JUDGING QUALITY OF EDUCATION FROM SOCIAL PARADIGM IN ASIA: EFFECT OF CIVIL LIBERTIES, REGULATORY QUALITY AND VOICE AND ACCOUNTABILITY

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Abstract. The present study attempts to examine the impact of Civil Liberties, Regulatory Quality, Voice and Accountability along with Literacy rate and Population growth on quality of education. For this research, the panel data has been collected over the period of 28 years for 9 Asian countries from World Bank and Global Economy data base. The data is specific to employed variables. After the completion of data collection, several tests were applied in order to test the hypotheses using the system GMM approach. The tests include LLC unit root test, diagnostic tests of Heteroskedasticity, Autocorrelation, Cross-section dependence and Multicollinearity, and the estimation of static and dynamic GMM. The results show that, civil liberty, regulatory quality, literacy rate and population growth significantly impact the quality of education in Asian Countries. Whereas, the insignificant impact of voice and accountability was evidenced from outcomes of the research. Also, the study embraces several theoretical, practical and policy making implications for the government to improve the quality of education and devise the policies for its regulatory controls and the policies of civil liberties to its citizens along with the effective controls for accountability. In the last, various limitations have been given along with the recommendations for in-depth findings by the future researchers.

Keywords: Quality of Education; Social Paradigm; Civil Liberties; Regulatory Quality; Voice and Accountability; Asia

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1. Introduction

Education is the backbone of economic prosperity and plays fundamental role in the political and social growth of any nation (Jermstittiparsert & Sawasdee, 2012; Baltgailis, 2019; Girdzijauskaitė, Radzeviciene, Jakubavicius, 2019; Humbatova, Gadim-Oglu Hajiyeve, 2019). Amid enough interest in human capital, no nation can achieve realistic financial reform (Lane, 2012). Education enhances people's perception not just of themselves, but of culture as well, which is fairly significant. It improves the quality of living and offers people and society economic advantages. Education is accepted as a fairly basic human right. Given the value of education, the Transparency International 2017 literally had alarming estimates in a definitely major way. As shown by Transparency International, 66% of countries have literacy levels below the average score of 43. Amongst the worst cases, Central Asian countries have an average literacy rate of 34. South East Asia for the most part is among most populated areas of the world yet quality of education in this region is very poor. A range of factors, for all intents and purposes such effect of civil liberties, regulatory quality and voice and accountability (Roser & Ortiz-Ospina, 2016). A country's success, progress and advancement are conceivable just when its residents are dynamic, ambitious and capable (Bassok,

Fitzpatrick, Greenberg, & Loeb, 2016; Ossiannilsson, Williams, Camilleri, & Brown, 2015). Without such residents, a country can't accomplish progress in any field and education is the most significant instrument to make such sorts of residents. Advanced education assumes an imperative job in a nation's general improvement and development (Spring, 2012). Civil liberty like guardians must be allowed to pick the instruction that is best for their children, regardless of where they live or the amount they gain. Teachers must be allowed to decide their very own educational programs and techniques and allowed to set their very own costs and pay. Schools must be allowed to improve and contend to pull in and hold understudies. Teachers and students are entitled to take advantage of their achievements and forced to suffer penalties for their mistakes because the process of profit and loss promotes creativity, productivity and the diffusion of good practices (O'Loughlin, 1995). To ensure the regulatory quality and accountability, national governments over various parts of the globe need to from one perspective grow advanced education enrolments and then again guarantee high calibre in instructing and research so as to ensure their advanced education frameworks can contend universally. Numerous Asian states have been in the front line of this push to improve national intensity by raising their advanced education enrolment rate. As state financing and arrangement alone won't fulfil the developing requests for advanced education, governments in Asia embrace all the more genius rivalry strategy instruments and progressively look to the market/private divisions in running advanced education (Mok, 2008). See figure 1 below.

Figure 1. Graph shows the freedom of education in Asian countries.

Despite the various affords done by the governments of Asian countries, level of quality of education is declining in developing countries of Asia. To increase the quality of education government of Asian countries are working on civil liberties, regulatory quality and voice and accountability. A lot of work is done and much more is needed in these factors to improve the quality of education. 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 civil liberties on the quality of education.
2. To analyse the impact of regulatory quality on the quality of education.
3. To analyse the impact of accountability on the quality of education.

In the present study, we discuss the impact of on civil liberties, regulatory quality and voice and accountability 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

On the advent of two ideologically opposed academic "sects" at the late nineteenth century. One, what he called "new," emphasized the sanctity of the child's rights to independence, creativity, and development. Another, the "ordinary," focused on training and skills learning, command, focus, order. The phrases "child-cantered" and "non-child-cantered" accurately describe these philosophies (Dewey, 1902). Child-centeredness seems to be founded on a faith in the inherited superiority of the kids. This means a desire for independence of growth, freedom of choice and behaviour, freedom to participate in intuitive activities such as recreation, freedom to pursue unorganized learning environment, right to express one's desires in the hope that they will be fulfilled. Non-child-centeredness appears to be based at rejection of inherent goodness and suggest reciprocal desires for control and power, conditioned and acquired behaviour. In the present era, freedom of education is the right of the student (Hampton, 1993; Patrinos, 1990).

2.1 Impact of effect of civil liberties on the quality of education

The Global Index Freedom of Education illustrates the need for a growth of education systems in the presence of civil society. In general, it is important to establish, for the most part, a tool to measure civil society interest in the enforcement of the right to education, which is fairly important (Zeichner & Conklin, 2017). Global Index Freedom of Education reported that the national community of the Arab States is very much the least of the five. In a global perspective, the quality of learning of the Arab States means (45.44) is much lower than the average of the other four national groups and is usually far below the global average (55.26). Such an estimate is generally found only in Lebanon and Jordan, with a slight difference of 4 and 2 points on average (Anser, Zhang, & Kanwal, 2018; Gong & Yi, 2018; Olasupo & Idemudia, 2017; Tight, 2019). While considering a few of the essentially possible reasons for this difference among nations, the first thing that comes to mind is not just the various levels of governance, but also the influence of the Syrian civil war, which is quite despite popular belief (Immenkamp, 2017). The Asia and the Pacific area spread a wide scope of nations with significant contrasts among their societies and instructive frameworks which can clarify the aberrations of opportunity of education results. Their regional mean of freedom score is 55.49, the second most noteworthy after the European and North American one, and it is additionally over the worldwide mean of 55.26. Among the nations with the most elevated freedom score are the New Zealand (65.84), Australia (70.74), Timor-Leste (66.02), Korea (70.81) and Singapore (64.11). On the contrary side, Malaysia (47.46), Afghanistan (29.95) Kazakhstan (44.67), Papua New Guinea (42.13) and Pakistan (83.63) are the ones with the least freedom score (Jitmaneeroj, 2017). Thus, above mentioned statistics suggest positive impact of civil liberties has positive impact on the quality of education.

H1: Civil liberties have positive impact on the quality of education.

2.2 Impact of regulatory quality on the quality of education

Chan et al and Yang et al., (2012) reported the case of Hong Kong that how the government implemented the regulations and policies during the financial crisis when it became part of China as an administrative sector. The Chinese government undertook a thorough review of tertiary education and decided to build a wisdom-based society in Hong Kong. The state tried to expand tertiary education enrolment by almost increasing the number of college graduates accepted to tertiary education programs in order to reach such a strategic goal. With limited resources, however, the state should focus on many other non-state funding outlets and other semi-state sectors (such as educational institutions abroad) to meet increasing tertiary education requirements (Chan, 2007; Yang, 2006). John Hawkins et al and Mok et al; Furthermore, institutions in Hong Kong have become more competitive in general and scholars are under pressure to perform with scarce resources more intelligently and faster (Hawkins, 2010; Mok, 2005). Lee & Gopinathan et al., stated that the administration of Singapore aggressively guides the growth of

the city-state tertiary education market. Early throughout the 1990s, developing higher education as a market was one of Singapore's strategic goals. The government implemented a project in 1998 to encourage more than ten 'world-class' institutions to establish significance in the country. A new policy called 'Creating Singapore's Education sector' was released in 2002, making attempts to grow education in a Singapore. (Lee & Gopinathan, 2005). Morshidi et al., reported that looking at the reforms at Singapore, consequently the Malaysian government has updated its legislation on private university education to promote the development of private institutions of higher learning; while public universities have gone through corporate processes but are now becoming more competitive by providing self-funded programs and franchising their programs to private institutions (Morshidi, 2006). Above mentioned studies strongly suggest that regulatory quality has positive impact on the quality of education.

H2: Regulatory quality has positive impact on the quality of education

2.3 Impact of voice and accountability on the quality of education

Levi-Faur & Jordana et al., (2013) In reaction to increasing pressure from the modernization movements, western states have tried to recreate themselves by going further than the social welfare system and becoming the country with increasing competition (Levi-Faur & Jordana, 2005). As per Philip Cerny, 'the state of competition has sought intensified advertising to make financial operations situated inside the national territory, or otherwise adding to country's wealth, more productive and transnational circumstances (Cerny, 1997). Countries across the world, experiencing similar competitive pressures, have pursued structural changes such as privatizing and corporation state-owned companies and publicly owned institutions like the postal service and schools, entering new opportunities for different providers or introducing new regulatory regimes under the oversight of independent regulators. Modern states can defund some fields while maintaining regulation in others, thus becoming a mediator or even a producer of trade to increase the efficiency of public policy (Anderson & Planning, 2005). It is therefore normal to see how the degree and function of re-regulation and re-centralization of business reform cycles is followed by the advent of powerful regulatory structures and the role of innovative states. Most specifically, the behaviour and task of the system of competition do not inevitably lead to the withdrawal of the government from the economy, but rather to the reaffirmation of the state's position in evolving socioeconomic circumstances (Odhiambo, 2011; Oldfield & Baron, 2000; Pfeffer, 2015). Thus, above mentioned studies suggest that voice and accountability of organizations increase completion thereby improves the quality of education.

H3: Voice and accountability have positive impact on the quality of education.

3. Methodology

3.1 Data

In a research process, the collection of data is the crucial step, which provides the foundation for conducting and initiating the research. It is essential to collect the accurate data by following the systematic procedure in order to get the results authentically. In view of the importance of data, the present study collected the panel data of 9 Asian countries comprising Bahrain, Bangladesh, India, Thailand, Indonesia, Malaysia, Vietnam, Japan and Pakistan for the period of 28 years. The data has been collected by the author from trustworthy and reliable sources. The database of World Bank and Global Economy Portal was utilized for gathering the information about the incorporated variables. It has been ensured that data is reliable as it determines the degree to which the obtained results are authentic. The key variables of the study comprise of Civil Liberties, Regulatory Quality, Voice and Accountability and quality of education.

3.2 Model Specification

After the collection of reliable data, the specification of research model is another vital step in the research process. The determination of regression equation and the model provides the basis for analyzing the data. The equation is formulated on the basis of representations for included variables and their measurement units. In order to specify the model, the current study discussed the incorporated variables by classifying them into dependent, independent and control variables separately with their notations and measurement criteria. The dependent variable of the study is Quality of education (QE), while the independent variables are Civil Liberties (CL), Regulatory Quality (RQ), Voice and Accountability (VA). Similarly, the control variables are literacy rate (LR) and population growth (PG). The incorporation of these variables is based on the objective of determining the impact of independent variables on the dependent variable, and the role of control variables. The following units are utilized for the measurement of variables. The variable Voice and Accountability is the aggregate indicator which reflects the degree of perception of citizen's participation in selection of government, freedom of expression, and association. It is measured in units of standard normal distribution, which ranges from -2.5 to 2.5. Similarly, Civil liberty was measured through Freedom House Index scale ranging from 1 to 7. In the same way, the variable Regulatory quality is measured with the regulatory quality index on a scale ranging from -2.5 to 2.5. The literacy rate is measured with the percentage of educated citizens and the population growth is measured in terms of annual percentage change. Likewise, the quality of education is measured by global competitiveness index on quality of education system with a scale of 1 -7. With the incorporation of above-mentioned units and notations, the following regression equation is formulated:

$$QE_{it} = \alpha + \beta_1 CL_{it} + \beta_2 RQ_{it} + \beta_3 VA_{it} + \beta_4 LR_{it} + \beta_5 PG_{it} + \varepsilon_{it}$$

In the above equation, QE shows quality of education, CL shows civil liberty, VA shows Voice and Accountability, LR denoted Literacy rate and PG denotes Population growth, while ε_{it} is representing the error term.

Authors	Country/Group	Period	Variables	Methodology	Results
(Shahabadi, Salehi, & Hosseinidoust, 2018)	Islamic countries	2007-2015	Economic growth, quality of education, brain drain, competitiveness, human capital, institutional quality, civil liberty.	Generalized Methods of Moments (GMM) approach.	Positive relation between Economic growth and quality of education was observed, with significant impact of competitiveness and human capital. Also the significant association was found between competitiveness and brain drain.
(Asongu, Orim, & Nting, 2019)	42 countries in Sub-Saharan Africa	2004-2014	Inequality, inclusive education, information and communication technology.	GMM approach	Significant association was evidenced between income inequality, access to information technology and inclusive access to education.
(Afolabi, 2019)	West African countries	2002-2016	Governance, voice and accountability, regulatory quality,	System GMM approach	The results show that voice and accountability,

government
effectiveness
,institutional
development,

political stability,
government
effectiveness are
positively related to
development.

3.3 Estimation Procedure

The details of the applied estimations and procedures and approaches are discussed in this section. The applied test comprises of unit root test and General Methods of Movement (GMM) estimations.

3.3.1 Unit root test

For the confirmation of stochastic attributes of the variables, in addition with their integration orders, the unit root tests of “Levin–Lin–Chu (LLC)” (Westerlund, 2009) is applied in the current study. In comparison to the time series unit root tests, these tests have advantages of overcoming the problem related to size and power of technique of individual time series. Also, it is mentioned in the literature that for a standard normal distribution, the panel root test statistics is convenient. This test is the extended form of Dickey-Fuller unit root tests utilized in time series approach. For the LLC test, the basis of null hypothesis of the variables are considered on the assumption of unit root against the alternative hypothesis of absence of unit root in the series. In addition, it is assumed that, across the cross sections, the similar autoregressive process was followed. The following regression equation represents the structure of the unit root test:

$$\Delta y_{it} = \alpha_i + \rho y_{i,t-1} + \sum_{j=1}^{p_i} \alpha_j \Delta y_{i,t-j} + \epsilon_{i,t}$$

3.3.2 GMM approach and diagnostic tests

The generalized methods of moments are the framework utilized for deriving estimators. It is based on the assumptions about the random variable moments to determine objective function (Blundell & Bond, 2000). It is used for the estimation of dynamic models of panel data. It is proposed to resolve the problems of heteroskedasticity, endogeneity and serial correlation problems in panel data. The “GMM-SYS estimator” is the system which contains the level and first difference equations. Which is the alternative of “standard first difference GMM estimator” (Arellano & Bond, 1991). The following GMM model is used by the current study:

$$v_{it} = \alpha_i + y_{i,t} + \sum_{p=1}^p B + \sum_{q=1}^q B + \sum_{r=1}^r B + E_{i,t}$$

It is evidenced in the literature that the regression models of panel data are exposed to problems of heteroskedasticity, autocorrelation and cross section dependence along with multicollinearity. To address these problems of cross section dependence, autocorrelation, and heteroskedasticity, the model is tested for “modified Wald and Breusch-Pagan/Cook-Weisberg heteroskedasticity test, Wooldridge test for autocorrelation, VIF test for multicollinearity and cross-section dependence test” of (Pesaran, 2004). Also, the correlation among variables is examined for determining the relationship among variables.

4. Empirical Analysis

4.1 Results of Unit Root Test

In order to identify the stationary properties of the data which have been collected for the analysis, the author applied LLC (Levin Lin Chu) test. The results of the test are presented through table 1. The presented results are based on the rejection and acceptance of null hypothesis for level and 1st difference both. When LLC test was applied, all the variables in the level series were found to be stationary except PG which is non-stationary. But when the 1st difference is applied, all of them become stationary. So, all these facts and results show that all the variables that are included in this study are stationary.

Table 1. LLC unit root

Constructs	CL	RQ	VA	PG	LR	QE
Level	-1.727	-0.983	-3.359	-2.237*	-0.483	-8.485
1 st difference	-2.301**	-2.982***	-7.385***	-6.584***	-7.459***	-9.498**

Table 2. Correlation Matrix

Variables	CL	RQ	VA	PG	LR	QE
CL	1					
RQ	.482	1				
VA	.377	.432	1			
PG	.538	.537	.299	1		
LR	.284	.283	.328	.428	1	
QE	.367	.482	.482	.348	.353	1

above mentioned table of correlation matrix indicated that the association of CL with itself is 1, with RO is .482, with VA is .377, with PG is .538, with LR is .284 and with QE is .367, and similar among every variables matrix are shown.

4.2 Results from PCSE estimation

The current study performed two major techniques to mitigate the issues of cross section dependence, heteroskedasticity and determination of robust standard errors. The static estimation by using “Prais-Winsten regression” was performed with “correlated PCSE and dynamic estimation” by utilizing the “one step system GMM estimation”. It is required to incorporate the dynamic and static estimation in order to ensure that the findings are robust. The country and time fixed effects are applied for capturing the heterogeneity which is unobserved. The assumption of “PCSE estimation” is that across the panels, the disturbances are contemporaneously correlated and possess heteroskedasticity and have the ability to handle the panel which is unbalanced.

For the GMM approach application proposed by (Arellano & Bover, 1995; Blundell & Bond, 2000), for addressing the problem of endogeneity, the dependent variable’s lagged values are used. The literature emphasized the importance of “first-differenced GMM and “system GMM” approach (Blundell & Bond, 2000). It is identified that the 1st differentiated model is not effective in providing the accurate results in the presences of small sample size. And it is highlighted by (Bond & Windmeijer, 2002) that system GMM application provides the accurate results with the high accuracy, due to the utilization of large number of instruments, and the connection of in the levels regression with the regression in first-difference. In addition, the system GMM model is applied as it addressed the sample size bias along with the improved precision of the model.

The results of estimations (dynamic and static) are presented in table 4. It is shown from the results that CL is significant indicating that Civil liberty has significant impact on quality of education. Similarly, it is shown that

(RQ) Regulatory quality also had a significant impact on the quality of education in Asian countries. In the same way, the variable (PG) Population growth and (LR), literacy rate also indicates significant impact on quality of education in countries of Asia. Contrary, no significant impact of Voice and accountability on the quality of education is observed from the results.

Table 3. Results from PCSE estimation

Dependent Variable = QE	PCSE estimation	Sys-GMM estimation
CR	0.287** (0.276)	0.261** (0.476)
RQ	0.183* (0.492)	0.193** (0.283)
VA	0.029 (0.687)	0.031 (0.572)
PG	0.201** (0.371)	0.219** (0.294)
LR	0.284** (0.248)	0.274** (0.285)
Constant	3.278** (0.943)	0.637** (0.849)
R^2	0.718*** (0.839)	-
<i>No. of Observations</i>	252	-
<i>No. of Instruments</i>	-	250
<i>No. of Observations</i>	-	250
<i>Arellano-Bond test for AR (1) (Pr W z)</i>	-	0.042
<i>Arellano-Bond test for AR (2) (Pr W z)</i>	-	0.236
<i>Hansen test of overid restrictions</i>	-	1.380

4.3 Results of Diagnostic checks

For obtaining the accurate statistical inferences, the diagnostic checks are applied on the data with the application of modified Wald and Breusch-Pagan/Cook-Weisberg heteroscedasticity test, Wooldridge test for autocorrelation, VIF test for multicollinearity and cross-section dependence test developed by Pesaran (2004). Table 2 and 3 show the results of diagnostic examination of the model. The results show the significant heteroskedasticity levels and among the variables, the cross-section dependence is observed.

Table 4. Diagnostic checks

Heteroskedasticity	Autocorrelation	Cross-section dependence	Multicollinearity
Modified wald	Wooldridge	Pesaran	VIF
Breusch-Pagan/Cook-Weisberg			
χ^2 -value: 11.37**	F-statistic: 4.83*	Test statistic: 3.841**	Mean VIF: 1.48
χ^2 -value: 6.28**			

5. Discussion and Conclusion

5.1 Discussion

The present study is conducted in order to investigate factors that affect the quality of education in Asian countries. For this purpose, the impact of Civil Liberties, Regulatory Quality, Voice and Accountability is examined on the quality of education. Also, the impact of control variables i.e Literacy rate and Population growth is also analyzed. Multiple hypotheses have been formulated to investigate the relationships. For hypothesis testing system GMM approach was applied. It was assumed that the degree of civil liberty provided by the government in Asian countries have significant impact on the quality of education. This hypothesis was accepted as the liberties provided by the government in form of freedom of religion, speech, freedom to petition the government and the freedom of press, encourages the public participation in policy development and the development of institutions and education growth as the civil liberties are the cornerstone of democracy. The results are consistent with the findings of (Agbaria, 2015). The next hypothesis was that Regulatory quality rate has significant impact on quality of education, this hypothesis was also accepted as the regulation and rules designed for the functioning of education system and their monitoring results in prominent improvement in education sector and also contributed in high systems of education quality, the regulatory quality also determines the effective quality controls and standards for the education and thus contributed towards the quality of education. The results are consistent with the study of (Delva et al., 2019). The other hypothesis was that voice and accountability has certain significant impact on quality of education. The author has tested this hypothesis and has declared it as rejected as the ineffective external monitoring was observed. Also, the impacts of two control variables i.e Literacy rate and Population growth in influencing quality of education have also been found as significant. As the high literacy rate leads towards educated citizens and human capital and led towards the overall improved education system of the country, the effective mechanism for increasing the literacy rate should be devised. These results are also in accordance with previous studies of (Lim, 2018; Pau & Saha, 2017).

5.2 Conclusion

The motive of the study is the investigation of factors that impact the quality of education in Asian countries. This had been studied with analyzing the impact of Civil Liberties, Regulatory Quality, Voice and Accountability along with Literacy rate and Population growth. For this research, the panel data has been collected over the period of 28 years for 9 Asian countries from World Bank and Global Economy data base. The data is specific to employed variables. After the completion of data collection, several tests were applied in order to test the hypotheses using the system GMM approach. The tests include LLC unit root test, diagnostic tests of Heteroskedasticity, Autocorrelation, Cross-section dependence & Multicollinearity, and the estimation of static and dynamic GMM. The purpose of these tests was to examine the impact of incorporated variables on the quality of education. In the last, various limitations have been given along with the recommendations to resolve and improve them effectively by the future researchers.

5.3 Implications

An important sector i.e education was examined in the study with role of civil liberty, regulatory quality, voice and accountability, literacy rate and population growth. Based on the research objective, the study embraces several theoretical, practical and policy making implications that will improve the education quality in the examined countries of Asia with the participation of citizens with high degree of civil liberty, effective regulator controls, literacy rate and population growth. The study will provide assistance to future researchers in understanding the determinants for judging the quality of education throughout the world. Also, the study will guide the governmental authorities to re-evaluate their policies in terms of given civil liberty to its citizens, along with the effective monitoring mechanisms for accountability of the given obligations to promote the education quality. In addition, it

is indicated that literacy rate determines the quality of education, it is suggested to devise policies for upgrading the education system and enhancing the literacy rate of the country.

5.4 Limitations and Future research indications

Like many other studies, this study is also not free from certain limitations and loopholes, which can be effectively filled by future researchers to improve the quality of their researches. The sample size of data can be increased to determine more comprehensive results. The study is concentrated on Asian countries only, the specific tests have been used in this study which limits the scope of the study. For covering the stated limitations, the researchers can increase the sample size of the collected data. Any other region, Other than Asia can also be used along with panel data approach for increasing the study scope.

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