

# Employee e-Recruitment using the Simple Additive Weighting (SAW) Algorithm at PT Krakatau IT

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## ARTICLE HISTORY

Received : June 14, 2024

Revised : July 5, 2024

Accepted : August 5, 2024

## KEYWORDS

E-recruitment  
SAW algorithm  
Online Recruitment  
Human Resources



## ABSTRACT

Recruitment aims to get the right people according to criteria that suit the company's conditions and needs. Currently in Krakatau IT the recruitment system is implemented manually using the stages of receiving files in hardcopy or still using company email, carrying out written tests directly in paper form. This requires a long time in the process of file selection and assessment of test results. To overcome this problem, an online recruitment system is needed, starting from publishing job requirements/vacancies, selection stages and online assessments. This e-recruitment can make decision making easier, from identifying problems to selecting the right data. The decision-making methodology in designing e-recruitment uses the simple additive weighting (SAW) method can help improve the fit between employees and their roles, which can contribute to better performance so that employee selection is based on criteria that match job requirements.

## 1. Introduction

Employees are an asset for a company who have a very important role in human resources in achieving certain company goals. Human Resources (HR) who carry out operational and strategic tasks within the company. High-quality and high-performing employees can help companies achieve targets, increase productivity, and generate profits. Apart from that, competent human resources can bring new ideas and innovations to the Company, this will encourage long-term plans.

One of the long-term plans is a recruitment strategy, where recruiting quality employees requires the stages of identifying criteria, recruitment sources, comprehensive interviews as well as references and background checks of prospective employees. So, companies will look for individuals who have a good work ethic so that the company is able to survive amidst competitive competition and dynamic changes. In previous research, the main objective was to prove the effectiveness of the Simple Additive Weighting (SAW) method in the process of recruiting new employees by utilizing a web-based decision support system. The SAW method requires normalization of the decision matrix so that all criteria can be measured on an equivalent scale and then improvements are made to all the data. [1]

It was written in previous research that the basis for employee recruitment carried out by companies is driven by business needs to streamline operational activities. For example, PT POS Indonesia took advantage of the situation during the Covid-19 pandemic to identify workforce needs. With the increasing number of online business people running their businesses from home, PT POS Indonesia needs additional workers for delivery pickup services to serve these online business people. [12]

The stages that will be carried out in recruitment begin with determining clear criteria for prospective employees, including skills, experience and personality that match the company culture. Next, use recruitment sources, such as job websites, social networks, or recruiting companies to reach quality prospective employees.

In response to this matter, the company should conduct recruitment sources online independently with the aim of getting potential employee candidates from various geographical areas, opening opportunities to attract more diverse and high-quality talent. Online recruitment (*e-recruitment*) can save time and costs compared to traditional methods such as advertisements in newspapers or career fairs.

In previous research regarding the design of a Web-Based Employee Recruitment Information System Using PHP and MySQL at PT. Ria Indah Mandir where

the manual employee recruitment system causes less effectiveness in the selection process which causes a buildup of job application files. [10] Handling these problems in his research creates a Web-Based Employee Recruitment Information System or *e-Recruitment* for companies that can independently select the right employees for their company. [2]

Previous research shows that the problem faced in the employee recruitment process is the difficulty of finding competent human resources that suit the company's needs. Even though the company already has a website, information regarding employee recruitment has only been spread through social media and word of mouth. The application files received are stored after being grouped first, which can cause some of the files to be scattered or damaged and require quite a long time to manage. [10]

In previous research, with the existence of a web-based recruitment information system that can provide information regarding job vacancies for prospective employees as well as stages of the employee recruitment process such as document selection, online psychological tests, with the use of appropriate technology, it is hoped that it can provide improvements and develop the initial system. manual becomes a faster, easier, and more efficient information system.[6]

The recruitment stages have been carried out, the last is determining the right decision to support decisions determined using the *Simple Additive Weighting (SAW) method* which can help improve the suitability between employees and their roles, which can contribute to better performance so that employee selection is based on certain criteria. according to job requirements.

## 2. Method

### 2.1 Employee Recruitment Process Flow

Recruitment is a series of processes that begin with searching, finding, and attracting potential applicants to join the company. This process also involves two-way communication, where applicants need precise information regarding their experience working at the company. Meanwhile, organizations also need accurate information about how prospective applicants will perform if they join the company.[13] The purpose of recruitment is to obtain prospective employees which enables the recruiter to select or select candidates according to the qualifications required by the organization or company. Recruitment is considered efficient if it can produce many prospective workers who meet the required qualifications. Efficiency in recruitment is characterized by the availability of accurate and consistent data to achieve qualifications and the number of individuals needed to carry out various tasks in an organization.[14]

The current employee recruitment process has several steps including:

#### 1. Recruitment Planning

In this planning, the need to fill certain positions in the company will be determined by creating a job description that includes the duties, responsibilities and required qualifications.

#### 2. Job Vacancies Announcement

Usually, job vacancy announcements will be distributed via the company website.

#### 3. Acceptance of Applications

Prospective employees send their application letter and CV via email according to the information on the company website.

#### 4. Application Processing

After the data is collected in one folder, a recap of the applicant data is carried out in Microsoft Excel

#### 5. Initial Selection Process

Application screening is carried out by verifying whether prospective employees meet the requirements according to the specifications.

#### 6. Written selection process

Prospective employees who pass the initial selection will be contacted via telephone by the HR Team to carry out a written test. The HR Team will assess the written testing.

#### 7. Interview

After the results of the written selection assessment, prospective employees who pass will receive an invitation for a direct interview with the HR team and technical team who need the position.

#### 8. Reference Verification

The HR Team can contact references provided by prospective employees to verify their experience and work history.

#### 9. Decision-making

Conduct Candidate Evaluation to select the most suitable for the available position, if the candidate is selected, they will be given an official job offer.

#### 10. Onboarding

Hired employees follow an onboarding process, which includes orientation, administration, and initial training.

#### 11. Performance Tracking:

The performance of new employees is evaluated over a certain period after the start of employment.

## 2.2 Simple Additive Weighting (SAW) Algorithm

SAW (Simple Additive Weighting) algorithm is a method used in multi-criteria or multi-attribute decision making. This method is used to assist in the process of selecting alternatives which have a few criteria that must be assessed and ranked. The SAW algorithm calculates the total value or score for each alternative based on the weight given to each criterion.

The basic concept of the *Simple Additive Weighting method* is suggested to solve selection problems in multiprocessing decision-making systems. The basic concept of the SAW method is to calculate the total weight value of the performance assessment of each alternative on each attribute. [11]

Following are the basic steps in the SAW algorithm:

### 1. Determination of Criteria

Identify and define the criteria that will be used in decision making, so that the criteria must be relevant to the problem being faced.

### 2. Data collection:

Collect the data or information needed to assess each alternative in relation to each criterion. Data can be values, scores, or other numbers that can be measured.

### 3. Data Normalization

The data collected may be on a different scale. Data normalization is necessary to make all data on a uniform scale so that they can be compared. By using the formula:

$$R_{ij} = \frac{NA_{ij}}{Max_{ij}}$$

$R_{ij}$  = normalized rating value

$NA_{ij}$  = attribute value each alternative

$Max_{ij}$  = maximum value of all candidates

### 4. Determination of Weight

Determine the relative weight or level of importance of each criterion. This weight reflects the level of priority or preference of these criteria in decision making.

### 5. Score Calculation

Calculate the score for each alternative by multiplying the criterion value by its weight, then adding up the results.

$$SA = (BK_1 \times NK_1) + \dots + (BK_n \times NK_n)$$

Information:

SA = Alternative Score

BK = Criterion Weight

NK = Criterion Value

n = variable amount of data

### 6. Alternative Ratings

After calculating the scores for all alternatives, rank the alternatives based on highest score to lowest score. The alternative with the highest score is considered the best alternative according to predetermined criteria.

## 3. Results and Discussion

### 3.1 Analysis of the Normalization and Ranking Process Using Simple Additive Weighting Method.

The initial step in the SAW algorithm is determining the criteria used for employee acceptance, namely educational background, interest in work, knowledge about work, mastery of information technology, work experience, ability to analyze and solve problems, appearance and communication, work ethics and motivation. Detailed information and values for each criterion can be seen in Table 1.

Table 1. Weight of Employee Selection Criteria

Criteria	Mark	Information	Weight
Educational Background(K1)	0-50	Not Mastering	1
	51-64	Lack of Mastery	2
	65-79	Average	3
	80-90	Control	4
	91-100	Expert	5
Interest in Work (K2)	0-50	Not Mastering	1
	51-64	Lack of Mastery	2
	65-79	Average	3
	80-90	Control	4
	91-100	Expert	5
Knowledge About Work (K3)	0-50	Not Mastering	1
	51-64	Lack of Mastery	2
	65-79	Average	3
	80-90	Control	4
	91-100	Expert	5
Mastery of IT Field (K4)	0-50	Not Mastering	1
	51-64	Lack of Mastery	2
	65-79	Average	3
	80-90	Control	4

	91-100	Expert	5
Work Experience (K5)	0-50	Not Mastering	1
	51-64	Lack of Mastery	2
	65-79	Average	3
	80-90	Control	4
	91-100	Expert	5
Analyze & solve problems (K6)	0-50	Not Mastering	1
	51-64	Lack of Mastery	2
	65-79	Average	3
	80-90	Control	4
	91-100	Expert	5
Appearance & Communication (K7)	0-50	Not Mastering	1
	51-64	Lack of Mastery	2
	65-79	Average	3
	80-90	Control	4
	91-100	Expert	5
Work Ethics & Motivation (K8)	0-50	Not Mastering	1
	51-64	Lack of Mastery	2
	65-79	Average	3
	80-90	Control	4
	91-100	Expert	5

In the current research, the employee recruitment process that carries out the selection stages contains 10 data on prospective employees. The criteria values for the prospective employees are shown in Table 2.

Table 2. Data on Values of Prospective Employees

Alternative	K1	K2	K3	K4	K5	K6	K7	K8
Anthony	90	85	95	75	85	85	80	79
Amelia	80	86	75	75	65	80	75	80
Siti	80	82	95	80	90	85	85	75
Marie	85	90	95	79	70	90	85	82
goddess	90	81	85	75	65	79	88	79
Indigo	90	95	90	80	65	80	90	88
Nadia	79	90	90	75	65	80	85	85
Dimas	90	85	88	80	70	80	85	83
Dinda	82	85	85	75	70	75	80	84
Uki	78	88	90	72	60	75	75	90

1) Determination of the suitability rating for each alternative against each criterion outlined in the form of weights is shown in Table 3.

Table 3. Suitability Ratings Per Alternative

Alternative	K1	K2	K3	K4	K5	K6	K7	K8
Anthony	4	4	5	3	4	4	4	3
Amelia	4	4	3	3	3	4	3	4
Siti	4	4	5	4	4	4	4	3
Marie	4	4	4	3	3	4	4	4
goddess	4	4	4	3	3	3	4	3
Indigo	4	5	4	4	3	4	4	4
Nadia	3	4	4	3	3	4	4	4
Dimas	4	4	4	4	3	4	4	4
Dinda	4	4	4	3	3	3	4	4
Uki	3	4	4	4	3	3	3	4

2) The alternative suitability rating will be changed in the decision matrix as follows:

$$\begin{pmatrix} 4 & 4 & 5 & 3 & 4 & 4 & 4 & 3 \\ 4 & 4 & 3 & 3 & 3 & 4 & 3 & 4 \\ 4 & 4 & 5 & 4 & 4 & 4 & 4 & 3 \\ 4 & 4 & 4 & 3 & 3 & 4 & 4 & 4 \\ 4 & 4 & 4 & 3 & 3 & 3 & 4 & 3 \\ 4 & 5 & 4 & 4 & 3 & 4 & 4 & 4 \\ 3 & 4 & 4 & 3 & 3 & 4 & 4 & 4 \\ 4 & 4 & 4 & 4 & 3 & 4 & 4 & 4 \\ 4 & 4 & 4 & 3 & 3 & 3 & 4 & 4 \\ 3 & 4 & 4 & 4 & 3 & 3 & 3 & 4 \end{pmatrix}$$

3) Matrix normalization in stage 2 will be calculated using table 3 using the data normalization step formula:

a. Educational background criteria (K1)

$$\begin{aligned} r_{11} &= 4/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 1 \\ r_{21} &= 4/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 1 \\ r_{31} &= 4/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 1 \\ r_{41} &= 4/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 1 \\ r_{51} &= 4/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 1 \\ r_{61} &= 4/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 1 \\ r_{71} &= 3/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 0.75 \\ r_{81} &= 4/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 1 \\ r_{91} &= 4/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 1 \\ r_{101} &= 3/\{\text{Max}(4,4,4,4,4,3,4,4,3)\} = 0.75 \end{aligned}$$

b. Criteria for interest in work (K2)

$$\begin{aligned} r_{12} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \\ r_{22} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \\ r_{32} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \\ r_{42} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \\ r_{52} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \\ r_{62} &= 5/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 1 \\ r_{72} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \\ r_{82} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \\ r_{92} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \\ r_{102} &= 4/\{\text{Max}(4,4,4,4,5,4,4,4,4)\} = 0.8 \end{aligned}$$

c. Criteria for knowledge of work (K3)

$$\begin{aligned} r_{13} &= 5/\{\text{Max}(5,3,5,4,4,4,4,4,4)\} = 1 \\ r_{23} &= 3/\{\text{Max}(5,3,5,4,4,4,4,4,4)\} = 0.6 \\ r_{33} &= 5/\{\text{Max}(5,3,5,4,4,4,4,4,4)\} = 1 \\ r_{43} &= 4/\{\text{Max}(5,3,5,4,4,4,4,4,4)\} = 0.8 \\ r_{53} &= 4/\{\text{Max}(5,3,5,4,4,4,4,4,4)\} = 0.8 \end{aligned}$$

$$\begin{aligned}
r_{63} &= 4/\{ \text{Max}(5,3,5,4,4,4,4,4,4) \} = 0.8 \\
r_{73} &= 4/\{ \text{Max}(5,3,5,4,4,4,4,4,4) \} = 0.8 \\
r_{83} &= 4/\{ \text{Max}(5,3,5,4,4,4,4,4,4) \} = 0.8 \\
r_{93} &= 4/\{ \text{Max}(5,3,5,4,4,4,4,4,4) \} = 0.8 \\
r_{103} &= 4/\{ \text{Max}(5,3,5,4,4,4,4,4,4) \} = 0.8
\end{aligned}$$

d. Criteria for mastering the IT field (K4)

$$\begin{aligned}
r_{14} &= 3/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 0.75 \\
r_{24} &= 3/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 0.75 \\
r_{34} &= 4/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 1 \\
r_{44} &= 3/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 0.75 \\
r_{54} &= 3/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 0.75 \\
r_{64} &= 4/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 1 \\
r_{74} &= 3/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 0.75 \\
r_{84} &= 4/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 1 \\
r_{94} &= 3/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 0.75 \\
r_{104} &= 4/\{ \text{Max}(3,3,4,3,3,4,3,4,3,4) \} = 1
\end{aligned}$$

e. Work experience criteria (K5)

$$\begin{aligned}
r_{15} &= 4/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 1 \\
r_{25} &= 3/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 0.75 \\
r_{35} &= 4/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 1 \\
r_{45} &= 3/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 0.75 \\
r_{55} &= 3/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 0.75 \\
r_{65} &= 3/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 0.75 \\
r_{75} &= 3/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 0.75 \\
r_{85} &= 3/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 0.75 \\
r_{95} &= 3/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 0.75 \\
r_{105} &= 3/\{ \text{Max}(4,3,4,3,3,3,3,3,3,3) \} = 0.75
\end{aligned}$$

f. Criteria for the ability to analyze and solve problems (K6)

$$\begin{aligned}
r_{16} &= 4/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 1 \\
r_{26} &= 4/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 1 \\
r_{36} &= 4/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 1 \\
r_{46} &= 4/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 1 \\
r_{56} &= 3/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 0.75 \\
r_{66} &= 4/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 1 \\
r_{76} &= 4/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 1 \\
r_{86} &= 4/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 1 \\
r_{96} &= 3/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 0.75 \\
r_{106} &= 3/\{ \text{Max}(4,4,4,4,3,4,4,4,3,3) \} = 1
\end{aligned}$$

g. Appearance and communication criteria (K7)

$$\begin{aligned}
r_{17} &= 4/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 1 \\
r_{27} &= 3/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 0.75 \\
r_{37} &= 4/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 1 \\
r_{47} &= 4/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 1 \\
r_{57} &= 4/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 1 \\
r_{67} &= 4/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 1 \\
r_{77} &= 4/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 1 \\
r_{87} &= 4/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 1 \\
r_{97} &= 4/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 1 \\
r_{107} &= 3/\{ \text{Max}(4,3,4,4,4,4,4,4,4,3) \} = 0.75
\end{aligned}$$

h. Criteria for work ethics and motivation (K8)

$$\begin{aligned}
r_{18} &= 3/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 0.75 \\
r_{28} &= 4/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 1 \\
r_{38} &= 3/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 0.75 \\
r_{48} &= 4/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 1 \\
r_{58} &= 3/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 0.75 \\
r_{68} &= 4/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 1 \\
r_{78} &= 4/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 1 \\
r_{88} &= 4/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 1 \\
r_{98} &= 4/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 1 \\
r_{108} &= 4/\{ \text{Max}(3,4,3,4,3,4,4,4,4,4) \} = 1
\end{aligned}$$

From the calculation above, the normalization matrix (NK) values are produced as follows:

$$\begin{pmatrix}
1 & 0.8 & 1 & 0.75 & 1 & 1 & 1 & 0.75 \\
1 & 0.8 & 0.6 & 0.75 & 0.75 & 1 & 0.75 & 1 \\
1 & 0.8 & 1 & 1 & 1 & 1 & 1 & 0.75 \\
1 & 0.8 & 0.8 & 0.75 & 0.75 & 1 & 1 & 1 \\
1 & 0.8 & 0.8 & 0.75 & 0.75 & 0.75 & 1 & 0.75 \\
1 & 1 & 0.8 & 1 & 0.75 & 1 & 1 & 1 \\
0.75 & 0.8 & 0.8 & 0.75 & 0.75 & 1 & 1 & 1 \\
1 & 0.8 & 0.8 & 1 & 0.75 & 1 & 1 & 1 \\
1 & 0.8 & 0.8 & 0.75 & 0.75 & 0.75 & 1 & 1 \\
0.75 & 0.8 & 0.8 & 1 & 0.75 & 1 & 0.75 & 1
\end{pmatrix}$$

4) The weighting values for each criterion has different amounts. Criterion weight values (BK) are shown in Table 4.

Table 4. Criteria Values

Criteria	Weight	BK (Criterion Weight)
K1	4	0.1
K2	6	0.15
K3	5	0.125
K4	4	0.1
K5	5	0.125
K6	6	0.15
K7	4	0.1
K8	6	0.15

5) The SAW method used is given a feasibility value as shown in Table 5.

Table 5. SAW Method Feasibility Value

No	Mark	Category
1	0 – 0.85	Not accepted
2	0.86 – 0.9	Recommended
3	0.91 - 1	Accepted

6) The score calculation to carry out the process of ranking the highest alternative is designed to multiply the matrix using the formula BK \* NK, adding up the results of the multiplication to obtain the best alternative score in accordance with the feasibility value of the SAW method.

Table 6. Alternative Scores

Alternative	K1	K2	K3	K4	K5	K6	K7	K8	SA
Antonia	0.10	0.12	0.13	0.08	0.13	0.15	0.10	0.11	0.91

Amelia	0.10	0.12	0.08	0.08	0.09	0.15	0.08	0.15	0.84
Siti	0.10	0.12	0.13	0.10	0.13	0.15	0.10	0.11	0.93
Marie	0.10	0.12	0.10	0.08	0.09	0.15	0.10	0.15	0.89
Dewi	0.10	0.12	0.10	0.08	0.09	0.11	0.10	0.11	0.81
Indigo	0.10	0.15	0.10	0.10	0.09	0.15	0.10	0.15	0.94
Nadia	0.08	0.12	0.10	0.08	0.09	0.15	0.10	0.15	0.86
Dimas	0.10	0.12	0.10	0.10	0.09	0.15	0.10	0.15	0.91
Dinda	0.10	0.12	0.10	0.08	0.09	0.11	0.10	0.15	0.85
Uki	0.08	0.12	0.10	0.10	0.09	0.15	0.08	0.15	0.86

7) From the results of the alternative scores above, a temporary decision value will be obtained in the Simple Additive weighting method calculation, which is in table 7.

Table 7. Ranking Result Values

Alternative	S.A	Results	Rank
Anthony	0.91	Accepted	4
Amelia	0.84	Not accepted	9
Siti	0.93	Accepted	2
Marie	0.89	Recommended	5
goddess	0.81	Not accepted	10
Indigo	0.94	Accepted	1
Nadia	0.86	Recommended	7
Dimas	0.91	Accepted	3
Dinda	0.85	Not accepted	8
Uki	0.86	Recommended	6

From the value table, the ranking results of the highest value of the alternatives can be seen in the table according to the value.

Eligibility calculated using the Simple Additive Weighting method, the achievement of 0.91 being accepted as an employee is Indigo (0.94), Siti (0.93), Dimas (0.91) and Antonia (0.91). Meanwhile, the recommended result is that the accepted alternative resigns, then that alternative will be replaced.

### 3.2 Application Implementation

1) Recruitment planning and announcements  
 Planning will be carried out by Human Capital and will then be announced via the Website.

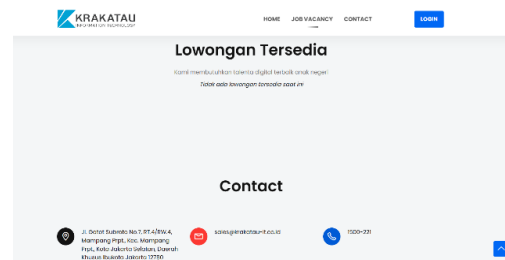


Figure 1. Recruitment Announcement

2) Registration of prospective employees

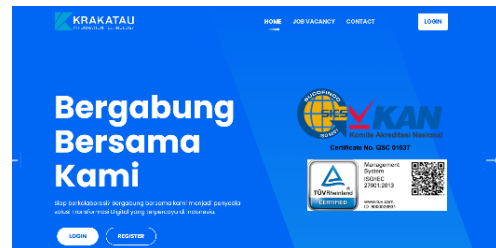


Figure 2. Recruitment Register

Figure 3. Input personal data for prospective employees.

### 3) Acceptance, Processing and Selection of Vacancies



Figure 4. Vacancies Acceptance Process

### 4) Assessment of Test Results

Hasil Assesment					
Kode	Assmnt	Bobot	Target Nilai	Asesns	
				Nilai	Nilai
K1	Latar Belakang Pendidikan	4	91	99	80
K2	Misat Pula Pekerjaan	6	91	85	86
K3	Pengalaman Testang Pekerjaan	5	91	95	75
K4	Pengasaan Bidang IT	4	91	75	75
K5	Pengalaman Pekerjaan	5	91	85	65
K6	Analisis & memecahkan masalah	6	91	85	80
K7	Penampilan & Komunikasi	4	91	80	75
K8	Etika Kerja & Motivasi	6	91	79	80

Figure 5. Assessment of Test Results

For ranking the output of the SAW method is:

HASIL AKHIR ASSESMENT				
Periode : 26 Desember 2023 s.d 30 Desember 2023				
Name	Skor Akhir	Hasil	Ranking	
1 Antonia	91	Diterima	4	
2 Amelia	84	Tidak Diterima	9	
3 Siti	93	Diterima	2	
4 Marie	89	Direkomendasikan	5	
5 Devi	81	Tidak Diterima	10	
6 Indigo	94	Diterima	1	
7 Nadia	86	Direkomendasikan	7	
8 Dimas	91	Diterima	3	
9 Dinda	85	Tidak Diterima	8	
10 Uki	86	Direkomendasikan	6	

Figure 6. Final Assessment Results

## 4. Conclusion

From the results of the discussion, it can be concluded that to be accepted as an employee, significant test results are needed which have the criteria of Interest in Work, Analysis & solving problems, and Work Ethics & Motivation. These three criteria could influence the results of the assessment, if the score obtained is high, it will reach the target, whereas, conversely, if the score obtained is low, the results will not be accepted for work. Based on the test results using the SAW method in *e-recruitment*, it produces a decision according to the category of suitability value which is declared " **Accepted** ".

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