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IT Personnel Recruitment Decision Support System: Combination of TOPSIS and Entropy Weighting Methods

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Abstract: IT personnel recruitment is an important process that aims to get the best talent in the field of information technology to support operations and innovation in an organization. IT personnel recruitment faces several key challenges that often make it difficult for companies to find the right candidates. One of the main problems is that the recruitment process can also be constrained by difficulties in assessing a candidate's cultural and interpersonal fit, where high technical skills are not necessarily balanced by good communication and teamwork skills. The purpose of this study is to apply DSS that integrates the TOPSIS and entropy weighting methods in the IT recruitment process, so that it can help companies select the best candidates effectively and objectively. The system is designed to improve the accuracy of candidate identification through multi-criteria analysis. An IT personnel recruitment decision support system that combines TOPSIS and entropy methods is an innovative approach designed to increase effectiveness in selecting the best candidates based on relevant criteria. The results of Candidate G ranking were ranked highest with a score of 0.932, followed by Candidate A with a score of 0.7069, Candidate C with a score of 0.645, and Candidate E with a score of 0.6443. Furthermore, Candidate I in the middle position with a score of 0.5023, followed by Candidate D with a score of 0.3417. Candidate B and Candidate H are in a lower position with values of 0.2188 and 0.1817, respectively. Candidate F ranked at the bottom with a score of 0.0519.
Keywords: Candidate; Decision Support System; Entropy; Recruitment; TOPSIS;

1. INTRODUCING

IT personnel recruitment is an important process that aims to get the best talent in the field of information technology to support operations and innovation in an organization. In this process, companies look for candidates who have relevant technical skills, such as programming, data analysis, cybersecurity, and systems management, as well as high analytical thinking and problem-solving abilities. Given the rapid development of technology, recruitment in the IT sector also emphasizes the ability to adapt and learn quickly in candidates to keep up with the latest trends and technologies. In addition,

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communication and teamwork skills are an important plus, as many IT projects require cross-division collaboration. The selection process can include technical interviews, practice tests, and soft skills assessments to ensure that the selected candidates are able to meet the needs of the organization effectively and contribute to long-term goals. IT personnel recruitment faces several key challenges that often make it difficult for companies to find the right candidates. One of the main problems is that the recruitment process can also be constrained by difficulties in assessing a candidate's cultural and interpersonal fit, where high technical skills are not necessarily balanced by good communication and teamwork skills. One solution to overcome this problem is to use a decision support system approach.

A Decision Support System (DSS) is a computer-based system that aids in decision-making, especially in complex situations and involves many criteria or variables[1]–[3]. DSS combines data, models, and analysis methods to process information so that users can make faster, objective, and more informed decisions. This system is often used to solve problems that are semi-structured or unstructured, where decisions are based not only on intuition or experience, but also on measurable data and analysis. With the help of algorithms and analytical methods such as weighting, ranking, or alternative benchmarking, SPK can be implemented in various fields, including human resource management, finance, logistics, and more, to improve the quality of decisions and support organizational operational efficiency. The purpose of the DSS is to assist decision-makers in solving complex problems that involve many criteria, so that decisions can be made faster, objectively, and accurately[4]. DSS aims to provide measurable and structured analysis through the combination of data, models, and analytical methods, thereby minimizing the potential for errors and improving the quality of decisions. One of the methods in DSS is the technique for others preference by similarity to ideal solution (TOPSIS).

TOPSIS is a multi-criteria decision-making method that aims to rank or select the best alternative based on its proximity to the ideal solution[5]–[7]. This method works with the concept that the best alternative should have the closest distance from the positive ideal solution (the best possible alternative) and the furthest distance from the negative ideal solution (the worst alternative). The process involves several stages, ranging from normalizing the data, weighting each criterion, calculating the ideal positive and negative solutions, to determining the distance of each alternative from the solution[8], [9]. With TOPSIS, each alternative is analyzed based on relevant criteria and weighted proportionally according to its level of importance. One of the disadvantages of TOPSIS in terms of criterion weight, the results of TOPSIS are highly dependent on the weight given to each criterion. If the weights are not determined objectively or by the right method, the results can become inaccurate, causing the best alternatives not to be properly identified. To cover the weakness of TOPSIS in the weight of the criteria, a weighting technique was used using a method based on the removal effects of criteria (MEREC).

The Entropy weighting method is a statistical approach used in decision support systems to objectively determine the weighting of criteria based on the degree of variation or data dispersion of each criterion[10], [11]. The basic principle of this method is that criteria with higher value variations tend to have more information and, therefore, have a more significant weight compared to criteria that have more uniform values[12], [13]. The main advantage of the Entropy method is its ability to generate weights that are free of subjectivity because the calculation process is based entirely on actual data, not the subjective judgment or preferences of the decision maker. In addition, this method is highly effective in handling complex multi-criteria data, thus improving the accuracy of the analysis and helping to ensure that each criterion is evaluated according to its informational contribution to the overall decision[14].

Previous research in the selection of IT staff admissions was carried out by Adhicandra (2024) the application of the Preference Selection Index method in the selection process

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based on objective factors that can result in the selection of competent employees[15]. Research by Lestari (2024) the F-AHP and F-TOPSIS methods assist in group-based decision-making in evaluating prospective employees, thus providing a strong foundation for recruitment decision-making[16]. The difference between this study and the previous research lies in the method used to determine the weight of the criteria and approach in the selection process. This research is different because it uses the Entropy and TOPSIS methods for IT employee selection. The Entropy method is used to objectively determine the weight of the criteria based on the distribution of existing data, so as to avoid subjectivity and ensure that each criterion has a weight according to its information contribution. TOPSIS is then used to rank candidates based on proximity to the ideal solution, which helps in identifying the best candidates who meet the criteria optimally.
The purpose of this study is to apply DSS which integrates the TOPSIS method and entropy weighting in the IT recruitment process, so that it can help companies select the best candidates effectively and objectively. The system is designed to improve the accuracy of candidate identification through a multi-criteria analysis that includes technical skills, problem-solving skills, communication, experience, and other relevant aspects.

2. RESEARCH METHODOLOGY

A research framework is a structure or plan used to guide and organize the research process[17]. The purpose of the research framework is to provide clear and systematic guidance throughout the research process, so that researchers can identify the steps that need to be taken, determine the right approach, and understand the context and background of the study being conducted.

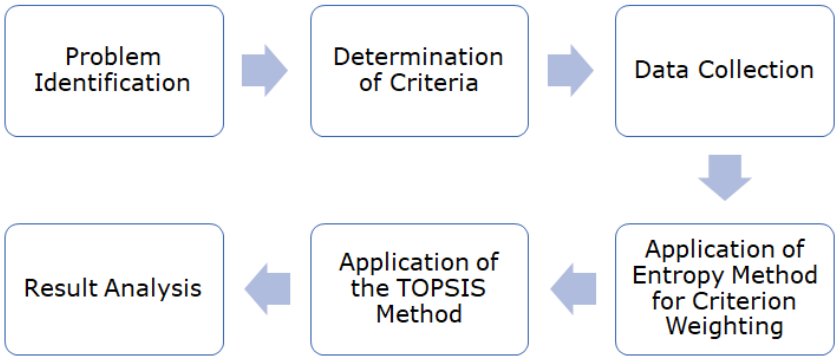

Figure 1. Research Framework

Problem Identification: Identifying challenges faced in the IT hiring process, such as subjectivity in candidate assessment, difficulty in determining relevant criteria, and the need for more efficient and objective systems. At this stage, the researcher conducts a literature review to understand the context and needs of the decision support system in recruitment.

Criteria Determination: Determining the criteria that will be used to assess IT candidates. These criteria can include technical skills, work experience, communication abilities, education, and certifications. This criterion must be relevant to the position to be filled and must be agreed upon by the hiring team.

Data Collection: Collecting assessment data from prospective candidates. This data can be obtained through interviews, questionnaires, or candidate portfolios. This data collection is important to provide accurate information for further analysis.

Application of Entropy Method for Weighting Criteria: Using the Entropy method to calculate the weights of each criterion based on the degree of variation in the data

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obtained. This method gives more objective weight by considering how informative each criterion is in decision-making.

Application of the TOPSIS Method: After the weights are determined, apply the TOPSIS method to assess and rank candidates based on the criteria that have been weighted. In this stage, TOPSIS steps are carried out, including normalization of the decision matrix, calculation of the distance from the positive and negative ideal solutions, as well as the calculation of the final score for each alternative.

Result Analysis: Analyze the results of the application of the TOPSIS method to determine the best candidates. Researchers should examine the resulting rankings, analyze sensitivity to changes in criterion weights, and evaluate the consistency of results with recruitment objectives.

Entropy Method

The entropy method is a technique used to determine the weight of criteria in multi-criteria decision-making by considering the level of uncertainty and information contained in the data. This method is based on the principles of information theory, where each criterion is assessed based on the variation or uncertainty of the associated data. The entropy method helps in identifying and assigning proportionate weight to the criteria that have a greater contribution to the final decision, thereby increasing objectivity and accuracy in the alternative evaluation process.

Decision Matrix: a table that presents the values or scores of several alternatives against some criteria. This matrix serves to assist decision-makers in determining the best alternative based on predetermined criteria.

$$X = \begin{bmatrix} x_{11} & \cdots & x_{1n} \\ \vdots & \ddots & \vdots \\ x_{m1} & \cdots & x_{mn} \end{bmatrix} \quad (1)$$

Decision Matrix Normalization: normalization is done to convert data into the same scale so that it can be compared directly. This is important so that the values of each alternative under different criteria do not affect each other.

$$k_{ij} = \frac{x_{ij}}{\sum_{j=1}^{n} x_{ij}} \quad (2)$$

Entropy Calculation for Each Criterion: Once the data is normalized, this stage calculates the entropy value for each criterion, which describes the level of uncertainty or variation in the data. The higher the entropy value, the less information the criterion can provide.

$$E_j = -\frac{1}{\ln m} \sum_{i=1}^{n} k_{ij} \ln(k_{ij}) \quad (3)$$

Calculation of Dispersion Value: The dispersion value is a measure that describes the distribution or variation of data in a dataset.

$$D_j = 1 - E_j \quad (4)$$

Criterion Weight Calculation: Once the dispersion value is calculated, this stage calculates the weights for each criterion. The weight of the criteria reflects how important the criteria are in decision-making.

$$w_j = \frac{D_j}{\sum_{j=1}^{n} D_j} \quad (5)$$

Through the stages of the entropy method, it provides a systematic and mathematical approach to calculate the weight of criteria in multi-criteria decision-making. The equations used in this process help guarantee that the results are objective and reliable.

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TOPSIS Method

The TOPSIS method is a multi-criteria decision-making technique used to select the best alternative by comparing it based on its proximity to the ideal solution. The advantages of the TOPSIS method are its ease of understanding and application, as well as the ability to generate clear rankings and support data-driven decisions in complex situations.

Decision Matrix Preparation: Collect data from alternatives to be evaluated based on established criteria. The decision matrix is arranged using equation (1).

Decision Matrix Normalization: Normalization is done to ensure that all criteria are on the same scale. Normalization can be done using the following formula for each element with the following formula:

$$x_{ij}^{*} = \frac{x_{ij}}{\sqrt{\left[\sum_{i=1}^{j} x_{ij}^{2}\right]}} \quad (6)$$

Weighted Decision Matrix: Multiply the normalized value by the weights with the following formula:

$$v_{ij} = w_j * x_{ij}^{*} \quad (7)$$

Determination of Ideal and Anti-Ideal Solutions: Determining the ideal solution and anti-ideal solution for each criterion with the following formula:

$$y_j^{+} = \begin{cases} max_i y_{ij} \,; if\ j\ is\ a\ benefit\ attribute \\ min_i y_{ij} \,; if\ j\ is\ a\ cost\ attribute \end{cases} \quad (8)$$

$$y_j^{-} = \begin{cases} min_i y_{ij} \,; if\ j\ is\ a\ benefit\ attribute \\ max_i y_{ij} \,; if\ j\ is\ a\ cost\ attribute \end{cases} \quad (9)$$

Distance Calculation: Calculate the distance of each alternative of the ideal and anti-ideal solution with the following formula:

$$D_i^{+} = \sqrt{\sum_{j=1}^{n} \left(y_i^{+} - y_{ij}\right)^2} \quad (10)$$

$$D_i^{-} = \sqrt{\sum_{j=1}^{n} \left(y_{ij} - y_i^{-}\right)^2} \quad (11)$$

Preference Index Calculation: Calculates the preference index for each alternative with the following formula:

$$V_i = \frac{D_i^{-}}{D_i^{-} + D_i^{+}} \quad (12)$$

The TOPSIS method is an effective and intuitive approach to solving multi-criteria decision-making problems. By identifying ideal and anti-ideal solutions, this method provides a clear way to compare alternatives based on how close they are to the desired solution, making it easier to make more informed and objective decisions.

3. RESULT AND DISCUSSIONS

An IT personnel recruitment decision support system that combines TOPSIS and entropy methods is an innovative approach designed to increase effectiveness in selecting the best candidates based on relevant criteria. In this system, the entropy method is used to objectively determine the weight of the criteria, thus reflecting the level of information and variation contained in the candidate's data. Once the weights are established, the TOPSIS method is applied to evaluate and compare candidate alternatives by measuring each candidate's proximity to the ideal solution and away from the anti-ideal solution. This system not only increases transparency and accuracy in the recruitment process, but also provides a solid foundation for better decision-making in the selection of IT personnel that suits the needs of the organization.

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Data Collection

Data collection is a crucial stage in the process of developing a decision support system for IT personnel recruitment that combines the TOPSIS and Entropy methods, because accurate and relevant data greatly determines the quality of evaluation results. This process involves gathering information about the candidate, which includes criteria such as work experience, technical skills, education, and interpersonal abilities. Data can be obtained through a variety of sources, including resumes, interviews, and psychometric assessments. By collecting comprehensive and structured data, organizations can ensure that recruitment decisions are based on valid and trustworthy information, thereby increasing the likelihood of proper candidate selection. The criteria in IT personnel recruitment are essential to ensure that the selected candidates match the needs and expectations of the organization. Here are some common criteria that are often used in IT personnel recruitment:

a) Work Experience (C01): A history of work experience in the IT industry, including experience in similar companies or in relevant projects, is an important factor in assessing a candidate's abilities.
b) Technical Skills (C02): Specific skills required for the position, such as programming, database management, cybersecurity, web development, or mastery of specific tools and technologies (e.g., Python, Java, SQL, AWS).
c) Education (C03): The level of formal education, such as an undergraduate or graduate degree in a related field (e.g., Informatics Engineering, Information Systems, or Computer Science), can be an indicator of a candidate's basic qualifications.
d) Professional Certifications (C04): Having a certification in IT, such as Cisco Certified Network Associate (CCNA), Certified Information Systems Security Professional (CISSP), or Microsoft Certified Solutions Expert (MCSE), demonstrates commitment and in-depth understanding of a specific field.
e) Interpersonal Skills (C05): Communication skills, teamwork, and the ability to interact with various stakeholders within an organization are essential for success in a collaborative work environment.
f) Problem Solving Skills (C06): The ability to analyze problems, think critically, and provide effective solutions is a highly valued criterion in the dynamic and frequent IT world that faces technical challenges.
g) Leadership and Project Management (C07): For senior positions, the ability to lead a team, manage projects, and make strategic decisions becomes an important additional criterion.

Assessment data in IT personnel recruitment is presented in Table 1.

Table 1. Assessment Data in IT Personnel Recruitment

Candidate Name	C01	C02	CO3	C04	C05	C06	C07
Candidate A	5	S1	9	6	8	7	6
Candidate B	2	D3	6	9	7	8	5
Candidate C	4	S1	8	8	9	9	8
Candidate D	3	D3	7	5	6	6	7
Candidate E	4	S1	9	7	8	8	9
Candidate F	1	D3	5	6	5	5	4
Candidate G	5	S2	8	8	8	8	7
Candidate H	2	D3	6	4	6	7	5
Candidate I	3	S1	7	7	9	8	6

Conversion of assessment data is a process carried out to convert the raw values obtained from candidate evaluations into a more standardized and easy-to-understand

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format, thus facilitating analysis and decision-making. Table 2 is the result of the conversion of assessment data.

Table 2. Conversion of Assessment Data in IT Personnel Recruitment

Candidate Name	C01	C02	CO3	C04	C05	C06	C07
Candidate A	5	2	9	6	8	7	6
Candidate B	2	1	6	9	7	8	5
Candidate C	4	2	8	8	9	9	8
Candidate D	3	1	7	5	6	6	7
Candidate E	4	2	9	7	8	8	9
Candidate F	1	1	5	6	5	5	4
Candidate G	5	3	8	8	8	8	7
Candidate H	2	1	6	4	6	7	5
Candidate I	3	2	7	7	9	8	6

The results of the conversion of assessment data are a crucial step in ensuring that the recruitment process runs efficiently and effectively, resulting in the selection of candidates that best suit the needs of the organization.

Implementation of Entropy Weighting Method

The implementation of the entropy weighting method is an important step in the decision support system to determine the relative weight of each criterion in the evaluation process. This method focuses on measuring the uncertainty of the information contained in the assessment data, so that it can provide a more objective weight based on the contribution of each criterion to the final result.

Decision matrix to assist decision-makers in determining the best alternative based on pre-defined criteria using (1).

$$X = \begin{bmatrix} 5 & 2 & 9 & 6 & 7 & 7 & 6 \\ 2 & 1 & 6 & 9 & 8 & 8 & 5 \\ 4 & 2 & 8 & 8 & 9 & 9 & 8 \\ 3 & 1 & 7 & 5 & 6 & 6 & 7 \\ 4 & 2 & 9 & 7 & 8 & 8 & 9 \\ 1 & 1 & 5 & 6 & 5 & 5 & 4 \\ 5 & 3 & 8 & 8 & 8 & 8 & 7 \\ 2 & 1 & 6 & 4 & 6 & 7 & 5 \\ 3 & 2 & 7 & 7 & 9 & 8 & 6 \end{bmatrix}$$

The normalization of the decision matrix is carried out to convert the data into the same scale so that it can be directly compared and calculated using equation (2).

$$k_{11} = \frac{x_{11}}{\sum_{j=1}^{n} x_{11}} = \frac{5}{29} = 0.1724$$

The results of the calculation of the normalization value of the decision matrix are presented in Table 3.

Table 3. The Results of the Calculation of the Normalization Value

Candidate Name	C01	C02	CO3	C04	C05	C06	C07
Candidate A	0.1724	0.1333	0.1385	0.1000	0.1212	0.1061	0.1053
Candidate B	0.0690	0.0667	0.0923	0.1500	0.1061	0.1212	0.0877
Candidate C	0.1379	0.1333	0.1231	0.1333	0.1364	0.1364	0.1404
Candidate D	0.1034	0.0667	0.1077	0.0833	0.0909	0.0909	0.1228
Candidate E	0.1379	0.1333	0.1385	0.1167	0.1212	0.1212	0.1579
Candidate F	0.0345	0.0667	0.0769	0.1000	0.0758	0.0758	0.0702

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Candidate G	0.1724	0.2000	0.1231	0.1333	0.1212	0.1212	0.1228
Candidate H	0.0690	0.0667	0.0923	0.0667	0.0909	0.1061	0.0877
Candidate I	0.1034	0.1333	0.1077	0.1167	0.1364	0.1212	0.1053

The entropy calculation for each criterion describing the degree of uncertainty or variation in the data is calculated using equation (3).

$$E_1 = -\frac{1}{\ln 9}\sum_{i=1}^{n} k_{11,19}\ln(k_{11,19}) = (-0.45512) * (-2.1070) = 0.95893$$

The results of the calculation of the entropy value of each criterion are presented in Table 4.

Table 4. The Results of the Calculation of the Entropy Value

	C01	C02	CO3	C04	C05	C06	C07
Entropy Value	0.95893	0.96424	0.99232	0.98820	0.99224	0.99409	0.98737

Calculation of dispersion values that describe the distribution or variation of data in a data set using equation (4).

$$D_1 = 1 - E_1 = 1 - 0.95893 = 0.04107$$

The results of the calculation of the dispersion value of each criterion are presented in Table 5.

Table 5. The Results of the Calculation of the Dispersion Value

	C01	C02	CO3	C04	C05	C06	C07
Dispersion Value	0.04107	0.03576	0.00768	0.01180	0.00776	0.00591	0.01263

The calculation of criterion weights reflects how important the criteria are in decision-making using equations (5).

$$w_1 = \frac{D_1}{\sum_{j=1}^{n} D_{1,7}} = \frac{0.04107}{0.12261} = 0.3350$$

The results of the calculation of the weight of criteria are presented in Table 6.

Table 6. The Results of the Calculation of the weight of criteria

	C01	C02	CO3	C04	C05	C06	C07
Weight	0.3350	0.2917	0.0626	0.0962	0.0633	0.0482	0.1030

Implementation of TOPSIS Method

The TOPSIS method is one of the popular methods in multi-criteria decision-making. This method works by comparing different alternatives based on their proximity to the ideal solution. Decision Matrix Preparation: Collect data from alternatives to be evaluated based on established criteria. The decision matrix is arranged using equation (1).

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$$X = \begin{bmatrix} 5 & 2 & 9 & 6 & 7 & 7 & 6 \\ 2 & 1 & 6 & 9 & 8 & 8 & 5 \\ 4 & 2 & 8 & 8 & 9 & 9 & 8 \\ 3 & 1 & 7 & 5 & 6 & 6 & 7 \\ 4 & 2 & 9 & 7 & 8 & 8 & 9 \\ 1 & 1 & 5 & 6 & 5 & 5 & 4 \\ 5 & 3 & 8 & 8 & 8 & 8 & 7 \\ 2 & 1 & 6 & 4 & 6 & 7 & 5 \\ 3 & 2 & 7 & 7 & 9 & 8 & 6 \end{bmatrix}$$

Normalization is done to ensure that all criteria are on the same scale. Normalization can be done using the following formula for each element with (6).

$$x_{11}^{*} = \frac{x_{11}}{\sqrt{[\sum_{i=1}^{j} x_{11,19}^{2}]}} = \frac{5}{\sqrt{109}} = \frac{5}{10.4403} = 0.4789$$

The results of the calculation of the normalization value of the decision matrix are presented in Table 7.

Table 7. The Results of the Calculation of the Normalization Value

Candidate Name	C01	C02	CO3	C04	C05	C06	C07
Candidate A	0.4789	0.3714	0.4087	0.2928	0.3578	0.3143	0.3074
Candidate B	0.1916	0.1857	0.2724	0.4392	0.3130	0.3592	0.2562
Candidate C	0.3831	0.3714	0.3633	0.3904	0.4025	0.4041	0.4099
Candidate D	0.2873	0.1857	0.3179	0.2440	0.2683	0.2694	0.3586
Candidate E	0.3831	0.3714	0.4087	0.3416	0.3578	0.3592	0.4611
Candidate F	0.0958	0.1857	0.2270	0.2928	0.2236	0.2245	0.2049
Candidate G	0.4789	0.5571	0.3633	0.3904	0.3578	0.3592	0.3586
Candidate H	0.1916	0.1857	0.2724	0.1952	0.2683	0.3143	0.2562
Candidate I	0.2873	0.3714	0.3179	0.3416	0.4025	0.3592	0.3074

The weighted decision matrix is a normalized multiplication of values by weights using (7)

$$v_{11} = w_1 * x_{11}^{*} = 0.3350 * 0.4789 = 0.1604$$

The results of the calculation of the normalized multiplication of values are presented in Table 8.

Table 8. The Results of the Calculation of the Normalized Multiplication of Values

Candidate Name	C01	C02	CO3	C04	C05	C06	C07
Candidate A	0.1604	0.1083	0.0256	0.0282	0.0227	0.0152	0.0317
Candidate B	0.0642	0.0542	0.0171	0.0422	0.0198	0.0173	0.0264
Candidate C	0.1283	0.1083	0.0227	0.0376	0.0255	0.0195	0.0422
Candidate D	0.0962	0.0542	0.0199	0.0235	0.0170	0.0130	0.0369
Candidate E	0.1283	0.1083	0.0256	0.0329	0.0227	0.0173	0.0475
Candidate F	0.0321	0.0542	0.0142	0.0282	0.0142	0.0108	0.0211
Candidate G	0.1604	0.1625	0.0227	0.0376	0.0227	0.0173	0.0369
Candidate H	0.0642	0.0542	0.0171	0.0188	0.0170	0.0152	0.0264
Candidate I	0.0962	0.1083	0.0199	0.0329	0.0255	0.0173	0.0317

Determining the ideal solution and the anti-ideal solution for each criterion with equations (8) and (9), are shown in Table 9.

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Table 9. The Results of the Ideal Solution and Anti-Ideal Solution

Candidate Name	C01	C02	CO3	C04	C05	C06	C07
y_j^+	0.1604	0.1625	0.0256	0.0422	0.0255	0.0195	0.0475
y_j^-	0.0321	0.0542	0.0142	0.0188	0.0142	0.0108	0.0211

Calculate the distance of each alternative ideal and anti-ideal solution with equations (10) and (11), the calculation results are shown in Table 10.

Table 10. The Results of the Distance of Each Alternative Ideal and Anti-Ideal Solution

Candidate Name	D_i^+	D_i^-
Candidate A	0.0584	0.1083
Candidate B	0.1468	0.0542
Candidate C	0.0634	0.1083
Candidate D	0.1283	0.0542
Candidate E	0.0637	0.1083
Candidate F	0.1716	0.0542
Candidate G	0.0124	0.1625
Candidate H	0.1489	0.0542
Candidate I	0.0862	0.1083

Calculating the preference index for each alternative with equation (12), the result of the alternative preference value is shown in Table 11.

Table 11. The Results of the Preference Index for Each Alternative

Candidate Name	V_i
Candidate A	0.7069
Candidate B	0.2188
Candidate C	0.6450
Candidate D	0.3417
Candidate E	0.6443
Candidate F	0.0519
Candidate G	0.9320
Candidate H	0.1817
Candidate I	0.5023

The end result of the TOPSIS method is the relative proximity value for each alternative, which shows how close the alternative is to the ideal solution. The alternative with the highest score is considered the best option because it has the closest distance to the ideal solution and the furthest from the non-ideal solution. TOPSIS provides results in the form of objective alternative rankings based on various predetermined criteria, helping decision-makers choose the option that best suits their needs. The ranking results are shown in Figure 2.

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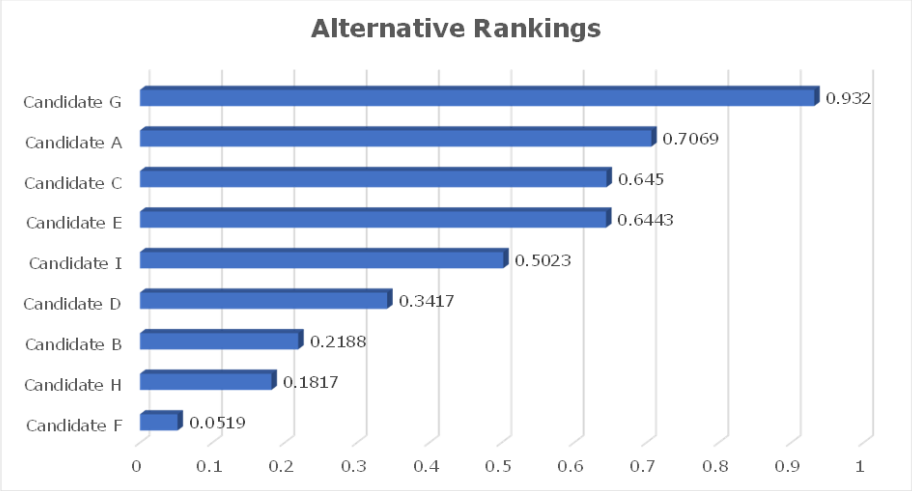

Figure 2. Alternative Rankings

The results of Candidate G ranking were ranked highest with a score of 0.932, followed by Candidate A with a score of 0.7069, Candidate C with a score of 0.645, and Candidate E with a score of 0.6443. Furthermore, Candidate I in the middle position with a score of 0.5023, followed by Candidate D with a score of 0.3417. Candidate B and Candidate H are in a lower position with values of 0.2188 and 0.1817, respectively. Candidate F ranked at the bottom with a score of 0.0519.

4. CONCLUSION

An IT personnel recruitment decision support system that combines TOPSIS and entropy methods is an innovative approach designed to increase effectiveness in selecting the best candidates based on relevant criteria. In this system, the entropy method is used to objectively determine the weight of the criteria, thus reflecting the level of information and variation contained in the candidate's data. Once the weights are established, the TOPSIS method is applied to evaluate and compare candidate alternatives by measuring each candidate's proximity to the ideal solution and away from the anti-ideal solution. This system not only increases transparency and accuracy in the recruitment process, but also provides a solid foundation for better decision-making in the selection of IT personnel that suits the needs of the organization. The results of Candidate G ranking were ranked highest with a score of 0.932, followed by Candidate A with a score of 0.7069, Candidate C with a score of 0.645, and Candidate E with a score of 0.6443. Furthermore, Candidate I in the middle position with a score of 0.5023, followed by Candidate D with a score of 0.3417. Candidate B and Candidate H are in a lower position with values of 0.2188 and 0.1817, respectively. Candidate F ranked at the bottom with a score of 0.0519.

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