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# Implementation of the Weighted Aggregated Sum Product Assesment Method in Determining the Best Rice for Serabi Cake Making

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***Abstract*—This study explains the implementation using the Weighted Aggregated Sum Product Assessment method in determining the best rice to be used for making Serabi cakes, the case was taken from a Serabi cake seller in Tegal City, Central Java with the aim of providing knowledge to Serabi cake traders to be more detailed in determining the rice that is used. suitable for use in making Serabi not just rice is cheap, but it is necessary to see the shape and characteristics of the whole rice. The steps taken to determine the best rice which will then be used as the basis for making Serabi cakes using the Weighted Aggregated Sum Product Assessment method are: (1) Prepare a matrix in which is the value of each set of criteria, (2) Normalize matrix data x becomes normalized data, (3) Calculates alternative values using Weighted Aggregated Sum Product Assessment formula so that the ranking value is found. After these steps are carried out, in this study the best rice that is right to be used as a material for making Serabi is Pelita rice with a yield of 7.12 by occupying the first rank.**

***Keywords-Weighted Aggregated Sum Product Assessment (WASPAS); the best rice: Serabi cake; education;***

## I. INTRODUCTION

Serabi, also called surabi, srabi, also known in Thailand as khanom khrok, is an Indonesian pancake that is made from rice flour with coconut milk or shredded coconut as an emulsifier. Most of traditional Serabi tastes sweet, as the pancake is usually eaten with kinca or thick golden-brownish-colored coconut sugar syrup.

Rice is one of the basic ingredients of an alternative pancake cake and consists of carbohydrates, fats, proteins, minerals and vitamins that are used as ingredients for Serabi cakes. At this time the consumptive power of people towards Serabi is getting higher, especially in Tegal city. The demand for Serabi products has also increased. Therefore, Serabi production companies increasingly improve the quality of their Serabi products, especially in the selection of rice raw materials for making Serabi cakes.

In making decisions that involve a lot of factors, it is necessary to use a certain method. One method used is WASPAS method. WASPAS method is a framework for making effective decisions on complex issues by simplifying and speeding up the decision making process by solving the problem into its parts, organizing these parts or variables in a hierarchical arrangement, giving value numerical on subjective considerations about the importance of each variable and synthesize these various considerations to determine which variables and synthesize which ones have the highest priority and act to influence the outcome of the situation. This WASPAS method helps solve complex problems with structure.

In decision support systems there are many methods that can be used to produce solutions to get the best alternative [1], including decision support systems Analytical Hierarchy Process (AHP), Simple Additive Weighting (SAW), Weighted Product (WP), Simple Multi Attribute Rating Technique (SMART), Preference Ranking Organization METHod for Enrichment Evaluation (PROMETHEE), and Multi-Objective Optimization on the basis of Ratio Analysis (MOORA) methods. In its development, it can also use Fuzzy to produce more effective decisions. The development of information technology and computers, especially in the field of decision support systems, also encompasses the fields of management, marketing and business, this can be seen in the need for management to produce more effective decisions in controlling marketing strategies and large business sustainability, such as determining raw material management the best however, at a relatively mild price.

Here are some similar studies that researchers took as material in making this study. First according to a study by [2], with the object of selecting the best flour in vermicelli making. Alternative data available are tapioca flour, sago flour, starch and corn flour, which are the best to be used as vermicelli, influenced by flour quality criteria, price, and brand of flour. From the results using WASPAS method, it was found that corn flour has the highest value, then corn flour is a viable alternative for making vermicelli.

Research by [3], with the object of determining the best wood in making guitar. Alternative data available are rosewood, maple, poplar, mahogany, basswood, alder, and ash, from the seven woods, which are best used as guitar material by being influenced by criteria for wood species, wood fiber, texture and wood weight. From the results using WASPAS method, it was found that ash wood has the highest value, then ash wood is a viable alternative used for making guitar materials.

Research by [4], with the object of determining the recipient of the Bidik Misi scholarship. The existing alternative data, namely high school graduate children equivalent, in the study provides examples of A1, A2, A3, A4, and A5 which are appropriate to be awarded a Bidik Misi scholarship influenced by the criteria of father's work, mother's work, parents 'income, parents' dependents , home ownership, land area and house area. From the results using WASPAS method, it was found that A5 students had the highest score, then A5 students were viable alternatives to receive the Bidik Misi scholarship.

Research by [5], with the object of appointing permanent teachers. The existing alternative data, namely, honorary teachers, in the study gave examples of A1, A2, A3, A4, and A5 which were apt to be made permanent teachers influenced by GPA criteria, didactic and methodical sciences, teaching experience, age, and distance of residence to school. From the results using WASPAS method, it was found that the A2 teacher had the highest score, then the A2 teacher was a viable alternative to become a permanent teacher.

Research by [6], with the object of choosing the best motorcycle mechanics. Alternative data available, namely, motorcycle mechanics, in the study gave examples of A1, A2, A3, A4, and A5, which if appropriate to be selected to be the best motorcycle mechanic influenced by the criteria of trouble shooting, years of service, education, and letters of reprimand . From the results using MOORA method, it is found that A2 motorcycle mechanics have the highest value, then A2 motorcycle mechanics are a viable alternative to be used as the best motorcycle mechanics.

Research by [7], with the object of giving people business credit. The existing alternative data, namely, the local community, in the study gave examples of A1, A2, A3, A4, and A5 which were appropriate if given credit business by influenced by credit status criteria, business productivity, business conditions, collateral, and collectability. From the results using WASPAS method, it was found that the A3 community had the highest value, then A3 community was a viable alternative to providing credit business.

Based on previous research that have been explained above, the researcher is interested in conducting research on "Implementation of WASPAS Method in Determining the Best Rice for the Making of Serabi".

## II. METHODOLOGY

### A. *Method Weighted Aggregated Sum Product Assessment (WASPAS)*

According to [8], WASPAS method is to look for priority location choices that are most appropriate by using weighting. The use of this method is a combination of two sources known as MCDM approach, WMM and the heavy product model (WPM) when a linear normalization of the result element is needed. Using WASPAS method, optimal combination criteria are sought based on two optimal criteria. The first criterion is optimal, the average criteria for success is the same as the WSM method. This option is a popular and used MCDM for decision making. Following are the work steps of WASPAS Estimation method, namely:

1. Prepare a Matrix

$$X = \begin{bmatrix} x11 & x12 & \dots & x1_n \\ x21 & x22 & \dots & x2_n \\ \dots & \dots & \dots & \dots \\ x_m1 & x_m2 & \dots & x_m3 \end{bmatrix} \quad (1)$$

Based on formula (1), *m* is the number of alternative candidates, *n* is the number of evaluation criteria and *x* is the alternative performance with respect to criteria *j*.

2. Normalize the value of X*ij* with the following Formula (2) & (3):

Benefit Criteria

$$Xij = \frac{Xij}{Maxi\ Xij} \quad (2)$$

Cost Criteria

$$Xij = \frac{Mini\ \bar{X}ij}{Xij} \quad (3)$$

3. Calculate the Alternative value (*Qi*) using the following Formula (4):

$$Q = 0{,}5 \sum_{j=1}^{n} \bar{x}_{ij} wj + 0{,}5 \Pi_{j=1} (\bar{x}_i ij) wj \quad (4)$$

The best value of *Q* is the highest value.

## III. ANALYSIS AND DISCUSSION

The analysis was carried out in direct interviews with Serabi traders, precisely in the City of Tegal, Central Java. In this case the Serabi trader does not pay attention to the characteristics of the rice that will be used as a Serabi, instead it is impressed that when there is rice that is very cheap the rice will be used as a Serabi without thinking that the rice is still feasible or not to be used as an ingredient in making Serabi cakes. From that problem, the researcher wants to try to make a research in determining the best rice to be used as a basic ingredient in making Serabi cakes using the Weighted Aggregated Sum Product Assessment method, with the aim of helping the Serabi cake traders in determining the best rice to be used as ingredients in making cakes Serabi based on the criteria of rice strength, texture, aroma, and price. It is hoped that this research can reduce the ignorance of Serabi cake sellers in determining the right rice to be used in making Serabi cakes, at least it needs to be seen in terms of the strength of rice, texture, and aroma of rice, so that more health is maintained when the Serabi cake has been produced. The following is a table of criteria, where the weight assessment is determined by the expert, then the expert gives a point for each criterion with the provisions of the criteria are sorted by the factors that influence the most and the factors that influence the most are given the biggest point then decreases until the number of criteria is affected.

TABLE I. CRITERIA

| Criteria | Information | Atribut | Weight |
|---|---|---|---|
| **C1** | Strength | Benefit | 5 |
| **C2** | Texture | Benefit | 4 |
| **C3** | Aroma | Benefit | 3 |
| **C4** | Price | Cost | 2 |

Then for each statement has a set and value, except the price because the price contains numbers or data that have clear values. Following is Table 2 of the set's information obtained from Table 1.:

TABLE II. THE SET OF CRITERIA

| Criteria | Information | Set | Value |
|---|---|---|---|
| C1 | Strength | Strong | 5 |
| | | Break easily | 3 |
| C2 | Texture | Stained | 5 |
| | | Slightly stained | 4 |
| | | No stained | 3 |
| C3 | Aroma | Natural | 5 |
| | | Musty | 3 |

Then there is some alternative rice which will then be selected the best one, then the best rice will be used as a basic ingredient in making Serabi cakes. The rice that researchers took as an alternative, looks like this:

TABLE III. ALTERNATIVE

| Alternative | Information |
|---|---|
| **A1** | Ramos |

| | |
|---|---|
| **A2** | Pandan Wangi |
| **A3** | Rojo Lele |
| **A4** | IR42 |
| **A5** | Lembang Rice |
| **A6** | Mentik Wangi |
| **A7** | C4 |
| **A8** | Brown Rice |
| **A9** | Black Rice |
| **A10** | Beureum Sengit |
| **A11** | Pelita Rice |
| **A12** | Bulog Rice |
| **A13** | Mutiara Rice |
| **A14** | Jasmine Rice |
| **A15** | Golden Rice |

From the 15 names of rice given in Table 3, each has its own shape and characteristics that the researcher got from an expert, it looks like Table 4:

TABLE IV. DATA SET

| Alternative | C1 | C2 | C3 | C4 |
|---|---|---|---|---|
| **A1** | Strong | No stained | Natural | 8500 |
| **A2** | Strong | No stained | Natural | 8000 |
| **A3** | Break easily | Stained | Natural | 8500 |
| **A4** | Strong | Slightly stained | Musty | 8000 |
| **A5** | Break easily | Stained | Natural | 8500 |
| **A6** | Strong | Stained | Natural | 8500 |
| **A7** | Strong | Slightly stained | Musty | 7000 |
| **A8** | Strong | Stained | Natural | 9000 |
| **A9** | Strong | Stained | Natural | 10000 |
| **A10** | Break easily | Slightly stained | Musty | 8500 |
| **A11** | Strong | Stained | Natural | 7000 |
| **A12** | Break easily | No stained | Musty | 6000 |
| **A13** | Break easily | No stained | Musty | 7500 |
| **A14** | Break easily | Stained | Musty | 8000 |
| **A15** | Strong | Stained | Natural | 9500 |

After the data set is obtained, change it into a weighting form according to the values listed in Table 2. The set, except prices because the price criteria have their respective prices, and in this case the researcher takes in units of kilograms of rice, looks like Table 5:

TABLE V. WEIGHTING

| Alternative | C1 | C2 | C3 | C4 |
|---|---|---|---|---|
| **A1** | 5 | 3 | 5 | 8500 |
| **A2** | 5 | 3 | 5 | 8000 |
| **A3** | 3 | 5 | 5 | 8500 |
| **A4** | 5 | 4 | 3 | 8000 |
| **A5** | 3 | 5 | 5 | 8500 |
| **A6** | 5 | 5 | 5 | 8500 |
| **A7** | 5 | 4 | 3 | 7000 |
| **A8** | 5 | 5 | 5 | 9000 |
| **A9** | 5 | 5 | 5 | 10000 |
| **A10** | 3 | 4 | 3 | 8500 |
| **A11** | 5 | 5 | 5 | 7000 |
| **A12** | 3 | 3 | 3 | 6000 |
| **A13** | 3 | 3 | 3 | 7500 |
| **A14** | 3 | 5 | 3 | 8000 |
| **A15** | 5 | 5 | 5 | 9500 |

The weighting table can also be referred to as the formation of the matrix x, then the normalization process for each criterion. Normalization of rice strength criteria (C1):

$$A1\ X_{11} = \frac{x_{11}}{Max\ x} = \frac{5}{5} = 1$$
$$A2\ X_{21} = \frac{x_{21}}{Max\ x} = \frac{5}{5} = 1$$
$$A3\ X_{31} = \frac{x_{31}}{Max\ x} = \frac{3}{5} = 0{,}6$$
$$A4\ X_{41} = \frac{x_{41}}{Max\ x} = \frac{5}{5} = 1$$
$$A5\ X_{51} = \frac{x_{51}}{Max\ x} = \frac{3}{5} = 0{,}6$$
$$A6\ X_{61} = \frac{x_{61}}{Max\ x} = \frac{5}{5} = 1$$
$$A7\ X_{71} = \frac{x_{71}}{Max\ x} = \frac{5}{5} = 1$$
$$A8\ X_{81} = \frac{x_{81}}{Max\ x} = \frac{5}{5} = 1$$
$$A9\ X_{91} = \frac{x_{91}}{Max\ x} = \frac{5}{5} = 1$$
$$A10\ X_{101} = \frac{x_{101}}{Max\ x} = \frac{3}{5} = 0{,}6$$
$$A11\ X_{111} = \frac{x_{111}}{Max\ x} = \frac{5}{5} = 1$$
$$A12\ X_{121} = \frac{x_{121}}{Max\ x} = \frac{3}{5} = 0{,}6$$
$$A13\ X_{131} = \frac{x_{131}}{Max\ x} = \frac{3}{5} = 0{,}6$$
$$A14\ X_{141} = \frac{x_{141}}{Max\ x} = \frac{3}{5} = 0{,}6$$
$$A15\ X_{151} = \frac{x_{151}}{Max\ x} = \frac{5}{5} = 1$$

Normalization of texture criteria (C2):

$$A1\ X_{12} = \frac{x_{12}}{Max\ x} = \frac{3}{5} = 0{,}6$$
$$A2\ X_{22} = \frac{x_{22}}{Max\ x} = \frac{3}{5} = 0{,}6$$
$$A3\ X_{32} = \frac{x_{32}}{Max\ x} = \frac{5}{5} = 1$$
$$A4\ X_{42} = \frac{x_{42}}{Max\ x} = \frac{4}{5} = 0{,}8$$
$$A5\ X_{52} = \frac{x_{52}}{Max\ x} = \frac{5}{5} = 1$$
$$A6\ X_{62} = \frac{x_{62}}{Max\ x} = \frac{5}{5} = 1$$
$$A7\ X_{72} = \frac{x_{72}}{Max\ x} = \frac{4}{5} = 0{,}8$$
$$A8\ X_{82} = \frac{x_{82}}{Max\ x} = \frac{5}{5} = 1$$

A9 $X_{92} = \frac{x_{92}}{Max\ x} = \frac{5}{5} = 1$
A10 $X_{102} = \frac{x_{102}}{Max\ x} = \frac{4}{5} = 0{,}8$
A11 $X_{112} = \frac{x_{112}}{Max\ x} = \frac{5}{5} = 1$
A12 $X_{122} = \frac{x_{122}}{Max\ x} = \frac{3}{5} = 0{,}6$
A13 $X_{132} = \frac{x_{132}}{Max\ x} = \frac{3}{5} = 0{,}6$
A14 $X_{142} = \frac{x_{142}}{Max\ x} = \frac{5}{5} = 1$
A15 $X_{152} = \frac{x_{152}}{Max\ x} = \frac{5}{5} = 1$

Normalization of aroma criteria (C3):

A1 $X_{13} = \frac{x_{13}}{Max\ x} = \frac{5}{5} = 1$
A2 $X_{23} = \frac{x_{23}}{Max\ x} = \frac{5}{5} = 1$
A3 $X_{33} = \frac{x_{33}}{Max\ x} = \frac{5}{5} = 1$
A4 $X_{43} = \frac{x_{43}}{Max\ x} = \frac{3}{5} = 0{,}6$
A5 $X_{53} = \frac{x_{53}}{Max\ x} = \frac{5}{5} = 1$
A6 $X_{63} = \frac{x_{63}}{Max\ x} = \frac{5}{5} = 1$
A7 $X_{73} = \frac{x_{73}}{Max\ x} = \frac{3}{5} = 0{,}6$
A8 $X_{83} = \frac{x_{83}}{Max\ x} = \frac{5}{5} = 1$
A9 $X_{93} = \frac{x_{93}}{Max\ x} = \frac{5}{5} = 1$
A10 $X_{103} = \frac{x_{103}}{Max\ x} = \frac{3}{5} = 0{,}6$
A11 $X_{113} = \frac{x_{113}}{Max\ x} = \frac{5}{5} = 1$
A12 $X_{123} = \frac{x_{123}}{Max\ x} = \frac{3}{5} = 0{,}6$
A13 $X_{133} = \frac{x_{133}}{Max\ x} = \frac{3}{5} = 0{,}6$
A14 $X_{143} = \frac{x_{143}}{Max\ x} = \frac{3}{5} = 0{,}6$
A15 $X_{153} = \frac{x_{153}}{Max\ x} = \frac{5}{5} = 1$

Normalization of price criteria (C4):

A1 $X_{14} = \frac{Min\ x}{x_{14}} = \frac{6000}{8500} = 0{,}7059$
A2 $X_{24} = \frac{Min\ x}{x_{24}} = \frac{6000}{8000} = 0{,}75$
A3 $X_{34} = \frac{Min\ x}{x_{34}} = \frac{6000}{8500} = 0{,}7059$
A4 $X_{44} = \frac{Min\ x}{x_{44}} = \frac{6000}{8000} = 0{,}75$
A5 $X_{54} = \frac{Min\ x}{x_{54}} = \frac{6000}{8500} = 0{,}7059$
A6 $X_{64} = \frac{Min\ x}{x_{64}} = \frac{6000}{8500} = 0{,}7059$
A7 $X_{74} = \frac{Min\ x}{x_{74}} = \frac{6000}{7000} = 0{,}8571$
A8 $X_{84} = \frac{Min\ x}{x_{84}} = \frac{6000}{9000} = 0{,}6667$
A9 $X_{94} = \frac{Min\ x}{x_{94}} = \frac{6000}{10000} = 0{,}6$
A10 $X_{104} = \frac{Min\ x}{x_{104}} = \frac{6000}{8500} = 0{,}7059$
A11 $X_{114} = \frac{Min\ x}{x_{114}} = \frac{6000}{7500} = 0{,}8$
A12 $X_{124} = \frac{Min\ x}{x_{124}} = \frac{6000}{6000} = 1$
A13 $X_{134} = \frac{Min\ x}{x_{134}} = \frac{6000}{7500} = 0{,}8$
A14 $X_{144} = \frac{Min\ x}{x_{144}} = \frac{6000}{8000} = 0{,}75$
A15 $X_{154} = \frac{Min\ x}{x_{154}} = \frac{6000}{9500} = 0{,}6316$

Furthermore, from the above calculation will produce a normalized table as given in Table 6:

TABLE VI. NORMALIZATION

| Alternative | C1 | C2 | C3 | C4 |
|---|---|---|---|---|
| **A1** | 1 | 0,6 | 1 | 0,7059 |
| **A2** | 1 | 0,6 | 1 | 0,75 |
| **A3** | 0,6 | 1 | 1 | 0,7059 |
| **A4** | 1 | 0,8 | 0,6 | 0,75 |
| **A5** | 0,6 | 1 | 1 | 0,7059 |
| **A6** | 1 | 1 | 1 | 0,7059 |
| **A7** | 1 | 0,8 | 0,6 | 0,8571 |
| **A8** | 1 | 1 | 1 | 0,6667 |
| **A9** | 1 | 1 | 1 | 0,6 |
| **A10** | 0,6 | 0,8 | 0,6 | 0,7059 |
| **A11** | 1 | 1 | 1 | 0,8 |
| **A12** | 0,6 | 0,6 | 0,6 | 1 |
| **A13** | 0,6 | 0,6 | 0,6 | 0,8 |
| **A14** | 0,6 | 1 | 0,6 | 0,75 |
| **A15** | 1 | 1 | 1 | 0,6316 |

The next step is to optimize the attributes by multiplying the weights of each criterion. The calculation process to get is as follows:

A1
$Q1 = 0{,}5 \sum (1 \times 5) + (0{,}6 \times 4) + (1 \times 3) + (0{,}7059 \times 2) + 0{,}5 \prod (1)^5 + (0{,}6)^4 + (1)^3 + (0{,}7059)^2$

= 5,9382

A2
Q2= 0,5 ∑ (1 x 5) + (0,6 x 4) + (1x 3) + (0,75 x 2) + 0,5 ∏ $(1)^5$ + $(0,6)^4$ + $(1)^3$ + $(0,75)^2$
= 5,9865

A3
Q3= 0,5 ∑ (0,6 x 5) + (1 x 4) + (1 x 3) + (0,7059 x 2) + 0,5 ∏ $(0,6)^5$ + $(1)^4$ + $(1)^3$ + $(0,7059)^2$
= 5,7253

A4
Q4 = 0,5 ∑ (1 x 5) + (0,8 x 4) + (0,6 x 3) + (0,75 x 2) + 0,5 ∏ $(1)^5$ + $(0,8)^4$ + $(0,6)^3$ + $(0,75)^2$
= 5,7749

A5
Q5 = 0,5 ∑ (0,6 x 5) + (1 x 4) + (1x 3) + (0,7059 x 2) + 0,5 ∏ $(0,6)^5$ + $(1)^4$ + $(1)^3$ + $(0,7059)^2$
= 5,7253

A6
Q6 = 0,5 ∑ (1 x 5) + (1 x 4) + (1x 3) + (0,7059 x 2) + 0,5 ∏ $(1)^5$ + $(1)^4$ + $(1)^3$ + $(0,7059)^2$
= 6,9550

A7
Q7= 0,5 ∑ (1 x 5) + (0,8 x 4) + (0,6 x 3) + (0,8571 x 2) + 0,5 ∏ $(1)^5$ + $(0,8)^4$ + $(0,6)^3$ + $(0,8571)^2$
= 5.8896

A8
Q8= 0,5 ∑ (1 x 5) + (1 x 4) + (1x 3) + (0,6667 x 2) + 0,5 ∏ $(1)^5$ + $(1)^4$ + $(1)^3$ + $(0,6667)^2$
= 6,8889

A9
Q9 = 0,5 ∑ (1 x 5) + (1 x 4) + (1x 3) + (0,6 x 2) + 0,5 ∏ $(1)^5$ + $(1)^4$ + $(1)^3$ + $(0,6)^2$
= 6,7799

A10
Q10= 0,5 ∑ (0,6 x 5) + (0,8 x 4) + (0,6 x 3) + (0,7059 x 2) + 0,5 ∏ $(0,6)^5$ + $(0,8)^4$ + $(0,6)^3$ + $(0,7059)^2$
= 4,7076

A11
Q11= 0,5 ∑ (1 x 5) + (1 x 4) + (1x 3) + (0,8 x 2) + 0,5 ∏ $(1)^5$ + $(1)^4$ + $(1)^3$ + $(0,8)^2$
= 7,12

A12
Q12= 0,5 ∑ (0,6 x 5) + (0,6 x 4) + (0,6 x 3) + (1 x 2) + 0,5 ∏ $(0,6)^5$ + $(0,6)^4$ + $(0,6)^3$ + $(1)^2$
= 4,6011

A13
Q13= 0,5 ∑ (0,6 x 5) + (0,6 x 4) + (0,6 x 3) + (0,8 x 2) + 0,5 ∏ $(0,6)^5$ + $(0,6)^4$ + $(0,6)^3$ + $(0,8)^2$
= 4,4007

A14
Q14= 0,5 ∑ (0,6 x 5) + (1 x 4) + (0,6 x 3) + (0,75 x 2) + 0,5 ∏ $(0,6)^5$ + $(1)^4$ + $(0,6)^3$ + $(0,75)^2$
= 5,1547

A15
Q15= 0,5 ∑ (1 x 5) + (0,6 x 4) + (1x 3) + (0,7059 x 2) + 0,5 ∏ $(1)^5$ + $(0,6)^4$ + $(1)^3$ + $(0,7059)^2$
= 5,9382

The final results or ranking values from the above calculations can be seen in Table 7 as follows:

TABLE VII. RANGKING

| Alternative | Information | Value | Rank |
|---|---|---|---|
| **A11** | Pelita Rice | 7,12 | 1 |
| **A6** | Metik Wangi | 6,9551 | 2 |
| **A8** | Brown Rice | 6,8889 | 3 |
| **A15** | Golden Rice | 6,8310 | 4 |
| **A9** | Black Rice | 6,7799 | 5 |
| **A2** | Ramos | 5,9865 | 6 |
| **A1** | Pandan Wangi | 5,9382 | 7 |
| **A7** | C4 | 5,8896 | 8 |
| **A4** | IR42 | 5,7749 | 9 |
| **A5** | Lembang Rice | 5,7253 | 10 |
| **A3** | Rojo Lele | 5,7253 | 11 |
| **A14** | Jasmine Rice | 5,1547 | 12 |
| **A10** | Beureum Sengit | 4,7076 | 13 |
| **A12** | Bulog Rice | 4,6011 | 14 |
| **A13** | Mutiara Rice | 4,4007 | 15 |

Based on Table 7, it can be taken the statement that the best rice that is right to be used as a material for pancake cakes is Pelita rice with a yield of 7.12 by occupying the first rank.

## IV. CONCLUSION

After conducting research and implementation of WASPAS method in determining the best rice which will then be made as a material for making of Serabi, the researchers conclude that:

*1)* WASPAS method can be used as one of the simulation methods to determine the best rice recommendations, based on existing criteria (rice strength, texture, aroma, and price).

*2)* The results of the research determine that Pelita rice is the best rice that is suitable for use in making Serabi with a value of 7.12, from several alternative rice choices.

*3)* Rice which is used as an alternative in making Serabi cakes is Ramos Rice, Pandan Wangi, Rojo Lele, IR42, Lembang, Mentik Wangi, C4, Brown Rice, Black Rice, Beureuem Sengit, Pelita, Bulog, Mutiara, Jasmine, and Gold.

*4)* Criteria data consists of rice strength, texture, aroma, and price of rice.

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