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Original Article

An Examination of Educational Institutions, Economic Development, and Developing Country Growth

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Abstract

The purpose of this project is to undertake an experimental and theoretical investigation into the interrelationships that exist between institutions, educational advancement, and economic expansion by utilizing panel data collected from 1996 to 2017. For the purpose of estimating the outcomes in developing countries, the panel data were put through a two-stage least squares (2SLS) regression analysis. In place of institutions, the rule of law, political stability, the lack of violence, and the control of corruption were put into place. According to the findings of an investigation, the expansion of the economy had a constructive and considerable impact on the areas of education, political stability, the management of corruption, and the lack of violent crime. It is possible to notice positive and significant benefits on education that are brought about by political stability, the rule of law, the absence of violence, and the fight against corruption among other factors. Conversely, education exerts a large and harmful influence on economic growth and the rule of law, whereas it does so in a positive and consequential way on political stability and the lack of violence. Therefore, the findings indicate that educational institutions make a beneficial contribution to economic growth, and that the majority of the discrepancies in educational achievement that exist between countries may be attributed to the fact that there are variances in the quality of the institutions.

Keywords: Educational Institutions, Economic Development, Developing Country Growth

Introduction

The factors that contribute to the differences in economic development and growth that exist between countries are a topic of discussion in the field of social science. What are the variables that contribute to the difference in prosperity that exists between countries? What factors contribute to the economic standstill that occurs in some countries while other countries experience higher growth rates? It is generally acknowledged by economists that there is a connection between the level of human, physical, and technological capital in a nation and the level of income that is per capita in that nation. Through the usage of research, instruction, and training, education facilitates the transmission of ideas, skills, and information from one generation to the next, as well as the enhancement of production and efficiency. An endogenous growth model is one that, according to Romer (1990), postulates that the model itself is responsible for determining the long-term development of the organism. The generation of innovative ideas, according to his hypothesis, is inextricably tied to human capital and is typically evaluated using measures that are related to education. Furthermore, the notion underlined the method in which a knowledge-driven economy generates favorable externalities that support general economic expansion. Nevertheless, these are simply proximate reasons in the sense that they raise the question of why certain nations have lower levels of technology, human capital (which includes education, training, and skills), and physical capital than others. What are the factors that contribute to certain countries' insufficient utilization of their resources and advantages on a global scale? In spite of the fact that these hypotheses shed light on the most significant differences that exist between countries, there is still a need to identify plausible elements that can explain for the discrepancies in physical, human, and technological capital. The thesis that is being presented here proposes that the quality of institutions is the primary factor that determines the differences in economic growth and development that exist between nations. North (1991) provides a definition of institutions that states that institutions are made up of constraints that are both officially recognized and unofficial. Property rights, constitutions, and laws are examples of formal regulations. On the other hand, taboos, conventions, traditions, punishments, and codes of conduct are examples of informal limits for behavior. At the end of the 1960s and the beginning of the 1970s, North provides criticism of neoclassical economic theory, arguing that it fails to acknowledge the

relevance of institutions. Through the incorporation of institutional functions, the incorporation of institutions into economic models, and an awareness of political processes, it is possible to achieve a more thorough understanding of the myriad difficulties of economic development in nations that are located in the Third World. The impact of institutions on economic performance is now firmly entrenched in the economic policy plans of a great number of emerging nations as a direct outcome of the fields of institutional economics and institutional economics. Consequently, institutional economics provides a number of different explanations for the inequalities that exist between the economic performance of rich countries and developing countries. There are a number of studies that provide evidence that the quality of institutions is essential for the effective operation of a market economy, as well as for the economy's continued growth and improvement. A theoretical and empirical investigation into the relationships that exist between institutions, educational opportunities, and economic expansion in emerging nations is carried out through this study. The following is the structure of the subsequent sections of the research paper: Section 2 provides an overview of the relevant literature; Section 3 outlines the research design and methodology; Section 4 presents the findings and subsequent discussion; Section 5 concludes the study; and Section 6 concludes with recommendations. There are a total of six sections in the research paper.

Literature Review

Education and economic progress are inextricably intertwined, according to the viewpoint of an individual who supports this stance. Researchers from a wide range of academic institutions, such as Mincer (1984), Galor and Tsiddon (1997), Asteriou and Agiomirgianakis (2001), Baldacci, Clements, Gupta, and Cui (2008), Isola and Alani (2012), and Oancea, Pospíšil, and Drăgoescu (2017), have proposed that the stock of human capital (education) has a significant impact on economic development. After adjusting for the possibility of measurement error, Krueger and Lindahl (2001) discovered that an average number of years spent in school was a favorable indication of economic development. This was found to be the case after the researchers made the necessary adjustments. In accordance with the recommendations made by Lee and Kim (2009), the only countries that have the potential to truly profit from higher education, technological advancement, and institutional development as long-term economic growth generators are those that have high incomes or upper middle incomes. In

countries with lower incomes, it was discovered that institutions and secondary education make a substantial contribution to the growth of those countries. In spite of the fact that there is compelling data that supports a positive association between education and economic development, there is still a lack of consensus among academics, and the discussion is still going on. Both Appiah and McMahon (2002) and Costantini and Monni (2008) came to the conclusion that the relationship between education and economic growth is inverse. This was the conclusion reached by both study groups. Pritchett (2001) found that there was a statistically significant negative link between economic growth and human capital (education). This correlation was established as a result of that there was an inadequate quality of educational and institutional institutions. On the other hand, a small number of studies have observed that there is no significant association between education and economic growth. After conducting their investigation, Benhabib and Spiegel (1994) came to the realization that although human capital does not have a substantial impact on the rates of increase in per capita income, the accumulation of human capital within a country determines the rate of development of total factor productivity. According to Rogers (2008), human capital is rendered irrelevant in the process of setting income levels because of the inability to utilize education in a manner that provides both productive and profitable results. According to Wang and Liu (2016), whereas elementary and secondary education have a minor impact on economic growth, postsecondary education has a considerable and beneficial influence. This is in contrast to the effect that primary and secondary education have. The integrity of institutions has been shown to be correlated with economic growth in recent years, which has led to the establishment of this link. As established by Keefer and Knack (1997), the quality of the institutions that are present in poor nations (corruption, rule of law, contract rejection, and the risk of expropriation) causes these countries to regress rather than develop.

As Acemoglu, Johnson, and Robinson (2001) have noted, discrepancies in colonial experiences could potentially be attributable to differences in institutional makeup. This is something that could be explored further. It has been noticed that countries that have a historical background of Western European influence and a foundation in British mutual law have better governance. This is according to Al-Marhubi (2004). According to the findings of research conducted by Eicher, Garca-Pealosa, and Van Ypersele (2009), institution-led

development is only available in countries with a high level of education and is associated with extreme inequality around the world. Education is propelled to the forefront of development when there is a more equitable distribution of money and resources. As to the findings of Law, Lim, and Ismail (2013), the relationship between institutions and economic development is not only bidirectional but also fluctuates depending on the socioeconomic class of the individuals involved. In countries with greater incomes, the quality of institutions acts as a driving force behind economic development. On the other hand, in countries with lower incomes, it is likely that economic advancement will lead to an improvement in the quality of institutions. A comprehensive analysis of political institutions was carried out by Flachaire, García-Peñalosa, and Konte (2014). Concurrently, they constructed a conceptual framework that outlines the functions of economic institutions. Only a handful of research have shed light on the connections that exist between educational institutions and educational programs. According to Osipian (2009), there is a connection between the partial privatization of higher education and an increased vulnerability to corruption. This increased susceptibility can be linked to the exploitation of those who are privileged and the supply of inadequate recompense. According to Rontos, Syrmali, and Vavouras (2015), individuals who possess greater levels of education are held to a higher standard of expectation in terms of their capacity to participate in public decision-making and their access to institutions of better caliber. This is said to be the case because of the higher degree of education that they hold. According to Bouzahzah, Asongu, and Jellal (2016), positive economic development is enhanced by both the accumulation of human capital and the strength of institutions. Both of these factors contribute to the growth of the economy. They placed a strong emphasis on the positive and direct correlation that exists between increased production and higher levels of education. As a consequence of this, the quality of the institution enjoys a dual advantage, which has been suggested as a key advantage for the growth of educational practices. Within the scope of this study, there is no actual proof. In spite of the overwhelming body of evidence that demonstrates a favorable association between education and economic development, academics continue to exhibit a degree of disagreement. Appiah and McMahon (2002), Benhabib and Spiegel (1994), Costantini and Monni (2008), and Rogers (2008) are only a few of the studies that have come to the conclusion that the association between education and economic growth is either negative or inconsequential. On the other hand, other

research has demonstrated that there is a positive correlation between education and economic growth (Asteriou & Agiomirgianakis, 2001; Baldacci et al., 2008; Krueger & Lindahl, 2001). There was a significant amount of diversity between countries in terms of the exogenous factors that were utilized in these investigations. Over the course of the last several decades, a whole new academic field has emerged, and its primary focus is on the investigation of the ways in which the quality of institutions influences the results of development and progress (North, 1991). It is hypothesized that variations in the policies and institutions of the government will lead to variations in the levels of income, education, and productivity. In the course of their parallel operations, these three lines of inquiry concerning institutions, education, and economic progress have not been acknowledged by one another. It is because of the controversial argument that surrounds the institutional repercussions of educational inequalities that the association between institutions, education, and economic growth has not been investigated in a systematic manner. According to the findings of previous research, it has been predicted that either the level of educational attainment or the quality of institutions has an effect on the rate of economic growth. As a result of the present study's comprehensive evaluation of an empirical correlation between economic growth rate, educational attainment, and institutional quality, it will make a contribution to the existing body of knowledge by exhibiting the systematic nature of the link that exists between these three variables. It argues that the quality of institutions is the ultimate factor that determines the differences between countries.

Research Methodologies

The process of attempting to define institutions is difficult since quantifying them is difficult. In 2005, Durlauf, Johnson, and Temple conducted a survey in which they discovered that the rule of law, political stability, protection of property rights, and low levels of corruption are all essential for encouraging economic expansion. This is despite the fact that there is a great amount of diversity in the definition of an important institution.

Methodology

In order to approximate the simultaneous model that was discussed earlier, the 2SLS approach will be utilized to solve equation by equation. Within the context of 2SLS estimates, there is an increase in consistency and a decrease in simultaneity bias. The Sargan-Hansen test is utilized in the process of estimating panel data in order to determine whether or not there

are over-identification limitations present. In the current investigation, the null hypothesis about the estimation of instrumental variables is evaluated. This hypothesis proposes that the instruments are, in fact, excluded from the equation that is being estimated and that they do not demonstrate any association with the error term. It rebuts any concerns that may have been raised about the dependability of the devices. When several estimate approaches are used to the same equation, the Hausman test can be more intuitively viewed as a test of the consistency (or consequence) of endogeneity. This is in contrast to the traditional interpretation of the Hausman test, which is an evaluation of the exogeneity or endogeneity of regressors to be determined. It is possible to investigate endogeneity in this manner by employing the Hausman test (Baum, Schaffer, & Stillman, 2003).

Results and Discussion

The following sixty-six developing economies have been selected in accordance with the classification of the International Monetary Fund: Argentina, Armenia, Azerbaijan, Belarus, Belize, Bhutan, Bolivia, Bulgaria, Brazil, Botswana, Burundi, Cambodia, Cameroon, Chad, Colombia, Cuba, Djibouti, Eritrea, Dominican Republic, Guinea-Bissau, Guinea, Honduras, Haiti, Indonesia, Kenya, Kazakhstan, Lao People's Democratic Republic, Lebanon, Malawi, Malaysia, and Mauritius. Institutions are exemplified by the assertion of control over corruption, political stability, the rule of law, and the absence of violence. In the context of education, surrogate measures include enrollment rates in primary, secondary, and postsecondary education.

Table 1: Effect of economic growth and institutions on education

Variables	2.1 Tertiary enrolment EC2sls	2.2 Secondary enrolment EC2sls	2.3 Primary enrolment EC2sls	2.4 Tertiary enrolment EC2sls	2.5 Secondary enrolment EC2sls	2.6 Primary enrolment EC2sls	2.7 Tertiary enrolment EC2sls	2.8 Secondary enrolment EC2sls	2.9 Primary enrolment EC2sls
Control of corruption	0.815*** (0.308)	-1.128 (0.741)	0.0692 (0.0841)						
GDP per capita	-0.106 (0.0908)	0.371** (0.160)	0.109** (0.0469)	-0.142 (0.119)	-0.00801 (0.00744)	0.00187 (0.0144)	-0.091*** (0.0295)	-0.0102 (0.00784)	-0.00488 (0.0181)
Industrial employment	0.276** (0.140)	0.498** (0.250)	0.0580 (0.0475)	0.407*** (0.123)	0.190*** (0.0421)	-0.0241 (0.0502)	0.561*** (0.117)	0.247*** (0.0535)	-0.0572 (0.0405)
Birth rate	-1.285*** (0.269)	0.419 (0.571)	0.144* (0.0847)	-0.701*** (0.216)	-0.397*** (0.0875)	0.230** (0.0926)	-0.495*** (0.177)	-0.348*** (0.101)	0.224*** (0.0724)
Urban population	-0.131 (0.0952)	0.0655 (0.0902)	0.0160 (0.0546)	-0.224** (0.103)	-0.0455** (0.0206)	-0.0514* (0.0310)	-0.242*** (0.0662)	-0.0408 (0.0268)	-0.0558* (0.0309)
Rule of law				0.443 (0.300)	0.156* (0.0814)	0.120* (0.0655)			
Political stability & Absence of violence							0.166	0.102*	0.0530
Constant	6.149*** (1.127)	-0.170 (1.923)	3.949*** (0.342)	3.587*** (0.892)	4.846*** (0.358)	4.129*** (0.365)	2.738*** (0.742)	4.495*** (0.412)	4.292*** (0.269)
Hausman probability (FEIV vs. EC2sls)	0.3098	0.2557	0.8753	1	1	0.2055	0.5760	0.6191	0.5829
Sargan–Hansen probability	0.0709	1	0.4638	0.1682	0.9022	0.2242	0.134	0.9399	0.2596
Observations	714	818	592	731	517	543	658	479	386
Countries	62	65	52	65	51	49	58	50	50

Note: Standard errors are given in parentheses, *p < 0.1, **p < 0.05, ***p < 0.01.

The time factors shown in Table 1 had substantial influences (1.1, 1.4, and 1.5) in the 2sls regressions that were conducted. According to the Hausman test of probability in regression 1.1, the results for FE-RE are 0.9918, while the results for EC2sls-RE are 0.00. The findings of the Hausman test of probability in 2sls regression 1.2 for FE-RE are 0.7851, whereas the results for EC2sls-RE are 0.00 with regard to the probability. The Hausman test of probability yielded the following results in 2sls regression 1.3: 0.0061 for FE-RE and EC2sls-RE, and 0.0029 for FEIV-FE. These results will be discussed further below. When conducting 2SLS regressions 1.1 and 1.2, the variables that are utilized are the birth rate, industry employment, gross capital formation, and natural resources. When conducting 2SLS regression 1.3, the variables that are utilized are the expansion of the urban population, civil liberty, natural resources, and industry employment. When the Hausman test of probability is performed at a value of 1.4, the result is a value of 0.00 for EC2sls-RE and 0.9448 for FE-RE in the context of 2sls regression. The results of the Hausman test of probability for FE-RE and EC2sls-RE in 2sls regression 1.5 are 0.8086 and 0.00, respectively. These values are considered to be acceptable. The Hausman test revealed that the probability values for FE-RE and EC2sls-RE in 2sls regression 1.6 are 0.6682 and 0.00, respectively. These values were derived from the test. For example, the variables that are utilized in 2SLS regression 1.4 are natural resources, civil liberties, gross capital formation, and labor force participation rate. For 2SLS regression 1.5, the variables that are utilized are life expectancy, industrial employment, and urban population. For 2SLS regression 1.6, the variables that are utilized are birth rate, labor force, and urban population. In 2sls regressions with magnitudes of 1.7,

1.8, and 1.9, the Hausman test of probability produced the results of 0.00 and 0.00, respectively, for FE-RE and FEIV-FE analyses. Among the factors that are incorporated into the 2sls regression 1.9 model are life expectancy, the labor force participation rate, industrial employment, and the urban population. Labor force participation, industrial employment, and gross capital formation are the instruments that are utilized for the 2sls regression 1.7 model. All things considered, the instruments that are utilized for the 2sls regression 1.8 model are the birth rate, the urban population, and the gross capital creation. It was shown that there is a substantial and positive association between efforts to combat corruption and the amount of money that is per capita. According to Alonso and Garcimartín (2013) and Rontos et al. (2015), a growth in economic development calls for the implementation of more stringent measures to reduce instances of corruption. The ability of a nation to successfully handle the wrongdoing and immoral behavior of public officials is enhanced by the political engagement and income of its inhabitants, according to Glaeser and Saks (2006). The conclusion that was reached was that there is a significant and inverse association between the openness of commerce and the control of corruption. Two elements are responsible for this:

Due to the growth of international trade, there has been an increase in the amount of bribe payments, which are often referred to as commissions. Government officials are bribed by corporations in order to get favorable terms over competitors, tax breaks, or first dibs on products or services. Contract losses are the result of refusing to pay bribes, and countries that acknowledge the existence of bribery are subject to pressure from the outside world to do the same. In a great number of countries, particularly those that are still in the process of developing, the functions of the government are commonly carried out through the execution of rules and regulations; in some instances, these regulations do not display transparency. According to Tanzi (1998), public authorities have the ability to postpone or prevent the implementation of decisions in order to collect bribes in exchange for essential authorization.

• According to Hisamatsu (2003), exporters that lack integrity are more inclined to engage in business with other nations that suffer from institutionalized corruption. It has been discovered that taxes have a good impact on political stability, the rule of law, the prevention of violence, and the management of corruption. Altunbas and Thornton (2011), Brautigam, Fjeldstad, and Moore (2008), and Moore (2004) all agree that

when a government makes an effort to produce income through taxation, it can improve the degree to which it is accountable to the people it serves. In accordance with the findings of this study, the absence of political rights has a negative impact on political stability, lawfulness, the ability to battle corruption, and the absence of violence. As Badinger and Nindl (2014) point out, when there is freedom of the press and when elections are carried out in a way that is both transparent and efficient, there is a greater likelihood that corruption will be discovered. After doing research, it was shown that there is a considerable and positive association between rule of law and education (both secondary and postsecondary enrollment). In the event that the political freedom and rule of law of an independent nation are regarded to be inadequate, the residents and leaders of that nation have the ability to utilize their particular expertise and understanding in order to rectify the problem (Rindermann, 2008). The relationship between commerce and the rule of law has been found to be inversely proportional; trade undermines the rule of law by expanding the income gap between different groups of people with different levels of income. According to Adams (2008) and Milanovic (2005), there is a positive association between the openness of trade and the extent of economic inequality. On the other hand, Keefer and Knack (2002) discovered that there is a negative correlation between the protection of property and contractual rights and income inequality.

The absence of violence, political stability, and secondary education were found to have a negative correlation with one another, according to that discovery. Individuals who have completed their secondary education but are either unemployed or underemployed are the ones that demonstrate the highest levels of hostility. As a consequence of this, there is a correlation between the combination of education with unemployment or underemployment and an increased chance of radicalization (Bhatia & Ghanem, 2017).

Conclusion

The field of institutional economics has shed light on the role of institutions in the technical advancement of a number of emerging countries. The establishment of empirical links between institutions, educational attainment, and economic development in developing nations was one of the primary objectives of the study. As a substitute for institutions, the rule of law, the control of corruption, political stability, and violence were deployed as surrogates. The rates of enrollment in

primary, secondary, and postsecondary education were used as surrogates for education. It has been proved that the fight against corruption is significantly and favorably impacted by per capita income, but that the opposite is not an accurate representation of the situation. The rate of enrollment in tertiary education is positively impacted by the implementation of anti-corruption measures; on the other hand, the opposite is not true. Enrollment in secondary and tertiary education is strongly and favorably influenced by the rule of law, whereas enrollment in elementary and secondary education is similarly and significantly influenced by the rule of law. The lack of violence and political stability have a significant and favorable impact on the percentage of students who enroll in secondary school levels of education. On the other hand, the elements that were described earlier have a significant and negative impact on what is known as education. Not only does economic development have a significant and positive impact on political stability and the absence of violence, but it also has the opposite effect, which is equally true. The number of students enrolled in secondary and higher education has a steady and considerable impact on the expansion of the economy, regardless of the circumstances. One of the secondary goals was to conduct an investigation of the theoretical connections that exist between institutions, educational systems, and economic growth respectively. By encouraging citizens to monitor government officials for infractions of the law and to intervene when required, Glaeser and Saks (2006) state that per capita income helps reduce corruption. This is accomplished by encouraging citizens to monitor government officials. According to Huang (2008) and Osipian (2009), corruption is a barrier to educational opportunities. The protection of state property rights is enhanced in states that have institutions that are more solid. According to Acemoglu et al. (2001), as a result of this, there has been a significant increase in both the amount of money invested in human capital and the amount of revenue. Through the utilization of their knowledge and abilities, citizens and leaders may be able to construct institutions that are more efficient (Rindermann, 2008).

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