

Combination of CRITIC Weighting Method and Multi-Atributive Ideal-Real Comparative Analysis in Staff Admissions

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Abstract—Staff recruitment is a critical process in human resource management where organizations select and place individuals who fit the needs and goals of the company. This process involves identifying position needs, job postings, screening applicants, interviewing, skills evaluation, and making a final decision to determine the most suitable employee. The integration of CRITIC and MAIRCA allows the staff selection process to be more objective and systematic. CRITIC helps in assessing the importance of each criterion by considering its relevance, thus ensuring that the evaluation is not based on just one dimension. On the other hand, MAIRCA provides a comprehensive framework by comparing each candidate against the desired ideal standards and their actual achievements in relevant attributes. The combination of these two methods not only strengthens accuracy in staff selection, but also ensures that decisions are made in accordance with the organization's strategic goals to achieve optimal performance and effectiveness. The ranking results obtained the results of rank 1 with a value of 0.0824 obtained by Alternative G, rank 2 with a value of 0.0798 obtained by Alternative B, and rank 3 with a value of 0.0778 obtained by Alternative C.

Keywords: Combination, CRITIC Weighting Method, Integration, MAIRCA Method, Staff Recruitment

1. INTRODUCING

Staff recruitment is a critical process in human resource management where organizations select and place individuals who fit the needs and goals of the company. This process involves identifying position needs, job postings, screening applicants, interviewing, skills evaluation, and making a final decision to determine the most suitable employee. Staff recruitment focuses not only on technical qualifications and experience, but also on the values of the organization's culture, personal fit, and potential for growth and development within the company. By implementing an effective and transparent onboarding process, organizations can ensure that they are building a strong and high-performing team, which is key to long-term success in achieving their business goals. By implementing a careful and objective selection process, organizations can build high-quality teams and minimize the risk of errors in workforce placement. Problems in staff recruitment selection can include several aspects that affect the effectiveness and fairness of the process. One common problem is the subjective assessment of the parties involved in the selection process, which can influence the final decision without objectively considering the candidate's qualifications and abilities. It is important to implement a selection method that is structured, objective, and supported by clear guidelines, and to ensure open and transparent communication throughout the recruitment process.

Multi-Atributive Ideal-Real Comparative Analysis (MAIRCA) is a decision-making method that combines the evaluation of various attributes of available alternatives to determine the most ideal decision[1]–[3]. MAIRCA involves a comparison between the desired ideal conditions and the actual conditions that exist, taking into account a variety of relevant attributes. This method allows for more comprehensive and objective decision-making because it takes into account various factors at once and compares them to standards that are considered ideal. The advantage of MAIRCA lies in its ability to provide a comprehensive and objective evaluation of various alternatives based on a number of relevant attributes. This method reduces subjectivity in decision-making by comparing actual conditions with desired ideal conditions, allowing for the identification of gaps and specific areas of improvement. MAIRCA's flexibility in applying to a wide range of areas and types of problems makes it particularly useful in a variety of decision-making contexts, from product selection to business strategy, ensuring that decisions are made more informed and in line with the expected objectives[4], [5]. The MAIRCA method helps in the identification of the best alternative that is closest to the expected ideal conditions. In MAIRCA, the determination of the weight of criteria is a crucial aspect but can also be a weakness. One of the drawbacks is the difficulty in determining the right weight for each criterion, which often requires subjective judgment and can be influenced by individual preferences. In overcoming the weakness of MAIRCA in the weighting of criteria, the weighting method of criteria importance through intercriteria correlation is used.

The criteria importance through intercriteria correlation (CRITIC) weighting method is an approach used to determine the relative weights of various criteria in a decision-making process. This method evaluates the extent to which each criterion correlates with other criteria, both positively and negatively. By analyzing these intercorrelation patterns, this method can identify the criteria that have the greatest influence on the overall assessment or decision. This approach helps to ensure that the weight given to each criterion reflects its role and contribution in a broader context, resulting in a more balanced and objective decision. The advantage of this method is its ability to provide a more comprehensive and objective assessment. By considering the relationship between criteria, this method can identify criteria that have a significant influence on the final result, thereby reducing subjective judgment in weight determination. In addition, this approach helps to reveal criteria that may have been given less attention but actually have a major impact on the decision-making process. This method also increases transparency and accountability in the weighting process, as each weight is based on a concrete and measurable analysis of the data.

Research related to the acceptance of employees or staff was carried out by Yusman (2022) the SAW method is used in the selection of employee admissions that are able to overcome existing problems[6]. Research by Rozali (2023) the Analytic Hierarchy Process (AHP) method is used to evaluate and prioritize criteria in the selection of new employee admissions to improve the efficiency and objectivity of the selection process[7]. Research from Satria (2023) shows that the VIKOR method in the decision support system for the selection of new employee admissions who will fill the position of administrative staff can make it easier and help the company in selecting new employee admissions[8]. Research from Firdaus (2024) the multi-Attributive border approximation area comparison (MABAC) method is able to help the process of selecting new employees based on predetermined weights and criteria[9]. Research from Hidayatullah (2024) the ROC and MABAC methods in the employee recruitment process to get a ranking of prospective employees so that it is the best recommendation in the employee recruitment process[10]. The difference with the research conducted is in the weighting method used, in this study the CRITIC weighting method is used to produce the weight of the criteria objectively.

The combination of the CRITIC Weighting Method with MAIRCA is a synergistic approach in multi-criteria decision-making. The CRITIC method is used to calculate the weight of the criteria based on the variability and intercorrelation between the criteria, so as to produce an objective weight and reflect the relative significance of each criterion. Once the criteria weights were determined, the MAIRCA method was used to evaluate and compare alternatives based on their distance from the ideal solution and the anti-ideal solution. By combining these two methods, the approach is able to provide a more accurate and holistic assessment, as it not only considers the importance of each criterion but also comprehensively evaluates alternative performance against established standards. The result is more informative and reliable decisions in a variety of application contexts.

The purpose of the research on the combination of the CRITIC and MAIRCA weighting methods in staff recruitment is to apply a more structured and objective approach in the employee selection and admission process, so as to increase objectivity, transparency, and accuracy in the staff admission decision-making process, so as to produce a more effective and relevant selection according to the needs of the organization.

2. RESEARCH METHODOLOGY

2.1 Research Stages

The research stage begins with the identification of the problem underlying the research objectives, followed by the determination of the theoretical framework through a comprehensive literature review to understand the relevant concepts and methods[11]–[13]. Data collection is carried out systematically in accordance with the predetermined plan. The data obtained is then analyzed using appropriate analysis techniques to test hypotheses or answer research questions. The final stage includes the submission of recommendations based on research findings and suggestions for further research in the future. The stages of the research are carried out in Figure 1.



Figure 1. Research Stage

The research stages carried out in figure 1 start from data collection carried out on companies, then using the CRITIC weighting method to determine the weight of the criteria, then applying the MAIRCA method in the selection of staff admissions, and finally staff admission ranking results.

2.2 CRITIC Weighting Method

The CRITIC weighting method lies in its ability to overcome several challenges in multi-criteria decision-making[14], [15]. This method uses intercorrelation analysis to determine the relative weight of each criterion, which allows recognition of the complexity of the relationship between criteria in the context of decision-making. With this approach, CRITIC can reduce subjectivity in weight determination and produce more consistent and objective judgments. In addition, this method allows for the identification of the criteria that have the most influence on the final outcome, thus helping to focus on the crucial aspects that need to be considered in the evaluation and decision-making process. Decision matrix is a useful tool for comparing several alternatives based on some predefined criteria, the decision matrix is created using equation (1).

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

Matrix normalization is an important step in a multi-criteria analysis to ensure that all criteria have a balanced weight and can be objectively compared, matrix normalization is calculated using equations (2).

$$d_{ij} = \frac{x_{ij} - \min x_{ij}}{\max x_{ij} - \min x_{ij}} \quad (2)$$

Measurement of information quality value can be carried out by focusing on the evaluation of the criteria used to determine the relative weight, measuring the value of information quality using equations (3).

$$C_j = \sigma_j \sum_{j=1}^n (1 - R_{ij}) \quad (3)$$

Where the standard deviation value is calculated using equation (4).

$$\sigma_j = \sqrt{\frac{\sum_{i=1}^n (d_{ij} - \bar{d}_j)^2}{n}} \quad (4)$$

Where the correlation coefficient value is calculated using equation (5).

$$R_{ij} = \frac{\sum_{i=1}^n (d_{ij} - \bar{d}_j) * (d_{ij} - \bar{d}_h)}{\sqrt{\sum_{i=1}^n (d_{ij} - \bar{d}_j)^2} * \sqrt{\sum_{i=1}^n (d_{ij} - \bar{d}_h)^2}} \quad (5)$$

Calculating the final weight value of each criterion is the last stage in the CRITIC method. The final weight value of each criterion is calculated using equation (6).

$$W_j = \frac{C_j}{\sum C_j} \quad (6)$$

The final value of the criterion weight using the CRITIC method is the final result in determining the criterion weight objectively.

2.3 MAIRCA Method

The MAIRCA method is its comprehensive approach in comparing alternatives based on their proximity to predetermined ideal and anti-ideal standards[16], [17]. The MAIRCA method is a powerful tool in supporting informed and strategic decision-making, helping organizations to choose the alternative that best suits their goals and needs. Decision matrix is a useful tool for comparing several alternatives based on some predefined criteria, the decision matrix is created using equation (1). The second stage in the MAIRCA method for determining alternative preferences involves evaluating and comparing various options to identify the alternative that best matches the needs or expectations. Alternative preferences are calculated using equation (7).

$$P_{ai} = \frac{1}{m} \sum_{i=1}^m P_{ai} = 1 \quad (7)$$

The third stage in the MAIRCA method, calculating the theoretical evaluation matrix, involves an analytical approach used to determine the theoretical value or weight of various criteria or variables relevant in a context. A theoretical evaluation matrix is created with the following equation.

$$T_p = \begin{bmatrix} t_{p11} * w_1 & \cdots & t_{pn1} * w_n \\ \vdots & \ddots & \vdots \\ t_{p1m} * w_1 & \cdots & t_{pnm} * w_n \end{bmatrix} \quad (8)$$

The fourth stage in the MAIRCA method of calculating a realistic evaluation matrix involves a systematic process to evaluate the performance or characteristics of various alternatives or entities based on defined criteria or attributes. A realistic evaluation matrix is created with the following equation.

$$t_{rij} = t_{pij} \left(\frac{x_{ij} - x_i^-}{x_i^+ - x_i^-} \right) \quad (9)$$

$$t_{rij} = t_{pij} \left(\frac{x_{ij} - x_i^+}{x_i^- - x_i^+} \right) \quad (10)$$

Equation (9) for the criterion is benefit, and equation (10) for the criterion is cost.

The fifth stage in the MAIRCA method, the total gap matrix, involves a process of careful evaluation of the difference between the actual value and the target value on a number of specific attributes or criteria. The total gap matrix is created by the following equation.

$$G_{ij} = t_{pij} - t_{rij} \quad (11)$$

The last stage in the MAIRCA method, which is calculating the final value of a function, involves the process of evaluating and determining the final result of a mathematical function or modeling. The calculation of the final value of the function uses the following equation.

$$Q_i = \sum_{j=1}^n g_{ij} \quad (12)$$

The end result of these calculations is often used to make decisions, perform analyses, or describe the nature of the modeled system.

3. RESULT AND DISCUSSION

The combination of the CRITIC and MAIRCA weighting methods is very effective in the staff recruitment process. CRITIC improves decision-making by determining the importance of criteria based on the relationship between criteria, which ensures a balanced assessment framework. Meanwhile, MAIRCA facilitates a comprehensive evaluation by comparing candidates against ideal standards and real-world achievements in a variety of attributes that are important for staff roles. This unified approach ensures that the selection process not only considers individual achievement but also aligns with the needs of the organization, thereby driving optimal hiring decisions to improve the effectiveness and overall performance of the team. The integration of CRITIC and MAIRCA allows the staff selection process to be more objective and systematic. CRITIC helps in assessing the importance of each criterion by considering its relevance, thus ensuring that the evaluation is not based on just one dimension. On the other hand, MAIRCA provides a comprehensive framework by comparing each candidate against the desired ideal standards and their actual achievements in relevant attributes. The combination of these two methods not only strengthens accuracy in staff selection, but also ensures that decisions are made in accordance with the organization's strategic goals to achieve optimal performance and effectiveness.

3.1 Data Collection

The process of collecting staff selection assessment data begins with the identification of key criteria that are relevant for the position being opened. Once the criteria are established, the necessary information is gathered from a variety of sources, including application forms, interviews, competency tests, references, and previous performance evaluations where available. These data are then organized and fed into a systematic format, such as an evaluation table that lists each candidate and their assessment of each criterion. A comprehensive approach to data collection ensures that selection decisions can be based on accurate and relevant information, which is in line with the needs of the organization as well as the desired long-term goals. Table 1 is the result of the assessment data collection carried out.

Table 1. Alternative assessment data

Alternative Name	Experience	Skills	Communication	Teamwork	Discipline	Motivation
Alternative A	8	7	6	9	5	8
Alternative B	7	6	8	7	6	7
Alternative C	6	8	7	6	8	6
Alternative D	9	5	6	8	7	7
Alternative E	7	7	7	7	7	7
Alternative F	8	6	9	5	8	6
Alternative G	6	9	5	6	9	5

The data collected from the staff selection process in table 1 includes not only the candidate's achievements and qualifications, but also more in-depth aspects such as work attitude, interpersonal skills, and the potential to develop in the role. Detailed information from each candidate helps in making more informed and objective decisions, as well as ensuring that the right people are placed in positions that match their abilities and motivations. In addition, this data collection process also allows for a thorough evaluation of each stage of selection, ensuring transparency and consistency in the recruitment process carried out.

3.2 CRITIC Method in Determining Criteria Weighting

The CRITIC method is an approach used to determine the relative weight of the criteria used in decision-making. This method focuses on the relationship between criteria, where each criterion is judged not only on the basis of its absolute value, but also by considering its impact on the other criteria. The process involves steps such as the formation of a comparison matrix between the criteria and the calculation of the eigenvalues of the matrix to determine the relative weight of each criterion. By using the CRITIC Method, decision-makers can avoid biases that may arise in subjective judgments and can make more structured and consistent decisions based on the importance of each criterion in the specific context of the decision to be taken. Decision matrix is a useful tool for comparing several alternatives based on some predefined criteria, the decision matrix is created using equation (1).

$$X = \begin{bmatrix} 8 & 7 & 6 & 9 & 5 & 8 \\ 7 & 6 & 8 & 7 & 6 & 7 \\ 6 & 8 & 7 & 6 & 8 & 6 \\ 9 & 5 & 6 & 8 & 7 & 7 \\ 7 & 7 & 7 & 7 & 7 & 7 \\ 8 & 6 & 9 & 5 & 8 & 6 \\ 6 & 9 & 5 & 6 & 9 & 5 \end{bmatrix}$$

Matrix normalization is an important step in a multi-criteria analysis to ensure that all criteria have a balanced weight and can be objectively compared, matrix normalization is calculated using equations (2).

$$d_{11} = \frac{x_{11} - \min x_{11,17}}{\max x_{11,17} - \min x_{11,17}} = \frac{8 - 6}{9 - 6} = \frac{2}{3} = 0,667$$

The overall result of the normalization value of the matrix in table 2.

Table 2. Normalization value

Alternative Name	Experience	Skills	Communication	Teamwork	Discipline	Motivation
Alternative A	0,667	0,5	0,25	1	0	1
Alternative B	0,333	0,25	0,75	0,5	0,25	0,666666667
Alternative C	0	0,75	0,5	0,25	0,75	0,333333333
Alternative D	1	0	0,25	0,75	0,5	0,666666667
Alternative E	0,333	0,5	0,5	0,5	0,5	0,666666667
Alternative F	0,667	0,25	1	0	0,75	0,333333333
Alternative G	0	1	0	0,25	1	0

Where the standard deviation value is calculated using equation (4).

$$\sigma_1 = \sqrt{\frac{\sum_{i=1}^n (d_{11,17} - \bar{d}_{11,17})^2}{7}} = 0,3434$$

The overall result of the standard deviation value in table 3.

Table 3. standard deviation value

Criteria	Experience	Skills	Communication	Teamwork	Discipline	Motivation
σ_j	0,343	0,3113	0,3113	0,3113	0,3113	0,3012

The correlation coefficient value is calculated using equation (5) in table 4.

Table 4. Correlation coefficient value

Alternative Name	Experience	Skills	Communication	Teamwork	Discipline	Motivation
Alternative A	1	-0,8590	0,1432	0,4772	-0,4772	0,5920

Alternative B	-0,8590	1	-0,4737	-0,2895	0,4737	-0,5622
Alternative C	0,1432	-0,4737	1	-0,4737	-0,0789	0,0725
Alternative D	0,4772	-0,2895	-0,4737	1	-0,8158	0,8343
Alternative E	-0,4772	0,4737	-0,0789	-0,8158	1	-0,9613
Alternative F	0,5920	-0,5622	0,0725	0,8343	-0,9613	1
Alternative G	1	-0,8590	0,1432	0,4772	-0,4772	0,5920

Measurement of information quality value can be carried out by focusing on the evaluation of the criteria used to determine the relative weight, measuring the value of information quality using equations (3).

$$C_1 = \sigma_1 \sum_{j=1}^n (1 - R_{11,61}) = 0.3434 * 5.1238 = 1.7594$$

The overall result of the measurement of information quality value in table 5.

Table 5. Measurement of information quality value

Criteria	Experience	Skills	Communication	Teamwork	Discipline	Motivation
C_j	1.7594	2.0894	1.	1.6400	2.1357	1.5133

Calculating the final weight value of each criterion is the last stage in the CRITIC method. The final weight value of each criterion is calculated using equation (6).

$$W_1 = \frac{C_1}{\sum C_{1,6}} = \frac{1.7594}{10.9469} = 0.1607$$

$$W_2 = \frac{C_2}{\sum C_{1,6}} = \frac{2.0894}{10.9469} = 0.1909$$

$$W_3 = \frac{C_3}{\sum C_{1,6}} = \frac{1.8091}{10.9469} = 0.1653$$

$$W_4 = \frac{C_4}{\sum C_{1,6}} = \frac{1.6400}{10.9469} = 0.1498$$

$$W_5 = \frac{C_5}{\sum C_{1,6}} = \frac{2.1357}{10.9469} = 0.1951$$

$$W_6 = \frac{C_6}{\sum C_{1,6}} = \frac{1.5133}{10.9469} = 0.1382$$

The final result of the application of the CRITIC Method in determining the criteria weighting provides an objective weight for each criterion based on variability and correlation between criteria. The weights obtained reflect the importance of each criterion in the context of decision-making, where the criteria with high variability and low correlation with the criteria are high.

3.3 MAIRCA Method in Determining Staff Admission Selection

The MAIRCA (Multi-Attributive Ideal-Real Comparative Analysis) method in determining staff admission selection is a comprehensive and objective analytical approach. This method involves assessing candidates based on several predetermined criteria, as well as comparing the actual achievements of each candidate with the desired ideal score for each criterion. This process begins by identifying the relevant key attributes for the open position, followed by measuring and evaluating each candidate's performance against those attributes. Using MAIRCA, organizations can determine how close each candidate is to the expected ideal profile, making it easier to identify candidates who best align with the organization's strategic needs and goals. The results of this method provide a clear and structured picture of each candidate's strengths and weaknesses, ultimately supporting more informed and effective decisions in the staff recruitment selection process. Decision matrix is a useful tool for comparing several alternatives based on some predefined criteria, the decision matrix is created using equation (1).

$$X = \begin{bmatrix} 8 & 7 & 6 & 9 & 5 & 8 \\ 7 & 6 & 8 & 7 & 6 & 7 \\ 6 & 8 & 7 & 6 & 8 & 6 \\ 9 & 5 & 6 & 8 & 7 & 7 \\ 7 & 7 & 7 & 7 & 7 & 7 \\ 8 & 6 & 9 & 5 & 8 & 6 \\ 6 & 9 & 5 & 6 & 9 & 5 \end{bmatrix}$$

The second stage in the MAIRCA method for determining alternative preferences involves evaluating and comparing various options to identify the alternative that best matches the needs or expectations. Alternative preferences are calculated using equation (7).

$$P_{a11,17} = \frac{1}{7} = 0.1429$$

$$P_{a21,27} = \frac{1}{7} = 0.1429$$

$$P_{a31,37} = \frac{1}{7} = 0.1429$$

$$P_{a41,47} = \frac{1}{7} = 0.1429$$

$$P_{a51,57} = \frac{1}{7} = 0.1429$$

$$P_{a61,67} = \frac{1}{7} = 0.1429$$

The third stage in the MAIRCA method, calculating the theoretical evaluation matrix, involves an analytical approach used to determine the theoretical value or weight of various criteria or variables relevant in a context. A theoretical evaluation matrix is created with the following (8).

$$t_{p11,17} = 0.1429 * 0.1607 = 0.0230$$

$$t_{p21,27} = 0.1429 * 0.1909 = 0.0273$$

$$t_{p31,37} = 0.1429 * 0.1653 = 0.0236$$

$$t_{p41,47} = 0.1429 * 0.1498 = 0.0214$$

$$t_{p51,57} = 0.1429 * 0.1951 = 0.0279$$

$$t_{p61,67} = 0.1429 * 0.1382 = 0.0197$$

The fourth stage in the MAIRCA method of calculating a realistic evaluation matrix involves a systematic process to evaluate the performance or characteristics of various alternatives or entities based on defined criteria or attributes. A realistic evaluation matrix is created with the following equation.

$$t_{rij} = t_{p11,17} \left(\frac{x_{11} - x_{11,17}^-}{x_{11,17}^+ - x_{11,17}^-} \right) = 0.0230 \left(\frac{8 - 6}{9 - 6} \right) = 0.0153$$

The overall result of the normalization value of the matrix in table 6.

Table 6. A realistic evaluation matrix value

Alternative Name	Experience	Skills	Communication	Teamwork	Discipline	Motivation
Alternative A	0.0153	0.0136	0.0059	0.0214	0	0.0197
Alternative B	0.0077	0.0068	0.0177	0.0107	0.0070	0.0132
Alternative C	0	0.0204	0.0118	0.0054	0.0209	0.0066
Alternative D	0.023	0	0.0059	0.0161	0.0139	0.0132
Alternative E	0.0077	0.0136	0.0118	0.0107	0.0139	0.0132
Alternative F	0.0153	0.0068	0.0236	0	0.0209	0.0066
Alternative G	0	0.0273	0	0.0054	0.0279	0

The fifth stage in the MAIRCA method, the total gap matrix, involves a process of careful evaluation of the difference between the actual value and the target value on a number of specific attributes or criteria. The total gap matrix is created by the equation (11).

$$G_{11} = t_{p11} - t_{r11} = 0.0230 - 0.0153 = 0.0077$$

The overall result of the total gap matrix in table 7.

Table 7. The total gap matrix

Alternative Name	Experience	Skills	Communication	Teamwork	Discipline	Motivation
Alternative A	0.0077	0.0136	0.0177	0.0000	0.0279	0
Alternative B	0.0153	0.0204	0.0059	0.0107	0.0209	0.0066
Alternative C	0.023	0.0068	0.0118	0.0161	0.007	0.0132
Alternative D	0	0.0273	0.0177	0.0054	0.0139	0.0066
Alternative E	0.0153	0.0136	0.0118	0.0107	0.0139	0.0066
Alternative F	0.0077	0.0204	0	0.0214	0.007	0.0132
Alternative G	0.023	0	0.0236	0.0161	0	0.0197

The last stage in the MAIRCA method, which is calculating the final value of a function, involves the process of evaluating and determining the final result of a mathematical function or modeling. The calculation of the final value of the function uses the following equation.

$$Q_1 = \sum_{j=1}^n g_{11,61} = 0.0077 + 0.0136 + 0.0177 + 0.0000 + 0.0279 + 0 = 0.0669$$

$$Q_2 = \sum_{j=1}^n g_{12,62} = 0.0153 + 0.0204 + 0.0059 + 0.0107 + 0.0209 + 0.0066 = 0.0798$$

$$Q_3 = \sum_{j=1}^n g_{13,63} = 0.023 + 0.0068 + 0.0118 + 0.0161 + 0.007 + 0.0132 = 0.0778$$

$$Q_4 = \sum_{j=1}^n g_{14,64} = 0 + 0.0273 + 0.0177 + 0.0054 + 0.0139 + 0.0066 = 0.0708$$

$$Q_5 = \sum_{j=1}^n g_{15,65} = 0.0153 + 0.0136 + 0.0118 + 0.0107 + 0.0139 + 0.0066 = 0.0720$$

$$Q_6 = \sum_{j=1}^n g_{16,66} = 0.0077 + 0.0204 + 0 + 0.0214 + 0.007 + 0.0132 = 0.0696$$

$$Q_7 = \sum_{j=1}^n g_{17,67} = 0.023 + 0 + 0.0236 + 0.0161 + 0 + 0.0197 = 0.0824$$

The MAIRCA method is a technique in Multiple Criteria Decision Making (MCDM) that is used to conduct alternative rankings based on various criteria that have been determined. This process involves normalizing the decision matrix to convert the various criteria into the same scale, calculating the ideal and real values for each alternative, and then measuring the distance between these values. The alternative with the smallest distance to the ideal value is considered the best. MAIRCA is effective in situations where decision-making must consider a variety of diverse factors, and this method helps in providing objective and structured rankings to support better decisions. The results of the staff admission selection ranking using the MAIRCA method provide a clear and objective view of the most suitable candidates based on the criteria that have been set. In the application of this method, each candidate is evaluated and scored against the criteria. After normalizing and calculating the distance between the ideal and real values, the candidate with the smallest distance to the ideal score gets the highest ranking. The results of this ranking help the management in making more informed and informed decisions, ensuring that the selected candidates have the best balance between the various criteria considered. The results of the staff admission selection ranking are in Figure 2.

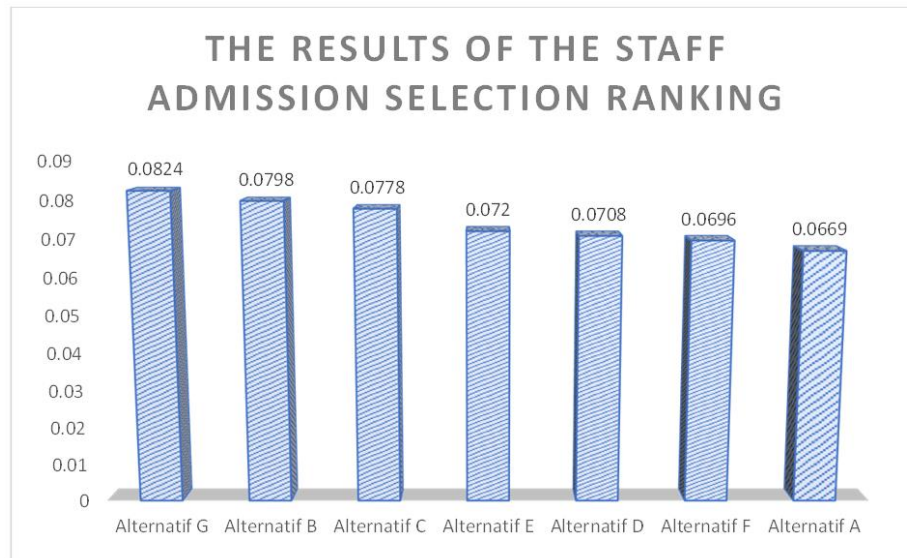


Figure 2. The Results of the Staff Admission Selection Ranking

The ranking results in figure 2 get the result of rank 1 with a value of 0.0824 obtained by Alternative G, rank 2 with a value of 0.0798 obtained by Alternative B, rank 3 with a value of 0.0778 obtained by Alternative C, rank 4 with a value of 0.072 obtained by Alternative E, rank 5 with a value of 0.0708 obtained by Alternative D, rank 6 with a value of 0.0696 obtained by Alternative F, and rank 7 with a value of 0.0669 obtained by Alternative A.

4. CONCLUSION

The purpose of the research on the combination of the CRITIC and MAIRCA weighting methods in staff recruitment is to apply a more structured and objective approach in the employee selection and admission process, so as to increase objectivity, transparency, and accuracy in the staff admission decision-making process, so as to produce a more effective and relevant selection according to the needs of the organization. The integration of CRITIC and MAIRCA allows the staff selection process to be more objective and systematic. CRITIC helps in assessing the importance of each criterion by considering its relevance, thus ensuring that the evaluation is not based on just one dimension. On the other hand, MAIRCA provides a comprehensive framework by comparing each candidate against the desired ideal standards and their actual achievements in relevant attributes. The combination of these two methods not only strengthens accuracy in staff selection, but also ensures that decisions are made in accordance with the organization's strategic goals to achieve optimal performance and effectiveness. The ranking results obtained the results of rank 1 with a value of 0.0824 obtained by Alternative G, rank 2 with a value of 0.0798 obtained by Alternative B, rank 3 with a value of 0.0778 obtained by Alternative C, rank 4 with a value of 0.072 obtained by Alternative E, rank 5 with a value of 0.0708 obtained by Alternative D, rank 6 with a value of 0.0696 obtained by Alternative F, and rank 7 with a value of 0.0669 obtained by Alternative A.

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