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Addict Coffee Barista Recruitment Decision Support System Using the ARAS Method

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Abstract−Barista is a person who works in a coffee shop as a delicious coffee maker. So it is necessary to recruit baristas who can work in coffee shops and have responsibilities that not only mix coffee but also have skills in processing coffee beans. The problem in the barista recruitment process is the process of determining barista candidates who are only selected individually so that it is less accurate to get barista candidates who have the expected skills so that it can have an impact on opinions on the coffee shop. So the solution is provided through a decision support system, a highly interactive computer-based system that assists in making a decision to utilise data and models in solving unstructured and semi-structured problems. The method used in making these decisions is the Additive Ratio Assessment Method (ARAS). A total of 11 people who will become data samples and five criteria are used as rules for assessing (selecting). The ARAS method is able to provide maximum results to obtain superior barista recruitment with a result of 5,342, namely A1 as the selected alternative in barista recruitment after going through the method application stage.

Keywords: DSS; Recruitment; Barista

1. INTRODUCTION

The increasing economy in today's world of work, companies are required to provide the best quality to consumers, especially in service, maintaining a good name and good products. To achieve these goals, the role of human resources in the company is needed and can be trusted, one of which is the Barista Addict Coffe company. Barista Addict Coffe is a place that provides food and drinks, especially in serving drinks such as coffee, which is commonly called a Coffee Shop. This place is designed to be as attractive as possible in providing many coffee menus.

Recruitment at Addict Coffe is carried out by the process of withdrawing barista candidates, where many prospective baristas register but the techniques used by this Coffee Shop are still individual or not computerised. This is less effective so that it hampers the barista recruitment process at Addict Coffe. The problem in the barista recruitment process is the lack of labour who are experts and have the skills to make coffee, especially machine-based esspreso in the barista field. With that, recruitment is needed to get the expected barista candidates, as for what is needed, several criteria are needed that can be used as a reference in the recruitment of baristas such as skill, responsibility, discipline, age and work experience.

Therefore, a Decision Support System (SPK) is needed to overcome the problems encountered. SPK is an information system that is intended and of course semi-structured in making a decision. The system that is implemented uses methods to analyse in decision making, namely the AHP method, EXPROM II, SAW, WP, SMART, NOORA, OCRA, PSI, ARAS, VIKOR, MOOSRA, TOPSIS, ROC and there are many more methods that can be used in decision making[1]–[9]. In this study using the Rank Order Centroid method or known as the ROC method and the ARAS method. The ROC method is a simple method that can produce weights for the criteria used while the ARAS method is one of the most popular Multicriteria Decision Making (MCDM) methods. Where this method provides an ideal and directed solution process to an existing problem or the ARAS method is referred to as the final determinant method (selection).

Some research using the ARAS method that has been done before is research conducted by Agus Iskandar 2023, he conducted research to solve problems in selecting Teleservice Representatives. The existence of Teleservice Representative is crucial for companies in maintaining the quality of customer service and ensuring their satisfaction with the products or services offered. Therefore, the company must be careful in selecting Teleservice Representative candidates because they are the spearhead in providing superior customer service and ensuring customer satisfaction so that this research uses the ROC and ARAS methods in making these decisions. The final result obtained is that alternative A4 obtained the highest score after applying the two methods with a very perfect final score of 1,000[10].

Similar research was also conducted by Puspa Ayu Sholeha and Rima Tamara Aldisa in 2024. They conducted research using the ROC and ARAS methods in determining the industry's creative team. Forming a creative team in the creative industry is not an easy matter. Complex challenges arise during the team member selection process. Formal and technical qualifications are easy to measure, but elements such as creativity, innovation, and cultural fit are subjective factors that are difficult to measure objectively. Conventional selection

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methods are often unable to incorporate these qualitative aspects thoroughly, resulting in less precise or less-than-ideal evaluations. Commonly used criteria in creative team selection, such as portfolio, experience, innovation, technical skills, and collaboration, are not enough to produce an ideal team. Therefore, they used the ROC and ARAS methods in solving the problem to obtain a final score of 1,000[11].

In 2024, a research was conducted with the same problem as this research, namely barista selection. Sanriomi Sintaro and Setiawansyah, who are his research colleagues, have successfully conducted research by combining the MOORA method with the PIPRECIA method. Based on the results of MOORA optimisation and PIPRECIA weighting, Yanto is ranked first with a final score of 0.428, followed by Ridho in second place with a score of 0.423, and Antoni in third place with a score of 0.414[12].

Hery Syahputra et al, in 2019 which discusses the determination of YouTube content that is worth watching children applying the Aras method. Where after calculating through alternatives and predetermined criteria, it obtained an optimisation value of 0.73633 on alternative A1 which can be recommended as content that is worth watching [13]. Research conducted by Liza Handayani et al, in 2019. Where this research discusses the selection of exemplary kepling applying the ARAS method, then from the calculation of each alternative and criteria, an optimisation value of 8.997 is obtained for the 1st alternative as the first rank [14]. Research conducted by Juniar Hutagalung et al, in 2022 which discusses the receipt of non-cash assistance applying the ARAS method. Then from the results of the calculation of each alternative produces a final value of <0.07 as the result of the method [15].

2. RESEARCH METHODOLOGY

2.1 Stages of Research

In this research stage, it will be explained how the stages will be carried out by the author, starting from identifying existing problems, collecting data or known as data samples, to making a final report of activities and solutions carried out in solving problems. The following is an overview of the stages of research that will be carried out during the research process from start to finish which can be seen in Figure 1.

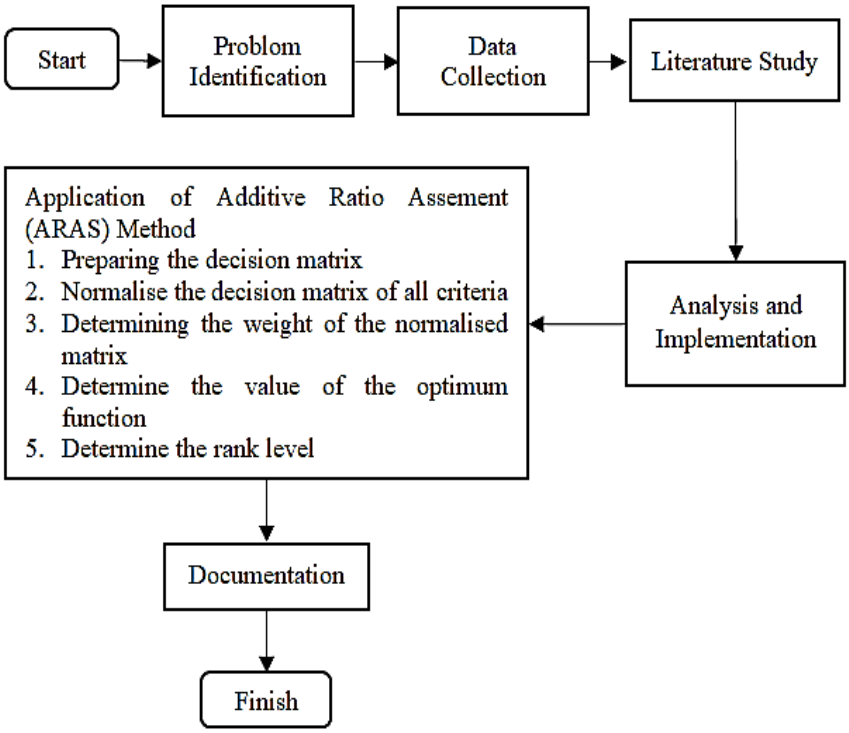

Figure 1. Stages of Research

Based on Figure 1, the researcher makes an explanation of these stages so that it is easier for the reader to understand the meaning of each point, the following explanation:

1. Problem Identification
   In this problem identification stage, the writer looks for and explains what causes problems in Addict Coffee recruitment.
2. Data Collection
   At the data collection stage, the search for information concerned in the research of a system creation is carried out, namely observation and interviews.

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a. Observation
   Observation or observation carried out for a way of collecting data through direct observation of situations and events in the field. The data to be processed or taken is data on prospective baristas in 2022 for an alternative of 10 Addict Coffee barista candidate data.
b. Interview
   In the interview the author gets information in some prospective barista data from the results of interviews at Addict Coffee.

3. Literature Study
   At this stage the author looks for and reads from several sources such as journals, books or other sources to be used as material in completing this research.
4. Analysis and Application of the ARAS Method
   At this stage, a solution is found to the problem in recruiting Addict Coffee baristas after that making decisions by applying the ARAS method.
5. Documentation
   At this stage documentation is the final stage to make research into a research report. Of course, the documentation stage also provides an explanation of the application used to facilitate users in developing future applications.

2.2 Decision Support System (DSS)

A decision support system (DSS) is a way of organising information that is intended for use in making decisions. Some define that a decision support system is an approach to support decision making. Decision support systems use data, provide easy user interfaces and can combine decision-making thinking. In SPK, there are many decision-making methods that can be used according to the problem at hand. The method consists of methods that can be used in determining the weight of importance or the level of importance of each assessment criterion and also methods for selecting alternatives[6], [16]–[27].

2.3 *Additive Ratio Assessment* (ARAS) Method

The Additive Ratio Assessment (ARAS) method is a method used for ranking criteria in conducting the ranking process. According to Stanujkic and Jovanovic, the ARAS method was developed by Zavadskas and Turskis in 2010. The ARAS method is one of the multicriteria decision-making methods based on the concept of ranking using utility degree, namely by comparing the overall index value of each alternative to the overall index value of the optimal alternative. In this research, the ARAS method applied to barista recruitment is discussed. A decision support system is a system that supports selection, reasoning and design, and supports decision-making styles and models. DSS is also adaptive and flexible, which is able to adapt / adjust over time, able to overcome all changes and conditions that exist besides that it is also easy to update, more effective and easy to use by its users[28]–[32]. The steps of the Additive Ratio Assessment (ARAS) method are as follows:

1. Formation of Decision Matrix

$$X = \begin{bmatrix} X_{01} & \cdots & X_{0j} & \cdots & X_{0n} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ X_{n1} & \cdots & X_{ij} & \cdots & X_{in} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ X_{n1} & \cdots & X_{mj} & \cdots & X_{mn} \end{bmatrix} \; i = 0, m;\; j = 1, n \qquad (1)$$

   Where m is the Number of Alternatives, n is the Number of Criteria, Xij is the performance value of alternative i against criterion j, and X0j is the optimum value of criterion j.

2. Normalising the decision matrix for all criteria

$$X = \begin{bmatrix} X_{01} & \cdots & X_{0j} & \cdots & X_{0n} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ X_{n1} & \cdots & X_{ij} & \cdots & X_{in} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ X_{n1} & \cdots & X_{mj} & \cdots & X_{mn} \end{bmatrix} \; i = 0, m;\; j = 1, n \qquad (2)$$

   If the criterion is benefical (max) then normalisation is done following:

$$X_{ij} = \frac{Xij}{\sum_{i=0} m}\; Xij \qquad \text{Where: Xij is the normalised value} \qquad (3)$$

   If the criteria are non-beneficial then the normalisation process is in 2 stages, namely:

   a. Stage 1 $x_{ij} = \frac{1}{X^*}$ (4)

   b. Stage 1 $R = \frac{x_{ij}}{\sum_{i}^{m}=0}\; Xij$ (5)

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3. Determine the normalised weight matrix

$\sum_{j=1}^{n} wj = 1$ Where wj is the criterion weight

$$X = \begin{bmatrix} X_{01} & \cdots & X_{0j} & \cdots & X_{0n} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ X_{n1} & \cdots & X_{ij} & \cdots & X_{in} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ X_{n1} & \cdots & X_{mj} & \cdots & X_{mn} \end{bmatrix} i = 0, m;\ j = 1, n \quad (6)$$

4. Determine the value of the optimisation function (S_i)

$$S_i = \sum_{j=1}^{n} = Xij;\ i = 0, m, \quad (7)$$

Where S_i is the alternative optimisation function value. The largest value is the best value, and the least value is the worst value. By taking into account the process, the proportional relationship with the weight values of the criteria under study affects the final result.

5. Determine the highest ranking level and alternatives

$$k_i = \frac{S_1}{S_0} \quad i = 0,\text{m}, \quad (8)$$

Where S_1 and S_0 are the optimals criterion values, obtained from the obvious equations.

2.4 Recruitment

Recruitment is the process of searching and attracting workers who have the potential to fill job vacancies, a qualified workforce greatly affects the performance of the company's progress. In the decision-making process, the acceptance of baristas is still influenced by subjective factors and companies often experience difficulties in selecting barista candidates, because there are many barista candidates who apply while those who will be accepted as baristas are very limited[33], [34].

2.5 Barista

A barista is someone who works in a coffee shop as a coffee brewer. Baristas who work in coffee shops have responsibilities that not only mix coffee but also take care of coffee bean processing equipment and are good at communicating with customers[35].

3. RESULTS AND DISCUSSION

3.1 Determination of Criteria and Weights

In producing a decision in recruiting baristas, supporting data is needed, such as criteria, weights and alternative data. The sample of alternative data that will be used is 10 barista recruitment data, and 5 criteria, namely skill, responsibility, discipline, age and work experience. The following criteria table can be seen in table 1 below.

Table 1. Criteria and Weights

No	Criteria Code	Criteria Name	Benefit/Cost	Weight
1	C1	Skills	Benefit	0.456
2	C2	Responsibility	Benefit	0.256
3	C3	Discipline	Benefit	0.156
4	C4	Age	Cost	0.09
5	C5	Work Experience	Benefit	0.04

Based on table 1 above, there are four criteria of the benefit type and one criterion of the cost type with the weight value (importance) of each criterion that has been determined using the ROC method so that the first criterion is more important (higher weight level) than the weight of the other criteria which is 0.456, for the weight of the other criteria can be seen in table 1. In order for each criterion used to be clearer and more understandable, the following is an explanation of each criterion used.

Skill : The ability to do something from what is done.
Responsibility : The compliance of a barista in doing his job well, aware of the actions and obligations he ust do.
Discipline : A sense of obedience and obedience to the rules and not breaking the rules that have been made, discipline also means being good at managing time.
Age : Minimum 22 years old and maximum 25 years old.
Work Experience : Knowledge and intelligence of a barista in performing his duties in the previous company.

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Table 2. Alternatives for Criteria

No	Name	*SKILL* (C1)	Responsibility (C2)	Discipline (C3)	Age (C4)	Work Experience (C5)
1	Jeky Saputra (A1)	Very Good	Good	Very Good	23 Year	3 Year
2	Melly Sofia (A2)	Very Good	Good	Good	22 Year	2 Year
3	Nadia Zahra (A3)	Good	Less Good	Very Good	25 Year	3 Year
4	Elsa Yulianti (A4)	Less Good	Good	Good	23 Year	1 Year
5	Dhany Haryanto (A5)	Very Good	Good	Very Good	24 Year	2 Year
6	Ade Rahayu (A6)	Enough	Enough	Good	22 Year	1 Year
7	Abdul Gani (A7)	Good	Enough	Very Good	24 Year	2 Year
8	Febby Diva (A8)	Good	Good	Enough	23 Year	2 Year
9	Rizky Pratama (A9)	Very Good	Good	Good	25 Year	3 Year
10	Dimas Darmawan (A10)	Less Good	Less Good	Very Good	22 Year	3 Year

Based on table 2, there are 3 criteria that are linguistic so that it is necessary to improve the weight of their values, including criteria C1, C2 and C3. As for criteria C4 and C5, there is no need to fix the weights anymore because they already have numerical values so that calculations can be done directly. More details can be seen in table 3 below.

Table 3. Improvement of Criteria Value Weights C1, C2, and C3

Description	Values
Very Good	4
Good	3
Enough	2
Less Good	1

After determining the weight value of linguistic criteria that have been carried out in table 3, the following is a match rating table that has been adjusted to table 2 with table 3 so that the process of applying the method in making decisions can be carried out. The table that will be used as the final sample is called the suitability rating table which can be seen in table 4 below.

Table 4. Suitability Rating Data

No	Alternatives	C_1	C_2	C_3	C_4	C_5
1	A0	4	4	4	22	3
2	A1	4	3	4	23	3
3	A2	4	3	3	22	2
4	A3	3	1	4	25	3
5	A4	1	3	3	23	1
6	A5	4	4	4	24	2
7	A6	2	2	3	22	1
8	A7	3	2	4	24	2
9	A8	3	3	2	23	2
10	A9	4	3	3	25	3
11	A10	1	1	4	22	3

3.2 Application of the ARAS Method

The Additive Ratio Assessment (ARAS) method is a method used for selecting alternatives based on criteria that have previously determined the importance weight of each of these criteria using the ROC method. The steps for completing the method in recruiting baristas are as follows:

1. Formation of Decision Matrix

$$X = \begin{vmatrix} 4 & 4 & 4 & 22 & 3 \\ 4 & 3 & 4 & 23 & 3 \\ 4 & 3 & 3 & 22 & 2 \\ 3 & 1 & 4 & 25 & 3 \\ 1 & 3 & 3 & 23 & 1 \\ 4 & 4 & 4 & 24 & 2 \\ 2 & 2 & 3 & 22 & 1 \\ 3 & 2 & 4 & 24 & 2 \\ 3 & 3 & 2 & 23 & 2 \\ 4 & 3 & 3 & 25 & 3 \\ 1 & 1 & 4 & 22 & 3 \end{vmatrix}$$

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2. After Normalised

$$\begin{bmatrix} 4 & 4 & 4 & 22 & 3 \\ 4 & 3 & 4 & 23 & 3 \\ 4 & 3 & 3 & 22 & 2 \\ 3 & 1 & 4 & 25 & 3 \\ 1 & 3 & 3 & 23 & 1 \\ 4 & 4 & 4 & 24 & 2 \\ 2 & 2 & 3 & 22 & 1 \\ 3 & 2 & 4 & 24 & 2 \\ 3 & 3 & 2 & 23 & 2 \\ 4 & 3 & 3 & 25 & 3 \\ 1 & 1 & 4 & 22 & 3 \end{bmatrix}$$

$$33 \quad 29 \quad 38 \quad 255 \quad 25$$

Form a normalisation matrix for C1 to C5 which can be determined in the same way as follows:

C1

$R_{01} = \frac{4}{33} = 0.121$

$R_{11} = \frac{4}{33} = 0.121$

$R_{21} = \frac{4}{33} = 0.121$

$R_{31} = \frac{3}{33} = 0.090$

$R_{41} = \frac{1}{33} = 0.030$

$R_{51} = \frac{4}{33} = 0.121$

$R_{61} = \frac{2}{33} = 0.060$

$R_{71} = \frac{3}{33} = 0.090$

$R_{81} = \frac{3}{33} = 0.090$

$R_{91} = \frac{4}{33} = 0.121$

$R_{101} = \frac{1}{33} = 0.030$

C2

$R_{02} = \frac{4}{29} = 0.137$

$R_{12} = \frac{3}{29} = 0.103$

$R_{22} = \frac{3}{29} = 0.103$

$R_{32} = \frac{1}{29} = 0.034$

$R_{42} = \frac{3}{29} = 0.103$

$R_{52} = \frac{4}{29} = 0.137$

$R_{62} = \frac{2}{29} = 0.068$

$R_{72} = \frac{2}{29} = 0.068$

$R_{82} = \frac{3}{29} = 0.103$

$R_{92} = \frac{3}{29} = 0.103$

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$R_{102} = \frac{1}{29} = 0.034$

C3

$R_{03} = \frac{4}{38} = 0.105$

$R_{13} = \frac{4}{38} = 0.105$

$R_{23} = \frac{3}{38} = 0.078$

$R_{33} = \frac{4}{38} = 0.105$

$R_{43} = \frac{3}{38} = 0.078$

$R_{53} = \frac{4}{38} = 0.105$

$R_{63} = \frac{3}{38} = 0.078$

$R_{73} = \frac{4}{38} = 0.105$

$R_{83} = \frac{2}{38} = 0.052$

$R_{93} = \frac{3}{38} = 0.078$

$R_{103} = \frac{4}{38} = 0.105$

Because the 4th criterion (C4) has a minimum value, there are 2 stages carried out in the normalisation process including the following.

a. Stage 1

C4

$X_{04} = \frac{22}{22} = 1$

$X_{14} = \frac{22}{23} = 0.956$

$X_{24} = \frac{22}{22} = 1$

$X_{34} = \frac{22}{25} = 0.880$

$X_{44} = \frac{22}{23} = 0.956$

$X_{54} = \frac{22}{24} = 0.916$

$X_{64} = \frac{22}{22} = 1$

$X_{74} = \frac{22}{24} = 0.916$

$X_{84} = \frac{22}{23} = 0.956$

$X_{94} = \frac{22}{25} = 0.880$

$X_{104} = \frac{22}{22} = 1$

Then add up the values from R04 to R104 so that they can be entered into stage 2

b. Stage 2

$R_{04} = \frac{1}{10.460} = 0.095$

$R_{14} = \frac{0.956}{10.460} = 0.091$

$R_{24} = \frac{1}{10.460} = 0.095$

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$$R_{34} = \frac{0.880}{10.460} = 0.084$$

$$R_{44} = \frac{0.956}{10.460} = 0.091$$

$$R_{54} = \frac{0.916}{10.460} = 0.087$$

$$R_{64} = \frac{1}{10.460} = 0.095$$

$$R_{74} = \frac{0.916}{10.460} = 0.087$$

$$R_{84} = \frac{0.956}{10.460} = 0.091$$

$$R_{94} = \frac{0.880}{10.460} = 0.084$$

$$R_{104} = \frac{1}{10.460} = 0.095$$

C5

$$R_{05} = \frac{3}{25} = 0.120$$

$$R_{15} = \frac{3}{25} = 0.120$$

$$R_{25} = \frac{2}{25} = 0.080$$

$$R_{35} = \frac{3}{25} = 0.120$$

$$R_{45} = \frac{1}{25} = 0.040$$

$$R_{55} = \frac{2}{25} = 0.080$$

$$R_{65} = \frac{1}{25} = 0.040$$

$$R_{75} = \frac{2}{25} = 0.080$$

$$R_{85} = \frac{2}{25} = 0.080$$

$$R_{95} = \frac{3}{25} = 0.120$$

$$R_{105} = \frac{3}{25} = 0.120$$

From the normalisation results above, the normalised decision matrix results can be found as follows:

$$X* = \begin{bmatrix} 0.121 & 0.137 & 0.105 & 0.095 & 0.120 \\ 0.121 & 0.103 & 0.105 & 0.091 & 0.120 \\ 0.121 & 0.103 & 0.078 & 0.095 & 0.080 \\ 0.090 & 0.034 & 0.105 & 0.084 & 0.120 \\ 0.030 & 0.103 & 0.078 & 0.091 & 0.040 \\ 0.121 & 0.137 & 0.105 & 0.087 & 0.080 \\ 0.060 & 0.068 & 0.078 & 0.095 & 0.040 \\ 0.090 & 0.068 & 0.105 & 0.087 & 0.080 \\ 0.090 & 0.103 & 0.052 & 0.091 & 0.080 \\ 0.121 & 0.103 & 0.078 & 0.084 & 0.120 \\ 0.030 & 0.034 & 0.105 & 0.095 & 0.120 \end{bmatrix}$$

3. Determining the Weight Matrix
   In determining the value of the normalised weight matrix, the multiplication of the normalised matrix against the weight of criteria D1 to D5 is carried out with the same solution as follows:

   D1:

   D01 = X_{01} * W1 = 0.121 * 0.456 = 0.265

   D11 = X_{11} * W1 = 0.121 * 0.456 = 0.265

   D21 = X_{21} * W1 = 0.121 * 0.456 = 0.265

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D31 = X_{31} * W1 = 0.090 * 0.456 = 0.197

D41 = X_{41} * W1 = 0.030 * 0.456 = 0.065

D51 = X_{51} * W1 = 0.121 * 0.456 = 0.265

D61 = X_{61} * W1 = 0.060 * 0.456 = 0.131

D71 = X_{71} * W1 = 0.090 * 0.456 = 0.197

D81 = X_{81} * W1 = 0.090 * 0.456 = 0.197

D91 = X_{91} * W1 = 0.121 * 0.456 = 0.265

D101 = X_{101} * W1 = 0.030 * 0.456 = 0.065

Perform Determining the Weight Matrix for D2 to D5 like the D1 calculation above. The results of the multiplication calculation above after being done to all of them, the following matrix can be obtained:

$$D = \begin{bmatrix} 0.256 & 0.535 & 0.673 & 1.055 & 3 \\ 0.256 & 0.402 & 0.673 & 1.011 & 3 \\ 0.256 & 0.402 & 0.005 & 1.055 & 2 \\ 0.197 & 0.132 & 0.673 & 0.933 & 3 \\ 0.065 & 0.402 & 0.005 & 1.011 & 1 \\ 0.265 & 0.535 & 0.673 & 0.966 & 2 \\ 0.131 & 0.265 & 0.005 & 1.055 & 1 \\ 0.197 & 0.265 & 0.673 & 0.966 & 2 \\ 0.197 & 0.402 & 0.333 & 1.011 & 2 \\ 0.265 & 0.402 & 0.005 & 0.933 & 3 \\ 0.065 & 0.132 & 0.673 & 1.055 & 3 \end{bmatrix}$$

4. Determine the value of the optimum function, by summing up the value of the criteria for each alternative from the result of multiplying the matrix with the weights from the previous step.

   S0 = 0.256 + 0.535 + 0.673 + 1.055 + 3 = 2.519

   S1 = 0.256 + 0.402 + 0.673 + 1.011 + 3 = 5.342

   S2 = 0.256 + 0.402 + 0.005 + 1.055 + 2 = 3.718

   S3 = 0.197 + 0.132 + 0.673 + 0.933 + 3 = 4.935

   S4 = 0.065 + 0.402 + 0.005 + 1.011 + 1 = 2.483

   S5 = 0.265 + 0.535 + 0.673 + 0.966 + 2 = 4.439

   S6 = 0.131 + 0.265 + 0.005 + 1.055 + 1 = 2.456

   S7 = 0.197 + 0.265 + 0.673 + 0.966 + 2 = 4.101

   S8 = 0.197 + 0.402 + 0.333 + 1.011 + 2 = 3.943

   S9 = 0.265 + 0.402 + 0.005 + 0.933 + 3 = 4.605

   S10 = 0.265 + 0.132 + 0.673 + 1.055 + 3 = 5.125

5. Determining the highest rank level of each alternative, by sharing the alternative value with the alternative 0

   $k_0 = \frac{2.519}{1} = 2.519$

   $k_1 = \frac{5.342}{1} = 5.342$

   $k_2 = \frac{3.718}{1} = 3.718$

   $k_3 = \frac{4.935}{1} = 4.935$

   $k_4 = \frac{2.483}{1} = 2.483$

   $k_5 = \frac{4.439}{1} = 4.439$

   $k_6 = \frac{2.456}{1} = 2.456$

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$$k_7 = \frac{4.101}{1} = 4.101$$

$$k_8 = \frac{3.943}{1} = 3.943$$

$$k_9 = \frac{4.605}{1} = 4.605$$

$$k_{10} = \frac{5.125}{1} = 5.125$$

From the calculation of the ARAS method above, the ranking values are sorted from the highest to the lowest except k0 is not included, which can be seen in table 5 below:

Tabel 5. Ranking Determination

Alternatives	Name	Preference Value	Rank
A1	Jeky Saputra	5.342	1
A10	Dimas Darmawan	5.125	2
A3	Nadia Zahra	4.935	3
A9	Rizky Pratama	4.605	4
A5	Dhany Haryanto	4.439	5
A7	Abdul Gani	4.101	6
A8	Febby Diva	3.943	7
A2	Melly Sofia	3.718	8
A4	Elsa Yulianti	2.483	9
A6	Ade Rahayu	2.456	10

Based on the preference values and criteria that have been determined in table 5 above, it can be seen that alternative A1 on behalf of "Jeky Saputra" obtained the highest optimisation value of 5,342 as the selected alternative in Addict Coffee barista recruitment.

4. CONCLUSION

From the research conducted, it can be concluded that Rank Order Centroid (ROC) can be used to generate weight values and Additive Ratio Assessment (ARAS) can be used in the recruitment of 10 barista candidates by utilising five criteria with each importance weight determined using the ROC method. After applying these two methods, the Decision Support System can be used as a tool in determining barista recruitment. And in this case the factor that greatly influences the results and determines the recruitment of baristas using the ROC and ARAS methods so as to obtain the largest optimisation value and produce the best alternative as the first rank, namely A1 with a final value of 5.342 then in second place is Alternative A10 with a final value of 5.125 and third place is alternative A3 with a final value of 4.935.

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