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Prototype Decision Support System Selecting Employee for Certain Position Using Profile Matching

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Abstract: The large coverage area is managed by a company or government agencies with the number of employees who are not few and the many forms that must be reviewed one by one for each employee causing assessment methods interview which has been used in determining the particular position, not able to give a decision reasonable and often cause problems. Therefore, we need a method profile matching to support the decision to choose a competent employee to occupy a certain position. Prototype profile matching builds upon the soft competency (core competency and role competency) and hard competency (technical competency) with the test results the higher value end of an employee, the greater the chance or opportunity the employee for the proposed positions. It is suggested to companies and government agencies to utilize the profile matching method that is able to accelerate and simplify the decision-making process objectively and effectively.

Key words: Decision support system, profile matching, accelerate, soft competency, hard competency

INTRODUCTION

Human resource management based competency is a management process based on competency information need for organization and competency information of employee. Selecting the competent employees are still difficult and so, we need a system that can manage it. The prototype of decision support system for selecting employee in certain position was made to solve it. The system useprofile matching method because its appropriate for selection process (Heap *et al*., 2014; Malinowski *et al*., 2006).

Literature review: In the literature review, we can find many researches to solve decisions problems such as: combining career progression and profile matching in a job recommender system (Heap *et al*., 2014).

Matching people and jobs: A bilateral recommendation approach (Malinowski *et al*., 2006). Combinig numerical and linguistic information in group decision making (Delgado *et al*., 1998). Collaborative filtering for people to people recommendation in social networks (Cai *et al*., 2010). Consensus measures and adjusting inconsistency of linguistic (Fan and Chen, 2005). Fuzzy preference modelling and multicriteria decision support (Fodor and Roubens, 1994).

Linguistic decision analysis: Steps for solving decision problems under linguistic information preference relations in group decision making (Herrera and Herrera-Viedma, 2000; Sutthipornphalangkoon, 2016; Hilao, 2016). An approach for combining linguistic and numerical information based on 2-tuple fuzzy representation model in decision-making (Herrera and Martinez, 2000).

Decision consolidation: Criteria weight determination using multiple preference formats (Zhang *et al*., 2004). An approach to ordinal decision making (Yager, 1995).

MATERIALS AND METHODS

Research model: Profile Matching is a process comparing and calculating competency valuebetween the individual competencies and job competenciesin human resource management. Competencies is measured from core competency, role competencyand technical competency. The first stage is determine gap. Gap is the value differencebetween candidate's value competencies and job's value competencies:

GAP = Job's value competencies-Candidate's value competencies

The second stage is determine and classify core factor and secondary factor:

$$NCI = \frac{\Sigma NC}{\Sigma IC}$$

Where:
NCI = The average value of core factor
NC = The total number of core factor
IC = Number of core factor

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Table 1: Average values

	Average values					
	Core competency		Role competency		Technical competency	
Candidates	NCI	NSI	NCP	NSB	NCB	NSB
A	5.0	5.0	5.5	5.75	5.5	4.5
B	5.0	5.25	5.5	5.75	5.5	5.0
C	5.5	5.75	5.167	5.25	3.0	5.5
D	5.0	5.625	5.667	5.75	4.0	5.167
E	5.0	5.75	5.0	5.75	3.0	5.0

Table 2: Total scores

	Total scores		
Candidates	NI	NP	NB
A	5.0	5.6	4.8
B	5.1	5.6	5.3
C	5.6	5.2	4
D	5.25	5.7	4.4667
E	5.3	5.3	3.8

$$NSI = \frac{\Sigma NS}{\Sigma IS}$$

Where:

NSI = The average value of secondary factor
NS = The total number of secondary factor
IS = Number of secondary factor

The third stage is calculate total score using formula:

$$N = 60\% NC + 40\% NS$$

Where:

N = Total score
NC = Value of core factor
NS = Value of secondary factor

The fourth stage is calculate final score using formula:

$$Final\ Score = 20\% NI + 30\% NP + 50\% NB$$

Where:

NI = Score of core competency
NP = Score of role competency
NB = Score of technical competency

RESULTS AND DISCUSSION

Data analysis: The data used from X organization with industry type is manufacturing (Table 1-3). The prototype of aplication is described in Fig. 1. One of the candidates who nominated for a particular position.

Table 3: Final scores

	Total score			Final	
Candidates	NI	NP	NB	score	Ranking
B	5.1	5.6	5.3	5.34	1
D	5.25	5.7	4.4667	5.273	2
A	5.0	5.6	4.8	5.2	3
C	5.6	5.2	4	5.12	4
E	5.3	5.3	3.8	5.00	5

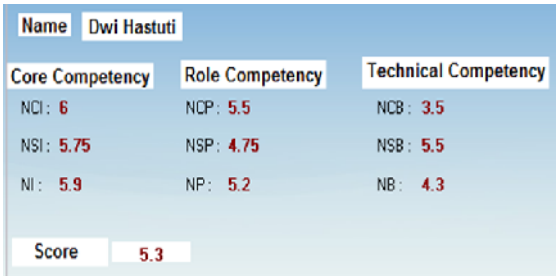

Fig. 1: Prototype candidate who nominated for a particular position

CONCLUSION

This system can help organization to make decision for determining the competent employee in a position.

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