



# Identification of Community Preferences in Housing Selection in North Balikpapan District

Maryo Inri Pratama<sup>1,2</sup>, Rut Nauli Hosana<sup>1</sup>, Luh Made Wisnu Satyaningrat<sup>3</sup>, Rahmat Aris Pratomo<sup>1</sup>, Muhammad Gilang Indra Mardika<sup>4</sup>, Umar Mustofa<sup>1</sup>, Mohtana Kharisma Kadri<sup>1</sup>, and Rulliannor Syah Putra<sup>5</sup>

<sup>1</sup> Urban Planning and Regional, Institut Teknologi Kalimantan, 76127 Balikpapan, Indonesia

<sup>2</sup> Center of Information and Communications Technology for Smart City, Institut Teknologi Kalimantan, Balikpapan, Indonesia

<sup>3</sup> Digital Bussiness, Institut Teknologi Kalimantan, 76127 Balikpapan, Indonesia

<sup>4</sup> Civil Engineering, Sumatera Institute of Technology, 35365 Lampung Selatan, Indonesia

<sup>5</sup> Architecture, Institut Teknologi Kalimantan, 76127 Balikpapan, Indonesia

maryo.inri@lecturer.itk.ac.id

**Abstract.** The productive age population in Balikpapan City, amounting to 72.5%, has entered an independent stage of life and is starting to consider their housing needs. As much as 36% of the North Balikpapan District is designated as a residential zone. The housing preferences of residents are influenced by several factors, as noted in various studies, including the availability of infrastructure, accessibility, and environmental comfort. Therefore, there is a need for community preferences in the selection of housing in the North Balikpapan District to create appropriate housing provisions. This study aims to identify community preferences in the selection of housing in the North Balikpapan District. We hypothesized that infrastructure availability would be the most significant factor based on regional characteristics. The method of this research use is Analytical Hierarchy Process with primary data obtained from 348 respondents through questionnaires. Results indicate that the highest priority for community preferences is the availability of facilities and infrastructure (weighted at 26.0%), followed by accessibility (22.8%), environmental comfort (19.2%), house design and quality (17.7%), and financing (15.2%). These findings can guide policymakers and developers in creating housing provisions that align with community needs.

**Keywords:** Analytical Hierarchy Process, Community preferences, Housing selection.

## 1 Introduction

Housing is seen as a crucial basic necessity for everyone [1]. Housing must provide a comfortable and harmonious environment for a family [2]. The different cycles of life determine needs in housing and residential location [3]. Choosing a house is significantly influenced by housing preferences, particularly when it comes to purchasing a

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M. Musyarofah et al. (eds.), *Proceedings of the 5th Borneo International Conference (BICAME 2024): Symposium on Digital Innovation, Sustainable Design and Planning (DSP)*, Advances in Social Science, Education and Humanities Research 882,

[https://doi.org/10.2991/978-2-38476-329-0\\_11](https://doi.org/10.2991/978-2-38476-329-0_11)

first home [4]. Housing preferences consist of several factors that will influence the decision-making process for buying a house [2]. Recent studies have highlighted the complexity of housing preferences. For instance, Kurniawan et al. found that millennial buyers prioritize financial and location factors [1]. Meanwhile, other studies have identified that economic and neighbourhood aspects differ between respondents' profiles, whether they are first-time buyers, upper-class elders, or lower-class elderly [5]. By comparing these diverse findings, our study aims to provide a comprehensive understanding of housing preferences in the context of North Balikpapan District.

Rapid population growth creates demand pressure on housing [6]. Like the population of Balikpapan City, which continues to increase annually with a population growth rate of 1.6% [7]. Balikpapan City has a vision to create a comfortable city to live in, but in 2020, it experienced an increase in housing backlog compared to the previous year, rising by 5.43% [8]. North Balikpapan District is planned to be the city's second sub-center, especially in Karang Joang Sub-district, and this district has a dominating residential zone designation, amounting to 36% [9, 10]. However, the case of North Balikpapan, planned as a second sub-center, poses unique challenges due to its industrial nature and geographic distance from the city center. Studies from other similar cities show that infrastructure plays a crucial role in housing preferences, particularly in suburban areas [11]. Comparing these factors with North Balikpapan provides a broader perspective on the housing demand landscape.

Based on this, North Balikpapan District is a development area and center of activity for the community in the future. As many as 72.5% of the population of Balikpapan City are productive individuals who have entered an independent phase of life and are starting to consider their housing needs [7, 12]. Therefore, it is necessary to know people's preferences in selecting housing in North Balikpapan District to create a suitable fulfilment of housing needs for the community in the future. This research will be useful for the government and housing developers as providers to create housing that meets the needs of the community.

## 2 Method

The method used in this research is Analytical Hierarchy Process (AHP) which can prioritize several variables using human perception [13, 14]. The AHP was selected for this study due to several advantages that align with the research objectives. AHP allows for consistency analysis, which ensures that the judgments provided by respondents in pairwise comparisons are coherent. The consistency of responses is verified using a consistency ratio, ensuring the validity of the responses, making AHP a reliable tool for evaluating subjective preferences in housing selection. [15, 16]. Data collection is conducted by distributing questionnaires to the people of Balikpapan City who are in productive age with a total sample of 348 people through purposive sampling. Respondents were reached through a combination of online and in-person surveys. The sample criteria in this study are as follows:

1. Currently employed

2. Does not yet own a house. Boundary conditions were set to exclude individuals who owned a home, ensuring the study focused on first-time home buyers for the millennial's buyers.
3. Has previously lived or worked in North Balikpapan District

The stages in using AHP method in this research are as follows:

#### 1. Input

The results of distributing questionnaires to respondents who assess five variables in the selection of housing in North Balikpapan District, namely: availability of facilities and infrastructure, accessibility, house design and quality, financing, and environmental comfort. Respondents give values by using pairwise comparison rating scale as seen in Table 1.

**Table 1.** Pairwise Comparison Rating Scale.

<b>Intensity of Importance</b>	<b>Definition</b>
1	Both are <b>equally important</b>
3	One element is <b>slightly more important</b> than the other
5	One element is <b>moderately more important</b> than the other
7	One element is <b>very much important</b> than the other element
9	One element is <b>absolutely more important</b> than the other element

#### 2. Process

The data processing process use an application called the expert choice. The stages carried out are as follows:

- a. Compile a pairwise matrix to normalize the weight of the level of importance on each element according to its hierarchy.
- b. Prioritization of all elements obtained from the overall pairwise comparison results.
- c. Checking the consistency of the hierarchy, where the value is below 10% to state that the calculation is declared correct.

#### 3. Output

Base on the input and process that has been conducted, the priority weight values are obtained to identify community preferences in housing selection in North Balikpapan District. Thus, conclusions can be drawn by sorting the weighting from the largest to the smallest, indicating the highest to the lowest priority in determining key factors.

### 3 Results and Discussion

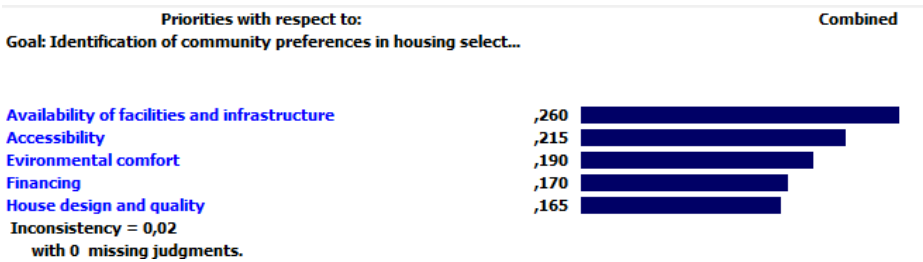
Identification of people's preferences in selecting housing in North Balikpapan District is done by presenting based on the amount of people's monthly income with four classifications as follows:

1. < Rp4,000,000
2. Rp4,000,000 - Rp8,000,000

- 3. > Rp8,000,000 - Rp12,000,000
- 4. > Rp12,000,000

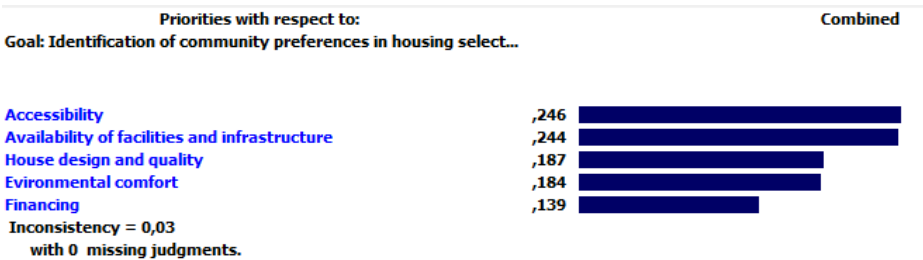
Based on the four classifications above, the weighted priorities of the community in selecting housing in North Balikpapan District are as follows.

There are 161 respondents with monthly income classification < Rp4,000,000. Based on Fig. 1, it can be seen that the main priority for this community in selecting housing in North Balikpapan District is the variable of availability of facilities and infrastructure with a weight value of 0.260. Meanwhile, variables that tend not to be prioritized are house design and quality with a weight value of 0.165 making both the key factor for the lower middle-income population for choosing the housing. The recap can be seen in Fig. 1.



**Fig. 1.** Priority Weight Based on Preferences of People with Income < Rp4,000,000.

There are 158 respondents with monthly income classification of Rp4,000,000 - Rp8,000,000. Based on Fig. 2, it can be seen that the main priority of this community in selecting housing in North Balikpapan District is the accessibility variable with a weight value of 0.246. Meanwhile, the variable that tends not to be prioritized is financing with a weight value of 0.139. The recap can be seen in Fig. 2.



**Fig. 2.** Priority Weight Based on Preferences of People with Income Rp4,000,000 - Rp8,000,000.

There are 27 respondents with monthly income classification of Rp8,000,000 - Rp12,000,000. Based on Fig. 3, it can be seen that the main priority of the preferences of people with monthly income Rp8,000,000 - Rp12,000,000 in selecting housing in North Balikpapan District is the availability of facilities and infrastructure variable with a weight value of 0.243. Meanwhile, the variable that tends not to be prioritized is financing variable with a weight value of 0.134. The recap can be seen in Fig. 3.

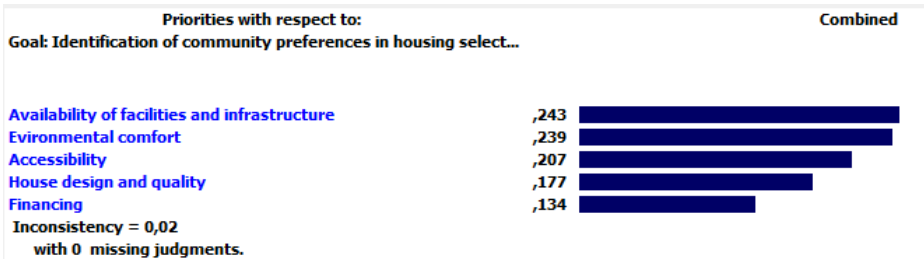


Fig. 3. Priority Weight Based on Preferences of People with Income Rp8,000,000 - Rp12,000,000.

There are 2 respondents with monthly income classification Rp12,000,000. Based on Fig. 4, it can be seen that the main priority of preferences of people with monthly income > Rp12,000,000 in selecting housing in North Balikpapan District is the variable of house design and quality with weight value of 0.438. Meanwhile, the variable that tends not to be prioritized is financing variable with weight value of 0.027. The recap can be seen in Fig. 4.

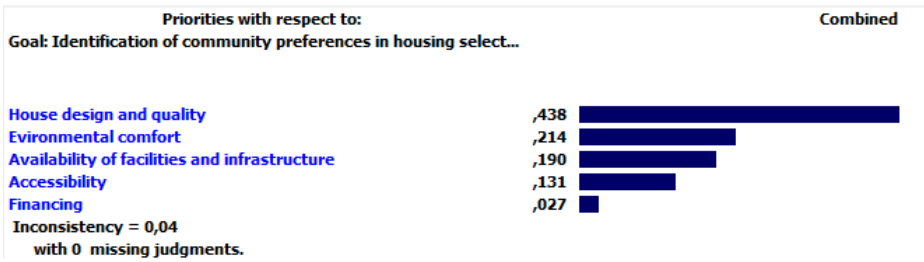
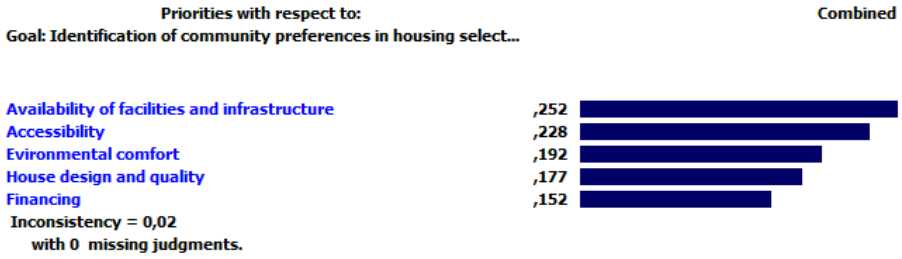


Fig. 4. Priority Weight Based on Preferences of People with Income Rp12,000,000.

On aggregate, the main priority variable for the general public in selecting housing in North Balikpapan District is the availability of facilities and infrastructure variable followed by the accessibility variable. This shows that the general public tends to choose housing that is equipped with facilities and infrastructure as well as housing locations that have affordable access. These two priority variables may be influenced by the condition of North Balikpapan District which is located in the north of Balikpapan City. People consider that facilities and infrastructure are not as equipped as in the city center and the distance to the city center is quite far. In addition, Balikpapan City, which has limited clean water supply, is a major consideration for the community in selecting housing, especially related to the availability of clean water network infrastructure. The aggregate can be seen in Fig. 5.



**Fig. 5.** Priority Weight Based on Community Preference.

The third priority is the variable of environmental comfort. This shows that people still consider environmental comfort as an important variable after considering the availability of facilities and infrastructure as well as accessibility. North Balikpapan District which consists of Industrial Estate has an impact on air quality and noise level in the neighborhood. Therefore, people consider the offers from housing developers related to environmental comfort.

The fourth priority is the variable of house design and quality. This shows that people are less concerned with the design and quality of the house compared to the availability of facilities and infrastructure, accessibility, and environmental comfort. House design and quality are related to aesthetic value, but people still prioritize the function of the house to support their daily lives. Finally, the fifth priority is the financing variable. This shows that people tend not to prioritize financing and prefer to prioritize other variables. This is in line with the existence of the home ownership loan financing system which makes it easier for people to finance their homes, namely house installments. Home ownership loan offers various options, such as the amount of down payment and the time period. So that it makes it easier for the community to fulfill financing variables. Therefore, people do not think too much or do not make financing variables a priority. Then, the following is a table of the percentage of the weighted value of community preference priorities based on the amount of income per month and the overall community in Table 2.

**Table 2.** Pairwise Comparison Rating Scale.

Income per Month	Number of Respondents	Variable				
		Availability of Facilities and Infrastructure	Accessibility	Environmental Comfort	House Design and Quality	Financing
< Rp4,000,000	161	26% <sup>1</sup>	21,5% <sup>2</sup>	19% <sup>3</sup>	16,5% <sup>5</sup>	17% <sup>4</sup>
Rp4,000,000 - Rp8,000,000	158	24,4% <sup>2</sup>	24,6% <sup>1</sup>	18,4% <sup>4</sup>	18,7% <sup>3</sup>	13,9% <sup>5</sup>
Rp8,000,000 - Rp12,000,000	27	24,3% <sup>1</sup>	20,7% <sup>3</sup>	23,9% <sup>2</sup>	17,7% <sup>4</sup>	13,4% <sup>5</sup>
> Rp12,000,000	2	19% <sup>3</sup>	13,1% <sup>4</sup>	21,4% <sup>2</sup>	43,8% <sup>1</sup>	2,7% <sup>5</sup>
<b>Overall</b>	<b>378</b>	<b>25,2%<sup>1</sup></b>	<b>22,8%<sup>2</sup></b>	<b>19,2%<sup>3</sup></b>	<b>17,7%<sup>4</sup></b>	<b>15,2%<sup>5</sup></b>

A critical factor influencing housing preferences in this study is income. Respondents with monthly incomes less than Rp4,000,000 placed the greatest emphasis on the availability of facilities and infrastructure (weighted at 26%), while higher-income respondents (> Rp12,000,000) prioritized house design and quality (43.8%). This demonstrates a shift in housing priorities as financial stability increases: lower-income groups focus on fulfilling basic necessities, while higher-income groups consider aesthetic and quality features more significant. An anomaly observed in respondents earning Rp4,000,000 to Rp8,000,000 is their equal weighting of accessibility (24.6%) and infrastructure (24.4%), likely due to the area's distance from city services. These findings suggest that income plays a significant role in shaping housing preferences, with infrastructure consistently ranked highly across all income levels.

This result aligns with previous research on housing preferences, such as studies by Kurniawan et al. (2020), who found that financial capability significantly influences home-buying decisions (Kurniawan et al., 2020). As financial stability increases, the ability to prioritize more subjective preferences like design and quality becomes more prevalent. This trend can be attributed to Maslow's hierarchy of needs, where individuals seek to satisfy their fundamental needs (shelter, safety) before advancing to higher-order desires, such as personal comfort and lifestyle preferences (Khan et al., 2017).

It can be identified that people with certain amount of income have different priority variables in selecting housing in North Balikpapan District. In addition, the priorities based on the amount of income are also different from the priorities based on the preferences of the community in general. Based on the percentage of weight value, there is a decreasing trend in the variable of availability of facilities and infrastructure. This shows that the higher a person's income, the less the weight value of the priority of the variable availability of facilities and infrastructure in the selection of housing in North Balikpapan District. This finding is in line with the tendency of lower income people who prioritize the fulfillment of basic needs to support their daily activities. Meanwhile, people with higher income tend to have greater financial capability, so that basic needs will certainly tend to be more easily fulfilled.

Across all income groups, infrastructure availability was a major driver of housing preference, indicating the vital role of infrastructure in suburban areas like North Balikpapan. Particularly, access to clean water, sanitation, and reliable transportation were cited as crucial elements by respondents. For lower-income groups, this emphasis is consistent with previous studies in similar suburban regions, where basic infrastructure often remains insufficient (Marois et al., 2019). The geographic distance of North Balikpapan from the city center amplifies the importance of these infrastructure services, as residents are less connected to the urban core. The city's efforts to establish North Balikpapan as a second sub-center (Balikpapan Municipality in Figures, 2023) further underscore the need for robust infrastructure to support its growing residential zones. From a policy standpoint, this presents a clear directive for developers and urban planners to prioritize the expansion of water networks, transportation links, and essential utilities in this region.

When comparing these findings to other cities in Indonesia and globally, we observe that infrastructure remains a consistent priority for lower- and middle-income groups. For instance, studies from suburban areas of Jakarta and Surabaya similarly found that

housing choices for low-income households are dominated by access to basic infrastructure and proximity to economic activities (Makinde, 2014). However, in regions where infrastructure is more developed, housing preferences begin to shift toward design, comfort, and environmental factors. This shift highlights how regional characteristics heavily influence community preferences and should be considered when planning housing policies.

Our findings suggest that income-based stratification of housing developments could improve overall satisfaction within North Balikpapan's housing market. Lower-income groups, who place significant weight on infrastructure, should benefit from housing projects that emphasize affordable housing with basic infrastructure. Middle-income groups, who balance accessibility and infrastructure, would benefit from better-connected housing developments that reduce travel times to the city center while maintaining affordability. For higher-income groups, where house design and quality were the top priorities, luxury developments that emphasize aesthetic and comfort could be more attractive. Developers should consider customizable designs and modern amenities to cater to this group. Policymakers, on the other hand, could create zoning regulations that encourage the development of diverse housing typologies, ensuring that the needs of each income group are met without compromising the region's environmental and social sustainability.

Furthermore, from the percentage of the financing variable weight value, a downward trend was found, where the greater a person's income, the weight value of the financing variable priority tends to decrease. This finding is in line with the greater a person's income, the easier it is to reach the price of existing houses and have an easy in financing systems such as mortgages. In addition, based on the order of priority and percentage of the weight value on the design and quality of the house variable, it appears that this variable is not highly prioritized for people with lower income. On the contrary, people with high income tend to make the variables of design and quality of house as the main priority in selecting housing in North Balikpapan District. Therefore, it can be concluded that people with high income already pay attention not only to basic needs, but also to the beauty of the house.

## 4 Conclusion

Income emerged as a significant determinant in shaping housing preferences. For lower-income groups (< Rp4,000,000 per month), the highest priority is given to basic infrastructure needs (26%), reflecting a focus on essential services and utilities. Middle-income groups (Rp4,000,000 - Rp8,000,000) prioritize accessibility (24.6%), indicating a desire for proximity to work and other daily activities. Meanwhile, higher-income groups (> Rp12,000,000) are more concerned with house design and quality (43.8%), demonstrating that once basic needs are met, aesthetic and comfort considerations take precedence. The study also uncovered an interesting trend among middle-income respondents who gave nearly equal weight to infrastructure and accessibility, likely due to their unique position in balancing affordability with access to urban amenities. These findings suggest that housing policies and developments in North Balikpapan should



prioritize the provision of essential infrastructure and improve access to transportation, particularly for lower- and middle-income groups. For higher-income segments, there is a growing demand for more sophisticated housing designs that cater to aesthetic and lifestyle needs. Ultimately, the ability to cater to these varied preferences is crucial for fostering balanced and sustainable urban development. This research provides a foundation for policymakers and developers to create housing solutions that align with community needs, thereby contributing to the long-term growth of North Balikpapan as a livable, accessible, and inclusive residential area.

**Acknowledgments.** The author extends their gratitude to the Kalimantan Institute of Technology for funding this research under the ITK Early-Career Research Program 2024

**Disclosure of Interests.** The authors have no competing interests to declare that are relevant to the content of this article.

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