

Comparison between universities in Indonesia and Malaysia: World-class college ranking perspectives

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Article Info

Article history:

Received Jul 15, 2022

Revised Feb 18, 2023

Accepted Mar 30, 2023

Keywords:

Higher education

Scientific research

Technical and vocational
education

Universities ranking

ABSTRACT

This study analyzes Indonesian and Malaysian universities in order to evaluate the reality of higher education in both countries, uncover the dynamics and causes influencing higher education, and disclose the similarities and contrasts between the Indonesian and Malaysian systems. Birdy's comparative descriptive method was used. This research relies on trustworthy global rating websites, statistics from the Indonesian and Malaysian Ministries of Higher Education, high-quality publications, and authoritative news. Indonesian higher education is largely entirely supported by the government and tuition fees at private universities. Due to a lack of collaboration between universities and industry groups, Indonesian higher education lacks a connection between scientific research, technical education, and the job market. Unlike Malaysia, it stresses scientific research, community service, and labor market demands. The researchers hypothesized the following processes based on the comparator countries: Adopting a productive university focused on output application via instruction and advice. Community-government and private-sector connections using research to enhance firm products collaboration with a firm or group to provide services that benefit them in exchange for participation in higher education goals, payment of expenditures, and use of outcomes. Through cooperative education, businesses and institutions may train and prepare university students for the job market.

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1. INTRODUCTION

Education has become a factor that affects the positions and impact of cultures in modern period. Whereas in the post-modern age, the globe was divided into an advanced who possesses knowledge and generates knowledge, and a backward who imports knowledge and consumes information [1], [2]. Education in general, and higher education in particular, provide the foundation for the formation and development of a wide range of economic and social activities [3]. It has become evident that the measure of progress at this time is not so much based on what countries have in terms of natural resources as it is on what they have in terms of human riches equipped with science and capable of producing knowledge. As a result, higher education is the primary driver in the preparation of creative human forces in society [4], [5]. The impact of higher education returns is visible in the workforce's creative knowledge and skills in many spheres of life.

The extent to which both the cornerstone of knowledge and the ability to exploit it is used to assess progress and backwardness [6]. Higher education provides a high return, and the outcomes can be ensured provided the people and material resources required for its management are effectively planned, and the level of performance and quality of its outputs are continually monitored. Thus, education investment is the ideal sort of investment if sufficient finances are available to fulfill the targeted aims while keeping up with global changes [6]–[8].

Higher education has become a key driver for the development of societies, whether through the formation and development of skills among their students in order to facilitate their integration into the labor market after graduation on the one hand, or by helping institutions, whether in the private or public sector, or even civil and civil society, by strengthening their competitiveness through creativity, for which this is in addition to the enrichment and dissemination of knowledge, which is constantly renewed and at an accelerating pace, forcing its graduates and professors to redouble their efforts and even create new job opportunities that society will need and resort to in the future so that it does not look for it in scientifically and technologically advanced Western European, American, or Asian foreign countries [9]–[13].

The importance of this study comes from as higher education institutions are the most important tools of society to achieve maximum comprehensive development in various cultural, economic and social fields. In Indonesia, higher education has made qualitative and quantitative leaps that drew the attention of those interested in higher education affairs, but it is still in its infancy. The Ministry of Education has introduced drastic changes to reach a new structure for universities to suit the trends of the Indonesian and global labor market. The stage of higher education is the stage that provides the labor market with highly qualified forces. Investing in education is the best kind of investment if it has sufficient funds to achieve the desired goals and that keep pace with global developments. Since Malaysia is one of the advanced countries in higher education, the importance of studying to discuss these aspects and benefit from them in Indonesia. It raises questions about: i) What is the reality of higher education in Indonesia and Malaysia?; ii) What are the roles of the Indonesian University and its strategic objectives?; iii) To what extent have the official directions of higher education reform policies succeeded in formulating a clear strategic vision in Indonesia?; iv) What is the impact of official directions of higher education reform policies on the contribution of Indonesian universities to accessing the global knowledge economy at the beginning of the new millennium?; and v) What are the proposed mechanisms to fix of higher education systems in Indonesia?

2. HIGHER EDUCATION IN INDONESIA AND MALAYSIA

The importance of this study comes from as higher education institutions are the most important tools of society to achieve maximum comprehensive development in various cultural, economic and social fields. In Indonesia, higher education has made qualitative and quantitative leaps that drew the attention of those interested in higher education affairs, but it is still in its infancy. The Ministry of Education has introduced drastic changes to reach a new structure for universities to suit the trends of the local and global labor market. The stage of higher education is the stage that provides the labor market with highly qualified forces. investing in education is the best kind of investment if it has sufficient funds to achieve the desired goals and that keep pace with global developments. Since Malaysia is one of the advanced countries in higher education, the importance of studying to discuss these aspects and benefit from them in Indonesia.

2.1. Higher education in Indonesia

Indonesia's readiness seeking to upgrade its human capital in response to changes in population and economic structure in order to harness the technological advances of the fourth industrial revolution. Therefore, the current government is concentrating its efforts on improving Indonesia's human capital. The need for higher education in Indonesia is increasing. According to market research firm Euromonitor, the Indonesian education sector will earn US\$118 billion (AUD \$170 billion) in revenue by 2025, rising at a rate of 10.3 percent annually, predicts market research firm Euromonitor. From 5.2 million students in 2010 to 8 million in 2018, more people were enrolled in higher education. This amount is anticipated to quadruple by 2024, making it the third-fastest expanding economy in the world behind China and India. Indonesia's higher education system produces about 250,000 graduates yearly through its 4,600+ higher education institutions and more than 26,000 fields of instruction, or subject areas. Regulating the caliber of courses, however, is extremely difficult due to the size of the industry [14], [15].

The two primary streams of Indonesia's higher education system are the national system and the religious system. The bulk of state-run and private higher education institutions fall within the first category, which is governed by the Ministry of Education and Culture (Kemendikbud, or MoEC). The second kind, with curricula centered on theology and other religious study subjects, is governed by the Ministry of Religious Affairs (MoRA), and it includes higher education institutions owned and administered by religious

groups, including state-sponsored institutions. Numerous religious organizations, including those run by the Catholic Church and the Muhammadiyah, continue to be a part of the government's educational system and follow Kemendikbud [14], [16].

The five different types of higher education institutions are universities (*universitas*), institutes (*institut*), tertiary colleges (*sekolah tinggi*), polytechnics (*politeknik*), and academies (in both systems) (*akademi*). Only the national system offers the final two options. Depending on their licensure, all higher education institutions can award degrees at the bachelor's through doctoral levels; however, polytechnic master's and doctoral degrees are referred to as 'applied' degrees ('S2/S3 *terapan*'). Community academies (*akademi komunitas*), which are educational institutions established by local communities and only provide D1 and D2 level certifications, make up the minuscule sixth category [15], [17]

As of October 2019, the majority of Indonesia's education and training system—which includes preschool through PhD programs—is under the control of the Ministry of Education and Culture (Kemendikbud), with some components falling under the purview of other ministries and implementation duties being shared by national, provincial, and local authorities. University education is under the control of the federal government, senior schooling is under the control of the provinces, and preschools, primary schools, and post-secondary training facilities are under the control of local governments. The national government oversees accreditation at all levels through the Ministry of Education and Culture [18], [19].

As of October 2019, the majority of higher education institutions are under the direction and control of the Ministry of Education and Culture. With 20% of all students from preschool through university are educated through a parallel educational system run by the Ministry of Religious (MoRA) Affairs. A variety of post-secondary training programs are overseen by the Ministry of Manpower (MoM). Several ministries are in charge of their own post-secondary training facilities. In these facilities, accreditation is handled by Kemendikbud. The non-government sector is extremely active in owning and managing educational institutions from preschool to university level, even though all educational institutions are overseen by one of the following ministries [20].

Indonesian national qualifications framework (KKNI) is a framework for qualification of human resources in Indonesia, while on the other hand, it is a system for work ability recognition that is suited to various employment sectors. To develop quality and productive human resources, KKNI is the embodiment of the quality and identity of the Indonesian country in terms of its education system, its job training program and its national learning outcomes evaluation system, which is owned by Indonesia. A specific set of work competency standards is called a specific work competency standard (SKKK). Organizations use SKKKs for their own internal goals and/or to meet the needs of other organizations that have cooperative ties with the organization in question or other organizations that require them. International work competency standards (SKKI) are work competency standards developed and determined by a multi-national organization and used internationally [19], [21].

2.2. Higher education in Malaysia

Malaysia's distinctive and well-structured higher education system, with more than 30 years of experience in international education, offers the option to pursue a quality education. In Malaysia, there are more than 100 public and private educational establishments, as well as international branches of prestigious universities from the US, UK, Australia, and Ireland [22]. There are many types of higher educational institutions in Malaysia [22], [23].

2.2.1. Public institutions of higher education (PIHE)

These are public or state-run higher educational institutes. Malaysia has a total of 20 public universities. Malaysian students benefit from these institutions' high-quality education. Research universities, focused universities, and comprehensive universities are the three major categories of public higher education institutions. Technical universities, education universities, management universities, and defense universities are the four subcategories of focused universities. There are five research universities and four comprehensive universities among the twenty universities now in operation. The remaining 11 are focused universities.

2.2.2. Research universities

Universities that focus on research are distinguished by high-quality lectures, difficult admissions, and intellectual orientation. The undergraduate-to-postgraduate ratio is roughly 50:50. When it comes to education, universities that focus on research are known for their ability to provide students with an opportunity to delve deeper into their field of interest. These universities are distinguished by the many resources they devote to research and development, which allows them to attract highly qualified faculty members and offer innovative courses. Research-oriented universities also tend to have better access to cutting-edge technology and state-of-the-art facilities, which provides students with hands-on experience in

their chosen field. Additionally, students at research-focused institutions often have opportunities for internships, collaboration on projects with professors or industry partners, and publication in prestigious academic journals. In short, universities that prioritize research play a valuable role in advancing knowledge and preparing the next generation of leaders in various fields.

2.2.3. Comprehensive universities

Universities that provide a wide range of courses and fields of study are known as comprehensive universities. The high-quality education is provided, and admission is a highly difficult process. Here, the undergraduate to postgraduate ratio is 70 to 30.

2.2.4. Focused universities

Universities with a specific focus; these universities concentrate on particular fields relevant to their founding. These universities are geared toward specialized research, with top-notch teaching and high educational standards. The ratio of undergraduates to postgraduates is around 50:50.

2.2.5. Private higher education institutions (PVIHE)

The purpose of PVIHE is to provide human capital for the nation's development. The government provides these institutions with access and equity management support through the national higher strategic plan (NHESP). PVIHE serves as a viable alternative to public universities and colleges. Their primary aim is to provide quality educational programs that cater to the diverse needs of students who seek a more personalized approach to learning. Private institutions are known for their unique offerings, including niche programs that may not be available in traditional public institutions. Moreover, private universities typically have smaller class sizes, allowing professors to cater to each student's individual needs better. Generally speaking, private higher education aims at providing innovative curriculum designs that engage students while preparing them for life beyond the classroom. Apart from academics, private schools often offer extracurricular activities such as clubs and sports teams geared towards skill development and networking opportunities. Overall, private higher education is focused on providing a holistic educational experience through a personalized approach aimed at fulfilling each student's unique aspirations and goals.

2.2.6. Polytechnic institutes

Malaysian polytechnics teach new technical skills to ensure that the country meets the requirements of the new economic model. These colleges place a strong emphasis on encouraging students to be innovative and creative. Malaysian polytechnics are well-known for creating knowledgeable and qualified workers.

Malaysia has taken a number of initiatives to bring its educational system up to par with that of the industrialized countries. It claims to have formed 'strategic relationships' between Malaysian institutions and select foreign universities with competence in specific fields. There is a strong desire to 'internationalize' the curriculum, especially in technology, business management, and accounting. In conjunction with "the most respected academic institutions in the world," a number of public (called 'national' in Malaysia) and private universities and colleges offering education packages were created for this aim [24], [25].

The Malaysian Qualifications Authority or MQA, is a legislative agency established under the Malaysian Qualifications Act 2007 to accredit academic programs offered by all higher educational institutions. This adds to the assurance of a course's quality, particularly in terms of content and teaching materials, delivery mechanism, and teaching staff expertise [26]. Due to the importance of education in Malaysia, the government spends approximately 5% of its gross domestic product or GDP on it, which is more than both the global and regional averages for education spending [27]. Since Malaysian culture is committed to quality education, Malaysian school teachers are some of the world's most dedicated instructors [28]. High-calibre academics and senior executives are being produced by the Higher Education Leadership Academy (AKEPT) as part of the government's efforts to improve higher education management [29]–[31].

University finance in Malaysia is supplemented by private sector support, which enhances the research reputation of Malaysian institutions and the employability of their graduates [32]. Additionally, private sector investments have led to the creation of private colleges and foreign universities' international branches in the United States. Eleven Malaysian universities are ranked in the top 500 of the world's universities, and 23 are in the top 1,000, according to the Quacquarelli Symonds (QS) and World University Rankings (WUR) [22].

3. RESEARCH METHOD

An approach to comparing case studies is used in this study, which employs qualitative research methods. According to researchers [33], [34], the goal of a comparative study is to comprehend, explain, and interpret various processes and their outcomes. There are similarities, contrasts, and patterns between two or more examples that have the same emphasis [35]. The units of analysis were chosen based on the study's goal, which was to assess the university's ranking indicators.

There are many higher education ranking versions, but authors choose three: Quacquarelli Symonds (QS) World University Rankings, Times Higher Education (THE) World University Rankings, and SCImago Journal & Country Ranking (SCImago), statistical data sites and higher education strategic plans of the ministries of higher education in the two countries, and other reliable sites inside and outside the two countries. Identification, evaluation and interpretation of each rating system's indicators are among the steps of analysis in this study, which are compared to produce indicators that are related to national interest and international trend. Since the nature of the study is within the scope of comparative studies that deal with the education system in a number of countries, the researchers used Perday's approach to comparative educational studies [36]. Which his approach referred to focuses on the accurate and organized collection of similar educational information and data in each of the comparison countries. Accordingly, the steps of the current study are: i) Compiling data from international higher education institutions classification sites, international statistics and reports sites, statistical data sites and higher education strategic plans of the ministries of higher education in the two countries; ii) Arrange the data based on classifications, indicators, topics and statistics; iii) A descriptive study analyzing the reality of the higher education system in Indonesia and Malaysia; iv) A descriptive study analyzing the forces and factors affecting higher education in Indonesia and Malaysia; v) An interview or debate of higher education in Malaysia and higher education in Indonesia in light of the forces and factors affecting both of them to determine the similarities and differences; vi) A comparison between the two systems in the light of the facts that have been reached and their interpretation, and vii) Formulating the proposed mechanisms for developing the higher education system in Indonesia and Malaysia in light of the experiences of both countries experiences in these areas.

4. DESCRIPTIVE ANALYSIS DATA

4.1. Universities rankings

The ranking and classification of universities and colleges in their scientific and literary departments at academic levels may depend on a set of statistics for scholars and professors. This arrangement is specific to the undergraduate level, which depends mostly on the quality of education, as for the postgraduate level, it depends on the level of scientific research. The ranking and classification are carried depends on raising the level of international standards for universities. It is concerned with the scientific level of universities and colleges and enhancing their role in scientific research, as well as enhancing the confidence of employers in graduate students [37], [38]. In this study, we use two types of global classifications, which are QS World University Rankings & Times Higher Education (THE) World University Rankings as shown Table 1. The indicators used in the international classifications are shown in Table 1.

Table 1. List indicators of international ranking (QS & THE)

QS World University Rankings		THE World University Rankings
(1)	Academic reputation (40%)	Teaching (the learning environment) (30%)
(2)	Employer reputation (10%)	Research (volume, income and reputation) (30%)
(3)	Faculty/student ratio (20%)	Citations (research influence) (30%)
(4)	Citations per faculty (20%)	International outlook (staff, students, research) (7.5%)
(5)	International faculty ratio (5%)	Industry income (knowledge transfer) (2.5%)
(6)	International student ratio (5%)	

The data from Tables 2 and 3 show that universities in Malaysia are outperformed universities in Indonesia in the ranking list issued by the QS world campus ranking agency. The latest data for 2021 shows that the University of Malaya has succeeded in being ranked 59th in QS world. The ranking of University of Malaya (UM) (59) is even far above the best university in Indonesia, Universitas Indonesia (UI) which is in position 305. Also, there are four Universities in Malaysia such as University Kebangsaan Malaysia (UKM) (141), University Putra Malaysia (UPM) (132), University Sains Malaysia (USM) (142), and University Teknologi Malaysia (UTM) (187) outperformed University Indonesia (UI). The previous year's conditions were more or less similar where a number of Malaysian universities were far above Indonesia's. According to QS & THE data, the ranking of major universities in Indonesia continues to decline from year to year.

Table 2. List Indonesian's universities rankings (THE & QS Ranking)

University name	THE rank univiversity in Indonesia			University name	QS rank univiversity in Indonesia		
	2019	2020	2021		2019	2020	2021
UI*	601-800	601-800	801-1000	UI*	292	296	305
ITB*	801-1000	1001+	1001+	ITP**	359	331	313
UGM	1001+	1001+	1001+	UGM**	391	320	254
IPB	1001+	1001+	1001+	UP*	651-700	751-800	801-1000
ITSN	1001+	1001+	1001+	BAU**	701-750	601-650	531-540
UB	-	1001+	1001+	AU**	751-800	651-700	521-530
DU	-	-	1001+	DU*	801-1000	801-1000	1001+
UP	-	-	1001+	ITSS**	801-1000	801-1000	751-800
TU	-	-	1001+	UB**	801-1000	1001+	1001+
-	-	-	-	BINUS	-	801-1000	801-1000

Source: THE & QS Ranking [37], [38]. Note: *Ranking decreased/**Ranking increased/ without a star, no change in ranking

Table 3. List Malaysian's universities rankings (THE & QS Ranking)

University name	THE rank univiversity in Malaysia			University name	QS rank univiversity in Malaysia		
	2019	2020	2021		2019	2020	2021
UM**	301-350	301-350	301-350	UM**	87	70	59
UTAR**	501-600	501-600	501-600	UKM**	184	160	141
UKM**	601-800	601-800	601-800	UPM**	202	159	132
UPM	801-1000	601-800	601-800	USM**	207	165	142
USM	601-800	601-800	601-800	UTM**	228	217	187
UTM	601-800	601-800	601-800	UCSI UNIV**	481	442	391
UTP	601-800	601-800	601-800	UTP**	521-530	482	439
UNITEN	801-1000	801-1000	801-1000	TYU**	601-650	511-520	379
UUM**	801-1000	801-1000	601-800	UUM**	601-650	591-600	531-540
UNIMAS	1001+	1001+	1001+	IUM**	651-700	651-700	601-650

Source: THE & QS Ranking [37], [38]. Note: *Ranking decreased/**Ranking increased/ without a star, no change in ranking

4.2. Universities rankings by subject

The evaluation of each subject is based on four measures. The first and two measures are the academic and business surveys conducted globally by QS, which are used to evaluate the standing of each institution globally. While the third and four measures of the research process, the influence of research is assessed using the number of research citations per publication and the relevant field's h-index. The most comprehensive research citation database in the world, Scopus, which is owned and run by Elsevier, is where this data came from. The results for each of the topic rankings are generated when these four factors are combined together, with weightings specific to each field [37].

University rankings are created by THE in order to measure university performance on a global scale and to give a resource for readers to understand the diverse missions and successes of higher education institutions in general. There are three basic focuses of university activity: research, teaching and impact, and the rankings consider all three of these aspects. According to the rankings, each university has a full profile with information on its overall rankings, as well as additional data aimed to assist students. Each university's staff-to-students ratio, the student's total income each year, and international students' share are just a few data points [38].

Table 4. QS rankings by subject in Indonesia vs Malaysia

Name	Country	Social Sciences and Management			Engineering and Technology			Arts and Humanities			Life Sciences and Medicine			Natural Science		
		19	20	21	19	20	21	19	20	21	19	20	21	19	20	21
UM	MYS	55	74	85	38	55	54	99	105	105	182	174	179	137	156	166
UKM	MYS	134	207	243	135	179	194	168	238	258	360	371	358	294	345	396
USM	MYS	144	214	225	123	179	199	212	250	304	326	355	363	223	295	327
UPM	MYS	166	199	232	142	210	224	253	324	343	326	311	314	231	281	244
UI	IDN	215	203	218	343	295	326	278	286	287	451	451	401	-	-	-
UTM	MYS	226	252	267	85	100	104	393	401	-	-	-	-	289	302	272
ITB	IDN	322	320	331	243	244	256	-	-	-	-	-	-	451	390	451
UiTM	MYS	324	317	340	290	391	451	383	-	-	-	-	-	-	-	-
UGM	IDN	327	266	261	392	355	335	-	274	350	-	-	-	-	-	-
IUM	MYS	376	401	451	-	-	-	451	-	401	-	-	-	-	-	-

Source: QS University Rankings by Subject (2019, 2020, 2021) [37], [38]. Note: Malaysia (MYS), Indonesia (IDN); 19 (2019), 20 (2020), and 21 (2021)

In the Table 4, taken the top 10 universities in Indonesia and Malaysia according to the QS world ranking. We note that Malaysian universities are far ahead of the best universities in Indonesia in all disciplines. For example, in the Department of Social Sciences and Management, the University of Malaysia is ranked (85) on the best university in Indonesia, which is UI, which is ranked (218) in the world in 2021. In the Department of Engineering and Technology, five universities in Malaysia UM, UKM, USM, UPM, and UTM are ahead of the best university in Indonesia, which is ITB, which ranks 256th for the year 2021. Also, in the Department of Arts and Humanities, UM and UKM are ahead of UI University, which is ranked (287) for the year 2021. As for the Department of Life Sciences and Medicine, one university from Indonesia is listed in the global rankings, which is UI (401) for the year 2021, while there are four universities from Malaysia that advance in the global rankings. Also, in the Department of Natural Science, only one university from Indonesia is included in the world rankings (451) for the year 2021. This university is the only university behind six Malaysian universities by a large difference.

Table 5. THE impact rankings 2021 of Indonesia vs Malaysia

Engineering		Business & Economics		Computer Science		Physical Sciences		Life Sciences	
Name	Rank	Name	Rank	Name	Rank	Name	Rank	Name	Rank
UM	151–175	UM	126–150	UM	126–150	UM	301–400	UM	401–500
UPM	301–400	USM	201–250	UTM	401–500	UTM	501–600	UPM	401–500
UTP	301–400	UTM	201–250	UTP	401–500	UMP	601–800	UI	601–800
UKM	501–600	UUM	251–300	ITB	501–600	UPM	601–800	IPBU	601–800
UTM	501–600	UPM	301–400	UI	501–600	UTP	601–800	UKM	601–800
UNITEN	501–600	UGM	501–600	UKM	501–600	UUM	601–800	USM	601–800
ITB	601–800	UI	501–600	USM	501–600	ITB	801–1000	ITB	801+
UI	601–800	UKM	501–600	MU	601–800	UI	801–1000	UB	801+
MU	601–800	UKL	501–600	UPM	601–800	UKM	801–1000	DU	801+
USM	601–800	UTAR	501–600	ITSP	601–800	USM	801–1000	UGM	801+

Social Sciences		Clinical & Health		Education		Arts & Humanities		Psychology	
Name	Rank	Name	Rank	Name	Rank	Name	Rank	Name	Rank
UTM	176–200	UM	176–200	UM	97	UKM	301–400	UM	251–300
UM	301–400	UI	301–400	USM	126–150	UM	301–400	-	-
UPM	401–500	UKM	301–400	UTM	126–150	USM	301–400	-	-
USM	401–500	USM	301–400	UKM	251–300	UPM	401–500	-	-
UUM	401–500	UTMARA	401–500	UPM	251–300	UTM	501+	-	-
UI	501–600	UPM	501–600	UUM	301–400	-	-	-	-
UKM	501–600	UB	601+	UTMARA	401–500	-	-	-	-
UB	601+	UGM	601+	-	-	-	-	-	-
UGM	601+	UP	601+	-	-	-	-	-	-
UP	601+	-	-	-	-	-	-	-	-

Source: THE University Rankings by Subject [38], Note: Indonesian universities are marked in bold

In the Table 5, according to the THE Impact Rankings 2021, the progress of Malaysian universities over Indonesian universities in all departments such as (engineering, business & economics, computer science, physical sciences, life sciences, social sciences, clinical & health). Indonesian universities were also absent from the international rankings in the departments (education, arts & humanities, psychology).

4.3. Sustainable development goals

A new worldwide league table based on university performance against the United Nations' Sustainable Development Goals has been launched (SDGs). Each year, we provide a global ranking, as well as 17 tables that demonstrate how universities are doing in achieving each of the Sustainable Development Goals [38]. Four main categories that compare using precisely calibrated measures are Research, stewardship, outreach and teaching. The 2021 Impact Rankings is the third edition and the overall ranking includes 1,118 universities from 94 countries/regions. In the table below Impact Rankings based on the United Nations' Sustainable Development Goals (SDGs): SDG 1–no poverty, SDG 2–zero hunger, SDG 3–good health and well-being, SDG 4–quality education, SDG 5–gender equality, SDG 6–clean water and sanitation, SDG 7–affordable and clean energy, SDG 8–decent work and economic growth, SDG 9–industry, innovation and infrastructure, SDG 10–reduced inequalities, SDG 11–sustainable cities and communities, SDG 12–responsible consumption and production, SDG 13–climate action, SDG 14–life below water, SDG 15–life on land, SDG 16–peace, justice and strong institutions, SDG 17–partnerships for the goals.

Table 6 shows the top 10 universities in Indonesia and Malaysia According to the global ranking THE in the global performance tables that evaluate universities against the United Nations' Sustainable Development Goals based on 11 indicators. Noted that there is one university (USM=39) from Malaysia, while there are 4 universities (ITS=64), (Unhas=79), (UGM 83) and (UI 85) from Indonesia among the top

100 universities in the world. Also noted was the absence of all Indonesian and Malaysian universities from the global rankings in the (SDG 10-Reduced Inequalities) index.

Table 6. THE impact rankings 2021 of Indonesia vs Malaysia

Name	Country	Rank	Ranking By Impact Indicator				Overall
USM	MYS	39	SDG16=86.4	SDG3=84.3	SDG1=78.8	SDG17=89.5	90.5
ITS	IDN	64	SDG7=76.2	SDG8=75.4	SDG1=80.3	SDG17=86.0	88.6
Unhas	IDN	79	SDG1=85.3	SDG14=89.1	SDG3=70.1	SDG17=73.5	87.5
UGM	IDN	83	SDG1=81.3	SDG7=71.3	SDG=81.1	SDG=90.5	87.1
UI	IDN	85	SDG7=74.9	SDG1=77.2	SDG12=77.0	SDG17=94.0	87.0
ITB	IDN	101–200	SDG7=73.9	SDG11=76.2	SDG6=73.0	SDG17=73.5	77.5
DU	IDN	101–200	SDG12=75.9	SDG7=66.8	SDG14=76.3	SDG17=87.0	77.5
IPB	IDN	101–200	SDG2=80.9	SDG1=68.2	SDG4=64.0	SDG17=73.5	77.5
UM	MYS	101–200	SDG11=79.5	SDG9=66.3	SDG7=67.5	SDG17=73.5	77.5
UTM	MYS	101–200	SDG9=90.3	SDG16=63.1	SDG4=64.0	SDG17=73.5	77.5

Source: THE Impact Rankings [38]

4.4. Research and publications

As a result of the Scopus database, the SCImago Journal & Country Rank is a publically accessible portal that comprises journals and scientific indicators for countries (Elsevier B.V). A wide range of scientific fields can be assessed using these markers. Comparison and analysis of journals is possible. It is possible to compare or analyze individual country rankings. It is possible to sort journals by subject area (27 broad thematic areas), subject category (313 individual subject categories), or even by country. It is based on citation data from more than 34,100 titles from more than 5,000 international publishers, as well as country performance measures from Information visualization project The Shape of Science aims to reveal science's structure. Bibliometric indicators from the SCImago Journal and Country Rank portal are accessible through its interface. Research performance, innovation outputs, as well as social impact as evaluated by their web visibility, are all considered in the SCImago Institutions Rankings (SIR) classification system for academic and research organizations.

Table 7. Research and publications rank in Indonesia vs Malaysia

Year	Ranking among Asian countries		Documents		Citable documents		Citations		Self-Citations		Citations per document		H index	
	MYS	IDN	MYS	IDN	MYS	IDN	MYS	IDN	MYS	IDN	MYS	IDN	MYS	IDN
	2020	7	5	39.166	50.145	37.099	49.160	30.333	17.017	9.225	8.326	0.77	0.34	
2019	7	5	38.228	47.432	36.402	46.644	114.103	55.764	32.121	28.730	2.98	1.18		
2018	6	7	34.924	34.918	32.688	34.004	192.744	89.502	49.290	44.391	5.52	2.56		
2017	6	9	33.656	21.549	31.633	20.860	258.458	101.638	59.460	39.485	7.68	4.72		
2016	6	11	30.660	12.701	29.275	12.209	298.443	82.549	67.513	27.435	9.73	6.5	373	259
2015	6	11	28.202	8.575	27.067	8.229	328.870	75.235	72.036	19.820	11.66	8.77		
2014	6	11	29.048	6.910	27.855	6.634	333.595	70.581	78.963	16.964	11.48	10.21		
2013	6	11	25.648	5.449	24.542	5.117	311.938	61.178	77.189	13.237	12.16	11.23		
2012	6	11	23.119	4.239	22.074	3.894	285.489	56.753	72.404	11.077	12.35	13.39		
2011	6	11	20.828	3.529	20.109	3.334	285.434	50.423	73.085	9.053	13.7	14.29		

Source: <http://www.scimagojr.com> [39]

In the Table 7, we note the rise in Indonesia's ranking in 2019 and 2020 in research and publication in the Asian rankings to the fifth place. However, Malaysia is still ahead of Indonesia in research (H index: MYS=259 & IDN=373). This indicates the weak impact of Indonesian research globally in terms of quality, impact and global citation.

5. DISCUSSION

The profound political and socioeconomic developments that have occurred since the early 1990s have had This is consistent with previous studies by Saleh and Mujahiddin [40] and Khan and Anwar [41], private universities in Asia including Indonesia face several problems such as varying quality, high costs, and difficulty to get financial support. In addition, based on reports issued by Asian Development Bank in 2012 and 2015 [42], [43], confirms that higher education institutions in South Asia, including Indonesia, are

confronted with immediate and pressing needs, such as: Improving their quality, relevance, equity, efficiency, and governance. Meet new challenges arising from the construction of knowledge economies, internationalization and ever-increasing competition.

There is a huge difference between the budgets of foreign universities and Indonesian universities. This difference is reflected in the difference in the position of these universities in the world rankings. The latest ranking results from THE in the Impact Rankings 2021 state that the ranking of Malaysian universities is still better than the ranking of Indonesian universities.

The ranking data submitted by QS & THE must be carefully observed by both the campus and the ranks of the Directorate General of Higher Education (Kemendikbudristek). QS and THE are the oldest and most credible university ranking agencies in the world. The calculations are also transparent and audited by the PwC auditor agency. This is also the main barometer for ranking campuses in the world.

According to the doctoral in economics from the Australian National University, the declining position of campuses in Indonesia is inconsistent with the state budget funds that are increasingly being poured into universities for research, publication, and other purposes. Then it is also inconsistent with the claim of the Directorate General of Higher Education which often says that Indonesia publications are from the greatest in Association of South East Asian Nations or ASEAN and are able to catch up with Singapore [44], [45].

Higher education in Indonesia currently faces three very serious challenges namely: the quality gap compared to regional universities in ASEAN: the limited participation rate, the disparity in access between the poor and the wealthy, and the low internal efficiency. To overcome these three challenges, significant financial support is needed. a considerable impact on universities in developing countries. To better illustrate this general pattern, it was decided to compare Indonesia and Malaysia, two significant Asian developing nations with burgeoning economies and lofty aspirations. The two nations are compared as part of this comparative framework, which then evaluates four key factors, including topic rankings, overall international university rankings (QS & THE), sustainable development goals (SDGs), and research and publications. Both Indonesian and Malaysian higher education systems have undergone massification, marketization, and internationalization, and are currently striving for universalization through more excellence-driven higher education initiatives, which include the main mechanisms and rules, as well as marketization and internationalization strategies and policies [46], [47].

Aside from the macro-level similarities, there are some notable differences and disparities in these three areas of higher education. These include the actual paths of size expansion, the growth and fate of private institutions, and the conception of internationalization. All of these differences are brought about by different historical paths, national agendas, and socio-political environments. In this comparative perspective, three common elements need to be further discussed: centralized decentralization, domestic globalization, and the uneven structure of quantitative development [46], [47].

According to previous studies [16], [20], [48]–[50], in 2020, data on the performance of Indonesian universities were re-identified based on four key factors: i) The caliber of human resources and students (input); ii) The management of higher education institutions (process); iii) The short-term performance achievements of universities (output); iv) The long-term performance achievements, and the length of college (outcome). The indicators that reflect each of the main components have undergone a number of revisions or additions, therefore it is believed that these main components will now more accurately reflect the state of Indonesian universities in accordance with their coverage. The number of lecturers with doctoral degrees, the number of lecturers holding the positions of head lector and professor, the ratio of lecturers to students, the number of international students, and the number of lecturers who have worked as practitioners in the industry for at least six months are all included in measuring the performance of universities in the input area. Nine indicators are used in the process aspect, including institutional accreditation, study program accreditation, online learning, cooperation between higher education institutions, Higher Education Database (PD Dikti) reports, the number of study programs working with World of Business Industry (DUDI)/, a non-governmental organization (NGO), or Quacquarelli Symonds (QS) top 100 World Class University Rankings or WCU by subject, the number of study programs implementing programs for independent learning, and the number of students taking part in the independent learning Program. The four metrics used in the output component are the number of indexed scientific articles per lecturer, research performance, student performance, and the number of study programs that have received international accreditation or certification. The outcome element uses five indicators, including innovation performance, number of citations per lecturer, number of patents per lecturer, performance in community service, and the proportion of college graduates who find employment within six months.

Data on both the performance of each individual in higher education as well as the performance of higher education as a whole are gathered and clustered within the concept of continuous development. In line with this, the clustering data source employs reliable, usable data that possess the qualities listed below: Information that is immediately usable, specifically information that colleges and institutions commonly

report to the PD Dikti. Information on the outcomes of higher education performance evaluations that have been completed by work units under the Directorate General of Higher Education but have not been presented in PD Dikti. Information that is particularly relevant to clustering but has not yet been incorporated in PD Dikti is systematically gathered by work units.

Giving value (score) clustering based on the achievement of the university on each indicator in each aspect. Each indicator has a weight on the overall college performance value. This stage is a very important stage and can be used as a tool for controlling higher education development policies. The indicator weight is determined by considering three things, namely: i) Interests: the influence of indicators in forming quality tertiary institutions; ii) Measurement validity: the validity of the measurements made, including data quality and ease of verification; and iii) Comparability: does the indicator really apply to all types, statuses, categories of higher education institutions. From the results of the analysis of data from 2,136 available universities, the results of the 2020 higher education clustering were obtained which consisted of five indicators used for evaluation, namely teaching (the learning environment), research (volume, income and reputation), citations (research influence), international outlook (staff, students and research), and industry income (knowledge transfer) [13], [51], [52].

Based on strategic of the Ministry of Research, Technology and Higher Education (Menristekdikti) regarding the education sector abroad, it turns out that the resources of lecturers and rectors are an important element for improving the quality of higher education. This is the basis for creating a program for the procurement of foreign rectors and lecturers. The government also targets that by 2020 there will be universities led by the best rectors from abroad and by 2024 the number is targeted to increase to five state universities (PTN). The Ministry of Research has mapped out which ones are the readiest, which ones are not and which universities they are targeting (rectors) are foreign. If there are many, two to five (universities with foreign rectors) until 2024. There is also a step by the government in increasing the ranking of universities to reach the top 100 in the world through bring foreign rector candidates.

6. CONCLUSION

In order to assess the realities of higher education in both nations, identify the forces and dynamics affecting higher education, and highlight the similarities and differences between the Indonesian and Malaysian systems, this study compares and contrasts universities in Indonesia and Malaysia. The comparative descriptive approach of Birdy was adopted. Based on the results, universities in Malaysia outperformed Universities in Indonesia in the ranking list issued by the QS world campus ranking agency. The latest data for 2021 shows that the University of Malaya has succeeded in being ranked 59th in the QS world. The ranking of the University of Malaya (UM) (59) is even far above the best university in Indonesia, Universitas Indonesia (UI) which is in position 305.

According to THE global ranking that evaluates universities against the United Nations' Sustainable Development Goals based on 11 indicators, noted that Indonesian universities are leading Malaysian universities. While both Indonesian and Malaysian universities have disappeared from global assessments in the latest indicator (SDG 10-Reduced Inequalities). In addition, the evaluation based on research noted the rise in Indonesia's ranking in 2019 and 2020 in research and publication in the Asian rankings to fifth place. But Malaysia is still ahead of Indonesia in research (H index: MYS=259 & IDN=373).

Suggested mechanisms to benefit from the Malaysian higher education system in Indonesia; adopting the concept of a productive university that is based on application and production, through the provision of educational and advisory services and community partnerships with government and private institutions, through: i) Adopting applied research in developing and increasing the quality of companies' products, as adopts special research in various scientific fields; ii) A partnership contract with companies or institutions to provide programs that serve these institutions so that they participate in its objectives, pay its costs and employ its outputs; iii) Activating cooperative education in universities so as to benefit from companies and institutions in training students and preparing them for the labor market; iv) Establishing consulting centers that provide services and proceeds to the university and scientific research as a center for engineering consultancy, family counseling, and research consultancy; v) Establishing business centers in universities, such as medical specialties, for which a day is allocated to provide medical services with the participation of consultants at reasonable prices and the proceeds to the university; and vi) To reach the top 100 universities in the world we suggest should improve publications, attracting foreign lecturers, attracting foreign students, exchange students with universities in other countries. Currently there are several regulatory improvements needed to be able to invite foreign rectors to be able to lead universities in Indonesia and foreign lecturers to be able to teach, research, and collaborate in Indonesia.




REFERENCES

- [1] P. Delgado, C. Vargas, R. Ackerman, and L. Salmerón, "Don't throw away your printed books: A meta-analysis on the effects of reading media on reading comprehension," *Educational Research Review*, vol. 25, pp. 23–38, Nov. 2018, doi: 10.1016/j.edurev.2018.09.003.
- [2] F. Reichert, D. Lange, and L. Chow, "Educational beliefs matter for classroom instruction: A comparative analysis of teachers' beliefs about the aims of civic education," *Teaching and Teacher Education*, vol. 98, p. 103248, Feb. 2021, doi: 10.1016/j.tate.2020.103248.
- [3] J. Roick and T. Ringeisen, "Students' math performance in higher education: Examining the role of self-regulated learning and self-efficacy," *Learning and Individual Differences*, vol. 65, pp. 148–158, 2018, doi: 10.1016/j.lindif.2018.05.018.
- [4] G. Ocaik and A. Yamaç, "Examination of the relationships between fifth graders' self-regulated learning strategies, motivational beliefs, attitudes, and achievement," *Kuram ve Uygulamada Egitim Bilimleri*, vol. 13, no. 1, 2013.
- [5] S. Li and J. Zheng, "The Relationship Between Self-efficacy and Self-regulated Learning in One-to-One Computing Environment: The Mediated Role of Task Values," *The Asia-Pacific Education Researcher*, vol. 27, no. 6, pp. 455–463, Dec. 2018, doi: 10.1007/s40299-018-0405-2.
- [6] B. J. Zimmerman and A. R. Moylan, "Self-Regulation: Where Metacognition and Motivation Intersect," in *Handbook of Metacognition in Education*, & A. C. G. D. J. Hacker, J. Dunlosky, Ed. New York: Routledge, 2009, pp. 299–315.
- [7] P. R. R. Pintrich, D. Smith, T. Garcia, and W. McKeachie, "A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)," *Ann Arbor, Michigan*, vol. 48109, no. August 2016, p. 1259, 1991, doi: ED338122.
- [8] M. Pressley, *Advanced educational psychology for educators, researchers, and policymakers*. New York: HarperCollins College Publishers, 1995.
- [9] W. Leal Filho, E. Manolas, and P. Pace, "The future we want key issues on sustainable development in higher education after rio and the un decade of education for sustainable development," *International Journal of Sustainability in Higher Education*, vol. 16, no. 1, pp. 112–129, Jan. 2015, doi: 10.1108/IJSHE-03-2014-0036.
- [10] A. S. Knowles, *The International encyclopedia of higher education*. San Francisco: Jossey-Bass, 1977.
- [11] J. W. Meyer, "The Effects of Education as an Institution," *American Journal of Sociology*, vol. 83, no. 1, pp. 55–77, 1977, [Online]. Available: <http://www.jstor.org/stable/2777763>.
- [12] P. G. Altbach, P. J. Gumport, and R. O. Berdahl, *American Higher Education in the Twenty-First Century: Social, Political, and Economic Challenges third edition*, 3rd ed. Baltimore: Johns Hopkins University Press, 2011.
- [13] T. W. Schultz, "Investment in Human Capital," *The American Economic Review*, vol. 51, no. 1, pp. 1–17, 1961, [Online]. Available: <https://www.jstor.org/stable/1818907>.
- [14] K. Digidowiseiso, "The development of higher education in Indonesia," *International Journal of Scientific and Technology Research*, vol. 9, no. 2, pp. 1381–1385, 2020.
- [15] A. N. R. Handini, Dinna and Hidayat, Firman and Putri, Dina Alif Vatul and Rouf, M. Rasha and Anjani, Nur Raly and Attamimi, "Higher education statistics 2020 (in Indonesian)," Jakarta, 2020. [Online]. Available: <https://pddikti.kemdikbud.go.id/asset/data/publikasi/Statistik>.
- [16] Minister of Education and Culture, *Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 5 of 2020 concerning Accreditation of Study Programs and Higher Education (in Indonesian)*. Jakarta, Indonesia, 2020.
- [17] National Education System, *Law (UU) on the National Education System (in Indonesian)*. Indonesia, 2003.
- [18] Z. Mohd Fahmi, U. Balasingam, and J. M. Laguardo, "ASEAN Qualification Reference Framework: Harmonization of ASEAN Higher Education Area," in *ASEAN Post-50*, Singapore: Springer Singapore, 2019, pp. 101–134.
- [19] Indonesian Central Government, *Presidential Regulation (PERPRES) concerning the Indonesian National Qualifications Framework (in Indonesian)*. Indonesia, 2012.
- [20] Ministry of Education and Culture, *Presidential Regulation (PERPRES) concerning the Ministry of Education and Culture*. Indonesia, 2019.
- [21] SKKNI, "About SKKNI (in Indonesian)." 2018, [Online]. Available: <https://skkni.kemnaker.go.id/tentang-skkni/kelembagaan>.
- [22] Education Malaysia Global Services, "Malaysia Higher Education in Brief," 2022. <https://educationmalaysia.gov.my/malaysia-higher-education-in-brief/>.
- [23] N. A. Albelbisi and F. D. Yusop, "Systematic Review Of A Nationwide MOOC Initiative In Malaysian Higher Education System," *Electronic Journal of e-Learning*, vol. 18, no. 4, pp. 287–298, Aug. 2020, doi: 10.34190/EJEL.20.18.4.002.
- [24] R. S. R. Kasim, "The Relationship of Knowledge Management Practices, Competencies and the Organizational Performance of Government Departments in Malaysia," *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, vol. 2, no. 12, pp. 1252–1258, 2008, [Online]. Available: <http://www.waset.ac.nz/journals/waset/v48/v48-9.pdf>.
- [25] N. Azman, M. Sirat, V. Pang, Y. M. Lai, A. R. Govindasamy, and W. A. Din, "Promoting university–industry collaboration in Malaysia: stakeholders' perspectives on expectations and impediments," *Journal of Higher Education Policy and Management*, vol. 41, no. 1, pp. 86–103, Jan. 2019, doi: 10.1080/1360080X.2018.1538546.
- [26] Malaysian Qualifications Agency, "Agensi Kelayakan Malaysia (MQA) Laporan Tahunan 2011," 2011. [Online]. Available: [https://www.mqa.gov.my/pv4/document/publications/reports/annual/Laporan Tahunan 2011.pdf](https://www.mqa.gov.my/pv4/document/publications/reports/annual/Laporan%20Tahunan%202011.pdf).
- [27] UNESCO Institute for Statistics (UIS), "Government expenditure on education, total (% of GDP) - Malaysia," 2020. https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?locations=MY&most_recent_year_desc=false.
- [28] Cambridge University Press & Assessment, "Malaysian teachers are amongst the most dedicated in the world for ensuring students achieve academic success," 2018. <https://www.cambridgeinternational.org/news/news-details/view/malaysian-teachers-are-amongst-the-most-dedicated-in-the-world-for-ensuring-students-achieve-academic-success-28-nov2018/>.
- [29] N. Kholis, "Teacher Professionalism in Indonesia, Malaysia, and New Zealand," *TARBIYA: Journal of Education in Muslim Society*, vol. 6, no. 2, pp. 179–196, Dec. 2019, doi: 10.15408/tjems.v6i2.11487.
- [30] I. Roha Mohamed Jais, N. Yahaya, and E. K. Ghani, "Higher Education Leadership Competency Framework in Malaysia: A Refinement," *Humanities and Social Sciences Letters*, vol. 8, no. 4, pp. 438–449, 2020, doi: 10.18488/journal.73.2020.84.438.449.
- [31] A. Garad, S. Haryono, R. Yaya, S. Pratolo, and A. Rahmawati, "The Relationship Between Transformational Leadership, Improving Employee's Performance and the Raising Efficiency of Organizations," *Management and Production Engineering Review*, vol. 13, no. 2, pp. 15–30, 2022, doi: 10.24425/mper.2022.142052.
- [32] I. Abidin, "University-Industry Collaboration and Malaysian Public Universities Funding Model." [Online]. Available: <https://news.ump.edu.my/experts/university-industry-collaboration-and-malaysian-public-universities-funding-model>.
- [33] Charles C. Ragin, *The comparative method: Moving beyond qualitative and quantitative strategies*, 1st ed. California: Univ of




- California Press, 2014.
- [34] W. Miller, "The comparative method: Moving beyond qualitative and quantitative methods," *Berkeley: University of California*, pp. 1–218, 1987, [Online]. Available: <https://www.jstor.org/stable/10.1525/j.ctt1pnx57>.
- [35] D. Goodrick, "Comparative Case Studies," Italy, 2014. [Online]. Available: https://www.unicef-irc.org/publications/pdf/brief_9_comparativecasestudies_eng.pdf.
- [36] B. Holmes and G. Z. F. Bereday, "Comparative Method in Education," *British Journal of Educational Studies*, vol. 13, no. 2, p. 220, May 1965, doi: 10.2307/3118354.
- [37] QS Quacquarelli Symonds Limited, "QS World University Rankings 2021," 2021. <https://www.topuniversities.com/university-rankings/world-university-rankings/2021>.
- [38] Times Higher Education, "Times Higher Education World University Rankings (2019; 2020; 2021)," 2021.
- [39] Scimago Institutions Rankings, "Scimago Journal & Country Rank." 2021, [Online]. Available: <https://www.scimagojr.com/countryrank.php?region=Asiatic>.
- [40] A. Saleh and M. Mujahiddin, "Challenges and Opportunities for Community Empowerment Practices in Indonesia during the Covid-19 Pandemic through Strengthening the Role of Higher Education," *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, vol. 3, no. 2, pp. 1105–1113, May 2020, doi: 10.33258/birci.v3i2.946.
- [41] A. Khan and M. Anwar, "Higher education in Peril: Challenges to Southeast Asian academics," *Higher Education Challenges in South-East Asia*, pp. 238–249, 2020, doi: 10.4018/978-1-7998-4489-1.ch013.
- [42] Asian Development Bank, "Private Higher Education Across Asia: Expanding Access, Searching for Quality," 2012. [Online]. Available: <https://think-asia.org/handle/11540/915>.
- [43] Asian Development Bank, *Education in Indonesia*. Paris: OECD Publishing, 2015.
- [44] S. Alifah, "Improving the Quality of Education in Indonesia to Catch Up with Other Countries (in Indonesian)," *CERMIN: Jurnal Penelitian*, vol. 5, no. 1, p. 113, Jul. 2021, doi: 10.36841/cermin_unars.v5i1.968.
- [45] Z. Zuhri, "Priority Determination of State Universities in Indonesia Using the Fuzzy Topsis Analysis Method (in Indonesian)," *Jurnal Ilman*, vol. 3, no. 1, pp. 50–60, 2015.
- [46] C. Li, "The Development of Higher Education in China and Malaysia: A Comparative Perspective," *Science Journal of Education*, vol. 9, no. 3, p. 77, 2021, doi: 10.11648/j.sjedu.20210903.12.
- [47] N. Kurniasih, C. Hasyim, A. Wulandari, M. I. Setiawan, and A. S. Ahmar, "Comparative Case Studies on Indonesian Higher Education Rankings," *Journal of Physics: Conference Series*, vol. 954, p. 12021, Jan. 2018, doi: 10.1088/1742-6596/954/1/012021.
- [48] Education Sector Analytical and Capacity Development Partnership (ACDP), "Developing Strategies for University, Industry, and Government Partnership in Indonesia." Agency for Research and Developments (Balitbang), Jakarta, 2013, [Online]. Available: https://multisite.itb.ac.id/mwa/wp-content/uploads/sites/40/2014/06/ACDP-025-Developing_Strategies_for_University-Industry-and-Government_Partnership.pdf.
- [49] F. D. Ananda and A. Nuri, "Changes in Management Strategy in Improving Discipline in Higher Education (in Indonesian)," *Jurnal Ilmu Komputer, Ekonomi dan Manajemen (JIKEM)*, vol. 2, no. 1, pp. 923–926, 2022, doi: 10.30596/edutech.v3i1.990.
- [50] Ministry of Health, "National Strategy for Combating Tuberculosis in Indonesia 2020-2024 (in Indonesian)," 2020. [Online]. Available: https://tbindonesia.or.id/wp-content/uploads/2021/06/NSP-TB-2020-2024-Ind_Final_-BAHASA.pdf.
- [51] A. M. Al-Ansi, A. Garad, and A. Al-Ansi, "ICT-Based Learning During Covid-19 Outbreak: Advantages, Opportunities and Challenges," *Gagasan Pendidikan Indonesia*, vol. 2, no. 1, p. 10, 2021, doi: 10.30870/gpi.v2i1.10176.
- [52] I. Fatmawati and A. Garad, "An Analytical Study of the Relationship Between Network Capability and e-Marketing to Achieve the Competitive Advantage of MSEs," in *The Implementation of Smart Technologies for Business Success and Sustainability: During COVID-19 Crises in Developing Countries*, 2023, pp. 3–12.

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