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CALCULATION OF STUDENT UNIT COST AND ITS IMPACT ON STRATEGIC COST MANAGEMENT AT SMKS X BATAM FOR THE 2019/2020 ACADEMIC YEAR

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ABSTRACT

This study aims to calculate student unit cost at each program study at SMKS X Batam for the 2019/2020 academic year and then analyze its impact on strategic cost management. The research uses a case study approach with qualitative descriptive methods, using interviews, questionnaires, and documentation. The study results indicate that the determination of tuition fees is currently under cost compared to student unit cost calculated using the Activity Based Costing (ABC) approach. This research also shows that the cost leadership strategy that the SMKS X applies is not appropriate because the tuition fees set for each student for each study program currently cannot cover the student unit cost. Therefore, an evaluation of the strategy implemented by SMKS X Batam is needed. This is also supported by the questionnaire results, which shows that affordable tuition fee is not the main reason for prospective students to continue their education at SMKS X Batam.

Keywords: activity based costing, student unit costs, strategic cost management, tuition fee.

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1. INTRODUCTION

According to the 1945 Constitution, educating the nation's life is one of the national goals that have been set. However, this goal can be achieved by improving and perfecting the national education administration system to enhance the quality of educational outcomes. According to Law Number 20 of 2003, education is a conscious and planned effort to create an atmosphere and learning process. It is hoped that it can help students actively develop their potential in religious, spiritual strength, self-control, personality, intelligence, and noble character. In addition, they will develop the skills needed by themselves, society, nation and state. National education is based on Pancasila and the 1945 Constitution, which is rooted in religious values, and national culture, and is responsive to the demands of a changing era. Therefore, education is crucial and becomes the basis for improving the quality of human resources. This is also in line with one of the Sustainable Development Goals (SDGs) goals, namely quality education. The purpose of education will be the basis of the government's efforts to promote sustainable development goals and objectives. Education for the Indonesian people will encourage the improvement of other goals and targets in the SDGs, mainly to prevent an increase in poverty rates.

Improving the quality of education is a priority goal that can be achieved through improving the quality of educators, educational facilities, curriculum, and learning methods. This effort can be easily achieved with appropriate financing, a significant problem in the field of education. Formal educational institutions, such as schools, must realize national education goals through the teaching and learning process. The cost of education is borne by students, parents, individual communities and groups, and the government (Suhardan & Riduwan, 2012). Therefore, it is essential to control expenditures related to using unit cost analysis to determine the efficient use of school resources, the benefits of education investment, and things to consider in policy decisions. Cost control is used to reduce and manage costs for survival in the existing competition.

The official website for Data Statistics of the Ministry of Education and Culture (Kemendikbud) states that the number of vocational high schools in Batam has increased from 2017 to 2019. In 2017, the number of vocational high schools registered in Batam was 53, consisting of 7 state schools and 46 private schools. Meanwhile, in 2018, the number of vocational high schools in Batam was 64 schools, consisting of 8 public schools and 56 private schools. The number of vocational high schools in Batam has increased again in 2019, where

there are 68 vocational high schools, consisting of 8 public schools and 60 private schools.

Based on information obtained from the management of SMKS X Batam, the school could not meet the target of new student admissions from 2017 to 2019. This indicates that SMKS X Batam does not yet have a competitive advantage or has not been able to compete, so SMKS X Batam requires a competitive strategy. Porter (1985) states that in conducting competitive strategy analysis, there are three types of generic strategies that companies can own, two of which are cost leadership and differentiation. If SMKS X Batam wants to implement a cost leadership strategy as a competitive strategy, an accurate calculation of the unit cost of education (student unit cost) is needed to determine the cost of education (Educational Development Contribution, SPP) per student per year. Meanwhile, suppose SMKS X Batam decides to implement a differentiation strategy. In that case, it is necessary to analyze whether SMKS X Batam has a competitive advantage compared to other private SMKSs, both in terms of facilities and other benefits offered.

Until now, SMKS X Batam has never calculated the student unit cost. This means that the management of SMKS X Batam does not know the number of education costs per student per year. The determination of tuition fees for SMKS X Batam so far has been based on the Foundation's policies and is limited to an analysis of the tuition fees for similar SMKSs in Batam, as well as consideration of the abilities of parents or guardians of students. SPP SMKS X Batam also has not experienced an increase in rates since 2017 considering similar SPP SMKSs in Batam. This makes the management of SMKS X Batam faced with difficulties when management has plans to update or add facilities at SMKS X Batam.

Departing from these conditions, SMKS X Batam requires information about the unit cost of education per student so that it can be seen whether the education fee rates that have been charged to students can cover the unit cost of education per student. SMKS X Batam has three study programs, namely Software Engineering (RPL), Computer and Network Engineering (TKJ), and Accounting (AKT). These three study programs have different characteristics that can cause other overhead consumption. For example, 70% of the learning hours for the Software Engineering (RPL) and Computer and Network Engineering (TKJ) study programs are spent on practicum in the laboratory, while most of the learning hours for the Accounting (AKT) study program are spent in theory classes. The laboratory rooms used for each study program are different. However, there are a number of teaching staff assigned to two or more

different study programs. These things can have an impact on the differences in the overhead consumed by each study program, such as the cost of electricity and internet costs consumed by the Software Engineering (RPL) and Computer and Network Engineering (TKJ) study programs. Accounting (AKT).

The difference in overhead consumption between the three study programs can cause the cost calculation using the traditional method to produce an inaccurate calculation of the unit cost of education. This is because the imposition of costs on indirect costs is carried out using a comprehensive or per departmental basis of charging or tariffs, thus causing cross-subsidies between products which have an impact on being overcosted or undercosted (Wardi, 2010). Therefore, this study seeks to calculate the unit cost of education by using the Activity Based Costing (ABC) approach to obtain the correct overhead allocation for each study program based on the overhead consumption pattern of each study program.

ABC is able to provide a more thorough analysis of the factors that affect costs compared to conventional costing methods (Deakin, 1991). Research conducted by Virgana (2014) and Saifuddin (2018) shows that unit cost calculations using Activity Based Costing (ABC) can be applied to educational institutions. The results of this study indicate that there are differences between unit cost calculations using the ABC method and unit cost calculations using the traditional method. The difference is in the unequal direction, namely that some are overcosted and some are undercosted. This indicates that the conventional unit determination costs can result in the imposition of activity costs from specific study programs which are partly or wholly not carried out by other study programs.

Based on research conducted by Bogdanoiu (2009), it is stated that Activity Based Costing (ABC) is a method that generates costs from each activity for cost objects such as products or services by calculating the costs and performance of activities and resources so that ABC can provide cost information that more accurate than traditional systems and can be used for decision making as a basis for gaining competitive advantage. Strategic Cost Management is the use of market-oriented strategies and costs and data to promote and develop strategies that can provide a competitive advantage (Cadez and Guilding, 2008). The calculation of student unit costs with ABC that has been done will then be analyzed to find out whether the education fee rates that have been applied so far support the cost management strategy chosen by the management of SMKS X Batam.

2. LITERATURE REVIEW

2.1. ACTIVITY BASED COSTING

According to Dierks and Cokins (2000), the Activity Based Costing (ABC) system is a methodology that calculates the cost and performance of cost objects, activities, and resources by assigning resources to activities and activities to cost objects based on their use. Blocher, Stout, and Cokins (2011) also define Activity Based Costing (ABC) as a cost calculation that assigns resource costs to cost objects such as products, services, or customers based on activities carried out by cost objects. Mulyadi (2007) states that the sacrifice of resources in carrying out activities is also intended to produce products or services so that products or services can be called cost objects.

Based on these two definitions, it can be seen that ABC uses activities that can be described and analyzed related to work that causes costs. By knowing the causal relationship between resources, activities, and cost objects such as products or customers, ABC can identify activity inefficiencies that will impact opportunities to reduce costs or increase profits.

The rationale in the calculation with the application of Activity Based Costing is that the company's products or services are the results of activities, where these activities use resources that have an impact on the emergence of costs. This rationale is very different when compared to traditional cost accounting systems, which are based directly on the product or service itself without taking into account activities.

2.2. STRATEGIC COST MANAGEMENT

According to Hansen and Mowen (1996), Strategic Cost Management can be defined as the use of cost data to develop and describe strategies that can create a competitive advantage on an ongoing basis. Competitive advantage is an advantage that can create better customer value for the same or lower costs than other competitors, while customer value is the difference between what customers will get and what they have to sacrifice. Porter (1985) states that in conducting competitive strategy analysis, there are three types of generic strategies that companies can have, including cost leadership, differentiation, and focus.

Strategic Cost Management can also be defined as the use of market-oriented strategies and costs and data to promote and develop strategies that can provide a competitive advantage (Cadez and Guilding, 2008). In research conducted by Bogdanoiu (2009), it is stated that Activity Based Costing (ABC)

is a method that generates costs from each activity for cost objects such as products or services by calculating the costs and performance of activities and resources so that ABC can provide cost information. which is more accurate than traditional systems and can be used for decision making as a basis for gaining competitive advantage.

2.3. PREVIOUS RESEARCH

Virgana (2014), in his research conducted at SMK Negeri 28 Jakarta, aims to calculate the cost per student for each study program by applying the Activity Based Costing (ABC) approach. In this study, Virgana identified 12 activities that occurred at the school, namely activities for implementing teacher training, teacher administration, student administration, purchasing books, procuring functional materials, teaching in classrooms and laboratories, supporting teaching, and implementing scientific activities, guiding industrial work practices. Academic guidance, assessment, and maintenance of facilities and infrastructure. This study uses three levels of activity (activity level), namely unit, batch, and facility. For activity drivers, the unit activity level in this study consisted of the number of teachers, the number of students, the number of teaching hours, the number of classes, and the number of students in class XI. The driver for activity at the batch activity level is the number of meetings, times the number of subjects, the number of scientific activities, and the number of committees multiplied by the number of scientific activities. Meanwhile, the charge for the facility activity level will be allocated according to the number of study programs offered, namely two study programs (Hospitality and Social Care Accommodation). The results showed that the cost calculation for the Hospitality Accommodation program was undercosted when compared to the cost calculation using the Activity Based Costing (ABC) method. In contrast, the cost calculation for the Social Care program was overcosted when compared to the cost calculation using the Activity Based Costing (ABC) method.

Research conducted by Saifuddin (2018) aims to determine the unit cost of education per student per level per skill package using the Activity Based Costing (ABC) method at SMK Negeri 4 Yogyakarta. In his research, Saifuddin (2018) identified six activities in the school. The six activities are teaching and learning activities, student activities, school management, school administration, infrastructure management, and school development. The assignment of costs between activities is carried out in two ways, namely driver tracing and allocation. The assignment of school management activities and school administration activities to other activities are carried out by allocation,

the assignment of infrastructure management activities to other activities is carried out with driver tracing, namely with room area drivers, while the assignment of school development activities to other activities is carried out by driver tracing with room area drivers, for the development of non-HR schools and the number of teachers or education personnel for the development of HR schools. The research concluded that there is a difference between the unit cost calculated by the Activity Based Costing (ABC) method and the unit cost calculated by the traditional method.

3. RESEARCH METHODS

This research uses a case study approach with descriptive qualitative methods, namely by determining, collecting, classifying and interpreting data to provide an overview of the research. It will be presented to answer the problem formulation. Sources of data used in this study are primary data and secondary data. Primary data were obtained from interviews and questionnaires, while secondary data used in this study were financial reports which became supporting evidence. The financial statements used are financial statements for the year 2019/2020. To calculate the unit cost of education (student unit cost), the data collection methods used are:

1. Documentation Method

In the documentation method, the documents used in this research are student data, educators and education staff, financial reports for the 2019/2020 school year and other supporting documents.

2. Interview Method

Interviews were used by researchers to obtain oral information through questions and answers between researchers and research subjects. This method is used to collect information related to activities that occur in the school, financial management, and the reporting system used by the school. The resource persons consisted of six people who were determined based on the level of respondent involvement in policy formulation and operational activity implementation, namely the Principal, Deputy Head of Curriculum, Deputy Head of Student Affairs, Deputy Head of Facilities and Infrastructure (Sapras), and the two school treasurers.

After knowing the unit cost of education (student unit cost), an analysis will be carried out to determine the impact of calculating the unit cost of education (student unit cost) on Strategic Cost Management with the data collection method, namely the questionnaire method. A questionnaire is a data collection

technique which is done by giving written questions to respondents to be answered. The questionnaire used in this study is a closed questionnaire; namely, the answers to the questionnaire are already available so that respondents can choose the available answers (Sugiyono, 2008). The questionnaire was addressed to SMKS X Batam students to determine the main reasons respondents continued their education at SMKS X Batam.

4. ORGANIZATION PROFILE

SMKS X Batam is a vocational education institution founded in 2007 that prioritizes innovation, achievement, and noble character. To achieve organizational goals, it takes good cooperation between the parties involved in it so that each individual can understand their duties and responsibilities. Therefore, an organizational structure is needed so that each work unit is able to move together in order to achieve the expected organizational goals. SMKS X Batam is led by a Principal who is supported by four Deputy Principals who are in charge of their respective fields, namely the Deputy Head of Public Relations, Curriculum, Student Affairs, and Facilities and Infrastructure.

SMKS X Batam offered three study programs, namely Software Engineering (RPL), Computer and Network Engineering (TKJ), and Accounting (AKT). The total number of students of SMKS X Batam for the 2019/2020 academic year is 435 people, with class X students being 146 people, class XI students being 143 people, and class XII students being 146 people.

5. RESULT AND DISCUSSION

5.1. CALCULATION OF EDUCATION COSTS WITH ACTIVITY BASED COSTING APPROACH AT PRIVATE VOCATIONAL HIGH SCHOOL X BATAM

The application of Activity Based Costing (ABC) in calculating the cost of education will be applied to SMKS X Batam. According to Blocher, Stout, and Cokins (2011), the stages include:

1. First stage: Identify activities and resources

At this stage, the researcher will analyze the activities that occur at SMKS X Batam with the aim of identifying the activities and resources carried out to carry out its operations. Activity analysis includes collecting data from existing documents and records, as well as collecting additional data using observations or interviews with key employees. Then the

activities that have been identified will be continued by determining the activity drivers and activity levels. In this study, the identification of activities and resources was carried out by conducting interviews with SMKS X Batam. Based on this identification, SMKS X Batam for the 2019/2020 academic year has six activities that can be grouped into two activity centers, namely direct (main) activities and indirect (supporting) activities. These activities include:

a. Teaching and Learning Activities

Teaching and learning activities are activities that include direct (main) activities at SMKS X Batam because teaching and learning activities are directly related to students. Teaching and learning activities include all activities related to the implementation of teaching and learning activities, both those carried out in the classroom in the form of theory and those carried out in the laboratory in the form of practicum. Resources needed for teaching and learning activities include teachers, school programs, books, as well as facilities and infrastructure such as classrooms and laboratories, electricity, internet and tools that support education.

b. Evaluation Activities

Evaluation activities are activities that are directly related to students so that they can be classified into direct (main) activities. The evaluation activity is related to giving grades to students, which begins with making exam questions and continues with corrections. The resources needed for evaluation activities are teachers and facilities and infrastructures such as rooms and electricity.

c. School Development Activities

School development activities are indirect activities. School development activities are related to activities carried out to improve the quality of SMKS X Batam, such as providing training for the development of educators and education personnel. The resources needed for this activity are teachers and facilities, and infrastructures such as rooms, electricity, tools that support training, and the internet.

d. School Administration Activities

School administration activities are activities that include indirect (supporting) activities. This activity consists of all school administration activities that aim to support teaching and learning activities carried out at SMKS X Batam. Resources for this activity are staff and facilities and

infrastructure that include rooms, electricity, internet, telephone and tools that support school administration.

e. School Management Activities

School management activities are indirect (supporting) activities. The school management activities include activities related to promotion and licensing. The resources needed for this activity are staff, teachers, and facilities and infrastructure such as rooms, electricity, internet, telephone, water, and equipment that supports this activity.

f. Facilities and Infrastructure Management Activities

This activity is carried out to maintain tools, materials, and supporting teaching and learning activities in the classroom, as well as classrooms and laboratories for teaching and learning activities. This activity includes the cost of maintaining facilities and infrastructure, purchasing multimedia equipment, electricity costs, drinking water costs, telephone/mobile/internet costs, depreciation, vehicle repairs, newspaper/magazine subscription fees, electrical installation maintenance, and website system maintenance. These costs are classified into facilities and infrastructure management activities because no more detailed information can be used to allocate these costs. For example, the cost of maintaining facilities and infrastructure recorded by the management of SMKS X Batam is an accumulation of costs incurred for the maintenance of facilities and infrastructure in 2019/2020, so that maintenance costs will be allocated on a prorated basis based on the number of study programs offered by SMKS X Batam. . This also occurs for depreciation costs, electricity costs, drinking water costs, telephone/mobile/internet costs, and maintenance of electrical installations.

The activity level consists of unit, batch, product, and facility. At the unit level, activity costs will increase according to the number of students studying in each study program. At the batch level, activity costs will increase if there is an increase in accordance with the number of classes for each study program. At the product level, activities are carried out with the aim of supporting teaching and learning activities but cannot be traced directly to students or classes. Fees at this level will change if there is a change in the number of courses offered. As for the facility level, activity costs cannot be traced directly to individual students, classes or study programs but support activities carried out by students as a whole.

Table 1. Activity, Activity Driver, and Activity Level

No	Activity	Activity Driver	Activity Level
1	Teaching and Learning		
	Teacher salaries	Number of teaching hours	<i>Unit</i>
	Extracurricular Learning Activities	The number of students	<i>Unit</i>
	Implementation of the 2019/2020 TOEIC Test	The number of students	<i>Unit</i>
	Implementation of industrial work practices	Number of students in grade XI	<i>Unit</i>
	Student handbook	The number of students	<i>Unit</i>
2	Evaluation		
	Implementation of UAS semester FY 2019/2020	The number of students	<i>Unit</i>
3	School Development		
	Development of educators and education personnel	The number of teachers	<i>Product</i>
	Provision of accommodation services	Study program prorated	<i>Facility</i>
4	School Administration		
	Office Stationery Supply	Number of meetings x Number of subjects	<i>Batch</i>
	Document handling	Study program prorated	<i>Facility</i>
5	School Management		
	Licensing/legal	Study program prorated	<i>Facility</i>
	Preparation of food and drink meet	Study program prorated	<i>Facility</i>
	Provision of entertainment/banquet	Study program prorated	<i>Facility</i>
	Use of advertising/ promotional services	Study program prorated	<i>Facility</i>
6	Facilities and Infrastructure Management		
	Maintenance of facilities and infrastructure	Number of classes	<i>Facility</i>
	Purchase of multimedia and learning tools	Number of classes	<i>Facility</i>
	Maintenance of the website system	Study program prorated	<i>Facility</i>
	Repair of facilities and infrastructure	Study program prorated	<i>Facility</i>
	Vehicle repair	Study program prorated	<i>Facility</i>
	Newspaper/magazine subscription service	Study program prorated	<i>Facility</i>
	School hygiene maintenance	Study program prorated	<i>Facility</i>
	Electrical installation maintenance	Study program prorated	<i>Facility</i>
	Use of drinking water	Study program prorated	<i>Facility</i>
	Use of electricity services	Study program prorated	<i>Facility</i>
	Use of telephone/mobile/internet services	Study program prorated	<i>Facility</i>

Source: Private Vocational High School X Batam (reprocessed)

Table 1 Activities, Activity Driver and Activity Levels are as follows:

a. Teaching and Learning Activities

In teaching and learning activities, the driver for teacher salaries is the number of teaching hours for teachers, and the level of activity is units. Then, to driver the costs of learning and extracurricular activities, the implementation of the 2019/2020 TOEIC TA test, as well as the student handbook, the number of students whose activity level is units, while the driver for the implementation of industrial work practices is the number of students XI and the activity level is units.

b. Evaluation Activities

The driver for the cost of holding UAS for the 2019/2020 semester is the number of students and the level of activity is units.

c. School Development Activities

In school development activities, the driver for the development of educators and education personnel is the number of teachers and the level of activity is the product. The reason the level of activity for the development of educators and education personnel is categorized at the product level is because the costs of developing education and education personnel are not determined by the increase in the number of students in each study program or the number of class increases in each study program, but because of an increase in the new study programs offered so that This causes the need for teachers who have certain skills to increase. Meanwhile, the provision of accommodation services is a facility with a cost driver in the form of a prorated number of study programs. The identification of activity levels and cost drivers for the provision of accommodation services is supported by research conducted by Virgana (2014). This is because the data related to the provision of accommodation services presented by SMKS X Batam is an accumulation of the overall accommodation costs incurred for the three study programs without any detailed information on the accommodation costs consumed by each study program, so accommodation costs cannot be traced to each study program.

d. School Administration Activities

The cost driver for providing office stationery is the number of meetings multiplied by the number of subjects, while the level of activity is batch. The cost driver for document processing is the prorated number of study programs, while the level of activity is the facility. The reason the document management is grouped at the activity level in the form of a facility level is because the documents that are managed include documents for staff, teachers, and students. Then the data provided by the school management is also the total cost of processing documents so that it cannot be traced directly to students, classes or study programs.

e. School Management Activities

School management activities include licensing/legal, providing food and drink for meetings, providing entertainment/banquets, and using advertising/promotional services. The level of activity in all school management activities is the facility and the cost driver is the prorated number of study programs.

f. Facilities and Infrastructure Management Activities

Facilities and infrastructure management activities include the maintenance of facilities and infrastructure as well as the purchase of multimedia and learning tools, with the cost driver being the number of classes. To trigger the cost of maintaining the website system, repairing facilities and infrastructure, repairing vehicles, newspaper/magazine subscription services, maintaining school cleanliness, maintaining electrical installations, using drinking water/PAM services, using electricity services, and using telephone/mobile/internet services. The activity level of all facilities and infrastructure management activities is the facility with the trigger for the cost, namely the prorated number of study programs.

The identification of the cost drivers and the level of activity in this facility and infrastructure management activity is based on the limited data that can be obtained. One example is the cost of using drinking water/ PAM, using electricity, and using telephone/mobile/internet services. In research conducted by Saifuddin (2018), the allocation for power costs and service subscriptions consisting of electricity, water, telephone and internet costs using a cost driver is the area of the room, assuming that the wider the room, the more space. power or service subscriptions used. However, in this study, information regarding the size of the room could not be obtained, so the prorated number of study programs was used as a cost driver.

Table 2. Cost of Private Vocational High School X Batam Resources for the 2019/2020 Academic Year

No	Fee Type	Total
1	Teacher salaries	2.003.948.558
2	Extracurricular Learning Activities	53.519.100
3	Implementation of the 2019/2020 TOEIC Test	2.750.000
4	Implementation of industrial work practices	21.735.800
5	Student handbook	70.503.000
6	Implementation of UAS semester FY 2019/2020	44.028.000
7	Development of educators and education personnel	31.719.500
8	Provision of accommodation services	40.086.662
9	Office Stationery Supply	14.285.000
10	Document handling	12.250.000
11	Licensing/legal	4.000.000
12	Preparation of food and drink meeting	18.203.600
13	Provision of entertainment/banquet	16.512.500
14	Use of advertising/ promotional services	106.743.720
15	Depreciation	282.526.071
16	Maintenance of facilities and infrastructure	549.657.737
17	Purchase of multimedia and learning tools	12.750.000
18	Maintenance of the website system	139.130.493

No	Fee Type	Total
19	Repair of facilities and infrastructure	19.798.000
20	Vehicle repair	4.566.200
21	Newspaper/magazine subscription service	550.000
22	School hygiene maintenance	74.250.500
23	Electrical installation maintenance	5.605.000
24	Use of drinking water	30.896.200
25	Use of electricity services	175.120.800
26	Use of telephone/mobile/internet services	74.049.660
Amount		3.809.186.101

Source: Financial Data of Private Vocational High School X Batam (reprocessed)

2. Second stage: Assigning resource costs to activities

Activity-based costing uses cost drivers for resource consumption and assigns resource costs to activities, because activities driver the emergence of resource costs used in the teaching and learning process at SMKS X Batam, where the cost drivers for resource consumption are based on cause-and-effect relationships. Resource costs can be assigned to activities by tracing directly the resources used by each activity.

According to Blocher, Stout, and Cokins (2011), the resource should be charged into activities, including using cost drivers for resource consumption and assigning resource costs to activities by tracing directly or indirectly estimates, as shown in Table 3.

Table 3. Assignment of Resource Costs to Activities Private Vocational High School X Batam Academic Year 2019/2020

No	Fee Type	Activity	Total
1	Teacher salaries	Teaching and Learning	2.003.948.558
2	Extracurricular Learning Activities	Teaching and Learning	53.519.100
3	Implementation of the 2019/2020 TOEIC Test	Teaching and Learning	2.750.000
4	Implementation of industrial work practices	Teaching and Learning	21.735.800
5	Student handbook	Teaching and Learning	70.503.000
6	Implementation of UAS semester FY 2019/2020	Evaluation	44.028.000
7	Development of educators and education personnel	School Development	31.719.500
8	Provision of accommodation services	School Development	40.086.662
9	Office Stationery Supply	School Administration	14.285.000
10	Document handling	School Administration	12.250.000
11	Licensing/legal	School Management	4.000.000
12	Preparation of food and drink meeting	School Management	18.203.600
13	Provision of entertainment/banquet	School Management	16.512.500
14	Use of advertising/ promotional services	School Management	106.743.720
15	Depreciation	Facilities and Infrastructure Management	282.526.071
16	Maintenance of facilities and infrastructure	Facilities and Infrastructure Management	549.657.737
17	Purchase of multimedia and learning tools	Facilities and Infrastructure Management	12.750.000
18	Maintenance of the website system	Facilities and Infrastructure Management	139.130.493
19	Repair of facilities and infrastructure	Facilities and Infrastructure Management	19.798.000
20	Vehicle repair	Facilities and Infrastructure Management	4.566.200
21	Newspaper/magazine subscription service	Facilities and Infrastructure Management	550.000
22	School hygiene maintenance	Facilities and Infrastructure Management	74.250.500
23	Electrical installation maintenance	Facilities and Infrastructure Management	5.605.000
24	Use of drinking water	Facilities and Infrastructure Management	30.896.200
25	Use of electricity services	Facilities and Infrastructure Management	175.120.800

No	Fee Type	Activity	Total
26	Use of telephone/mobile/internet services	Facilities and Infrastructure Management	74.049.660

Source: Financial Data of Private Vocational High School X Batam (reprocessed)

Table 3 refers to Table 2 assigning resource costs to activities. The activities are grouped with the overall accumulated costs, as shown in Table 4 below.

Table 4. Results of Assigning Resource Costs to Activities Private Vocational High School X Batam Academic Year 2019/2020

No	Activity	Total
1	Teaching and Learning	2.152.456.458
2	Evaluation	44.028.000
3	School Development	71.806.162
4	School Administration	26.535.000
5	School Management	145.459.820
6	Facilities and Infrastructure Management	1.368.900.661
Amount		3.809.186.101

Source: Financial Data of Private Vocational High School X Batam (reprocessed)

3. Third stage: Assign costs to cost objects

Assign activity costs or cost pools to cost objects based on cost drivers. Horngren, Datar, and Foster in Lestari (2008) define a cost object as something whose cost will be measured, for example, a product. The purpose of this study is to determine student unit costs so that the cost object is each student in three study programs, namely Software Engineering (RPL), Computer and Network Engineering (TKJ), and Accounting (AKT).

According to Blocher, Stout, and Cokins (2011), activity costs should be charged to cost objects based on cost drivers for consumption activities. The output is students skilled in Engineering Software (RPL), Computer and Network Engineering (TKJ), and Accounting (AKT). Activities are calculated, and the drivers' number for each study program according to their activities is determined and seen in Table 5.

Table 5. Activity Drivers and Consumption Levels for Each Private Vocational High School X Batam Study Program for the 2019/2020 Academic Year

No	Activity	Activity Driver	Level Activity	Driver Amount			
				RPL	TKJ	AKT	Total
1	Teaching and Learning						
	Teacher salaries	Number of teaching hours	Unit	4518	2412	3024	9954
	Extracurricular Learning Activities	The number of students	Unit	210	96	129	435
	Implementation of the 2019/2020 TOEIC Test	The number of students	Unit	210	96	129	435
	Implementation of industrial work practices	Number of students in grade XI	Unit	74	29	40	143
	Student handbook	The number of students	Unit	210	96	129	435

No	Activity	Activity Driver	Level Activity	Driver Amount			
				RPL	TKJ	AKT	Total
2	Evaluation						
	Implementation of UAS semester FY 2019/2020	The number of students	Unit	210	96	129	435
3	School Development						
	Development of educators and education personnel	The number of teachers	Product	25	25	21	71
	Provision of accommodation services	Study program prorated	Facility	1	1	1	3
4	School Administration						
	Office Stationery Supply	Number of meetings x Number of subjects	Batch	672	768	528	1968
	Document handling	Study program prorated	Facility	1	1	1	3
5	School Management						
	Licensing/legal	Study program prorated	Facility	1	1	1	3
	Preparation of food and drink meeting	Study program prorated	Facility	1	1	1	3
	Provision of entertainment/banquet	Study program prorated	Facility	1	1	1	3
	Use of advertising/ promotional services	Study program prorated	Facility	1	1	1	3
6	Facilities and Infrastructure Management						
	Depreciation	Study program prorated	Facility	1	1	1	3
	Maintenance of facilities and infrastructure	Number of classes	Facility	9	5	6	20
	Purchase of multimedia and learning tools	Number of classes	Facility	9	5	6	20
	Maintenance of the website system	Study program prorated	Facility	1	1	1	3
	Repair of facilities and infrastructure	Study program prorated	Facility	1	1	1	3
	Vehicle repair	Study program prorated	Facility	1	1	1	3
	Newspaper/magazine subscription service	Study program prorated	Facility	1	1	1	3
	School hygiene maintenance	Study program prorated	Facility	1	1	1	3
	Electrical installation maintenance	Study program prorated	Facility	1	1	1	3
	Use of drinking water	Study program prorated	Facility	1	1	1	3
	Use of electricity services	Study program prorated	Facility	1	1	1	3
	Use of telephone/mobile/internet services	Study program prorated	Facility	1	1	1	3

Source: Private Vocational High School X Batam (reprocessed)

After determining the number of drivers from each study program, their rate for each activity that occurs was determined.

Table 6. Calculation of Activity Driver Rate

No	Activity	Driver Amount	Total Cost	Driver Rate
1	Teaching and Learning			
	Teacher salaries	9954	2.003.948.558	201.321
	Extracurricular Learning Activities	435	53.519.100	123.032
	Implementation of the 2019/2020 TOEIC Test	435	2.750.000	6.322
	Implementation of industrial work practices	143	21.735.800	151.999
	Student handbook	435	70.503.000	162.076
2	Evaluation			
	Implementation of UAS semester FY 2019/2020	435	44.028.000	101.214
3	School Development			
	Development of educators and education personnel	71	31.719.500	446.754
	Provision of accommodation services	3	40.086.662	13.362.221

No	Activity	Driver Amount	Total Cost	Driver Rate
4	School Administration			
	Office Stationery Supply	1968	14.285.000	7.259
	Document handling	3	12.250.000	4.083.333
5	School Management			
	Licensing/legal	3	4.000.000	1.333.333
	Preparation of food and drink meeting	3	18.203.600	6.067.867
	Provision of entertainment/banquet	3	16.512.500	5.504.167
	Use of advertising/ promotional services	3	106.743.720	35.581.240
6	Facilities and Infrastructure Management			
	Depreciation	3	282.526.071	94.175.357
	Maintenance of facilities and infrastructure	20	549.657.737	27.482.887
	Purchase of multimedia and learning tools	20	12.750.000	637.500
	Maintenance of the website system	3	139.130.493	46.376.831
	Repair of facilities and infrastructure	3	19.798.000	6.599.333
	Vehicle repair	3	4.566.200	1.522.067
	Newspaper/magazine subscription service	3	550.000	183.333
	School hygiene maintenance	3	74.250.500	24.750.167
	Electrical installation maintenance	3	5.605.000	1.868.333
	Use of drinking water	3	30.896.200	10.298.733
	Use of electricity services	3	175.120.800	58.373.600
	Use of telephone/mobile/internet services	3	74.049.660	24.683.220
	Total		3.809.186.101	

Source: Data Private Vocational High School X Batam (reprocessed)

In Table 6, the drivers' total rate column is divided by the number of their columns. Activity costs were charged to services using the cost driver rate. Driver numbers rates in Table 6 are multiplied by the activity driver rate in Table 7. This is based on 3 study programs at Private Vocational High School X Batam, including Software Engineering (RPL), Computer and Network Engineering (TKJ), and Accounting (AKT).

Table 7. Calculation of Activity Cost Allocation to Study Programs at Private Vocational High School X Batam

No	Activity	RPL		TKJ		AKT	
		Driver Amount	Total Cost	Driver Amount	Total Cost	Driver Amount	Total Cost
1	Teaching and Learning						
	Teacher salaries	4518	909.567.971	2412	485.586.088	3024	608.794.499
	Extracurricular Learning Activities	210	25.836.807	96	11.811.112	129	15.871.181
	Implementation of the 2019/2020 TOEIC Test	210	1.327.586	96	606.897	129	815.517
	Implementation of industrial work practices	74	11.247.897	29	4.407.959	40	6.079.944
	Student handbook	210	34.035.931	96	15.559.283	129	20.907.786
2	Evaluation						
	Implementation of UAS semester FY 2019/2020	210	21.254.897	96	9.716.524	129	13.056.579
3	School Development						

No	Activity	RPL		TKJ		AKT	
		Driver Amount	Total Cost	Driver Amount	Total Cost	Driver Amount	Total Cost
	Development of educators and education personnel	25	11.168.838	25	11.168.838	21	9.381.824
	Provision of accommodation services	1	13.362.221	1	13.362.221	1	13.362.221
4	School Administration						
	Office Stationery Supply	672	4.877.805	768	5.574.634	528	3.832.561
	Document handling	1	4.083.333	1	4.083.333	1	4.083.333
5	School Management						
	Licensing/legal	1	1.333.333	1	1.333.333	1	1.333.333
	Preparation of food and drink meeting	1	6.067.867	1	6.067.867	1	6.067.867
	Provision of entertainment/banquet	1	5.504.167	1	5.504.167	1	5.504.167
	Use of advertising/ promotional services	1	35.581.240	1	35.581.240	1	35.581.240
6	Facilities and Infrastructure Management						
	Depreciation	1	94.175.357	1	94.175.357	1	94.175.357
	Maintenance of facilities and infrastructure	9	247.345.982	5	137.414.434	6	164.897.321
	Purchase of multimedia and learning tools	9	5.737.500	5	3.187.500	6	3.825.000
	Maintenance of the website system	1	46.376.831	1	46.376.831	1	46.376.831
	Repair of facilities and infrastructure	1	6.599.333	1	6.599.333	1	6.599.333
	Vehicle repair	1	1.522.067	1	1.522.067	1	1.522.067
	Newspaper/magazine subscription service	1	183.333	1	183.333	1	183.333
	School hygiene maintenance	1	24.750.167	1	24.750.167	1	24.750.167
	Electrical installation maintenance	1	1.868.333	1	1.868.333	1	1.868.333
	Use of drinking water	1	10.298.733	1	10.298.733	1	10.298.733
	Use of electricity services	1	58.373.600	1	58.373.600	1	58.373.600
	Use of telephone/mobile/internet services	1	24.683.220	1	24.683.220	1	24.683.220
	Jumlah		1.607.164.348		1.019.796.405		1.182.225.348

Source: Data Private Vocational High School X Batam (reprocessed)

Table 7 shows the calculation of Activity Cost Allocation for Study Programs by multiplying the driver rates number in Table 6 with the activity drivers number in Table 5. The activity-Based Costing approach indicated students' education costs for the Software Engineering (RPL), Computer and Network Engineering (TKJ), and Accounting (AKT) study programs, as seen in Table 8 below.

Table 8. Educational Costs for RPL, TKJ, and AKT Study Programs at Private Vocational High School X Batam

No	Activity	Software Engineering (RPL)	Computer and Network Engineering (TKJ)	Accounting (AKT)
1	Teaching and Learning	982.016.192	517.971.339	652.468.928
2	Evaluation	21.254.897	9.716.524	13.056.579
3	School Development	24.531.059	24.531.059	22.744.045
4	School Administration	8.961.138	9.657.967	7.915.894
5	School Management	48.486.607	48.486.607	48.486.607
6	Facilities and Infrastructure Management	521.914.456	409.432.909	437.553.296
	Total Cost	1.607.164.348	1.019.796.405	1.182.225.348
	The Number of Students	210	96	129
	Cost per student per year	7.653.164	10.622.879	9.164.538
	Cost per student per month	637.764	885.240	763.711

Source: Data Private Vocational High School X Batam (reprocessed)

In Table 8, Education Costs for the RPL, TKJ, and AKT Study Programs using the Activity-Based Costing (ABC) approach shows that the education cost for the Software (RPL), and Computer and Network engineering (TKJ) and Accounting study (AKT) programs are Rp637.764, Rp885.240 and Rp763.711 per student per month, respectively. Table 9 shows a comparative analysis of calculations using the Activity Based Costing (ABC) approach with the Foundation's policy in determining the cost per student per month. The monthly student cost based on the Foundation's policy for IT study programs such as Software (RPL), Computer and Network Engineerings (TKJ) is Rp600.000 inclusive of tuition and committee and student council Costs of Rp550.000 and Rp50.000, respectively. The accounting study program (AKT) cost per month is Rp550.000, including the tuition and Committee and Student Council costs of Rp500.000 and Rp50.000, respectively.

According to Table 8, which discusses the cost of education for the RPL, TKJ, and AKT study programs using the Activity-Based Costing (ABC) approach, this study compares the calculation of the current education cost method with the cost of education using the Activity Based Costing approach, as shown in Table 9.

Table 9. Comparison of Current Method Calculation with Activity Based Costing Approach per Year

Study Programs	The Number of students	Tuition Fee	Student Tuition Fee with ABC
Software Engineering (RPL)	210	1.512.000.000	1.607.164.348
Computer and Network Engineering (TKJ)	96	691.200.000	1.019.796.405
Accounting (AKT)	129	851.400.000	1.182.225.348

Source: Data of Private Vocational High School X Batam (reprocessed)

In Table 9 above, the calculation using Activity Based Costing (ABC) for RPL, TKJ, and AKT study programs results in higher costs compared to the current SPP charged to students. This indicates that the current SPP rate is undercosted when compared to the cost calculation using the Activity Based Costing (ABC) approach. Based on the ABC calculations that have been carried out, SMKS X Batam can fix the cost composition so that the allocation of costs to schools is more precise.

5.2. STRATEGIC COST MANAGEMENT ANALYSIS OF PRIVATE VOCATIONAL HIGH SCHOOL X BATAM

According to Porter (1985), there are five competitive factors Porter (Porter's Five Forces) that can be used to determine the strength of the industry. The five competitive factors will be used to analyze the external environmental conditions faced by SMKS X Batam. These competitive factors include:

1. Competition in similar industries (rivalry of competitors)

The main competitor of SMKS X Batam is SMK which offers study programs similar to those offered by SMKS X Batam.

2. The threat of substitute products or services

One of the threats of substitute products or services to SMKS X Batam is the existence of training institutions. Training institutions have the ability to conduct teaching and learning activities based on meeting the needs of the industrial world. If SMKS X Batam does not have competitiveness in the industrial world, then SMKS X Batam can be replaced by training institutions.

3. Bargaining power of buyers

Parents who have children who will continue their education from junior high school to vocational school level are the buying power for SMKS X Batam. Schools must conduct socialization and promotion to parents who have children who have graduated from junior high school so that parents register their children as prospective students at SMKS X Batam.

4. Bargaining power of suppliers

The main supplier of SMKS X Batam is SMP in Batam City because the SMP students can be the basis for adding prospective SMK students. In addition, qualified educators and education staff are also a supply force for SMKS X Batam.

5. The threat of new entrants

The presence of new SMKs and training institutions that have the same study program as the study program offered by SMKS X Batam is a threat that SMKS X Batam must be wary of.

Porter (1985) states that there are two ways to achieve excellence or competitiveness, namely differentiation and low cost. Referring to the problem formulation that has been described, the cost of education at SMKS X Batam has not increased, thus making the school management face difficulties in managing the resources and costs in it. The school management considers that the absence of an increase in the cost of education is a competitive advantage of SMKS X Batam. If it is associated with Porter's theory, SMKS X Batam focuses

on competitive advantage, namely cost leadership. This shows that SMKS X Batam applies a low-cost strategy.

Based on competitor data that can be obtained, the range of tuition rates offered by other SMKs for the Accounting study program (AKT) is IDR 550,000 – IDR 770,000, while for the Software Engineering (RPL) and Computer and Network Engineering (TKJ) study programs it is IDR 700,000 – IDR 950,000. When compared with competitor data, the SPP rate offered by SMKS X Batam can be said to be the same or even lower than the SPP rate offered by its competitors. However, the tuition fee for each student for each study program determined by SMKS X Batam cannot cover the unit cost of education (student unit cost), which has been calculated using the Activity Based Costing (ABC) approach.

The purpose of SMKS X Batam implementing a low-cost strategy (cost leadership) is to achieve excellence or competitiveness, which is the primary consideration for prospective students to continue their education. But in reality, the low-cost strategy implemented by SMKS X Batam is not aligned with the results of the questionnaire, which was filled out by 112 students consisting of 58 students from the RPL study program, 19 students from the TKJ study program, and 35 students from the AKT study program. Based on the questionnaires that were collected, it is known that 64,3% of respondents or 72 students chose to continue their education at SMKS X Batam with the main reason being the reputation of an excellent school, while 2,7% of respondents or three students chose the main reason, namely affordable education costs.

The main reasons students choose to continue their education at SMKS X Batam:

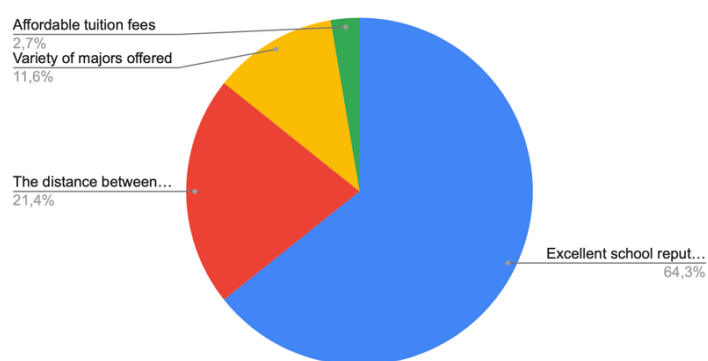


Figure 1. Diagram of The Main Reasons Students Choose to Continue Their Education at Private Vocational High School X Batam

From the diagram, the excellent reputation of SMKS X Batam is the main reason for students choosing to continue their education at the SMKS, not

because of the affordable tuition fees. This shows that the low cost strategy implemented by SMKS X Batam is not appropriate. By considering the analysis of Porter's five competitive factors and competitor data, it is better if SMKS X Batam applies a differentiation strategy so that SMKS X Batam has a uniqueness that makes it different from other SMKS. Differentiation strategies that can be carried out can be in the form of increasing facilities and activities needed by students or by offering new study programs that meet the needs of prospective students. With the calculation of student unit costs using the Activity Based Costing (ABC) approach, SMKS X Batam can use the calculations that have been done as consideration for setting tuition rates in the future.

6. CONCLUSION AND RECOMMENDATIONS

This study aims to analyze the unit cost of each student per study program at SMKS X Batam by using the Activity Based Costing approach for the 2019/2020 academic year. Three study programs are offered by SMKS X Batam, namely Software Engineering (RPL), Computer and Network Engineering (TKJ), and Accounting (AKT). This research uses a case study approach with descriptive qualitative methods, namely by determining, collecting, classifying, and interpreting data.

The determination of the current SPP is based on the Foundation's policies and market analysis, as well as consideration of the abilities of parents or guardians of students. Based on the analysis and discussion that has been carried out, the research results obtained indicate that the determination of the SPP of the three study programs is currently undercosting when compared to the calculation of the cost of education using the Activity Based Costing (ABC) approach.

The results of the subsequent study related to Strategic Cost Management showed that the cost leadership strategy implemented by SMKS X Batam was not appropriate to be used with the aim of creating superiority or competitiveness. This refers to the analysis of the five competitive factors proposed by Porter (1985) and the SPP tariff data offered by competitors. Therefore, it is necessary to evaluate the strategy that SMKS X Batam has currently implemented.

The following are the limitations of the research, including:

1. The limitations of the data in this study caused the activity level to be set at the facility level due to the absence of cost triggering data or the

unavailability of resource cost data at a lower level, namely unit level, batch level or product level. For example, the identification of the activity level for the use of electricity services in this study is the facility. The identification is based on limited information regarding the size of the classrooms for each study program so that the cost driver uses a prorated number of study programs. Even though it can be assumed that the wider the room, the more power or service subscriptions are used. Another example is identifying activity levels for document management. In this study, the activity level for document management is facility. The consideration of managing documents grouped at the facility activity level is because the documents that are managed include documents for teachers, staff, and students. The data provided by school management regarding the cost of processing documents is also the total amount of the cost of processing documents so that it cannot be traced directly to students, classes or study programs.

2. Because the right driver has not been found, the cost assignment is allocated on the basis of assumptions. Examples of these costs include website system maintenance costs, advertising/promotional costs, and electricity maintenance. Because the causes of these costs cannot be identified, in this study, the costs are allocated evenly to each study program.

RECOMMENDATIONS

Suggestions that can be given to SMKS X Batam to manage costs to increase competitiveness in the future are to calculate the costs required for each activity for each student. So far, the determination of tuition fees has only been carried out with the Foundation's policies and is limited to market analysis. The application of Activity Based Costing can help SMKS X Batam calculate the unit cost of each student more accurately so that the Foundation can make the right decisions in setting tuition fees. The Foundation and management can also consider increasing the cost of education fees for the next academic year so that teaching and learning activities at SMKS X Batam can be in line with increasing facilities and activities that meet the needs of students so that the increase in these facilities can increase the competitiveness of SMKS X Batam among SMKs others in Batam.

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