ANALYSIS OF THE ECONOMIC AND SOCIAL VISIBILITY OF THE CONSTRUCTION OF SIMPLE HOUSES IN EAST JAVA COMMUNITIES (CASE STUDY OF BANGKALAN REGENCY, MADURA)

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Keywords	ABSTRACT
economic; modest housing; social; visibility analysis	This study explores the perspectives of developers and residents regarding the economic and social visibility of simple housing construction in Bangkalan Regency, East Java. The study seeks to assess the visibility of affordable housing prices and analyze the social conditions associated with simple housing. The results indicate that there is a gap between reality and community expectations of housing adjacent to industrial sites in increasing employment opportunities for the surrounding community. Public transportation, educational facilities, healthcare services, and proximity to employment centers must be incorporated into housing planning to create sustainable and livable communities that meet both the expectations and realities of low-income populations. In addition, the authors developed indicators for the visibility analysis of simple residential buildings in Bang Kalan regency. This research is expected to provide insights into housing affordability and its impact on the social dynamics of the region.

INTRODUCTION

Housing serves as a key indicator of a country's standard of living. However, rapid urbanization has made housing availability insufficient to meet the growing demand (Ezennia & Hoskara, 2019). It is estimated that the global urban population will increase from 3.6 billion in 2011 to 6.3 billion by 2050, with 94% of this growth occurring in developing countries (Bocquier, 2005). Currently, about 828 million people in developing nations live in slums, and this number could rise to 1.4 billion by 2020 (Al-Saadi & Abdou, 2016). Addressing this issue, the provision of affordable housing has become a priority to improve the living standards of low- and middle-income households (Lin et al., 2015). Affordable housing refers to housing that is accessible to households whose income is insufficient to purchase housing at market prices (Winston & Eastaway, 2008).

The construction of simple houses represents a response to the basic need for decent housing for underprivileged populations. Factors such as high demand for housing, economic inequality, limited access to formal housing, and government programs aimed at reducing poverty serve as the main drivers for the construction of simple houses. The primary objective of such initiatives is to provide safe, healthy, and affordable housing, thereby improving the quality of life for low-income communities.

Simple houses should be accessible to all economic levels, including lower-middle-income families (MBR). Affordability, in this context, relates to the Ability to Pay (ATP), which reflects an individual's capacity to afford decent housing. Key factors in developing housing include affordability, availability, and accessibility (Jana et al., 2016). Sustainable affordable housing, moreover, integrates principles of environmental sustainability, social justice, and community welfare (Ezennia & Hoskara, 2019).

Developers must address buyer needs, including convenience, accessibility, and facilities, to enhance consumer satisfaction and maximize company profitability (Afiqah et al., 2020). Sustainable affordable housing policies aim to promote sustainable construction practices while minimizing environmental impacts (Mulliner & Maliene, 2011). Additionally, residents of affordable housing play a crucial role in evaluating policies that impact their quality of life.

Research on sustainable housing and its affordability has been conducted by many researchers with various approaches. Winston & Eastaway (2008) started by developing sustainable housing indicators through a literature study. Their results showed that the development of indicators has great potential to support sustainability, although there is room for improvement in its application. This research became an important basis for subsequent studies, such as that of Mulliner et al. (2013), who used questionnaires and Mean Score analysis to show that energy-efficient housing close to access to public transportation, jobs and key amenities can reduce indirect costs for communities.

Several studies have also focused on the integration of sustainability into affordable housing programs. Gan et al. (2017) emphasized the importance of adopting sustainability indicators in feasibility studies, planning, and project evaluation to achieve systematic integration of sustainability. On the other hand, Mulliner & Maliene (2015) used various statistical methods such as Kruskal-Wallis Test and Kolmogorov-Smirnov Test to analyze professional perceptions regarding housing affordability criteria. Their research provides insights into how ranking criteria can help policymakers set priorities for sustainable housing development.

Furthermore, Ezennia & Hoskara (2019, 2021) investigated the factors that influence people's choice and perception of sustainable affordable housing. They found that housing price is the most important factor, followed by safety, location, and energy efficiency. This research reinforces the findings of Pullen et al. (2010), who point out that affordable housing should consider life-cycle living costs, including transportation costs. Finally, Chan & Adabre (2019) offer a critical success framework (CSC) to bridge the gap between sustainable and affordable housing, highlighting aspects of household satisfaction, quality, and cost efficiency as key elements that should be considered in housing planning.

This research explores the perspectives of developers and residents regarding the economic and social visibility of simple housing in Bangkalan Regency. The study seeks to assess the visibility of affordable housing prices and analyze the social conditions associated with simple housing in Bangkalan Regency. Through this research, it is expected to provide insights into housing affordability and its impact on the social dynamics of the region.

The current research on the economic and social visibility of simple housing construction in Bangkalan Regency, East Java, offers novel contributions compared to existing studies such as those by Gan et al. (2017), Mulliner & Maliene (2011), and Winston & Eastaway (2008). While earlier research often addresses housing affordability on broader scales or focuses on either economic or social dimensions separately, this study uniquely integrates both aspects to assess housing affordability in a localized context. It employs Economic and Social Visibility Analysis, emphasizing the gap between community expectations and the reality of housing conditions,

particularly regarding affordability and access to essential services. By providing actionable insights for policymakers and developers, this research highlights the importance of creating not just affordable housing but also integrating necessary services to enhance the quality of life for low-income communities, thus contributing to sustainable development goals.

METHODS

An outline of the stages of this research work can be seen in the following diagram:
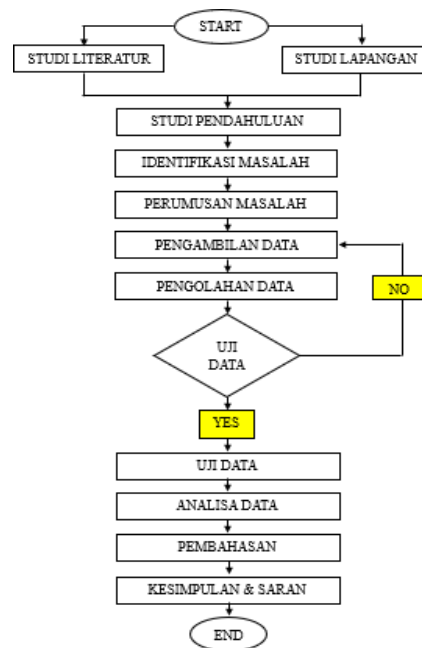

Figure 1. Research Flow Chart

This research flow chart illustrates a systematic process, starting from the initial stages until reaching the final result. The research begins with the selection of an approach, namely through literature studies and/or field studies. Literature studies are conducted to collect information from theoretical sources such as journals, books, or relevant documents, while field studies aim to collect data directly from real conditions in the field. Furthermore, a preliminary study was conducted to understand the general description of the object of research and identify relevant problems. From here, the researcher formulates the problem specifically, so that it becomes a clear basis for further research.

The next stage is data collection, where researchers use methods such as surveys, interviews, or observations to obtain the required information. The data that has been collected is then processed using certain techniques to ensure its validity. If the data is invalid or does not meet the research needs, the process will go back to the data collection stage for improvement. After the data is processed, the data is tested using appropriate statistical methods or analysis techniques to ensure its accuracy and consistency. If the data passes the test, the process continues with in-depth analysis to find patterns or significant relationships with the formulated problem.

The final stage involves discussing the results of the analysis, where the research findings are compared with theory or previous research to strengthen their validity. The researcher then draws conclusions based on the results obtained and provides relevant suggestions, both for practical implementation and for further research. This conclusion ends the research process, the whole of which was systematically designed to produce valid, accurate and useful findings

This research is a quantitative survey and descriptive research, to find out the conclusions in looking at simple residential buildings taken in Bangkalan Regency. To achieve this goal, a survey method was used by distributing questionnaires to collect data. This research uses two types of data that include:

1. Primary data, data collection in this study was carried out using primary data obtained from questionnaire answers. This questionnaire is addressed to predetermined respondents, namely the buying public or residents of simple housing in Bangkalan Regency.

2. Secondary Data, Data obtained indirectly, including reports on population data in Bangkalan Regency, poverty statistics (low-income people), research reports on simple housing and simple housing building construction articles.

The variables used are from previous studies that focus on the selection of sustainable affordable housing buildings, namely Gan et al. (2017), Ezennia & Hoskara (2021), Mulliner & Maliene (2011) which were then developed by the author with indicators supported by opinions from some literature and previous research.

Table 1. Synthesis of Variables and indicators of Simple Housing Visibility Analysis

No.	Indicator	Operational Definition	Source
		Economic Visibility	
1	Price Affordability	Affordable for people with economies of scale middle income and even lower.	(Gan et al., 2017; Winston & Eastaway, 2008)
2	Stable Residential Building Prices	In a growing economy, the buying and selling of residential buildings can lead to an increase in property prices.	(Gan et al., 2017; Golubchikov & Badyina, 2012)
3	Financial Feasibility	Estimate the financial viability of investing in the housing price.	(Gan et al., 2017; Mawardi et al., 2020)
4	Creation of Job Opportunities	development of affordable housing adjacent industrial sites can increase employment opportunities for buyers.	(Gan et al., 2017; Ross et al., 2010)
5	Reduce Transportation Costs	Where residents can own fewer private vehicles, drive less, and rely more on resources such as cycling, public transportation.	(Gan et al., 2017; Isalou et al., 2014)
6	Reduced Energy Costs	Reduction of electricity use, Selection of lighting to save energy, Use of efficient lighting types and use of natural lighting	(Gan et al., 2017; Isalou et al., 2014; Roufechaei et al., 2014)
		Social Visibility	
1	Access to Transportation Services	Access to good transportation services makes an area to be a good place to live and to create a thriving community.	(Mulliner & Maliene, 2011)
2	School Access	The availability of good education can also be beneficial.	(Mulliner & Maliene, 2011; Zhu et al., 2005)
3	Access to shops (local store, market, supermarket).	The presence of shops and markets has been shown to increase the attractiveness of residential locations.	(Mulliner & Maliene, 2011; Zhu et al., 2005)
4	Access to health services	The availability of health services makes an area a good place to live and to create sustainable communities.	(Mulliner & Maliene, 2011; Zhu et al., 2005)

5	Access to leisure facilities	access to areas where they can spend their leisure time that support a healthy lifestyle, such facilities can also contribute to increased social interaction.	(Mulliner & Maliene, 2011)
6	Access to open green public spaces.	Housing should have access to good quality public areas where they can relax and interact.	(Mulliner & Maliene, 2011; Zhu et al., 2005)
7	Public Safety	Developers provide controls and maintain security to prevent crime in residential areas	(Wiedmann et al., 2016; Winston & Eastaway, 2008)

This study took a population of simple housing construction developer/developer companies located in Bangkalan Regency. While the criteria for housing construction included in this study are simple housing construction projects. In the calculation of determining the minimum sample in this study using the Slovin formula. The Slovin formula is a formula for calculating or processing the minimum sample size, when the actions of a person or group from an unknown population are real or certain.

$$N = \frac{N}{1 + N\alpha^2}$$

Description:
N = population size
α = Margin of error (researchers use 5%)

The researcher tried to measure the suitability of the use of sentences for each point of the questionnaire by asking the respondents' perceptions and asking for suggestions for the use of precise and clear sentences so that the research objectives could be achieved. Measurement of each variable point is carried out on a Likert scale of 1 to 5, where:

1. A score of 1 represents the answer that the use of variable sentences is very inappropriate.
2. A score of 2 represents the answer that the use of variable sentences is not appropriate.
3. A score of 3 represents the answer that the use of variable sentences is quite appropriate.
4. A score of 4 represents an answer that uses variable sentences accordingly.
5. A score of 5 represents the answer that the use of variable sentences is very appropriate.

Statements from the questionnaire that have a small value were corrected so that the variable sentences in the main questionnaire can be easily understood.

RESULTS
Data Description

In this study, a sample of the population of low-income and homeless people was taken. The number of low-income residents and do not have a house is 190,940 residents (Source: BPS Bangkalan Regency, Susenas 2003-2024). To determine the number of samples, researchers used the Slovin Formula, as follows:

$$N = \frac{N}{1 + N\alpha^2}$$
$$N = \frac{190.940}{1 + 190.940 * 0,05^2}$$
$$N = 399,16$$

The number of samples to be studied in the research on the visibility analysis of simple affordable housing buildings for the community was determined to be 400 respondents.

Preliminary Survey Results

On these variables that have been given an assessment, the average value (mean) is sought and ranked. Variables that will be used as research variables if the average value of variable relevance ≥ 3 (More or equal to three). The value of 3 (three) is the middle value which means that the variable is in the category quite relevant to the scope of research. Table 2 shows the mean value and standard deviation of each variable and ranks the variables that have the highest mean value to the lowest.

Table 2. Preliminary Survey Results

No.		Indicator	Mean	Standard Deviation
		Economic Visibility		
4	VE4	The availability of a good transportation system can reduce the use of private vehicles.	4,33	0,58
2	VE2	The price of residential buildings is stable (unchanged within <5 years).	4,00	1,00
1	VE1	The price of residential buildings can be reached by low-income people (MBR).	3,67	0,58
3	VE3	Housing is adjacent to industrial sites (increases employment opportunities for housing communities.).	3,33	0,58
6	VE6	Reduce energy costs (use of efficient lighting and use of natural lighting).	3,33	0,58
5	VE5	Investment Feasibility (investing by taking advantage of subsidized housing).	1,67	0,58
		Social Visibility		
3	VS3	Availability of basic grocery shopping in residential areas.	4,33	0,58
4	VS4	Availability of health services in residential areas.	4,33	0,58
1	VS1	Availability of public transportation services available to residential communities.	4,00	0,00
2	VS2	Availability of education facilities in residential areas.	4,00	0,00
5	VS5	Availability of recreational facilities in residential areas.	1	0,58
6	VS6	Availability of parks or green public spaces in residential areas.	1,67	0,58
7	VS7	Security guards to prevent crime in residential areas.	1,67	0,58

Table 2 shows that out of 12 indicators, 4 indicators have a value below the average value of 3.00. Thus, it can be concluded that the indicator is not relevant. These indicators include indicators of investment feasibility, indicators of the availability of recreational facilities in residential areas, parks or public spaces in residential areas, and security guards to prevent crime in residential areas. Thus, there are 4 indicators used as an assessment of the visibility of residential buildings shown in Table 3.

Table 3. Assessment Indicator Table

No.	Variables	Indicator
VE1		Housing prices can be reached by low-income people (MBR).
VE2		Housing prices are stable (unchanged over a period of< 5 years).
VE3	Economic Visibility	Housing adjacent to industrial sites (increases employment opportunities for housing communities).
VE4		The availability of a good transportation system can reduce the use of private vehicles.
VE5		Reduce energy costs (use of efficient lighting and use of natural lighting).
VS1		Availability of public transportation services available to residential communities.
VS2	Social Visibility	Availability of education facilities in residential areas.
VS3		Availability of grocery shopping in residential areas.
VS4		Availability of health services in residential areas.

In the economic visibility variable Indicator (VE1) "Housing prices can be reached by low-income people (MBR)" (Gan et al., 2017; Winston & Eastaway, 2008) explains that affordable for people with an economic level with a middle income scale and even lower. In indicator (VE2) "Housing prices are stable (unchanged within <5 years)" Gan et al. (2017) and Golubchikov & Badyina (2012) explain that in economic growth, housing buying and selling activities that can result in rising property prices. Indicator (VE3) "Housing adjacent to industrial sites (increases employment opportunities for housing communities)" Gan et al. (2017) and Ross et al. (2010) explain that with the construction of affordable housing adjacent to industrial sites can increase employment opportunities for housing residents. In indicator (VE4) "The availability of a good transportation system can reduce the use of private vehicles" Gan et al. (2017) and Isalou et al. (2014) explain that where residents can own fewer private vehicles, drive less, and rely more on resources such as walking, cycling, and public transportation. Indicator (VE5) "Reduce energy costs (use of efficient lighting and use of daylighting)" (Gan et al., 2017; Isalou et al., 2014).

In the social visibility variable (VS1) "Availability of public transportation services available to residential communities" Mulliner & Maliene (2011) explains that access to good transportation services makes an area a good place to live and to create a thriving community. Indicator (VS2) "Availability of educational facilities in residential areas" Mulliner & Maliene (2011) and Zhu et al. (2005) explain that the availability of good education can also directly affect the future prospects and quality of life of a community. (VS3) "Availability of grocery shopping in residential areas" Mulliner & Maliene (2011) and Zhu et al. (2005) explain that the presence of shops and markets has been shown to increase the attractiveness of residential locations. Indicator (VS4) "Availability of health services in residential areas" Mulliner & Maliene (2011) and Zhu et al. (2005) explains the availability of health services makes an area a good place to live and to create sustainable communities.

Discussion

Economic Visibility

In the choice of Housing Price Range that can be reached by Low-Income Communities (MBR) divided into 5 price groups, the desired housing price options are obtained from Expert Respondents of Bangkalan Regency Housing Developers, namely prices of 170 million, 200 million, 220 million, 250 million, and others (smaller than 170 million). The results of the simple

housing price range obtained were 20.4% or 83 respondents chose the price of 170 million, 24.1% or 98 respondents chose the price of 200 million, 18.7% or 76 respondents chose the price of 220 million, 15.5% or 64 respondents chose the price of 250 million and 21.1% or 86 respondents chose other prices or below the price of 170 million.

A comparison between the reality and expectations of the community towards housing prices that can be reached by Low-Income Communities (MBR). The Reality diagram shows that most respondents gave a score of 2 (Slightly Good) with 216/407 respondents. While the lowest number with 6/407 respondents was at a value of 1 (Not Good). In the Expectation diagram, the majority of respondents gave a score of 5 (Very Good), with a total of 286/407 respondents. While the lowest number with the number of respondents 0/407 is at a value of 1 (Not Good). So, it can be concluded that there is a significant gap between reality and expectations, where people expect housing prices to be more affordable. Meanwhile, the reality shows that the majority of respondents feel that housing prices are less affordable for MBR.

The Reality diagram shows that most respondents gave a score of 3 (Quite Good) with 229/407 respondents. While the lowest number with the number of respondents 3/407 is at a value of 5 (Very Good). In the Expectation diagram, the majority of respondents gave a score of 4 (Good), with a total of 270/407 respondents. While the lowest number with the number of respondents 0/407 is at a value of 1 (Not Good). So, it can be concluded that people expect the stability of housing prices to be at a value of 4 (Good). Meanwhile, reality shows that the stability of housing prices is at a value of 3 (Quite Good), so it has not met people's expectations.

A comparison between the reality and expectations of the community towards housing adjacent to industrial sites, which can increase employment opportunities for people around housing. Reality shows that most respondents gave a score of 2 (Slightly Good) with 183/407 respondents. While the lowest numbers with 6/407 respondents were at values 1 (Not Good) and 5 (Very Good). In the Expectation diagram, the majority of respondents gave a score of 4 (Good), with 277/407 respondents. While the lowest number with 0/407 respondents is at a value of 1 (Not Good). It can be concluded that there is a gap between reality and community expectations of housing adjacent to industrial sites in increasing employment opportunities for the surrounding community. The community has high expectations of the benefits of housing close to industrial sites to increase employment opportunities, but reality shows that current conditions have not been able to meet these expectations.

Between reality and people's expectations of the availability of a good transportation system in reducing the use of private vehicles. Reality shows that most respondents gave a score of 3 (Fair) with 196/407 respondents. While the lowest number with the number of respondents 0/407 is at a value of 1 (Not Good). In the Expectation diagram, the majority of respondents gave a score of 4 (Good), with a total of 262/407 respondents. While the lowest number with 0/407 respondents is at a value of 1 (Not Good). It can be concluded that there is a gap between reality and people's expectations of the availability of a good transportation system to reduce the use of private vehicles. People have high expectations of a good transportation system to reduce the use of private vehicles.

The comparison between reality and people's expectations of reducing energy costs through the use of efficient lighting and daylighting. The reality shows that most respondents gave a score of 2 (Somewhat Good) with 179/407 respondents. While the lowest number with 0/407 respondents is at a value of 1 (Not Good). In the Expectation diagram, the majority of respondents gave a score of 4 (Good), with a total of 281/407 respondents. While the lowest number with the number of respondents 0/407 is at a value of 1 (Not Good). It can be concluded that there is a significant difference between the reality and expectations of the community towards reducing energy costs

through the use of efficient lighting and daylighting. The public has much higher expectations than the reality of efforts to reduce energy costs through efficient and natural lighting.

The comparison between reality and community expectations of the availability of public transportation services available to residential communities. Reality shows that most respondents gave a score of 3 (Quite Good) with a total of 176/407 respondents. While the lowest number with 0/407 respondents is at a value of 1 (Not Good). In the Expectation diagram, the majority of respondents gave a score of 4 (Good), with a total of 271/407 respondents. While the lowest number with the number of respondents 0/407 is at a value of 1 (Not Good). It can be concluded that there is a difference between the expectations and reality of the community regarding the availability of public transportation services in housing. The majority of people have high expectations of public transportation services. However, the reality shows that the current public transportation services only slightly meet expectations for comfort and convenience of transportation.

The comparison between reality and community expectations of the availability of education facilities in residential areas. The reality shows that most respondents gave a score of 2 (Somewhat Good) with a total of 177/407 respondents. Meanwhile, the lowest number with 3/407 respondents was 1 (Not Good). In the Expectation diagram, the majority of respondents gave a score of 4 (Good), with a total of 259/407 respondents. While the lowest number with the number of respondents 0/407 is at a value of 1 (Not Good). It can be concluded that there is a significant difference between the expectations and reality of the community towards the availability of educational facilities in residential areas. The majority of people have high expectations of educational facilities; however, the reality shows that the currently available educational facilities do not fully meet people's expectations. Although there are some positive responses, the quality and availability of existing education facilities are still far from the desired expectations.

The comparison between reality and people's expectations of the availability of basic shopping in residential areas. Reality shows that most respondents gave a score of 3 (Quite Good) with a total of 172/407 respondents. While the lowest number with 0/407 respondents is at a value of 1 (Not Good). In the Expectation diagram, the majority of respondents gave a score of 4 (Good), with a total of 271/407 respondents. While the lowest number with the number of respondents 0/407 is at a value of 1 (Not Good). It can be concluded that there is a difference between the expectations and reality of the community regarding the availability of basic food shopping in residential areas. The majority of people have high expectations of the availability of basic shopping. However, reality shows that although the availability of basic necessities is quite adequate, there are still shortcomings when compared to higher expectations. The availability of staple foods has not fully met people's expectations.

The comparison between reality and community expectations of the availability of health services in residential areas. Reality shows that most respondents gave a score of 3 (Quite Good) with a total of 184/407 respondents. While the lowest number with the number of respondents 4/407 is at a value of 1 (Not Good). In the Expectation diagram, the majority of respondents gave a score of 4 (Good), with a total of 272/407 respondents. While the lowest number with the number of respondents 3/407 is at a value of 1 (Not Good). It can be concluded that there is a difference between the expectations and reality of the community regarding the availability of health services in residential areas. The majority of people have high expectations of health services. However, the reality is that the currently available health services are quite adequate, but still far from meeting the higher expectations of the community. This suggests that although some aspects of health services are good, there is still room for improvement to better match community expectations.

The gap between reality and community expectations regarding housing affordability, access to services, and infrastructure highlights the need for improvements in several areas. The results indicate a significant demand for affordable housing that is adequately supported by services such as transportation, education, healthcare, and employment opportunities.

For housing developers and policymakers, this gap suggests that affordable housing solutions must consider not only the price range but also the integration of essential services within residential areas. The community expects housing to offer convenience and accessibility to services that support daily life and economic opportunities. Therefore, future housing developments should focus on balancing affordability with social infrastructure to meet the growing needs of low-income communities.

In conclusion, while the availability of affordable housing is a critical factor, addressing the social and economic factors surrounding housing development is equally important. Public transportation, educational facilities, healthcare services, and proximity to employment centers must be incorporated into housing planning to create sustainable and livable communities that meet both the expectations and realities of low-income populations.

CONCLUSION

The study concludes that the visibility price for simple housing in Bangkalan Regency is 200 million rupiah, with 24.1% of respondents selecting this price as suitable. It identifies five key social conditions affecting simple housing, including the availability of public transportation, educational facilities, and health services in residential areas. The researchers suggest that while they have developed indicators for visibility analysis in this specific region, further research is needed on different types of simple housing in various locations to enhance the applicability of their findings. Additionally, applied research focusing on the viability of livable housing is essential to achieve economically and socially sustainable solutions, thereby meeting the demand for affordable housing and promoting community well-being and regional development.

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