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Learning of Higher Education and Economic Growth in Malaysia

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Abstract

Higher education and economic growth are interrelated. The role of higher learning institutions is becoming increasingly important today to produce a knowledgeable workforce to meet the needs of the labor market. This study aims to analyze the trends of higher education graduates in Malaysia over 10 years from 2008 to 2018. In addition, this study also aims to identify the relationship between the number of higher education graduates and economic growth in Malaysia during the period. Findings showed that the number of higher education graduates increases over 10 years. The increase in the number of higher education graduates is also followed by an increase in economic growth by looking at the Gross Domestic Product in Malaysia. Higher education has a positive relationship with economic growth. The higher the education level of the labor force, the higher the productivity and, consequently, the higher the country's economic growth.

Keywords: Higher Education, Graduates, Institutions of Higher Learning, Economic Growth

Introduction

Higher education and economic growth are interrelated. The relationship between higher education and economic growth can be explained through two aspects. Firstly, human living standards will generally be enhanced due to education. In Malaysia, the community began to gain access to higher education when the University of Malaya was established in 1949. The number of graduates earning diplomas and bachelor's degrees increased as other universities were established thereafter. As a result, Malaysian lives improved, and the country's economy grew faster. Society itself is beginning to believe that higher education guarantees a better life and those without higher education find it difficult to find a place in a more modern and sophisticated Malaysian society (Tajudeen & Raja, 2019).

Secondly, an individual's income depends on their education level. An example of a classic study was (Mincer, 1974). He stated individual income is a function of schooling years, age, and experience. If this micro-observation is translated to the macro level, that is the individual income is aggregated as the national economy, then the intuition that can be expressed is that higher education gives a return to the national income or in other words, higher education has a relationship with economic growth. Solow in 1956 explained this

through the growth accounting model. Developed countries have a high proportion of the labor force with tertiary education. For example, South Korea has among the highest tertiary-educated labor force ratios in the world. It is not surprising that South Korea has achieved the status of a developed country due to its highly competitive economy. An economy like South Korea is certainly driven by economic growth which is also influenced by growth in higher education.

Apart from education, economic growth is also an indicator of a country's progress and prosperity. Economic growth is influenced by several factors such as labor, capital, and technology. In terms of technology, nowadays more to Technical and Vocational and Educational Training (TVET) sector are the most significant effect on economic growth (Zulnaldi & Majid, 2020). Labor or human capital greatly influences economic growth in terms of quantity and quality. The workforce quality is influenced by several aspects such as education, skills talents, and health. According to Dan et al (2019), education is said to have the most important role in determining work quality. The higher the education level of the labor force, the higher the productivity and, consequently, the higher the country's economic growth.

The Human Capital Theory

Human capital, especially the highly educated, is considered an important component in generating sustainable economic growth (Abiddin, 2014). Rapid technological advances and increasing competition have led to major changes in the labor market that demand a change in the knowledge-based education system (k-economy). The human capital theory describes the process by which education has a positive relationship to economic growth. This theory has been dominating the studies related to economic growth and education. Proponents of this theory such as Gary Becker, Edward Denison, and Theodore Schultz state that people with higher education levels, which is also measured by the length of time in school, will have better jobs and salaries than those with only lower education. The more highly educated people are, the higher the productivity of the country and consequently, the country's economy will grow (Lazim & Yusof, 2012).

Literature Review

Various studies had been conducted to look at the relationship between higher education and economic growth. Mariani et al (2022) studied the relationship between employability rates, education level, gender, and economic growth in European Union countries using quantitative methods and inferential statistics. Findings show that a high education level has a positive relationship with increased employability, which leads to an increase in economic growth. Angus et al (2021) studied how cultural differences influence economic growth in China. The level of education that is too low and parents' preference for education affects economic growth in the long run.

Nugroho's (2014) study related to the influence of education on economic growth in Indonesia shows that education represented by Literacy Rate has a positive and significant relationship to economic growth represented by the value of Gross Domestic Product (GDP). A study by Danacica and Belascu (2010) in Romania concluded the existence of a one-way causal relationship between economic growth and higher education. They used time-series data from 1980 to 2008, which is analyzed using the VAR model, unit root, and Granger causality test with four lags. Huang et al (2009) conducted a study in China that analyzed data on tertiary education enrollment and GDP per capita starting from 1972 to 2007 using the

Vector Error Correction Model (VECM). Empirical results show that there is a long-term cointegration relationship between higher education enrollment and GDP per capita and education has a serious lag impact on the economy. Higher education does not necessarily cause the economy to grow. This relationship can be a reverse in which economic growth leads to an increase in higher education enrollment.

Self and Grabowski (2003) conducted a study in Japan, which found that higher education was the cause of economic growth after the second world war. The study was performed using the Vector Autoregression (VAR) model. They noted the accumulation of higher education human capital has contributed to the economic progress of Japan today. (Podrecca & Carmeci, 2002) summarizes higher education enrollment affects gross domestic product (GDP) growth in Brazil while in Argentina and Chile, no relationship can be seen. This study covers the period between 1960 to 1996 and uses the Granger causality test based on two and three lag. In Malaysia, a similar study was also conducted. Nashraf (2011) studied the causal relationship between higher education and economic growth in Malaysia. The data used is a time series of real GDP and student enrollment in postgraduate programs in public institutions of higher learning from 1980 to 2010. Empirical results show that there is a one-way causal relationship between the real GDP and higher education.

Objective

- a. Analyze the trends of higher education graduates in Malaysia for 10 years from 2008 to 2018.
- b. Analyze the trend of higher education graduates by study level in Malaysia for 10 years from 2008 to 2018.
- c. Identify the relationship between higher education graduates in Malaysia and the country's economic growth for 10 years from 2008 to 2018.

Methodology

In this study, secondary data from the Ministry of Education Malaysia and the Department of Statistics Malaysia were used to make the analysis. The data were a collection of observations obtained through repeated measurements over time. The number of higher education graduates and Gross Domestic Product (GDP) was consistently measured over one year from 2001 to 2012. This makes the data obtained a set of time-series data. Therefore, the time series analysis method was used to gain an understanding. In this study, higher education refers to the number of students who complete their studies or graduate with a Ph.D., master's, bachelor's degree, diploma, certificate, professional certificate, and other equivalents from public institutes of higher learning (IPTA), private institutes of higher learning (IPTS), polytechnics and community colleges. As for economic growth data, it refers to Gross Domestic Product in Malaysia. The trends analysis from 2008 to 2018 was chosen because there is still a lack of relevant studies for the time series of that period. Moreover, this time series also did not study the impact of the Covid pandemic on the number of graduates and the country's GDP.

Results and Discussion

Table 1.1

Number of IPT Graduates in Malaysia in 2008-2018.

Year	Number of Graduates (Thousand)	Changes (%)
2008	176.04	0
2009	194.22	10.33
2010	224.75	15.7
2011	236.55	5.3
2012	249.7	5.6
2013	259.36	3.9
2014	254.2	-1.9
2015	273.4	7.6
2016	283.6	3.7
2017	299.6	5.6
2018	299.8	0.07

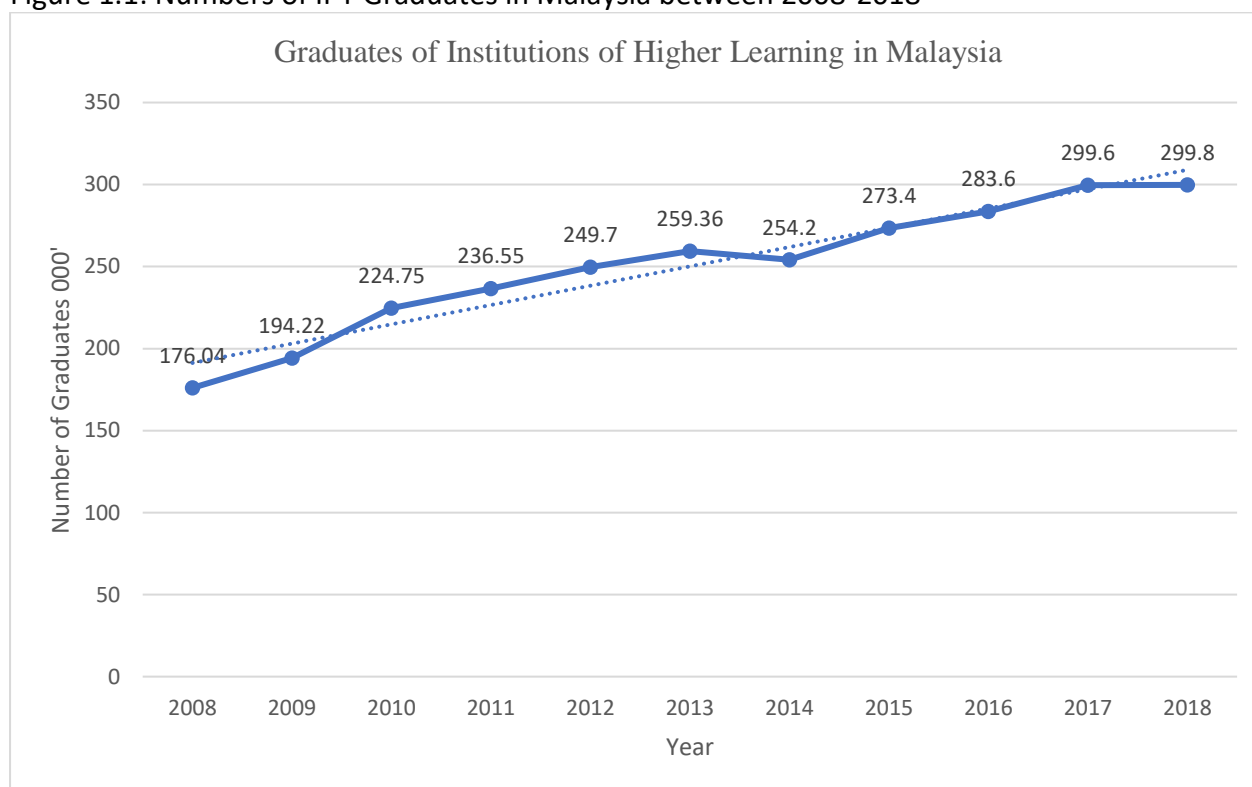
Source: Graduate Tracing Report, Ministry of Higher Education

The number of graduates from the Institutions of Higher Learning (IPT) in Malaysia increased from 176 000 people in 2008 to 299 000 people in 2018. The increase in the number of graduates is in line with the increase in the number of IPTs in Malaysia. In 2008 there were 20 Public Institutes of Higher Learning (IPTA), 40 private universities and university colleges as well as 545 Private Institutes of Higher Learning (IPTS) or colleges that have successfully produced graduates in various fields and study levels (Kementerian Pengajian Tinggi, 2010). Higher education is increasingly gaining government attention because the success of the national development is highly dependent on the ability of the Institute of Higher Learning (IPT) to produce trained manpower in the required fields (Norain & Nooriah, 2012). This is demonstrated through the increasing government allocation for education and training development in the Malaysian plan. The goal of establishing Malaysia as an educational hub has led in the establishment of numerous governmental and private schools and universities. The government has made several adjustments to the governance of these public and private HEIs, and with the establishment of the MQA, the government can rest certain that students in HEIs are receiving quality education. This applies to both teaching and learning, as well as qualified lecturers (Grapragasem et al., 2014).

In the Ninth Malaysia Plan (2006-2010), the allocation for education and training development was RM16,069.0 million (Unit Perancang Ekonomi, 2006). This amount is significantly larger than the allocation in the First Malaysia Plan (1966-1970) which was only RM 30.0 million. The increasing allocation proves that the government pays more attention to the development of education and training. The positive effect of the allocation increment for higher education can be seen in the establishment of more higher education institutions in Malaysia. In 2018, there are 20 public universities, 101 private universities and university colleges as well as 300 private colleges. Statistics show that there has been a significant increase in the number of private universities and university colleges. The increasing demand for IPT further encourages the establishment of new IPTS to accommodate students who fail to enroll in the IPTA. According to Azrin et al (2018), the drastic move by IPTS to merge with foreign universities and offer twinning programs is a wise move in which the tuition fees are

lower but the quality is comparable to IPTA. This makes IPTS one of the best alternatives in addition to the option of furthering studies abroad.

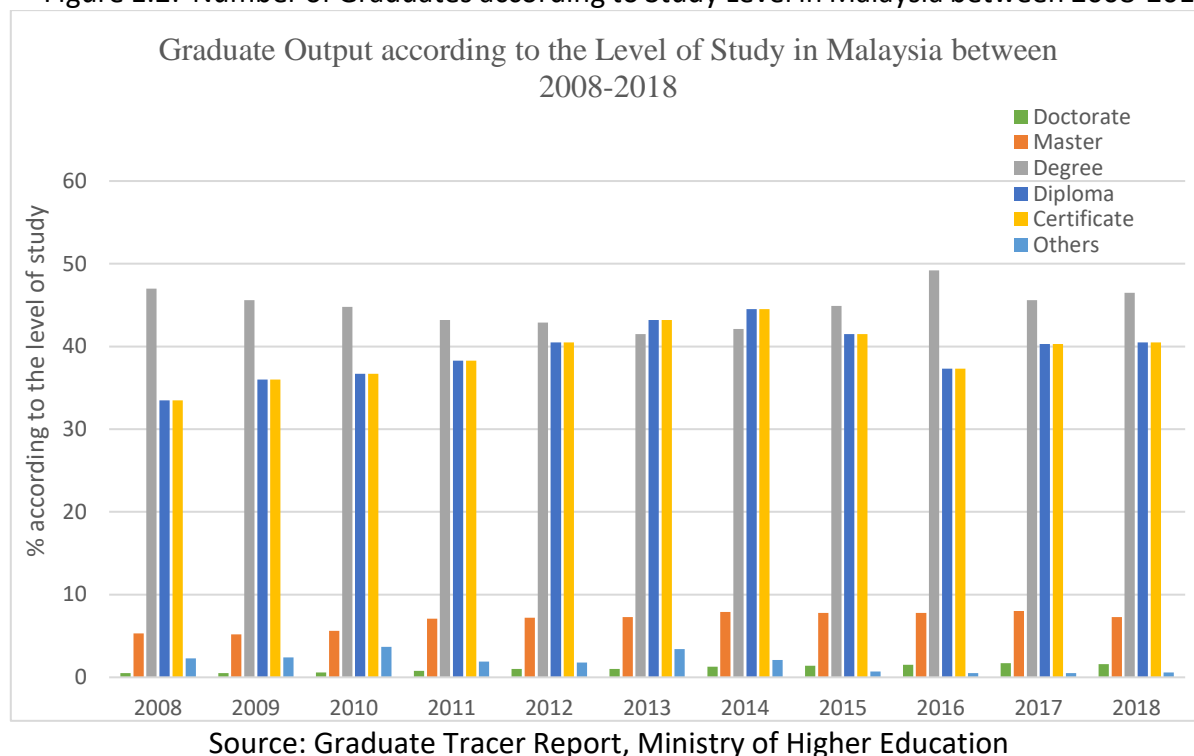
Figure 1.1: Numbers of IPT Graduates in Malaysia between 2008-2018



Source: Graduate Tracing Report, Ministry of Higher Education

Based on Figure 1.1, the trend shows a consistent increase from 2008 to 2018. The most significant increase was in 2010 which was 15.7 % (KPT, 2010). Among the factors contributing to the increase in the number of graduates during the year was the emergence of new universities that offer various much-needed fields in the contemporary economy such as UNiMAP, UMP, UTeM, and several other universities. Data in 2010 recorded that the total student who graduate was 239,303 (KPT,2011). The contribution of Malaysia's major universities, namely UM, USM, UKM, UPM, and UTM in terms of student production is declining compared to the contribution at the beginning of its establishment. However, the overall contribution of these major IPTAs from 2005 to 2010 remained large compared to other new IPTs. During the analysis period, only in 2014, the number of IPT graduates in Malaysia recorded a decrease of -1.9%. The graduate output in 2014 decreased slightly because the output of polytechnic and community college graduates decreased that year due to polytechnics no longer making certificate level intake from 2012 (KPT, 2017). The number of polytechnic graduates decreased from 31 514 in 2013 to 26 460 in 2014. Community colleges also showed a decrease in the number of graduates in that year which was only 3,282 compared to 5,727 in the previous year.

Figure 1.2: Number of Graduates according to Study Level in Malaysia between 2008-2018



Based on Figure 1.1, the largest group of graduates is from the undergraduate level followed by diplomas and certificates. In Malaysia, undergraduate studies are at the tertiary level. This professional level requires at least a diploma or preparatory courses such as Matriculation or Malaysian Higher Certificate of Education (*Sijil Tinggi Pelajaran Malaysia*, STPM). To hold a position in the management and professional group also requires a person to have at least a bachelor's degree. Therefore, it is not surprising that there are a greater number of graduates from this group. Apart from the increase in the quantity, the quality of graduates is also a priority. In the Eleventh Malaysia Plan Report, the academic achievement of undergraduate students has improved. A total of 17.5% of the graduates obtained a Cumulative Grade Point Average (CGPA) above 3.49 in 2013 compared to 13.6% in 2010. The number of students who achieved a CGPA above 3.49 in 2013 increased by 31.7% compared to 2010. In 2013, 75.5% of public university graduates and 73.2% of private university graduates found employment or furthered their studies or awaited employment placement (RMK11, 2015).

The smallest group of graduates are from Ph.D. studies. However, the annual increase in the number of Ph.D. holders in Malaysia is a good indicator of the country's education system and economy. A Doctor of Philosophy or Ph.D. degree is the highest academic qualification awarded by a university. PhDs are often associated with the professional needs of academicians at universities, particularly for the research and supervision aspects of postgraduate students. There are members of other professions who also continue their studies at the Ph.D. level for self-development including the need for promotion. For Ph.D. qualified civil servants, the knowledge capacity possessed can help increase the quality of services in the organization. Their thinking must be different and critical. At the same time, the public is beginning to realize the importance of having a Ph.D. qualification through a lifelong learning practice. The country is targeting 60,000 Ph.D. holders by 2023. This target is in line with Malaysia's aspiration to become a developed country. Sufficient Ph.D. graduates

as knowledgeable and highly skilled human beings will be able to lead an innovation-based economy. To ensure that the target number of Ph.D. graduates is met, several steps are taken such as the MyBrain15 program under the Ministry of Higher Education starting in 2011, but this program is postponed to 2018.

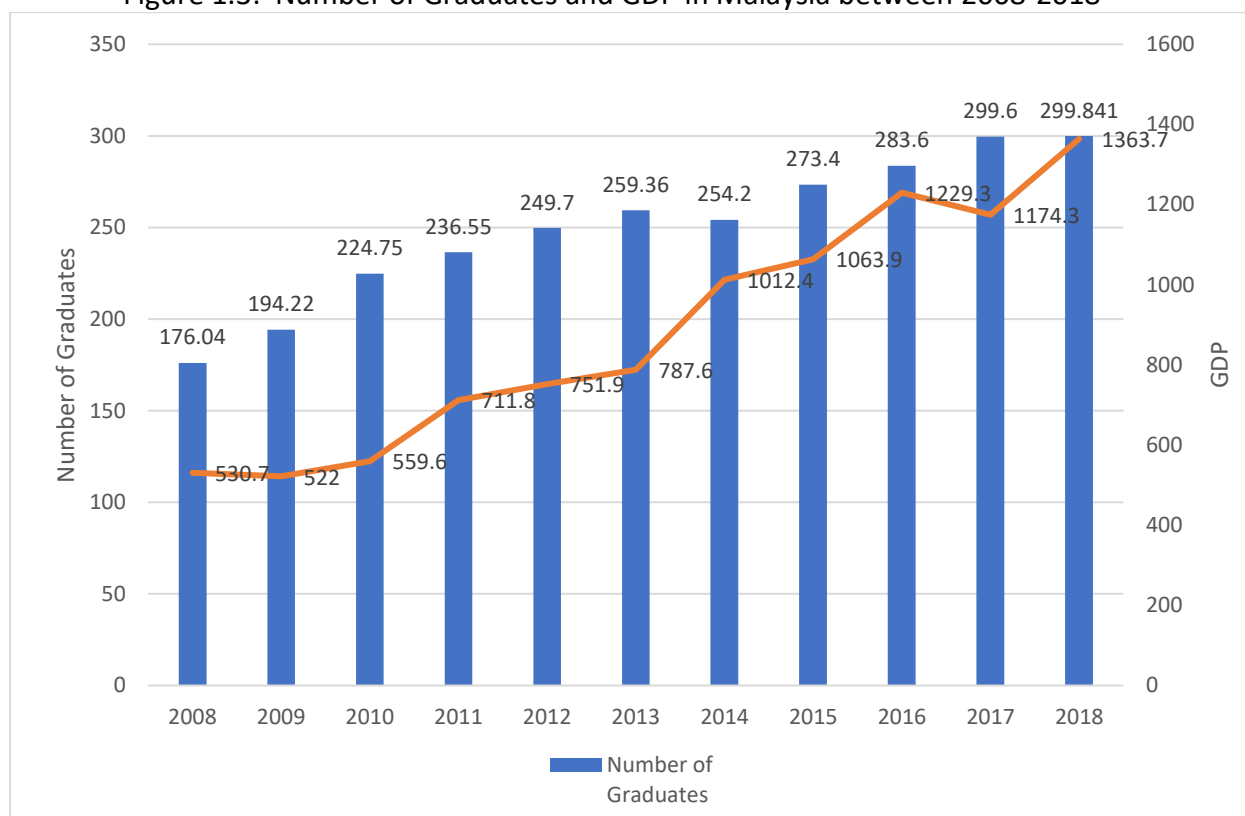
Table 1.2
Number of Graduates and GDP in Malaysia between 2008-2018

Year	Number of graduates	Changes (%)	GDP (RM million)	Changes (%)
2008	176.04	0	530.7	0
2009	194.22	10.33	522	-1.6
2010	224.75	15.7	559.6	7.2
2011	236.55	5.3	711.8	27.2
2012	249.7	5.6	751.9	5.6
2013	259.36	3.9	787.6	4.7
2014	254.2	-1.9	1012.4	28.5
2015	273.4	7.6	1063.9	5.09
2016	283.6	3.7	1229.3	15.6
2017	299.6	5.6	1174.3	-4.5
2018	299.8	0.07	1363.7	16.1

Source: Ministry of Higher Education & Department of Statistics Malaysia

Table 1.2 shows the statistics of two sets of data, namely the number of IPT graduates and economic growth according to the country's GDP. Many past studies abroad have proven that the number of higher education graduates has a positive relationship with economic growth. Nashraf's (2011) study looked at the relationship between higher education and economic growth in Malaysia between 1980 and 2010. Empirical results show that there is a one-way causal relationship between real GDP to higher education. Economic growth has the potential to stimulate higher enrollment in higher education. The economic progress achieved has provided funds to the government to establish more universities which can be seen in the implementation of the Malaysia plan. Previous study by Nuremyra & Muhammad (2017), also indicate that employment, and student enrolment as well as IPTA level education expenditure can influence GDP economic growth in the long run.

Figure 1.3: Number of Graduates and GDP in Malaysia between 2008-2018



Source: Ministry of Higher Education & Department of Statistics Malaysia

Similar findings can be seen in this study. The increasing number of graduates from 2008 to 2018 is followed by an increasing GDP except in 2009 and 2017. For example, an increase in the number of graduates in 2015 of 7.6% was followed by an increase in GDP of 5.07%. The establishment of more higher education institutions has succeeded in producing more graduates to meet the needs of the country's skilled workforce. The rapid growth of the Malaysian economy is increasing the demand for highly educated labor (Zuber et al., 2015). Higher education has a positive relationship with economic growth. The higher the level of education of the labor force, the higher the productivity and, consequently, the higher the country's economic growth. This is align with empirical analysis by which indicates that average years of primary schooling and tertiary schooling have positive and significant impact on economic growth among high-income nations in East Asia (Sieng & Yussof, 2017)

Conclusion

The higher education liberalization in Malaysia has increased the number of highly educated communities. The establishment of higher education institutions in the country, whether public or private, reflects the increasing demand for higher education in the country. Higher education and universities have become increasingly important demanding clear changes to the role of these institutions to meet the contemporary economic demands. Universities are institutions that play a role in producing a knowledgeable workforce which led to the increasing demand for these institutions to strengthen the capacity and quality of higher education to produce workforces that meet the needs of the labor market. Higher education leads to higher individual income or earning and thus contribute to income and economic growth. Middle income nations are investing less in higher education compared to high

income nations in higher education (Sieng & Yussof, 2018). The discussion and analysis of the research and policy implications, clearly support that education is one of the factors that bring positive impact to the economic growth of a country in line with previous studies such as (Self & Grabowski, 2003; Huang et al., 2009; Nugroho, 2014; Angus et al., 2021; Mariani et al., 2022).

Ongoing efforts to develop and produce a knowledgeable workforce are increasingly gaining the attention of policymakers. In the Tenth Malaysia Plan (2011 - 2015) and the Eleventh Malaysia Plan (2016 - 2020), education has been placed as one of the National Key Result Areas (NKRA) which aims to improve student performance to support the development of knowledge and innovation, high skill technicians and professionals as well as high productivity which are critical to propelling the country towards achieving the status of a developed and high-income country. Economy globally has changed the nature of labour force, which expands the function of higher education institutions for students to create job, instead of merely filling in job vacancies (Ayob, 2021). There is no doubt that the development of higher education has a positive impact on the country's economic growth, however recently the number of unemployed graduates has also increased. Therefore, stakeholders need to consider the graduate marketability agenda so that the country has highly skilled, versatile, and holistically developing graduates.

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