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Human Capital: Education Issues in Emerging Economies — BRICS and ASEAN

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Human capital formed through education is a driving force for economic growth in both the short and long term of any country. The emerging economies in the BRICS and ASEAN groups have all implemented policies to enhance human capital through investment in education. In this study, the author conducts an analysis of the current state of education development and education development policies in BRICS and ASEAN countries to accurately assess the level of education development, constraints in education development policies, opportunities, and challenges in the education development of these countries. From the research results obtained, policy implications for education development are also proposed by the author to enhance human capital through investment in education in BRICS and ASEAN countries.

Introduction

Since A. Smith, the theory of human capital has begun to take shape as he believed that human knowledge would be the driving force for technological changes and lead to economic growth [13]. Until the 1960s when Schultz introduced the term human capital, the theory of human capital and its role in economic growth became a matter of interest to many researchers [12, p. 86]. Previous studies have shown that human capital can directly and indirectly influence economic growth [1, p. 25]. Directly, studies have incorporated human capital factors into economic growth models and asserted that human capital contributes to the output of the economy [7; 14]. Indirectly, human capital influences technological progress and thereby contributes to labor productivity and the efficiency of equipment use, thereby promoting economic growth [5]. Human capital is acquired through investment in education and healthcare. Therefore, education is an important factor that promotes economic growth in countries.

To ensure long-term economic growth, education policies need to be developed and perfected. In the context of rapid development of scientific revolution, the application of information technology, and artificial intelligence, there are both opportunities and challenges in education development. On the other hand, since the Covid pandemic, common issues in education development have become more urgent.

In recent years, emerging economies in BRICS and ASEAN have achieved significant achievements in education. The quality of education has improved over time, but education growth is not uniform among countries, and the quality of education still has many shortcomings leading to mixed ef-

fects on human capital development and economic growth.

In the context of international and domestic development requirements, the author realizes that researching education issues in these countries is crucial to address the following questions:

1. What is the current level of education in BRICS and ASEAN countries?
2. How is public investment in education in these countries?
3. And how to invest in education development effectively?

Theoretical framework

Classical economists were the first to lay the foundation for human capital theory, but the term "human capital" was not widely used before the 1960s. In 1961, the human capital theory was first introduced by T. Schultz, and in 1962, it was elaborated by Becker. Schultz argued that the costs of education should be analyzed as a form of investment, contributing to the improvement of workers' skills and the increase in economic output. In 1962, Denison also suggested that education contributes to economic growth through the enhancement of labor productivity. In 1964, Becker analyzed the benefits of education in his book "Human Capital", asserting that investing in education is similar to investing in physical capital.

In the 1970s, research on human capital theory showed that the level of investment in human capital increased, and educational costs rose. However, it was noted that education consumed a larger amount of resources than the economic growth it generated. This led to studies focusing on determining the level and methods of investment in education. For instance, Psacharopoulos' (1981) research indicated the level and direction of investment in education. The study conducted in 45 countries revealed that investment in primary education yields the highest benefits.

Research on human capital also indicated that quantitative indicators such as enrollment rates and years of schooling do not fully measure education. Economists have identified financial and physical characteristics to measure human capital with the educational component, including enrollment rates, grade-level enrollment rates [7], teacher-to-student ratios, educational attainment and average years of schooling, and public and private spending on education. These variables are widely used in many studies evaluating human capital-education.

Methodology

The study employs a literature review method, drawing from reliable sources such as books, reports listed in Scopus, WOS, and Google Scholar, to examine issues related to human capital development with a focus on the educational component. It evaluates policies aimed at addressing challenges in human capital (education) development.

Data for the study is collected from secondary sources published by international organizations such as the World Bank (WB), OECD, and UNESCO.

Data processing: The data is processed with the support of Excel software.

The study uses a qualitative analysis method through descriptive statistical techniques, as well as analysis and cross-comparison between countries and over time, to evaluate the current state of human capital (educational capital) and the level of investment.

Results and Discussion

Education in BRICS and ASEAN countries

The amount of education is measured by the average number of years of schooling for the population over 25 years old.

General Trends for the Average Years of Schooling in BRICS and ASEAN Emerging Economies show an increasing trend from 2000 to 2021. Within the research group, Russia has the highest average years of schooling, equivalent to countries with developed economies (OECD). However, over the past 20 years, Russia's average years of schooling have hardly improved significantly (with a difference of less than 1 year throughout the period). India has the lowest average years of schooling. India's average years of schooling are equivalent

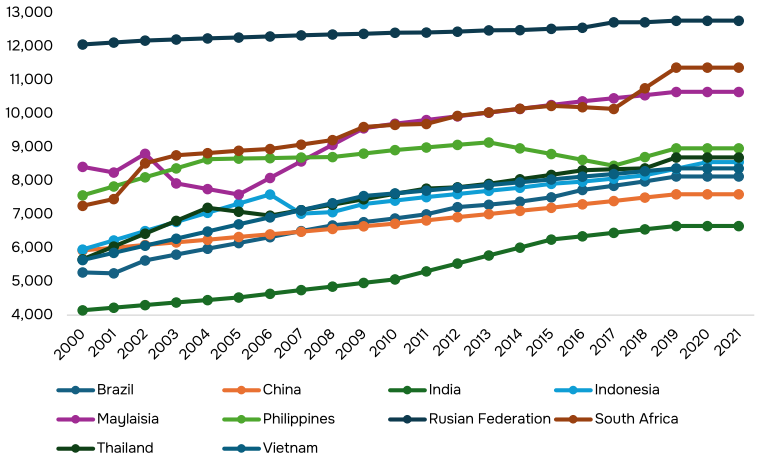

Figure 1. Average years of schooling for the population over 25 years old in the period 2000–2021. Source: the author synthesizes data source [18].

to the level of low–medium incomes countries. However, during the period 2000–2021, India has made significant strides in increasing the average years of schooling of the population, approaching the average years of schooling of other countries in the research group. The Philippines, Thailand, and Indonesia have experienced periods of decline in average years of schooling due to external impacts affecting these Southeast Asian countries.

This study demonstrates that in terms of quantity, education has increased in all researched countries, but the growth is not sustainable and is vulnerable to external influences. On the other hand, there is also the risk that education growth in these countries will plateau in the future.

To accurately assess the education situation of the countries, it is more important to research the quality of education. Quality assessments of student performance conducted on a global scale are significant for comparing the development of education levels over time and comparing the quality of education achieved between countries.

Due to limitations in survey data sources, in this study, the author used PISA and TIMSS test scores of 8th-grade students (aged 14–15) and NAS scores specifically for Indian students because since 2009, India has not participated in any international student assessment programs.

The quality of education, as indicated by PISA scores, shows that China has the highest PISA scores for all three tests: math, reading, and science. Vietnam and Russia have achieved quite good results in the PISA tests. The Philippines has the lowest performance. PISA scores demonstrate differences between the quantity of educational achievements and the quality of education attained in these countries. The scale of average years of schooling does not fully correspond to the level achieved by student.

TIMSS scores show a significant difference in the level of education quality attained between Russia and South Africa. This gap is much larger than the difference in the average years of schooling achieved. This indicates that the quality of education in South Africa is posing a significant challenge for the country.

Using a separate test, it is not possible to compare the quality of education in India with other countries in the research group. However, the results show that the quality of education in India has hardly improved during the period 2017–2021. Furthermore, the test results indicate that the quality of students' education in India is only at an average level (the maximum score for a NAS test is 500 points). This poses a significant challenge for the country in educational development.

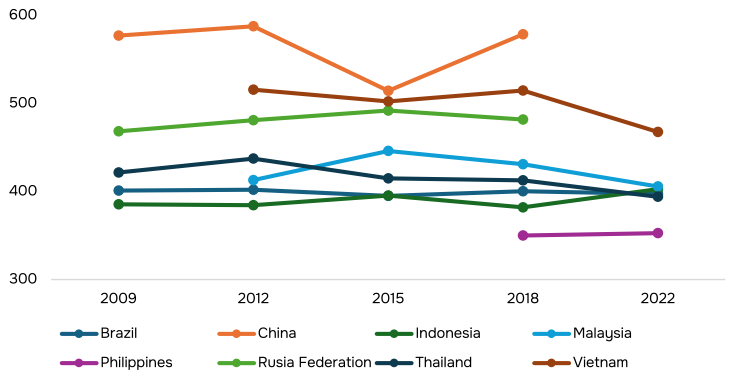

Figure 2. Mean PISA Scores period 2009–2022. Source: the author synthesizes data source [9].

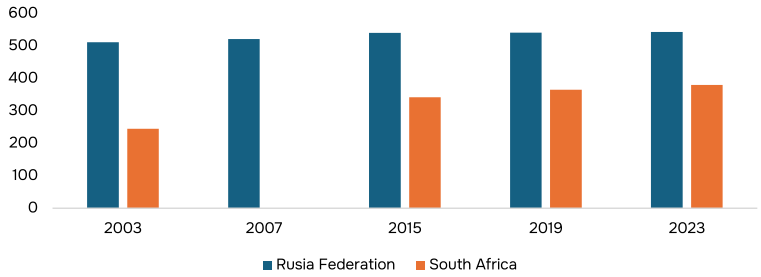

Figure 3. Mean TIMSS Scores of Russia and South Africa. Period 2003–2023. Source: the author synthesizes data source [9].

Policy for Education in BRICS and ASEAN Countries

Policy Orientation for Education Development

Recognizing the importance of education for human capital development and economic growth, all governments of BRICS and ASEAN countries acknowledge the right to access education as a fundamental right. Policies are implemented to enhance opportunities and create conditions for people to access education from basic to higher levels. In all countries in the research group, education is provided free of charge and is compulsory for children. To increase the enrollment rate of children in schools, since the early 2000s, the Brazilian government has implemented the “Bolsa Familia” education policy to encourage children to attend school by providing monthly financial support to poor households with children attending school [2]. In India, since 2009, the government has enacted the “Right of Children to Free and Compulsory Education Act of India in 2009” regarding the right of children to free and compulsory education [4]. In China, since the 1980s, the Chinese government has invested in education, especially in basic education and vocational education. The ”Gaokao” examination system has led to intense competition in the education system, which is believed to have a positive impact on the quality of education in China [16]. In South Africa, since the collapse of the apartheid regime in 1994, the government has implemented policies to support children of school age to access education through providing free education. This policy has promoted the enrollment rate of children in these countries [15]. Malaysia implements free and compulsory education policies for children aged 6–12 or until completion of secondary education. The education system is developed with diversity and multilingualism suitable for the cultural needs and conditions of the country [6]. This policy has contributed to improving both the quantity and quality of education in Malaysia. In Indonesia, the national education system law has been implemented since 2003 with a positive impact on the country's education system. The Indonesian government has built policies to support and improve basic

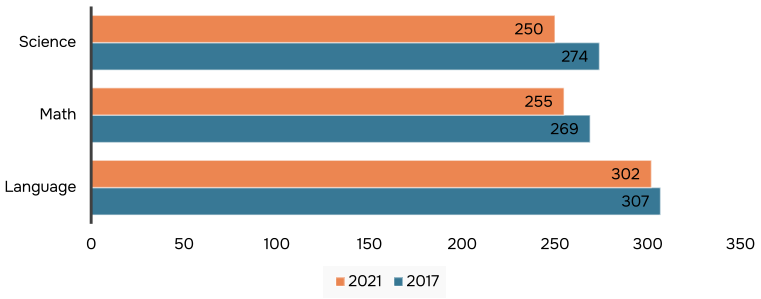

Figure 4. NAS Scores for 8th Grade Students in India. Source: the author synthesizes data source [3].

and vocational education [8]. Since 2005, the education law has been enacted in Vietnam, and the education development strategy of Vietnam has been implemented since 2011 with the aim of improving the quality of education from primary to level [17]. In the Philippines, since 2013, the basic education system has been supplemented with an additional 2 years of K+12 program to enhance knowledge and skills for students. Government efforts to enhance access to basic education for children are reflected through policies such as the "Enhanced Basic Education Act of 2013" and DepEd Order No. 31 in 2020 [11]. In contrast to the researched countries, education in Thailand does not focus much on basic education but aims at higher education and scientific research. The Thai government's policies aim to enhance the capacity and competitiveness of universities [10].

With the policies and objectives of these policies in BRICS and ASEAN countries, it is observed that most countries focus on basic education. This explains why these countries have achieved achievements in improving the quantity of education, increasing the average years of schooling of the population over 25 years old. However, different policies are applied in different contexts of the countries, leading to differences in the quality of education among the countries in the research group.

The policies and objectives of government policies for education development are reflected through government spending on education.

Government Public Expenditure on Education

Statistics show that South Africa and Brazil are the two countries with the highest public expenditure ratios for education investment. South Africa's public expenditure on education increased from 5,13% in 2010 to 6,18% in 2022. Meanwhile, Brazil's public expenditure on education has been gradually decreasing during the period of 2016–2020. This is explained by the Brazilian government's new policies to tighten and control education expenditure policies to balance with other expenditures. Indonesia and India are the two countries with the lowest investment ratios for education in 2010, at 2,81% and 3,38%, respectively. However, after 10 years of education reform efforts, the governments of these countries have been trying to focus resources on education, with expenditure ratios increasing to 3,49% and 4,29% of GDP, respectively. The investment levels in education as a percentage of GDP are relatively high compared to other countries. The expenditure ratios for education of other countries in the research group tended to decrease during the period of 2010–2022. The most significant decrease occurred in Vietnam and Malaysia. In 2010, the investment levels for education as a percentage of GDP in these two countries were 4,05% and 4,97%, respectively, which decreased to 2,9% and 3,51% in 2022. The trend of decreasing government expenditure ratios in these countries is partly due to after a period of education development when certain achievements have been made, they are rebalancing investments to facilitate economic development and implement policies to mobilize private resources for education development in

Table 1. Government Public Expenditure on Education (% GDP).

	2010	2012	2014	2016	2018	2020	2022
Brazil	5,65	5,86	5,95	6,31	6,09	5,77	
China	3,75	3,94	3,58	3,76	3,54	3,57	
India	3,38	4,08	3,90			4,29	
Indonesia	2,81	3,41	3,29	3,57	2,75	3,49	
Malaysia	4,97	5,74	5,03	4,35	4,13	4,52	3,51
Philippines			2,93	3,03	3,86	3,88	3,58
Rusia Federation	3,85	3,79	4,01	3,76	4,68	3,70	
South Africa	5,13	5,52	5,49	5,44	5,64	6,18	6,18
Thailand	3,51	3,60	3,92	3,77	3,20	3,15	2,61
Vietnam	4,05	4,41	3,54	3,47	3,30	3,22	2,90

Source: the author synthesizes data source [18].

the context of increasing per capita income and decreasing poverty rates.

Discussion

Although all countries in the research group implement compulsory and free education policies for children, the quality of education varies. These policies mainly increase the enrollment rate of children and the average years of schooling for adults over 25 years old but do not necessarily improve the quality of education.

The quality of education largely depends on the priority direction of investment and the way countries invest in education. Countries such as Brazil, South Africa, and India still mainly focus on basic education development but pay little attention to the quality of education, leading to high investment rates in education but inadequate human capital development. Meanwhile, countries like China, Thailand, Malaysia, and Indonesia focus more on higher education and vocational training to enhance the future workforce's skills. Russia and Vietnam aim for comprehensive education and invest in all levels and types of education to build a competent workforce in both the short and long term. Prioritizing education quality policies has contributed to promoting the growth of education levels and human capital in these countries.

The gradual increase in private expenditure on education compared to public expenditure in some countries may affect inequality in access to high-quality education opportunities, leading to unequal human capital development among regions and social classes.

Another issue in most countries in the research group is the quality of the workforce for education development. Except for Russia, there is a significant disparity in the quality of teachers between urban and rural areas in other countries in the research group.

A major challenge as well as an opportunity for education development in BRICS and ASEAN countries is the rapid development of science and technology, especially information technology and artificial intelligence. Technological advancements create opportunities for these countries to apply new technologies in the learning process, facilitating rapid and efficient knowledge dissemination. However, it also poses a significant challenge of inequality in accessing information and education between rural and urban areas, and between the poor and other social classes. This leads to the rapid risk of knowledge and skill obsolescence for a large part of the population.

Conclusion and Policy recommendations

The study provides analyses of the quantity and quality of education achievements in BRICS and ASEAN countries based on secondary data collected from reputable sources such as the WB, UN, OECD... The research results have shown that these countries have achieved significant

achievements in improving the average years of schooling, but the quality of education achieved still has many shortcomings. This directly affects the human capital development of BRICS and ASEAN countries.

Based on the research results, the authors propose some policies for education development in BRICS and ASEAN countries as follows:

Firstly: Focus on investing in infrastructure and teacher quality to create a good foundation for improving the quality of education and embracing opportunities from the advancement of science and technology.

Secondly, there needs to be policies to allocate resources reasonably for education investment among different levels. BRICS and ASEAN countries are populous countries, with China and India accounting for about 40% of the world's population. This requires resource allocation policies to ensure that all populations have access to basic and high-quality education. Government investment in education must play a foundational role, guiding and creating conditions for private investment in education.

Thirdly, education development policies need to ensure balanced development of both primary education for children and higher education and vocational training for adults.

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