Volume 8 issue 6 May 2021

Journal of Asian Finance, Economics and Business

- The Journal of Asian Finance, Economics and Business (JAFEB): is an international peer-reviewed journal and is published welve issues per year monthly in full English in joint sponsorship from the Korea Distribution Science Association (KODISA) and the Institute of Economics under the Ministry of Education and Science of the Republic of Kazakhstan (Institute of Economics).
- The Journal of Asian Finance, Economics and Business (JAFEB): publishes on the following dates: January 30, February 28, March 30, April 30, May 30, June 30, July 30, August 30, September 30, October 30, November 30, and December 30.
- The Journal of Asian Finance, Economics and Business (JAFEB): is published in international standards both in print and online with Digital Object Identifier (DOI) information: Print ISSN: 2288-4637 / Electronic ISSN: 2288-4645
- The Journal of Asian Finance, Economics and Business (JAFEB): is an Open Access journal distributed under the terms of the Creative Commons Attribution Non-Commercial License (CC BY-NC)
- Editorial Head Office: Anhui University of Finance and Economics (AUFE) School of International Economics and Trade [Postal Address: 962 Caoshan Road, Benghu City, Anhui Province, China 233030] Email: jwlee119@yahoo.com; jungwan.lee@aufe.edu.cn
- Publisher and Offprints Publishing Office: Korea Distribution Science Association (KODISA) Hanshin Officetel 1030, 2463-4 Shinheung-dong Sujeong-gu, Seongnam-city, Gyeongg-do, KOREA Tel: (+52 31) 740-7292 Fax: (+82 31) 740-7361 Email: kodisajournals@gnail.com

Print ISSN: 2288-4637 / Online ISSN: 2288-4645



Senior Editor-in-Chief

Jung Wan Lee, Ph.D. ORCID ID, Researcher ID

School of International Economics and Trade, Anhui University of Finance and Economics, China

Editor for Southeast Asia

Hooi Hooi Lean, Ph.D. ORCID ID, Researcher ID

School of Social Sciences, Universiti Sains Malaysia, Malaysia

Editor for East Asia

Teng-Tsai Tu, Ph.D. <u>ResearchGate</u>, <u>Current Affiliation</u>

Graduate Institute of International Business, National Taipei University, Taiwan

Editor for Central Asia

Azimkhan A. Satybaldin, Ph.D. Researcher ID, ResearchGate

The Institute of Economics under the Ministry of Education and Science, Republic of Kazakhstan

Publishing Editor

Myoung-Kil Youn, Ph.D. ORCID ID, Researcher ID

Department of Medical IT Marketing, College of Health Industry, Eulji University, Korea (the Republic of)

Associate Editors

Wee-Yeap Lau, Ph.D. ORCID ID, Researcher ID Department of Applied Statistics, Faculty of Economics and Administration, University of Malaya, Malaysia Anel A. Kireyeva, Ph.D. ORCID ID, Researcher ID The Institute of Economics, under the Ministry of Education and Science, Republic of Kazakhstan Nailya K. Nurlanova, Ph.D. ORCID ID, Researcher ID The Institute of Economics, under the Ministry of Education and Science, Republic of Kazakhstan Rajasekhara Mouly Potluri, Ph.D. ORCID ID, Researcher ID College of Business Studies, Al Ghurair University, Dubai, United Arab Emirates Helena M. Nobre, Ph.D. ORCID ID, Researcher ID DEGEIT - Economics, Management, Industrial Engineering and Tourism, GOVCOPP, University of Aveiro, Portugal Jooh Lee, Ph.D. GoogleScholar, Current Affiliation Department of Management &Entrepreneurship, College of Business, Rowan University, USA Tahereh Alavi Hojjat, Ph.D. ResearchGate, Current Affiliation Professor of Economics & Finance, Division of Business, DeSales University, USA Tantatape Brahmasrene, Ph.D. ResearchGate, Current Affiliation Professor of Finance and International Business, College of Business, Purdue University Northwest, USA Yu Hsing, Ph.D. ResearchGate, Current Affiliation Joseph H. Miller Endowed Professor. Department of Management & Business Administration, College of Business, Southeastern Louisiana University, USA. Yoon S. Shin, Ph.D. GoogleScholar, Current Affiliation Department of Finance, The Sellinger School of Business and Management, Loyola University, Maryland, USA Ayse Yuce, Ph.D. GoogleScholar, Current Affiliation Professor of Finance. Department of Finance, Ted Rogers School of Management, Ryerson University. Toronto, Canada Ad Hoc Associate Editors Muhammad Ayub Siddiqui, Ph.D. GoogleScholar, Current Affiliation Bahria Institute of Management and Computer Sciences, Bahria University, Pakistan Yuliani Dwi Lestari, Ph.D. GoogleScholar, Current Affiliation

Professor, School of Business and Management, Institut Teknologi Bandung, Indonesia

Tripati Rao, Ph.D. GoogleScholar, Current Affiliation

Professor of Economics. Business Environment Area, Indian Institute of Management Lucknow, India

Jung-Lieh Hsiao, Ph.D. ResearchGate, Current Affiliation

Graduate Institute of International Business, National Taipei University, Taiwan

Soo-Joon Chae, Ph.D. Researcher ID, ResearchGate

Division of Business Administration and Accounting, Kangwon National University, South Korea

Nguyen Ngoc Duy Phuong, Ph.D. GoogleScholar

Professor, International University, Vietnam National University Ho Chi Minh City, Vietnam

2022	Volume 8 Issue 6
2021	
 > Volume 8 Issue 12 > Volume 8 Issue 11 > Volume 8 Issue 10 > Volume 8 Issue 9 > Volume 8 Issue 8 > Volume 8 Issue 7 > Volume 8 Issue 6 > Volume 8 Issue 5 > Volume 8 Issue 4 	 Life-Cycle Theory of Corporate Dividend Policy in Jordan: The Role of Equities, Assets, and Age during the Period 2015-2019 AL SAWALQA, Fawzi A. 1 https://doi.org/10.13106/jafeb.2021.vol8.no6.0001 PDF The Impact of Logistics and Infrastructure on Economic Growth: Empirical Evidence from Vietnam NGUYEN, Chi Dieu Thi;LUONG, Bao Thai;HOANG, Huong Lan Thi
 > Volume 8 Issue 3 > Volume 8 Issue 2 > Volume 8 Issue 1 	https://doi.org/10.13106/jafeb.2021.vol8.no6.0021 PDF 3. Profitability and Stability of GCC Islamic Banks: The Role of Corporate Governance
2020	KHEDIRI, Karim Ben;ABIDI, Asma;SAYARI, Sonia 29
2019	https://doi.org/10.13106/jafeb.2021.vol8.no6.0029 PDF
2018	4. Factors Impacting on Social and Corporate Governance and Corporate Financial
2017	Performance: Evidence from Listed Vietnamese Enterprises TRAN, Ngoc Hung;NGUYEN, Thi Thuy Hanh 41
2016	https://doi.org/10.13106/jafeb.2021.vol8.no6.0041 PDF
2015	5. The Role of Board of Commissioners and Institutional Ownership in CSR Disclosure: An
2014	Empirical Study in Indonesia SWARDANI, Ni Wayan Risna;SUPRASTO, Herkulanus Bambang;RATNADI, Ni Made Dwi;SUARYANA, I Gusti Ngurah Agung
	60. The Relationship Between Human Capital Development and Economic Growth: Evidence from Malaysia WIDARNI, Eny Lestari;WILANTARI, Regina Niken 641
	https://doi.org/10.13106/jafeb.2021.vol8.no6.0641 PDF
	61. The Impact of Exchange Rate, Bank Indonesia Certificate and Global Indexes on the Composite Price Index (IHSG) in Indonesia YUNANTO, Muhamad;MEDYAWATI, Henny 651
	https://doi.org/10.13106/jafeb.2021.vol8.no6.0651 PDF
	62. Determinants of Corporate Cash Holdings Among Asia's Emerging and Frontier Markets: Empirical Evidence from Non-Financial Sector BAGH, Tanveer;KHAN, Muhammad Asif;MEYER, Natanya;SADIQ, Rashid;KOT, Sebastian 661 https://doi.org/10.13106/jafeb.2021.vol8.no6.0661
	63. The Impact of Voluntary Disclosure on Firm's Value: Evidence from Manufacturing Firms in Bangladesh QAMRUZZAMAN, Md.;JAHAN, Ishrat;KARIM, Salma https://doi.org/10.13106/jafeb.2021.vol8.no6.0671

The Journal of Asian Finance, Economics and Business

Volume 8 Issue 6 / Pages.641-650 / 2021 / 2288-4637(pISSN) / 2288-4645(eISSN)

Korea Distribution Science Association (한국유통과학회)

The Relationship Between Human Capital Development and Economic Growth: Evidence from Malaysia



WIDARNI, Eny Lestari (STIE Jaya Negara Tamansiswa Malang); WILANTARI, Regina Niken (Economics Department, Faculty of Economics and Business, University of Jember) Received: 2021.03.10 Accepted: 2021.05.15 Published: 2021.06.30

https://doi.org/10.13106/jafeb.2021.vol8.no6.0641 Copy Cit

Abstract

This study aims to determine the behavior of education and health data in driving economic growth in Malaysia before the COVID-19 pandemic hit the world, namely, in the period from 2000 to 2019. This period was chosen to assess the behavior of data in the past so that it can be an indicator for decision-making for the future. To achieve this goal, the Quantitative Threshold Autoregressive method is used to predict data behavior so that the relationship between data can be seen in order to forecast economic growth when investing in health and education. This study focuses on secondary data sourced from the World Bank, including data on Malaysian gross domestic product, health investment in Malaysia and investment in education. We find that education and health are very important means of investing in human capital to drive economic growth. Education and health have the potential to be the two means of awakening and developing and restoring the economy during a pandemic and post-pandemic period. Education is a human resource development mechanism. However, education will be difficult to improve human performance without support from health. Education and health support each other in improving economic performance in Malaysia.

(Previous Next)

Abstract Keywords References



The Relationship Between Human Capital Development and Economic Growth: Evidence from Malaysia

Eny Lestari WIDARNI^{1*}, Regina Niken WILANTARI²

¹First Author and Corresponding Author. Lecturer, STIE Jaya Negara Tamansiswa Malang, Indonesia [Postal Address: Jl. R. Tumenggung Suryo No.17, Bunulrejo, District. Blimbing, Malang City, East Java 65123, Indonesia] Tel: +62 895622194405, Email: enylestariwidarnimalang@gmail.com

²Lecturer, Economics Department, Faculty of Economics and Business, University of Jember, Indonesia. Email: reginanikenw.feb@unej.ac.id

Received: March 10, 2021 Revised: May 08, 2021 Accepted:

Abstract

This study aims to determine the behavior of education and health data in driving economic growth in Malaysia before the COVID-19 pandemic hit the world, namely, in the period from 2000 to 2019. This period was chosen to assess the behavior of data in the past so that it can be an indicator for decision-making for the future. To achieve this goal, the Quantitative Threshold Autoregressive method is used to predict data behavior so that the relationship between data can be seen in order to forecast economic growth when investing in health and education. This study focuses on secondary data sourced from the World Bank, including data on Malaysian gross domestic product, health investment in Malaysia and investment in education. We find that education and health are very important means of investing in human capital to drive economic growth. Education and health have the potential to be the two means of awakening and developing and restoring the economy during a pandemic and post-pandemic period. Education is a human resource development mechanism. However, education will be difficult to improve human performance without support from health. Education and health support each other in improving economic performance in Malaysia.

Keywords: Human Capital, Health, Education, Gross Domestic Product

JEL Classification Code: C01, E44, E51

1. Introduction

The Malaysian economy is still into recession. In fact, throughout 2020, the neighboring countries' economy contracted by minus 5.6% (Sajid, 2021). This is the worst achievement since the 1998 monetary crisis, even under the previous government's projection, namely, -3.5% to -5.5%. Over the past year, the Malaysian economy contracted 5.6%, the worst performance since 1998 and below the government's projection of -3.5% to -5.5%. This was influenced by a new virus in late 2020 that pushed the economy to its worst annual performance since the 1998 Asian financial crisis (Sipalan, 2021). Malaysia's economic conditions throughout 2020 have worsened due to the COVID-19 outbreak. This is a sizeable health challenge faced by the Malaysian state. The experience of the COVID-19 outbreak throughout 2020 is an indication that health is a factor that has a very significant impact on economic growth. To see and understand the economic growth in the years before 2020. From 2000 to 2019, based on World Bank data, the Malaysian economy was quite healthy. The following is a graph of Malaysia's economic growth, which was developed based on gross domestic product data in the period 2000-2019.



Figure 1: Gross Domestic Product Malaysia in million USD Period 2000 - 2019

Figure 1 shows that Malaysia's gross domestic tends to increase. The increase in gross domestic product indicates that there is good economic growth in Malaysia despite fluctuations, however, the trend tends to increase in the period from 2000 to 2019. Theoretically, in human capital theory, health and education have an effect on human performance. Where in human capital theory, what is meant by human

performance is a human performance that produces economic value. This means that human performance has an impact on economic growth. In human capital theory, to work and generate income, humans need expertise, skills and knowledge to complete their work, which is supported by experience, and mental and physical health. To increase or develop human capital, humans can develop it through human capital investment.

Education is one of the human capital investments to increase or develop human capital. So that education becomes very important in the economy (Doppelt, 2018). Because education plays a role as a developer of community human capital with the hope that human capital owned by the community develops so as to empower people to be productive in the economy. When the productivity of society increases, the gross domestic product resulting from the increase in the productivity and performance of the community nationally increases. The increase in gross domestic product creates economic growth. Education in Malaysia developed well enough to be able to develop the human capital of the Malaysian community (Symaco et al., 2017).

The human capital that develops in Malaysia increases the productivity of society, which has an impact on increasing Malaysia's gross domestic product every year (Abdullah, 2013). Human capital investment in Malaysia in the education sector is an increasing trend from year to year. So, it can be said that human capital investment in Malaysia is developing well. It is hoped that an increase in human capital investment can encourage economic growth. The condition of human health has an impact on human performance. When people are sick or their health is damaged, it will automatically have an impact on human performance because human capital is integrated into humans. When humans work in sick conditions, it will have an impact on performance that is not optimal compared to working in healthy conditions. So, health is a human capital or supporting human performance.

In 2020, the COVID-19 was found to have spread throughout the world starting in 2020. The COVID-19 massively disturbed and threatened human health globally, including Malaysia (Alrabaiah et al., 2021). The impact of the COVID-19 pandemic has a very significant impact on the economy. This shows the importance of health for the economy.

The development of the massive COVID-19 outbreak is a challenge for the world, including Malaysia. In 2019, Malaysia's healthcare service was named the best worldwide, beating several other countries such as Ecuador, Mexico, Costa Rica, Thailand, and France. This award was given by the International Living Annual Global Retirement Index 2019. Citing its official website, Malaysia managed to get a score of 95 out of 100. The COVID-19 spreads throughout the world and has an impact on the global economy (Pramono et al., 2021).

One of the industries most affected by the COVID-19 is the tourism industry (Kristiana et al., 2021). It is not only the tourism industry that has been affected by the COVID-19. Informal industries such as micro, small and medium scale enterprises were also affected by the COVID-19, resulting in changes in management in the management of the micro, small and medium enterprises. The impact of COVID-19 affects firm performance (Raies & Ben Mimoun, 2021).

Health services in Malaysia are considered world-class with an infrastructure that develops overtime and is sophisticated. Some 13 hospitals in the country are accredited by the Joint Commission International (JCI). It is considered the gold standard in health care assessment worldwide, and nearly every doctor is fluent in English. Most of them were reportedly trained in the UK, United States and Australia, so communication can run smoothly. International Living also states that people can choose a hospital, private and public, that suits their needs. Private hospitals tend to be slightly more expensive, but are more compliant with Western standards than general hospitals. Even in private hospitals, treatment is so affordable that for minor visits, people can pay themselves (Azimian et al., 2020). Malaysia excels in the domain of health care and advanced infrastructure.

Malaysia Healthcare Travel Council (MHTC) is an organization under the Malaysian Ministry of Finance whose task is to increase the number of medical tourists in Malaysia. MHTC is an integrated service to Malaysian healthcare. Its services include visa extensions for medical purposes and accommodation (Timan et al., 2018). Not only that, Kuala Lumpur International Airport provides a concierge and special lounge that caters to medical tourists. Officers will greet tourists as soon as they leave the aerobridge and escort the tourists by speeding up the passport and customs control process. They also escort tourists to the targeted hospitals and provide interpreters if necessary. Based on data from the World Bank, investment in the health sector in Malaysia has also continued to increase from year to year in the period 2000 to 2019. Figure 2 charts the investment growth in the health sector in Malaysia.



Figure 2: Health Investment in Malaysia

Figure 2 data shows that health investment in Malaysia has an increasing trend from year to year. At a glance, the graph of data between health, education and economic growth in Malaysia has a positive relationship. Speaking of infrastructure, it is true that there are at least 13 hospitals in Malaysia that are accredited by the Joint Commission International (JCI), a global standard for the quality of clinical health services or hospitals. This could be one of the factors in the perception that treatment in Malaysia is better. The healthcare system in Malaysia consists of public services that are funded by taxes and administered by the government as well as the private sector. In general, public-sector health services are managed centrally by the Ministry of Health, which also regulates the pharmaceutical industry and food safety (Ahmad et al., 2020). The public sector (Malaysian Ministry of Health) provides a comprehensive range of services such as health promotion, disease prevention, curative care and rehabilitation provided through clinics and hospitals. Meanwhile, the private sector is funded by taxes, business ownership,

insurance, and medical patients. The private health sector provides health services focused on urban areas, through private clinics and hospitals with special facilities for curative care. The Malaysian health care system is organized into three groups, which means that three types of ownership distinguish hospitals in Malaysia such as public hospitals, private hospitals, and non-profit private hospitals. One of the factors is the regulation imposed by the Malaysian Ministry of Health regarding the price of health services and pharmaceutical products. One of Malaysia's health innovations is the use of AI to diagnose patients through gadgets. There is also telemedicine, where patients can monitor their heart rate and blood glucose levels through a device worn by the patient, such as a patch or watch. Meanwhile, their doctor can monitor abnormalities remotely. Patients can also contact their doctor via video call and receive a doctor's prescription at once.

However, this requires proof that the right method is utilized. In order to understand the behavior data and the possibilities that may occur in the future, which is full of uncertainty, it is necessary to know the behavior of data between education, health and economic growth in Malaysia to answer the challenges of health and economy in Malaysia since the arrival of the 2020 COVID-19 pandemic. We use data from 2000 to 2019 because we want to objectively look at the behavior of health, education and economic growth data in Malaysia using the Threshold Autoregressive analysis tool.

2. Literature Review

Human capital is all things that are inherent in humans that can be used in completing work in earning income (Ajidem & Alimi,2021). Human capital can be in the form of experience, knowledge and expertise as well as health, which is a vital human capital in life. Education is an investment in human capital in the form of time and money. Education is also seen as one of the most important forms of human capital investment, in particular for increasing the income level of an employee. Human capital is a very important force in building corporate wealth. Superior human capital has the potential to help leaders to be more effective and superior, to help form a strong cultured organization, to help improve the company's financial performance; and to help create new business potential from the results of creativity and innovation. Superior human capital will be an extraordinary solution to increase the competitiveness of companies at local and global levels (Alvarado et al., 2021). Managing human capital requires smart strategies to optimize individual potential. For that, companies must facilitate and finance the employee learning process on an ongoing basis as well as reward and treat employees as their most valuable asset. And then, leadership must communicate performance and targets clearly and consistently. Managers must be fair and open with responsibility for appraising, rewarding, caring for and directing potential employees into higher business responsibilities, as well as creating innovation and supporting continuous improvement in every aspect of work and business (Hamilton & Sodeman, 2020).

Human capital is a very important factor in determining the productivity of an economy (Haini, 2021). The different quality of human capital is believed to cause two economies that have identical amounts of labor, physical capital, natural resources and technology to produce different outputs. A human being is a form of capital, like physical capital and technology. Human capital is a qualitative dimension of human resources. The qualitative dimension of human resources, such as expertise and skills, possessed by a person will affect that person's productive ability. Skills and knowledge can be improved through a good educational process and maintained health conditions. Expenditures on education and health are investments because, like investing in buildings or land, they will generate returns in the future. Expenditures on education, training and health will improve a person's health and knowledge so that the productivity and income of that person will increase in the future (Mariana, 2015).

From the company's point of view, human capital is the knowledge and skills of the employees who work for the company. Human capital means employees have strong analytical and communication skills, high enthusiasm for work, moral and conscientious excellence, excellence in creativity and intellectual curiosity, superior mental and physical endurance, a proactive character for goals, strong business instincts, and understand people, processes, technology and operations with high personal integrity.

The superiority of employee quality as human capital in the company will enable the company to maintain its competitiveness in order to win the business competition. The proactive attitude of the company's leadership to protect human capital, like protecting other important assets, will always make the company and its leadership superior in overcoming various potential risks, in particular, the risks that arise from the behavior and ways of thinking of human resources for business, organization and leadership. Human capital has always been perceived by experts as intangible capital (Desarno et al., 2020). However, actually human capital always takes the form of behavior and ways of thinking. Maybe human capital cannot yet be recorded, such as money capital and capital goods. However, reality has always shown that human capital is something that will determine the success of the management of money capital and capital goods. Therefore, human capital must be able to control emotions and conscience, so that human capital can generate moral strength, to be used in increasing the growth of all company assets, and to protect the company's financial capital and business potential from various risks (Khan et al., 2020).

Human capital is the most strategic force in business. Therefore, company leadership must be smart, consistent, accurate, and decisive, in making strategic decisions about human potential wealth governance, in order to manage company employees as superior company assets and capital. Human capital is the best asset that can be used to protect a company's wealth from inflation and other risks (Wright, 2020). Human resources who are educated in morality, ethics, conscience, character, quality and competence will be the best protectors against the company's competitiveness at all times, and in every situation. Training is the second most important human capital investment activity after education and one of the main tools for companies to develop human capital owned by their employees. Human capital is developed in the form of competencies like skills, knowledge and attitudes needed to be able to complete a job well. These developed competencies can increase the value of employees in the eyes of the company so that they can ask for higher salaries, and access better jobs and careers. Competencies built by training can be grouped into two, namely general competencies and specific competencies. General competencies increase human capital, which can be easily adapted and transferred to other situations and workplaces, while specific competencies are more tied to existing situations and workplaces so that they are more difficult to adapt and transfer to other situations and workplaces.

In general, employees will prefer investment in the form of general competency training that can increase their selling value in the labor market than investment in the form of specific competency training that has no added value outside of the current job. Therefore, each employee will seize all opportunities to develop general competencies that he has and is even willing to sacrifice his personal resources to develop a general competency if he feels that general competence can provide greater added value to the human capital. On the other hand, employers will be more reluctant and careful in financing human capital investments in the form of general competencies because they are concerned that these investments will increase their risk of losing their investment due to being hijacked by other companies. Employers will prefer to fund the development of specific competencies that only benefit companies that provide training and can even increase the perceived switching cost of an employee for changing jobs (Tang et al., 2021).

In order for individuals to obtain the highest degree of health, health problems must be an important economic goal. These efforts require significant investment and organized effort to produce a

high quality, public health status and a productive workforce. This can be achieved by providing health services that are fair and equitable, sustainable with care. This will provide great benefits to society and increase competitiveness in the global market. Economic growth is an indicator to see the economic performance, both at the national and national levels at the regional (regional) level (Tandon et al., 2020). Basically, economic growth is an increase in aggregate output (total goods and services produced by economic activity) or Gross Domestic Product. Increased economic growth is associated with an increase in the production of goods and services in people's economic activities. Because basically, economic activity is the process of utilizing production factors to produce output, then this process, in turn, produces a flow of remuneration for the production factors owned by the community. One of the factors affecting economic growth is the quality of human resources, including health (Lopreite & Zhu, 2020). Health plays a major role in shaping the ability of a developing country to obtain quality human resources in order to realize a sustainable economy. In a global knowledge-based economy, health is recognized as a form of investment in human resources that generates economic benefits and contributes to the future prosperity of the nation. Health is a very useful investment to improve the quality of human resources, and it is considered an important factor affecting the quality of human resources. Countries with low levels of health have a greater challenge to achieve this economic growth because it is assumed that if society is healthy then production will increase and lead to economic growth (Culver & Chalkidou, 2019).

High rates of illness and death are the main causes of long-term delays in economic growth in developing countries. The relationship between health and economic growth has a positive relationship between the survival rate of adults and economic growth (Coccia, 2021). The results remained the same when the adult survival rate was replaced by life expectancy, which was positively related. Life expectancy and education level have a positive and significant relationship to Gross Domestic Product. Improved health has also increased labor productivity and capital accumulation. Education and health are very important means of investing in human capital in increasing economic growth (Ogundari & Awokuse, 2018). Education and health have the potential to be two means of awakening and growing and recovering the economy during a pandemic and post-pandemic period (Piltch-Loeb et al., 2021).

Education and health have an influence and impact on economic growth. Where education increases the human capital of the community so that it can increase community productivity and have an impact on improving community performance. In aggregate, when people's economic performance increases, it will have an impact on increasing gross domestic product, where when the gross domestic product increases, it indicates an increase in the economy.

Therefore, this study examines the education and health variables in driving economic growth based on human capital theory based on the following hypotheses:

H1: Education has an influence in increasing human capital.

H2: Human capital has an impact on human performance, which then in aggregate has an impact on economic growth.

H3: Health plays a role in maintaining good human performance because, when human health is disturbed, it will have an impact on decreasing performance.

H4: Education and health support each other in promoting economic growth with different roles.

3. Research Methods and Materials

This study aims to determine the behavior of education and health data in driving economic growth in Malaysia. To achieve this goal, the Quantitative Threshold Autoregressive method is used to

forecast data behavior so that the relationship behavior between data can be seen for the forecasting economic growth when investing in health and education sectors. The autoregressive threshold was proposed by Tong in 1978 and is one of the non-linear time-series analysis tools (Vinod, 2020). The autoregressive threshold can be used to study data behavior based on past data so that it can be used as an indicator for future decision-making. The hopes that knowing the behavior of the data in the past can be an indicator of decisions that can be taken in the future, which is full of uncertainty, especially during the COVID-19 pandemic. In this study we use the autoregressive equation as follows:

 $AR_{(p)} = Y_t = c + \Phi_1 Y_{t-1} + \Phi_2 Y_{t-2} + \dots + \Phi_p Y_{t-p} + e_t$

Where AR is Y and Y_t is Y over time in a time series that is influenced by Y_{t-1} or Y over time in the past in period 1 and Y_{t-1} itself is also influenced by Y_{t-2} that is Y in the past in the period 2 and so on, which is influenced by error term for time in the study period.

This study focuses on secondary data sourced from the World Bank including Malaysia's gross domestic product data, health investment in Malaysia and education investment. The econometric equation is as follows:

 $Y_t = \beta_0 + \beta_1 H_{t1} + \beta_2 E_{t2} + e_t$

Where Y is a gross domestic product, t is a time period, β is constant, H is health investment, E is education investment. All data are secondary data from the World Bank with the unit in million USD

4. Results and Discussion

In analyzing the threshold variable, we used two estimates. The first estimate made the variable H or health as the threshold variable and the variable E or education as the non-threshold variable. The second estimate uses the education variable as the threshold variable and the Health variable as the non-threshold variable. This is done to see the behavior of the health and education variables toward GDP in different situations so that in the future it can be used as an indicator in making decisions for decisions that affect the future. The following is the results of the first estimate where the threshold variable is health and the non-threshold variable is education:

The estimation results from the first estimate can be seen in Table 1:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Threshold Variables (linear part)				
HEALTH	-1.742761	1.32518	-1.315113	0.2178
С	3.54E+10	6.81E+09	5.199333	0.0004
Threshold Variables (nonlinear part)				

Table 1: Estimation Results

HEALTH	1.080336	2.636214	0.409806	0.6906
С	-5.33E+10	4.14E+10	-1.288506	0.2266
Non-Threshold Variables				
EDUCATION	28.93174	1.909004	15.15541	0
Slopes				
SLOPE	3.81E-10	2.30E-07	0.001662	0.9987
Thresholds				
THRESHOLD	2.57E+11	1.24E+12	0.20734	0.8399
R-squared	0.995948	Mean dependent var		2.55E+11
Adjusted R-squared	0.993517	S.D. dependent var		8.45E+10
S.E. of regression	6.80E+09	Akaike info criterion		48.41135
Sum squared resid	4.62E+20	Schwarz criterion		48.75444
Log likelihood	-404.4965	Hannan-Quinn criter.		48.44545
F-statistic	409.6669	Durbin-Watson stat		2.130998
Prob(F-statistic)	0			

When the health variable becomes a threshold variable and the education variable becomes a nonthreshold variable, it can be seen that the relationship between GDP and education is positive at 28.93174, which means that a 28% increase in education investment can boost or 1% increase of GDP nationally with a threshold line because of the health effect of - 1.742761 or 1.7% decrease from the estimate as a negative impact or pressure due to health effects with a probability of 0.2178 or the possibility of this happening in the study period of 0.2% and an additional boost or positive influence that strengthens education encourages economic growth by 1.080336 or 1.08% with a probability of 0.6906 or 0.7%. This shows that, when investing in education, health is more likely to play a role as a support for education in driving the economy than as an error that hinders economic growth. Because the probability of a negative boost from health is 0.2% and a positive boost is greater, 0.7%. To understand the behavior of data in influencing economic growth can predict the effect of investment in education and health (Figure 3):



Figure 3: The results of forecasting GDP when health becomes the threshold variable and education becomes the nonthreshold variable

From the forecast shown in Figure 3, it can be seen that the GDP graph tends to increase over time due to the encouragement of education and health when variables other than education and health are ignored or ceteris paribus. The following is the results of the second estimate where the threshold variable is education and the non-threshold variable is health:

GDP = (30.401419063*EDUCATION + 33847223817.8) + (-5.8849208548*EDUCATION + 28444497823.9)*@LOGIT(7.23540562182e-11*(GDP(-3)-268153271299)) - 2.47985361939*HEALTH

The estimation results from the second estimate can be seen in table 2 below:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Threshold Variables (linear part)				
EDUCATION	30.40142	2.065608	14.7179	0
С	3.38E+10	6.13E+09	5.521148	0.0003
Threshold Variables (nonlinear part)				
EDUCATION	-5.884921	5.864198	-1.003534	0.3393
С	2.84E+10	6.23E+10	0.456793	0.6576
Non-Threshold Variables				
HEALTH	-2.479854	1.285058	-1.92976	0.0825
Slopes				
SLOPE	7.24E-11	6.72E-11	1.075922	0.3072
Thresholds				

THRESHOLD	2.68E+11	1.64E+10	16.31041	0
R-squared	0.996552	Mean dependent var		2.55E+11
Adjusted R-squared	0.994484	S.D. de	8.45E+10	
S.E. of regression	6.27E+09	Akaike info criterion		48.24987
Sum squared resid	3.94E+20	Schwarz criterion		48.59296
Log likelihood	-403.1239	Hannan-	48.28398	
F-statistic	481.751	Durbin-	2.576201	
Prob(F-statistic)	0			

If the health variable becomes the non-threshold variable and the education variable becomes the threshold variable, it can be seen that the relationship between GDP and education remains positive and is greater than the first estimate of 30.40142, which means that an increase in education investment of 30.4% can boost or 1% increase of GDP simultaneously. National threshold line due to health effects of -5.884921 or 5.9% decreased from the estimate as a negative impact or pressure due to health effects with a probability of 0.3393 or the probability of this happening during the study period was 0.3% and with a health pressure of -2.479854 and probability 0.0825. This reinforces the first estimate that, when investing in education, health plays a more important role in supporting education in driving the economy and acts as maintenance rather than a direct driver of economic growth. Health works to keep people working optimally and education encourages human performance so that, when health becomes a non-threshold variable, it gives a pressure of -2%, which acts as a maintenance cost for support for encouraging educational investment in human performance. To understand the behavior of data in influencing economic growth can predict the effect of investment in education and health (Figure 4):



Figure 4: The results of forecasting GDP when health becomes the non-threshold variable and education becomes the threshold variable

From the forecast shown in Figure 4, it can be seen that the GDP graph tends to increase over time due to the encouragement of education and health when variables other than education and health are ignored or ceteris paribus. The same is the case with the results of the first estimation forecast, but

the results of this second forecasting estimate the increasing trend becomes more gentle. From the estimation results, it can be seen that behavior, education and health have a role in supporting economic growth. However, the form or role of support for the economy is different. Education has a direct role in driving economic growth through human performance; health has more of a role as a supporter and guardian of human performance. This becomes very rational because when humans improve their education, they will acquire new knowledge and new skills so that they become more skilled and more productive. However, when he gets healthier he can optimize the results of investment in the health sector. When sick, despite having high skills, human performance will be impaired. However, when healthy, but do not have enough education, they will have difficulty completing their work. So it can be understood and proven through an autoregressive threshold analysis tool that education plays a direct role in encouraging economic growth in Malaysia, and health has a maintenance role. When there are health challenges, human performance will be disrupted. Even with high skills, when there are health problems, performance will be disrupted.

5. Conclusion

Education is a mechanism for developing human capital. However, education will be difficult to improve human performance without support from health. Education and health support each other in improving economic performance in Malaysia. With good education and a good health system, the economy has the potential to improve and develop well in Malaysia.

References

- Abdullah, A. J. (2013). Education and Economic Growth in Malaysia: The Issues of Education Data. *Procedia Economics and Finance*, 7(1), 65–72. https://doi.org/10.1016/S2212-5671(13)00219-0
- Ahmad, N. S., Makmor-Bakry, M., & Hatah, E. (2020). Multi stakeholders of health and industries perspectives on medicine price transparency initiative in private health care settings in Malaysia. *Saudi Pharmaceutical Journal*, 28(7), 850–858. https://doi.org/10.1016/j.jsps.2020.06.003
- Ajidem, K. B., & Alimi, O. Y. (2021). Income inequality, human capital and terrorism in Africa: Beyond exploratory analytics. *International Economics*, 165(5), 218–240. https://doi.org/10.1016/j.inteco.2021.01.003
- Alrabaiah, H., Arfan, M., Shah, K., Mahariq, I., & Ullah, A. (2021). A comparative study of spreading of novel virus disease by using fractional order modified SEIR model. *Alexandria Engineering Journal*, 60(1), 573–585. https://doi.org/10.1016/j.aej.2020.09.036
- Alvarado, R., Tillaguango, B., López-Sánchez, M., Ponce, P., & Işık, C. (2021). Heterogeneous impact of natural resources on income inequality: The role of the shadow economy and human capital index. *Economic Analysis and Policy*, 69(3), 690–704. https://doi.org/10.1016/j.eap.2021.01.015
- Azimian, M., Haron, H. N., & Hamid, A. B. A. (2020). *Malaysia Healthcare Tourism: Accreditation, Service Quality, Satisfaction and Loyalty.* Singapore, SG: Partridge.
- Coccia, M. (2021). The relation between length of lockdown, numbers of infected people and deaths of Covid-19, and economic growth of countries: Lessons learned to cope with future pandemics similar to Covid-19 and to constrain the deterioration of economic system. *Science of the Total Environment*, 775(6), 1–13. https://doi.org/10.1016/j.scitotenv.2021.145801
- Culyer, A. J., & Chalkidou, K. (2019). Economic Evaluation for Health Investments En Route to

Universal Health Coverage: Cost-Benefit Analysis or Cost-Effectiveness Analysis? *Value in Health*, 22(1), 99–103. https://doi.org/10.1016/j.jval.2018.06.005

- Desarno, J., Perez, M., Rivas, R., Sandate, I., Reed, C., & Fonseca, I. (2020). Succession Planning Within the Health Care Organization: Human Resources Management and Human Capital Management Considerations. Nurse Leader, [Online First], https://doi.org/10.1016/j.mnl.2020.08.010
- Doppelt, R. (2018). Skill flows: A theory of human capital and unemployment. *Review of Economic Dynamics*, *31*(1), 84–122. https://doi.org/10.1016/j.red.2018.12.004.
- Hamilton, R. H., & Sodeman, W. A. (2020). The questions we ask: Opportunities and challenges for using big data analytics to strategically manage human capital resources. *Business Horizons*, 63(1), 85–95. https://doi.org/10.1016/j.bushor.2019.10.001
- Haini, H. (2021). Examining the impact of ICT, human capital and carbon emissions: Evidence from the ASEAN economies. *International Economics*, 166(8), 116–125. https://doi.org/10.1016/j.inteco.2021.03.003
- Khan, Z., Hussain, M., Shahbaz, M., Yang, S., & Jiao, Z. (2020). Natural resource abundance, technological innovation, and human capital nexus with financial development: A case study of China. *Resources Policy*, 65(3), 1–10. https://doi.org/10.1016/j.resourpol.2020.101585
- Kristiana, Y., Pramono, R., & Brian, R. (2021). Adaptation Strategy of Tourism Industry Stakeholders During the COVID-19 Pandemic: A Case Study in Indonesia. *Journal of Asian Finance, Economics and Business*, 8(4), 213–223. https://doi.org/10.13106/jafeb.2021.vol8.no4.0213
- Lopreite, M., & Zhu, Z. (2020). The effects of ageing population on health expenditure and economic growth in China: A Bayesian-VAR approach. *Social Science & Medicine*, 265(11), 1–13. https://doi.org/10.1016/j.socscimed.2020.113513
- Mariana, I. (2015). Consequences of the Investment in Education as Regards Human Capital. *Procedia– Economics and Finance, 23*(1), 362–370. https://doi.org/10.1016/S2212-5671(15)00426-8
- Ogundari, K., & Awokuse, T. (2018). Human capital contribution to economic growth in Sub-Saharan Africa: Does health status matter more than education? *Economic Analysis and Policy*, 58(6), 131–140. https://doi.org/10.1016/j.eap.2018.02.001
- Piltch-Loeb, R., Merdjanoff, A., & Meltzer, G. (2021). Anticipated mental health consequences of COVID-19 in a nationally-representative sample: Context, coverage, and economic consequences. *Preventive Medicine*, 145(4), 1–13. https://doi.org/10.1016/j.ypmed.2021.106441
- Pramono, C. A., Manurung, A. H., Heriyati, P., & Kosasih, W. (2021). Factors Affecting Start-up Behavior and Start-up Performance During the COVID-19 Pandemic in Indonesia. *Journal of Asian Finance, Economics and Business, 8*(4), 809–817. https://doi.org/10.13106/jafeb.2021.vol8.no4.0809
- Raies, A., & Ben Mimoun, M. (2021). Laying Off Versus Training Workers: How Can Saudi Entrepreneurs Manage the COVID-19 Crisis? *Journal of Asian Finance, Economics and Business*, 8(4), 673–685. https://doi.org/10.13106/jafeb.2021.vol8.no4.0673
- Sajid, I. (2021). Malaysia: Economy contracts 5.6% in 2020 Country registered negative growth of 3.4% in fourth quarter, says central bank. aa.com.tr. Retrieved April 8, 2021 (actual access date), from: https://www.aa.com.tr/en/asia-pacific/malaysia-economy-contracts-56-in-2020/2141068
- Sipalan, J. (2021). Update 2-Malaysia's economy posts biggest annual decline since 1998 crisis. reuters.com. Retrieved April 8, 2021 (actual access date), from: https://www.reuters.com/article/malaysia-economy-gdp-idUSL4N2KG1HZ
- Symaco, L. P, Tee, M. Y., & Samuel, M. (2017). *Education in Malaysia Developments and Challenges*. Singapore: Springer Singapore
- Tandon, A., Cain, J., Kurowski, C., Dozol, A., & Postolovska, I. (2020). From slippery slopes to steep

hills: Contrasting landscapes of economic growth and public spending for health. *Social Science & Medicine*, 259(8), 1–13. https://doi.org/10.1016/j.socscimed.2020.113171

- Tang, L., Sun, S., & Yang, W. (2021). Investments in human capital: The evidence from China's new rural pension scheme. *Research in International Business and Finance*, 55(1), 1–13. https://doi.org/10.1016/j.ribaf.2020.101345
- Timan, H., Kama, N., Yusoff, R. C. M., & Selamat, A. (2018). Social Media for Medical and Health Information: Malaysian Medical Tourism Hospital. In: *Proceedings of the 17th International Conference SoMet 18 (pp 143-156)*. Amsterdam, Netherlands, September 16-18, Amsterdam, Netherlands: IOS Press BV
- Vinod, H. D. (2020). *Financial, Macro and Micro Econometrics Using R*. Amsterdam, The Netherlands: Elsevier
- Wright, P. M. (2020). Rediscovering the "Human" in strategic human capital. *Human Resource* Management Review, 9(1), 1–13. https://doi.org/10.1016/j.hrmr.2020.100781

