APPLICATION OF PROFILE MATCHING METHOD AS THE ELECTION OF PRIVATE UNIVERSITIES IN MEDAN FOR SMK STUDENTS

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Abstract

Profile Matching Method outline is the process of comparing individual competencies into system competency standards so that the results of competency comparison can be known. Decision Support System or Decision Support System which we then briefly in this thesis becomes SPK, is generally defined as a system that is able to provide good capabilities, problem-solving abilities, and communication skills for semi-structured problems. Specifically, the DSS is defined as a system that supports the work of a manager in solving semi-structured problems by providing information or proposals leading to certain decisions. From this description the authors designed a decision support system to help vocational students in the selection of private universities in Medan.

Keywords : Profile Matching, Decision Support System

INTRODUCTION

Acceptance of new students is an annual agenda undertaken by private universities, the process of selecting private universities is very difficult for vocational students due to lack of information about private universities[1]. Selection of private university selection often has difficulty due to the large number of private universities and having almost the same competencies with each other so that vocational students have difficulty choosing and determining university decisions according to criteria. To minimize these constraints a decision support system is needed that can analyze several universities in accordance with the criteria with the parameters of existing private universities[2]. This is what drives the birth of the concept of decision support systems. Decision support system is an interactive, flexible, adaptable (adaptable) Computer Based Information System (CBIS) specifically developed to support the resolution of unstructured problems to improve decision making [3].

METHOD

In developing the system the writer uses the waterfall paradigm. The waterfall method has the following stages:
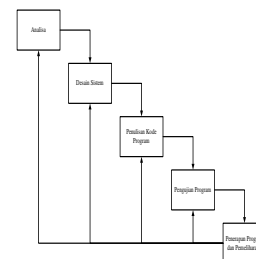

Figure 1.*Waterfall*

System analysis is to determine the ability requirements or criteria that must be met by the system so that the user desires [4].

RESULT

In this study the authors conducted an evaluation of the problem to help students make the decision to choose the best private university appropriately, because the system made already has a weight in each criterion so in the calculation for the selection of a private university is not wrong[5].

Application of Profile Matching Method The calculation model of the profile matching method applied in this decision support system can be seen in the following case resolution. For example, a student Andy Susanto, Ibrahim Abdulah, Renaldi Munir wants to choose a private university in Medan, then what is the final value of the results of the calculation of the profile matching method. Solution: Profile Matching Method. Phase 1: Determine Assessment Aspects and Criteria. It is known that there are 2 aspects of evaluating the selection of private universities in the form of specific aspects, general aspects. Each of these aspects has 4 criteria, Here are the criteria values based on the sub criteria value, where the criteria values have a range between 1 to 5 shown in Table 1:

Table 1. Explanation of Sub Criteria Aspect Value

Kriteria	Nama Sub Kriteria	Nilai Sub Kriteria	Keterangan
Aspek Khusus	IQ	1 2 3 4 5	Tidak Memenuhi Syarat Kurang Cukup Baik Sangat Baik

	Kemampuan Berpikir	1 2 3 4 5	Tidak Memenuhi Syarat Kurang Cukup Baik Sangat Baik
	Imajinasi Kreatif	1 2 3 4 5	Tidak Memenuhi Syarat Kurang Cukup Baik Sangat Baik
	Logika Praktis	1 2 3 4 5	Tidak Memenuhi Syarat Kurang Cukup Baik Sangat Baik
Aspek Umum	Kemampuan Akademis	1 2 3 4 5	Tidak Memenuhi Syarat Kurang Cukup Baik Sangat Baik
	Pengetahuan Umum	1 2 3 4 5	Sangat Kurang Kurang Cukup Baik Sangat Baik
	Pengetahuan Teori	1 2 3 4 5	Sangat Kurang Kurang Cukup Baik Sangat Baik
	Test Psikotes	1 2 3 4 5	Sangat Kurang Kurang Cukup Baik Sangat Baik

Stage 2: Calculating the Results of Competency Gap Mapping
Next is the calculation of the gap value for specific aspects. In this process, the gap calculation between the university profile value and the standard profile value is carried out. The calculation process can be seen in Table.2

Table .2 Special Aspects

No.	Kode Siswa	Kriteria-kriteria Aspek Khusus (A1)			
		C1	C2	C3	C4
1.	S001-Andy Susanto	5	4	4	3
2.	S002-Ibrahim Abdulah	5	3	3	5
3.	S003-Renaldi Munir	5	5	4	3
	Profil Standar	**5**	**4**	**4**	**4**
1.	S001-Andy Susanto	0	0	0	-1
2.	S002-Ibrahim Abdulah	0	-1	-1	1
3.	S003-Renaldi Munir	0	1	0	-1

Gap (for the last three rows)

In Table .1. can be seen the gap value calculation process. Gap value of 0 in the student code S001 column C1 is obtained from the difference in the value of university profiles with the company standard profile (5 - 5 = 0), and so on to find other Gap values. Next is the calculation to find the Gap value for specific aspects, the calculation process can be seen in Table .3

Table .3. General aspects

No.	Kode Siswa	Kriteria-kriteria Aspek Umum (A2)			
		C1	C2	C3	C4
1.	S001-Andy Susanto	4	5	4	4
2.	S002-Ibrahim Abdulah	3	4	3	4
3.	S003-Renaldi Munir	2	4	4	4
	Profil Standar	**4**	**4**	**3**	**4**
1.	S001-Andy	0	1	1	0

Gap

(continued)

	Susanto				
2.	S002-Ibrahim Abdulah	-1	0	0	0
3.	S003-Renaldi Munir	-2	0	1	0

After obtaining a Gap value from each student, each Gap value is converted into a weighted Gap value that has become a provision. Gap weight weights can be seen in Table .1. From the results of the conversion of Gap values into weights, we will obtain weight values for each university. Conversion of Gap values into weights or Gap mapping results in each aspect can be seen in Table 3, and Table 4.

Table 4. Weight of Gap Specific Aspects

No.	Kode Siswa	Kriteria-kriteria Aspek Khusus (A1)			
		C1	C2	C3	C4
1.	S001-Andy Susanto	0	0	0	-1
2.	S002-Ibrahim Abdulah	0	-1	-1	1
3.	S003-Renaldi Munir	0	1	0	-1
	Bobot Nilai *Gap*				
1.	S001-Andy Susanto	5	5	5	4
2.	S002-Ibrahim Abdulah	5	4	4	4.5
3.	S003-Renaldi Munir	5	4.5	5	4

Table 5. Weights of General Aspect Gap Rates

No.	Kode Siswa	Kriteria-kriteria Aspek Khusus (A1)			
		C1	C2	C3	C4
1.	S001-Andy Susanto	0	1	1	0
2.	S002-Ibrahim Abdulah	-1	0	0	0
3.	S003-	-2	0	1	0

		Renaldi Munir				
		Bobot Nilai *Gap*				
1.	S001-Andy Susanto	5	4.5	4.5	5
2.	S002-Ibrahim Abdulah	4	5	5	5
3.	S003-Renaldi Munir	3	5	4.5	5

Stage 3: Classification of Core Factors and Secondary Factors
After all the weighted Gap values are obtained, the next process is to group these variables or values into Core Factor (CF) and Secondary Factor (SF) groups. The calculation of core and secondary factors begins with first determining which criteria are the core factors. For example in specific aspects (A1), the criteria for core factors are IQ (C1), and Thinking Ability (C2), then the rest will be secondary factors. Then the value of Core Factor (CF) and Secondary Factor (SF).

$$NCF= \frac{\Sigma\, NC}{\Sigma IC}$$

$$NCF= \frac{5+5}{2}=\frac{10}{2}=\ 5.00$$

$$NSF= \frac{\Sigma\, NS}{\Sigma IS}$$

$$NSF= \frac{5+4}{2}=\frac{9}{2}=\ 4.50$$

Stage 4 finding the Total Value of Each Aspect. After obtaining the CF and SF values from each aspect, the next step is to look for the total value of each aspect which is calculated based on the percentage of core factors and secondary factors which are estimated to affect the performance of each profile. Calculation of total value.

$$(x)\%NCF + (x)\%NSF = N_{total}$$
$$N_{total(A1)} = (60\%*5.00) + (40\%*4.50) = 4.80$$

For the product aspect, the same is done. The results of the calculation process of the total value in each aspect.

Table .6. Total Value of Specific Aspects

No.	Kode Siswa	Aspek Khusus (A1)		
		CF(60%)	SF(40%)	N_{total} (N1)
1.	S001-Andy Susanto	5.00	4.50	4.80
2.	S002-Ibrahim Abdulah	4.50	4.25	4.40
3.	S003-Renaldi Munir	4.75	4.50	4.65

Table .7. Total Value of General Aspects

No.	Kode Siswa	Aspek Umum (A2)		
		CF(60%)	SF(40%)	N_{total} (N1)
1.	S001-Andy Susanto	4.75	4.75	4.75
2.	S002-Ibrahim Abdulah	4.50	5.00	4.73
3.	S003-Renaldi Munir	4.00	4.75	4.34

Stage 5: final score. the final result of the profile matching process is the ranking or final grade of the student being assessed. In this final value calculation using a percentage value from each aspect. Final value calculation.

Nilai Akhir = (X)%N1+(X)%N2
= (55%*4.80) + (45%*4.75)
= 2.64 + 2.14
= 4.78

So, the total final score rather than calculation with this profile matching for university code x is 4.78. For more details, the final results of the profile matching calculation process can be seen in Table .8.

Table .8 Final score

| No. | Kode Siswa | Nilai Masing-masing Aspek | | Nilai Akhir |
		N_{total} (N1) 55%	N_{total} (N2) 45%	
1.	S001-Andy Susanto	4.80	4.75	4.78
2.	S002-Ibrahim Abdulah	4.40	4.73	4.55
3.	S003-Renaldi Munir	4.65	4.34	4.51

After knowing the final grades from each aspect, the next step is to determine which students enter private universities. Where S001-Andy Susanto students with a final score of 4.78 are entitled to enter the xyz private university in medan city. The following displays the results of the application that has been made, which is used to clarify the displays that exist in the application of the Profile Matching Method as a Selection of Private Universities in Medan for Vocational Students. So the results of its implementation can be seen in accordance with the results of the program that has been made.

Figure 2. Appearance Results Page Views

CONCLUTION

Based on research that has been done during making a decision support system for the selection of private universities using this profile matching, it can be drawn several conclusions. The results of the study can be used as reference material by subsequent researchers who will discuss issues regarding the decision support system. Make it easy for companies to make comparisons of determining the best universities. Input data needed in system design is university data.

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