DOI: https://doi.org/10.70656/ijcse.v3i02.937

DETERMINATION OF THE BEST WRESTLING ATHLETES TO PARTICIPATE IN THE PRAPON NATIONAL CHAMPIONSHIP USING THE MOOSRA METHOD

1st Julia Purnama Sari
Information Systems Study Program
Faculty of Engineering
University of Bengkulu
Bengkulu, Indonesia
juliapurnamasari@unib.ac.id

2nd Fepy Supriani
Civil Engineering Study Program
Faculty of Engineering
University of Bengkulu
Bengkulu, Indonesia
fsupriani@unib.ac.id

3rd Dwi Rina Utami
Architecture Study Program
Faculty of Engineering,
University of Bengkulu
Bengkulu, Indonesia
dwirinautami13@unib.ac.id

***Abstract*— In the national-level competition, each province needs to prepare its best athletes to compete in the PraPON national championships. At the Bengkulu Province Student Training and Education Center (PPLP), the selection process for the best wrestling athletes to participate in the PraPON national championships still relies on manual observation and evaluation by wrestling coaches. This results in the selection of the best wrestler being less structured and objective. The athlete selection process also involves multiple criteria, making a decision support system necessary to ensure that the selection results are more objective, quick, and efficient for all athletes who will compete in the PraPON national championships. The aim of this research is to determine the best wrestling athlete to participate in the PraPON national championships in an objective and accurate manner. The method used in this research is the MOOSRA method (Multiobjective Optimization on the Basis of Simple Ratio Analysis). MOOSRA is a decision support system method that is easy to understand and follows a systematic process, making it simple to implement. The results of this research can assist in making decisions to select the best wrestler for the PraPON national championships using the MOOSRA method. From the calculations using the MOOSRA method, the decision was made that the first ranking goes to Debi Ardianto with the highest preference score of 25.1. Meanwhile, the last ranking goes to Septo Dwi Cahyo, who received the lowest preference score among all alternatives, which is 13.52.**

Keywords— Wrestling, Decision Support System, MOOSRA, PraPON

I. INTRODUCTION

Wrestling is a martial art sport that focuses on the application of throwing and locking techniques against opponents, while emphasizing strength, flexibility, agility, and optimal physical fitness [1]. Wrestling is frequently featured in various prestigious sporting events worldwide, including the Olympic Games, World Championships, Asian-level competitions such as the Asian Games, Southeast Asian-level competitions such as the SEA Games, as well as national sporting events such as the Pre-National Sports Week (PraPON), National Sports Week (PON), Provincial Sports Week (PORPROV), and National Student Sports Week (POPNAS) [2].

In national-level competitions, each province needs to prepare its best athletes to compete in the PraPON national-level competition. PraPON is an essential part of the preparation of teams or athletes for the National Sports Week (PON). At the Student Education and Training Center (PPLP) of Bengkulu Province, the process of selecting the best wrestling athletes to participate in the PraPON national championship still relies on manual observation and assessment conducted by wrestling coaches. This approach makes the selection of the best wrestling athletes less structured and objective. Furthermore, assessments conducted by coaches are prone to subjectivity due to the numerous factors influencing the selection of wrestling athletes [3]. The athlete selection process also involves multiple criteria; therefore, a decision support system is required to ensure that the selection results are more objective, timely, and efficient for all athletes competing in the PraPON national championship. Accordingly, the selection process is carried out with the assistance of a decision support system to facilitate the objective and accurate identification and selection of candidates [4].

The implementation of decision support systems has been widely adopted in decision-making processes [5]. A decision support system is a computerized tool that assists decision-makers in solving complex problems without being restricted by previously established limitations or rules. This system relies on algorithms and data to identify solutions to complex problems. When properly implemented, a decision support system can serve as a highly useful tool for identifying optimal solutions to a particular problem [6]. Furthermore, decision support systems have the capability to solve problems and facilitate communication in semi-structured and unstructured decision-making situations [7]. The purpose of a Decision Support System (DSS) is to provide predictions, supply information, and offer guidance to information users so that they can make decisions more effectively [8].

Several methods can be applied in decision support systems, one of which is the MOOSRA (Multi-Objective Optimization on the Basis of Simple Ratio Analysis) method [9]. MOOSRA is a decision support system method that is easy to understand and follows a systematic process, making it relatively straightforward to implement [10]. The primary

advantages of MOOSRA lie in its computational simplicity and ease of interpretation. This method facilitates multi-criteria decision-making without compromising accuracy [11]. In general, the MOOSRA method begins with the formulation of a decision matrix consisting of alternatives, criteria or attributes, individual weights or significance coefficients for each criterion, and performance evaluations corresponding to those criteria [12].

This study aims to support the decision-making process in determining the best wrestling athletes to participate in the PraPON national championship using the MOOSRA method. Therefore, this study is expected to provide benefits to the Student Education and Training Center (PPLP) of Bengkulu Province in determining the wrestling athletes who will participate in the PraPON national championship.

II. Research Method

A. Literature Review

Previous studies employing the MOOSRA method include research conducted by Situmpul et al., which produced a decision to identify employees who met the requirements for permanent employment [13]. Another study was conducted by Abdul Karim et al., which resulted in the selection of the best graduate, with Zainal achieving the highest score of 0.418397 [10]. Furthermore, research conducted by Fitri Meilida developed a decision support system for selecting pencak silat athletes based on predetermined performance rankings [3]. Meanwhile, the present study aims to generate decisions for determining the best wrestling athletes to participate in the PraPON national championship using the MOOSRA method.\

B. Research Method

Data collection is a crucial stage in a research study, involving the application of several techniques. The data collection techniques used in this study are as follows:

1. Interview

   The purpose of this method is to obtain first-hand information from the respondents regarding the criteria used to determine the best wrestling athletes for the PraPON national championship.

2. Literature Study

   The literature study was conducted to support this research by utilizing previous research findings as references and guidelines. The sources include books, national and international journals, and other reliable references.

   The system development method employed in this study is the Waterfall model. The stages of this model are presented in Figure 1.

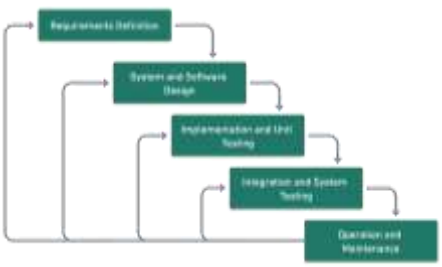


Figure 1. Waterfall Method

a. Requirements Definition

This initial stage aims to identify the obstacles encountered and plan how the system will operate. To achieve this objective, data collection was conducted at the Student Education and Training Center (PPLP) of Bengkulu Province through direct interviews with the respondents.

b. System and Software Design

The second stage involves system design using the Unified Modeling Language (UML) and XAMPP for database design.

c. Implementation and Unit Testing

The third stage involves implementing the system based on the design developed in the second stage, followed by verifying each program unit to determine whether it meets the specified requirements and design specifications.

d. Integration and System Testing

The fourth stage involves system testing using the Black Box Testing technique. This testing is conducted to identify potential problems within the system and ensure that all system components function properly. If no problems are identified, the system can be handed over to the Student Education and Training Center (PPLP) of Bengkulu Province.

e. Operation and Maintenance

This stage is carried out once the system has been deployed and is operational at the Student Education and Training Center (PPLP) of Bengkulu Province.

III. Results and Discussion

This study employs the MOOSRA method to objectively and accurately determine the best wrestling athletes to participate in the PraPON national championship. In this study, 12 athletes were used as alternatives, evaluated based on six criteria.

A. Determination of Criteria, Sub-criteria, and Weights

The criteria required in this study include achievements, physical abilities, technical skills, physical fitness, discipline, and attendance. Each criterion is assigned a corresponding weight.

TABLE I. CRITERIA AND WEIGHTS

Code	Criteria	Weights	Type
C1	Achievements	30%	Benefit
C2	Physical	30%	Benefit
C3	Abilities	20%	Benefit
C4	Technical Skills	10%	Benefit
C5	Physical Fitness	5%	Benefit
C6	Discipline Attendance	5%	Cost

Each criterion consists of sub-criteria, each of which is assigned a specific weight. The sub-criteria and their corresponding weights are presented in the following table. 2.

DOI: https://doi.org/10.70656/ijcse.v3i02.937

TABLE II. SUBCRITERIA AND WEIGHTS

Criteria	Sub Criteria	Sub Sub Criteria	Weights
Achievements (C1)	Level (SC1)	PON	3
		PraPON	2,5
		Annual PP Calendar	2
		POMNAS	1,5
		POPNAS	1
		Inter PPLP	0,5
	Years (SC2)	< = 1 Years	1
		> 1 Tahun <=3Years	0,7
		> 3 Years	0,5
Physical Abilities (C2)	Push Up (1 minute)(SC3)	>= 44	1
		< 44	0,5
	Sit Up (2 minute)(SC4)	>= 50	1
		< 50	0,5
	Endurance (SC5)	<= 54.1 Seconds	1
		> 54.1 Seconds	0,5
	Speed (SC6)	<= 4.09 Seconds	1
		> 4.09	0,5
	Agility (SC7)	<= 11.2 Seconds	1
		> 11.2 Seconds	0,5
Technical Skills (C3)	Wrestling Gymnastics (SC8)	8,6 – 10	1
		7,6 – 8.5	0,7
		6,6 – 7,5	0,5
		<= 6,5	0,2
	Upper-Body Techniques (SC9)	8,6 – 10	1
		7,6 – 8.5	0,7
		6,6 – 7,5	0,5
		<= 6,5	0,2
	Upper-Body Techniques (SC10)	8,6 – 10	1
		7,6 – 8.5	0,7
		6,6 – 7,5	0,5
		<= 6,5	0,2
	Technical Sparring (SC11)	8,6 – 10	1
		7,6 – 8.5	0,7
		6,6 – 7,5	0,5
		<= 6,5	0,2
Physical Fitness (C4)	Body Mass Index (SC12)	20 – 29 (Normal)	4
		30 – 34 (Overweight)	3
		< 19 or > 35 (Underweight/Obese)	2
Discipline (C5)	Punctuality (SC13)	0 Late	2
		1–6	1,5
		>6	1
Attendance (C6)	Attendance (SC14)	0 Alpa	2
		1–6	1,5
		>6	1

B. Determination of Alternatives

A total of 12 alternative records were used as research samples. The alternative data are presented in Table 3.

TABLE III. ALTERNATIVE DATA

Kode	Alternatif
A1	Debi Ardianto
A2	Suparmanto
A3	Dendy M
A4	M.Athif
A5	M.Gilang P
A6	Tri Wahono
A7	Aditya Saputra
A8	Bahrony
A9	Ari Pragita
A10	Candra
A11	Ahmad Haidar
A12	Septo Dwi Cahyo

The alternative scores for each alternative are presented in Table 4.

TABLE IV. ALTERNATIVE SCORE

Alternative	C1		C2					C3				C4	C5	C6
	SC 1	SC 2	SC 3	SC 4	SC 5	SC 6	SC 7	SC 8	SC 9	SC 10	SC 11	SC 12	SC 13	SC 14
A1	PON	2021	82	123	3,3	14,89	52,3	8,5	8,5	8,5	8,5	24,17	3	2
A2	POPNAS	2017	74	98	3,26	14,66	54,34	8	8,5	8,5	8	21,26	4	3
A3	PRAPON	2019	76	78	3,46	17,19	1,00,2	8,5	8,5	8,5	8,5	30,12	1	0
A4	POPNAS	2018	75	100	3,37	15,51	53,23	8,5	8,5	8,5	8,5	22,06	7	2
A5	ANNUAL PP CALENDAR	2021	65	90	3,44	15,78	58,7	8	8	8	8	24,39	1	2
A6	PON	2021	76	85	3,67	15,83	1,08,13	9	9	9	9	25,44	2	0
A7	ANNUAL PP CALENDAR	2019	64	80	3,5	15,58	1,02,96	8,5	8,5	8,5	8,5	35,29	3	1
A8	POPNAS	2017	92	115	3	13	56,21	9	9	9	9	23,28	7	3
A9	ANNUAL PP CALENDAR	2018	45	55	5	15	130	6,5	6,5	6,5	6,5	31,22	8	5
A10	PRAPON	2020	60	98	4,2	12	52	9,5	9,5	9,5	9,5	21,51	1	0
A11	POPNAS	2013	65	90	3,44	15,78	58,7	8	8	8	8	24,39	1	1
A12	POPNAS	2015	52	82	3,39	15,38	53,6	7,5	7,5	7,5	7,5	25,35	2	0

The alternative scores are matched against the corresponding criteria, as presented in Table 5.

TABLE V. ALTERNATIVE COMPATIBILTY RATINGS WITH RESPECT TO THE CRITERIA

Alternative	C1		C2					C3				C4	C5	C6
	SC 1	SC 2	SC 3	SC 4	SC 5	SC 6	SC 7	SC 8	SC 9	SC 10	SC 11	SC 12	SC 13	SC 14
A1	3	0,7	1	1	1	0,5	1	0,7	0,7	0,7	0,7	4	1,5	1,5
A2	1	0,5	1	1	1	0,5	0,5	0,7	0,7	0,7	0,7	4	1,5	1,5
A3	2,5	0,5	1	1	1	0,5	0,5	0,7	0,7	0,7	0,7	3	1,5	2
A4	1	0,5	1	1	1	0,5	1	0,7	0,7	0,7	0,7	4	1	1,5
A5	2	0,7	1	1	1	0,5	0,5	0,7	0,7	0,7	0,7	4	1,5	1,5
A6	3	0,7	1	1	1	0,5	0,5	1	1	1	1	4	1,5	2
A7	2	0,5	1	1	1	0,5	0,5	0,7	0,7	0,7	0,7	2	1,5	1,5
A8	1	0,5	1	1	1	0,5	0,5	1	1	1	1	4	1	1,5
A9	2	0,5	1	1	0,5	0,5	0,5	0,2	0,2	0,2	0,2	3	1	1,5
A10	2,5	0,5	1	1	0,5	0,5	1	1	1	1	1	4	1,5	2
A11	1	0,5	1	1	1	0,5	0,5	0,7	0,7	0,7	0,7	4	1,5	1,5
A12	1	0,5	1	1	1	0,5	1	0,5	0,5	0,5	0,5	4	1,5	2

Next, the compatibility rating values of the alternatives with respect to the criteria are summed, as presented in Table 6.

TABLE VI. SUMMATION OF ALTERNATIVE- CRITERION COMPATIBLITY RATINGS

Alternative	C1	C2	C3	C4	C5	C6
A1	3,7	4,5	2,8	4	1,5	1,5
A2	1,5	4	2,8	4	1,5	1,5
A3	3	4	2,8	3	1,5	2
A4	1,5	4,5	2,8	4	1	1,5
A5	2,7	4	2,8	4	1,5	1,5
A6	3,7	4	4	4	1,5	2
A7	2,5	4	2,8	2	1,5	1,5
A8	1,5	4	4	4	1	1,5
A9	2,5	3,5	0,8	3	1	1,5
A10	3	4	4	4	1,5	2
A11	1,5	4	2,8	4	1,5	1,5
A12	1,5	4,5	2	4	1,5	2

C. *Calculation Using the MOOSRA Method*

1. Decision Matrix

The decision matrix plays an important role in various multi-criteria decision-making methods, as it facilitates the selection of the best alternative based on predetermined criteria. Based on the data obtained from the summation of the alternative compatibility rating values with respect to the criteria presented in Table 6, the resulting decision matrix is presented as follows.

$$Xij[mxn] = \begin{pmatrix} 3,7 & 4,5 & 2,8 & 4 & 1,5 & 1,5 \\ 1,5 & 4 & 2,8 & 4 & 1,5 & 1,5 \\ 3 & 4 & 2,8 & 3 & 1,5 & 2 \\ 1,5 & 4,5 & 2,8 & 4 & 1 & 1,5 \\ 2,7 & 4 & 2,8 & 4 & 1,5 & 1,5 \\ 3,7 & 4 & 4 & 4 & 1,5 & 2 \\ 2,5 & 4 & 2,8 & 2 & 1,5 & 1,5 \\ 1,5 & 4 & 4 & 4 & 1 & 1,5 \\ 2,5 & 3,5 & 0,8 & 3 & 1 & 1,5 \\ 3 & 4 & 4 & 4 & 1,5 & 2 \\ 1,5 & 4 & 2,8 & 4 & 1,5 & 1,5 \\ 1,5 & 4,5 & 2 & 4 & 1,5 & 2 \end{pmatrix}$$

2. Matrix Normalization

Next, the decision matrix is normalized as follows:

$$Xij = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} \quad (1)$$

$$X_{11} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{3,7}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,42$$

$$X_{21} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{1,5}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,17$$

$$X_{31} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{3}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,34$$

$$X_{41} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{1,5}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,17$$

$$X_{51} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{2,7}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,31$$

$$X_{61} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{3,7}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,42$$

$$X_{71} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{2,5}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,29$$

$$X_{81} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{1,5}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,17$$

$$X_{91} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{2,5}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,29$$

$$X_{101} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{3}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,34$$

$$X_{111} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{1,5}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,17$$

$$X_{121} = \frac{Xij}{\sum_{i=1}^{m} x^2 ij} = \frac{1,5}{\sqrt{3,7^2 + 1,5^2 + 3^2 + 1,5^2 + 2,7^2 + 3,7^2 + 2,5^2 + 1,5^2 + 2,5^2 + 3^2 + 1,5^2 + 1,5^2}} = 0,17$$

And so on, up to X_{512}.

The normalization results are presented in Table 7.

TABLE VII. MATRIX NORMALIZATION

Alternatif	C1	C2	C3	C4	C5	C6
A1	0,42	0,32	0,27	0,31	0,31	0,26
A2	0,17	0,28	0,27	0,31	0,31	0,26
A3	0,34	0,28	0,27	0,23	0,31	0,34
A4	0,17	0,32	0,27	0,31	0,21	0,26
A5	0,31	0,28	0,27	0,31	0,31	0,26
A6	0,42	0,28	0,39	0,31	0,31	0,34
A7	0,29	0,28	0,27	0,16	0,31	0,26
A8	0,17	0,28	0,39	0,31	0,21	0,26
A9	0,29	0,25	0,08	0,23	0,21	0,26
A10	0,34	0,28	0,39	0,31	0,31	0,34
A11	0,17	0,28	0,27	0,31	0,31	0,26
A12	0,17	0,32	0,19	0,31	0,31	0,34

3. Attribute Optimization

Attribute optimization is performed by multiplying each criterion by its corresponding criterion weight. The results of these multiplications are presented in Table 8.

TABLE VIII. RESULTS OF MULTIPLYING THE CRITERIA BY THEIR CORRESPONDING WEIGHTS

Alternative	C1	C2	C3	C4	C5	C6
A1	0,127	0,095	0,054	0,031	0,016	0,013
A2	0,051	0,085	0,054	0,031	0,016	0,013
A3	0,103	0,085	0,054	0,023	0,016	0,017
A4	0,051	0,095	0,054	0,031	0,010	0,013
A5	0,093	0,085	0,054	0,031	0,016	0,013
A6	0,127	0,085	0,077	0,031	0,016	0,017
A7	0,086	0,085	0,054	0,016	0,016	0,013
A8	0,051	0,085	0,077	0,031	0,010	0,013
A9	0,086	0,074	0,015	0,023	0,010	0,013
A10	0,103	0,085	0,077	0,031	0,016	0,017
A11	0,051	0,085	0,054	0,031	0,016	0,013
A12	0,051	0,095	0,039	0,031	0,016	0,017

4. Preference Value Calculation

The preference value (Y) is calculated by summing all criteria classified as benefit and dividing the result by the sum of the criteria classified as cost. The calculation process is illustrated in the following equations.

$$Yi = \frac{\sum_{j=1}^{g} \mathrm{Wj\ Xij}}{\sum_{j=g+1}^{n} \mathrm{Wj\ Xij}} \quad (2)$$

$$Y1 = \frac{0,127 + 0,095 + 0,054 + 0,031 + 0,016}{0,013} = 0,323$$

$$Y2 = \frac{0,051 + 0,085 + 0,054 + 0,031 + 0,016}{0,013} = 0,237$$

$$Y3 = \frac{0,103 + 0,085 + 0,054 + 0,023 + 0,016}{0,017} = 0,280$$

$$Y4 = \frac{0,051 + 0,095 + 0,054 + 0,031 + 0,010}{0,013} = 0,242$$

$$Y5 = \frac{0,093 + 0,085 + 0,054 + 0,031 + 0,016}{0,013} = 0,278$$

The calculation of the preference values (Y) is then performed for the remaining alternatives (Alternatives 6 to 12). The results of the preference value (Y) calculations are presented in Table 9.

TABLE IX. PREFERENCE CALCULATION RESULTS

Alternative	Benefit	Cost	Yi
A1	0,323	0,013	25,1
A2	0,237	0,013	18,4
A3	0,280	0,017	16,35
A4	0,242	0,013	18,82
A5	0,278	0,013	21,61
A6	0,335	0,017	19,56
A7	0,256	0,013	19,87
A8	0,255	0,013	19,8
A9	0,209	0,013	16,24
A10	0,311	0,017	18,15
A11	0,237	0,013	18,4
A12	0,232	0,017	13,52

TABLE X. RANKING RESULT

Alternative	Name	Yi	Ranking
A1	Debi Ardianto	25,1	1
A2	Suparmanto	18,4	7
A3	Dendy M	16,35	9
A4	M. Athif	18,82	6
A5	M. Gilang P	21,61	2
A6	Tri Wahono	19,56	5
A7	Aditya Saputra	19,87	3
A8	Bahrony	19,8	4
A9	Ari Pragita	16,24	10
A10	Candra	18,15	8
A11	Ahmad Haidar	18,4	7
A12	Septo Dwi Cahyo	13,52	11

Based on Table 10, the ranking of the best wrestling athletes to participate in the PraPON national championship was determined using the MOOSRA method. The table shows that Debi Ardianto achieved the highest preference value of 25.1. Meanwhile, Septo Dwi Cahyo obtained the lowest preference value among all alternatives, with a score of 13.52.

IV. CONCLUSION

The results of this study can support decision-making in determining the best wrestling athletes to participate in the PraPON national championship using the MOOSRA method. Based on the calculations using the MOOSRA method, Debi Ardianto was ranked first, achieving the highest preference value of 25.1. Meanwhile, Septo Dwi Cahyo was ranked last, obtaining the lowest preference value among all alternatives, with a score of 13.52.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to the Faculty of Engineering, University of Bengkulu, for funding this research in 2024, which enabled the successful completion of this study

REFERENCES

[1] Gustiawan, "Indonesion Journal of Sport Science and Coaching Survei Program Latihan Atlet Gulat Kabupaten Kerinci Kerinci District Wrestling Athlete Training Program Survey olahraga yang berhadapan dengan menggunakan anggota tubuh , berusaha untuk," vol. 03, no. 02, pp. 22–28, 2021.

[2] R. Kembara, F. P. Hidasari, M. Fachrurrozi Bafadal, and A. Triansyah, "Hubungan power tungkai dan kelentukan terhadap bantingan lengan pada pegulat putra," Sport. J. Phys. Educ. Sport Recreat., vol. 6, no. 2, p. 132, 2022, doi: 10.26858/sportive.v6i2.37100.

[3] F. Meilida, "Sistem Pendukung Keputusan Seleksi Atlet Pon Cabang Pencak Silat Menerapkan MOOSRA," Bull. Comput. Sci. Res., vol. 1, no. 3, pp. 93–100, 2021.

[4] P. M. Sitanggang, Mesran, and K. Siregar, "Analisis Metode MOORA dan MOOSRA Dalam Pemilihan Peserta Olimpiade Matematika," RESOLUSI Rekayasa Tek. Inform. dan Inf., vol. 3, no. 1, pp. 6–16, 2022, doi: 10.47065/bits.v3i4.1238.

[5] J. P. Sari and M. Yusa, "Penentuan Karyawan Terbaik Pada Collection PT. PANIN Bank Menggunakan Metode SMART," Pseudocode, vol. 7, no. 2, pp. 157–164, 2020, doi: 10.33369/pseudocode.7.2.157-164.

[6] I. Gede Iwan Sudipa et al., Sistem Pendukung Keputusan. 2022.

[7] Sawitri, A. Nabila, and Mesran, "Penerapan Metode Multi-Objective Optimization on the Basis of Ratio Analysis dalam Pemilihan Teknisi Mesin Kompressor Terbaik," J. Mach. Learn. Data Anal., vol. 1, no. 2, pp. 76–82, 2022.

[8] D. Hardiyanti, "Sistem Pendukung Keputusan Pemilihan Atlet Renang Sumatera Utara Untuk Kejuaraan Tingkat Nasional dengan Metode ARAS Dan ROC," J. Informatics, Electr. Electron. Eng., vol. 1, no. 4, pp. 135–143, 2022.

[9] Nazrul Azizi, Bella Putri Cahyani, Hetty Rohayani, Jasmir, Yuwan Jumaryadi, and Jeperson Hutahaean, "Penerapan Metode MOOSRA dan ROC dalam Penentuan Guru Terbaik," J. Informatics Manag. Inf. Technol., vol. 3, no. 2, pp. 46–54, 2023, doi: 10.47065/jimat.v3i2.255.

[10] A. Karim, S. Esabella, T. Andriani, and M. Hidayatullah, "Penerapan Metode Multi-Objective Optimization on the Basis of Simple Ratio Analysis (MOOSRA) dalam Penentuan Lulusan Mahasiswa Terbaik," Build. Informatics, Technol. Sci., vol. 4, no. 1, pp. 162–168, 2022, doi: 10.47065/bits.v4i1.1630.

[11] M. A. Abdullah and R. T. Aldisa, "Sistem Pendukung Keputusan Perbandingan Metode MOORA Dengan MOOSRA Dalam Pemilihan Hair Stylish," J. Sist. Komput. dan Inform. Hal 131−, vol. 140, no. 1, pp. 131–140, 2023, doi: 10.30865/json.v5i1.6824.

[12] F. Saidah, E. Pratiwi, and N. Hasibuan, "Sistem Pendukung Keputusan Penerapan Metode MOOSRA Rekrutmen PPNPN Pada Kantor Pertanahan Kota Medan," Pros. SNASTIKOM Semin. Nas. Teknol. Inf. Komun. Pap., vol. 09, pp. 89–97, 2022.

[13] Lulu Dia Marito Sitompul, Keti Gabryriel Purba, and S. Aripin, "Penerapan Metode Multi-Objective Optimization on the Basis of Simple Ratio Analysis Dalam Seleksi Pengangkatan Karyawan Tetap," J. Informatics Manag. Inf. Technol., vol. 3, no. 2, pp. 55–62, 2023, doi: 10.47065/jimat.v3i2.253.