



Artikel

Decision Supporting System For Assessment Of Recruitment And Employees Management With Analytical Hierarchy Process (AHP) Method In PT. Indo Porcelain

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ABSTRACT

Managing human resources in the company is very important where human resources are needed for the progress of the company, in most companies, of course, can utilize all the human resources obtained in accordance with the need to contribute in accordance with the needs of the company to achieve its goals.

PT. Indo Porcelain is engaged in manufacturing with ceramic dining table products, such as glassware, bowls and dishes. Problems faced by PT. Indo Porcelain is the absence of an integrated information system, so that the employee recruitment process requires time in making selection decisions for prospective employees while at the same time hampering the company's internal control.

With the decision support system using the Analytical Hierarchy Process method, the recruitment process is faster and easier. Information on the results of recruitment obtained by company management becomes more structured so that the decision support process taken by the management can produce more accurate decisions..

INTRODUCTION

The larger a company is, the greater the number of workers needed to contribute in accordance with the company's requirements to achieve approval. If labor issues are not systematically thought out, then of course they will adversely affect the company itself. This is intended so that the objectives of this company are agreed and implemented well. Recruitment and management system is one

of the things related to the availability of integrated information in an effort to create a system with efficient and competitive prospective employee data management. Efficient and competitive management of prospective employee data will certainly affect the results of decision making by the company. A reliable system will also prevent the occurrence of weaknesses due to various forms of fraud, human error such as lost

data, corrupted documents, important confidential data that is known to others, and also requires a process further to make a recapitulation of prospective employee reports. Therefore, it is very important for companies to have a well integrated system in storing prospective employee data and at the same time supporting the company's internal control. AHP, developed by Thomas L. Saaty [1], can solve a fairly complex problem in which there are quite a number of aspects or criteria. This complexity can also be caused by the structure of the problem that is not yet clear, the uncertainty of perception in decision making and the unavailability of accurate statistical data or even virtually nonexistent. Sometimes a problem arises and must make a decision as soon as possible to solve the problem, but the variations are classified as complicated so that the data of the problem may not be numerically recorded.

I. METHODS

Analytic Hierarchy Process Method (AHP)

This method is a framework for making effective decisions on complex problems by simplifying and speeding up the decision making process by solving the problem into its parts, arranging these parts or variables in a hierarchical arrangement, giving numerical values to subjective considerations of the importance of each variable and synthesize these considerations to determine which variable has the highest priority and act to influence the outcome of the situation.

This AHP method helps solve complex problems by structuring a hierarchy of criteria, interested parties, outcomes and by attracting various considerations to develop weights or priorities. This method also combines the power of feelings and logic involved in various problems, then synthesizes various considerations into results that match our estimates intuitively as presented in the considerations that have been made [1].

The hierarchy process is a model that provides opportunities for individuals or groups to develop ideas and defining the problem by making their respective assumptions and obtaining the desired solution from it. There are two reasons The main thing is to state an action is better than an action other. The first reason is the effects of these actions sometimes it cannot be compared because of the size or areadifferent and second, states that the effect of these actions sometimes clashing with each other, meaning the improvement of the effect of the actionone can be achieved by the other deterioration. Both of these reasons will make it difficult to make equivalence between influences so that a flexible scale called priority is needed.

Strengths of AHP Unity (Unity), AHP can make abroad and unstructured problems into a model flexible and relatively easy to understand. Complexity (Complexity), AHP can solve a problem that is classified as complex through a systems approach and integrated deductive. Each other dependency (Inter Dependence), AHP can be implemented on system elements that are not interconnected and do not require linear relationship. Hierarchy Structuring, AHP can represent natural thinking which tends to group elements the system into different levels where each level contains similar elements. Measurement (Measurement), AHP provides a measurement scale and method for obtaining values priority of each element of the criteria. Consistency, AHP consider a logical consistency value in the valuation used to determine a priority. Synthesis (Synthesis), AHP leads to an overall estimate in the hierarchy to find out how desirable each alternative is. Trade Off, AHP consider the relative priority of each factor contained in system so that people are able to choose the best alternative based on the goalas expected. Judgment and Consensus (Judgment and Consensus), AHP does not require a consensus, but combining the results of a different assessment. RepetitionProcess (Process Repetition), AHP

is able to make people filter definitions from an issue and develops judgment and understanding they go through a repetition process.

Disadvantages of AHP, AHP method has a dependency on input the main. The main input referred to is in the form of perception or interpretation of an expert so that in this case involves the subjectivity of the expert besides that the model becomes meaningless if the expert gives

wrong judgment. The AHP method is only a mathematical method. Without statistically testing based on historical data on problems that have been happened before, so there are no limits on trust and information strong supporter of the truth of the formed model. Analytic Hierarchy Process (AHP) method is one methods in decision support systems that are unique in compare the others. This is because in weighting criteria, the weight of each criterion is not determined at the beginning but is determined use the formula of this method based on priority scale (level interests) sourced from the current table. This method is a method which is perceptual, meaning the level of importance of a criterion alternatives depend on one's perspective or perspective rate it.



Figure 1. AHP Method Structure

The following is a table of importance used:

Table 1. Value of Importance in the AHP Method [1]

No	Nilai Kepentingan	Keterangan
1	1	Sama Penting
2	3	Cukup Penting (1 Level lebih penting di bandingkan kriteria lainnya)
3	5	Lebih Penting (2 Level lebih penting di bandingkan kriteria lainnya)
4	7	Sangat Lebih Penting (3 Level lebih penting di bandingkan kriteria lainnya)
5	9	Mutlak Lebih Penting (4 Level lebih penting di bandingkan kriteria lainnya atau level tertinggi)

In this method there is a Consistency Index value. The table of Consistency Ratio values

from the Analytic Hierarchy Process Method (AHP) method is as follows:

Table 2. Value of Consistency Index in AHP Method

No	Jumlah n Kriteria	RI _n
1	2	0
2	3	0.58
3	4	0.90
4	5	1.12
5	6	1.24
6	7	1.32
7	8	1.41
8	9	1.45
9	10	1.49

Named the Analytic Hierarchy Process Method (AHP) method because in this method the solution process is to solve each case by first completing the criteria weight matrix, then the alternatives. The uniqueness of this method compared to other methods, namely this method in determining the criteria weight (W_j) based on the evaluation of the criteria weight matrix is not determined in advance by stakeholders compared to other methods. There are 3 (three) elements in the AHP method, namely:

- 1) Problems
- 2) Criteria
- 3) Alternative

The following is the structure of the Analytic Hierarchy Process Method (AHP) method, which is as follows:

The algorithm for solving the Analytic Hierarchy Process Method (AHP) method is as follows:

- 1) Step 1: Define in advance the criteria that will serve as benchmarks for solving problems and determine the level of importance of each criterion.
- 2) Step 2: Calculate the Comparison Matrix Value of each criterion based on the importance value table
- 3) Step 3: Calculate the criteria weight value (W_j)
- 4) Step 4: Calculate the Consistency Index value
- 5) Step 5: Calculate the value of Consistency Ratio

II. RESULT

Results The purpose of this study was to develop an already established model formed

by the AHP method. Data were analyzed by conducting a validity test and reliability, determine hypotheses, and calculations with the AHP method.

AHP (Analytical Hierarchy Process) is one of the methods in the system Supports decisions that are unique compared to others. This matter Because in the criteria, the weight of each criterion is not determined Start by using the formula from this method based on priority scale(level of importance) sourced from the current table. This method is a method which are perceptual, meaning the level of importance of an alternative criterion depending on one's point of view or point of view [2] [3]. Example Problems:

The most important part of the analysis process is the following 3 (three) stages:

1. State the purpose of the analysis:
Assessment of prospective employees
2. Determine the criteria: Psychotest, Logic, Competence.
3. Determine alternative choices: Employee 1, Employee 2, Employee 3.

Table 3. Alternative Score

Kriteria	Psikotes	Logika	Kompetensi	Bobot Final	Rank	Keterangan
Karyawan1	0,18	0,14	0,11	13	1	Karyawan Diterima
Karyawan2	0,11	0,06	0,09	8,5	3	Tereeliminasi
Karyawan3	0,05	0,14	0,14	12	2	Tereeliminasi
Bobot	20	30	50			

This information is then arranged to form a multilevel tree

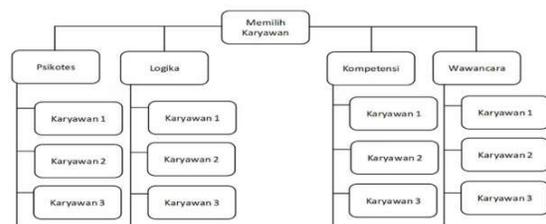


Figure 2. Tiered Tree Assessment Selecting Employees

Importance:

- 1 Fairly Important
- 3 Very important
- 5 Absolute Important

The following are the Calculation Results for the Candidates for Employee Candidates that are already in propose: Determination of Criteria

	0,20	0,21	-0,01	3
	0,30	0,30	0,00	2
	0,50	0,49	0,01	1
Psikotes	0,20		0,2000	Prioritas Ketiga
Logika	0,30		0,3000	Prioritas Kedua
Kompetensi	0,50		0,5000	Prioritas Pertama
	1,00		1,0000	

Segi Psikotes

Karyawan1	10	0,53	0,18
Karyawan2	6	0,32	0,11
Karyawan3	3	0,16	0,05
TOTAL	19		

Segi Logika

Karyawan1	15	0,41	0,14
Karyawan2	7	0,19	0,06
Karyawan3	15	0,41	0,14
TOTAL	37		

Segi Kompetensi

Karyawan1	7	0,32	0,11
Karyawan2	6	0,27	0,09
Karyawan3	9	0,41	0,14
TOTAL	22		

- conduct an assessment of competency tests in the field of work.
- The variables taken into account in the employee appraisal application are:
3. With this application it is very helpful for the HRD to do calculation of valuation as a consideration for supporting decisions and not need to check the completeness of employee data, as it is this application employee data has been configured in the application.
 4. By using the AHP method this application can work with the maximum and get accurate results.
1. Evaluation of the results of the psychological test which is to get a weight of 20 (Important enough)
 2. Evaluate the results of the logic test which is to get a weight of 30 (Very Important)
 3. Evaluation of the results of the competency ability test that is weighted 50 (Absolute Important)

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BIOGRAPHY

Tri Hartati received his Bachelor degree in Information System (S.Kom) from Buddhi Dharma University, Indonesia. Currently working as finance accounting at PT Indo Porcelain.

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