

# Decision Making in Selection of House for Civil Servants in the Mataram City

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**Abstract**— House is one of basic and important needs for every person as a place to live and fostering a family. Currently there are numerous residential housing providers that can help potential purchasers choose and own a house in a method that is practical. Purpose of this study was to assess the significance of the criterion as a relevant factors in choosing the residential houses that prefers by civil servants in Mataram City. In this study, Analytic Hierarchy Process (AHP) method was used to determine the type of house chosen by civil servants in Mataram City as well as the relative importance of the various selection factors. Data in this study were obtained through a questionnaire, then processed using the AHP method. Mentari Residence, Adhyaksa Residence, Bukit Citra Kencana and Bumi Harapan Permai were the 4 (four) house samples that examined. While assessment parameters used are criteria for Location, Price, Public Facilities, Technical Specifications, Type and Facade criteria. As the result, it is known that the weight for every criteria from highest to lowest is the Price criterion (K2) about 0.2168, Location criteria (K1) about 0.1965, Facade (K6) about 0.1640, Type (K5) about 0.1538, Technical Specifications (K4) about 0.1431 and Public Facilities (K3) about 0.1241. Results of alternative ranking indicate that the weight of houses, in order of highest to lowest, are Adhyaksa Residence Housing (A2), Bukit Citra Kencana (A3), Mentari Residence (A1), and Bumi Harapan Permai (A4).

**Keywords**— House, Civil Servants, Mataram, Analytical Hierarchy Process.

## I. INTRODUCTION

House is very important for everyone as a place to live for individuals or family groups as a place to go home and take shelter when finishing work activities or other things. The development of the times has made the provision of residence developed with the emergence of housing developers who provide ready-to-live houses so that someone can practically buy a house according to his wishes. Like wise the civil servants, for civil servants, owning a house is a must because a house is a basic need. In order to take advantage of this market opportunity, it is necessary to know the criteria and type of housing desired by civil servants in Mataram City, so it is necessary to calculate the priority of the criteria for selecting houses and the priority of sample houses using the AHP method so that the priority arrangement is known based on the weights obtained.

## II. LITERATURE REVIEW

Decision Making for Residential Houses Using the Promethee Method". This research was conducted using the Preference Ranking Organization Method for Enrichment Evaluation (PROMETHEE) method as a decision-making model. There are several criteria used as parameters for decision making, such as strategic location, safety, price, infrastructure, distance and design. From the results of the study it was found that the best choice as a solution for recommendations for choosing a place to live is a landed house which from an economic point of view is very good for residence and investment.

Widyassari and Yuwono (2019) in their research entitled "Decision Making for House Selection in the Cepu Area Using the Analytical Hierarchy Process". The method used in this study is the AHP method, which is expected to help consumers choose the desired house. The criteria used in this study include price, location, facilities, house size and design. From this study

it was found that of the 9 (nine) house samples in the Cepu area, the one that received the highest score was the Grand Zam-Zam Cepu Housing Type 38/78 with a total value of 2.84564719.

Yohendri and Basit (2017) in their research entitled "Analysis of the Use of the Fuzzy Analytic Hierarchy Process (FAHP) Method for Supporting Decisions in House Selection". This research was conducted using the Fuzzy Analytical Hierarchy Process (FAHP) method which is a combination of Fuzzy theory and the Analytical Hierarchy Process (AHP) method. There are several criteria determined in the study, namely price, location, facilities, design and developer. From these criteria then selected, compared and carried out the calculation process to produce the highest number that is used as a recommendation. From the research results it was found that housing A1 is more recommended than housing A2 and A3.

Sibarani (2016) in his research entitled "Preferences for Choosing a Residential House with Conjoint Analysis". The method used in this study is Conjoint Analysis by forming an Orthogonal design and Designing Stimuli. From the results of the study it was found that the number of stimuli formed was 96 stimuli and 16 cards, such as: accessibility (access from the house to the city center and accessibility from the house to the main highway/public transportation), facilities and service factors (quality & utility of the facilities, services contained in the residence area and availability of clean water), price factor houses (Rp300 million and between Rp301-350 million), house down payment factors (less than Rp20 million, between Rp21-40 million) and payment method factors (installments with flat interest, installments with interest according to current interest rates).

Saputra and Mawartika (2019) in their research entitled "Decision Support System in Choosing Housing Locations Using the Simple Multi Attribute Rating Technique Method". Of the six criteria, the calculation is carried out by applying a decision making based on the Simple Multi Attribute Rating

Technique method. From the results of the study it was found that alternative A1 or Green Garden Housing had the highest value compared to other alternatives, so it can be said that Green Garden is the right housing and can be used as a recommendation in determining a residential house based on predetermined criteria.

### III. BASIC THEORY

The house is a building that functions to be a place to live and live life. Besides that, the house is also a place for socialization when an individual is introduced to the norms and habits that apply in the surrounding community. (Law No. 1 of 2011). Housing is a collection of houses as part of settlements, both urban and rural, which are equipped with infrastructure, facilities and public utilities as a result of efforts to fulfill livable housing (Law No. 1 of 2011).

A decision making is a system that is used to be able to make decisions in semi-structured and unstructured situations, where people do not know for sure how to make decisions. (Turban, 2001).

AHP method is one of the decision support models in the Decision Making (DM). AHP method was made to reflect the way people actually think. This method allows quantitative as well as qualitative aspects of the decision to be considered. AHP method also uses a ratio scale for criterion weights as well as alternative assessments which add to more precise measurements (Magdalena, 2012). In solving problems using AHP method, there are several principles used (Manurung, 2010), including the following:

#### Decomposition

Systems that have complex problems can be broken down into smaller elements so that they are easier to understand. As seen in the figure 1.

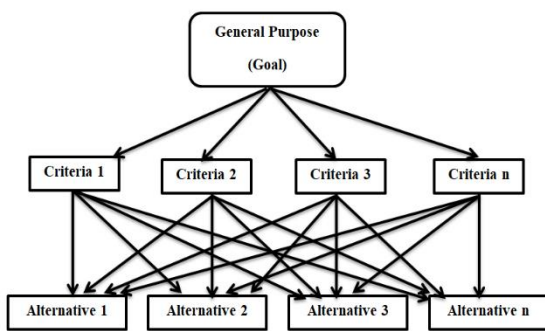


Figure 1. AHP hierarchy

TABLE 1. Pair Comparison Rating Scale

Interest Intensity	Information
1	Both elements are equally important
3	One element is slightly more important than the other
5	Elements that are more important than anything else
7	One element is clearly more important than the other elements
9	One element is absolutely important than the other elements
2,4,6,8	Values between two adjacent judgment values
$(1/(2-9))$	if activity i has a higher value than activity j then j has the opposite value when compared to i

#### Comparative Judgement

In 1990, Saaty expressed the opinion that for various issues, a scale of 1 to 9 is the best scale for expressing opinions (saaty, 1990). The value and definition of qualitative opinion from the comparison scale according to Saaty can be measured using an analysis table, as seen in Table 1.

#### Synthesis of Priority

Determining the priority of the criteria elements can be seen as the weight/contribution of these elements to the decision making objectives. AHP performs element priority analysis using the pairwise comparison method between two elements so that all elements are included. This priority is determined based on the views of experts and interested parties on decision making, either directly (discussion) or indirectly (questionnaire).

#### Logical Consistency

Consistency has two meanings. First, similar objects can be grouped according to uniformity and relevance. Second, regarding the level of relationship between objects based on certain criteria.

### IV. RESEARCH METHODS

The research object used in this research is ready-to-live houses by developers around Mataram city. The population reviewed was civil servants in Mataram City with a total sample of 30 (thirty) respondents who met the population criteria and passed the consistency test.

In this study, there are 2 (two) types of data to be used, namely primary data and secondary data. Primary data is in the form of respondents assessments taken directly by researchers through questionnaires. Secondary data is in the form of criteria in determining residential houses taken from similar previous studies and also alternative options for ready-to-live houses taken from property development companies around Mataram city.

#### Criteria for Selection of Ready to Live Houses

- Location (K1)
- Pricing (K2)
- Public facilities (K3)
- Technical specifications (K4)
- Type (K5)
- Building facade (K6)

#### Alternative Options for Ready to Live Houses

- Mentari Residence Housing (A1)
- Adhyaksa Residence Housing (A2)
- Bukit Citra Kencana Housing (A3)
- Bumi Harapan Permai Housing (A4)

#### Hierarchical Structure Arrangement

The arrangement of the hierarchical structure is carried out to fully describe the decision-making process, starting from objectives, criteria and alternatives. The hierarchical structure of the structure can be seen in Figure 2.

#### Criteria Weighting

- Make comparisons between criteria and model them in the form of a paired matrix.

- b. Find the matrix total column. The total matrix column is the sum of all values in each criterion column. Later the results of the sum are used to normalize the matrix.

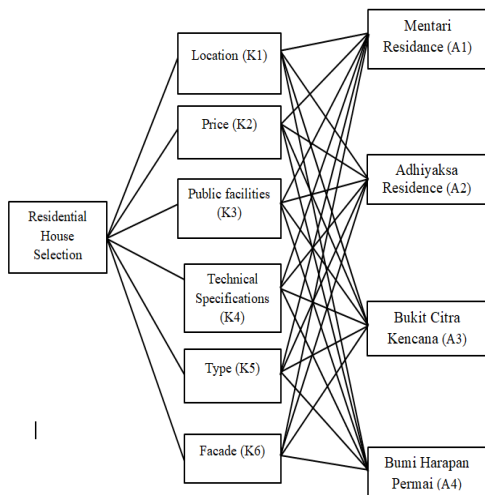


Figure 2. Hierarchical structure of ready-to-live houses

- c. Normalize matrices and weights. Normalizing the matrix is the result for each criterion comparison value with the matrix total column. Weighting is the sum of the total rows on each criterion.
- d. Do a consistency test. The consistency test was carried out to check whether the respondent was correct (consistent) in giving a comparative assessment.

**Alternative Ranking**

- a. Make comparisons between alternatives based on each criterion.
- b. Perform normalization and weighting of each alternative on each criterion.
- c. Perform normalization and weighting of each alternative on each criterion.
- d. Alternative ranking. Based on the weight of the criteria and alternative weights obtained, alternative ranking calculations can then be carried out.

**V. DATA, ANALYSIS, AND DISCUSSION**

**5.1. Research Implementation**

In this study, the implementation of the research began by collecting respondent data, namely civil servants in the city of Mataram, West Nusa Tenggara. Respondents filled in the data in the questionnaire that had been provided which contained questions about the respondent's personal data, the respondent's assessment of the criteria for choosing a ready-to-live house and an alternative assessment for each criterion. The amount of data is 30 (thirty) respondents who have met the requirements of consistency test analysis.

**5.2 Respondent Data**

**5.2.1 General Data of Respondents:** The general data of respondents is in the form of the number of existing samples based on selected criteria. General data of respondents in this study are as follows. Percentage sample based on various such

as age, gender, marital status, and civil servants grade are presented in figure 3-6, respectively.

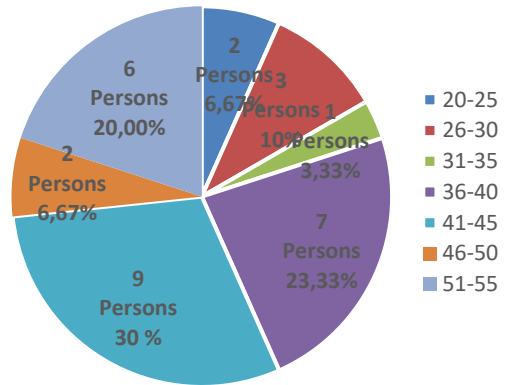


Figure 3. Percentage of Sample Based on Age

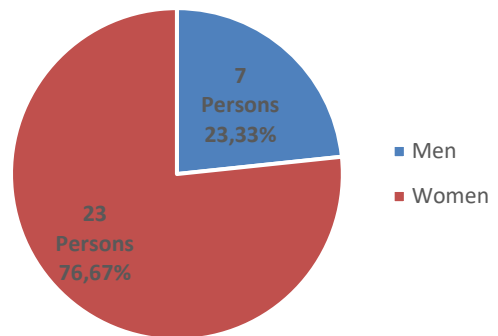


Figure 4. Percentage of Sample Based on Gender

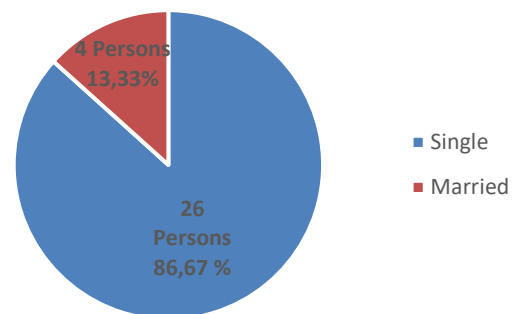


Figure 5. Percentage of Sample Based on Marital Status

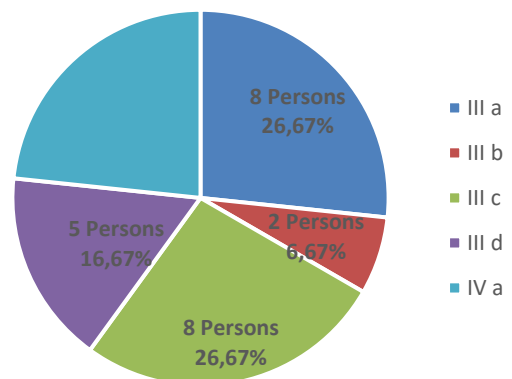


Figure 6. Percentage of Sample Based on Civil Servants Grade

5.2.2 Criteria Assessment Data

Table 2 explains about result recapitulation of the comparison between the criteria considered the most important by respondents as a reference in determining the decision to choose a residential house.

From Table 2 it can be seen the data on the results of the criteria assessment by all respondents. The data is the

cumulative number of respondents' ratings on each criterion comparison. In the analysis, each assessment data is still used respondents and will be averaged at the end of the analysis stage. From results of the analysis, weight of each criterion will be obtained in selection of ready-to-live houses.

TABLE 2. Recapitulation of Criteria Assessment Result Data

Comparison	Recap of the Number of Voters Comparison Between Criteria														
	i = K1, j = K2	i = K1, j = K3	i = K1, j = K4	i = K1, j = K5	i = K1, j = K6	i = K2, j = K3	i = K2, j = K4	i = K2, j = K5	i = K2, j = K6	i = K3, j = K4	i = K3, j = K5	i = K3, j = K6	i = K4, j = K5	i = K4, j = K6	i = K5, j = K6
i and j are equally	18	16	19	14	15	13	19	17	17	9	5	8	13	11	17
i is slightly more important	2	6	7	16	8	13	7	9	10	7	9	4	4	4	10
i is more important than j	0	8	3	0	2	3	3	2	1	0	2	4	3	4	0
i is very important than j	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0
i absolute importance of j	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
j is slightly more important	10	0	0	0	2	0	1	1	1	10	8	5	6	5	3
j is more important than i	0	0	0	0	3	0	0	0	1	4	2	7	2	4	0
j is very important than i	0	0	0	0	0	0	0	0	0	0	2	2	2	2	0
j absolute importance of i	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0

TABLE 3. Recapitulation of Alternative Assessment Result Data on Location Criteria

Comparison	Number of Voters Comparison of Alternatives on Location Criteria (K1)					
	i = A1, j = A2	i = A1, j = A3	i = A1, j = A4	i = A2, j = A3	i = A2, j = A4	i = A3, j = A4
i and j are equally strategic	5	9	4	9	5	9
i is a bit more strategic than j	6	1	10	6	11	4
i is more strategic than j	2	6	4	8	6	4
i was very strategic from j	0	0	0	1	2	4
i absolute strategic of j	0	0	0	0	0	0
j is a bit more strategic than i	7	9	5	3	3	6
j is more strategic than i	9	5	7	2	3	3
j is very strategic than i	1	0	0	1	0	0
j absolute strategic of i	0	0	0	0	0	0

TABLE 4. Data Recapitulation of Alternative Assessment Results on Price Criteria

Comparison	Number of Voters Comparison of Alternatives on Price Criteria (K2)					
	i = A1, j = A2	i = A1, j = A3	i = A1, j = A4	i = A2, j = A3	i = A2, j = A4	i = A3, j = A4
i and j are equally affordable	3	1	24	26	3	4
i is a bit more affordable than j	0	2	1	4	8	14
i is more affordable than j	0	0	2	0	16	10
i is very affordable than j	0	0	0	0	1	1
i absolute reach of j	0	0	0	0	1	1
j is slightly more affordable	10	7	3	0	1	0
j is more affordable than i	13	17	0	0	0	0
j is very affordable from i	3	3	0	0	0	0
j is the absolute reach of i	1	0	0	0	0	0

TABLE 5. Recapitulation of Alternative Assessment Result Data on Public Facilities Criteria

Comparison	Number of Voters Comparison of Alternatives on Public Facilities Criteria (K3)					
	i = A1, j = A2	i = A1, j = A3	i = A1, j = A4	i = A2, j = A3	i = A2, j = A4	i = A3, j = A4
i and j are complete	22	2	3	4	1	14
i is a bit more complete than j	4	1	0	1	1	5
i is more complete than j	0	0	0	0	0	4
i is very complete from j	0	0	0	0	0	0
i is absolute completeness of j	0	0	0	0	0	0
j is slightly more complete	2	10	12	9	13	6
j is more complete than i	2	15	15	10	14	1
j is very complete from i	0	2	0	5	1	0
j is absolute completeness of i	0	0	0	1	0	0

TABLE 6. Recapitulation of Alternative Assessment Results Data on Technical Specification Criteria

Comparison	Number of Voters Comparison of Alternatives on Technical Specification Criteria (K4)					
	i =A1, j = A2	i =A1, j = A3	i =A1, j = A4	i =A2, j = A3	i =A2, j = A4	i =A3, j = A4
i and j are equally good	20	9	10	18	9	17
i is slightly better than j	2	5	3	4	2	0
i is better than j	3	2	3	0	0	0
i is very good from j	0	2	0	0	2	0
i absolutely better than j	0	0	0	2	0	0
j is slightly better than i	5	7	4	4	9	7
j is better than i	0	4	4	1	7	6
j is better than i	0	0	5	1	1	0
j is absolutely better than i	0	1	1	0	0	0

TABLE 7. Data Recapitulation of Alternative Assessment Results on Type Criteria

Comparison	Number of Voters Comparison of Alternatives on Type Criteria (K5)					
	i =A1, j = A2	i =A1, j = A3	i =A1, j = A4	i =A2, j = A3	i =A2, j = A4	i =A3, j = A4
i and j are equal in area	8	4	13	7	7	15
i is slightly wider than j	5	17	10	13	6	10
i is wider than j	1	3	7	7	10	0
i is much wider than j	0	0	0	0	2	2
i is the absolute extent of j	0	0	0	0	2	0
j is slightly wider than i	12	5	0	3	3	3
j is wider than i	4	1	0	0	0	0
j is much wider than i	0	0	0	0	0	0
j is the absolute extent of i	0	0	0	0	0	0

TABLE 8. Data Recapitulation of Alternative Assessment Results on Facade Specification Criteria

Comparison	Number of Voters Comparison of Alternatives on Facade Criteria (K6)					
	i =A1, j = A2	i =A1, j = A3	i =A1, j = A4	i =A2, j = A3	i =A2, j = A4	i =A3, j = A4
i and j are equally good	10	8	13	10	8	13
i is slightly better than j	6	5	9	5	3	2
i is better than j	5	6	7	0	0	0
i is very good from j	5	8	0	0	0	0
i absolutely better than j	4	0	0	0	0	0
j is slightly better than i	0	3	1	15	7	15
j is better than i	0	0	0	0	12	0
j is better than i	0	0	0	0	0	0
j is absolutely better than i	0	0	0	0	0	0

5.2.3 Alternative Assessment Data on Each Criterion

Table 3-8 explains about recapitulations data from respondents in this research based on criteria such as Location, Price, Public Facilities, Technical Specification, Type and Facade.

5.3 Data Analysis Using the Analytic Hierarchy Process (AHP) Method

Criteria and Proposed Respondent Criteria

There are 6 criteria used in the study, namely Location (K1), Price (K2), Public Facilities (K3), Technical Specifications (K4), Type (K5) and Facade (K6). In addition, there were criteria suggestions from respondents, namely Clean Water Sources (2 suggestions), Internet/Wifi Network Access (1 suggestion) and Social Security Environment (2 suggestions). The criteria for the proposal have not been included in list of criteria so that it can become additional criteria in further research.

Criteria Weight Analysis and Consistency Test for Each Respondent

Criteria weight is the level of importance of each criterion based on the respondent's assessment. The following is a sample of the results of a comparison assessment between criteria by Respondent 1.

TABLE 9. Sample Respondent Criteria Assessment Results 1

Code	K1	K2	K3	K4	K5	K6
K1	1/1	3/1	1/1	1/1	3/1	3/1
K2	1/3	1/1	1/1	1/1	5/1	3/1
K3	1/1	1/1	1/1	1/3	5/1	3/1
K4	1/1	1/1	3/1	1/1	3/1	3/1
K5	1/3	1/5	1/5	1/3	1/1	1/1
K6	1/3	1/3	1/3	1/3	1/1	1/1
ΣK	4	6.53	6.53	4	18	14

The values in the table above are then performed to normalize the matrix and calculate the priority weight of the criteria.

TABLE 10. Matrix Normalization and Priority Weighting Criteria Assessment Results by Respondents 1

	K1	K2	K3	K4	K5	K6	Bp
K1	0.25	0.45	0.15	0.25	0.16	0.21	0.24
K2	0.08	0.15	0.15	0.25	0.27	0.21	0.18
K3	0.25	0.15	0.15	0.08	0.27	0.21	0.18
K4	0.25	0.15	0.45	0.25	0.16	0.21	0.24
K5	0.08	0.03	0.03	0.08	0.05	0.07	0.05
K6	0.08	0.05	0.05	0.08	0.05	0.07	0.06

After obtaining the priority weights as shown in Table 10, to find out whether the assessment is consistent or not, it is necessary to carry out a consistency test. By using the consistency test formula, the following values are obtained.

$$\begin{aligned} \lambda \text{ maks} &= 6.3910 \\ \text{Consistency Index (CI)} &= 0.0782 \\ \text{Consistency Ratio (CR)} &= 0.0631 \end{aligned}$$

Because the CR value  $\leq 0.1$ , the results of respondent 1's assessment can be said to be consistent.

TABLE 11. Recapitulation of Results of Priority Criteria Weight Analysis and Consistency Test

Resp.	K1	K2	K3	K4	K5	K6	C
1	0.25	0.19	0.19	0.25	0.06	0.07	0.063
2	0.19	0.19	0.08	0.19	0.19	0.16	0.023
3	0.27	0.15	0.20	0.16	0.09	0.12	0.091
4	0.16	0.16	0.10	0.11	0.23	0.23	0.025
5	0.21	0.30	0.04	0.04	0.15	0.27	0.076
6	0.20	0.15	0.27	0.22	0.08	0.08	0.089
7	0.20	0.15	0.27	0.22	0.08	0.08	0.089
8	0.21	0.13	0.21	0.28	0.12	0.04	0.098
9	0.20	0.18	0.20	0.20	0.18	0.05	0.007
10	0.16	0.29	0.06	0.08	0.24	0.18	0.098
11	0.20	0.33	0.03	0.18	0.16	0.09	0.094
12	0.21	0.34	0.05	0.09	0.11	0.20	0.089
13	0.19	0.23	0.16	0.16	0.15	0.12	0.081
14	0.22	0.22	0.04	0.07	0.27	0.17	0.066
15	0.21	0.19	0.13	0.10	0.09	0.27	0.090
16	0.10	0.20	0.05	0.15	0.21	0.29	0.089
17	0.14	0.18	0.05	0.17	0.17	0.28	0.065
18	0.32	0.29	0.12	0.09	0.10	0.10	0.034
19	0.16	0.25	0.25	0.15	0.11	0.08	0.092
20	0.19	0.31	0.11	0.14	0.10	0.15	0.091
21	0.15	0.12	0.11	0.08	0.08	0.45	0.097
22	0.19	0.31	0.11	0.14	0.10	0.15	0.091
23	0.10	0.20	0.05	0.13	0.25	0.28	0.095
24	0.16	0.25	0.21	0.11	0.15	0.08	0.070
25	0.15	0.21	0.05	0.14	0.27	0.18	0.096
26	0.29	0.19	0.16	0.24	0.06	0.07	0.068
27	0.22	0.30	0.04	0.04	0.17	0.23	0.075
28	0.22	0.18	0.08	0.14	0.22	0.16	0.057
29	0.15	0.15	0.11	0.10	0.29	0.19	0.077
30	0.28	0.15	0.20	0.14	0.11	0.13	0.080

It can be seen that the weight of the criteria and the consistency test for each respondent has a different value because of the different mindsets of the respondents. However, there were 8 (eight) respondents who had a CR value  $> 0.1$  so they could not be included in the next calculation. Alternative Weight Analysis and Consistency Test for Each Respondent.

TABLE 12. Comparison between Alternatives on Location Criteria on Respondents' Assessment Results 1

Code	A1	A2	A3	A4
A1	1	3	1	5
A2	0.3333	1	0.3333	1
A3	1	3	1	5
A4	0.2000	1	0.2000	1
$\Sigma A$	2.5333	8	2.5333	12

TABLE 13. Matrix Normalization and Priority Weight on Location Criteria Results of Alternative Assessment by Respondent 1

Code	A1	A2	A3	A4	Bp
A1	0.3947	0.3750	0.3947	0.4167	0.3953
A2	0.1316	0.1250	0.1316	0.0833	0.1179
A3	0.3947	0.3750	0.3947	0.4167	0.3953
A4	0.0789	0.1250	0.0789	0.0833	0.0916

After obtaining the priority weights as shown in Table 13, to find out whether the assessment is consistent or not, it is necessary to carry out a consistency test. By using the consistency test formula, the following values are obtained.

$$\begin{aligned} \lambda \text{ maks} &= 4.0330 \\ \text{Consistency Index (CI)} &= 0.0110 \\ \text{Consistency Ratio (CR)} &= 0.0122 \end{aligned}$$

Because the CR value  $\leq 1$ , the results of respondent 1's assessment can be said to be consistent.

Table 14 explains about priority weight of each respondent in this research.

TABLE 14. Recapitulation of Alternative Priority Weights and Consistency Test on Location Criteria

Resp.	A1	A2	A3	A4	Priority Weight
1	0.40	0.12	0.40	0.09	0.01
2	0.05	0.62	0.11	0.22	0.09
3	0.25	0.58	0.08	0.09	0.10
4	0.07	0.53	0.13	0.27	0.07
5	0.07	0.55	0.20	0.18	0.09
6	0.08	0.42	0.08	0.42	0.00
7	0.06	0.21	0.19	0.54	0.10
8	0.13	0.20	0.61	0.06	0.09
9	0.08	0.14	0.24	0.54	0.08
10	0.22	0.11	0.62	0.05	0.09
11	0.13	0.22	0.16	0.48	0.06
12	0.12	0.47	0.12	0.28	0.06
13	0.18	0.06	0.38	0.38	0.06
14	0.48	0.13	0.16	0.22	0.06
15	0.41	0.12	0.07	0.41	0.06
16	0.44	0.17	0.16	0.23	0.10
17	0.18	0.35	0.41	0.07	0.10
18	0.22	0.28	0.42	0.08	0.04
19	0.28	0.42	0.22	0.08	0.04
20	0.27	0.43	0.23	0.06	0.07
21	0.40	0.12	0.40	0.09	0.01
22	0.27	0.43	0.23	0.06	0.07
23	0.44	0.17	0.16	0.23	0.10
24	0.28	0.42	0.22	0.08	0.04
25	0.18	0.35	0.41	0.07	0.10
26	0.13	0.38	0.38	0.13	0.00
27	0.07	0.55	0.20	0.18	0.09
28	0.25	0.04	0.66	0.08	0.10
29	0.07	0.53	0.13	0.27	0.07
30	0.25	0.58	0.08	0.09	0.10

Calculation of Weight Criteria and Alternative Average Assessment of Respondents Who Pass the Consistency Test

TABLE 15. Average Priority Weight and Criteria Rating for Passing the Consistency Test

Criteria	Average Weight	Ranking
Location (K1)	0.1965	2
Pricing (K2)	0.2168	1
Public Facilities (K3)	0.1241	6
Technical Specification (K4)	0.1431	5
Type (K5)	0.1538	4
Building Facade (K6)	0.1640	3

From Table 15 it is known that in general in choosing a house ready for habitation the first thing to pay attention to is the housing price. Price is very important because it relates to the budget owned by prospective House buyers. If someone buys a house with a credit scheme, of course they don't want to have instalment jams due to buying a house that is over budget. When the housing price meets the criteria, the next thing a potential buyer will see is the location. Of course, prospective buyers choose strategic housing locations to support and facilitate the daily activities of homeowners. The distance from the house to the place of work, to public facilities (markets, schools, hospitals and others), accessibility and security against the threat of disaster are factors that are taken into account in choosing the location of the house to be purchased. The next criterion to look at is the facade which is the face or visible model of a house building. Then proceed with the type, technical specifications and the last is public facilities.

TABLE 16. The Average Alternative Priority Weight Passes the Consistency Test on Location Criteria

Housing Alternative	Average Weight	Ranking
Mentari Residence (A1)	0.2146	3
Adhyaksa Residence (A2)	0.3225	1
Bukit Citra Kencana (A3)	0.2617	2
Bumi Harapan Permai (A4)	0.2023	4

From Table 16 it can be seen that Adhyaksa Residence excels in location criteria. Aura Residence is located on Jl. Bayan Pongsong, Labuapi, West Lombok.

TABLE 17. The Average Alternative Priority Weight Passes the Consistency Test on Price Criteria

Housing Alternative	Average Weight	Ranking
Mentari Residence (A1)	0.1205	3
Adhyaksa Residence (A2)	0.3972	1
Bukit Citra Kencana (A3)	0.3639	2
Bumi Harapan Permai (A4)	0.1184	4

From Table 17 it can be seen that Adhyaksa Residence excels in price criteria. The price of Aura Residence housing is IDR 355,000,000 / unit with full furniture. What makes consumers only need to bring a suitcase to occupy this house.

TABLE 18. Average Alternative Priority Weight Passes

Housing Alternative	Average Weight	Ranking
Mentari Residence (A1)	0.1083	4
Adhyaksa Residence (A2)	0.1097	3
Bukit Citra Kencana (A3)	0.4100	1
Bumi Harapan Permai (A4)	0.3721	2

Consistency Test on Public Facilities Criteria

From Table 18 it can be seen that Bukit Citra Kencana excels in the criteria for public facilities. What makes Bukit

Citra Kencana public facilities superior to other housing estates is the availability of places of worship, sports facilities and access to the internet/indiHouse network.

TABLE 19. Average Alternative Priority Weight Passes

Housing Alternative	Average Weight	Ranking
Mentari Residence (A1)	0.2314	2
Adhyaksa Residence (A2)	0.2043	4
Bukit Citra Kencana (A3)	0.2083	3
Bumi Harapan Permai (A4)	0.3560	1

Consistency Test on Technical Specification Criteria

From Table 19 it can be seen that Bumi Harapan Permai excels in technical specification criteria.

TABLE 20. Average Alternative Priority Weight Passes Consistency Test on Type Criteria

Housing Alternative	Average Weight	Ranking
Mentari Residence (A1)	0.2753	2
Adhyaksa Residence (A2)	0.3847	1
Bukit Citra Kencana (A3)	0.1923	3
Bumi Harapan Permai (A4)	0.1477	4

From Table 20 it can be seen that Adhyaksa Residence excels in the type criteria. Adhyaksa Residence is a 50/100 type house which is larger in size than other housing types.

TABLE 21. Average Alternative Priority Weight Passes Consistency Test on Type Facade

Housing Alternative	Average Weight	Ranking
Mentari Residence (A1)	0.4296	1
Adhyaksa Residence (A2)	0.1503	4
Bukit Citra Kencana (A3)	0.1778	3
Bumi Harapan Permai (A4)	0.2423	2

From Table 21 it can be seen that Mentari Residence excels in the Facade criteria. Where is the advantage of modern design combined with very good natural-stone. Alternative Ranking

TABLE 22. Alternative Ranking

Alternative	Priority Weight	A1	A2	A3	A4
K1	0.1965	0.2146	0.3255	0.2617	0.2023
K2	0.2168	0.1205	0.3972	0.3639	0.1184
K3	0.1241	0.1083	0.1097	0.4100	0.3721
K4	0.1431	0.2314	0.2043	0.2083	0.3560
K5	0.1538	0.2753	0.3847	0.1923	0.1477
K6	0.1640	0.4296	0.1503	0.1778	0.2423
Mark		0.2277	0.2762	0.2698	0.2250
Priority Level		3	1	2	4

From Table 22 it can be seen the results of calculating the priority level of all alternatives that combine all the criteria so that an alternative priority level is obtained that accommodates all the criteria. The alternative priority values that accommodate all criteria are obtained from the cumulative multiplication

between the alternative priority weights that are different from the ranking of alternatives per each criterion which only takes into account the criteria parameters themselves.

## VI. CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusions

From the results of the research conducted, it can be concluded regarding "Decision Making in Selection of House for Civil Servants in The Mataram City" as follows.

1. The choice of criteria used as a determinant in selecting a ready-to-live-in house has its own weight of importance. From the results of the analysis of the respondent's assessment it is known that the most important criterion or first order is the price criterion (K2) with a weight of 0.216. The price criterion is also the most important criterion in similar research conducted by Yohendri and Basit (2017) and research by Widyassari and Yuwono (2019). Criteria with the next level of importance are Location criteria (K1) with a weight of 0.1965, then Facade criteria (K6) with a weight of 0.1640, Type criteria (K5) with a weight of 0.153, Technical Specifications criteria (K4) with a weight of 0.1431, and the last sequence is the criteria for Public Facilities (K3) with a weight of 0.1241.
2. From the analysis and calculations that have been carried out from the four housing estates that have become alternatives for civil servants in Mataram city, the Adhyaksa Residence (A2) housing is the main alternative chosen by civil servants Mataram city in selecting ready-to-live houses. Adhyaksa Residence Housing (A2) is a type 50/100 commercial house located on Jalan Pengsong, Labuapi. The selling price for this housing is IDR 355,500,000.00/unit with complete furniture.

### 6.2 Suggestions

From the results of the research that has been carried out regarding "Decision Making in Selection of House for Civil Servants in The Mataram City" of course there are still many shortcomings so that further research is needed or something similar to this research. Suggestions for further research or similar are as follows.

- 1) Include additional criteria from respondents who have not been accommodated as criteria that are taken into account in this study. Some of these additional criteria are Clean Water Sources, Internet Network Access, House Environment Situations or Social Security and Environment.
- 2) If the research time is longer, it is better to determine the criteria besides taking references from previous research, it is also good to be able to take direct criterion suggestions from respondents in order to prevent the existence of respondent criteria that are not accommodated in the research process. However, this method requires two stages of filling out the questionnaire. The first stage is the collection of criteria and the second stage is the assessment.
- 3) This research was conducted in the Mataram city, so it is necessary to do other research outside the Mataram city in order to obtain differences in characteristics in various regions.

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