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Article

Interplay of poverty, unemployment, education, and technology: Insights from Malaysia's economic development strategies

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Abstract: Malaysia's economic development strategies have evolved significantly since independence, focusing on reducing poverty, enhancing education, and integrating technology to foster sustainable growth. Despite substantial progress, challenges persist in achieving inclusive development across rural and urban sectors. This study examines the effectiveness of Malaysia's New Economic Model (NEM) in addressing poverty and unemployment through technological and educational advancements. Employing a qualitative approach, it reviews literature on technology's impact on economic growth, poverty alleviation, and the role of tertiary education in national development. Analysis reveals that while NEM initiatives have attracted foreign investment and improved infrastructure, gaps remain in educational access and technological self-reliance. The findings underscore the need for targeted policies that enhance educational outcomes, promote inclusive technology adoption, and address structural inequalities to achieve sustainable economic development. Recommendations include bolstering vocational training, enhancing rural infrastructure, and fostering public-private partnerships in technology innovation to ensure equitable economic progress.

Keywords: economic development; national plan; technology; education; poverty

1. Introduction

Economic progress has been influenced by many factors such as education, technology, infrastructure, climate, presence of seaports and many more. All these factors are considered by policymakers to develop national economic strategy. Economic development is a core component of economic growth in the states, producing high wage employment and enhancing the quality of life (Roche, 2018). Furthermore, Clickner (2012) believed it is government responsibilities to ensure to generate revenue to provide services and provide employment opportunities to the citizens for them to survive. The policy of economic development, if done effectively, can increase the potential of investment, especially Foreign Direct Investment (FDI) and reduce poverty rate and unemployment rate by providing more jobs. Maintained growth of the economy of the states is necessary especially for developing states such as Malaysia, Thailand, and Indonesia to development plans and strategies can be run and implement smoothly and successfully. There are several factors that will be considered in NED, such as human resources, physical capital, natural resources, and technology that contribute to the growth of the state's national economic policy. As stated by Agarwal (2020), positive economic development leads to higher tax collections for budget expenditures, which can be used by the government to develop

the economy. That can also be used to reduce the budget deficit to a minimum. Indeed, sustainable growth reduces individuals from poor working standards to better jobs and adequate homes.

The motivation to address poverty, unemployment, education, and technology in Malaysia is driven by the urgent need to achieve sustainable and inclusive socio-economic growth in a rapidly evolving global landscape. Reducing poverty and unemployment is essential for social stability and economic prosperity, ensuring that all Malaysians have equitable access to opportunities and resources. Improving education is crucial for developing a skilled workforce that can adapt to and thrive in a competitive job market, while technological advancement is vital for enhancing productivity, fostering innovation, and bridging gaps between urban and rural communities. By tackling these issues, Malaysia aims to empower its citizens, reduce disparities, and position itself as a resilient and forward-looking nation capable of leveraging the benefits of a digital economy to uplift all segments of society.

In Malaysia, persistent challenges in poverty, unemployment, education, and technology continue to hinder comprehensive socio-economic development. Despite significant economic growth and poverty reduction efforts, income inequality remains stark, particularly affecting rural areas and indigenous communities. Youth unemployment and underemployment highlight a critical mismatch between the labor market demands and the current education system, which struggles with disparities in quality and equity. Furthermore, the uneven access to and integration of technology exacerbates the digital divide, limiting opportunities for marginalized populations and impeding Malaysia's aspirations to become a digitally advanced economy. Addressing these intertwined issues requires holistic policies that enhance educational outcomes, foster inclusive technological advancement, and create sustainable employment opportunities, thereby ensuring equitable socio-economic progress for all Malaysians (Osman et al., 2015).

After Tanah Melayu's independence in 1957, the country's economic policy centered on the "Divide and Rule Policy" brought by the British was seen to have caused the problem of economic imbalance in which the race-based economic distribution system took place. After the formation of Malaysia in 1963, the national economic development began to formulate plans with a Long Plan Framework covering the National Economic Development of Malaysia such as the New Economic Policy (NEP), the National Development Policy (NDP) and the National Vision Policy (NVP) (Abdullah, 2014). After nearly 64 years of Malaysia's independence, the economic growth strategies of the country continue to be strengthened in line with the fast speed of technology and globalization and the economic goals of the country to be accomplished. At the end of March 2011, the New Economic Model (NEM) developed under the Economic Transformation Program (ETP) by Malaysia's 5th Prime Minister, Najib Razak, was reinforced with eight strategic policy initiatives aimed at improving people's quality of life and generating highly qualified human resources. Evidently, Najib Razak stressed that NEM is an important pillar for Malaysia which is being formed, a structure that will serve our society in the future (Abdullah, 2014). Najib Razak hopes that NEM can transform the country's economy to lead global excellence through high competitiveness, increase private growth and investment and help the people achieve high income levels (Programme, 2011).

However, the effectiveness of this policy is still a question mark either it is effective to reduce poverty and unemployment rate in Malaysia. Furthermore, the effectiveness of NEM in Malaysia and the link with higher education level does contribute to the economic growth of the states by increasing the capabilities and skills of labor and efficiency. Besides, the investment in technologies during this era of NEM brought by Najib Razak whom close with China who have a very strong ecommerce-based sectors, contribute to the foreign direct investment and economic growth of Malaysia. Therefore, this paper will discuss the effectiveness of NEM by looking at the impact of poverty reduction and NEM investment on technology and infrastructure. In addition, this paper will focus on the contribution of tertiary education to the effectiveness of NEM.

The aim of this study is to analyze the Malaysian measures in overcoming the level of poverty in rural areas as well as investigate the effectiveness of increasing the level of education and technology in economic growth. The structure of the paper in section one is an introduction, section two describes the literature review specially on the technologies impacts to economic development, poverty and inequality, tertiary education on national economic development. Section three analyses the national economic development strategic particularly, impact of Malaysia's New Economic Model, poverty reform, unemployment rate, and tertiary education. Section 4 explain the discussion on economic development in Malaysia specially investment and technology policies. Finally, section five concludes the summary of this paper.

2. Literature review

This section discusses some general National Economic Developments key instruments such as poverty, technologies and higher education level, and reviews existing studies in the field of economic development in Malaysia.

Evolution of Development Paradigms: Economic development strategies in developing countries have evolved from traditional models of state-led industrialization to more nuanced approaches integrating market dynamics and global integration. The initial focus on import substitution industrialization (ISI) aimed at self-sufficiency by replacing foreign imports with domestically produced goods, as seen in Latin America and parts of Africa during the mid-20th century. However, this approach often led to inefficiencies and economic stagnation due to lack of competition and over-reliance on protectionism (Irwanshah et al., 2016; Rodrik, 2018). In contrast, the success of export-oriented industrialization (EOI) in East Asian economies like South Korea and Taiwan highlighted the benefits of integrating into global markets, emphasizing competitive exports and leveraging global demand to drive growth (Felipe, 2019). This shift reflects a broader recognition that global market access and competitive industrial policies are critical for fostering economic resilience and diversification in developing economies (World Bank, 2020).

Importance of Institutional Quality and Governance: Recent research underscores the pivotal role of institutions and governance in shaping economic development outcomes. Effective institutions—characterized by clear property rights, rule of law, and efficient regulatory frameworks—are foundational for attracting investment and fostering economic activity (Acemoglu and Robinson, 2019). Empirical studies by

Dincecco and Wang (2022) demonstrate that countries with robust institutional frameworks and governance systems experience more stable and sustainable economic growth. Furthermore, improvements in governance, such as reducing corruption and enhancing transparency, are associated with higher economic performance and social welfare (Khan and Jomo, 2022). The World Bank (2023a) highlights that strengthening institutional capacities and governance mechanisms is essential for ensuring that development strategies translate into tangible economic benefits and equitable growth outcomes, particularly in regions vulnerable to political and economic instability.

Role of Human Capital and Technological Innovation: The modern literature increasingly emphasizes human capital development and technological innovation as core drivers of economic growth in developing countries. Human capital theory, articulated by Becker and Schultz, posits that investments in education and skills training enhance labor productivity and economic potential (Barro, 2022). Recent studies indicate that countries investing heavily in education and health achieve more rapid economic growth and social advancement (UNESCO, 2023). Technological innovation, as highlighted by Romer and endogenous growth theory, further accelerates development by enabling productivity gains and creating new market opportunities (Comin and Mestieri, 2021). Case studies from emerging economies like China and India illustrate how strategic investments in technology and human capital have catalyzed their transition from low-value manufacturing to high-tech industries (Naughton, 2022). Consequently, aligning development strategies with education, skill development, and technology adoption is critical for fostering inclusive and sustainable economic growth in developing nations (OECD, 2023).

2.1. Technologies impacts to economic development

Investment in technologies, especially during the outbreak of the Industrial and information era, is very highly recommended. As stated by Hausmann and Domínguez (2020), it is for the most part perceived in the field of economic matters that technology is the one of the fundamental motors of nation's monetary development. They added that innovation and technology help more and better products and enterprises to be delivered more viably. Furthermore, an institution of a nation will make or break their capacity to facilitate technological progress by stating positive institutions promote innovation, negative institutions suppress it (O'Sullivan, 2019). In line with this, Sullivan (2019) by quotes from Douglas North and Barry Weingast stated that good organizations preserve and promote property rights, empowering people to discover new means of changing their lives. Furthermore, O'Sullivan (2019) agreed with Deirdre McCloskey and Joel Mokyr with the statement of technologies emphasizing the role of culture in promoting creative entrepreneurship, whether through reverence within the bourgeois class or through promoting an academic elite culture that is pro-innovation. Evidently, Sassi and Goaied (2013) found a coherent and statistically important effect on economic growth between 1960 and 2009 of the diffusion of ICT assessed by three metrics, namely mobile phones, fixed-line telephones and the Internet, has been identified. However, as stated by Bahrini and Qaffas (2019) quoted from Freeman and Soete (1997), has shown that the propagation of ICT may have a

negative impact on economic growth, especially in developed countries. This has been supported by Lee et al. (2005) by stating that ICT was found to have a positive effect on economic development only for recently developed states, but not for emerging countries in East Asia.

Recent studies underscore the transformative impact of technology on economic development, highlighting its role in enhancing productivity, fostering innovation, and enabling new economic opportunities. Technological advancement facilitates the efficient allocation of resources, reduces transaction costs, and improves access to information, which collectively boosts economic output and competitiveness (Comin and Mestieri, 2021). For instance, digital technologies like artificial intelligence (AI), big data, and the Internet of Things (IoT) are revolutionizing sectors such as manufacturing, agriculture, and services by increasing efficiency and enabling new business models. Empirical research by Lane (2023) demonstrates that countries investing in digital infrastructure and technological innovation experience significant improvements in economic growth rates and productivity gains, particularly in industries that are technology intensive. This technological progress also fosters economic diversification by enabling developing countries to leapfrog traditional industrialization stages and integrate into higher-value global value chains.

Moreover, technology's impact on economic development extends to social and inclusive growth dimensions. It enhances financial inclusion through digital banking and mobile payment systems, improves access to education via e-learning platforms, and expands healthcare services through telemedicine (UNCTAD, 2023). These advancements help bridge urban-rural divides and increase economic participation among marginalized groups. However, the literature also cautions about potential challenges, such as the digital divide and skill mismatches that may exacerbate inequalities if not adequately addressed. Consequently, policymakers are urged to complement technological investments with strategies that promote digital literacy, skill development, and inclusive access to technological resources. Integrating technology-driven growth with inclusive policies can maximize economic benefits and contribute to sustainable development (World Bank, 2023b).

2.2. Poverty and inequality

Poverty usually has a link with inequality and the condition of states either the states having challenges on the resources such as lack of water supplies or rich with natural resources. These contribute to the economic developments and economic growth of the states. As stated by Dollar and Kray (2001), since the real income of the poorest fifth in population rises in proportion to the average income. It shows that economic prosperity normally supports the poor as well as anyone else (Dollar and Kray, 2001). Adams (2003) claimed that Poverty is minimized by economic growth because growth has no effect on income inequality. This has been supported by Forsyth (2000) in his writing by stating that there is plenty of evidence that existing economic development and globalization trends are growing wage inequalities and thereby serving as a brake on reducing poverty. However, Adelman and Morris (1973) believed development is followed by both an actual and a proportional drop in the average income of the very poor. The terrifying effect of inequality, they claimed, was

that hundreds of millions of chronically poor people were harmed rather than improved by economic growth. Some experts also believed that economic growth continues to increase the disparity in wealth and properties, and these higher levels of inequality mean that the wealthy rather than the poor benefit from economic growth. Adams (2003) believed that the most recent theory is that economic prosperity does not have a substantial effect on inequality, as the distribution of wealth usually does not change much over time. He added that since income inequality continues to remain constant over time, it can be assumed that, at least to some degree, economic development would decrease poverty. At least two aspects depend on just how much prosperity ultimately decreases poverty, which is the extent of inequality and the rate of economic growth itself.

2.3. Tertiary education on national economic development

The level of education somehow influences and affects the economic growth of the state. As stated by Canals (2017), education has a direct impact on economic growth, to the extent that improving human capital is essential. She added an increase in the educational level of workers improves their human capital and increases the productivity of these workers and the output of the economy. As stated by Romer (1990) and the Augmented Solow Growth Model argued that higher education workers are more skilled and profitable, ultimately leading to economic development. This model shows the key theoretical approaches which demonstrate through education the relationship between human capital and economic growth. However, as stated by Babalola (2012) by using Nigeria as case study there is a long-term relationship between education and economic growth. Moreover, there is also a sufficient positive link between GDP growth rates and educational factors in Romania, which is the 12th new Member State of Europe. On the contrary, Abdullah (2014) in his research showed a negative relation between economic growth and education. This result is in line with the research made by Lau et al. (1991) stated that the stock of human capital measured by average years of education was insignificant and, in some cases, had a negative contribution to growth.

Recent literature highlights the critical role of tertiary education in driving national economic development by enhancing human capital, fostering innovation, and supporting a knowledge-based economy. Advanced education provides individuals with specialized skills and knowledge, which are essential for high-productivity industries and complex economic activities. According to Hanushek and Woessmann (2023), countries with higher levels of tertiary education attainment experience faster economic growth due to the increased availability of skilled labor, which boosts productivity and facilitates technological adoption. Their research indicates that tertiary education contributes significantly to the development of human capital, leading to higher innovation rates and more dynamic entrepreneurship, essential components for sustainable economic growth. Moreover, tertiary institutions often serve as hubs for research and development (R&D), fostering innovation and technological advancements that drive economic competitiveness on a global scale.

Additionally, tertiary education plays a crucial role in promoting social mobility and reducing economic inequality, thereby contributing to inclusive economic

development. Recent findings by Aghion et al. (2023) suggest that access to higher education enables individuals from diverse socio-economic backgrounds to acquire skills and qualifications that improve their employment prospects and earning potential. This not only enhances individual economic outcomes but also contributes to broader economic stability and growth by expanding the skilled workforce. Furthermore, tertiary education institutions often engage in partnerships with industry and government, facilitating knowledge transfer and aligning educational outcomes with market needs (Islam et al., 2016). This alignment ensures that graduates are equipped with relevant skills, reducing skill mismatches and enhancing employability. Thus, expanding access to quality tertiary education is increasingly recognized as a vital strategy for promoting economic resilience, innovation, and inclusive growth in developing and developed nations alike.

3. National economic development strategic

New Economic Model (NEM), which is the country's economic policy, aims to create Malaysia as a successful and high-income country by 2020. In addition, the goal of NEM is also to eradicate most of the poverty that afflicts the people in this country, to develop the country through a high-income economy, to create higher wages to increase productivity in the use of skills and innovation, knowledge-based economy and investment in new technologies, diverse skills and innovative and creative, Producing a competitive workforce. Thus, this section will discuss the effectiveness of NEM by looking at the impact of poverty reduction and NEM investment on technology and infrastructure. In addition, this section will focus on the contribution of tertiary education to NEM.

3.1. The impact of Malaysia's new economic model

Poverty is relative to a developing country, thus requiring the ongoing efforts of a powerful government to ensure that it can be dealt with properly (Razak, 2020). The focus and concentration of poverty eradication efforts should be the main agenda according to state, urban and rural channels as well as the targeted approach needed so that poverty can be addressed more effectively, especially category below 40 (B40) (Razak, 2020). One of the speeches from former Malaysian Prime Minister Najib Razak during the establishment of NEM was, "The poor, the incapable and the marginalized will not be left behind. Through the economic stimulus of the NEM policy, the government at that time hoped that through the exploration of new capital could enhance economic development by opening the important sectors of the economy and at the same time open employment opportunities.

Based on the **Figure 1**, the poverty rate in Malaysia in 2010 to 2015 is in a satisfactory condition. It shows that Malaysia's poverty rate in 2008 was very high with 16.7% due to the impact of the global financial crisis that occurred in 2008. The graph above shows that the declining poverty rate is due to BR1M. BR1M or "Bantuan Rakyat 1 Malaysia" initiative has been established by Prime Minister Datuk Seri Najib Tun Razak as a feature of an administration exertion to help Malaysian in a lower pay gathering. Despite, the data poverty rate in 2008 to 2015 shows a good achievement by looking at Malaysia's unemployment rate from 2008–2015, shows fluctuated

statistics. The issue of unemployment is one of the big challenges for the government. Many action plans have been made by the government however, the unemployment rate is still unstable.

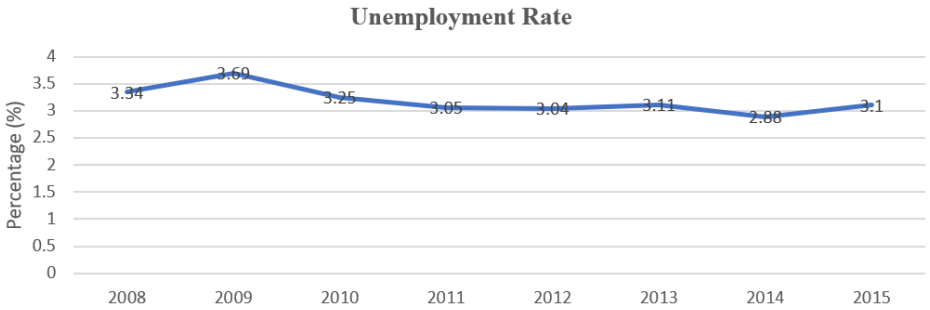

Figure 1. Poverty rate in Malaysia.

After several years of NEM implementation, the results can be seen in the reduction of the country's poverty rate taking into account from 2008 to 2015. In 2008 poverty rate was the highest 16.7% and gradually reduced to 2.7% in 2015. However, beginning in 2009, according to the statistics given below, the country's poverty rate has decreased significantly. It can be said that the new economy model that has been established in 2010 gives a significant impact to the rate of poverty in Malaysia. This can be looked at the graph of poverty rate in Malaysia 2008–2015.

3.1.1. Poverty Reform

After achieving independence in 1957, Malaysia continued towards a developed country with the beginning of the economy with the production of agricultural products for domestic use and exported. The agricultural sector was concentrated in rural areas before the 1990s where more than 70% of the population was involved in the agricultural sector (Malaysia, 1986–1990). This is clearly seen where Gross Domestic Product (GDP) for the agricultural sector in the 1970s recorded 16% (Malaysia, 1971–1975). Production output in this sector shows an increase year by year as shown in **Table 1**.

Table 1. GDP by kind of economic activity, 1990–2010, Malaysia (RM Million).

Sector/Year	1990	1995	2000	2005	2010
Agriculture, Livestock, Forestry and Fishing	17,308	17,114	30,647	35,835	40,916
Mining and Quarrying	9968	13,643	37,617	42,472	39,270
Manufacturing	22,060	45,174	10,998	137,940	154,640
Construction	3750	7411	13,971	14,685	18,220
Services	49,619	85,348	175,648	230,043	322,610

Source: Department of statistics, Malaysia, 2015.

This increase in production can be directly seen because of the development and implementation of policies introduced by the government. Agrarian reforms such as land development and rural development are integrated among the programs centered on rural development. In rural areas, smallholder entrepreneurs in the agricultural sector most carry out informal economic activities. The agricultural sector of smallholders consists of oil palm, rubber, coconut, fishermen, farm workers, paddy

farmers, and mixed farmers. Along with the increase in agricultural production, especially in rural areas, the growth rate of the rural population also showed a significant increase compared to the previous year. **Table 2** shows the total growth rate of rural and urban population.

Table 2. Population (million people), 2006–2015, Malaysia (million People).

Year	2006	2008	2010	2012	2015
Rural	9.9	10.1	10.4	10.5	10.8
Percentage (%)	37.1	36.8	36.6	36.4	36.2
Urban	16.9	17.4	17.9	18.4	19.0
Percentage (%)	62.9	63.2	63.4	63.6	63.8
Total	26.8	27.5	28.3	28.9	29.8

Source: Department of statistics, Malaysia, 2015

3.1.2. Unemployment Rate

Despite the population growth figures in Malaysia which shows encouraging growth, this growth is overshadowed by the issue of unemployment among the people. As in **Table 3**, it can be clearly seen that the number of unemployed is increasing every year even based on the average unemployment rate below 4%.

Table 3. Unemployment (million people), 2006–2015, Malaysia (Thousand People).

	2006	2008	2010	2012	2015
Labour Force	10,628.9	11,028.1	12,303.9 1	13,119.6	13,931.6
Total of Employed Persons	10,275.4	10,659.6	11,899.5	12,723.2	13,532.1
Unemployment	353.6	368	404.4	396.3	399.5
Unemployment Rate (%)	3.3	3.3	3.3	3.0	2.9
Labour Force Participation Rate (%)	63.1	62.6	63.7	65.5	67.5

Source: Department of statistics, Malaysia, 2015.

During Malaysia's British colonial occupation, rural development policies were implemented but were not taken seriously. This led to the indigenous population that on average the majority are Malays who dominate the subsistence agricultural sector is not progressing. This can also be seen that the British are more focused on plantation agriculture which focuses on rubber and other commercial crops.

Seeing the effects of colonization that did not give progress in the indigenous economy, Malaysia began to introduce plans that emphasized the development of the rural agricultural sector to eradicate poverty beginning in 1971 which was introduced during the reign of Tun Abdul Razak during his tenure as Second Prime Minister. The plan implemented is branded as the Second Malaysia Plan (2MP) which started from 1971–1975 where there is a program introduced, namely New Economic Policy (NEP) (Malaysia, 1971–1975). The NEP is a social engineering plan designed to reduce economies between ethnic groups and between regions with the main goal being growth through equitable distribution.

Based on the **Figure 2**, in 2008 Malaysia unemployment rate was 3.34%, has declined to 3.10% which is decreased 0.34% to 2015. The ongoing unemployment

issue is linked to the national education system. In terms of education, Malaysia still maintains its old education status even though the education system is constantly being improved. This can be seen in university education where the courses offered are still unchanged. Similarly, the demand for the qualification of the course is less placed by companies after graduation (Husain, 2017).

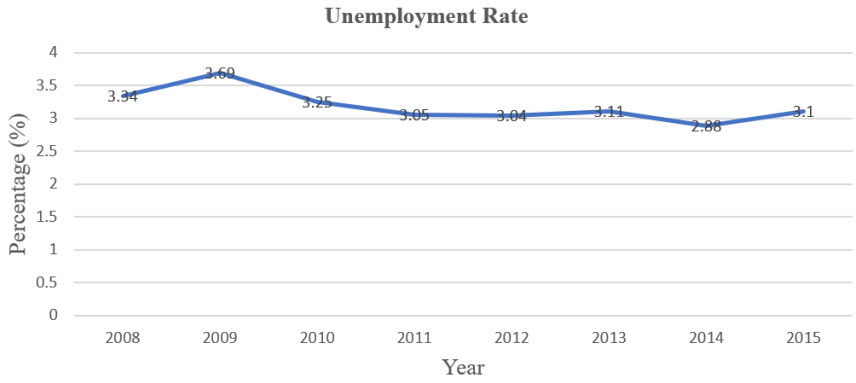

Figure 2. Unemployment rate in Malaysia

3.2. Tertiary education

Higher education plays a key role in driving development, reducing poverty, and enhancing mutual prosperity. A highly skilled workforce with a good tertiary education is a requirement for innovation and growth, for instance well-educated individuals are more employable, earn higher incomes and cope better with economic shocks. Besides, higher education mostly helps not only the individual, but also society. Higher school graduates are more environmentally responsible, have healthy lifestyles, and have a greater degree of political engagement.

As mentioned above, the Malaysian economic sector was initially an agricultural-based country. However, the dominance and contributors of the economic sector began to shift towards the manufacturing sector which began to take its place as the main catalyst for the economy. The development and development of the sector is closely related to the education sector which shapes the demand and supply of human resources. This is because the demand for human resources nowadays requires a person who has knowledge in the field required by the industry such as information and communication technology (ICT), science which is the basis of R&D, pharmaceutical industry and so on. Demand for energy resources is also a priority for those with trained skills. Therefore, education and human resource development is a starting point in the country's economic growth as well as opening opportunities for the country to be competitive in the open market. Therefore, the national education system must be at a level that can produce quality energy resources that are resilient in the market.

The education system and human resource development in Malaysia is beginning to be seen seriously in the implementation under the Fourth Malaysia Plan (4MP). The ability to read, write and count was first introduced at the primary school level through the 3M concept. In addition, during the 5 years of implementation of this plan saw the increase of educational and training institutions such as vocational schools, MARA Skills Institute, National Youth Skills Institute and the addition of the new INTAN

campus (Malaysia, 1981–1985).

The Fifth Malaysia Plan (5MP) aims to produce productive and quality manpower in line with the needs of the economic market. The education and training system is enhanced according to the needs, requirements and technological advances in the manufacturing, agriculture, and services sectors. At the school level, the New Primary School Curriculum and the New Secondary School Curriculum are emphasized while in institutions of higher learning the priority is given to courses related to engineering, applied science, applied literature, and technology (Malaysia, 1986–1990). Demand for human resources in the sector of engineers and technicians showed an increase in the market during the period 1986–1990 when this plan was implemented.

The Sixth Malaysia Plan (6MP) planned for the period 1991–1995 is the starting point for the National Development Policy (NDP) (Malaysia, 1990–1995). This policy aims to produce a productive workforce that has self-discipline. This is important because improving the quality of education and training as well as labor efficiency and mobility will be able to increase productivity. There are several curricular priorities offered in new fields of engineering such as process engineering, systems engineering, and applied literature. Therefore, an institution was established, the German Malaysian Institute (GMI) to assist in the production of the technology and electronics industry. The study found that the total allocation in the education sector almost doubled in every 5 years of planning implementation. In addition, the percentage of the total national expenditure to this sector was also increased to reach 20% in the Ninth Malaysia Plan in **Table 4**.

Table 4. Education sector development allocation according to Malaysia plan.

Malaysia Plan	Education Expenditure (RM Million)	Percentage of Overall Expenditure (%)
2nd	537.27	7.4
3rd	1,671.32	9.0
4th	4,840.09	9.8
5th	4,687.59	10.1
6th	7,760.00	13.3
7th	10,210.00	15.1
8th	22,660.00	20.6
9th	41,114.00	20.6

Source: Malaysia plan various series.

The increase in the total allocation to the education sector also enables the education administration to be able to manage and plan more comprehensive training and education for students and teachers. This is important in ensuring that product quality is guaranteed because of quality and up-to-date teaching techniques. Therefore, investment in higher education programs is increasing in significant amounts starting from 2001 under the 8th Malaysia Plan as in the **Table 5** below.

Table 5. Total development allocation to education sector by program (RM Million).

Program	Malaysia Plan				
	5th	6th	7th	8th	9th
Education	5,262.2	7409.8	8437.2	37,922.0	40,356.5
Pre-school	-	61.8	107.4	215.7	807.3
Primary education	784.9	1184.7	1396.0	5369.3	4837.3
Secondary education	1436.5	2050.7	2447.9	8748.1	6792.8
Higher education	2591.9	3,139.3	2961.8	13,403.9	16,069.0
Teacher	284.9	180.1	458.8 1	1,368	577.7
Exercise	303.9	615.4	1661.6	4792.6	4792.6
Others	163.9	793.2	1065.3 8	816.9	11,272.4
Total	5566.1	8,025.2	10,098.8	42,372.9	45,149.1

Source: Malaysia plan various series.

The impact of the increase in funds in higher education programs, the number of admissions and even the graduates' output is starting to have a positive impact. In 2015 Malaysia recorded a graduate output of 289,794 people is shown in **Table 6**. This shows that Malaysia is starting to produce knowledgeable human resources to meet market demand.

Table 6. Total intake, enrollment and graduates in institutions of higher learning (IPT) in Malaysia, 2003–2015.

Year	2003	2007	2010	2015
Intake	277,185	358,053	390,535	511,154
Enrollment	698,156	873,238	1,134,134	1,236,164
Graduation	244,487	212,304	239,303	289,794

Source: Higher education statistics: Ministry of higher education various series.

4. Discussions

In planning the economic development strategy of the country, each plan cannot be successful without adequate allocation to cover the cost of expenses. In addition, each planner for a sector will also not be achieved if there is no correlation between other sectors. This interconnectedness is important in realizing the goals that have been set. This situation is clear and the development of the education sector, especially at the highest level, can bring a positive impact on economic development and even support the development plan of the technology sector. The supply of quality, knowledgeable, disciplined, and innovative human resources can meet the demand of human resources needed by the industry that uses the latest technology in boosting production. The commitment that shows seriousness with every provision approved by the government on every plan is increasingly allocating the implementation period of 5 years. Starting with the Second Malaysia Plan which only allocated only 7.4% of the total expenditure increased to 20.6% in the Ninth Malaysia Plan. Furthermore, the number of allocations to higher education has increased dramatically. As a result, Malaysia began to produce highly educated human resources began to reach the figure of three hundred thousand in 2019. However, this output figure is still far from the

total enrollment which reached the number of millions. This may be a factor in the ability of the population to bear the cost of higher education, which is still low. This can be seen based on the poverty rate is still rising even though the percentage rate is low.

Although Malaysia has established National Higher Education Fund Corporation there are still issues of the people's willingness to take this approach as initial financial loan assistance. The national higher education fund corporation issue is still hotly played in the mass media regarding the implementation of loan repayment as well as loan rates. Although Malaysia already has a level of technology that is not outdated, for a developing country that wants to achieve developed country status, they must have the ability to produce their own technology without expecting technology transfer from developed countries. This approach, which is considered a shortcut, must be discarded to be able to compete globally. This is because despite the good relations during the technology transfer agreement, at the same time, competitors are doing research to expand the existing technology. Thus, the gap of progress will always exist and will not be able to bypass due to the lack of ability to produce new technologies that can compete.

Among the strategies used such as modernizing the rural sector by increasing new lands will be developed, developing infrastructure facilities such as roads, telecoms, civil aviation, water and electricity supply, information and broadcasting, schools, hospitals, and rural clinics as well as establishing new and boarding secondary schools that emphasize science and technology lessons to the rural population. In addition, strategies to enhance the development of education among the races and communities are also implemented. This strategy is paying more attention to the Malays, Bumiputera's and poor people of other races to get the opportunity to pursue higher than give more opportunities to get scholarships for students continuing at colleges and universities level.

4.1. Economic development

Economic development planning with emphasis on poverty eradication efforts was continued to the Third Malaysia Plan (3MP) 1976–1980 and the Fourth Malaysia Plan (4MP) 1981–1985. The 3MP implements strategies that have been formulated such as increasing the role of the agricultural and industrial sectors to provide increasing opportunities for multiracial people to participate in these fields and improve the living standards of the poor in urban and rural areas and will implemented simultaneously with efforts to develop employment and income. Meanwhile, 4MP focuses on increasing the production of the agricultural and manufacturing sectors. Ongoing efforts will be made to increase the income of paddy growers. Research and development (R&D) in various aspects is done to develop the paddy cultivation sector such as research to produce high quality seeds and fertilizers. National Agricultural Policy (NAP) launched in 1984 to further boost agricultural development (Malaysia, 1981–1985).

The NDP continued to the second phase under the Seventh Malaysia Plan (7MP) where it emphasized the importance of human resources in catalyzing economic growth (Malaysia, 1996–2000). Therefore, investment in training and education is

seen to increase to strengthen the core of human resources. The involvement of private firms is beginning to be encouraged in this sector. This involvement is important in enriching the development and innovation of local science and technology to be able to compete with external products. With the amendments made to the Universities and University Colleges Act 1971 and the Private Higher Education Institutions Act 1996 to encourage the involvement of the private sector in education and training shows the growth of training institutions by the private sector is very encouraging. Education and training centers are Pusat Giat MARA, Center for Teacher Training and Advanced Skills.

4.2. Investment and technology policies

Technology investment during Najib Razak can be seen where the cooperation between China and Malaysia is very close. Datuk Seri Najib Razak in Malaysia-China Digital Economy Forum approached nearby economic managers to work with innovation and technology networks worldwide and use all and maximizes capacity of the advanced economy since the capability of advances especially in web is boundless. Evidently, the effect is seen through increased foreign direct investment in the technology industry and enhanced government courier services, as well as wider cultural upliftment through digital revenue opportunities.

Although Malaysia started with an agricultural-based country, technological developments were not neglected and technological modernization in Malaysia was seen to be almost identical to the current technological progress in developed countries. The need for technology in increasing production is undeniable and this factor is important in the economic development of a country. Mastery in technology is important so that the country's progress is not slow. Malaysia does not practice technology development on its own but takes steps to implement a technology transfer approach. Technology transfer is generally a process of information transfer that originates in one institutional environment, used in another institutional environment (Aziz, 1989). Through this technological transfer, it aims to raise the level of ownership of current technology in addition to being able to increase production output and foster an innovative attitude. This attitude is important in producing new technology because of technology owned as a result of technology transfer from developed countries.

The implementation of this technology transfer policy began in 1986 under the Fifth Malaysia Plan. This is because starting in the 80s, the development of Malaysian industry began to look vibrant with involvement in heavy industry. Thus, the development of science and technology began to be taken seriously. Thus, in April 1996, the National Science and Technology Policy were launched with the aim of enhancing the capacity of local technology as a tool for national socio-economic development (Malaysia, 1986–1990). Close collaboration between the public and private sectors and scientists and technology is at the core of this policy. This is to accelerate the process of creation of local technology through the process of assimilation and innovation as well as reduce dependence on foreign technologies. To strengthen local technology capabilities and make the Industrial Master Plan a success, the government has launched an Action Plan for Industrial Technology Development

(PTPTP) at the end of the Fifth Malaysia Plan (Malaysia, 1986–1990). Taman Technology Malaysia was developed in several states to encourage the private sector to play an active role in modern agricultural activities such as horticulture, aquaculture, and sapling production through genetic engineering technology (Malaysia, 1986–1990). The privatization policy has also accelerated the transfer of technology through the R&D efforts of privatized concession companies and cooperates with local R&D institutions (Malaysia, 1986–1990).

Technology development continued in the Sixth Malaysia Plan (1991–1995) the role of Science & Technology (S&T) and R&D in tired technology-oriented activities was further intensified by the establishment of several new institutions and committees such as the Malaysian Science and Technology Information Center (MASTIC), Science Academic, Director of Biotechnology, the Advanced Materials Research Center at Kulim High Technology Industrial Park, Kedah, and the National Design Council.

4.3. Relationship between economic growth, poverty, and inequality

The relationship between economic growth, poverty reduction, and inequality is multifaceted and has been the subject of extensive research, revealing that growth alone is not a panacea for poverty alleviation. While economic growth is often correlated with reduced poverty rates, the extent to which growth translates into poverty reduction depends on the nature and inclusiveness of that growth. For instance, empirical studies by Dollar, Kleineberg, and Kraay (2022) show that growth is more effective in reducing poverty when it is inclusive, characterized by broad-based participation across various sectors and demographic groups. Growth that generates employment and raises incomes for the poor tends to reduce poverty more significantly than growth that benefits only a narrow segment of the population. Additionally, sectors like agriculture and manufacturing, which are more labor-intensive, often have a more pronounced impact on poverty reduction compared to capital-intensive sectors. This suggests that policies promoting inclusive growth and employment generation are crucial for maximizing the poverty-reducing effects of economic growth.

However, the relationship between growth and inequality presents additional complexities. Growth can sometimes exacerbate inequality, particularly when initial conditions of wealth and opportunity are unevenly distributed. As Piketty (2023) notes, growth in economies with high levels of initial inequality can lead to a concentration of wealth and income among the already affluent, thereby widening the gap between rich and poor. This is often observed when technological advancements and globalization benefit skilled workers and capital owners disproportionately, leaving low-skilled workers and marginalized groups behind. Such dynamics underscore the importance of implementing redistributive policies, such as progressive taxation, social safety nets, and investments in education and healthcare, to ensure that the benefits of growth are equitably shared. Thus, achieving a balance between economic growth, poverty reduction, and inequality requires comprehensive strategies that address structural inequities and promote inclusive economic participation.

4.4. Analysis of economic development strategies in Malaysia and other developing countries: Political, social, and institutional factors

Economic development strategies in Malaysia and other developing countries are deeply influenced by political, social, and institutional factors, which shape their effectiveness and sustainability. These factors determine how policies are formulated, implemented, and how benefits are distributed across different segments of society.

Political Factors: Political stability and governance quality are critical for successful economic development. In Malaysia, consistent political commitment to economic transformation has enabled the implementation of long-term development plans such as the New Economic Policy (NEP) and Vision 2020. These policies have focused on restructuring the economy, reducing poverty, and addressing ethnic disparities, demonstrating how political will can drive strategic development (Malaysia Prime Minister's Department, 2024). Conversely, in many developing countries, political instability and corruption impede development efforts by undermining policy consistency and deterring investment. The presence of robust, transparent governance mechanisms is essential to mitigate these challenges, ensuring that economic strategies are effectively pursued and that development outcomes are equitable and inclusive.

Social Factors: Social factors, including demographic trends and social cohesion, significantly impact economic development strategies. Malaysia's demographic dividend, characterized by a young and growing workforce, has been leveraged to support labor-intensive industrialization and service sector growth. However, ensuring that economic benefits are equitably distributed across ethnic groups and regions remains a critical challenge. Social cohesion and inclusivity are essential for sustaining public support for development initiatives and mitigating social unrest (Hassan et al., 2024). In other developing countries, addressing social inequalities, such as those based on gender or rural-urban divides, is crucial for harnessing the full potential of human capital and ensuring that economic growth translates into broad-based improvements in living standards.

Institutional Factors: Effective institutions play a pivotal role in shaping economic development outcomes by providing the framework within which economic activities are conducted. In Malaysia, strong institutions have facilitated economic planning, regulatory oversight, and the creation of a conducive business environment. Initiatives like the Malaysian Investment Development Authority (MIDA) and the Malaysia Digital Economy Corporation (MDEC) exemplify how institutional support can foster industrial diversification and technological innovation. Conversely, many developing countries struggle with weak institutions that lack the capacity to enforce regulations, protect property rights, or combat corruption. Enhancing institutional quality through capacity building, governance reforms, and international cooperation is essential for improving the efficacy of development strategies and achieving sustainable economic growth (World Bank, 2023c).

5. Conclusion

National Economy Development (NED) is crucial for states to ensure sovereignty and people's wellbeing. Effective NED policies can increase investment potential,

reduce poverty and unemployment, and provide more jobs. Factors such as human resources, physical capital, natural resources, and technology contribute to the growth of a state's economic policy. Developing states like Malaysia, Thailand, and Indonesia need to develop smooth and successful plans and strategies for NED.

The poverty rate in Malaysia from 2008 to 2015 was high, with 16.7% due to the 2008 global financial crisis. The declining poverty rate is attributed to the BR1M initiative, established by Prime Minister Datuk Seri Najib Tun Razak, which aims to help Malaysians earn lower wages. However, the unemployment rate from 2008–2015 fluctuated, indicating a challenge for the government.

Malaysia's economy began with the production of agricultural products, with over 70% of the population involved in this sector. The government introduced policies focusing on rural development, including land development and rural development. Smallholder entrepreneurs in the agricultural sector, such as oil palm, rubber, coconut, fishermen, farm workers, paddy farmers, and mixed farmers, have contributed to the increase in production. During British colonial occupation, rural development policies were not taken seriously, leading to a stagnant indigenous economy. Malaysia introduced plans to eradicate poverty in 1971, including the Second Malaysia Plan (2MP) and the New Economic Policy (NEP), which aimed to reduce economies between ethnic groups and regions.

The ongoing unemployment issue is linked to the national education system, with Malaysia still maintaining its old status despite continuous improvement. Investment in higher education programs has increased significantly since 2001, with a graduate output of 289,794 people in 2015. Economic development planning with a focus on poverty eradication was continued in the Third Malaysia Plan (3MP) 1976–1980 and the Fourth Malaysia Plan (4MP) 1981–1985. These plans aim to increase the role of the agricultural and industrial sectors, improve living standards, and boost agricultural development.

Contributions:

Contributions to Economic Theory and Practice: Highlight how your study contributes to the understanding of economic development theories, particularly in the context of Malaysia's policy frameworks and their impact on poverty alleviation and economic growth.

Practical Implications for Policy Makers: Emphasize the practical insights derived from your analysis that can inform future policy decisions in Malaysia and similar developing economies. Discuss how your findings can guide policymakers in designing more effective strategies for sustainable development.

Broader Impact on Socio-Economic Development: Articulate the broader implications of your research on socio-economic development, including potential benefits for social

Policy Implications:

Enhanced Investment in Education and Technology: Emphasize the critical role of education and technology in driving economic growth and reducing poverty. Recommend increased government investment in educational infrastructure, curriculum development aligned with industry needs, and initiatives to promote technological innovation.

Promotion of Inclusive Growth: Highlight the importance of inclusive economic

policies that ensure marginalized communities benefit from economic development. Suggest targeted programs to improve access to education, healthcare, and economic opportunities in rural and disadvantaged areas.

Strengthening Institutional Frameworks: Advocate for institutional reforms to enhance governance transparency, reduce corruption, and improve regulatory environments. Propose initiatives to strengthen institutions like MIDA and MDEC to attract foreign investment and foster local entrepreneurship.

Limitations:

Data Constraints: Acknowledge limitations related to data availability and reliability, especially in assessing the impact of policies on poverty and inequality over time. Highlight the need for robust data collection and analysis for more accurate policy evaluation.

Contextual Specificity: Recognize that the effectiveness of policies may vary across different regions and demographic groups within Malaysia. Discuss the challenges of implementing uniform policies in a diverse socio-economic landscape.

Political and Economic Uncertainties: Address potential challenges arising from political changes, global economic fluctuations, and external factors that could influence the outcomes of economic development strategies.

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