

The Internationalization of Higher Education: An Estimation of Cost Using Activity Based Costing Method

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Abstract

This study was conducted to estimate the total cost associated in producing an international student and to compare the estimated costs with actual fees charged. This study employed Activity Based Costing method to analyse associated costs based on the concept of life cycle throughout the student's study duration on the basis of semester at Universiti Pendidikan Sultan Idris (UPSI). The results suggested that the Faculty of Languages and Communication has the highest cost for producing an international student while the lowest cost was incurred by the Faculty of Human Sciences. The results also indicated a substantial difference between the fees charged by the university and the estimated costs. The findings of this study are useful in identifying value added and non-value added activities and resources incurred by a higher education institution in its internationalisation effort. This study should also assist the management of the university to plan effectively and efficiently in terms of cost management and determine a more competitive and suitable fee structure.

Keywords: International Students, Higher Education, Cost Estimates, Activity Based Costing

Introduction

The ability to strengthen the internationalisation agenda will give provide better competitive edge to any higher learning institutions. In Malaysia, this effort is also in line with the National Higher Education Strategic Plan in transforming higher learning institutions by making Malaysia an international higher learning hub of excellence. Further, with the implementation of the New Economic Model, which is one of the strategic initiatives introduced by the government to enhance and strengthen Malaysia's global competitiveness, internationalisation should be one of the main focus of higher learning institutions. Statistics obtained from Ministry of Higher Education indicated that up until 2011, there has been a substantial increase in the enrolments of international students in Malaysian higher learning institutions. Specifically, data showed that there has been a 7 percent increase (23,988 in

2011 compared to 22,456 in 2009) and a 7.6 percent increase (62,705 in 2011 compared to 58,294 in 2009) in the number of enrolments at public and private universities, respectively.

As a leading university in the field of education in Malaysia, UPSI is considered unique due to the fact that most courses offered are education-based. Nonetheless, in 2012 UPSI made major changes by offering various open market and non education-based courses in order to boost student enrolment that has been decreasing over the years. Besides that, the move was undertaken to fulfil market requirement that is becoming more progressive in nature. According to the statistics obtained in 2012, the number of first degree students were 26,249. This showed a massive increase compared to 13,544 and 16,464 in 2009 and 2010, respectively. Out of that, 71 (in 2009) and 80 (in 2010) were international students. Meanwhile, in 2012, the number of international students increased dramatically to 171 and to 254 students in 2014. This indicated an increase of 72 percent in international students' enrolment over the six-year period.

In general, most international students find that furthering studies in Malaysia would be the right choice due to various programs and form of education offered, competitive cost among higher learning institutions, and guaranteed and higher education quality (Rohana et al., 2010). It can be seen that cost and education quality are key factors affecting international students' decisions in choosing to further their studies in Malaysia. This means that accurate costing which consequently facilitates the determination of tuition fees will be one of the most important decisions that has to be made by the top management of the higher learning institution. This cost calculation should take into account all the relevant costs to be incurred each semester in producing a student.

Looking at the objective of creating a more competitive market for international students, higher learning institutions in Malaysia nonetheless, do not have a comprehensive and standardised fee determination or calculation method (Rohana et al., 2010). If the tuition fee placed by the university is too high and uncompetitive compared to the programs and facilities offered, this will affect international students' choices. On the other hand, if the university charges its fee too low compared to its programs and services offered as opposed to the actual costs borne, the number of enrolment will increase dramatically. The university however, will bear losses for every increase in the number of enrolled student. Meanwhile, relevant costs for international students differ from local students. This is due to services offered caters differently for each group for example academic and physical facilities such as internet access (Siti Falindah and Azizul, 2013). In UPSI for instance, facilities offered to international students include air-conditioned rooms, personal counsellor, visa services and personal advisor which are not offered to other local students. Thus, in order to determine a suitable fee, the university needs to estimate the costs involved precisely given the services offered to international students.

In line with the national internationalisation agenda, UPSI also collaborates with other higher learning institutions from overseas on various programs catered for international students. Nevertheless, several issues arise from such collaboration, such as inconsistencies and ambiguities in the amount of total tuition fees charged especially for short term courses or teaching training programs. Authors such as Breneman (1994) and O'Connell & Perkins (2003) argued that a simplified fee-determination method without a solid underpinning foundation

in costing (for example the practice of prorating total fees per semester with the number of weeks the course is conducted) is questionable. This is because costs especially those in the non-profit, service-oriented industries can be characterised as being diverse, multidimensional and unclear. Due to these inherent characteristics, the process of determining the cost for such services accurately especially in today's competitive education market proves to be more difficult and challenging. Hence, an examination of cost structures and cost elements is deemed timely in order to assist in designing a more suitable framework that can be used for various programs offered by higher learning institutions. Simplified fees determination method (for example by prorating the total amount of fees over study duration period) is questionable due to multidimensional, ambiguous and different nature of cost elements, especially in non-profit institutions.

Looking at the recent enrolment trend, UPSI needs to be more proactive in providing better facilities and services in an effort to attract more international students to the university. As a result, determination of relevant cost of these facilities and services is required to ensure more accurate and competitive tuition fees are charged. Further, tuition costs and services are among the main factors which determine a student's decision to further studies at a particular higher learning institution (Abd Hair et al., 2012). This highlights the importance of examining relevant costs involved and estimating the total costs of producing an international student at UPSI. The findings of this study should be beneficial to other higher learning institutions especially to (1) increase international students' enrolment, (2) manage costs and govern resources efficiently in running programs which involves international students, and (3) ensure limited resources are efficiently and effectively utilised.

The objectives of this study are to (1) provide an estimate of the total cost that has to be incurred by the university in producing an international student and (2) make a comparison between the actual fees charged by the university and the estimated costs. Relevant cost identification and estimation is performed using the Activity Based Costing (ABC) system on the basis of the life cycle of an international student during the semester-based study duration. This outcome of this study will be beneficial for the university in determining and enhancing relevant activities and resources that add value to the students which will consequently improve the institution's competitive advantage. Further, the findings will assist the university in making sound and informed decisions especially with regards to cost control and management. This is to eliminate or reduce problems with undercosted or overcosted services. Finally, the findings should be useful for the top management of the university in its efforts to reduce waste of resources used and in undertaking a better direction in long term-planning for the institution.

International Student Perception and Satisfactory Level

Education at higher learning level is one of the most important prerequisites to achieve the national economic objective in a particular country through the production of quality human capital. For example, in the United States (US) education is identified as the second largest export market after agriculture and second largest domestic market after healthcare (Abeless, 2001). This puts the US at the forefront for education market worldwide, followed by Britain and Australia (Binsardi and Ekwulugo, 2003). From investment perspective, countries like Australia, Canada, USA and Korea invested 1.1, 1.5, 2.5 and 2.7 percent respectively from Gross Domestic Product (GDP) into higher learning. International students undoubtedly, can

be considered currently as an important form of commodity in higher learning arena. It is no surprise that developed countries like the US, Britain and Australia are competing for international students to enrol into their universities through various promotional education packages (Kent, 2005). For example, the British government is working to provide more attractive incentives for international students from non-European countries. The Australian government on the other hand is collaborating and synchronising their strategies with all the universities in an effort to increase international enrolment while numerous studies have been conducted in the US to develop and enhance competitive advantage in international students' market (Pandit, 2007).

McFadden et al. (2012) performed a study on an institution's traits, programs and intakes demanded by international students in the US and found that there are several key traits that the university have to consider. First, all sample students agreed that the ratio between student / faculty is an important program trait, while student intake process and study duration are an institution's important trait. In addition to that, these students regardless of study background have also listed funds received by an institution to be an important factor in determining their choice in the selection process. McFadden et al. (2012) listed the following implications to the administration; (1) the larger the number of international students at an institution, the higher the needs to build a relationship between a faculty and student; (2) higher learning institutions need to apply a suitable business strategy to increase effectiveness and performance and (3) more funds are needed by the institution to attract more international students. This research supported previous findings of Sherry et al. (2010). These authors observed international students at University of Toledo in which during the time of the research, international students composed 10 percent of the whole population of students on campus. Some major problems faced by these students were adapting to foreign culture, English language proficiency, financial issues and lack of understanding from the university community as a whole towards a minority group. The researchers suggested that suitable measures needed to be taken to expose international students more to the community and its surroundings, better financial support and scholarships, and provide better opportunity for international students to improve their English language, especially in communication.

In the South East Asian region, Min et al. (2012) identified four motives as to why international students chose higher learning institutions in Singapore. Using SERVQUAL model, they found that (1) academic and education; (2) career and migration; (3) leisure and experience; and (4) career were the main motivations. The authors suggested more aggressive efforts to be undertaken by relevant parties to promote Singaporean higher learning institutions by taking all the motives into consideration. In Malaysia, Tan (2002) identified four main objectives that needs to be achieved in order to restructure higher learning institutions especially private universities. This includes (1) producing more human resources needed by the country; (2) exporting education overseas; (3) shifting outflow of Malaysian students to overseas to avoid outflow of Malaysian currency; and (4) producing 40 percent graduates by 2020 to realise Malaysia's intention to become an industrial country.

Policies regarding liberalisation and democratisation of Malaysian education system have been introduced by the government through the National Higher Education Act which resulted in a tremendous increase in international students' enrolment since 1996. This has

been proven by the number of international students with 32 students in 1970 to 126,005 students in 1991 (Hanapi et al., 2003). Meanwhile in 2004 alone, there were 39,763 international students in private higher learning institutions in Malaysia (Habhan, 2004). This clearly shows the major effort in attracting international students to further their studies in Malaysia by the government. According to the Ministry of Higher Education, up until 2009, Malaysia obtained 2 percent out of the whole population of overall international students worldwide and ranked 11th as the favoured destination for international students to further studies. In 2010, with international students coming from 170 different countries, Malaysia has been identified to be positioned comfortably among the top ten preferred countries according to the total number of international students (MOHE, 2010).

A study conducted by Siti Falindah et al. (2010) found six factors which influence the decisions of international students to further their studies at private higher learning institutions in Malaysia. These were (1) quality of study environment; (2) institutional influence; (3) customer focus; (4) cost; (5) facilities and (6) social environment and location. An in-depth study was done by Njie et al. (2012) to understand international students' perception towards the quality of services at public higher learning institutions in Malaysia. The study used interview method with six international students as the respondents. The findings indicate that the students felt the services offered to them were in general to be satisfactory and that the universities are committed to provide the very best they can offer with ideal policies and rules in place and conducive study environment. Despite these positive remarks, they also suggested improvements in several aspects of the services offered, especially where human interactions are involved.

Costing Method

Traditional costing method where overhead cost is allocated on a product's average cost is the first and oldest method introduced and used in the manufacturing industry. Due to the low level of technological advancement at that time, industry had to rely intensively on manual labour for manufacturing and production processes. While the cost of labour was low, this inadvertently increased the total of labour costs over overhead costs (Horngren et al., 2012). In the services industry, fixed cost is usually identified to be the biggest part of costing where usually it is tied to overhead cost that can give a major impact on overall cost (Das, 2013). Further, Abdullah and Tareq (2013) stated that traditional methods are not suitable for the services industry due to its reliance on inaccurate cost drivers, leading to unit cost distortions and consequently pricing decisions.

In the context of Malaysian higher learning institutions, studies conducted by Anbalagan (2006), Ruhanita et al. (2011) and Hashim (2013), also showed that traditional methods were not relevant in determining student costs. In his research at Universiti Teknologi Malaysia (UTM) for example, Anbalagan (2006) found that ABC gives more accurate costing information for the management. Specifically, it helps to highlight relevant costs involved, over- or under-costing and identify value added and non value added costs. Ruhanita et al. (2011) also supported this research by providing evidence of ABC as an efficient tool to measure the relationship between costs and output (services) of a university. The findings suggested that ABC method can be used to analyse information related to resources used, thus assisting management in determining a more accurate and competitive pricing policy for each services provided.

Costing and Fees Determination Method

Currently, tuition fees determination will be the biggest challenge for a higher learning institution. This is driven especially with increase competition from other public and private institutions offering similar courses, reduction in funds received and increase in education costs and facilities. There have been various studies being done to determine the cost for producing a student and setting a suitable fee for the higher learning institution (Bryan and Whipple, 1995; Ho and Wang, 2011; Ruhanita et al, 2012). The purpose of these studies is to suggest a costing model and setting the fees for institution. In an earlier study, Bryan and Whipple (1995) for example, proposed the tuition elasticity model at Mount Vernon Nazarene College (MVNC), a small university located in Ohio. The model was developed based on information such as cost and revenue and predicted net earnings using a software called Tuition Elasticity and Net Earnings Projections (TENEP). However, the extent to which the model has been used and applied at the institution is still unclear.

In general, there are two price determination strategies; competition-based pricing and demand-based pricing. Competition-based pricing looks at market price charged by competitors in the same industry as a reference so that prices charged are nearly identical or identical among competitors in order to avoid losses due to reduction in market share. Demand-based pricing looks at the quality of a product or service offered and price is determined to enable the cost to be covered so as to generate profit. In the service industry, there are two ways to determine prices under competition-based pricing, parallel pricing (price is identical or nearly identical to competitors) and predatory pricing (price is lower than competitors). As for demand-based pricing, prestige pricing is used to determine price.

In another research, Ho and Wang (2011) used samples from four education-based universities in Taiwan to suggest a tuition fee determination model based on the quality of a university. The researches debated that most universities in Taiwan did not perform a complete and extensive research before deciding on tuition fees charged to students. Instead, management only looked at the tuition fees charged by other universities without taking into consideration of the quality aspect (parallel pricing). By using weighted quality based on several traits; academic staff promotion potential, career benefits, graduate needs, entry rules, research facilities, institution's location, quality of teaching staff and curriculum design; they found that parallel pricing method was used (by charging fees nearly identical to competitors), even though each universities have different quality weight. This causes universities that have higher quality to subsidise their lower quality counterparts in absorbing costs by charging fees lower. Ho and Wang (2011) suggested for universities that have higher quality uses prestige pricing in charging their students in order to become more competitive.

In Malaysia, Ruhanita et al. (2012) examined fee determination method at higher learning institutions based on Malaysian Higher Learning Institution Ranking System 2009. Research sample includes nine institutions listed on Tier-4 and Tier-5. Results showed that higher learning institutions in Malaysia determined fees based on competition and demand. Specifically, seven institutions – UCTI, IMU, KLIUC, UNITEN, MMU, UKM and UIA (executive programs only) uses parallel pricing method, where fees are charged parallel or nearly the same as the average fees in the market. Meanwhile, UNIKL and KUIS uses predatory pricing by charging lower fees compared to other institutions. Surprisingly, UKM and UIA (other programs) uses value pricing where fees are charged based on demand for quality service.

In another research, Morphew (2007) stated that fixed-tuition plan is one of the pricing methods that has been used and applied at a few institutions in the US for example Georgia, Iowa, Wisconsin, Kansas, Missouri, Illinois, Michigan and North Carolina. Although there are minor differences depending on the institution, the base for this plan is the same where the university will estimate the total cost that will be maintained during the study period (usually four years), and determine average total cost for each semester. Students will be required to pay tuition fees for each semester according to the total average determined. If the student fails to finish within the given time frame, a higher fee will be charged inclusive of extra credit hours that the graduate needs to take. The use of this method requires precise tuition fees estimation for a long period, including inflation rate, increase in costs and support from the government (through financial budget, funds allocation and etc.) In general, this fixed plan uses costing method based on life cycle costing. However, uncertainties in estimation is the biggest risk that has to be faced by the university in any type of costing.

According to Morphew (2007), this method is the most popular and favoured method used by university's management, policymaker, student clubs and parents. The main reason for this is due to the drastic increase and uncertainties in education costs at higher learning level. So, fixed-tuition fee will be able to help solve this problem because students and parents can make better investment education plan without facing risks associated with cost increase because tuition fees have been set for a specific time. However, the main problem faced by the university will be estimating the fees precisely and ensuring that cost in future especially goods and services that are affected by inflation such as utility costs and medical. This problem is further increased when there are uncertainties in budget allocation received by the university from the government each year. Besides that, since costs and fees have been pre-determined, this plan shows negative impacts on certain groups of students especially those who do not have good academic performance, minority groups, less fortunate and the first batch of students. This is because students that could not complete their studies within the study period (for example four years), have no choice but to pay more depending on the credit hours taken compared to students who completed their studies in that period. It is estimated that students who complete their studies in two years, will have to pay 10.5 percent more than other students when they complete their studies. Eventhough there are opinions which states that the execution of this plan will encourage students to complete on time, it will burden less fortunate groups and leave them out from completing their studies. Fixed-tuition fee method also is being used at higher learning institutions in Malaysia, including UPSI. Table 1 and 2 shows fees rate charged by UPSI to international students according to two program categories; education and non-education.

Table 1:

Fees Rate for Education Degree (International Student)

Fees (Semester 1)	Non – Science and Technical (RM)	Science and Technology (RM)	Science and Technical (RM)
Administration Fee	360.00	360.00	360.00
Registration	500.00	500.00	500.00
Co-curricular	720.00	720.00	720.00
Alumni	200.00	200.00	200.00

Student Council	160.00	160.00	160.00
Health Checkup	250.00	250.00	250.00
Tuition Fee	1,100.00	1,240.00	1,400.00
Computer	50.00	50.00	50.00
Medical Insurance	170.00	170.00	170.00
Laboratory	28.00	28.00	28.00
Services	200.00	200.00	200.00
Health	60.00	60.00	60.00
International Fee	500.00	500.00	500.00
Total	4,298.00	4,438.00	4,598.00
Fees (Semester 2 - 8)	Non – Science and Technical (RM)	Science and Technology (RM)	Science and Technical (RM)
Tuition Fee	1,100.00	1,240.00	1,400.00
Computer	50.00	50.00	50.00
Medical Insurance	170.00	170.00	170.00
Laboratory	28.00	28.00	28.00
Services	200.00	200.00	200.00
Health	60.00	60.00	60.00
International Fee	500.00	500.00	500.00
Total	2,108.00	2,248.00	2,408.00

Table 2:

Fees Rate for Non-Education Degree (International Student)

Fees (Semester 1)	Science (RM)	Non – Science (RM)
Administration Fee	360.00	360.00
Registration	500.00	500.00
Co-curricular	720.00	720.00
Alumni	200.00	200.00
Student Council	160.00	160.00
Health Checkup	250.00	250.00
Tuition Fee	1,400.00	1,400.00
Medical Insurance	170.00	170.00
Services	200.00	200.00
Health	60.00	60.00
Yuran khas	480.00	380.00
International Fee	500.00	500.00
TOTAL	5,000.00	4,900.00
Fees (Semester 2 - 8)	Science (RM)	Non - Science (RM)
Tuition Fee	1,400.00	1,400.00
Medical Insurance	170.00	170.00
Services	200.00	200.00
Health	60.00	60.00
Yuran khas	480.00	480.00
International Fee	500.00	500.00

TOTAL	2,810.00	2,710.00
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Research Design

Research design is based on observation method that uses quantitative data where primary and secondary data is used obtained from Treasury division, Academic Affairs division and International Affairs division. Cost calculation method in general is based on Amizawati et al. (2012) which lists out five major generic steps in costing which are: (1) usage of resources; (2) resources cost drivers; (3) relevant activities; (4) activity cost driver; and (5) resources allocation to cost object.

The first step involves identifying and dividing cost (type of cost) into two categories; direct and indirect. In estimating the costs involved for an international student, data are collected from relevant divisions that are related either directly or indirectly in producing a graduate. The next step undertaken in cost estimation is to identify the cost drivers that will be used to calculate the rate to be used in cost allocation. The following suitable cost driver are identified:

- a. Direct Cost – Total number of students
- b. Indirect Cost – Total number of students, credit hour, study term (depending on suitability)

Table 3:

Information Needed in Estimating Costs for International Student

No.	Information
1	Student intake flow starting from advertising until registration (including costs student selection method)
2	Total number of international students (according to country)
3	Total number of international students (according to faculty, course and semester)
4	Type of services provided for international students
5	BHEA Organisational Chart
6	Total number of courses and credit hour taken by student
7	ISMP graduate statistics (according to program)
8	PULAMI spending and services costs
9	Co-curricular Centre spending and services costs
10	PPK spending and services costs
11	BHEP spending and services costs
12	Cultural Centre spending and services costs
13	Housing College spending and services costs
14	Sports Centre spending and services costs
15	Library spending and services costs
16	ICT Centre spending and services costs
17	Health Centre spending and services costs
18	JPPHB spending and services costs
19	Private advice services
20	Study period

Data Collection and Analysis

A majority of the data gathered and used in this research is in the form of secondary data. Data collection started by submitting an application to the relevant responsibility centres. Primary data is collected from interviews with the staff in order to obtain confirmation about the precision and suitability of driver cost that will be chosen as the allocation base in cost calculation process. The steps taken in determining the education cost for an international student are as follows:

Step 1: Collection of Related Financial Information

All related financial information in cost calculation obtained from related responsibility centres are collected to determine the overall cost needed to be allocated to object cost (an international student).

Step 2: Type of Cost Classification

Financial information which involves all relevant costs are analysed and classified based on the type of related costs such as fixed cost, variable cost, direct cost and indirect cost.

Step 3: Selection of Cost Driver

Suitable cost drivers are identified to distribute costs according to resources consumption. Selection of a suitable driver cost is important in ensuring the precision of cost allocated over cost object.

Step 4: Determine Cost Allocation Base

Cost allocation base is determined by dividing total cost classified in Step 2 to cost driver selected in step 3.

Step 5: Allocation of Cost to Cost Object Cost

After all information have been identified, estimated cost involved in producing a degree international student in each faculty at UPSI will be obtained by multiplying relevant allocated cost with total cost driver for each cost item.

Results and Discussions

Table 4 illustrates the estimated cost incurred in producing an international student based on faculty. From Table 4, it can be summarised that the faculty with highest cost to produce an international student would be from the Faculty of Languages and Communication followed by the Faculty of Science and Mathematics, the Faculty of Computer Sciences and Creative Industry and the Faculty of Sports Sciences and Coaching. Table 4 also shows that the faculty that incur the lowest cost in producing an international student is the Faculty of Human Sciences, followed by the Faculty of Education and Human Development and the Faculty of Management and Economics. Although there are nine faculties at the university, cost calculation can only be done on eight faculties. The Faculty of Music and Arts Performance was not included in the study due to the constraints in obtaining data, which highly likely to result in an imprecise cost calculation.

Table 4:

Estimated Cost for an International Student According to Faculty

SEMESTER	FPE	FBK	FPPM	FSMT	FSKIK	FSSKJ	FSK	FPTV
1	8763.13	10242.14	9125.24	10311.72	10184.97	10885.26	6889.97	6642.36
2	10284.70	27296.55	9720.52	11622.31	12720.75	12398.45	8469.30	8745.38
3	7801.30	8137.87	2666.40	9828.42	12748.83	9316.61	4531.61	4509.65
4	10372.12	4044.33	4012.84	12208.38	11910.51	11485.76	6613.70	8309.52
5	6671.30	8090.54	7163.96	9521.35	7882.02	8765.26	5318.98	6022.41
6	7350.49	9213.79	7694.65	10668.12	8901.71	9103.59	5624.56	6521.55
7*	4465.04	5584.60	4692.87	6354.97	5292.29	5145.16	4197.66	4708.81
8	5262.97	7059.06	5537.49	8470.17	7890.77	6699.89	4344.55	5143.36
TOTAL	60971.03	79668.89	47613.97	78985.45	77531.87	73799.98	45990.33	50603.03

*Student undergoes Teacher Training in Semester 7 of their study

FPE : Faculty of Management and Economics

FBK : Faculty of Languages and Communication

FPPM : Faculty of Education and Human Development

FSMT : Faculty of Science and Mathematics

FSKIK : Faculty of Computer Sciences and Creative Industry

FSSKJ : Faculty of Sports Sciences and Coaching

FSK : Faculty of Human Sciences

FPTV : Faculty of Technical Education and Vocational

Table 5 to 7 provide a comparison between the estimated cost and fees charged by each faculty. Based on the tables, it can be seen that there are major differences between fees charged and the estimated costs. In Tables 5 to 7, each faculty is categorised into Non-Science and Technical, Science and Technology, and Science and Technical. It can be seen that fees charged by the faculties categorised as Non-Science and Technical on average is too low compared to overall costs needed to be maintained to produce an international student, with a percentage rate of 207.34 percent (Education degree) and 145.33 percent (Non-Education degree).

As for faculties under Science and Technology category, total fees charged is 202.23 percent lower compared to the estimated cost for degree in education and 147.15 percent lower compared to non-education degree. Similar results are observed for faculties categorised under Science and Technical where it can be seen that fees charged are lower compared to the cost maintained. Specifically, for degree in education-based programs and degree in non-

education based programs, the costs maintained are more than 213.75 percent and 172.85 percent compared to fees charged.

Besides that, results from this study also indicate that faculties under Non-Science and Technical category spend the lowest cost compared to other categories. Meanwhile, faculties under the Science and Technical category have the highest estimated cost and the highest difference between estimated cost and fees charged.

Table 5:

Comparison between Estimated Cost and Fees Charged According to Faculty
(Non Science and Technical)

SESSION	SEMESTER	ESTIMATED COST (RM)				FEES CHARGED (RM)	
		FPE	FBK	FPPM	FSK	EDUCATION	NON-EDUCATION
2009/2010	1	8763.13	10242.14	9125.24	6889.97	4298.00	4900.00
	2	10284.70	27296.55	9720.52	8469.30	2108.00	2710.00
2010/2011	3	7801.30	8137.87	2666.40	4531.61	2108.00	2710.00
	4	10372.12	4044.33	4012.84	6613.70	2108.00	2710.00
2011/2012	5	6671.30	8090.54	7163.96	5318.98	2108.00	2710.00
	6	7350.49	9213.79	7694.65	5624.56	2108.00	2710.00
2012/2013	7	4465.04	5584.60	4692.87	4197.66	2108.00	2710.00
	8	5262.97	7059.06	5537.49	4344.55	2108.00	2710.00
TOTAL		60971.03	79668.89	47613.97	45990.33	19054.00	23870.00

FPE : Faculty of Management and Economics

FBK : Faculty of Languages and Communication

FPPM : Faculty of Education and Human Development

FSK : Faculty of Human Sciences

Table 6:

Comparison between Estimated Cost and Fees Charged According to Faculty (Science and Technology)

SESSION	SEMESTER	ESTIMATED COST (RM)	FEES CHARGED (RM)	
		FSMT	EDUCATION	NON-EDUCATION
2009/2010	1	10311.72	4438.00	5000.00
	2	11622.31	2248.00	2810.00
2010/2011	3	9828.42	2248.00	2810.00
	4	12208.38	2248.00	2810.00
2011/2012	5	9521.35	2248.00	2810.00
	6	10668.12	2248.00	2810.00

2012/2013	7	6354.97	2248.00	2810.00
	8	8470.17	2248.00	2810.00
TOTAL		60971.03	20174.00	24670.00

FSMT : Faculty of Science and Mathematics

Table 7:

Comparison between Estimated Cost and Fees Charged According to Faculty (Science and Technical)

SESSION	SEMESTER	ESTIMATED COST (RM)	FEES CHARGED (RM)			
			FSKIK	FSSKJ	FPTV	EDUCATION
2009/2010	1	10184.97	10885.26	6642.36	4598.00	5000.00
	2	12720.75	12398.45	8745.38	2408.00	2810.00
2010/2011	3	12748.83	9316.61	4509.65	2408.00	2810.00
	4	11910.51	11485.76	8309.52	2408.00	2810.00
2011/2012	5	7882.02	8765.26	6022.41	2408.00	2810.00
	6	8901.71	9103.59	6521.55	2408.00	2810.00
2012/2013	7	5292.29	5145.16	4708.81	2408.00	2810.00
	8	7890.77	6699.89	5143.36	2408.00	2810.00
TOTAL		77531.87	73799.98	50603.03	21454.00	24670.00

FSKIK : Faculty of Computer Sciences and Creative Industry

FSSKJ : Faculty of Sports Sciences and Coaching

FPTV : Faculty of Technical Education and Vocational

Conclusion

The results show that the Faculty of Languages and Communication has the highest estimated cost for producing an international student, followed by the Faculty of Sciences and Mathematics, the Faculty of Arts, Computing and Creative Industry and the Faculty of Sport Sciences and Coaching. The results also reveal that the lowest cost can be traced back to the Faculty of Human Sciences, the Faculty of Education and Human Development and finally the Faculty of Management and Economics. Overall, it can be concluded that fees charged by the university to international students are lower compared to the estimated cost incurred. Hence, it is suggested that more comprehensive evaluation and improvements are needed so that fees charged are more competitive compared to other higher learning institutions and at the same time, appropriate to the total cost incurred.

Based on the discussion, some suggestions can be presented for further research and improvements in the future. First is regarding the details and depth of the data being used. Due to the constraints faced in obtaining and analysing data, this study focuses on producing international students for degree programs only. However, there are international students that have finished, still undergoing their studies and those that will enrol in various study levels (Masters, Doctor of Philosophy, short term courses, twinning programs, industrial training, exchange programs and so forth). These various courses and levels will also affect the total cost involved. Therefore, it is suggested that future research will take into account these factors or undertake an in-depth research at this level. Besides that, cost determination

method will need to be carried out according to faculty in the future. In order to obtain a more precise calculation, data collection and cost determination need to be done according to programs offered at each faculty. Thus, it is suggested that this research is extended to each program available at each faculty so that a more accurate and detailed cost estimation can be performed.

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