Does Globalization Promote Human Development in Emerging Economies? Evidence from a Panel Analysis of BRICS Countries

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Abstract

This study has provided an empirical answer to the question whether globalization promotes human development in emerging economies using the case study of BRICS countries. The study subjected the annual data between 1990 and 2019 extracted from the World Bank and UNCTAD databases to econometric analysis. It is important to stress that, in the light of the empirical analyses, the study establishes the following findings: the existence of a co-integrating linkage between globalisation and human development was confirmed in BRICS countries. In the same vein, globalization components-FDI inflows as percentage of GDP and trade openness had a positive and significant relationship with human development in BRICS countries. Moreover, both capital formation and internet users had positive and significant relationship with human development. This is strong evidence that that globalization promotes human development in BRICS countries in the long run. As a result of this finding, this study makes the following recommendations for the policymakers in BRICS countries, and by extension other emerging economies that since the economic components of globalization promote human development in these countries, any time the goal of the policymakers is the achievement of human development in the long run, promotion of policies that would facilitate FDI inflows and trade surpluses simultaneously should be of the priorities by these policymakers.

Keywords: globalisation; human development; FDI; trade openness; BRICS.

JEL Classification: F43; F62; D60; O55; O15.

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Introduction

Development of human capital has always been the strategic driver of economic growth in the endogenous growth model (Mankiw et al., 1992; Galor and Weil, 2000; Romer, 1990). This makes human development an unavoidable task for policymakers in their decisions to facilitate both the national and regional development (OECD, 2010; RSA, 2013). Meanwhile, the issues surrounding human capital become more pronounced due to the recent wave of globalization among the countries of the world (UNDP, 2014; UNCTAD, 2015). However, the paradigm shift in the structure of global economy from industrial sector to the knowledge based market has orchestrated the wave of globalization to continuously intensifying in shaking all the spheres of the global economy in the past few decades (Aderemi et al., 2020; Kovářová, 2017; Pelinescu, 2015).

Meanwhile, this study focuses on the nexus between globalization and human development with a view to verifying if literature is consistent or not with the experience of BRICS countries. This study is strategic due to the fact the emergence of Brazil, Russia, India, China and South Africa in the global market cannot be undermined in the last two decades. This is because this economic bloc possesses about 42% of the world population and 32% of global GDP, in which their dominance is expected to replace the one currently enjoying by the G7 comes 2050 (Goldman Sachs, 2001; UNDP, 2014; UNCTAD, 2015). The implication of the above assertion is that a huge share of the global human resources is domiciled in BRICS economies. In the same vein, the concept of human development emphasizes beyond the expansion of economic growth, as it places more premium on the distribution of wealth, opportunities and social privileges as the benchmarks to measure real progress of any country. The principal goals of most policymakers and global development institutions are tailored towards the achievement of human development. Meanwhile, the past experience of economic growth without substantial human welfare improvement in many economies across the globe in the past decades has redirected the concern of scholars and policymakers towards inclusive growth among the countries of world. (United Nations, 2020; United Nations, 2015). And as such, development economists have replaced income criteria with the people focused criteria that is domiciled in improvement of the quality of people as the performance indicator in the evaluation and ranking of economic performance (United Nations Development Programme - UNDP, 1997).

However, the current wave of integration among various emerging economies of the world is continuously eliminating all the forms of restrictions and barriers among these countries. This has been one of the unifying factors among these economies causing the emergence of various economic blocs such as BRICS and ASEAN in the last few decades (Aderemi, Ebere, & Olayemi, 2019). Both expansion in business opportunities and advancement of digital technologies have made globalization a pertinent phenomenon in the world market (Dollar, 2001). In the recent times, besides income, the components of globalization have been established as a pertinent variable affecting human development in developing countries (Ejemeyovwi et al., 2019; Asongu and Nwachukwu, 2016). Whereas, no study, to the best of our knowledge, has established this claim in emerging economies such as BRICS. This suggests that this study is unique from the existing studies. In the same vein, it is important to stress that this research would utilize UNDP-human development index which integrates health, knowledge and decent standard of living as the strategic measurement of human development. In the light of the above, the study that would provide empirical answer to how components of globalisation affect human development becomes highly imperative in BRICS economies. Therefore, this study examines the nexus between globalisation and human development in BRICS economies.
Besides the introductory aspect in section one, the rest the study follows this structure. Section two accounts for the review of empirical studies. Whereas methodology, data analysis and discussion of results alongside with the policy implications are domiciled in section of the paper.

**Literature Review**

The theoretical foundation of globalization could find its root in the neoclassical growth model. This model emphasizes that globalization is an important ingredient that catalyses how capital migrates from capital-rich economies to capital-poor economies as a result of the higher returns which could accrue to capital in poor countries. Whereas, in the submissions of Lewis (1954), Harris and Todaro (1970) globalization is enunciated to be a migration of labour vis-à-vis economic development. Lewis (1954) arrogated the differences in the real wage differences in various economies of the world as a pertinent driving force orchestrating the perpetual rise in globalization. It is important to state that welfare constitutes a strategic migration decision of labour.

Over the years, several researchers have used empirical data to extend the theoretical arguments in reference to globalization and some pertinent macroeconomic variables across the globe. Some of these studies are as follows: Olawumi (2019) employed Ordinary Least Square alongside Generalized Method of Moments to explore the relationship between human capital development and economic growth in BRICS economies between 1990 and 2017. It was discovered from the study that human capital development had an insignificant impact on economic growth of countries under investigation. Shahbaz et al. (2018) explored how asymmetric impact of globalization affected economic growth and energy consumption within BRICS economies. The authors used the NARDL bounds approach to submit that positive and negative socks of globalization resulted in direct and inverse consumption of energy respectively. Attanasio et al. (2017) conducted a research about the nexus between human capital and poverty in Peru and Ethiopia. The study argued that the parents with high income embarked on more investment in their younger ages. In South Asia, Muhammad (2015) assessed the relationship between globalization and economic growth from 1981 to 2011. The author explored Ordinary Least Squares and Granger causality to assert that the contribution of globalization was impactful at the rate which the South Asia sub region grew. Aderemi et al. (2021) employed Autoregressive Distributed Lag technique to evaluate the connection between human capital development and sustainable development in Nigeria from 1990 to 2018. It could be submitted that human capital development did not possess the capacity to guarantee a sustainable economic growth in Nigeria. In another empirical work, José, António & Cátia (2019) examined how globalization components affected the development of financial market and economic growth BRICS and OECD economies between 1980 and 2015. It was discovered from the study that economic growth was enhanced by financial globalization in both the short run and long run, while political globalization enhanced significant growth in the economies of the selected countries. Latif et al. (2018) focused their study on BRICS countries by investigating how globalization enhanced economic growth using the technique of a simple regression. The authors argued that the impact of information and communication technology (ICT) was positive in orchestrating economic growth in the long run. However, Aderemi et al. (2020) explored how globalization stimulated economic growth in countries of European ranging from 1990 to 2018. The authors applied ARDL and Bounds test to analysis the collected data, and consequently posited that economic growth was advanced by globalization in the European economies. In another related study focusing on Sub-Saharan African countries, Egbetunde and Akinlo (2015) applied panel cointegration
alongside Error Correction Model to estimate the influence of financial globalization on the growth of the selected countries. The authors asserted that a long run convergence existed between financial globalization and growth in the selected economies. Meanwhile, Bhanumurthy and Kumawat (2018) explored countries in South Asia with a view to establishing the linkage between economic growth and globalization utilizing a panel VAR and the technique of a panel Granger causality. It was discovered from the study that there was an existence of a weak Granger causality which flows from financial globalization to economic growth but reverse was the case of Granger causality which flow from economic growth to financial globalization. Also, one of the major components of financial globalization in the study-foreign direct investment sponsored an increment in the growth of the selected economies in the long run. Whereas, Akinbode et al. (2020) investigated how human development was influenced by government effectiveness and corruption in thirty-seven (37) countries in Sub Saharan Africa. The system Generalized Method of Moment was utilized as a technique of estimation. The paper submitted that the major variables that led to the positive contribution to human development in Sub Saharan Africa were past human development index, government health spending and economic growth rate. Also, in ECOWAS sub region, Ejemeyovwi et al. (2019) examined the influence of internet usage and innovation on human development with the application of the fixed and random effects. It was argued in the study that both internet usage and innovation caused a significant positive impact on human development in ECOWAS sub region.

Conclusively, studies on globalization and its influence on human development have not been well articulated in the literature, especially in BRICS countries. Hence, the relevance of this research work.

**Methodology and Data**

**Theoretical framework**

The endogenous growth theory is considered as the appropriate theoretical framework upon which this study could be anchored. This theory articulates the importance of human capital as a factor input that cannot be ignored in building production function (Mankiw et al., 1992; Lucas, 1988). However, the theory emphasizes the importance of knowledge and its spillover effect, in which its production function could be illustrated below:

\[
Y (t) = f (K (t), [A (t) L (t)]
\]

The implication of equation (1) is that the level of output (Y) over time depends on three factors: inputs namely capital (K), knowledge (A) and Labour (L) over time concurrently.

**Model specification**

Building empirical model to address the impact of globalization on human development from the theoretically suggested determining variables requires insights from the works of Aderemi et al. (2021), Akinbode et al., (2020), Aderemi et al., (2020), Tanwar (2012) and Dreher, Gaston & Martens (2008). This study adapted their models to meet the objective of this present study as follows:

\[
HDI = f (FDI, TOP, GCF, INT)
\]

Transforming equation (2) into econometric panel equation gave birth to equation (3)

\[
HDI_{it} = \alpha + \Omega_1 FDI_{it} + \Omega_2 TOP_{it} + \Omega_3 GCF_{it} + \Omega_4 INT_{it} + u_{it}
\]
Where: $HDI$ represents Human Development Index, FDI is Foreign Direct Investment inflows, TOP is trade openness, GCF is capital accumulation, INT denotes the number of people who have access to internet, and $u$ is the error term. Consequently, $i$ denotes a balanced panel of BRICS countries, $t$ is time period. Meanwhile, the a priori expectation is as follows, the estimated parameters which are $\Omega_1$, $\Omega_2$, $\Omega_3$, and $\Omega_4 > 0$.

**Sources of data**

World Development Indicators (WDI) database.

**Measurement of variables and justification for inclusion**

- Human Development is a process by which humans’ choices and capabilities are enlarged. In measuring it, UNDP developed HDI as which ranges on a scale of 0-1. High human development is denoted by 1, meanwhile, 0 points to a very low human development. This serves the dependent variable in this study.

- Globalisation which is an independent variable is a complex phenomenon which a number of indicators could be used as its measurement. However, since the focus of this study is on economic globalisation, Capital flow and trade openness which are the most two relevant “KOF Globalization Index” pioneered by Dreher, Gaston & Martens (2008), and later utilized by Aderemi et al. (2020) in an empirical work would be adopted in this study. This justifies the inclusion of FDI inflows and trade openness as the proxies of globalization. Explicitly, this study used FDI inflows as a percentage of GDP. In the same vein, trade openness is measured as the ratio of total trade to GDP.

- Gross Fixed Capital Formation is a capital accumulation which is measured by the percentage of gross capital formation relative to GDP. Internet user is measured by the individuals using internet as percentage of population. These two variables are used as control variables. It is important to stress that the inclusion of these variables in the estimated model was motivated by the argument of endogenous growth model which emphasizes that capital and knowledge are very important in the production of output.

**Results and discussion**

In Table 1, the descriptive statistics of various variables used in the panel analysis of BRICS countries were shown as follows; HDI has a minimum value of 0.61 and maximum value of 0.76 and average value of 0.69. This shows that human development in BRICS countries is neither high nor low, but above average. In the same vein, the variable is moderately dispersed from the mean value of the variable is higher than its standard deviation. However, GCF has a minimum value of 14.5% and maximum value of 22.8%, and with the mean value of 18.4%. This variable is moderately dispersed from its mean due to the fact that it has a standard deviation value which is low than the mean value. Consequently, the two components of globalisation – FDI inflows as percentage of GDP and trade openness used in this paper. They have the average values of 2.67% and 23.1% respectively. This implies that the level of economic integration of BRICS countries with rest of the world is evolving. Also, the mean value of internet users is 25%. This implies that at least 25% of individuals in BRICS countries have access to internet.

Moreover, the values of the standard deviation are less than their mean values. The implication of this is that FDI, TOP and INT were moderately dispersed from their respect mean. Meanwhile, all the variables were negatively skewed except INT, with Kurtosis values that are not far from 3. Furthermore, it is only the probability of Jarque Bera of GCF that is not significant, while the rest of the variables are significant. This is an indication that the variables in the study conform to the assumption of normal distribution to certain extent.
Table 1. Descriptive statistics of variables

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>HDI</th>
<th>GCF</th>
<th>FDI</th>
<th>INT</th>
<th>TOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.699133</td>
<td>18.44579</td>
<td>2.667933</td>
<td>25.80187</td>
<td>23.19450</td>
</tr>
<tr>
<td>Median</td>
<td>0.699500</td>
<td>18.42054</td>
<td>3.116500</td>
<td>20.04821</td>
<td>24.43100</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.765000</td>
<td>22.80400</td>
<td>5.034000</td>
<td>70.43428</td>
<td>29.67800</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.613000</td>
<td>14.56376</td>
<td>0.183000</td>
<td>0.000000</td>
<td>15.16200</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>0.045520</td>
<td>1.892324</td>
<td>1.434154</td>
<td>25.04798</td>
<td>4.448618</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.210579</td>
<td>-0.054044</td>
<td>-0.400277</td>
<td>0.422648</td>
<td>-0.399785</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.979502</td>
<td>2.706635</td>
<td>1.937908</td>
<td>1.681001</td>
<td>1.886666</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>7.617446</td>
<td>0.610913</td>
<td>11.05577</td>
<td>15.33927</td>
<td>11.74266</td>
</tr>
<tr>
<td>Probability</td>
<td>0.022176</td>
<td>0.736787</td>
<td>0.003974</td>
<td>0.000467</td>
<td>0.002819</td>
</tr>
<tr>
<td>Sum</td>
<td>104.8700</td>
<td>2766.869</td>
<td>400.1900</td>
<td>3870.280</td>
<td>3479.175</td>
</tr>
<tr>
<td>Sum. Sq. Deviation</td>
<td>0.308737</td>
<td>533.5526</td>
<td>306.4627</td>
<td>93482.77</td>
<td>2948.740</td>
</tr>
<tr>
<td>Observation</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
</tbody>
</table>

Note: HDI = Human Development Index (0-1); GCF = Capital accumulation measured as % of GDP; FDI = FDI as % GDP in %; TOP = Trade openness; INT = individuals using internet as percentage of population.

Source: Authors’ computation (2021).

Table 2 shows the estimated results of the stationary tests using the panel augmented Dickey Fuller and Philip Perron tests. This test is so important that failure to establish the stationarity properties or otherwise of these variables could cause a nonsense or spurious regression. The implication of this is that spurious regression adversely affects the policy implication(s) of research. In the light of the above, the unit root tests in the above table indicate that the null hypothesis of the unit roots for the panel data of all the variables of interest could not be rejected in level. But, the hypothesis was rejected when the series were firstly differenced. This means that all variables utilized for the study were not stationary in their natural forms but stationary after first differencing.

Table 2. Unit Root Test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Panel ADF Test</th>
<th>Panel PP Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>Probability</td>
</tr>
<tr>
<td>FDI</td>
<td>14.2308**</td>
<td>0.1627</td>
</tr>
<tr>
<td>HDI</td>
<td>9.28691**</td>
<td>0.5051</td>
</tr>
<tr>
<td>GCF</td>
<td>10.2917**</td>
<td>0.4153</td>
</tr>
<tr>
<td>INT</td>
<td>0.06186**</td>
<td>1.0000</td>
</tr>
<tr>
<td>TOP</td>
<td>7.03602**</td>
<td>0.7220</td>
</tr>
<tr>
<td></td>
<td>Level</td>
<td>Probability</td>
</tr>
<tr>
<td>FDI</td>
<td>12.2599**</td>
<td>0.2680</td>
</tr>
<tr>
<td>HDI</td>
<td>13.6640**</td>
<td>0.1889</td>
</tr>
<tr>
<td>GCF</td>
<td>10.1774**</td>
<td>0.4251</td>
</tr>
<tr>
<td>INT</td>
<td>0.01493**</td>
<td>1.0000</td>
</tr>
<tr>
<td>TOP</td>
<td>8.82594**</td>
<td>0.5487</td>
</tr>
</tbody>
</table>

Note: ** %5 level ( ) P-Value.

Source: Authors’ computation (2021).

Table 3 shows the long run equilibrium relationship between globalization and human development estimated within the context of Johansen Fisher Panel Cointegration Test. The reported results in the above table imply that there is an existence of at most four (4) Cointegration vectors between human development and the various components of globalization. Hence, since there is an existence of long run equilibrium relationship among the
variables of interest, further step to investigate the long run regression estimate between globalization and human development was carried out as follows.

Table 3. Johansen Fisher Panel Cointegration Test

Trend assumption: Linear deterministic trend
Lags interval (in first differences): 1 1
Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>70.47</td>
<td>0.0000</td>
<td>30.25</td>
<td>0.0008</td>
</tr>
<tr>
<td>At most 1</td>
<td>44.90</td>
<td>0.0000</td>
<td>20.09</td>
<td>0.0284</td>
</tr>
<tr>
<td>At most 2</td>
<td>31.05</td>
<td>0.0006</td>
<td>20.06</td>
<td>0.0287</td>
</tr>
<tr>
<td>At most 3</td>
<td>19.54</td>
<td>0.0339</td>
<td>23.04</td>
<td>0.0106</td>
</tr>
<tr>
<td>At most 4</td>
<td>1.518</td>
<td>0.9989</td>
<td>1.518</td>
<td>0.9989</td>
</tr>
</tbody>
</table>

Note: *Probabilities are computed using asymptotic Chi-square distribution.

Source: Authors’ computation (2021).

The long run relationship between the components of globalization and human development was estimated within the technique of Panel Fully Modified Least Squares (FMOLS) as reported in Table 4. All the explanatory variables followed the a priori expectation. It is instructive too stress that the R-squared which is 0.96, confirms that about 96% of variation in human development was explained by the explanatory variables. This is an indication that adopted model for the empirical analysis in this work is relatively good.

Meanwhile, the first component of globalization-FDI inflows as percentage of GDP had a positive and significant relationship with human development in BRICS countries. A percentage change in FDI as percentage of GDP leads to a rise in human development by 0.009956%. Similarly, the second component of globalization-trade openness possessed both positive and significant relationship with human development BRICS countries. As such, if trade openness changes by a percentage, human development rises by 0.002056% in the countries under investigation. Also, both capital formation and internet users had positive and significant relationship with human development in the study.

Therefore, by and large, this study submits that globalization promotes human development in BRICS countries in the long run. This finding corroborates the assertion of Asongu and Nwachukwu (2016) in a related work covering 51 African economies and Ejemeyovwi et al. (2019) covering ECOWAS countries.

Table 4. Long Run Relationship between Globalization and Human Development in BRICS Countries

Dependent Variable: HDI
Method: Panel Fully Modified Least Squares (FMOLS)

<table>
<thead>
<tr>
<th>Regressors</th>
<th>Coefficient</th>
<th>T-statistics</th>
<th>Prob. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>0.009956***</td>
<td>17.26257</td>
<td>0.0000</td>
</tr>
<tr>
<td>TOP</td>
<td>0.002056***</td>
<td>9.722198</td>
<td>0.0000</td>
</tr>
<tr>
<td>INT</td>
<td>0.001140***</td>
<td>32.20768</td>
<td>0.0000</td>
</tr>
<tr>
<td>GCF</td>
<td>0.000821**</td>
<td>2.092348</td>
<td>0.0383</td>
</tr>
<tr>
<td>R-Squared</td>
<td></td>
<td>0.956205</td>
<td></td>
</tr>
</tbody>
</table>

Note: ***Significant at 1%; **significant at 5%; *Significant at 10%

Source: Authors’ computation (2021).
Summary of Findings and Policy Implication

This study has provided an empirical answer to the question whether globalization promotes human development in emerging economies using the case study of BRICS countries. The study subjected the annual data between 1990 and 2019 extracted from the World database to econometric analysis. This study becomes highly imperative because globalization is an ongoing phenomenon in the world on one hand, and a huge share of the global human resources is domiciled in BRICS economies on the other hand. In contributing to the existing knowledge, it is important to stress that, in the light of the empirical analysis, the study establishes the following findings; the existence of a co-integrating linkage between globalisation and human development was confirmed in BRICS countries. In the same vein, globalization components—FDI inflows as percentage of GDP and trade openness had a positive and significant relationship with human development in BRICS countries. Moreover, both capital formation and internet users had positive and significant relationship with human development. This is a strong evidence that that globalization promotes human development in BRICS countries in the long run. As a result of this finding, this study makes the following recommendations for the policymakers in BRICS countries, and by extension other emerging economies that since the economic components of globalization promote human development in these countries, any time the goal of the policymakers is the achievement of human development in the long run, promotion of policies that would facilitate FDI inflows and trade surpluses simultaneously should be of the priorities by these policymakers. In another words, the policymakers in BRICS countries should focus on the promotion of economic components of globalization – internet usage, FDI inflows and trade openness in order to facilitate human development in the desired direction in these countries.

Moreover, the limitation of this study lies in the fact that the panel analysis of BRICS economic bloc in this study might not reflect the situation in each of the countries in this economic bloc. Therefore, further study on individual country under BRICS could be explored in future researches.

References


