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The Analysis of Activity-Based Management Implementation to Increase Cost Efficiency in Hotel XY Semarang

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ABSTRACT: Hotel XY Semarang is a star hotel that provides various services and facilities, so it is necessary to increase cost efficiency without reducing the value provided to customers. This study aims to analyze the cost efficiency of activities by applying the Activity-Based Management method using accurate cost information to reduce non-value-added activities. This study uses a quantitative descriptive method. The data were collected through observation, interviews, and documentation. This study first calculated the room rental cost using Activity-Based Costing, then calculated the value of cost efficiency with the Activity-Based Management method and tested the hypothesis to determine whether there is a significant difference after the implementation of Activity Based Management. The results showed that Hotel XY Semarang still calculates room rental costs using the traditional method. After implementing the Activity Based Costing method, the results show the difference in under costing in the President Suite room types and over costing in the Deluxe Room, Junior Suite, and Executive Suite room types. The implementation of Activity Based Management can reduce costs by Rp. 734.526.570 or increase cost efficiency by 7.91% of the total cost of Rp. 9.287.146.443.

Keywords: Activity-Based Costing, Activity-Based Management, Cost Efficiency.

INTRODUCTION

One of the impacts of the rapid development of technology is increasing competition (Byrne et al., 2022). The current competition does affect not only the trade industry but also the service industry. This competition makes consumers have various choices, and consumer satisfaction will be achieved by getting high-quality products at low prices (Ticoalu, 2020). With the various choices by consumers, companies are competing to increase competitive advantage and make continuous improvements to increase customer satisfaction because customer satisfaction is the key to win the global competition. Another key to win the competition also lies in improving product quality and controlling costs to avoid wastage (Bux & Amicarelli, 2022).

One thing that must be considered by company management is how to increase profits by spending costs as efficiently as possible to reduce wasted costs (Zhao et al., 2022). Therefore, management must make decisions by determining methods to increase efficiency in production activities to obtain the expected profit and increase value for customers (Fraiman, 2022). There are still many business environments that use conventional cost accounting methods, where conventional cost methods only provide information about how much costs or resources have been spent, for what costs or resources were spent. It causes the determination of the cost of production to experience problems under costing or over costing (Fatimah & Santoso, 2020).

Activity-Based Management (ABM) is a concept that can be applied to reach a meeting point between improving quality and value for customers. The integrated management control system from ABM has two integrated dimensions: the cost dimension and the process dimension (Mowen et al., 2017) . The cost dimension improves the accuracy of cost assignments obtained from cost information about activities, resources, products, and customers (Schneider et al., 2022). The process dimension provides information regarding the analysis of the chain of production activities from raw materials to the hands of consumers, namely what activities are carried out, why these activities must be carried out, when is the right time to carry out these activities, then how an activity should be carried out with an orientation to reduce costs (Burritt & Christ, 2021).

Activity-Based Management (ABM) uses information obtained from Activity-Based Costing (ABC) to make improvements in a company. Activity-Based Costing (ABC) is an appropriate method because it causes cause and effect between cost drivers and activities (Yang et al., 2020). The basis of using the ABC method is the product or service performed by the activity, and the required activity uses the resources that cause costs. Then resources are allocated to activities to be assigned to cost objects based on their usage (Carter & Usry, 2015; Li et al., 2020).

One of the service industries is hotel business. Perhimpunan Hotel dan Restoran Indonesia (PHRI) the City of Semarang indicates that hotel competition in Semarang is getting tougher, along with the increasing number of star hotels that continue to emerge. Based on data from Badan Pusat Statistik the City of Semarang, the number of star hotels currently reaches 80 hotels, with details of 16 1-star hotels, 22 2- star hotels, 19 3-star hotels, 19 4-star hotels, and 4 5-star hotels.
The advantages and potential of implementing Activity-Based Management should be utilized by Hotel XY, a star hotel in Semarang built with a vision to become a company with sales and profitability in the Central Java hospitality industry by prioritizing excellent service. This vision shows a solid commitment to provide the best service to every guest to have a memorable experience while staying at the hotel. Therefore, many activities need to be carried out in serving guests so that the costs incurred are also getting more significant.

Based on interviews conducted with the Front Office employee, Hotel XY Semarang still uses a room rental cost calculation system based on the traditional method. It is based on estimated expenses such as guest supplies, chemicals, salary, electricity, and water costs. All of these costs are also adjusted to the occupancy rate of each room type. The occupancy rate for Deluxe Room

is 35,87%, Junior Suite is 25,32%, Executive Suite is 22,04%, and President Suite is 6,28%. After obtaining the total cost of each type of room, the total cost is divided by one type of cost driver, namely the number of rooms available, so that the room rental cost can be obtained. This traditional method is calculated without paying attention to activities that trigger costs so that the assignment of costs becomes less precise. Therefore, Hotel XY had to decide on room rental costs and reduce non-value-added costs. To determine a more accurate room rental cost, Hotel XY can apply Activity- Based Costing. To analyze value-added and non-value-added activities, Hotel XY can implement Activity-Based Management.

This research aims to analyze the application of the Activity-Based Costing method in determining room rental cost at Hotel XY, to calculate the value of cost efficiency for room service activities at Hotel XY, and to analyze the efficiency of activity costs at Hotel XY using the Activity-Based Management method as suggestions or recommendations for the hotel.

METHOD

1. Cost Concept

Cost is an exchange rate, expenditure, or sacrifice made to guarantee the acquisition of benefits (Carter & Usry, 2015; Kanda, 2021). Costs are cash or cash equivalent values sacrificed to obtain goods or services expected to provide current or future benefits for the organization (Mowen et al., 2017).

Based on the definition above, it can be concluded that the cost is a sacrifice of economic resources to obtain goods or services measured in units of money, which is expected to provide benefits both now and in the future for an organization.

2. Cost of Good Sold

Cost of good solds are also known as production cost. Production costs are the total costs incurred to produce a good or service expressed in units of money, consisting of direct material costs, direct labour costs, and factory overhead costs (İncekara, 2022). Production costs are the sum of three cost elements: direct materials, direct labour, and factory overhead (Carter & Usry, 2015).The cost of production reflects the total cost of goods completed during the current period (Mowen et al., 2017).

3. Cost of Production using Traditional Method

Traditional costing is characterized by the exclusive use of measures related to the size of the volume or unit level as a basis for allocating overhead to output (Carter & Usry, 2015). Therefore, the traditional method is also called a unit-based system. Traditional systems began to be felt no longer able to produce authentic products in technology development (da Silva Stefano et al., 2022). Traditional cost accounting systems focus on emphasizing the objectives that determine production costs (Aprillia et al., 2017). As a result, the system provides very little information to achieve an edge in global competition. Traditional accounting systems for overhead costs focus too much on the distribution and allocation of overhead costs rather than reducing waste and eliminating non-value-added activities. Traditional cost accounting systems do not reflect cost causes because they often assume that costs are caused by a single factor, such as product volume or direct labour hours (Koolmees et al., 2021).

4. Activity-Based Costing

Activity-Based Costing assigns factory overhead costs to cost objects such as products or services by identifying resources and activities and their costs and the amount needed to produce output (Greenberg & Wilner, 2015). Activity-based costing systems trace costs to activities, then to products (Mowen et al., 2017).

Based on some of the definitions above, it can be concluded that Activity-Based Costing is a costing approach that assigns resource costs to cost objects such as products, services, or customers based on the activities performed for these cost objects.

5. Activity-Based Management

Activity-Based Management is a system- wide integrated approach focused on increasing value for customers and resulting profits. Activity-Based Management emphasizes the Determination of Activity- Based Costing (ABC) and process analysis (Wang & Wan, 2020).

Activity-Based Management manages resources and activities to increase the value of products or services for customers and increase competition and company profitability (Ibrahim et al., 2021).

Based on the definitions above, it can be concluded that Activity-Based Management manages resources and activities to increase the value of products or services for customers and increase the value received by customers (customer value). It also increases profits for achieving organizational goals through a continuous improvement process (Jasinski et al., 2015).

6. Value-Added Activity Analysis, an activity can be called a value- added activity if it meets several requirements (Mowen et al., 2017):
    1. The activity causes a state change.
    2. State changes cannot be achieved with previous activities.
    3. This activity allows other activities to be carried out.

Eliminating activities that provide little or no added value to customers will reduce resource consumption and allow companies to focus on activities that increase customer satisfaction (Koolmees et al., 2021).

7. Cost Reduction

Cost Reduction is a set of activities designed to change operating methods to achieve lower cost standards. Activity analysis for cost reduction is carried out by (Mowen et al., 2017):

1) Activity Elimination
   Focusing on non-value-added activities can achieve cost reductions. After identifying non-value-added activities, these activities are eliminated.
2) Activity Selection
   The selection of different sets of activities is due to different competitive strategies.
3) Activity Reduction
   Reduction of activities that can reduce time and resources to increase activity efficiency or increase non-value added activities until they can be eliminated.
4) Activity Sharing

The division of activities can increase the efficiency of activities by using economies of scale. In particular, it is disclosed that the number of cost drivers can be increased without increasing the total cost of the activity itself.

8. Cost Efficiency

Cost efficiency is how resources (inputs) are correctly used without wasting costs in the production process to produce output (Parker & Schmitz, 2022). Cost efficiency can be interpreted as the actual production costs are used as well as possible, namely whether the actual costs have been implemented through a standard cost system that has been set (Azevedo et al., 2022; Piran et al., 2021).

By applying the Activity-Based Management method, companies can control activities through activity analysis to identify value- added and non-value-added activities. Non-value-added activities can be reduced because they add unnecessary costs (D'Onza et al., 2016; Dunant et al., 2019). A company's accounting system must distinguish between value-added and non- value-added costs to motivate managers to control non-value-added costs. This cost control will lead to the loss of cost wastage so that production cost efficiency will be achieved (Azevedo et al., 2022; Burritt & Christ, 2021).

Research Hypothesis

H0: There is no significant difference between activity costs before and after the implementation of Activity-Based Management.

H1: There is a significant difference between activity costs before and after the implementation of Activity-Based Management.

Research Methodology

This research is a quantitative descriptive study with a comparative analysis approach. The types of data used in this research are as follows:

1. Qualitative data, in the form of an overview of the profile of Hotel XY Semarang. This qualitative data is presented in a historical description and organizational structure of Hotel XY Semarang (Creswell, 2017; Sugiyono, 2019).
2. Quantitative Data, in the form of a report on expenses for Hotel XY Semarang in 2020. Quantitative data is data in the form of numbers (Creswell, 2017; Sugiyono, 2019).

Sources of data used in this research are:

1) Primary data are the results of direct interviews with the Head of each Department of Hotel XY Semarang and direct observations of hotel service activities.
2) Secondary data was obtained indirectly through intermediary media, namely financial data from the Accounting Department and Hotel XY Semarang profiles, such as hotel history, vision and mission, and organizational structure.

The data collection methods in this research are (1) observation to see a description of the company's activities, (2) interviews conducted with the Head of each Department to obtain more

information about activities carried out and expenses, and (3) documentation data in this research are company profile and expenses report (Moon et al., 2022).

To analyze data, first comparing the room rental cost according to Hotel XY with the ABC method, then calculating cost efficiency, and the last step is testing the hypothesis

RESULTS AND DISCUSSION

1. Identify the Room Rental Cost using the Traditional Method according to Hotel XY Semarang

Based on interviews conducted with the Front Office employee, Hotel XY Semarang still uses the traditional method in determining the room rental cost. This room rental cost calculation is based on estimated expenses such as guest supplies, chemicals, salary, electricity, and water costs. All of these costs are also adjusted to the occupancy rate of each room type. The occupancy rate for Deluxe Room is 35,87%, Junior Suite is 25,32%, Executive Suite is 22,04%, and President Suite is 6,28%. After obtaining the total cost of each type of room, the total cost is divided by one type of cost driver, namely the number of rooms available, so that the room rental cost can be obtained.

2. Calculation of the Room Rental Cost using Activity-Based Costing Method

Before calculating the room rental cost, the first step is identifying what activities carried out in the services of Hotel XY Semarang, especially in hotel room rentals. Existing activities include payment of employee salaries, use of rooms, marketing, water use, electricity use, provision of breakfast, repair and maintenance, laundry, administration and public service, use of buildings and facilities, and payment of land and building taxes. After all activities are identified, the following is the cost sources contained in the room rental services at Hotel XY Semarang.

Table 1. Actual Costs Used in Room Rental Activities at Hotel XY Semarang

No	Cost Element	Activity Type	Amount (Rp)
1	Employee Salary Cost	Employee salary payment	**1.328.699.419**
2	Room Cost	Room use	**644.288.604**
3	Breakfast Cost	Giving breakfast	**1.213.400.575**
4	Water Cost	Water usage	**539.133.000**
5	Electricity Cost	Electricity consumption	**1.493.511.025**
6	Laundry Cost	Laundry activity	**498.072.970**
7	Administration and General Cost	Administration and General Activities	**455.905.396**
8	Marketing Cost	Marketing Activities	**393.895.150**
9	Repair and Maintenance Cost	Repair and Maintenance	**575.727.726**
10	Building Depreciation Cost	Building shrinkage	**1.036.024.520**
11	Facility Depreciation Cost	Depreciation of facilities	**677.821.391**
12	Land and Building Tax Cost	Payment of land and building tax	**430.666.667**
	TOTAL		9.287.146.443

Source: Processed secondary data, 2021

After identifying activities also relating costs to related activities, the next step is to determine the cost drivers for each activity. The goal is to find out what is the cause or driver of a cost that can occur. The cost drivers used in this research are the number of room used, the number of guests staying, KWh, m3, room size (m2), and employee's working hours.

After knowing the cost driver of each activity, the fourth step is to determine homogeneous cost pools. Various costs are classified into homogeneous cost groups. Each group consists of costs that depend on one cost driver.

The fifth step is to determine the ABC rate of each activity group. ABC rate is the rate of overhead costs per unit cost driver calculated for a group of activities. ABC rate is calculated using the following formula.

After knowing the ABC rate of each activity group, the next step is to assign costs to cost objects based on the consumption of their activities. The formula for charging the costs is as follows.

After knowing the results of the calculations using the ABC method, then a comparison can be made to determine the difference between the traditional method according to the hotel and using the ABC method.

Based on the calculations, there are differences in the room rental cost using the Activity Based Costing method and the room rental cost according to Hotel XY Semarang for each type of room, Deluxe Room, Junior Suite, Executive Suite, and President Suite. It can be seen in the Table 2 that the basic price according to Hotel XY Semarang for the Deluxe Room type, Junior Suite, and Executive Suite higher or over costing by Rp 80.576, Rp 210.298, and Rp 164.290, respectively, from the room rental cost using the ABC method. As for the type of room President Suite's basic price is lower or under costing Rp 243.488 of the room rental cost using the ABC method.

Table 2. Comparison of Room Rental Cost for Hotel XY Semarang in 2020

Room type	Room rental cost with ABC Method (Rp)	Room rental cost Accordingto Hotel XY Semarang (Rp)	Difference (Rp)	Difference in Percentage	Information
	(1)	(2)	(3) = (2)-(1)		
Deluxe Room	554.677	635.253	80.576	12,68 %	**Over-costing**

Junior Suite	727.458	937.756	210.298	22,43 %	**Over-costing**
Executive Suite	951.413	1.115.702	164.290	14,73 %	**Over-costing**
President Suite	**2.282.786**	**2.039.298**	**(243.488)**	**11,94 %**	**Under costing**

Source: Processed data, 2021

The difference between under costing and over costing arise because Hotel XY Semarang determines the room rental cost using the traditional method. In the traditional method, costs are charged to only one type of cost driver, namely the number of rooms available. Many costs are not following the driver or the cost driver is not following the activity that causes these costs. For example, the cost of water should be traced based on m3, but in the traditional method, there is only one cost driver, namely the number of rooms available, causing cost distortions because the costing is not appropriate.

In contrast to the Activity-Based Costing method, costs are assigned to each product on many cost drivers that vary according to activity consumption. Costs arising from each activity are allocated appropriately based on activity consumption, such as the number of rooms used, number of guests staying, room size, employee working hours, KWh, and m3. The room rental cost is determined following the costs incurred issued and activities performed.

Types of rooms with fewer facilities according to the Activity-Based Costing method, the room rental cost is lower, so the traditional price indicates over costing. On the other hand, the room rental cost using the ABC method is higher for the type of room with more facilities, so the traditional price indicates under costing.

The results of this Activity-Based Costing calculation can be refined by implementing Activity-Based Management (ABM), which aims to reduce waste and streamline the costs of each activity.

3. The Application of Activity-Based Management (ABM) in Hotel XY Semarang

The activities that exist at Hotel XY must be traced first so that the existing costs can be identified. Activities that occur in Hotel XY room rental services :

1. Reservation call book and blocking
2. Check-in and check-out administration
3. Deposit reservations
4. Room numbering block
5. Manage bill and payment
6. Reservation confirmation
7. Set the number of rooms occupied
8. Supervise Front Office
9. Handle guest problems/complaints
10. Open the guest car door
11. Carry guest bags and escort guests to the room
12. Provide information to guests

13. Shuttle service airport and railway station
14. Prepare and clean the room
15. Clean the area around the room
16. Decorate a hotel room
17. Supervise housekeeping
18. Checking room
19. Supervise engineering
20. Prepare breakfast
21. Deliver breakfast to the guest room
22. Take plates and glasses that have been used
23. Wash and clean the dirty plates and glasses
24. Collect linens and employee uniforms
25. Hand over linen and employee uniforms to the third parties
26. Re-check the cleanliness of linen and employee uniforms
27. Store clean linen and employee uniforms
28. Electricity consumption
29. Water usage
30. Provide office supplies
31. Garbage retribution payment
32. Payment of telephone and internet costs for administration and general department
33. Payment of electricity for administration and general department
34. Sales visit/sales call, sales trip, roadshow, sales blitz
35. Telemarketing
36. Collaborate with the media
37. Create the content on social media
38. Prepare facilities such as bed, sofa, safety deposit box, hairdryers, and others
39. Maintenance of Building
40. Maintenance of Vehicle
41. Maintenance of Equipment
42. Deluxe Room Depreciation
43. Junior Suite Depreciation
44. Executive Suite Depreciation
45. President Suite Depreciation
46. Land and Building Tax Payment

After dividing the existing activities in the hotel room rental service, the next step is to divide the value-added and non-value-added activities so as to produce efficient activities to reduce costs incurred. This cost grouping is then reduced and eliminated so that the costs of non-value added activities can be reduced. Table 3 presented activities that are grouped into value-added and non-value added activities.

Table 3. Cost of Value-Added and Non-Value-Added Activities

Activity	Activity Cost (Rp)	VA (Rp)	NVA (Rp)
Room Usage Activities			
Reservation call book and blocking	30.827.938	30.827.938	
Check-in and check-out administration	123.311.751	123.311.751	
Deposit reservations	61.655.876	61.655.876	
Room numbering block	61.655.876		**61.655.876**
Manage bill and payment	123.311.751	123.311.751	
Reservation Confirmation	92.483.814		**92.483.814**
Set the number of occupied rooms	61.655.876		**61.655.876**
Supervise Front Office	61.655.876	61.655.876	
Handle guest problems/complaints	12.331.175	12.331.175	
Open the guest car door	12.331.175	12.331.175	
Carry guest bags and escort guests to the room	12.331.175	12.331.175	
Provide information to guests	12.331.175	12.331.175	
Shuttle service airport and railway station	12.331.175	12.331.175	
Prepare and clean the room	369.935.254	369.935.254	
Clean the area around the room	123.311.751	123.311.751	
Decorate a hotel room	61.655.876	61.655.876	
Supervise housekeeping	184.967.627	184.967.627	
Checking room	184.967.627		**184.967.627**
Supervise engineering	369.935.254	369.935.254	
Total	1.972.988.023	1.572.224.831	400.763.192
Breakfast Activities			
Prepare breakfast	499.635.531	499.635.531	
Deliver breakfast to the guest room	214.129.513	214.129.513	
Take plates and glasses that have been used	356.882.522	356.882.522	
Wash and clean dirty plates and glasses	142.753.009	142.753.009	
Total	**1.213.400.575**	**1.213.400.575**	
Laundry Activities			
Collect employee linens and uniforms	99.614.594	99.614.594	
Hand over linen and employee uniforms to third parties	99.614.594	99.614.594	
Re-check the cleanliness of employees' linen and uniforms	199.229.188	199.229.188	
Store clean linen and employee uniforms	99.614.594		**99.614.594**

Total	**498.072.970**	**398.458.376**	99.614.594
Electricity Consumption			
Total	**1.493.511.025**	**1.493.511.025**	
Water Usage			
Total	**539.133.000**	**539.133.000**	
Administration and General Activities			
Provide office supplies	182.362.158	182.362.158	
Garbage retribution payment	43.991.000	43.991.000	
Administration and general use of telephone and internet	52.477.614	52.477.614	
Use of electricity for administration and general	177.074.624	177.074.624	
Total	**455.905.396**	**455.905.396**	
Marketing Activities			
Sales visit/sales call, sales trip, roadshow, sales blitz	218.830.639	54.707.660	**164.122.979**
Telemarketing	87.532.256	17.506.451	**70.025.804**
Collaborate with the media	43.766.128	43.766.128	
Create the content on social media	43.766.128	43.766.128	
Total	**393.895.150**	**159.746.366**	234.148.784
Setting Up Facilities			
Total	**677.821.391**	**677.821.391**	
Repair and Maintenance Activities			
Maintenance of Building	246.740.454	246.740.454	
Maintenance of Vehicle	164.493.636	164.493.636	
Maintenance of Equipment	164.493.636	164.493.636	
Total	**575.727.726**	**575.727.726**	
Building			
Deluxe Room Depreciation	769.022.710	769.022.710	
Junior Suite Depreciation	**194.052.460**	**194.052.460**	
Executive Suite Depreciation	**50.669.253**	**50.669.253**	
President Suite Depreciation	22.280.097	22.280.097	
Total	**1.036.024.520**	**1.036.024.520**	
Land and Building Tax			
Total	**430.666.667**	**430.666.667**	
TOTAL	9.287.146.443	8.552.619.873	734.526.570

Source: Processed data, 2021

Based on the costs that have been classified previously, it is possible to eliminate and reduce non-value-added activities so that the costs of non-value-added activities can be reduced.

Activities that do not contribute to meet customer or organizational needs (non-value- added activities) can be reduced by activity elimination, activity reduction, activity sharing, and activity selection to reduce costs.

Table 4. Cost Reduction of Non-Value-Added Activities (NVA) at Hotel XY Semarang

Non-Value-Added Activities (NVA)	Activity Costs (Rp)	Elimination/ Reduction (%)	Total Cost Reduction
Room numbering block	61.655.876	100%	**61.655.876**
Reservation Confirmation	92.483.814	100%	**92.483.814**
Set the number of occupied rooms	61.655.876	100%	**61.655.876**
Checking room	184.967.627	100%	**184.967.627**
Store clean linen and employee uniforms	99.614.594	100%	**99.614.594**
Sales visit/sales call, sales trip, roadshow, sales blitz	218.830.639	75%	**164.122.979**
Telemarketing	87.532.256	80%	**70.025.804**
Total			**734.526.570**

Source: Processed data, 2021

The following is an explanation from table 4 regarding non-value-added activities at Hotel XY Semarang:

1. Room numbering block
   This activity has no added value because it does not result in a change in conditions. This activity has the same benefits as the call book and blocking reservation activity to block rooms that have been booked by guests so that the cost of this activity can be eliminated by 100%.
2. Reservation Confirmation
   This activity is an activity to reconfirm to guests to ensure guests stay or not. If the guest does not book, the room can be resold to other guests. In addition, by confirming the reservation, the reserved hotel room can be prepared in advance. Front office employees must also confirm reservations through travel agents through the system. This activity does not add value because the previous activity can do it, namely call book reservation and blocking, so the cost of this activity can be eliminated by 100%.
3. Set the number of occupied rooms
   This activity does not add value because the previous activity can achieve it, namely call book reservation and blocking. If the employee has confirmed the number of rooms to be booked, he can also ensure how many rooms are prepared to be occupied. Therefore, the cost of this activity can be eliminated by 100%.
4. Checking Room
   This activity does not add value because it has the same function as the housekeeping supervision activity, so that the cost of this activity can be eliminated by 100%.
5. Store clean linen and employee uniforms
   This activity is carried out after linen and employee uniforms are checked for cleanliness and condition. Furthermore, clean linen and employee uniforms can be stored. This activity is

non-value- added because it does not support other activities to be carried out to be eliminated by 100%.

6. Sales visit/sales call, sales trip, roadshow, sales blitz
   This activity is beneficial for the hotel but does not increase customer value, so it is classified as a non-value-added activity. In addition, this activity also does not support other activities to be carried out. The essence of this activity can be maximized by promotion through social media to streamline costs. Therefore, the cost of this activity can be reduced by 75%, and 25% is maintained. This activity supports the hotel business to expand its marketing reach.
7. Telemarketing
   The sales department carries out this activity to find a business by phone. This activity includes activities that do not add value because it does not support other activities to be carried out. This activity can also be achieved by other activities, namely sales visits/sales calls. Marketing by phone only differs in method from direct marketing so that the cost of this activity can be reduced by 80%. The remaining 20% can be maintained because this activity is an important activity for the sales department.

Based on the analysis and calculations, the total activity cost of all hotel room rental services is Rp. 9.287.146.443,-. After reducing costs, value-added activities generate costs of Rp. 8.552.619.873,- and non-value-added activities generate costs of Rp. 734.526.570,-. Value-added activities can be considered for Hotel XY Semarang to be maintained. In contrast, non-value-added activities can be eliminated to increase cost efficiency in room rental services for Hotel XY Semarang.
The following is the calculation of the percentage change in costs after implementing Activity-Based Management (ABM) at Hotel XY Semarang.

$$\text{Cost Efficiency} = \frac{\text{Non-value-added activity costs}}{\text{The costs before implementing ABM}} \times 100\%$$

$$= \frac{\text{Rp } 734.526.570,-}{\text{Rp } 9.287.146.443,-} \times 100\%$$

$$= 7{,}91\%$$

Thus, implementing Activity-Based Management to eliminate non-value-added activities can facilitate the management of Hotel XY Semarang to increase cost efficiency by 7,91%.

4. Hypothesis Testing

This hypothesis test begins with the Data Normality Test to determine whether the data presented is normally distributed or not.

Table 5. Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	**Sig.**
Before ABM	.257	46	.000	.657	46	**.000**
After ABM	**.245**	**46**	**.000**	**.662**	**46**	**.000**

a. Lilliefors Significance Correction
Source: Processed data, 2021

Based on the normality test table above, the significance value of activity costs before and after implementing the Activity-Based Management method is 0.000, less than 0.05, indicating that the data is not normally distributed. The paired t-test cannot be performed.

Wilcoxon Test
The alternative used if the paired t-test cannot be done because the data is not normally distributed is the Wilcoxon test (Sari & Wardani, 2016). Decision-making in this test is based on probability. If the probability value is more than 0,05, then H0 is accepted, but if the probability value is less than 0,05, then H0 is rejected. Wilcoxon test results in this study are as follows.

Table 6. Descriptive Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Before ABM	201894487.89	46	262324472.361	**38677633,352**
After ABM	**185926518.96**	**46**	**269524645.316**	**39739240.937**

Source: Processed data, 2021

Table 7. Ranks

		N	Mean Rank	Sum of Ranks
After ABM - BeforeABM	Negative Ranks	7[a]	4.00	**28.00**
	Positive Ranks	0[b]	.00	**.00**
	Ties	39[c]		
	Total	46		
a. After ABM < Before ABM				
b. After ABM > Before ABM				
c. After ABM = Before ABM				

Source: Processed data, 2021

Table 8. Test Statistics

	After ABM - Before ABM
Z	**-2.371[b]**

Asymp. Sig. tailed)	**.018**

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Source: Processed data, 2021

The test results in table 7 show a decrease in the value of activity costs from before applying the ABM method to after using the ABM method, and it is shown in negative ranks.
Based on the results of the SPSS output for the Wilcoxon test shown in table 8 above, it shows two values. Based on the number of z, it is stated in the table that the z count is -
2.371 while the z table can be calculated in the z table with = 5%, then the area of the normal curve is 50% - 5% = 45% or 0,45. In table z, for an area of 0.45, the z table number is -1.645. It is shown that z count < z table (-2.371 < -1.645), then H0 is rejected, or there is a difference.
In addition to concluding the calculated z value, it can be seen the Asymp. Sig (2- tailed) that the value is 0,018. It is proven that the probability value is less than 0,05, i.e. 0,018 < 0,05. Thus H0 is rejected, and H1 is accepted, which means that there is a significant difference between activity costs before and after implementing the Activity-Based Management method.

To strengthen the two results above, in table 6, it can be seen that of the 46 activity costs inputted into the SPSS application, seven activity costs are categorized as negative ranks, or after implementing Activity-Based Management, the cost of these activities is reduced. In table 4.32, it can also be seen that the mean value after the implementation of Activity Based Management is smaller than before implementing Activity-Based Management. It means that the implementation of the Activity-Based Management method can reduce activity costs.

Based on the overall results and discussion, the implementation of Activity-Based Management can analyze value-added and non-value-added activities. Activities that are not added value can be eliminated or reduced so that the costs incurred can also be reduced to create cost efficiency.

CONCLUSION

1. As the research object, Hotel XY Semarang still uses conventional methods when calculating the room rental cost based on the estimated costs incurred. It causes cost distortion. This cost distortion occurs because the traditional method charges costs based on only one type of cost driver, namely the number of rooms available.
   In comparison, the Activity Based Costing method assigns cost to each room type appropriately based on the consumption of each activity. The charges are based on the number of rooms used, the number of guests staying, KWh, room size, and labour hours, m3, so that the room rental cost is more appropriate with the costs incurred and the activities carried out. It means that determining the room rental cost based on the Activity Based Costing method is more appropriate because it does not cause cost distortions like the traditional method applied by Hotel XY Semarang.

2. Based on the information obtained from the Activity-Based Costing implementation to streamline costs, it can be continued with Activity-Based Management (ABM). The results showed that with the implementation of Activity Based Management, Hotel XY Semarang could reduce costs by Rp734.526.570,- of the total activity costs of Rp. 9.287.146.443,-. After implementing the Activity-Based Management method, the activity cost is Rp. 8.552.619.873, or cost efficiency of 7.91% is created. Based on the hypothesis test that has been carried out, it also shows a significant difference between activity costs before and after the implementation of Activity Based Management (ABM). It means that Hotel XY Semarang room rental service activities are still included in non-value added activities, resulting in waste. From 100% of the costs incurred for room rental services, 7.91% can be reduced using the Activity- Based Management method to increase cost- efficiency.
3. Implementing Activity-Based Management at Hotel XY Semarang can eliminate non-value-added activities such as room numbering blocks, reservation confirmation, managing the number of rooms occupied, checking rooms, and storing clean linen and employee uniforms. In addition, sales visit/sales calls, sales trips, roadshows, sales blitz activities can be reduced by 75% and telemarketing by 80%. It means that not all non-value-added activities must be eliminated but must adapt to the company's needs, such as in the sales and marketing department. Sales visit/sales call activities, sales trips, roadshows, sales blitz still maintain 25% of its activity costs because it can expand the reach of the hospitality business. Likewise, the cost is maintained at 20% for telemarketing activities because it is essential in the sales and marketing department.

Managerial Implications

1. The management of Hotel XY Semarang can apply the Activity- Based Costing method as an alternative to calculating the room rental cost to find out the cost that must be set for each service product so that there is no over costing or under costing. By calculating the correct room rental cost, Hotel XY can determine the right rates according to the company's goals.
2. Hotel XY Semarang can implement the Activity-Based Management method to eliminate and reduce activities that do not add value to the company to streamline costs. The costs that cause these activities can be reduced and do not result in wastage of costs.
3. In applying the Activity-Based Management method, Hotel XY can review existing activities. Sales activities such as sales visits/sales calls, trips, roadshows, sales blitz, and telemarketing can be reduced by maximizing technology or social media to reduce transportation costs.

RECOMMENDATIONS

Based on the conclusions and limitations of the study, recommendations for further research are to examine the overall services in the hospitality business, such as apartments, meeting rooms, and grand ballrooms. The Activity-Based Costing method can be applied to calculate the cost of renting apartments, meeting rooms, and grand ballrooms, followed by implementing Activity-Based Management to eliminate non-value-added activities to reduce costs. In addition, the writer can design systems and procedures and design computer applications for ABC and ABM systems.

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