, two have rejected the null hypothesis indicating the presence of cointegrated relationships. It can be concluded that out of total seven values, five test statistic values have rejected the null hypothesis of no cointegration. Thus, it can be stated that cointegrated relationships do occur between the variables that have been included in the study.

Table 2. The Pedroni Panel Cointegration Test

Alternative hypothesis: common AR coefs. (within-dimension)			
<u>Statistic</u>	<u>Prob.</u>	<u>Statistic</u>	<u>Prob.</u>
		Weighted	

Panel v-Statistic	-3.817263	0.2863	-2.386323	0.0000
Panel rho-Statistic	5.746362**	0.1826	3.376372	0.6253
Panel PP-Statistic	-13.18366*	0.0000	-5.384672	0.0001
Panel ADF-Statistic	-3.927632*	0.0002	-2.474672	0.0003

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	3.816383*	0.0000
Group PP-Statistic	-16.18368	0.0000
Group ADF-Statistic	-4.836481**	0.0243

In this table, * represents that the rejection is one percent significant, ** shows that rejection is five percent significant

c. Results of Coefficient Estimation Test

After unit root and cointegration test, the author applied FMOLS coefficient estimation approach so that the impacts of independent and control variables can be measured on dependent variables. The results of this test have been presented in the table 3 in detail. These results indicate that corruption has significant and negative impact on quality of education as with one percent increase in corruption, education quality will decrease by 12.6%. In addition, the political instability also has significant negative impact on quality of education and with one unit increase in political instability; quality of education will decrease by 18.3%. Moreover, expropriation risk also has significant negative impact on quality of education and with one percent increase in this risk, quality of education is supposed to drop by 22.6%. In the last, the control variable, population is also found to have a significant impact on quality of education. These results can be summarized by stating that corruption, political instability, expropriation risk and population have significant impacts on quality of education.

Table 3. FMOLS Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CORR	0.126384**	0.2846	2.715388	0.0000
POL	0.183684*	0.2363	3.173583	0.0002
EXP	0.226491**	0.9264	2.173684	0.0001
POP	0.197304*	0.0012	2.284684	0.2724
LIT	0.826499	0.2836	3.926837	0.0001
Constant	0.248694	0.7135	1.286482	0.0003
R-squared	0.236942			
Adjusted R-squared	0.193794			
F-statistic	32.28364			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	2.836919			

In this table, * represents one percent significance level, ** shows five percent significance level

d. Results of Granger Casualty Test

In the last, the author applied Granger casualty test in order to determine and find out the casual relationships between the variables. The detailed results have been given in the table 4 of this study. It is clearly evident from the table that unidirectional and bidirectional casualty runs in different directions among the variables. In this regard, casualty runs from corruption to quality of education and expropriation risk. In the same way, there is casual

relationship between population and quality of education, population and political instability. The same kind of relationships is present in other variables too.

Table 4. Granger Casualty Test

Variables	EDU	CORR	POL	EXP	POP	LIT
EDU		0.128	0.273	0.856	0.173	0.283*
CORR	0.826*		0.227	0.867*	0.576	0.455
POL	0.635	0.273*		0.324	0.988*	0.823
EXP	0.263**	0.284*	0.273		0.424	0.854
POP	0.272*	0.474	0.274*	0.142*		0.223*
LIT	0.744	0.825	0.586	0.144	0.237	

In this table, * represents one percent significance level, ** shows five percent significance level

5. Discussion and Conclusion

a. Discussion

As this study was designed to find out the impact of corruption, political instability and expropriation risk on quality of education in the presence of two control variables i.e. population and literacy rate, the results of this study have been discussed here. When the hypotheses of this study were examined, the first hypothesis that corruption has significant impact on quality of education was accepted by the results of the study. This result has also been presented in a previous study (Heyneman, Anderson, & Nuraliyeva, 2007). The next hypothesis that political instability has significant impact on quality of education was also accepted and is in accordance with a past study (McLendon, Deaton, & Hearn, 2007). The last hypothesis that expropriation risk has significant impact on education quality has also been accepted by the author. This is the same results as shown by another past study (Durnev & Guriev, 2011). In the last, the control variable, population has also been found to have a significant impact on quality of education which is in concordance with a past study (Maeshiro et al., 2010).

b. Conclusion

In this study, the impact of three aspects i.e. corruption, political instability and expropriation risk has been studied on education quality. The above mentioned three aspects have great significant in the government or political system of any country. For research purpose, the author has collected data about the above-mentioned aspects along with two control variables, population and literacy rate from different Asian countries for 30 years. This data was then analyzed by using various tools and techniques such as unit root test, cointegration test, coefficient estimation test and Granger casualty test. The results of these tests presented that three aspects that have been discussed earlier i.e. corruption; political instability and expropriation risk have significant impacts on education quality. In addition, population, the control variable has also been found to have significant impact in this regard. The results of casualty test also show that there are some casual relationships between the variables that are included in this particular study. Some implications and limitations have also been discussed by the author in the study.

c. Implications

Several implications in context of theory, practical and policy making have been recognized by the author. In this regard, this study provides a detailed literature about corruption, political instability and expropriation risk as well as their impact on quality of education. This will provide information to other researchers that may help them in their own studies. This study may also provide assistance to the educational institutes to save themselves from the aspects such as corruption, political instability and expropriation risk in order to increase the quality of education. Moreover, it will also provide assistance to the government officials for policy making in order to devise policies that put an end to corruption, political instability and expropriation risk so that the quality of education may be enhanced.

d. Limitations and Future Research Indications

There are some of the limitations that have been recognized by the author and some suggestions to improve them have also been discussed. The sample size of the study has found to be very small and can be increased by the other researchers in their own studies. As this study revolves around the Asian countries, other researchers may collect data in context of other regions or countries as well. They may also use other tests and variables that have not been used in this particular study. This will have positive impact on their studies and researches and may improve them effectively.

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