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DECISION SUPPORT SYSTEM OF AMIK MEDICOM PROMOTION STRATEGY DETERMINATION USING AHP METHOD

Sutrisno Situmorang[1], Jontinus Manullang[2]

[1,2]AMIK Medicom, Jl. Darat No.74, Medan, Indonesia
Email : [1]risnositumorang4@gmail.com, [2]jhoe6590@gmail.com

ABSTRACT

Every year, both public and private universities carry out campus promotion activities to introduce and find prospective new students. In carrying out this promotion, appropriate promotional media are needed such as: brochures, banners, football/volleyball, educational exhibitions, electronic media, through radio and social media, such as Facebook and Instagram. The main priority of the promotion is getting students according to the capacity that has been provided and getting students according to the promotion target. Therefore we need the right promotional media. In decision making, the researcher uses the AHP (Analytical Hierarchy Process) method. The AHP (Analytical Hierarchy Process) method is used to determine the weight of the criteria, the working principle of AHP is to simplify a complex problem that is structured, strategic, and dynamics into their parts and organize them in a hierarchy. Then the importance of all variables is given a subjective numerical value about the relative importance of these variables compared to other variables. The results of the assessment weights are two, namely feasible and not feasible.

Keywords*: Promotion Strategy, Promotional Media, Higher Education, AHP*

1. Introduction

The development of science and technology is an important aspect of globalization, especially in the field of higher education. Thus we need to anticipate the challenges faced from the impact of globalization which has an impact on the world of higher education and universities in Indonesia.

Every new academic year, PTS always compete with other PTN and PTS in fighting over the number of students. In order to survive, every PTS must understand what things are considered or attractive for prospective new students to choose a particular university (PT), and this uniqueness can also be used as a competitive advantage.

In global competition Decision making that is carried out quickly, on target, and can be accounted for is the key to success. Having a lot of information alone is not enough, if you are not able to quickly mix it into the best alternative in the decision-making process. However, before the decision-making process is carried out from the various alternatives, a criterion is needed. Each criterion must be able to answer an important question about how well an alternative can solve the problem at hand.

AMIK Medicom is one of the private universities located in the city of Medan, North Sumatra Province. Since its inception, AMIK Medicom has been a place to learn for young people who come from various regions in North Sumatra with their respective local cultures and languages. AMIK Medicom has 3 study programs engaged in informatics, namely Computer Engineering (D3), Computerized Accounting (D3) and Information Management (D3). Which makes students free to choose majors according to their talents and interests as well as the needs of the current world of work.

Every year AMIK Medicom carries out promotional activities for new student admissions, the main priority of the promotion is getting students according to the capacity that has been provided and accepting students according to the promotion target.

AMIK Medicom conducts promotions to various places both inside and outside the province. In carrying out this promotion, appropriate promotional media are needed such as: brochures, banners, football/volleyball, educational exhibitions, electronic media, through radio and social media, such as Facebook and Instagram. However, to determine promotional media quickly and accurately is not an easy thing, there are many things that must be researched and considered so that it takes a lot of time.

The Analytical Hierarchy Process (AHP) method is a suitable method to be applied in making decisions with various criteria, especially in determining promotional media quickly and accurately. The working principle of the Analytical Hierarchy Process (AHP) is the simplification of an unstructured, strategic, and dynamic complex problem into its parts and arrange them in a hierarchy. Then the importance of all variables is given a subjective numerical value about the relative importance of these variables compared to other variables. From these various considerations, a synthesis is then carried out to determine the variables that have high priority and play a role in influencing the results of the system.

2. Method

In solving problems using the Analytic Hierarchy Process (AHP) method, there are several basic principles that must be understood, including:

1. Decomposition (creating a hierarchy) The process of analyzing real problems in the hierarchical structure of the supporting elements, namely the supporting elements, arranging the elements hierarchically, and combining them or synthesizing them.
2. Comparative judgment (assessment of criteria and alternatives) Assessment of criteria and alternatives is carried out by pairwise comparisons according to Saaty (1998), for various problems, a scale of 1 to 9 is the best scale for expressing opinions on various problems. The value and definition of the qualitative opinion of the time comparison scale when measured using an analysis table as shown in table 2.5.1 The value and definition of the qualitative opinion of the time comparison scale when measured using an analysis table as shown in table 1.

Table 1.
Pairwise Comparison Scale Values

Intensity of Interest	Information
1	Both elements are equally important
3	One element is slightly more important than the other elemen
5	One element is more important than the other elements

7	One element is clearly more important than the other elements
9	One element is absolutely more important than the other elements
2,3,6,8	The value between two adjacent consideration values
opposite	If activity I gets one number with activity j, then j has the opposite value compared to i

3. Setting priorities
   For each criterion and alternative, it is necessary to do a pairwise comparison. The relative comparison values of all alternative criteria can be adjusted with predetermined judgments to produce weights and priorities. The weights and priorities are calculated by manipulating the matrix or by solving mathematical equations.
4. Consistency has two meanings. First, similar objects can be grouped according to uniformity and relevance. Second, it concerns the level of relationship between objects based on certain criteria.

AHP Procedure

Basically, the procedure or steps in the method include:

1. Define the problem and determine the desired solution, then arrange a hierarchy and the problems faced. The arrangement of the hierarchy is to set goals which are the goals of the system as a whole at the top level.
2. Determining the priority of elements
   a. The first step in determining the priority of elements is to make a pair comparison, which is to compare elements in pairs according to the given criteria.
   b. The pairwise comparison matrix is tested using the number
   c. to represent the relative importance of one element to another.
3. Synthesis
   Consideration = consideration of synthetic pairwise comparisons to obtain overall priority. The things to do in this step are:
   a. Sum the values of each column in the matrix
   b. Divide each value from the column by the corresponding column total to obtain a normalized matrix.
   c. Add up the values of each row and divide by the number of elements to get the average value.
4. Measuring Consistency
   In decision making, it is important to know how good the consistency is because we don't want decisions based on judgment with low consistency. The things to do in this step are:
   a. Multiply each value in the first column by the relative priority of the first element, the value in the second column by the relative priority of the second element, and so on.
   b. Number of each line
   c. The result of the row sum is divided by the corresponding relative priority element.
   d. The sum of the top quotients by the number of elements present, the result is called max.

e. Calculate the consistency index (CI) with the formula:

CI= lmax-n
n-1
Where n = number of elements

f. Calculate the consistency ratio (CR) with the formula:

CR=CI
RI
Where is CR = Consistency Ratio
I = Consistency Index
IR = Index Random Consistency

g. Checking Hierar consistency ki.

If the value is more than 10%, then the judgment data must be corrected. However, if the CI consistency ratio is equal to 0.1, then the results of the bias calculation are declared correct. The list of random indexes of consistency (IR) can be seen in table 2.

Table 2.
List of Random Consistency Index (IR)

Matrix Size	IR value
1.2	0.0
3	0.58
4	0.90
5	1.12
6	1.24
7	1.32
8	1.41
9	1.45
10	1.49
11	1.51
12	1.48
13	1.56
14	1.57
15	1.59

3. Analysis

In accordance with the results of research with the leadership elements of AMIK Medicom, criteria and alternatives have been agreed upon to determine the priority of promotional media. There are 5 (five) criteria used, namely Financing, Completeness of Information, Reach, Achievement of Targets, and Level of Influence. Identification of criteria can be initialized to K (Criteria) as written in Table 3 below

Table 3.
Promotional Media Determination Criteria

No	Criteria Code	Criteria Name	Information
1	K1	Financing	Cost of creating and distributing promotional media

2	K2	Complete Information	Completeness of promotional media information
3	K3	Reach	The distance that can be reached by promotional media
4	K4	Target Achievement	Achievement of the target for the spread of promotional media
5	K5	Influence Level	Level of influence of promotional media

Table 4.
Criteria and Weights

No	Criteria Code	Criteria Name	Weight Value
1	K1	Financing	25%
2	K2	Complete Information	25%
3	K3	Reach	15%
4	K4	Target	20%
5	K5	Influence Level	15%

Then, 6 (nine) alternative promotional media were used, namely brochures, banners, radio, presentations, social media and websites. Alternative identification can be initialized to A (Alternative) as shown in Table 5 below.

Table 5
Alternative Media Promotion

No	Alternate Code	Alternative name
1	A1	Brochure
2	A2	Banner
3	A3	Radio
4	A4	Presentation/Socialization
5	A5	Social media
6	A6	Website

4.2.2 Determining Criteria Weights with AHP

The assessment of the weight of the importance of the criteria is determined by the AMIK Medicom decision maker team. The value of the weight of the importance of these criteria becomes input in the comparison matrix between criteria. It can be seen the weight value of the importance of each criterion as shown in Table 5 below.

Table 5.
Criteria Value

No	Criteria	Intensity of Interest	Information
1	Financing	1	Both elements are very important
2	Complete Information	2	Values between two adjacent first values
3	Reach	3	One element is slightly more important than the other.

4	Target	4	Values between two adjacent consideration values
5	Influence Level	5	The two elements are more important than the other elements

After obtaining the weight value of the importance of each criterion, the next step is to make and calculate the pairwise comparison matrix as shown in Table 6 below.

Table 6.
Pairwise Comparison Matrix Results

Criteria	K1	K2	K3	K4	K5
K1	1	2	3	4	5
K2	0.5	1	1.5	2	2.5
K3	0.3	0.6	1	1.3	1.6
K4	0.25	0.5	1	1	1.25
K5	0.2	0.4	0.6	0.8	1
Amount	2.25	4.5	7.1	9.1	11.35

The total row is obtained from the sum of each column, with the following calculation: Column K1 = 1+0.5+0.3+0.25+0.2=2.25. Column K2 = 2+1+0.6+0.5+0.4=4.5. The next calculation is carried out until the 5th column. The next step is to divide the numerical value by the number of each column. So that a normalization matrix is formed as shown in table 7.

Table 7.
Criteria Normalization Matrix

Criteria	K1	K2	K3	K4	K5
K1	0.444	0.444	0.422	0.439	0.440
K2	0.222	0.222	0.211	0.219	0.220
K3	0.133	0.133	0.140	0.142	0.140
K4	0.111	0.111	0.140	0.109	0.110
K5	0.088	0.088	0.084	0.087	0.088

Based on the Normalization matrix data, the priority weight scale for each criterion can be searched by calculating the row average as follows:
Mean of row K1 =(0.4444+0.4444+0.4225+0.4395+0.4405)/5=2.189 do the next calculation until row K5. The calculation results are shown in table 8 below.

Table 8
Criteria Value Matrix

Criteria	K1	K2	K3	K4	K5	Amount	Priority Criteria
K1	0.444	0.444	0.422	0.439	0.440	2.189	0.4378
K2	0.222	0.222	0.211	0.219	0.220	1.094	0.2188
K3	0.133	0.133	0.140	0.142	0.140	0.688	0.1376
K4	0.111	0.111	0.140	0.109	0.110	0.581	0.1162
K5	0.088	0.088	0.084	0.087	0.088	0.435	0.087

The Criteria Weight Matrix is obtained from the results of the number of K1 2.189/5 = 0.4378 and the calculation is carried out until K5.
The next step is to find the consistency of the matrix obtained from the multiplication of the table pair comparison matrix with the weight criteria. The results of the calculation of the consistency matrix can be seen in table 9

Table 9
Consistency Matrix

Criteria	K1	K2	K3	K4	K5	Amount
K1	0.437	0.875	1.313	1,751	2,189	6.565
K2	0.109	0.218	0.328	0.437	0.547	1,639
K3	0.041	0.082	0.137	0.178	0.220	0.658
K4	0.029	0.058	0.137	0.092	0.145	0.461
K5	0.017	0.034	0.052	0.069	0.087	0.259

From the table, it can be determined the consistency of the criteria weights using equations 1,2 and 3. The Lambda Max calculation is obtained by adding up the quotient between the number of each row of criteria with the weights of the criteria in the table. The results of the calculation of the CI and CR values are as shown in the table.

Table 10
Consistency Ratio Calculation

Criteria	Amount	Criteria Weight	Results
K1	6.565	0.4378	7.0028
K2	1,639	0.2188	1.8578
K3	0.658	0.1376	0.7956
K4	0.461	0.1162	0.5772
K5	0.259	0.087	0.346

The value in the number of columns per row is obtained from the column number of rows per table. while the value of the criteria weight column in the criteria weight column in the table. From the table obtained values as follows:

Sum of the result column : 10,58
N (number of criteria): 5
lmax(Number/n) : 10.58/5 = 2.11
CI (lmax-n)/n-1) : -2.89/5 = -0.578
CR(C/IR) : (-0.578/1.12)= -0.516
Because CR <0.1 then the consistency ratio of the calculation is acceptable.

4.2.3 Determining the Priority of K1 or financing sub-criteria

The sub-criteria calculation is carried out on the sub-criteria of all criteria, in this case there are 3 criteria, which means that there will be 3 sub-criteria priority calculations, the sub-criteria for each criterion are 3 (Cheap), 2 (Medium), 1 (Expensive). And the priority calculation for each sub-criteria is as follows:

Table 11
Financing Assessment Sub-criteria

Sub-criteria	Weight
Inexpensive	3
Currently	2
Expensive	1

1. Create a pairwise comparison matrix
   At this stage a comparison assessment is carried out between one sub-criteria with other sub-criteria, the results of the assessment can be seen in the table

Table 12.
Value Comparison of Financing sub-criteria

No	Sub criteria	Intensity of Interest	Information	Criteria comparison
1	Inexpensive	1	Both elements are equally important	Both are equally important
2	Currently	5	One element is more important than the other elements	Good is more important than enough
3	Expensive	7	One element is clearly more important than the other elements	Good is more important than enough and less

2. Creating a pairwise comparison matrix for the Financing sub-criteria is presented in the table

Table 13.
Financing sub-criteria paired matrix

Financing	K1	K2	K3
K1	1	5	7
K2	0.2	1	5
K3	0.14	0.2	1
Amount	1.34	6.2	13

The number 0.2 in the column K1 row to K2 is the result of the calculation of 1 divided by K2 rows of K1 values. The other numbers are obtained in the same way.
Creating a value matrix for sub-criteria for financing
This matrix is obtained by the following formula:
New column row value + old column row value/sum of each old column. The calculation results can be seen in table 14

Table 14.
Financing sub-criteria value matrix.

Financing	K1	K2	K3	Amount	Priority
K1	0.746	0.806	0.538	2.09	0.696
K2	149	0.161	0.384	0.694	0.231
K3	0.104	0.032	0.076	0.212	0.070

The value of 0.746 in the column K1 row, the value of the K1 table is obtained from the value of the column value of the K1 row of the table's K1 value divided by the number of columns of the table's K1 value. The value of the column number in the table is obtained

from the sum of each row. For the first row, the value of 2.09 is the sum of 0.746+0.806+0.538+2.09. the value of the priority column is obtained from the value in the sum column for the number of criteria in this study.

3. Creating a summation matrix for each line of Financing

Table 15
The sum of each line of financing.

Criteria	Number of Rows	Priority	Results
K1	2.09	0.696	2,786
K2	0.694	0.231	0.925
K3	0.212	0.070	0.282
Amount			4.063

4. The calculation of the financing consistency ratio is

Sum (the sum of the result values) = 4.1
N (number of criteria) = 3
Lmax (Amount/n) = 4.1/3= 1.366
CI(Lmax-n)/n-1) = (1.366-3)/3=-0.544
CR(CI/CR): = -0.937
Because CR <0.1 then the consistency ratio of the calculation is acceptable.

4.2.4 Determining the priority of K2 sub-criteria or Completeness of Information

Sub-criteria calculation is carried out on sub-sub-criteria of all criteria in this case there are 3 criteria, which means there will be 3 sub-criteria priority calculations. sub-criteria of each criterion are 2 (complete), 1 (less complete), 5 (interaction).

Table 16.
Information Completeness Sub-criteria

Sub-criteria	Weight
Complete	2
Less complete	1
Interaction	5

1. Create a pairwise comparison matrix

At this stage a comparison assessment is carried out between one sub-criteria with other sub-criteria, the results of the assessment can be seen in the table

Table 16.
Comparison Value of Information Completeness Sub-criteria

No	Sub Criteria	Intensity Interest	Information	Comparison Criteria
1	Complete	1	Both elements are equally important	Both are equally important
2	Less complete	3	One element is slightly more important than the other	Good is more important enough a little is more important than less

3	Interaction	5	One element is more important than the other elements	Good is more important than enough

2. Create a pairwise comparison matrix

At this stage, a comparison assessment is carried out between one sub-criteria and other sub-criteria, the results of the assessment can be seen in the table

Table 18.
Paired matrix of sub-criteria Completeness of information

Completeness Information	K1	K2	K3
K1	1	3	5
K2	0.33	1	3
K3	0.2	0.33	1
Amount	1.53	4.33	9

3. Create a sub-value matrix for completeness of information

Table 19.
Information completeness sub-criteria value matrix

Complete Information	K1	K2	K3	Amount	Priority
K1	0.653	0.692	0.555	1.898	0.632
K2	0.215	0.230	0.333	0.778	0.259
K3	0.130	0.076	0.111	0.317	0.105

4. Calculation of the number of each line of the completeness of information sub-criteria

Table 20
The summation matrix of each row of completeness of information

Criteria	Amount Line	Priority	Results
K1	1.898	0.632	2.498
K2	0.778	0.259	1.037
K3	0.317	0.105	0.422
Amount			4

Calculation of the consistency ratio of completeness of information

Sum (the sum of the result values) = 4
N (number of criteria) = 3
Lmax (Amount/n) = 4/3= 1.333
CI(Lmax-n)/n-1) = (1.333-3)/(3)=-1.667/4=-0.555
CR(CI/CR): = (-0.555/0.85)= -0.652

Because CR <0.1 then the consistency ratio of the calculation is acceptable.

4.2.5 Determining the priority of the OHS or Outreach sub-criteria

Sub-criteria calculation is carried out on sub-sub-criteria of all criteria in this case there are 3 criteria, which means there will be 3 sub-criteria priority calculations. sub-

criteria of each criterion are 1 (Inside the City), 3 (Outside the City), 5 (Inter-Province). And the calculation for each sub-criteria is as follows:

Table 21
Reach sub-criteria

Sub-criteria	Weight
In the city	1
Out of town	3
Inter-Province	5

1. Create a pairwise comparison matrix
   At this stage a comparison assessment is carried out between one sub-criteria with other sub-criteria, the results of the assessment can be seen in the table

Table 22.
Range sub-criteria comparison value

No	Sub Criteria	Intensity Interest	Information	Comparison Criteria
1	In the city	1	Both elements are equally important	Both are equally important
2	Out of town	3	One element is slightly more important than the other	Good is more important enough a little is more important than less
3	Inter-Province	5	One element is more important than the other elements	Good is more important than enough and less

2. Creating a pairwise comparison matrix for the sub-criteria range is presented in the table

Table 23
Range sub-criteria paired matrix

Reach	K1	K2	K3
K1	1	3	5
K2	0.333	1	2
K3	0.2	0.333	1
Amount	1,533	4.333	8

3. Create a sub-criteria value matrix of range

Table 24
Range subcriteria value matrix

Reach	K1	K2	K3	Amount	Priority
K1	0.652	0.692	0.625	1969	0.656
K2	0.217	0.230	0.25	0.697	0.232
K3	0.130	0.076	0.125	0.331	0.110

4. Calculation of the Number of each row of the range sub-criteria

Table 25
The summation matrix of each range line

Criteria	Amount Line	Priority	Results
K1	1969	0.656	2,625
K2	0.697	0.232	0.929
K3	0.331	0.110	0.441
Amount			3.995

Range consistency ratio calculation

Sum (the sum of the result values) = 4
N (number of criteria) = 3
Lmax (Amount/n) = 4/3= 1.333
CI(Lmax-n)/n-1) = (1.333-3)/(3)=-1.667/3=-0.555
CR(CI/CR): = (-0.555/0.85)= -0.652

Because CR <0.1 then the consistency ratio of the calculation is acceptable.

4.2.6 Determining the priority of the K4 or Target sub-criteria

Sub-criteria calculation is carried out on sub-sub-criteria in this case there are 3 criteria, which means that there will be 3 sub-criteria priority calculations. The sub-criteria of each criterion are 5 (Students of SMA/SMK), 1 (Employees), 2 (Communities). And the priority calculation for each sub-criteria is as follows:

Table 26
Target scoring sub-criteria

Sub-criteria	Weight
High school/vocational school students	5
Employee	1
Public	2

1. Create a pairwise comparison matrix

At this stage, a comparison assessment is carried out between one sub-criteria with other sub-criteria, the results of the assessment can be seen in table 27.

Table 27
Target sub-criteria comparison value

No	Sub Criteria	Intensity Interest	Information	Comparison Criteria
1	In the city	1	Both elements are equally important	Both are equally important
2	Out of town	5	One element is more important than the other elements	Good is more important than enough and less
3	Inter-Province	7	One element is clearly more important than the other elements	Good is more important than enough and less

2. Creating a pairwise comparison matrix for the target sub-criteria is presented in table 28

Table 28.
Target sub-criteria comparison value

Target	K1	K2	K3
K1	1	5	7
K2	0.2	1	2
K3	0.14	0.2	1
Amount	1.34	6.2	10

3. Create a target subcriteria value matrix

Table 29.
Target subcriteria value matrix

Reach	K1	K2	K3	Amount	Priority
K1	0.746	0.806	0.7	2.252	0.750
K2	0.149	0.161	0.2	0.51	0.17
K3	0.104	0.32	0.1	0.54	0.18

4. Count Count of each target line

Table 30.
The summation matrix of each row

Criteria	Number of Rows	Priority	Results
K1	2.252	0.750	2,975
K2	0.51	0.17	0.68
K3	0.54	0.18	0.72
Amount			4.372

Range consistency ratio calculation
Sum (the sum of the result values) = 4.372
N (number of criteria) = 3
Lmax (Amount/n) = 4.372/3= 1.457
CI(Lmax-n)/n-1) = (1,457-3)/(3)=-1.543/3=-0.457
CR(CI/CR): = (-0.457/0.85)= -0.537
Because CR <0.1 then the consistency ratio of the calculation is acceptable.

4.2.7 Determining the priority of the K5 sub-criteria or the Level of Influence

Sub-criteria calculation is carried out on sub-sub-criteria of all criteria in this case there are 3 criteria, which means there will be 3 sub-criteria priority calculations. sub-criteria of each criterion is 1 (Ordinary) 3 (Medium) 5 Large.

Table 31.
Level of Influence assessment sub-criteria

Sub-criteria	Weight

Normal	1
Currently	2
Big	3

1. Create a pairwise comparison matrix

At this stage a comparison assessment is carried out between one sub-criteria with other sub-criteria, the results of the assessment can be seen in the table

Table 32.
Comparison of sub-criteria Level of Influence

No	Sub Criteria	Intensity Interest	Information	Comparison Criteria
1	Normal	1	Both elements are equally important	Both are equally important
2	Currently	2	One element is slightly more important than the other	Good is more important enough a little is more important than less
3	Big	3	One element is more important than the other elements	Good is more important than enough and less

2. Creating a pairwise comparison matrix for the level of influence sub-criteria is presented in the table

Table 33.
The value of the comparison of the level of influence of the sub-criteria

Reach	K1	K2	K3
K1	1	3	5
K2	0.333	1	3
K3	0.2	0.333	1
Amount	1,533	4.333	9

3. Creating a value matrix for the level of influence

Table 34.
Influence level sub-criteria value matrix

Reach	K1	K2	K3	Amount	Priority
K1	0.643	0.692	0.555	1.89	0.63
K2	0.217	0.230	0.333	0.78	0.26
K3	0.130	0.076	0.111	0.317	0.105

4. Count Count of each row

Table 35.
The summation matrix of each row

Criteria	Number of Rows	Priority	Results
K1	1.89	0.63	2.52
K2	0.78	0.26	1.04
K3	0.317	0.105	0.422
Amount			4

Range consistency ratio calculation

Sum (the sum of the result values) = 4
N (number of criteria) = 3
Lmax (Amount/n) = 4/3= 1.333
CI(Lmax-n)/n-1) = (1.333-3)/(3)=-1.667/3=-0.555
CR(CI/CR): = (-0.555/0.85)= -0.652

Because CR <0.1 then the consistency ratio of the calculation is acceptable.

4.2.8 Calculating assessment results

The priority of the calculation results in the steps above is then poured into the result matrix as shown in the table

Table 36.
Priority Value of Sub-Sub-Criteria

K1	K2	K3	K4	K5
0.4378	0.2188	0.1376	0.1162	0.087
Inexpensive	Complete	In the city	High school/vocational school students	Normal
0.696	0.632	0.656	0.750	0.63
Currently	Less complete	Out of town	Employee	Currently
0.231	0.259	0.232	0.17	0.26
Expensive	Interaction	Inter-Province	Public	Big
0.070	0.105	0.110	0.18	0.105

The following is promotional data that will be a campus promotion strategy at AMIK Medicom.

1. Promotion Strategy Assessment

There are 6 alternatives that will be used in the campus promotion strategy at AMIK Medicom with the following results:

Table 37.
Promotion Rating

Alternative	K1	K2	K3	K4	K5
Brochure	3	2	1	5	3
Banner	1	2	1	2	2
Radio	1	1	3	2	2
Presentation/Socialization	2	2	3	5	3
Social media	3	2	5	2	3
Website	2	2	5	1	2

Table 38.

Value of Priority Multiplication of Campus Promotion Criteria with sub-criteria priority numbers

Alternative	K1	K2	K3	K4	K5
Brochure	0.4378*	0.2188*	0.1376*	0.1162*	0.087*
	0.696	0.632	0.656	0.750	0.63
Banner	0.4378*	0.2188*	0.1376*	0.1162*	0.087*
	0.070	0.632	0.656	0.18	0.26
Radio	0.4378*	0.2188*	0.1376*	0.1162*	0.087*
	0.070	0.259	0.232	0.18	0.26
Presentation/	0.4378*	0.2188*	0.1376*	0.1162*	0.087*
Socialization	0.321	0.632	0.232	0.750	0.105
Social media	0.4378*	0.2188*	0.1376*	0.1162*	0.087*
	0.696	0.632	0.110	0.18	0.105
Website	0.4378*	0.2188*	0.1376*	0.1162*	0.087*
	0.231	0.632	0.110	0.17	0.26

Table 39.
The result of multiplying the priority of the Criteria with the priority of the sub-criteria

Alternative	K1	K2	K3	K4	K5	Total	Note:
Brochure	0.304	0.138	0.090	0.087	0.054	0.673	Recommendation
Banner	0.030	0.138	0.090	0.020	0.022	0.3	Recommendation
Radio	0.030	0.056	0.031	0.020	0.022	0.159	Not
Presentation/ Socialization	0.140	0.138	0.031	0.087	0.009	0.404	Recommendation
Social media	0.304	0.138	0.015	0.020	0.009	0.486	Recommendation
Website	0.101	0.138	0.015	0.012	0.022	0.288	Not

Based on the results of the calculation above, the alternative brochure gets the highest value with a value of 0.673. in this case the brochure is stated as the most recommended promotional strategy.

5. Conclusion

The following are some conclusions from the system implementation and research that has been made:

1. Design and manufacture of a decision support system application for campus promotion strategies at AMIK Medicom using UML (Unifield Method language), namely use case diagrams, activity diagrams, and class diagrams. Visual basic 2010 programming language, Microsoft Access 2010, and the AHP (Analytical Hierarchy Process) method as a method in making this decision support system.
2. The application of the AHP (Analytical Hierarchy Process) method in making a decision support system application for campus promotion strategies that can be applied to determine the criteria used as a reference for decision making, perform a suitability rating on each alternative on each criterion, make weights for each criterion, normalize the matrix and process The final step is to rank each alternative on each criterion to find the greatest value from each alternative to determine the

campus promotion strategy. With proper research results, the one with the highest score is the Brochure.

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