Analysis of Human Resouce Placement Based on Ability and Work Skills using the Profile Matching Method

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Abstract

Human resource management is closely related to employee performance to provide the best service to companies and steak holders. The right placement is a way to optimize the ability, skills towards good work performance for the workers themselves. The right position will be able to help the company (organization) in achieving its goals. Analysis of decision support systems developed in this research uses the Profile Matching method. Criteria for placement of employee positions based on aspects of personality and aspects of work attitude. The results of this research are an analysis used to rank employee competencies that will occupy employee positions in the public relations and admissions departments.
Keywords: employee performance, personality, work attitude, profile matching

INTRODUCTION

An important resource of an organization is employees [1]. The achievement of organizational goals depends on how human resources (employees) that are in the organization can develop capabilities both in the managerial field, human relations and operational technical [2].

Human resource management is closely related to employee performance in providing the best service to companies and steak holders. The right HR placement and position in accordance with their interests and abilities will increase the productivity of an employee [3].

Matching two or more users with related interests is an important and general problem, applicable to a wide range of scenarios including job hunting [4]. The right placement is a way to optimize the ability, skills towards good work performance for the workers themselves [5]. So that the right position will

be able to help the company / organization in achieving the expected goals. Employee placement must refer to several principles 1) humanity, 2) democracy, 3) the right man in the right place, 4) equal pay for equal work, 5) unity of direction and purpose, 6) unity of command, and 7) efficiency and Work Productivity.

The stages of assessment are the chronological order carried out without leaving the applicable principles. Employee placement procedures taken are decisions made by HR managers, both rationally and scientifically. Rational consideration is decision making based on factual information, and data that are considered representative. Whereas scientific objective considerations are based on data and personal information about employees, both on the basis of references from someone and the results of employee selection with scientific methods.

Complexity of the components and aspects of an employee's competency assessment

require a way that can be used as an alternative to a faster, more precise and accurate assessment. Objectivity and accuracy in assessment are absolutely essential to get accurate results. In many cases, there are problems in finding the right one position and the proper analysis for an employee [6]. The process of evaluating employee performance by involving many criteria and aspects of assessment is included in the category of Multi-Attribute Decision Making (MADM).

This research will analyze the employee performance appraisal process as the basis for appropriately placing employees (The Right Man on The Right Place). The multi attribute decision making model is used to increase speed and accuracy. The case analysis process will be carried out using the Profile Maching method. The process of calculating the Profile Matching method, starting with defining the minimum value foreach variable assessment. Difference testing each data value to the minimum value of each variable, a gap which is then given weight [7].

Profile matching method can resolve the case of sorting dynamically. Parameters collected as aspects of the main requirements to perform the calculation. With the results of calculations which have high accuracy, the difference i s less likely to form a pattern of a different order so that the possibility of the data have the same value will be obviated [8].

Research conducted by [9] that applies the profile matching method for Wireless Positioning. This study shows a comparison of traditional one-point matching methods and profile matching methods. The results show that PM is a more reliable solution, especially in environments with sparsely distributed access points, and more accurate initial positions. the profile matching method reduces position errors by 11.5% - 21.6%.

Weighting of values in the profile mathing can be combined with different methods. [7] adds Linear Interpolation Weighting to Classification of Students Based on Academic Ability. The results showed that the weighting calculation results are getting better and accurate.

METHOD

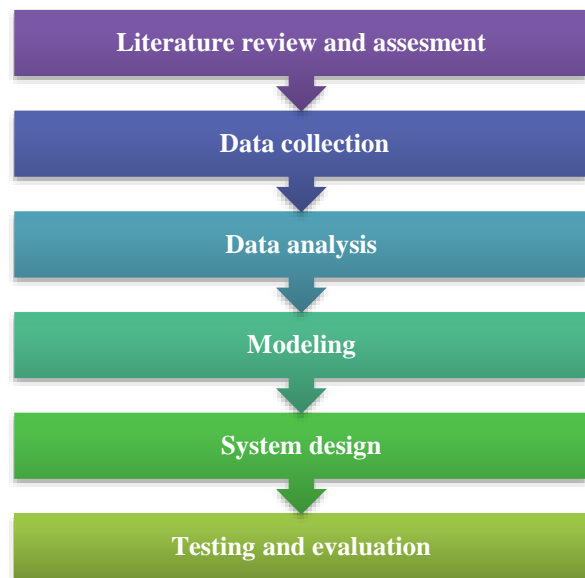The method used in this research is divided into several sections as shown in Figure 1.

Figure 1. Research Method

This research uses the profile matching method in the decision making process. Profile Matching is a decision making mechanism by assuming that there is an ideal level of

predictor variables that must be owned, not the minimum level that must be met or passed [10].

Employees who can be promoted in a position are those who are closest to the ideal profile. Profile matching has the task of comparing the competencies of positions so that different competencies (GAP) can be identified. Competency GAP is the difference between the actual employee profile and the ideal employee profile. The smaller the GAP produced the greater the value weights which means the greater the opportunity for employees to occupy that position. GAP values can be calculated using equation (1).

The steps in the Profile Matching method are as follows:

1. Determine aspects of assessment;
2. Mapping competency GAP;
3. Weighting; and
4. Calculation and Grouping of Core and Secondary Factors.

$$GAP = EProf - RProf \qquad (1)$$

Where EProf is the competency value owned by an employee and RProf is the expected ideal competency value.

After determining the value of the gap for each aspect of the assessment. Each aspect is grouped into two groups, namely the Core and Secondary Factor groups. The calculation of Core Factor values uses equation (2), while the calculation of Secondary Factor values uses equation (3).

$$CFV = \frac{\sum VC(Aspect)}{\sum IC} \qquad (2)$$

Where, **CFV** is the average value of Core Factor, **VC (Aspect)** = value of the Core Factor and **IC** are the Core Factor Items.

$$SFV = \frac{\sum VS(Aspect)}{\sum IS} \qquad (3)$$

With **SFV** as an average value of Secondary Factor, **VS (Aspect)** = Value of Secondary Factor and **IS** are Item aspects of Secondary Factor.

After obtaining the average value of Core and Secondary Factor, the total value of aspects is determined using equation (4).

$$V(Aspect) = (x\%)CFV + (y\%)SFV \qquad (4)$$

where, **V (Aspect)** is the total value of the aspect, (**x%**) is the percentage value of the core factor aspect while (**y%**) is the percentage value of the secondary factor.

The final step is to determine the final results in the form of employee rankings using equation (5).

$$Vi = \sum(x\%)V(Acpect) \qquad (5)$$

RESULTS AND DISCUSSION

The decision making process begins with determining aspects of assessment in determining the position of human resources. Furthermore, mapping the competency GAP is followed by weighting, then calculation and Grouping of Core and Secondary Factors can be obtained so that the proper sequence of human resource positions can be obtained.

1. Determination of aspects of the assessment

In this research an employee will be chosen to be placed in the public relations and admissions department. The evaluation aspects are based on

table 1.

Table 1. Aspects of personality assessment

No	Code	Aspects/ Criteria	Criteria Type
1	KP1	Leadership	SF
2	KP2	Creative	CF
3	KP3	Relation	CF
4	KP4	Experience	SF

Table 2. Aspects of work attitude assessment

No	Code	Aspects/ Criteria	Criteria Type
1	SK1	Responsibilities	CF
2	SK2	Accuracy	SF
3	SK3	Loyalty	CF
4	SK4	Planning	SF

2. Competency gap

Gap represents the difference between the value obtained from the results of the assessment are determined to employee selection participants. Employee value obtained from the difference in the value of the position profile and the value of the participant's profile. Table 3 shows the Gap competence of aspects of personality while Table 4 shows the competency gaps of aspects of the work attitude

Table 3. Gap competence aspects of personality

E_Id	KP1	KP2	KP3	KP4	
10544	4	2	5	2	participants value
10988	3	5	5	3	
12003	3	4	4	3	
11097	4	3	4	2	
12015	4	4	5	2	
	4	3	5	3	Position Profile
10544	0	-1	0	-1	GAP
10988	-1	2	0	0	
12003	-1	1	-1	0	
11097	0	0	-1	-1	
12015	0	1	0	-1	

Table 4. Gap competence aspects of the work attitude

E_Id	SK1	SK2	SK3	SK4	
10544	2	2	4	5	participants value
10988	3	2	3	5	
12003	3	3	4	4	
11097	2	3	3	5	
12015	3	2	4	5	
	3	2	5	4	Position Profile
10544	-1	0	-1	1	GAP
10988	0	0	-2	1	
12003	0	1	-1	0	
11097	-1	1	-2	1	
12015	0	0	-1	1	

3. Weighting

After gaps in each employee are obtained, the next is to determine the value weights by benchmarking the gab value weights (table 5).

Table 5. The weight table for gap values

No	Difference	Weight Value	Information
1	0	5	There is no difference
2	1	4.5	Individual competence is 1 level over
3	-1	4	Individual competencies lack 1 level
4	2	3.5	Individual competence 2 levels excess
5	-2	3	Individual competencies lack 2 levels
6	3	2.5	Individual competence 3 levels excess
7	-3	2	Individual competencies lack 3 levels
8	4	1.5	Individual competence 4 levels excess
9	-4	1	Individual competencies lack 4 levels

Table 6 shows the results of the competency gap mapping on aspects of personality by referring to table 5. While the

results of the mapping of competencies in the aspects of work attitude are shown in table 7.

Table 6. Personality mapping competency gaps

E_Id	KP1	KP2	KP3	KP4
10544	5	4	5	4
10988	4	3.5	5	5
12003	4	4.5	4	5
11097	5	5	4	4
12015	5	4.5	5	4

Table 7. Work attitude mapping competency gaps

E_Id	SK1	SK2	SK3	SK4
10544	4	5	4	4.5
10988	5	5	3	4.5
12003	5	4.5	4	5
11097	4	4.5	3	4.5
12015	5	5	4	4.5

4. Calculation and Grouping of Core and Secondary Factors

After weighting the value gap of these two aspects have been determined thereafter every aspect are grouped into two groups, namely the core factor and the secondary factor.

a. Personality aspects

Aspects of personality that are included in the core factor are KP2 (Creative) and KP3 (Relationship). By using the formulas in equation 2 and equation 3 the results are obtained as shown in table 8.

Table 8. Grouping weighting gab aspects of personality

E_Id	KP1	KP2	KP3	KP4	CF	SF
10544	5	4	5	4	4.50	4.50
10988	4	3.5	5	5	4.25	4.50
12003	4	4.5	4	5	4.25	4.50
11097	5	5	4	4	4.50	4.50
12015	5	4.5	5	4	4.75	4.50

b. Work attitude aspects

From the aspect of work attitude, which is included in the core factor is SK1 (Responsibility) and SK3 (Loyalty). By using the formula in equation 2 and equation 3 the results are obtained as shown in table 9.

Table 9. Grouping the weighting of the gab aspects of work attitudes

E_Id	SK1	SK2	SK3	SK4	CF	SF
10544	4	5	4	4.5	4.00	4.75
10988	5	5	3	4.5	4.00	4.75
12003	5	4.5	4	5	4.50	4.75
11097	4	4.5	3	4.5	3.50	4.50
12015	5	5	4	4.5	4.50	4.75

5. Calculation of total values

Based on the calculation of each aspect that has been done, then the total value will be calculated based on the percentage of core factors and secondary factors which are estimated to affect the performance of each profile.

Table 10. Total value of aspects of personality

E_Id	CF	SF	Personality Value
10544	4.50	4.50	4.50
10988	4.25	4.50	4.35
12003	4.25	4.50	4.35
11097	4.50	4.50	4.50
12015	4.75	4.50	4.60

Table 11. Total value of aspects of work attitude

E_Id	CF	SF	Total Work Attitude Value
10544	4.00	4.75	4.30
10988	4.00	4.75	4.30
12003	4.50	4.75	4.60
11097	3.50	4.50	4.00
12015	4.50	4.75	4.60

6. Calculation of Ranking

The final result of the profile matching process is the ranking of candidates submitted to fill public relations and admission positions. The ranking is done by calculation using equation 5 where aspects of personality and work attitude have the same weight that is 50%. Table 12 shows the final results of the process.

Table 12. Final results of the profile matching process

E_Id	Total Personality Value	Total Work Attitude Value	Final score
10544	4.50	4.30	4.40
10988	4.35	4.30	4.33
12003	4.35	4.60	4.48
11097	4.50	4.00	4.25
12015	4.60	4.60	4.60

From table 12, it appears that those who have competency in holding public relations and admission positions are employees with E_Id 12015. The second order is employees with E_Id 12003. The third sequence is employees with E_Id 10544. The fourth place is employees with E_Id 10988 while employees with E_Id 11097 come in last.

CONCLUSIONS

From the overall description that has been raised from the Decision Support System process to determine the position of employees in public relations and admission positions, it can be concluded that the profile matching method can be used to determine the ranking of employees who will occupy that position.

SUGGESTION

The advice given for the continuation of the next research is that the decision support system application can be developed and then can use other methods and the results can be compared with the results of this research.

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