

# Analysis Of The Implementation Of Residential Area Program Related To The Improvement Of Unhabitable Houses In Sigi District

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**Abstract:** This study aims to analyze the implementation of the Settlement Area Program related to the improvement of uninhabitable houses (RTLH) in Sigi Regency, focusing on six villages. The objective is to identify the factors influencing the increase in the number of beneficiaries and to formulate strategies to enhance the program's success. Data were collected through observation, questionnaires, and documentation involving 100 respondents, and then analyzed using descriptive statistics, Relative Rank Index (RRI), and multiple linear regression. The results revealed five key factors that significantly influence the program: education, motivation, sense of safety and comfort, government–community communication, and improvement in quality of life. Based on these findings, the study recommends several strategies, including accurate data collection and verification, collaboration among stakeholders, integration of programs and funding, community empowerment, area-based approaches, and monitoring and evaluation using technology.

**Keywords:** Implementation, Settlement Area, Housing, Community, Empowerment

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## I. INTRODUCTION

Sigi Regency, located in Central Sulawesi Province, has an area of 5,196.02 km<sup>2</sup> and a population of 266,654. At the end of March 2023, 12.83% of the population was recorded as living in poverty (Badan Pusat Statistik, 2024), with the number of uninhabitable houses reaching 10,471 units (Dinas Perumahan Dan Kawasan Permukiman, 2023). This condition indicates the need for serious handling for low-income groups. Sigi Regency is also known as an earthquake-prone area, primarily due to the activity of the Palu Koro Fault. The 2018 earthquake that struck Palu City, Sigi Regency, and Donggala Regency (PASIGALA) with a magnitude of (M7.4) and an aftershock in the Saluki segment of Sigi Regency with a magnitude of (M6.9) caused surface cracks, liquefaction in the areas (Petobo, Jono Oge, and Sibalaya), landslides, infrastructure damage, loss of life, and profound psychological impacts for affected residents (Leopatty et al., 2021).

In response to this situation, the Sigi Regency Government established a housing development program and a residential area program in order to accelerate the construction of houses for disaster victims, the construction of new habitable houses and the repair of uninhabitable houses, especially for low-income communities to restore community life and rebuild areas affected by the disaster in the hope of reducing the poverty rate in Sigi Regency (Kementerian Dalam Negeri, 2021). By looking at the problem of the high poverty rate and the large number of uninhabitable houses in Sigi Regency, efforts need to be made to identify factors that can influence the increase in the number of beneficiaries of habitable houses built for low-income communities (MBR) and what strategies must be implemented to increase the success of the Residential Area Program Related to the Repair of Uninhabitable Houses in Sigi Regency (Dinas Perumahan Dan Kawasan Permukiman, 2021).

## II. METHODOLOGY

### 2.1 Previous Studies

Several previous studies have examined the factors contributing to the success of uninhabitable housing improvement programs in various regions in Indonesia. These previous studies serve as benchmarks for the research. Several previous studies can serve as an illustration for the technical evaluation analysis of habitable housing in Sigi Regency that are related or related to this study. In general, the findings group these factors into five main categories (X1-X5), as shown in the following table:

**Table 1.** Success Factors of Previous Research Programs

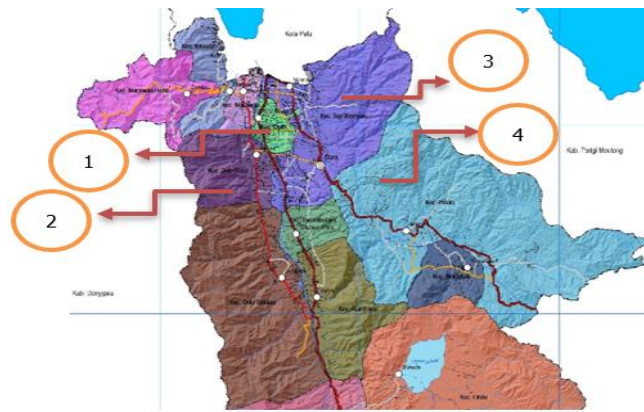
No	Variabel	Indikator
1	Personal Factors (X1)	1 Community Behavior (Abbas, 2015; Adi Saputra et al., 2024; Tika, 2025; Tirtana et al., 2023)
		2 Community Skills (Abbas, 2015; Gurun Aua et al., 2025; Pateda et al., 2024)
		3 Education Level (Abbas, 2015)
		4 Community Motivation (Abbas, 2015; Tika, 2025; Wisesa et al., 2024)
		5 Sense of Safety and Comfort (Abbas, 2015; González et al., 2024; Gurun Aua et al., 2025; Montero-Gutiérrez et al., 2024; Pateda et al., 2024; Tika, 2025; Wisesa et al., 2024)
		6 Amount of Aid (Abbas, 2015; Gunadi et al., 2022; Gurun Aua et al., 2025; Pateda et al., 2024; Tika, 2025)
2	Leadership factors (X2)	1 Decision-Making (Dzakiyyah Radwa & Megawati, 2022; González et al., 2024; Ismasudayanti et al., 2024; Rahmah & Subadi, 2021; Tirtana et al., 2023; Yuliana et al., 2025)
		2 Good Cooperation (Ananda Putra Navijanto & Arif, 2024; Kawer et al., 2018; Tirtana et al., 2023; Wisesa et al., 2024)
		3 Good Socialization (Ismi, 2021; Tirtana et al., 2023)
3	Team Factors (X3)	1 Response Team (Adi Saputra et al., 2024; Hadiati et al., 2023; Pateda et al., 2024; Tirtana et al., 2023)
		2 Community Service (Indriani & Rahadian, 2024; Tirtana et al., 2023)
		3 Team Competence (Dzakiyyah Radwa & Megawati, 2022; Hadiati et al., 2023; Indriani & Rahadian, 2024; Ismasudayanti et al., 2024; Rahmah & Subadi, 2021; Tirtana et al., 2023; Windriyana & Widowati, 2020)
4	System Factor (X4)	1 Transparent and fair selection system (Adi Saputra et al., 2024; Hadiati et al., 2023; Indriani & Rahadian, 2024; Ismi, 2021; Kawer et al., 2018; Tirtana et al., 2023; Yuliana et al., 2025)
		2 Effective monitoring and evaluation system (Indriani & Rahadian, 2024; Tirtana et al., 2023; Wisesa et al., 2024; Yuliana et al., 2025)
		3 Easily accessible and actionable complaint system (Indriani & Rahadian, 2024; Tirtana et al., 2023; Wisesa et al., 2024)
		4 Good administrative process (Indriani & Rahadian, 2024; Tirtana et al., 2023)
5	Contextual/situational (X5)	1 Good support and communication (Adriyanto & Nirmalawati, 2020; Ananda Putra Navijanto & Arif, 2024; Dzakiyyah Radwa & Megawati, 2022; Gunadi et al., 2022; Ismi, 2021; Rahmah & Subadi, 2021; Tirtana et al., 2023; Windriyana & Widowati, 2020)
		2 Housing quality before assistance (Tirtana et al., 2023; Wisesa et al., 2024)
		3 Housing quality after assistance (Tirtana et al., 2023; Wisesa et al., 2024)
		4 Improvement in the community's quality of life (Tirtana et al., 2023; Wisesa et al., 2024)
6	Personal Factors (Y1)	1 Provision of adequate housing (increasing the number of beneficiaries of RTLH for (MBR). (Abbas, 2015; Ananda Putra Navijanto & Arif, 2024; González et al., 2024; Hadiati et al., 2023; Tika, 2025; Wisesa et al., 2024)

This study combines the indicators in the table into an analysis tool to identify the dominant factors that influence the increase in the number of beneficiaries of habitable housing for low-income communities (MBR), and to find out what strategies should be carried out to increase the success of the Settlement Area Program Related to the Repair of Uninhabitable Houses in Sigi Regency. The researcher hopes that this program can support the achievement of the RPJMD (Pemerintah Kabupaten Sigi, 2021) and the Renstra of the Sigi Regency Housing and Settlement Area Service for the 2021–2026 period (Dinas Perumahan Dan Kawasan Permukiman, 2021), especially in increasing the number of beneficiaries of habitable housing for low-income communities (MBR).

## 2.2 Research Location

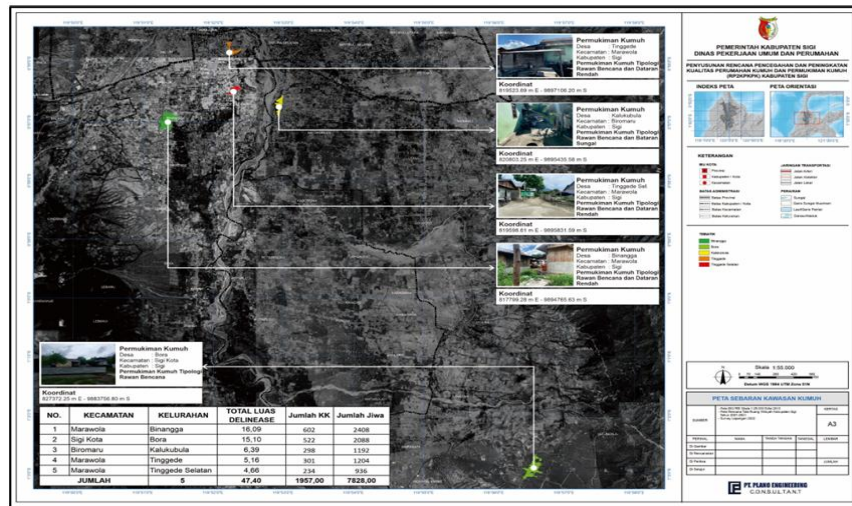
This research was conducted in Sigi Regency, with the focus of the research on six villages in four sub-districts, namely: West Dolo District, Dolo District, Sigi City District, Sigi Biromaru District. The selection of this location is based on an official document in the form of a Decree on Recipients of Self-Help Housing Assistance for the Repair of Uninhabitable Houses in Housing Prevention Activities and Slum Areas in Sigi Regency in 2024 (Pemerintah Kabupaten Sigi, 2024). Two of these sub-districts, namely Sigi Biromaru District and Sigi City District, are also sub-districts included in the Decree on Determination of Slum Housing and Slum Settlements in Sigi Regency (Pemerintah Kabupaten Sigi, 2023; PT. Plano Engineering Consultant, 2022). The selection of this area takes into account the availability of data and relevance to the issues being studied.

**Figure 1. Research Location**

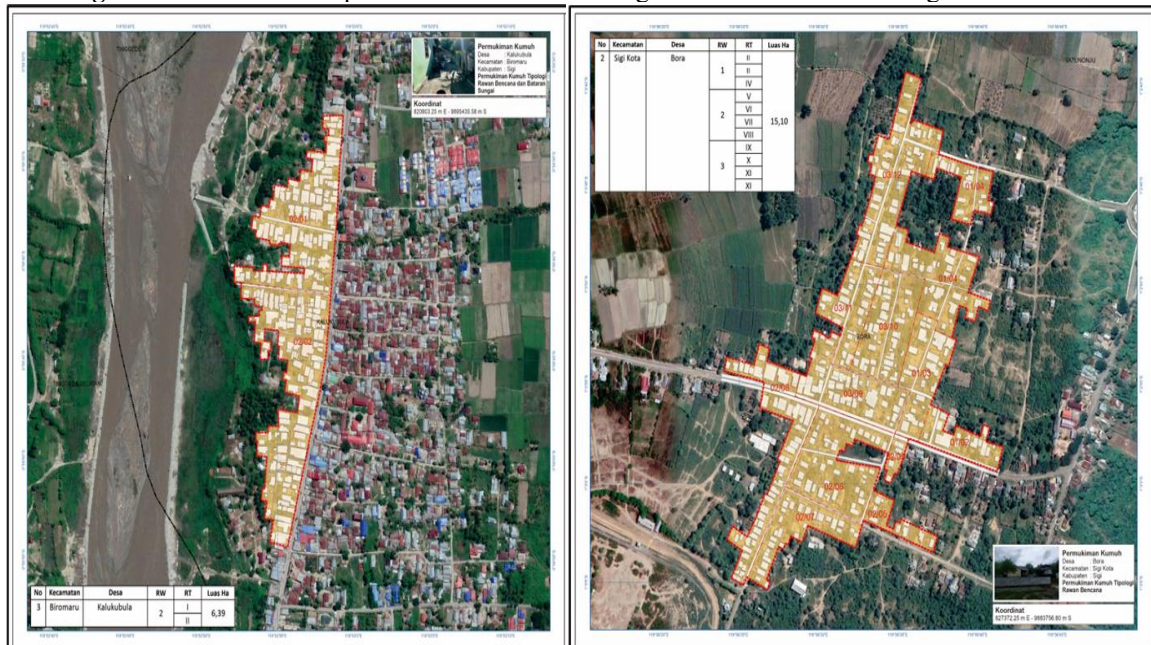


Keterangan : 1. Kec. Dolo                      2. Kec. Dolo Barat  
3. Kec. Sigi Biromaru                      4. Kec. Sigi Kota

**Figure 2. Map of Slum Distribution in Sigi Regency**



**Figure 3. Delineation Map of Slum Settlements in Sigi Biromaru District and Sigi Kota District**



### 2.3 Data Collection Methods

The research method used a descriptive quantitative approach (Sugiyono, 2014). Data were collected through field observations, questionnaires distributed to 100 respondents receiving RTLH assistance, documentation studies, and interviews with budget management officials at the Sigi Regency Housing and Settlement Agency for the 2024 Fiscal Year. The research period until completion of the research results was carried out for approximately 2 (two) months, namely from June to August 2025, with the research focus being on recipient communities of assistance for repairing uninhabitable houses, with the number of respondents per village/sub-district as shown in the following table:

**Table 2.** Number of research respondents

No.	Target	Number of Respondents (Sample)
1.	West Dolo District (Balumpewa Village)	20
2.	Dolo District (Kotarindau Village)	20
3.	Dolo District (Tulo Rantea Preparation Village)	10
4.	Sigi Kota District (Sigimpu Village)	20
5.	Sigi Biromaru District (Pombewe Village)	20
6.	Sigi Biromaru District (Sidondo I Village)	10
Jumlah Total Responden		100

### 2.4 Data Analysis Methods

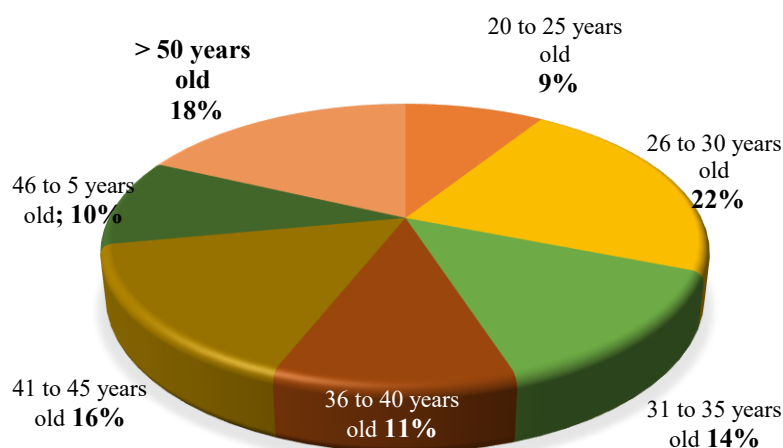
The analysis in this study used a descriptive statistical approach to describe the general characteristics of respondents, the Relative Rank Index (RRI) method to identify the most dominant factors, and multiple linear regression to test the relationship between independent and dependent variables to the increase in the number of beneficiaries (Sugiyono, 2014). The validity and reliability of the instrument were carried out using SPSS software version 27.0 (Tjiptono, 2011). This approach was used to evaluate the effectiveness of the program and formulate improvement strategies that can be practically implemented.

## III. RESULTS AND DISCUSSIONS

The analysis of this study reveals findings based on questionnaires distributed to recipients of assistance for repairing uninhabitable houses in the 2024 budget year. The survey was conducted in six villages spread across four sub-districts in Sigi Regency, with the following results:

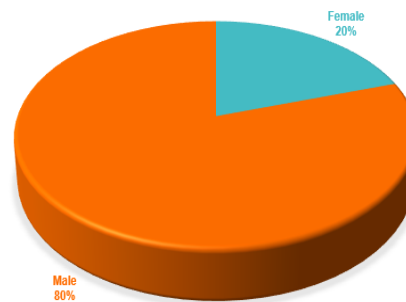
### 3.1. General Description of Respondent Characteristics

**Figure 4.** Overview Of Respondents By Age



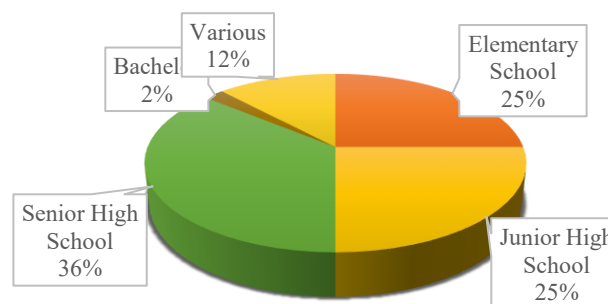
Data shows that of the 100 recipients of uninhabitable house repair assistance by 2024, as many as 22% are in the age range of 26 to 30 years. This productive age is one of the supporting factors for the successful implementation of the program, because the recipients of assistance are in a socially and economically active phase.

**Figure 5.** Overview of respondents by gender



Based on the data obtained, it can be seen that the recipients of uninhabitable house repair assistance in 2024 will be dominated by men as much as 80%. This is of course with the consideration that the success of the repair of uninhabitable houses which is actually self-help between the government and the community will be achieved if the community involved is able to manage the building material assistance that has been provided by doing it themselves or with the help of craftsmen until the process of completing the repair of the uninhabitable house is completed and considered worthy of being occupied by the community receiving assistance. So that the recipients who were selected were predominantly male than female.

**Figure 8** Overview of respondents by education



The data obtained showed that the majority of respondents had an educational background at the high school/vocational level as much as 36%, followed by junior high and elementary education levels of 25% each and the lowest level of S1 education as much as 2%. The level of education of the respondents is very important to be used as one of the characteristics of the respondents. With a good level of education, respondents are considered to be able to understand the statements contained in the research instrument so as to produce the right answers.

### 3.2 Validity Test Results

The validity test aims to ascertain whether each item in the research instrument actually measures what it is supposed to measure. Validity is determined by comparing the calculated  $r$  values and the  $r$  of the table. If  $r$  counts  $>$  of the  $r$  table, then the item is declared valid, while if it is smaller, it is considered invalid (Sugiyono, 2017). In this validity test, the researcher tested the answer results of 100 respondents with a significant level of 5%, obtained a table  $r$  of 0.195. The results of the validity test for each variable question in this study can be seen in the following table:

**Table 3** Pearson Correlations  
Correlations

Question	r count	r Table	Significance	Information
X1.1	.360**	0,195	0,000	Valid
X1.2	.365**	0,195	0,000	Valid
X1.3	.463**	0,195	0,000	Valid
X1.4	.525**	0,195	0,000	Valid

Question	Correlations			
	r count	r Table	Significance	Information
X1.5	.431**	0,195	0,000	Valid
X1.6	.426**	0,195	0,000	Valid
X2.1	.339**	0,195	0,001	Valid
X2.2	.528**	0,195	0,000	Valid
X2.3	.584**	0,195	0,000	Valid
X3.1	.483**	0,195	0,000	Valid
X3.2	.394**	0,195	0,000	Valid
X3.3	.410**	0,195	0,000	Valid
X4.1	.469**	0,195	0,000	Valid
X4.2	.468**	0,195	0,000	Valid
X4.3	.415**	0,195	0,000	Valid
X4.4	.361**	0,195	0,000	Valid
X5.1	.474**	0,195	0,000	Valid
X5.2	.293**	0,195	0,003	Valid
X5.3	.350**	0,195	0,000	Valid
X5.4	.404**	0,195	0,000	Valid

From table 3 of the *Pearson Correlation* it can be concluded that all question items are valid with a significance value of  $< 0.05$  and a value of  $r$  calculated  $> r$  table, so that the data on each indicator can be further analyzed.

### 3.3 Reliability Test Results

The reliability test is used to assess the extent to which respondents' answers remain stable and consistent when responding to questions related to the topic being studied. The basis for decision-making in the reliability test is:

- If the  $\alpha > r$  table then it is said to be consistent (reliable)
- If the  $\alpha < r$  table then it is said to be inconsistent (unreliable)

The question item is also said to be reliable if *Cronbach's alpha* value is above 0.600 (Sugiyono, 2018), while the alpha stability measure scale can be interpreted as follows:

**Table 4** Alpha Stability

Alpha Stability Size Scale	Information
Cronbach's alpha value 0.00 – 0.20	Less Reliable
Cronbach's alpha value 0.21 – 0.40	Somewhat Reliable
Cronbach's alpha value 0.42 – 0.60	Quite Reliable
Cronbach's alpha value 0.61 – 0.80	Reliable
Cronbach's alpha value 0.81 – 1.00	Highly Reliable

The following are the results of the reliability test of each variable question item in this study, we can see in the following table:

**Table 5** Reliability Test Results

Number of Question Items	Cronbach's Alpha SPSS Test Scores	Cronbach's Alpha Minimum Test Score	Information
20	0,764	0,600	Reliable

From the results of the reliability test, a *Cronbach's Alpha* value of 0.764 was obtained with a total of 20 data or question items. Because the *Cronbach's* value obtained was 0.764 and the *Cronbach's* value was



included in the *range of Cronbach's value* of 0.61 – 0.80 which means reliable, it was concluded that the answers given by the respondents were reliable or feasible, so that they could be continued for further data analysis.

### 3.4 Results of Relative Rank Index (RRI) Analysis

From the results of the respondents' answers to the questionnaire, then the data was processed by looking for the Relative Rank Index (RRI) (Sugiyono, 2019) value of each answer for all research variables to obtain factors that affect the increase in the number of beneficiaries of livable houses built for low-income communities (MBR). Here is an example of a calculation formula (RRI), namely:

$$RRI = \frac{1}{nN} (\sum_{i=1}^i l_i X_i)$$

An example of the calculation on questionnaire number 1, the following values are known:

n = 5 (Highest likert scale)  
N = 100 (Respondents)  
i = 1, 2, 3, 4, 5  
Li = (1 = 0), (2 = 0), (3 = 18), (4 = 58), (5 = 24)  
(Number of respondents' answers at each scale interval)  
Xi = i = 1 to 5

Settlement:

Ms. = 5 x 100 = 500  
 $\sum li.xi$  = (0 x 1) + (0 x 2) + (18 x 3) + (58 x 4) + (24 x 5)  
= 0 + 0 + 54 + 232 + 120  
 $\sum li.xi$  = 406  
RRI =  $li.xi / nN$   
= 406 / 500  
= 0.812

**Table 6 RRI and Ranking Calculation Results**

Notation	Question	RRI	Rank
X1.1	The behavior of the recipient of home assistance affects the success of the program	0,812	18
X1.2	The skills (e.g. carpentry) of the beneficiary can increase the success of the program	0,852	15
X1.3	The education of the beneficiaries affects the success of the program	0,824	17
X1.4	The motivation of the recipients in maintaining the houses that have been given assistance affects the success of the program	0,856	13
X1.5	Home repairs provide a sense of security and comfort for the recipients	0,866	10
X1.6	The amount of assistance provided according to the needs of the recipients	0,858	12
X2.1	The Head of the Sigi Regency Housing and Settlement Area Office or those who represent the field are able to make good decisions so that the program runs well	0,796	20
X2.2	The Head of the Sigi Regency Housing and Settlement Area Office or his representative was able to encourage cooperation between the team and the beneficiaries.	0,800	19
X2.3	The Head of the Sigi Regency Housing and Settlement Area Office or his representative gave clear directions to the team and also the recipients of assistance through easy-to-understand socialization.	0,848	16
X3.1	The government team is fast and solutive in overcoming program problems	0,856	14
X3.2	The team works professionally in serving the beneficiaries	0,880	7
X3.3	The technical team has the ability to carry out its duties.	0,866	11
X4.1	The system for selecting aid recipients is transparent and fair	0,888	6
X4.2	The program has a monitoring system to maintain the quality of the house	0,874	8
X4.3	The public can submit complaints easily and quickly	0,892	5
X4.4	The administrative process runs smoothly without major obstacles	0,916	1
X5.1	Communication between the government and the beneficiaries is going well	0,874	9
X5.2	I feel that the condition of my house before receiving repair assistance from the Sigi Regency Housing and Settlement Areas Office is very unsuitable for occupancy	0,894	4
X5.3	I feel that the condition of my house after receiving repair assistance from the Housing and Settlement Areas Office is much more feasible and comfortable to occupy	0,910	2
X5.4	Uninhabitable house repair program improves the quality of life of aid recipients	0,896	3

### 3.5 Discussion of the Dominant Factors of the Relative Rank Index (RRI) Calculation Results

The data from the questionnaire results were analyzed using the *Relative Rank Index (RRI) method*. RRI calculation is carried out by combining 100 respondents' answers on the *Likert* scale and calculating the weight of each of these answer choices, resulting in an index value for each question item. After that, factors that affect

the increase in the number of beneficiaries of livable houses built for low-income communities (MBR) are identified. The factors that enter the top 5 in the ranking can be seen in the following table:

**Table 7 Dominant Factors**

Notation	Question	RRI	Rank
X4.4	The administrative process runs smoothly without major obstacles	0,916	1
X5.3	I feel that the condition of my house after receiving repair assistance from the Housing and Settlement Areas Office is much more feasible and comfortable to occupy	0,91	2
X5.4	Uninhabitable house repair program improves the quality of life of aid recipients	0,896	3
X5.2	I feel that the condition of my house before receiving repair assistance from the Sigi Regency Housing and Settlement Areas Office is very unsuitable for occupancy	0,894	4
X4.3	The public can submit complaints easily and quickly	0,892	5

The community's response to the Settlement Area Program for the repair of uninhabitable houses has been very positive, especially in terms of smooth administration and the real impact of the assistance provided. The easy bureaucratic process is the most appreciated aspect, followed by the results of the assistance that are felt directly. This shows that the program is not only technically successful, but also provides social and emotional value for the beneficiaries.

### 3.5 Multiple Linear Regression Data Analysis

Multiple linear regression analysis is used to understand the extent to which independent variables influence or can be used to predict a single bound variable. In the process, simultaneous testing through the F Test, partial testing through the T Test, and the assessment of the determination coefficient ( $R^2$ ) are needed to determine how much the free variable contributes to the bound variable (Sugiyono, 2019).

#### 3.5.1 Simultaneous Test (F Test)

**Table 8 Simultaneous Test (F Test)**

NEW ERA					
Type	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	11.315	20	.566	2.289	.005b
Residual	19.525	79	.247		
Total	30.840	99			

a. Dependent Variable: Y1.1

b. Predictors: (Constant), x5.4, x1.1, x1.7, x4.2, x3.3, x5.3, x2.1, x1.5, x4.1, x4.4, x5.2, x1.4, x3.1, x5.1, x2.3, x1.2, x3.2, x1.3, x2.2, x4.3

From the results of the analysis, the value of the degree of freedom (df) for regression was 20 (df1) and df residual (df2) of 79, so that the value of the F table for probability of 0.05 was obtained of 1.705. From the results of the F Test test, the value of sig.  $0.005 < 0.05$  and the value of F counts  $2.289 > 1.705$  which means it is greater than the limit value. This indicates that personal, leadership, teamwork, system, and situational factors collectively have a real influence on the increase in the number of beneficiaries of livable houses built for low-income communities (MBRs) in Sigi Regency.

#### 3.5.2 Partial Test (T Test)

The T-test or partial test is used to see the extent to which each factor—such as personal, leadership, teamwork, system, and situational factors—individually affects the increase in the number of recipients of livable houses built for low-income communities (MBR) in Sigi Regency. The test was performed by comparing the value of the T calculation and the T table, where the influence was considered significant if the significance value  $< 0.05$  or the T calculation value  $>$  the T table. The results of the partial test (T test) of each variable in this study can be seen in the following table:

**Table 9 Partial Test (T Test)**

Coefficient					
Type	Unstandard. Coefficients		Standar d. Coef.	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0,584	0,961		0,608	0,545
X1.1	0,057	0,102	0,067	0,559	0,578
X1.2	0,093	0,108	0,102	0,855	0,395



Coefficient					
Type	Unstandard. Coefficients		Standar d. Coef. Beta	t	Sig.
	B	Std. Error			
X1.3	-0,249	0,123	-0,263	-2,017	0,047
X1.4	0,225	0,108	0,250	2,072	0,042
X1.5	0,239	0,098	0,266	2,442	0,017
X1.7	0,173	0,091	0,203	1,895	0,062
X2.1	0,068	0,106	0,073	0,636	0,526
X2.2	0,079	0,109	0,092	0,723	0,472
X2.3	-0,101	0,105	-0,116	-0,967	0,336
X3.1	-0,036	0,121	-0,033	-0,297	0,768
X3.2	-0,010	0,131	-0,009	-0,077	0,939
X3.3	0,062	0,106	0,067	0,584	0,561
X4.1	-0,109	0,111	-0,109	-0,986	0,327
X4.2	0,083	0,106	0,083	0,778	0,439
X4.3	0,128	0,141	0,124	0,909	0,366
X4.4	-0,145	0,135	-0,139	-1,073	0,286
X5.1	-0,248	0,102	-0,280	-2,445	0,017
X5.2	0,143	0,106	0,152	1,346	0,182
X5.3	0,129	0,107	0,129	1,212	0,229
X5.4	0,327	0,104	0,359	3,161	0,002
a. Dependent Variable: Y1.1					

Based on table 8 of the previous simultaneous test (F test), a residual degree of freedom (df) of 79 was obtained, so that the T value of the table with an alpha value ( $\alpha$ ) of 0.05 for the one-sided test was obtained of 1.667. It presents in a concise manner the meaning of the value of the coefficient (B), the direction of influence, significance, and conclusions of each variable on Y1.1 (an increase in the number of beneficiaries of livable houses built for low-income communities (MBR) in Sigi Regency). The significance value  $< 0.05$  or the value of T calculated  $> T$  of the eligible table is in the variable X1.3 with the coefficient value  $B = -0.249$ ; sig. = 0.047, X1. 4 with  $B = 0.225$ ; Sig. = 0.042, X1.5 with  $B = 0.239$ ; Sig. = 0.017, X5.1 with  $B = -0.248$ ; Sig. = 0.017, and X5.4 with  $B = 0.327$ ; Sig. = 0.002. This means that individually the variables of education, motivation, sense of security and comfort, communication and improvement of the quality of life of aid recipients have a significant effect on the dependent variable, namely the increase in the number of beneficiaries of livable houses built for low-income communities (MBR) in Sigi Regency.

### 3.5.3 Coefficient of Determination ( $R^2$ )

The Coefficient of Determination ( $R^2$ ) describes how much the contribution of independent variables in explaining the dependent variables. The value ranges from 0-1, where getting closer to 1 means that the independent variable provides almost complete information to predict the dependent variable. Conversely, the smaller the  $R^2$  value, the more limited the ability of independent variables to explain changes in dependent variables. The R-Square ( $R^2$ ) value is categorized as follows (Sugiyono, 2019):

- Strong if the *R-Square* value ( $R^2$ ) is more than 0.67
- Moderate if the *R-Square* value ( $R^2$ ) is more than 0.33 but low than 0.67
- Weak If the *R-Square* value ( $R^2$ ) is more than 0.19 but lower than 0.33

**Table 10** Coefficient of Determination (  $R^2$  )

Model Summary				
Type	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.606a	.367	.207	.49715

a. Predictors: (Constant), x5.4, x1.1, x1.7, x4.2, x3.3, x5.3, x2.1, x1.5, x4.1, x4.4, x5.2, x1.4, x3.1, x5.1, x2.3, x1.2, x3.2, x1.3, x2.2, x4.3

Based on the results of the Model Summary, an R value of 0.606 or 60.6% showed that factors such as personal, leadership, teamwork, system, and environmental situation had a moderate (moderately strong)

contribution in encouraging an increase in the number of livable housing beneficiaries for low-income communities in Sigi Regency, while the remaining 39.4% was explained by other independent variables outside the study. *R-Square* ( $R^2$ ) of 36.7% variation in the increase in the number of livable housing beneficiaries can be explained by the independent variables tested and *the Adjusted R Square* of 20.7% can still be validly explained in this study but in the weak category. Although this value is classified as weak/low, this model still makes an important initial contribution in understanding the relationship between variables, especially because this research is related to the social community, which is influenced by many variables that cannot always be measured quantitatively, the existence of cultural factors, values, perceptions, and social interactions that are difficult to fully capture by statistical models, so this model is only used as an exploration or initial mapping tool. not a precision prediction (an accurate and reliable estimate).

This test shows how factors such as personality, leadership, teamwork, system, and environmental situation play a role in increasing the number of recipients of livable housing assistance built for low-income communities (MBR) in Sigi Regency, but there are still other external factors outside the study that also influence, such as local policies, economic situation, or geographical conditions as conveyed directly by the recipients during the field interview.

### 3.6 Multiple Linear Equations

Multiple linear regression analysis was used to understand the extent to which factors such as education, motivation, sense of safety and comfort, communication, and quality of life contributed to the increase in the number of low-income communities (MBR) receiving livable housing assistance in Sigi Regency. Through this approach, we can see how every aspect of people's lives is interconnected and affects their access to more decent housing. The equations are:

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + e$$

Y = Dependent variable (response/output) that you want to predict or describe

a = 0.584

$b_1, \dots = 0.249, 0.225, 0.239, 0.248, 0.327$

$x_1, \dots$  = education, motivation, sense of security and comfort, communication and improvement of the quality of life of aid recipients

Based on table 9 of the previous Partial Test (T Test), multiple linear regression equations are obtained, namely:

$$Y = 0.584 - 0.249 (\text{education}) + 0.225 (\text{motivation}) + 0.239 (\text{sense of security and comfort}) - 0.248 (\text{communication}) + 0.327 (\text{improvement of the quality of life of aid recipients}).$$

The results of multiple linear regression analysis showed that there were five independent variables that had a significant influence on the Y1.1 dependent variable, namely the increase in the number of livable housing beneficiaries for low-income people in Sigi Regency. A positive value of constant (a) of 0.584 indicates a unidirectional relationship between independent variables and dependent variables, where an increase in these variables tends to be followed by an increase in the number of beneficiaries

1. The X1.3 variable showed a significant negative influence (*coefficient B* = -0.249; *Sig.* = 0.047). This means that the increase in people's education levels contributes to greater opportunities to obtain decent work and adequate income, so that they can afford to have their own place to live. This condition also reduces dependence on livable housing assistance programs.
2. The variable X1.4 had a significant positive influence (*B* = 0.225; *Sig.* = 0.042). This indicates that the higher the motivation of the recipients to maintain the houses that have been given, the higher the success of the program in the eyes of the community.
3. The X1.5 variable also showed a positive and significant influence (*B* = 0.239; *Sig.* = 0.017). The sense of security and comfort felt by recipients towards the aid home contributes directly to the increase in the number of beneficiaries as it reflects the real success of the program.
4. The X5.1 variable exerted a significant negative influence (*B* = -0.248; *Sig.* = 0.017). This suggests that poor communication between the government and aid recipients can hinder the success of the program. On the contrary, effective communication is essential to increase the success of the distribution of livable housing assistance.
5. The X5.4 variable had the strongest and most significant positive influence (*B* = 0.327; *Sig.* = 0.002). This shows that the uninhabitable house repair program has had a real impact in improving the living standards of the people receiving assistance, so that the community considers the program successful and beneficial for their lives.

Meanwhile, the other variables tested in this regression model had significance values that exceeded the commonly used threshold of 0.05, so they were not considered statistically influential on the increase in the number of livable house beneficiaries.

### **3.7 SWOT Analysis**

#### **3.7.1 Strengths**

- a. Strong and systematic administrative support, as evidenced by the program administration process that ran smoothly with a score (highest RRI 0.916).
- b. The direct impact on the quality of life of the beneficiaries, with a more comfortable and decent house as shown by the value (RRI 0.910) and the improvement of welfare with the value (RRI 0.896).
- c. In accordance with the program's targets, the majority of recipients are low-income people with previously unsuitable houses.
- d. Active involvement of local governments in the implementation of programs with a clear coordination structure.

#### **3.7.2 Weaknesses**

- a. Less than optimal communication between the government and the community (significant negative values on communication variables).
- b. Lack of beneficiaries with higher education, which can have an impact on administrative and technical understanding.
- c. Budget and resource constraints, which limit the number of aid recipients each year.
- d. The lack of digitalization and reporting systems, so transparency has not been fully maximized.

#### **3.7.3 Opportunities**

- a. Integration of funds from various sources (APBD, CSR, NGO) that can expand the scope of beneficiaries.
- b. Development of digitization of reporting and monitoring of project progress, such as a dashboard system for aid recipients.
- c. Collaboration with the private sector for the procurement and construction of housing assistance.
- d. Increasing public awareness of the importance of decent housing post-disaster, creates opportunities for active participation.

#### **3.7.4 Threats**

- a. Budget uncertainty every year that has the potential to hinder the sustainability of the program.
- b. The risk of natural disasters (earthquakes, liquefaction) that can again damage repaired buildings.
- c. The possibility of social inequality, if the distribution of aid is considered unfair or transparent.
- d. Geographical challenges and logistics distribution in remote areas in Sigi Regency that are still difficult to reach.

## **IV. CONCLUSION**

From the results of the research, it can be concluded that:

1. There are 5 (five) factors that affect the increase in the number of beneficiaries of livable houses built for low-income people (MBR) in Sigi Regency as follows: (1) the level of education of the beneficiary community, (2) the motivation of the beneficiary community to maintain the house that has been given assistance, (3) the sense of security and comfort towards the results of the repair of uninhabitable houses, (4) good communication between the government and aid recipients, (5) improvement of the quality of life of aid recipients after the implementation of the assistance program for repairing uninhabitable houses. This reflects that these five main factors have a huge impact on the increase in the number of beneficiaries of livable houses built for low-income communities (MBR) in Sigi Regency
2. The handling strategy that must be carried out to increase the success of the residential area program related to the repair of uninhabitable houses in Sigi Regency is an effective, integrated, participatory, and sustainable strategy. Here are some strategic approaches that can be applied based on the results of the SWOT analysis:
  - a. Proper data collection and verification
  - b. Government and community collaboration
  - c. Program integration and funding
  - d. community empowerment.
  - e. Region-based approach
  - f. Monitoring and evaluation using technology

## V. SUGGESTION

Here are some suggestions to increase the number of beneficiaries of livable houses built for low-income communities (MBR):

1. Further research is needed to identify various additional factors that have the potential to affect the increase in the number of beneficiaries of the livable housing development program for low-income communities (MBR) in Sigi Regency.
2. Holding training to improve the technical capabilities of the community such as construction training, quality control, or the use of building tools and technology in order to actively participate in independent development and maintenance of houses and their environment considering that Sigi Regency is a disaster-prone area.
3. Strengthening the digital-based reporting system so that the transparency of the location of recipients and the progress of repairing uninhabitable houses is easily supervised.

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