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Decision Support System Feasibility for Promotion using the Profile Matching Method

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Abstract: Human Resources (HR) is an important element in companies and agencies. In companies like PT. Petrogas Sinta Energi, with fairly good economic growth and being able to compete with other companies, a system is needed to evaluate each employee to fill a position. Decision Making System (DSS) Determination of job eligibility using the profile matching method by utilizing two aspects, namely the Aspect of Work Attitude and the Intellectual Aspect can assist the Company in measuring the eligibility of an employee to occupy a position. Technology or Website-based Decision Support Systems (DSS) can speed up and simplify the determination of employee eligibility assessments as well as computerized data that can be accessed online. The results of calculations using the profile matching method, the results of the decision support system on behalf of Asep with a value of 4.55 are obtained which are selected in rank 1.
Keywords: Decision Support Systems; Employee; Evaluate; Position; Profile Matching

1. INTRODUCING

The system is a set of sub-systems, components or elements that work together with the same goal to produce predetermined output, So, to achieve a goal, an accurate system is needed, especially in making a decision[1], both for company systems and human resources (HR) of a company. Human Resources (HR) is an important element in companies and agencies. In companies like PT. Petrogas Sinta Energi, with fairly good economic growth and being able to compete with other companies, a system is needed to evaluate each employee to fill a position.

PT Petrogas Sinta Energi is a private company engaged in general refueling (SPBU). As a distribution company and one that markets fuel and other products such as LPG gas and oil, using the Pertamina trademark, the company needs a system that can simplify the company's work and manage the company's human resources (HR). So the company needs a method to support a system running well and so that every employee who is selected for a certain position meets the criteria and fits the proposed position[2].

Based on the results of interviews conducted by the author, currently PT Petrogas Sinta Energi still uses a manual process in managing the employee recruitment system for a position. Where an employee will get a promotion when the employee has passed the stage of work as an ordinary employee and the length of time an employee has worked at the company. And the process of managing employee data also still uses Microsoft Office such as Excel and a relatively large number of employees. So that the employee selection process takes quite a long time and the error rate in the system is very high, such as

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deleted data, data that cannot be opened, and so on. Therefore the company certainly requires the application of a decision support system method that can facilitate the company in solving existing problems. Decision support systems have many methods of solving a problem[3]–[6], and in this study the authors used the Profile Matching method.

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2. RESEARCH METHODOLOGY

The research framework or frame of mind is a conceptual model of how theory relates to various factors that have been defined as important issues[13]–[15]. The following is a research framework proposed by researchers can be seen in the image below

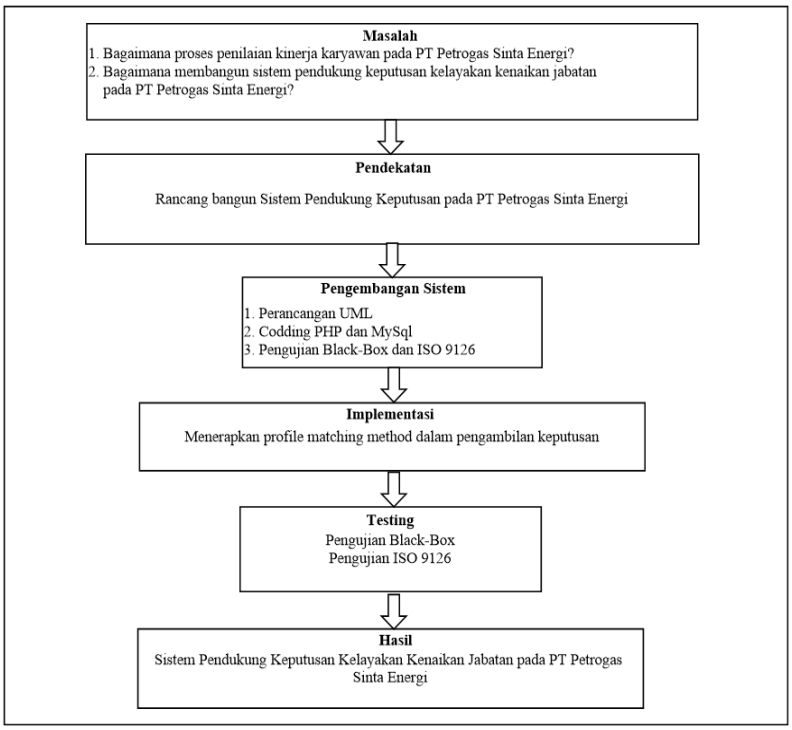

Figure 1. Research Framework

use case diagram that describes the expected functionality of a system (case study: PT Petrogas Sinta Energi). can be seen in figure 2 below:

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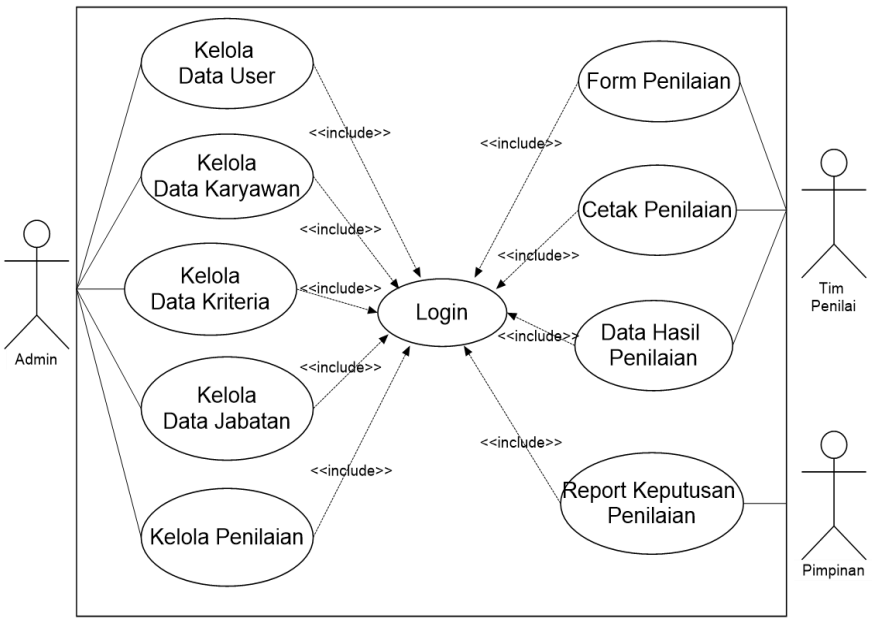

Figure 2. Usecase Diagram

This use case has three actors, namely the admin, the assessment team and the leader. Admin has access to login, manage employee data, manage position data, manage criteria data, and manage assessments. And the assessment team has access to login, manage job criteria, manage positions, and manage job assessments. And for leaders to have access to log in and see the results of the position assessment report

3. RESULT AND DISCUSSIONS

Determination of Aspects and sub Criteria

The use of the Profile Matching method is the determination of what aspects will be used as comparisons and the standard targets to be achieved. In the case of this study, 2 aspects of the assessment were given as well as several sub-aspects and standard assessment targets used, including:

Table 1. Assessment Aspects and Sub Criteria

Aspect	ID Criteria	Criteria	Standard Value/Target	Type
Work Attitude 60%	S1	Discipline	4	Core Factor
	S2	Honest	5	Core Factor
	S3	Motivation	3	Secondary Factor
	S4	Accept Opinion	4	Secondary Factor
	S5	Self-confident	4	Core Factor
	S6	Appearance	5	Core Factor
	S7	Politeness	4	Core Factor
	S8	Responsibility	4	Core Factor
Intellectual 40%	K1	Knowledge	4	Core Factor
	K2	Work productivity	3	Core Factor
	K3	Teamwork	4	Secondary Factor
	K4	Creative and Innovative	4	Secondary Factor

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Selection of Candidates

The next stage is the selection of candidates, the selection of candidates who will be assessed. Each candidate is assessed based on factor points in predetermined aspects. As an example, the candidate data obtained along with their assessments are as follows:

Table 2. Work Attitude Assessment

Name	Criteria Work Attitude							
	S1	S2	S3	S4	S5	S6	S7	S8
Ikbal	4	4	3	3	3	4	3	4
Asep	5	4	3	3	3	4	4	4
Darman	4	4	4	3	3	3	4	4

Table 3. Intellectual Assessment

Name	Criteria Intellectual			
	K1	K2	K3	K4
Ikbal	4	3	3	3
Asep	3	3	4	4
Darman	3	3	3	4

GAP Mapping Calculation

After the candidate selection process, the next process is to determine which candidate is most suitable for the position proposed by the company. In this case the author uses a competency gap mapping calculation where what is meant by a gap here is the difference between the position profile and the employee profile.

Table 4. Work Attitude Gap Mapping Value

Name	Criteria Work Attitude							
	S1	S2	S3	S4	S5	S6	S7	S8
Ikbal	4-4=0	4-5=-1	3-3=0	3-4=-1	3-4=-1	4-5=-1	3-4=-1	4-4=0
Asep	5-4=1	4-5=-1	3-3=0	3-4=-1	3-4=-1	4-5=-1	3-4=-1	4-4=0
Darman	4-4=0	4-5=-1	4-3=1	3-4=-1	3-4=-1	3-5=-2	4-4=0	4-4=0
Target Value	4	5	3	4	4	5	4	4

Table 5. Intellectual Gap Mapping Value

Name	Criteria Intellectual			
	K1	K2	K3	K4
Ikbal	4-4=0	3-3=0	3-4=-1	3-4=-1
Asep	3-4=-1	3-3=0	4-4=0	4-4=0
Darman	3-4=-1	3-3=0	3-4=-1	4-4=0
Target Value	4	3	4	4

Aspect Weighting

After obtaining the GAP for each employee, then each employee profile is given a weight according to the value of the provisions in the GAP value weight table. The following is the result of the weighting:

Table 6. Work Attitude Weighting Value

Name	Criteria Work Attitude							
	S1	S2	S3	S4	S5	S6	S7	S8
Ikbal	5	4	5	4	4	4	4	5
Asep	4,5	4	5	4	4	4	5	5

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Darman	5	4	4,5	4	4	3	5	5

Table 7. Intellectual Aspect Weighting Value

Name	Criteria Intellectual			
	K1	K2	K3	K4
Ikbal	5	5	4	4
Asep	4	5	5	5
Darman	4	5	4	5

Calculation of Final Results (Rank)

Calculation of the Aspect Value of Ikbal's Work Attitude:

$$\text{NCF} = \frac{5+4+4+4+4+5}{6} = 4.333$$

$$\text{NSF} = \frac{5+4}{2} = 4.5$$

$$\text{NT} = 60\% \text{ x } 4.333 + 40\% \text{ x } 4.5 = 4.4$$

Calculation of Asep's Work Attitude Aspect Value:

$$\text{NCF} = \frac{4{,}5+4+4+4+5+5}{6} = 4.417$$

$$\text{NSF} = \frac{5+4}{2} = 4.5$$

$$\text{NT} = 60\% \text{ x } 4.417 + 40\% \text{ x } 4.5 = 4.45$$

Calculation of the Value of the Daman Work Attitude Aspect:

$$\text{NCF} = \frac{5+4+4+3+5+5}{6} = 4.333$$

$$\text{NSF} = \frac{4{,}5+4}{2} = 4.25$$

$$\text{NT} = 60\% \text{ x } 4.333 + 40\% \text{ x } 4.25 = 4.3$$

Calculation of Intellectual Aspect Value for Ikbal:

$$\text{NCF} = \frac{5+5}{2} = 5$$

$$\text{NSF} = \frac{4+4}{2} = 4$$

$$\text{NT} = 60\% \text{ x } 5 + 40\% \text{ x } 4 = 4.6$$

Calculation of Intellectual Aspect Value for Asep:

$$\text{NCF} = \frac{4+5}{2} = 4.5$$

$$\text{NSF} = \frac{5+5}{2} = 5$$

$$\text{NT} = 60\% \text{ x } 4{,}5 + 40\% \text{ x } 5 = 4.7$$

Calculation of Intellectual Aspect Value for Daman:

$$\text{NCF} = \frac{4+5}{2} = 4.5$$

$$\text{NSF} = \frac{4+5}{2} = 4.5$$

$$\text{NT} = 60\% \text{ x } 4{,}5 + 40\% \text{ x } 4.5 = 4.5$$

Rank Determination Calculation:

Value Ikbal :
Value = 60% x NSK + 40% x NKI = 0.6 x 4.4 + 0.4 x 4.6 = 4.48
Value Asep :
Value = 60% x NSK + 40% x NKI = 0.6 x 4.45 + 0.4 x 4.7 = 4.55
Value Daman :
Value = 60% x NSK + 40% x NKI = 0.6 x 4.3 + 0.4 x 4.5 = 4.38

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Table 8. Rank

Rank	Name	NSK	NKI	HR
1	Ikbal	4.4	4.6	4.48
2	Asep	4.45	4.7	4.55
3	Daman	4.3	4.5	4.38

So that the results of calculations using the profile matching method, the results of the decision support system on behalf of Asep with a value of 4.55 are obtained which are selected in rank 1.

Implementation System

System implementation is a display when a decision has been made by an assessor or HRD. And in this view also every employee who has the highest value will be ranked first and is proposed to be eligible for the position offered by the company. The following display can be seen in Figure 2 below:

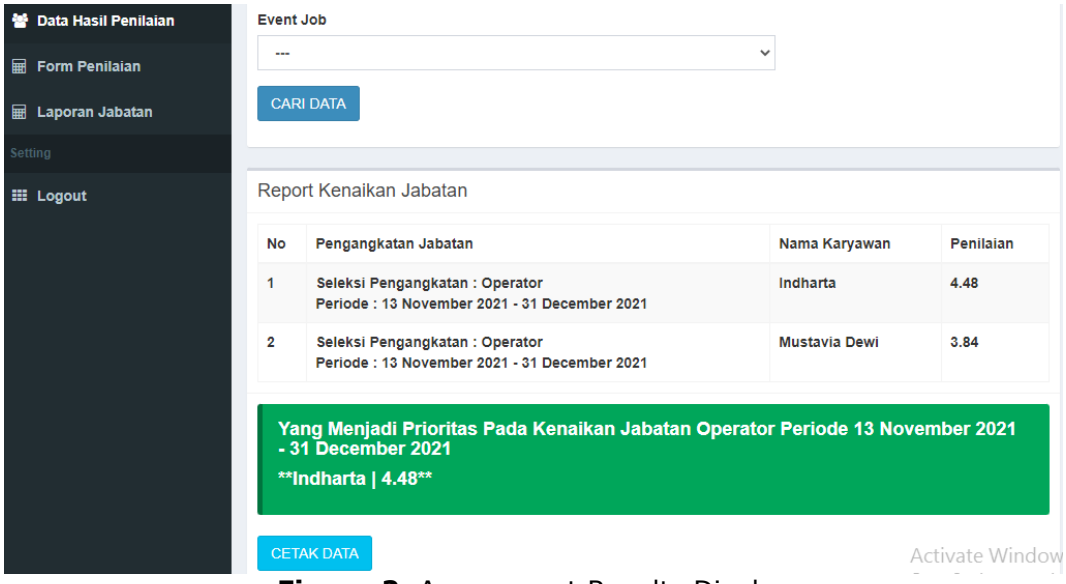

Figure 2. Assessment Results Display

4. CONCLUSION

Decision Making System (SPK) Determination of job eligibility using the profile matching method by utilizing two aspects, namely the Aspect of Work Attitude and the Intellectual Aspect can assist the Company in measuring the eligibility of an employee to occupy a position. Technology or Website-based Decision Support Systems (SPK) can speed up and simplify the determination of employee eligibility assessments as well as computerized data that can be accessed online. The results of calculations using the profile matching method, the results of the decision support system on behalf of Asep with a value of 4.55 are obtained which are selected in rank 1.

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