

# Decision Support System for Student Exchange Selection in Support of Independent Campus using the MAUT and ROC Methods

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## Abstract

Independent campus is an off-campus learning activity as an opportunity for students to hone skills in preparation for entering the world of work. One of the programs held is the exchange of students to be able to study on campuses or companies that join the Ministry of Education and Culture, Research and Technology. With the current independent campus program, almost all universities open up opportunities for students to register. However, because there are too many students who register, the campus has difficulty in choosing some students who can be accepted according to the criteria set by the party. For this reason, a Decision Support System is needed that applies the MAUT method along with the use of ROC to produce the best preference value. The calculation of several data samples resulted in the best final utility value in the selection of independent campus student exchanges in Alternative A<sub>2</sub> with the best final utility value of 0.9700.

**Keywords:** Independent Campus; Student Exchange; MAUT Method; ROC Method; DSS

## 1. INTRODUCTION

In early January 2020, the Ministry of Education and Culture led by Nadiem Makarim launched a program specifically designed for students known as MBKM (Independent Learning, Independent Campus). Nadiem Anwar Makarim, B.A., M.B.A., as the Minister of Education, Culture, Research, and Technology, was keen on instigating a new era for the upcoming generation. The objective behind the MBKM program is to serve as a framework for preparing students to become resilient scholars, relevant to the needs of the times, and ready to assume leadership roles with a high spirit of nationalism[1]. Subsequently, this program is approved by universities, companies, and the government, allowing it to run meticulously. Learning activities, in accordance with Minister of Education and Culture Regulation No. 3 of 2020 Article 15 paragraph 1, can be carried out both within and outside the study program. These include Student Exchange, Independent Internship, Independent Study, Humanitarian Projects, Entrepreneurial Activities, and Real Work Lecture. Students are permitted to enroll in and participate in the available learning opportunities within MBKM by registering and fulfilling certain requirements set by the Independent Campus Selection team[2].

In this regard, the Independent Student Exchange will be one of the selected programs to be pursued. Student Exchange is a learning activity undertaken by students outside their regular study program, either within their home institution or at other institutions within or outside the country, with a credit load of 20 credits to 40 credits. Therefore, students have the opportunity to participate in this program[3]. There are several stages of selection for the Independent Campus Exchange that will be conducted by the Independent Campus as a requirement for students to be accepted into the program. Some of the criteria that may serve as prerequisites in the Independent Campus selection include GPA, Non-Academic Achievements, Skills, Ethics, Attendance, and Academic Sanctions. Hence, the need for a Decision Support System as a tool to assist in the selection of student exchanges in support of the independent campus.

Decision Support System is a computer-based system that can be used in decision-making for a crucial component in helping to choose a decision. The Decision Support System has several methods that can obtain the best decision, including Preference Selection Index (PSI), Complex Proportional Assessment (COPRAS), Rank Order Centroid (ROC), weight product (WP), Simple Additive Weighting (SAW), Multi-Objective Optimization on the basis of Ratio Analysis (MOORA), Metode Occupational Repetitive Action (OCRA), Analytical Hierarchy Process (AHP), Multi Attribute Utility Theory (MAUT)[4]–[8]. In this case, the author employs the MAUT and ROC methods as a solution for a decision support system to achieve the highest values. The MAUT method is one of the techniques used for quantitative comparison to combine estimates and costs of different profit-risk scenarios, while ROC is used to obtain results from a weighting process.

Based on research data related to references from several MAUT and ROC methods, in 2022, the use of MAUT and ROC methods in determining the priority of regional flagship products was conducted by Agung Triayudi et al., resulting in the best value of 0.00653[9]. In 2022, the use of MAUT and ROC methods for the development of the metaverse for online learning media was performed by Pristiwanto et al., yielding the best value of 0.0597[10]. In 2022, the use of MAUT and ROC methods for employee selection was carried out by Dian Nur Sholihaningti, resulting in the best value of 0.732[11]. Also in 2022, the use of MAUT and ROC methods for determining the eligibility of migrant workers was conducted by Dimas Hadityo Ramadhan et al., producing the best value of 0.9748[12]. Lastly, in 2022, the use of MAUT and ROC methods for selecting extracurricular activities was performed by Intan Oktaria, yielding the best

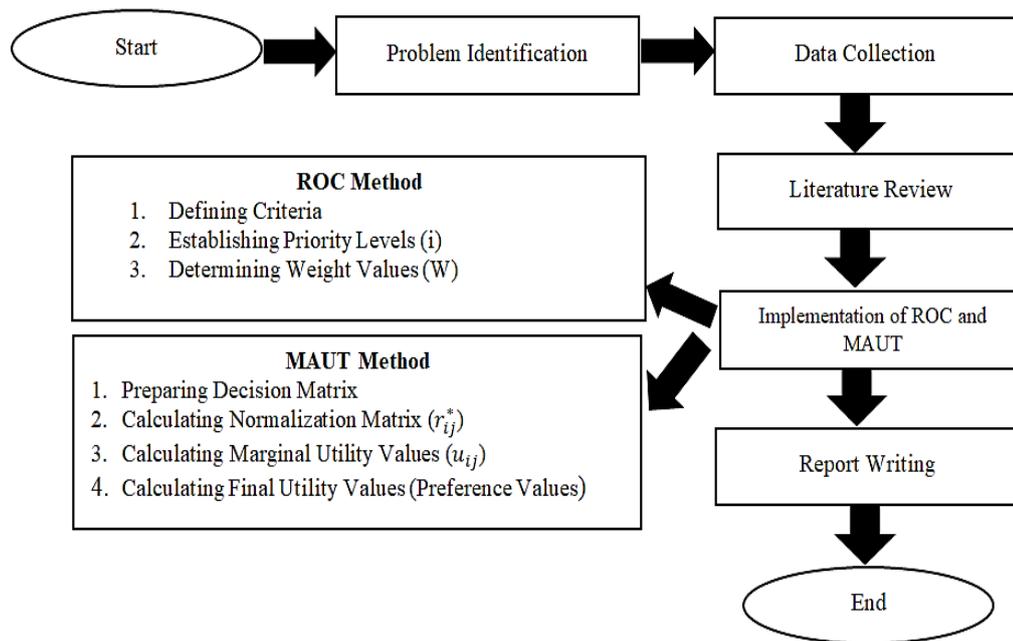
value of 0.654[13]. Based on these related studies, the author is interested in combining MAUT and ROC methods to obtain the highest preference value in the Student Exchange Selection by the Independent Campus.

By implementing a combination of these methods, it is expected to assist in generating decisions based on weighted values and the best alternatives in the Student Exchange Selection. This method is carried out to achieve the best alternative results maximally in accordance with the predetermined criteria up to the final stage. Thus, it can produce the most precise and accurate values.

## 2. RESEARCH METHODOLOGY

### 2.1 Research Stages

Based on the research process, there are several stages structured by the author according to the Literature Review. The following is a figure 1 of the research stages:



**Figure 1.** Research Stages

In conducting this research, the author followed several stages. Here is an explanation of figure 1:

1. Problem Identification  
Addressing a problem and analyzing data before conducting a study, design, or calculation.
2. Data Collection  
Conducting observations to understand the stages of selecting strategic locations.
3. Literature Review  
Becoming familiar with Decision Support System (DSS) and MAUT method by reading relevant journals and references related to the research.
4. Implementation of ROC and MAUT  
Applying the ROC and MAUT methods in the process of calculating sample data.
5. Report Writing  
Compiling a research report as a written result in the form of a summary of this study

### 2.2 Independent Campus

Independent Campus is a policy established by the Minister of Education and Culture that provides opportunities for students to hone their skills in accordance with their talents and interests as preparation for entering the workforce. Essentially, this program serves as a concept that grants students the freedom to learn in higher education[14]. Student Exchange is one form of learning activity within the independent campus, providing students with the opportunity to take courses for one or two semesters in other programs and campuses[15].

### 2.3 ROC Method

The ROC method is used to assign weights based on existing criteria. In this process, the highest value is determined as the best value. In this case, the weight values in the ROC method can be seen in the following formula[16]–[20]:

$$w_m = \frac{1}{m} \sum_{i=1}^m \left( \frac{1}{i} \right) \quad (1)$$

Then, it can result in  $w_m$  having a value of 1.

## 2.4 MAUT Method

The MAUT method is a technique used for quantitative comparison to combine estimates and costs of different profit-risk scenarios. The following are the steps in the MAUT method[21]–[24]:

### 1. Preparing Decision Matrix

$$X_{ij} = \begin{bmatrix} r_{11} & \dots & r_{1j} & \dots & r_{1n} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ r_{i1} & \dots & r_{ij} & \dots & r_{in} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ r_{m1} & \dots & r_{mj} & \dots & r_{mn} \end{bmatrix} ; i = 1, \dots, m, j = 1, \dots, n \quad (2)$$

### 2. Calculating Normalization Matrix ( $r_{ij}^*$ )

$$r_{ij}^* = \frac{r_{ij} - \min(r_{ij})}{\max(r_{ij}) - \min(r_{ij})} ; i = 1, \dots, m, j = 1, \dots, n \quad (3)$$

$$r_{ij}^* = 1 + \left( \frac{\min(r_{ij}) - r_{ij}}{\max(r_{ij}) - \min(r_{ij})} \right) ; i = 1, \dots, m, j = 1, \dots, n \quad (4)$$

### 3. Calculating Marginal Utility Values ( $u_{ij}$ )

$$u_{ij} = \frac{e^{(r_{ij}^*)^2} - 1}{1.71} ; i = 1, \dots, m, j = 1, \dots, n \quad (5)$$

### 4. Calculating Final Utility Values (Preference Value)

$$U_i = \sum_{j=1}^n u_{ij} \cdot w_j ; i = 1, \dots, m \quad (6)$$

## 3. RESULTS AND DISCUSSION

In making a decision in the Independent Student Exchange Selection, the MAUT and ROC methods are employed as a solution to obtain the best alternatives. Therefore, several calculations and method implementations are carried out, as explained below.

### 3.1 Determination of Alternatives and Criteria

In obtaining the best results, there are several alternatives in the selection of student exchange in support of independent campus, as explained in the following Table 1:

**Table 1.** Alternative Data

Alternative	Location Name
A <sub>1</sub>	Rika Ayu
A <sub>2</sub>	Shofwan Hamid
A <sub>3</sub>	Zein Fatahillah
A <sub>4</sub>	Zico Parinduri
A <sub>5</sub>	Sheila Dwi Ayu
A <sub>6</sub>	Kayla Shifa
A <sub>7</sub>	Bunga Cahya Simanjuntak

In the Student Exchange Selection process, there are criteria needed as outlined in the following Table 2:

**Table 2.** Data Kriteria

Kriteria	Information	Type
C <sub>1</sub>	GPA	Benefit
C <sub>2</sub>	Number of Achievements	Benefit
C <sub>3</sub>	Semester	Benefit
C <sub>4</sub>	English Proficiency	Benefit
C <sub>5</sub>	Attendance	Benefit
C <sub>6</sub>	Academic Sanctions	Cost

Based on the above Table 2, there are several criteria that can be used as references to strengthen the student exchange selection. The following is an explanation of some of these criteria:

GPA : Assessment based on the academic achievements obtained by the student to participate in the student exchange selection.

- Number of Achievements : Reinforcement to prove that the selected student has outstanding achievements.
- Semester : Requirement for applying for the activity.
- English Proficiency : Additional value to facilitate the selection process.
- Attendance : Requirement that the student is active in lectures.
- Academic Sanctions : Violations given by the university to students, expected to minimize such incidents.

### 3.2 Determination of Weights Using the ROC Method

In the Student Exchange Selection to support the independent campus, there are criteria that must include weights in the calculation process. ROC is used for the weighting needed in ranking alternative values. The process of elaborating weight values using equation 1 in the ROC method can be clearly seen in the calculations below:

$$W_1 = \frac{1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6}}{6} = 0,40$$

$$W_2 = \frac{0 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6}}{6} = 0,24$$

$$W_3 = \frac{0 + 0 + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6}}{6} = 0,15$$

$$W_4 = \frac{0 + 0 + 0 + \frac{1}{4} + \frac{1}{5} + \frac{1}{6}}{6} = 0,10$$

$$W_5 = \frac{0 + 0 + 0 + 0 + \frac{1}{5} + \frac{1}{6}}{6} = 0,06$$

$$W_6 = \frac{0 + 0 + 0 + 0 + 0 + \frac{1}{6}}{6} = 0,02$$

Hence, the weight for  $C_1$  is 0.40,  $C_2$  is 0.24,  $C_3$  is 0.15,  $C_4$  is 0.10,  $C_5$  is 0.06, and  $C_6$  is 0.02. The following are the weight values and criteria as shown below in table 3:

**Table 3.** Value Weights dan Criteria

Criteria	Information	Weight	Type
$C_1$	GPA	0.40	Benefit
$C_2$	Number of Achievements	0.24	Benefit
$C_3$	Semester	0.15	Benefit
$C_4$	English Proficiency	0.10	Benefit
$C_5$	Attendance	0.06	Benefit
$C_6$	Academic Sanctions	0.02	Cost

Here is the table 4 of alternative and criteria data needed in the student exchange selection at the independent campus.

**Table 4.** Data of Alternatives and Criteria

Alternative	$C_1$	$C_2$	$C_3$	$C_4$	$C_5$	$C_6$
Rika Ayu	3,75	3	4	Good	Very good	1
Shofwan Hamid	3,80	4	6	Very good	Very good	2
Zein Fatahillah	3,40	2	6	Good	Good	1
Zico Parinduri	3,70	1	4	Pretty good	Very good	1
Sheila Dwi Ayu	3,66	4	2	Good	Good	2
Kayla Shifa	3,50	3	2	Very good	Very good	1
Bunga Cahya Simanjuntak	3,70	4	6	Good	Very good	1

In the table above, it can be seen that there is still linguistic-type data, requiring weighting to produce numerical values as seen in Tables 5 as follows:

**Table 5.** Weight Values for English Proficiency ( $C_4$ ) dan and Attendance ( $C_5$ )

Information	Weight
Very good	4
Good	3
Pretty good	2
Not good	1

The weighted criteria can be clearly seen in the following Table 6:

**Table 6.** Matching Rating Data After Weighting

Alternative	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>6</sub>
A <sub>1</sub>	3,75	3	4	3	4	1
A <sub>2</sub>	3,80	4	6	4	4	2
A <sub>3</sub>	3,40	2	6	3	3	1
A <sub>4</sub>	3,70	1	4	2	4	1
A <sub>5</sub>	3,66	4	2	3	3	2
A <sub>6</sub>	3,50	3	2	4	4	1
A <sub>7</sub>	3,70	4	6	3	4	1

### 3.3 Implementation of the MAUT Method

The stages of the calculation process in applying the MAUT method are detailed in the following steps:

1. Preparing the Decision Matrix

$$X_{ij} = \begin{bmatrix} 3,75 & 3 & 4 & 3 & 4 & 1 \\ 3,80 & 4 & 6 & 4 & 4 & 1 \\ 3,40 & 2 & 6 & 3 & 3 & 1 \\ 3,70 & 1 & 4 & 2 & 4 & 2 \\ 3,66 & 4 & 2 & 3 & 3 & 1 \\ 3,55 & 3 & 2 & 4 & 4 & 1 \\ 3,70 & 4 & 6 & 3 & 4 & 1 \end{bmatrix}$$

2. Calculating the Normalization Matrix ( $r_{ij}^*$ )

For Criterion C<sub>1</sub>(Benefit)

$$r_{11}^* = \frac{3,75-3,40}{3,80-3,40} = 0,875$$

$$r_{21}^* = \frac{3,80-3,40}{3,80-3,40} = 1$$

$$r_{31}^* = \frac{3,40-3,40}{3,80-3,40} = 0$$

$$r_{41}^* = \frac{3,70-3,40}{3,80-3,40} = 0,75$$

$$r_{51}^* = \frac{3,66-3,40}{3,80-3,40} = 0,65$$

$$r_{61}^* = \frac{3,55-3,40}{3,80-3,40} = 0,375$$

$$r_{71}^* = \frac{3,70-3,40}{3,80-3,40} = 0,75$$

For Criterion C<sub>2</sub>(Benefit)

$$r_{12}^* = \frac{3-1}{4-1} = 0,67$$

$$r_{22}^* = \frac{4-1}{4-1} = 1$$

$$r_{32}^* = \frac{2-1}{4-1} = 0,33$$

$$r_{42}^* = \frac{1-1}{4-1} = 0$$

$$r_{52}^* = \frac{4-1}{4-1} = 1$$

$$r_{62}^* = \frac{3-1}{4-1} = 0,67$$

$$r_{72}^* = \frac{4-1}{4-1} = 1$$

For Criterion C<sub>3</sub>(Benefit)

$$r_{13}^* = \frac{4-2}{6-2} = 0,5$$

$$r_{23}^* = \frac{6-2}{6-2} = 1$$

$$r_{33}^* = \frac{6-2}{6-2} = 1$$

$$r_{43}^* = \frac{4-2}{6-2} = 0.5$$

$$r_{53}^* = \frac{2-2}{6-2} = 0$$

$$r_{63}^* = \frac{2-2}{6-2} = 0$$

$$r_{73}^* = \frac{6-2}{6-2} = 1$$

For Criterion C<sub>4</sub>(Benefit)

$$r_{14}^* = \frac{3-2}{4-2} = 0.5$$

$$r_{24}^* = \frac{4-2}{4-2} = 1$$

$$r_{34}^* = \frac{3-2}{4-2} = 0.5$$

$$r_{44}^* = \frac{2-2}{4-2} = 0$$

$$r_{54}^* = \frac{3-2}{4-2} = 0.5$$

$$r_{64}^* = \frac{4-2}{4-2} = 1$$

$$r_{74}^* = \frac{3-2}{4-2} = 0.5$$

For Criterion C<sub>5</sub>(Benefit)

$$r_{15}^* = \frac{4-3}{4-3} = 1$$

$$r_{25}^* = \frac{4-3}{4-3} = 1$$

$$r_{35}^* = \frac{3-3}{4-3} = 0$$

$$r_{45}^* = \frac{4-3}{4-3} = 1$$

$$r_{55}^* = \frac{3-3}{4-3} = 0$$

$$r_{65}^* = \frac{4-3}{4-3} = 1$$

$$r_{75}^* = \frac{3-3}{4-3} = 0$$

For Criterion C<sub>6</sub>(Cost)

$$r_{16}^* = 1 + \frac{1-1}{2-1} = 1$$

$$r_{26}^* = 1 + \frac{1-2}{2-1} = 0$$

$$r_{36}^* = 1 + \frac{1-1}{2-1} = 1$$

$$r_{46}^* = 1 + \frac{1-1}{2-1} = 1$$

$$r_{56}^* = 1 + \frac{1-2}{2-1} = 0$$

$$r_{66}^* = 1 + \frac{1-1}{2-1} = 1$$

$$r_{76}^* = 1 + \frac{1-1}{2-1} = 1$$

Based on the calculations conducted, we obtain the normalized matrix values as clearly shown in the following table 7:

**Table 7.** Result of Normalized Matrix

Alternative	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>6</sub>
A <sub>1</sub>	0.875	0.67	0.5	0.5	1	1
A <sub>2</sub>	1	1	1	1	1	0

Alternative	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>6</sub>
A <sub>3</sub>	0	0.33	1	0.5	0	1
A <sub>4</sub>	0.75	0	0.5	0	1	1
A <sub>5</sub>	0.65	1	0	0.5	0	0
A <sub>6</sub>	0.375	0.67	0	1	1	1
A <sub>7</sub>	0.75	1	1	0.5	0	1

### 3. Calculating Marginal Utility Values (U<sub>ij</sub>)

For Criterion C<sub>1</sub>

$$U_{11} = \frac{e^{(0.875)^2} - 1}{1.71} = 0.67$$

$$U_{21} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{31} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_{41} = \frac{e^{(0.75)^2} - 1}{1.71} = 0.44$$

$$U_{51} = \frac{e^{(0.65)^2} - 1}{1.71} = 0.30$$

$$U_{61} = \frac{e^{(0.375)^2} - 1}{1.71} = 0.08$$

$$U_{71} = \frac{e^{(0.75)^2} - 1}{1.71} = 0.44$$

For Criterion C<sub>2</sub>

$$U_{12} = \frac{e^{(0.67)^2} - 1}{1.71} = 0.33$$

$$U_{22} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{32} = \frac{e^{(0.33)^2} - 1}{1.71} = 0.06$$

$$U_{42} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_{52} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{62} = \frac{e^{(0.67)^2} - 1}{1.71} = 0.33$$

$$U_{72} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

For Criterion C<sub>3</sub>

$$U_{13} = \frac{e^{(0.5)^2} - 1}{1.71} = 0.16$$

$$U_{23} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{33} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{43} = \frac{e^{(0.5)^2} - 1}{1.71} = 0.16$$

$$U_{53} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_{63} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_{73} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

For Criterion C<sub>4</sub>

$$U_{14} = \frac{e^{(0.5)^2} - 1}{1.71} = 0.16$$

$$U_{24} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{34} = \frac{e^{(0.5)^2} - 1}{1.71} = 0.16$$

$$U_{44} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_{54} = \frac{e^{(0.5)^2} - 1}{1.71} = 0.16$$

$$U_{64} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{74} = \frac{e^{(0.5)^2} - 1}{1.71} = 0.16$$

For Criterion C<sub>5</sub>

$$U_{15} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{25} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{35} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_{45} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{55} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_{65} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{75} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

For Criterion C<sub>6</sub>

$$U_{16} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{26} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_3 = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{46} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{56} = \frac{e^{(0)^2} - 1}{1.71} = 0$$

$$U_{66} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

$$U_{76} = \frac{e^{(1)^2} - 1}{1.71} = 1$$

From the calculations performed, the final marginal utility values as table 8 below:

**Table 8.** Result of Final Marginal Utilities

Alternative	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>6</sub>
A <sub>1</sub>	0.67	0.33	0.16	0.16	1	1
A <sub>2</sub>	1	1	1	1	1	0
A <sub>3</sub>	0	0.06	1	0.16	0	1
A <sub>4</sub>	0.44	0	0.16	0	1	1

Alternative	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>6</sub>
A <sub>5</sub>	0.30	1	0	0.16	0	0
A <sub>6</sub>	0.08	0.33	0	1	1	1
A <sub>7</sub>	0.44	1	1	0.16	0	1

#### 4. Calculating Final Utility Values (U<sub>i</sub>)

$$U_1 = (0.40 * 0.67) + (0.24 * 0.33) + (0.15 * 0.16) + (0.10 * 0.16) + (0.06 * 1) + (0.02 * 1) = 0.4672$$

$$U_2 = (0.40 * 1) + (0.24 * 1) + (0.15 * 1) + (0.10 * 1) + (0.06 * 1) + (0.02 * 1) = 0.9700$$

$$U_3 = (0.40 * 0) + (0.24 * 0.06) + (0.15 * 1) + (0.10 * 0.16) + (0.06 * 0) + (0.02 * 1) = 0.2004$$

$$U_4 = (0.40 * 0.44) + (0.24 * 0) + (0.15 * 0.16) + (0.10 * 0) + (0.06 * 1) + (0.02 * 1) = 0.2800$$

$$U_5 = (0.40 * 0.30) + (0.24 * 1) + (0.15 * 0) + (0.10 * 0.16) + (0.06 * 0) + (0.02 * 0) = 0.3760$$

$$U_6 = (0.40 * 0.08) + (0.24 * 0.33) + (0.15 * 0) + (0.10 * 1) + (0.06 * 1) + (0.02 * 1) = 0.2912$$

$$U_7 = (0.40 * 0.44) + (0.24 * 1) + (0.15 * 1) + (0.10 * 0.16) + (0.06 * 0) + (0.02 * 1) = 0.6020$$

The final utility values and rankings can be observed at table 9 follows:

**Table 9.** Alternative Rankings

Alternative	Location Name	Nilai U <sub>i</sub>	Rank
A <sub>2</sub>	Shofwan Hamid	0.9700	1
A <sub>7</sub>	Bunga Cahaya Simanjuntak	0.6020	2
A <sub>1</sub>	Rika Ayu	0.4672	3
A <sub>5</sub>	Sheila Dwi Ayu	0.3760	4
A <sub>6</sub>	Kayla Shifa	0.2912	5
A <sub>4</sub>	Zico Parinduri	0.2800	6
A <sub>3</sub>	Zein Fatahillah	0.2004	7

According to the calculation results using the MAUT method with the implementation of ROC weighting, the most suitable alternative based on the criteria in the Student Exchange Selection to support the Independent Campus is obtained with the highest value in alternative A2, amounting to 0.9700, under the name Shofwan Hamid.

## 4. CONCLUSION

Based on the research results, the author concludes that the MAUT method with the implementation of ROC weighting can be used in the selection of independent campus student exchange. The application of the MAUT method is useful for assisting in more efficient decision-making. In this case, the factor that significantly influences the value acquisition in the MAUT method is the largest preference value, which results in the best alternative in the first rank, found in alternative A2 with the highest preference value of 0.9700 under the name Shofwan Hamid.

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