INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN ECONOMICS & MANAGEMENT SCIENCES

OPEN ACCESS JOURNAL

Vol 14, Issue 1, (2025) E-ISSN: 2226-3624

Enhancing Sabah's Human Capital Development & Economic Complexity: Higher Education Strategic Role in the Economy

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DOI Link: http://dx.doi.org/10.6007/IJAREMS/v14-i1/25905

Published Online: 28 February 2025

Abstract

Higher education plays important role for human capital development. In Malaysia, higher education institutions provide education services by offering courses at diploma, bachelor's degree, masters and doctorate level, besides other important role such as its research and development activities. In Malaysia, there are many tertiary education institutions that provide services to the people and other stakeholders. In Malaysia, besides 20 public universities, there are more than 10 state owned universities, university colleges and colleges and many private higher learning institutions situated in different locations around the country. In Sabah, there are more than 20 higher learning institutions and TVET institutions. Besides producing human capital, activities by those institutions make significant impact to the economy or at least benefit certain segment of the economy. It also play role in enhancing the economic complexity of a country. Overtime, the productive capabilities of a country ameliorates due to the knowledge and skills the gain through learning in higher education institutions. Consequently, types of products being produced and to be exported becomes more diversified. This study aims to study the result of further enhancing higher education institutions, its academic offering and other services by estimating the impact of increasing student enrolment by attracting students from outside Sabah on the economy. Besides, the study recommends to look into the possibility of attracting reputable universities to open a branch campus in Sabah as this can diversify the options for students. Moreover, the study recommends to look into the possibility of establishing higher education park in Sabah.

Keyword: Higher Education, Economy, Finance, Sabah, Economic Complexity, Service

Introduction

Sabah's gaining independence and forming Malaysian federation in 1963, the economy of Sabah has become more diversified. During the early years of independence, the economy has been very dependent on the export of first sector economy such as agriculture and natural resources. Over the decades, there has been structural transformation in the economy and enhancement in the education and skills of Malaysian labour force. Many higher education and Technical and Vocational Education and Training (TVET) institutions were opened and more Malaysians have better education attainment.

The contribution of mining and quarrying sector, construction, manufacturing and services sector have increased and the sectors were expanding from time to time. In recent years, services sector has become the biggest contributing sector to the economy, besides oil and gas and agriculture also playing significant role among others. Under services sector, there are many sub sectors which are important such as tourism and hospitality and education sector. The contribution to the economy, is no doubt, significant.

While planning for the future, acknowledging the importance of other sectors such as manufacturing sector, the role of higher education sector is very important. Education sector develops the human capital and improve the economic complexity of Sabah.

In this regard, Malaysia was placed on the 25th rank in global economic complexity index. Economic complexity index is an index that measure a country's productive capabilities, indicating the diversity and sophistication of the products it exports. A country with high score of that index would indicate that the country has a more diversified and complex export basket.

An analogy by a professor from Harvard, Ricardo Hausmann is very interesting and indeed convincing in this context. Linking with economic complexity, Hausmanns' Scrabble Theory of Economic Development explains the action of converting know-how into a product. According to him, at the starting point, each nation has a set of existing capabilities represented by know-hows, or letters (in scrabble game) within a society. The next step is how these capabilities or know-hows or scrabble letters get transposed into tangible goods and services or the scrabble words. These final goods are essentially a combination of capabilities that a country has, or in scrabble game, letters that translate into words. In other words, if a person flips the 'country-capability-product' model and focus on the end products manufactured by a country, the existing capabilities within that country can be determined.

Hence, the more letters you have in a scrabble game and diverse they are, the more words can be created or made. Alternatively, the more know-how a country have, more diverse products it can actually produce. To produce more know-how, more universities and TVET institutions needed with diverse range of course types being offered.

In Malaysia, there are many tertiary education institutions that provide services to the people and other stakeholders. In Malaysia, besides 20 public universities, there are more than 10 state owned universities, university colleges and colleges and many private higher learning institutions operating and situated in different locations around the country. In Sabah, there are more than 20 higher learning and TVET institutions. Besides producing human capital, those institutions make significant impact to the economy or at least benefit certain segment of the economy.

The research aims to study the result of further enhancing higher education institutions and its academic offering by estimating the impact of increasing student enrolment by attracting students from outside Sabah on the economy. Besides, the study attempts to provide general recommendations on tertiaty education in Sabah.

Literature Review

There are many studies related to higher education globally and in Malaysia specifically. Past studies generally focus on various aspects of higher education and not limited to areas such as related to assessment tool, internationalization of higher education, management and development of higher education, technology enhance learning in higher education, TVET, opening foreign university branch campus, role of tertiary education, issues and challenges of higher education among others. This can be seen for example reports or studies or studies of K. Muniisvaran et. al (2025); Berchin II (2021); Ramayah B and Kumar R (2020); Hutagaluh, O. et. al (2025); Figueiró, P. S., and Raufflet, E. (2015); Z. Suo (2023); Richards, C. (2019); R. Jusoh (2024); K. H. Bahari et. al (2023); Hou, A.YC., Hill, C., Chen, K.H.J. and Tsai S. (2018); S. Wilkins (2023).

With regard to human capital development, economic complexity and Sabah's economy, limited studies were found. On Sabah's economy, quite a number of work were found such as were found in R. Idris and K. Mansur (2020); R. Idris (2015).

Nevertheless, limited studies are found on enhancing human capital development, higher learning institutions and economic complexity in Sabah. All the studies do not attempt to estimate the impact of having more students enrolled in local institutions as a result of enhancing the institutions to the economy of Sabah.

Methodology

The research aims to understand the result of further enhancing higher education institutions and its academic offering by estimating the impact of increasing student enrolment by attracting more students from within and outside Sabah on the economy. To do the estimation, the study assumes the following:

a. A student will spend on average RM700 for tuition fees a month.
b. A student will spend on average RM900 a month for food.
c. A student will spend approximately RM250 a month for hostel fee
d. A student spends RM150 a month for other needs such as transportation

The above assumption is based on information obtained from some students. The actual amount spend by a student may not be same with other students as tuition fee for each student might be different as it depends on the course registered by student. Besides, students' affordability might differ from one another depending on family financial background and whether or not they obtain scholarship among others. This determine the amount that they can spend in a month. Hence, for simplicity and for simulation purpose, the study assumes the spending amount to be the same.

Based on the assumptions above, for simplicity and on average, this study assumes each student spends around RM2,000 a month. Hence, annually, a student will spend around RM24,000 for higher education purpose, and this will give impact not only to the institutions that collect fee but also to at least few sectors in the economy.

To estimate the impact of increasing student enrolment by attracting more students from within and outside Sabah on the economy, a simulation exercise is being undertaken using

input-output table analysis. The study uses similar method as applied in the work of Idris R, Morshidi A, Mansur K, Idris R. Z. (2024).

Therefore, the impact of increase in final demand (spending amount per year as assumed above) on the economy is being estimated using input-output table analysis. Regional Input-Output Table 2015 is being used for the analysis and as a guide. For this purpose, the output multiplier is being computed as discussed in the study of Miller and Blair (2009).

To estimate the impact, 3 scenarios are being assumed in this study. Each scenario represents different number of active students enrolled in private tertiary institutions in Sabah. The scenarios are as follows:

SCENARIO 1 : 1,000 active students studying in private tertiary education institutions in Sabah (35% for tuition fee, 45% for food, 12.5% for accommodation and 7.5% for transportation and communication)

SCENARIO 2 : 10,000 active students studying in private tertiary education institutions in Sabah (35% for tuition fee, 45% for food, 12.5% on accommodation and 7.5% for transportation and communication)

SCENARIO 3 : 30,000 active students studying in private tertiary education institutions in Sabah (35% for tuition fee, 45% for food, 12.5% on accommodation and 7.5% for transportation and communication)

Considering the above 3 scenarios and spending composition are the same across 3 scenarios, the study assumes the final demand are made for three different sub sectors which are namely food, beverages and accommodation, transport and communication as well as business and private services with different level of student numbers.

The study uses the output multiplier to compute the impact on output. The formula of the output multiplier are as follows:

Output multiplier $(O_{MULT})_j = \Sigma_i L_{ij}$.
The type I output multiplier for a particular industry is defined as the total of all outputs from each domestic industry required in order to produce one additional unit of output that is, the column sums (Σ_i) from the type I Leontief inverse matrix (L_{ij}).

Findings/Results
In this study, three scenarios are being simulated to estimate the effect of having certain number of students to the economy. Based on the simulation exercise, the subsequent paragraphs report the research findings. Table 1, 2 and 3 are the results of the analysis.

Table 1
Scenario 1 Results

SCENARIO 1 ASSUMPTION	SUB SECTOR	BY THE AMOUNT (RM)	IS ESTIMATED TO GENERATE A TOTAL EFFECT OF RMXX OF OUTPUT IN THE ECONOMY	% CHANGE IN OVERALL OUTPUT	STUDENTS' SPENDING IN A MONTH (RM)	STUDENTS' SPENDING IN A YEAR (RM)
An increase in final demand involving 1,000 students for products in	Food, beverages & accomodation, transport & communication and business & private services	13,800,000 + 1,800,000 + 8,400,000	47,777,163	0.05%	2,000,000	24,000,000

In scenario 1, assuming there is an increase in final demand involving 1,000 students for products and services in 3 sub sectors which are namely food, beverages and accommodation sub sector, transport and communication sub sector and business and private services sub sector by the amount of RM24,000,000 based on the composition in methodology section is estimated to generate a total effect of approximately of RM47.77 million of output.

Table 2
Scenario 2 Results

SCENARIO 2 ASSUMPTION	SUB SECTOR	BY THE AMOUNT (RM)	IS ESTIMATED TO GENERATE A TOTAL EFFECT OF RMXX OF OUTPUT IN THE ECONOMY	% CHANGE IN OVERALL OUTPUT	STUDENTS' SPENDING IN A MONTH (RM)	STUDENTS' SPENDING IN A YEAR (RM)
An increase in final demand involving 10,000 students for products in	Food, beverages & accomodation, transport & communication and business & private services	138,800,000 + 18,000,000 + 84,000,000	477,777,163	0.54%	20,000,000	240,000,000

In scenario 2, assuming there is an increase in final demand involving 10,000 students for products and services in 3 sub sectors in the economy which are namely food, beverages and accommodation sub sector, transport and communication sub sector and business and private services sub sector by the amount of RM240 million based on the composition

specified in the methodology section is estimated to generate a total effect of approximately of RM477.77 million of output and 0.54 percentage change to overall output.

Table 3
Scenario 3 Results

SCENARIO 3 ASSUMPTION	SUB SECTOR	BY THE AMOUNT (RM)	IS ESTIMATED TO GENERATE A TOTAL EFFECT OF RMXX OF OUTPUT IN THE ECONOMY	% CHANGE IN OVERALL OUTPUT	STUDENTS' SPENDING IN A MONTH (RM)	STUDENTS' SPENDING IN A YEAR (RM)
An increase in final demand involving 30,000 students for products in	Food, beverages & accomodation, transport & communication and business & private services	414,000,000 + 54,000,000 + 252,000,000	1,433,314,893	1.62%	60,000,000	720,000,000

In scenario 3, assuming there is an increase in final demand involving 30,000 students for products and services in 3 sub sectors in the economy which are namely food, beverages and accommodation sub sector, transport and communication sub sector and business and private services sub sector by the amount of RM720 million based on the composition specified in the methodology section is estimated to generate a total effect of approximately of RM1.43 billion of output and 1.62 percentage change to overall output.

Having discussed the above, it is evident that higher education contributes significantly to Sabah's economy. The ability to increase student numbers would eventually produce positive effects at least to few subsectors. There will be more money in circulation when student enrolment rises in Sabah.

Nevertheless, it is important to note that the value presented is not projected to be accurate but rather as a guide and as preliminary estimation. The dynamics of Sabah, Malaysia and world economy, geopolitics in the region or in other region or changes in economic variables may make the value to be vary.

Moving forward, how can Sabah increase student numbers especially for students enrol in private tertiary institutions? Based on inputs from various stakeholders through interview sessions conducted, the followings are some recommendations to consider by the respective stakeholders.

Firstly, continuous support to state owned private higher education institution can be considered. Bigger investment and funding might be required to upgrade existing facilities, expand its campus, greater effort for internationalization agenda, greater funding for operation used to attract more senior academics, as well as bigger grant for research and

development. With that, it is hoped that it will be further grow, expand and more will be attracted to study at state owned private institutions.

Secondly, the study recommends to consider for the possibility of establishing higher education park in Sabah. Education park in this context implies that an area is gazetted as education area or city on which tertiary education institutions open their campus in this area. There will be also government investment on infrastructure. The good thing about such area is that some facilities can be shared together by the institutions.

Thirdly, the study recommends to consider for the effort to open reputable universities in Sabah by investing, by giving support and incentives and also explore the possibility of acquiring shares in the university campus registered in Sabah. This can be done for example through state government-linked companies (GLC) or through investment by private non GLC. In this regard, the effort to attract reputable universities to open campuses in Sabah is a good thing, as this can diversify the options for Sabahan students and as it may benefit domestic economy. Moreover, other effort such as providing financial incentives and tax breaks to attract reputable universities to open branch campuses might be studied and considered.

Conclusion

Higher education institutions play important role for human capital development and improve the economic complexity of Sabah. With better economic complexity, that would mean Sabah has higher productive capabilities, indicating the diversity and sophistication of the products it exports. It also indicate that Sabah at least in the long run would have more diversified and complex export basket.

The higher education institutions in Malaysia have played and continuously play very important role in developing the human capital of the country. The government at federal and state level play important role in human development in the country. No doubt, besides playing significant role in human capital development, it also give positive impacts to the economy. The public and private sector have played their strategic roles in giving access to higher education institutions as well as providing quality services.

In the context of Sabah, besides improving human capital development and economic complexity, having more students studying in Sabah would create significant impact to the economy. The simulation results reveal that if there are 30,000 students studying in a private tertiary education in Sabah, it has the potential to generate a total effect of approximately of RM1.43 billion of output and 1.62 percentage change to overall output. The findings are intended to provide preliminary estimation and act as a guide for various stakeholders.

Moving forward, the study recommends for consideration for continuous support to the state owned institutions. Bigger investment and funding might be required to upgrade existing facilities, expand its campus, greater effort for internationalization agenda, greater funding for operation used to attract more senior academics, as well as bigger grant for research and development. With that, it is hoped that it will be further grow, expand and more will be attracted to study at state owned private institutions.

Secondly, the study recommends to consider for the possibility of establishing higher education park in Sabah. Thirdly, the study recommends to consider the effort to facilitate the opening of reputable universities in Sabah by investing, by giving support and incentives and also explore the possibility of acquiring shares in the university campus registered in Sabah.

Having mentioned all the recommendations, it is important to be noted that the recommendations are general in nature. There is a need for further consideration and may require a study by itself if necessary.

Acknowledgement
This research is a part of several research conducted on Sabah's economy under UMS research grant (SDK0094-2019).

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