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ARTICLE

Bugis Tribe Community Behavior in Developing Vernacular House Models in the Coastal Area of South Sulawesi Province

Rahmansah* *, *Nurlita Pertiwi, Muhammad Yusri Bachtiar, Mithen Lullulangi

Department of Civil Engineering, Education and Planning, Faculty of Engineering, Universitas Negeri Makassar, Makassar 90222, Indonesia

ABSTRACT

This study aims to understand the behavior of the Bugis community in developing vernacular house models in the coastal areas of South Sulawesi Province, along with the factors influencing this behavior, such as knowledge, motivation, attitude, locus of control, commitment, concern, and income level. Bugis vernacular houses reflect local wisdom that is adapted to environmental, socio-cultural conditions, and the challenges of modernization. This correlational research was conducted in the regencies of Pangkajene and Kepulauan, Barru, and Bone, with a sample of 300 household heads. The variables analyzed include knowledge, motivation, attitude, locus of control, commitment, concern, and income level. Data were collected through knowledge tests and questionnaires and were analyzed using simple and multiple regression techniques. The results show that the Bugis community's behavior in developing vernacular houses is moderate. Individually, motivation, locus of control, commitment, and concern significantly influence behavior, while knowledge, attitude, and income do not have a significant impact. However, collectively, all independent variables (knowledge, motivation, attitude, locus of control, commitment, concern, and income) affect the behavior of the Bugis community in developing vernacular houses in coastal areas. This study provides valuable insights into the environmental and social adaptations of the Bugis coastal community, as well as efforts to preserve culture through the sustainable development of vernacular houses.

Keywords: Bugis Vernacular Houses; Local Wisdom; Community Behavior; South Sulawesi Coast; Sustainable Development

*CORRESPONDING AUTHOR:

Rahmansah, Department of Civil Engineering, Education and Planning, Faculty of Engineering, Universitas Negeri Makassar, Makassar 90222, Indonesia; Email: rahmansah@unm.ac.id

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1. Introduction

This research was conducted in three regencies in South Sulawesi Province. The problem in this study is how the knowledge, motivation, attitude, locus of control, commitment, concern, and income level of the community in the two regencies to develop vernacular architecture by utilizing natural materials available in the area. The aim is that the results of this study will be followed up by conducting dissemination or training to the community so that the use of natural materials in the area can be used to develop vernacular architecture to reduce the challenges of a hot and humid tropical climate through a design strategy by adopting the local wisdom of the community in the past that has been abandoned, in order to increase the thermal comfort of the occupants of traditional Bugis houses. This research is a new innovation in developing Bugis vernacular architecture, namely to see the weaknesses that have existed so far, and trying to find solutions so that the level of thermal comfort of Bugis vernacular architecture is more comfortable to live in in the future

The Bugis community has developed a vernacular architecture that utilizes natural materials from the surrounding environment, designed to mitigate the challenges of a hot and humid climate through passive design strategies that enhance thermal comfort[1]. Bugis houses not only embody ancestral local wisdom but also represent a successful adaptation to local environmental and social conditions[2, 3] The challenges posed by modernization call for a comprehensive approach to preserving these traditional houses while also addressing the needs of contemporary society.

One Housing is considered a fundamental human need, and the vernacular aspect of home construction is highly significant for the Bugis community. Vernacular homes are viewed as a tangible manifestation of cultural heritage preservation in Indonesia[4] representing the concrete expression of local culture[5]. A house serves not only as a residence but also as a space for family development[6], meeting the standards of decent living conditions[7]. It is also a place where individuals engage in socialization, social interaction, and the introduction of cultural values[8, 9].

The Bugis vernacular house has distinctive characteristics adapted to the environmental conditions of South Sulawesi's coastal regions[1]. Its iconic stilt design, for instance, serves to protect the home from flooding and improve air circulation in hot and humid climates. Additionally, the use of local materials like wood and bamboo reflects the sustainable utilization of natural resources in an environmentally friendly manner[10, 11]. However, modernization pressures have led many community members to abandon traditional vernacular homes in favor of modern houses that are seen as more aligned with contemporary lifestyles[12, 13].

Crucial aspect that requires further exploration is the community's behavior in developing vernacular house models[12]. This behavior is influenced by various factors, such as knowledge of house design, motivation to preserve tradition, attitudes toward modernization, and environmental awareness[12, 14–16]. This study focuses on understanding how these factors influence the Bugis community's decision-making in selecting and developing vernacular houses amidst social and environmental changes.

This research is vital to understanding the behavior of the Bugis community in developing vernacular house models in the coastal areas of South Sulawesi, as well as the factors influencing this behavior, such as knowledge, motivation, attitude, locus of control, commitment, concern, and income level. The study provides insights into how Bugis vernacular houses are adapted to coastal environmental conditions. Vernacular houses reflect the social life of the community. The findings of this research can offer an understanding of how the Bugis community uses vernacular houses as spaces for social and cultural interaction. Moreover, the study contributes to understanding the community's approach to coastal development, including spatial planning and the sustainable use of natural resources.

2. Research Methodology

This research is a quantitative correlational research with a survey method, conducted in Pangkajene and Kepulauan Regency, Barru Regency, and Bone Regency. The research sample was 300 heads of families taken as many as 100 heads of families from each Regency, using purposive sampling. The purpose of the study was to determine the behavior of the Bugis community in developing vernacular house models in the coastal areas of South Sulawesi Province, along with the factors that influence this behavior. The research variables are knowledge, motivation, attitude, locus of

control, commitment, concern, and income level. Data were collected through knowledge tests and questionnaires. Data were collected through questionnaires measuring knowledge, motivation, attitude, locus of control, commitment, concern, and income levels. Data analysis was conducted using simple and multiple regression techniques to determine the influence of each independent variable on the dependent variable, which is the community's behavior in developing vernacular houses.

3. Research Results and Discussion

3.1. Results

Based on the research findings, the behavior of the Bugis community in developing vernacular house models is categorized as moderate. Factors such as motivation, locus of control, commitment, and concern have a significant influence on the development of vernacular houses, while knowledge, attitude, and income do not have a significant impact. This suggests that even though the community has sufficient knowledge of traditional house designs, psychological and social factors, such as commitment and concern, play a more prominent role in the preservation of this cultural heritage. The detailed description of the research findings is as follows:

1. Description of the Bugis Community's Behavior in Developing Vernacular House Models (Y).
   To assess the behavior of the Bugis community in developing vernacular house models, a descriptive analysis was conducted using a sample of 300 respondents and 17 questions/observations, which were adapted from the Likert scale model. The results of the descriptive statistical analysis (frequency distribution) are presented in **Table 1**.
   Based on **Table 1**, it can be understood that the behavior of the Bugis community in developing vernacular house models is characterized by 14.7% rated as very high, 13.6% high, 14.7% moderate, 42% low, and 15% very low. The results of further statistical analysis show an average score of 52.90, with a minimum of 17 and a maximum of 85. Thus, it can be concluded that the average score falls into the category of "sometimes," indicating that the behavior of the Bugis community in developing vernacular house models is considered moderate.

Table 1. Frequency Distribution of the Bugis Community's Behavior in Developing Vernacular House Models.

No	Description	Score	Frequency	Percentage	Cumulative Percentage
1	Very Low	17–30.6	45	15	15
2	Low	30.7–44.3	126	42	57
3	Moderate	44.4–58	44	14.7	71.7
4	High	58.1–71.7	41	13.6	85.3
5	Very High	71.8–85	44	14.7	100
	Total		300	100	-

2. Description of the Bugis Community's Knowledge in Developing Vernacular House Models (X^1)
   To assess the knowledge of the Bugis community regarding the development of vernacular house models, a descriptive analysis was conducted with a sample size of 300, utilizing 18 questions/observations adapted from the Likert scale. The results of the descriptive statistical analysis (frequency distribution) are presented in **Table 2**.
   Based on **Table 2**, it can be understood that there are no members of the Bugis community with very low knowledge regarding the development of vernacular house models. Specifically, 7% are categorized as low, 44.3% as moderate, 40.7% as high, and 8% as very high. Further statistical analysis reveals an average score of 10.70, with a minimum of 5 and a maximum of 17. Therefore, it can be concluded that the average score falls into the moderate category, indicating that the knowledge of the Bugis community in developing vernacular house models is considered moderate.

Table 2. Frequency Distribution of the Bugis Community's Knowledge in Developing Vernacular House Models.

No	Description	Score	Frequency	Percentage	Cumulative Percentage
1	Very Low	1–3.5	0	0	0
2	Low	3.6–7.2	21	7	7
3	Moderate	7.3–10.9	133	44.3	51.3
4	High	11–14.6	122	40.7	92
5	Very High	14.7–18	24	8	100
	Total		300	100	-

3. Description of the Bugis Community's Motivation in Developing Vernacular House Models (X^2)

   To assess the motivation of the Bugis community in developing vernacular house models, a descriptive analysis was conducted with a sample size of 300, utilizing 18 questions/observations adapted from the Likert scale. The results of the descriptive statistical analysis (frequency distribution) are presented in **Table 3**.

   Based on **Table 3**, it can be understood that no members of the Bugis community exhibit very low motivation in developing vernacular house models. Specifically, 7% are categorized as low, 44.3% as moderate, 40.7% as high, and 8% as very high. Further statistical analysis shows an average score of 10.70, with a minimum of 5 and a maximum of 17. Therefore, it can be concluded that the average score falls within the moderate category, indicating that the motivation of the Bugis community in developing vernacular house models is generally moderate.

Table 3. Frequency Distribution of the Bugis Community's Motivation in Developing Vernacular House Models.

No	Description	Score	Frequency	Percentage	Cumulative Percentage
1	Very Low	1–3.5	0	0	0
2	Low	3.6–7.2	21	7	7
3	Moderate	7.3–10.9	133	44.3	51.3
4	High	11–14.6	122	40.7	92
5	Very High	14.7–18	24	8	100
	Total		300	100	-

4. Description of the Bugis Community's Attitudes Toward Developing Vernacular House Models (X^3).

   To assess the attitudes of the Bugis community in developing vernacular house models, a descriptive analysis was conducted on a sample of 300 respondents, using 17 questions/observations adapted from the Likert scale. The results of the descriptive statistical analysis (frequency distribution) are presented in **Table 4**.

   Based on **Table 4**, it can be understood that no members of the Bugis community exhibit very low attitudes toward developing vernacular house models. Specifically, 11% of the community holds a low attitude, 68.3% are categorized as moderate, 20.7% have a high attitude, and no members demonstrate a very high attitude toward vernacular house model development. Further statistical analysis reveals an average score of 54.43, with a minimum of 40 and a maximum of 70. Thus, it can be concluded that the average score falls within the moderate category, indicating that the attitudes of the Bugis community in developing vernacular house models are generally moderate.

Table 4. Frequency Distribution of the Bugis Community's Attitudes Toward Developing Vernacular House Models.

No	Description	Score	Frequency	Percentage	Cumulative Percentage
1	Very Low	17–30.6	0	0	0
2	Low	30.7–44.3	33	11	11
3	Moderate	44.4–58	205	68.3	79.3
4	High	58.1–71.7	62	20.7	100
5	Very High	71.8–85	0	0	100
	Total		300	100	-

5. Description of the Bugis Community's Locus of Control in Developing Vernacular House Models (X^4).
   To assess the locus of control of the Bugis community in developing vernacular house models, a descriptive analysis was conducted on a sample of 300 respondents, using 17 questions/observations adapted from the Likert scale. The results of the descriptive statistical analysis (frequency distribution) are presented in **Table 5**.
   Based on **Table 5**, it can be understood that no members of the Bugis community exhibit very low or low locus of control in developing vernacular house models. Specifically, 66.33% of the community has a moderate locus of control, while 33.67% are categorized as having a high locus of control. There are no individuals with a very high locus of control in this context. Further statistical analysis shows an average score of 56.25, with a minimum of 44 and a maximum of 71. Thus, it can be concluded that the average score falls within the moderate category, indicating that the locus of control of the Bugis community in developing vernacular house models is generally moderate.

Table 5. Frequency Distribution of the Bugis Community's Locus of Control in Developing Vernacular House Models.

No	Description	Score	Frequency	Percentage	Cumulative Percentage
1	Very Low	17–30.6	0	0	0
2	Low	30.7–44.3	0	0	0
3	Moderate	44.4–58	199	66.33	66.33
4	High	58.1–71.7	101	33.67	100
5	Very High	71.8–85	0	0	100
	Total		300	100	-

6. Description of the Bugis Community's Commitment in Developing Vernacular House Models (X^5)
   To assess the commitment of the Bugis community in developing vernacular house models, a descriptive analysis was conducted on a sample of 300 respondents, using 17 questions/observations adapted from the Likert scale. The results of the descriptive statistical analysis (frequency distribution) are presented in **Table 6**.
   Based on **Table 6**, it can be understood that the commitment of the Bugis community in developing vernacular house models is as follows: 0.33% have a very low commitment, 11.33% have a low commitment, 74.67% have a moderate commitment, 13.34% have a high commitment, and 0.33% have a very high commitment. Further statistical analysis shows an average score of 50.77, with a minimum of 17 and a maximum of 72. Thus, it can be concluded that the average score falls within the moderate category, indicating that the Bugis community's commitment to developing vernacular house models is generally moderate.

Table 6. Frequency Distribution of the Bugis Community's Commitment in Developing Vernacular House Models.

No	Description	Score	Frequency	Percentage	Cumulative Percentage
1	Very Low	17–30.6	1	0.33	0.33
2	Low	30.7–44.3	34	11.33	11.66
3	Moderate	44.4–58	224	74.67	86.33
4	High	58.1–71.7	40	13.34	99.67
5	Very High	71.8–85	1	0.33	100
	Total		300	100	-

7. Description of the Bugis Community's Awareness in Developing Vernacular House Models (X^6)
   To assess the awareness of the Bugis community in developing vernacular house models, a descriptive analysis was conducted on a sample of 300 respondents, using 17 questions/observations adapted from the Likert scale. The results of the descriptive statistical analysis (frequency distribution) are presented in **Table 7**.
   Based on **Table 7**, it can be understood that the awareness of the Bugis community in developing vernacular

house models is as follows: there are no individuals with very low awareness. A total of 1.67% have low awareness, 92.67% have moderate awareness, 5.33% have high awareness, and 0.33% have very high awareness. Further statistical analysis shows an average score of 52.62, with a minimum of 34 and a maximum of 77. Thus, it can be concluded that the average score falls within the moderate category, indicating that the Bugis community's awareness in developing vernacular house models is generally moderate.

Table 7. Frequency Distribution of the Bugis Community's Awareness in Developing Vernacular House Models.

No	Description	Score	Frequency	Percentage	Cumulative Percentage
1	Very Low	17–30.6	0	0	0
2	Low	30.7–44.3	5	1.67	1.67
3	Moderate	44.4–58	278	92.67	94.34
4	High	58.1–71.7	16	5.33	99.67
5	Very High	71.8–85	1	0.33	100
	Total		300	100	-

8. Description of the Income Level of the Bugis Community in Developing Vernacular House Models (X^7)

   To assess the income level of the Bugis community in developing vernacular house models, a descriptive analysis was conducted on a sample of 300 respondents. The results of the descriptive statistical analysis (frequency distribution) are presented in **Table 8**.

   Based on **Table 8**, it can be understood that the income level of the Bugis community in developing vernacular house models is as follows: 37.70% have an income ranging from IDR 500.000,00 to IDR 2.000.000,00 A total of 35.30% have an income between IDR 2.100.000,00 and IDR 3.000.000,00 while 15% have an income between IDR 3.700.000,00 and IDR 5.200.000,00. Additionally, 6% have an income ranging from IDR 5.300.000,00 to IDR 6.800.000,00 and 6% have an income of IDR 6.900.000,00 or above. Further statistical analysis shows an average income of IDR 2.995.000,00 with a minimum of IDR 500.000,00 and a maximum of IDR 7.000.000,00 The average income falls within the category of IDR 2.100.000,00 to IDR 3.600.000,00 When compared to the provincial minimum wage of South Sulawesi, which is IDR 3.434.298,00 it can be concluded that the average income of the community is below the regional minimum wage or considered low.

Table 8. Frequency Distribution of the Bugis Community's Income Level in Developing Vernacular House Models.

No	Description	Frequency	Percentage	Cumulative Percentage
1	500.000,00–2.000.000,00	113	37.70	37.70
2	2.100.000,00–3.600.000,00	106	35.30	73
3	3.700.000,00–5.200.000,00	45	15	88
4	5.300.000,00–6.800.000,00	18	6	94
5	6.900.000,00 - up	18	6	100
	Total	300	100	-

9. The Influence of Knowledge (X^1) on the Behavior of the Bugis Community in Developing Vernacular House Models (Y).

   To determine the influence of knowledge (X^1) on the behavior of the Bugis community in developing vernacular house models (Y), a simple regression analysis of the effect of X^1 on Y was conducted. The results of the analysis are presented in **Table 9**.

   Based on **Table 9**, it can be understood that the significance value of F = 0.128 is greater than $\alpha = 0.05$. This indicates that X^1 (knowledge) does not have a significant effect on Y (behavior).

Table 9. ANOVA of X^1 on Y.

ANOVA [a]						
	Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	175.247	1	175.247	2.329	0.128 [b]
	Residual	22418.949	298	75.231		
	Total	22594.197	299			

[a]. Dependent Variable: Y.
[b]. Predictors: (Constant), X^1.

10. The Influence of Motivation (X^2) on the Behavior of the Bugis Community in Developing Vernacular House Models (Y)

    To determine the influence of motivation (X^2) on the behavior of the Bugis community in developing vernacular house models (Y), a simple regression analysis of the effect of X^2 on Y was conducted. The results of the analysis are presented in **Table 10**.

    Based on **Table 10**, it can be understood that the significance value of F = 0.000 is smaller than α = 0.05. This indicates that X^2 (motivation) has a significant effect on Y (behavior). Its influence (R-squared) is 0.073 or 7.30%. The contribution of X^2 to Y is (B = 0.512). This figure indicates that for every increase in X^2, Y will increase by 0.512.

Table 10. ANOVA of X^2 on Y.

ANOVA [a]						
	Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	1647.042	1	1647.042	23.431	0.000 [b]
	Residual	20947.155	298	70.292		
	Total	22594.197	299			

[a]. Dependent Variable: Y.
[b]. Predictors: (Constant), X^2.

11. The Influence of Attitude on the Behavior of the Bugis Community in Developing Vernacular House Models

    To determine the influence of attitude (X^3) on the behavior of the Bugis community in developing vernacular house models (Y), a simple regression analysis of the effect of X^3 on Y was conducted. The results of the analysis are presented in **Table 11**.

    Based on **Table 11**, it can be observed that the significance value of F = 0.000 is smaller than α = 0.05. This indicates that X^3 (attitude) significantly influences Y (behavior). Its influence (R-squared) is 0.073 or 7.30%. The contribution of X^3 to Y is (B = 0.396). This figure shows that for every increase in X^3, Y will increase by 0.396.

Table 11. ANOVA of X^3 on Y.

ANOVA [a]						
	Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	1647.657	1	1647.657	23.441	0.000 [b]
	Residual	20946.540	298	70.290		
	Total	22594.197	299			

[a]. Dependent Variable: Y.
[b]. Predictors: (Constant), X^3.

12. The Influence of Locus of Control (X^4) on the Behavior of the Bugis Community in Developing Vernacular House Models

    To determine the influence of locus of control (X^4) on the behavior of the Bugis community in developing vernacular house models (Y), a simple regression analysis

of the effect of X^4 on Y was conducted. The results of the analysis are presented in **Table 12**.

Based on **Table 12**, it can be observed that the significance value of F = 0.000 is smaller than α = 0.05. This indicates that X^4 (locus of control) significantly influences Y (behavior). Its influence (R-squared) is 0.273 or 27.30%. The contribution of X^4 to Y is (B = 0.729). This figure shows that for every increase in X^4, Y will increase by 0.729.

Table 12. ANOVA of X^4 on Y.

ANOVA [a]						
	Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	6164.021	1	6164.021	111.799	0.000 [b]
	Residual	16430.176	298	55.135		
	Total	22594.197	299			

[a]. Dependent Variable: Y.
[b]. Predictors: (Constant), X^4.

13. The Influence of Commitment (X^5) on the Behavior of the Bugis Community in Developing Vernacular House Models

To determine the influence of commitment (X^5) on the behavior of the Bugis community in developing vernacular house models (Y), a simple regression analysis of the effect of X^5 on Y was conducted. The results of the analysis are presented in **Table 13**.

Based on **Table 13**, it can be observed that the significance value of F = 0.000 is smaller than α = 0.05. This indicates that X^5 (commitment) significantly influences Y (behavior). Its influence (R-squared) is 0.265 or 26.50%. The contribution of X^5 to Y is (B = 0.652). This figure shows that for every increase in X^5, Y will increase by 0.652.

Table 13. ANOVA of X^5 on Y.

ANOVA [a]						
	Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	5991.596	1	5991.596	107.543	0.000 [b]
	Residual	16602.601	298	55.713		
	Total	22594.197	299			

[a]. Dependent Variable: Y.
[b]. Predictors: (Constant), X^5.

14. The Influence of Concern (X^6) on the Behavior of the Bugis Community in Developing Vernacular House Models

To determine the influence of concern (X^6) on the behavior of the Bugis community in developing vernacular house models (Y), a simple regression analysis of the effect of X^6 on Y was conducted. The results of the analysis are presented in **Table 14**.

The Influence of Concern (X^6) on the Behavior of the Bugis Community in Developing Vernacular House Models.

To determine the influence of concern (X^6) on the behavior of the Bugis community in developing vernacular house models (Y), a simple regression analysis of the effect of X^6 on Y was conducted. The results of the analysis are presented in **Table 14**.

Based on **Table 9**, it can be seen that the significance value of F = 0.121 is greater than α = 0.05. This indicates that X^6 (concern) does not have a significant effect on Y (behavior).

Table 14. ANOVA of X^6 on Y.

ANOVA [a]						
	Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	181.573	1	181.573	2.414	0.121 [b]
	Residual	22412.624	298	75.210		
	Total	22594.197	299			

[a]. Dependent Variable: Y.
[b]. Predictors: (Constant), X^6.

15. The Influence of Income Level (X^7) on the Behavior of the Bugis Community in Developing Vernacular House Models

To determine the influence of income (X^7) on the behavior of the Bugis community in developing vernacular house models (Y), a simple regression analysis of the effect of X^7 on Y was conducted. The results of the analysis are presented in **Table 15**.

Based on **Table 15**, it can be seen that the significance value of F = 0.354 is greater than α = 0.05. This indicates that X^7 (income level) does not have a significant effect on Y (behavior).

Table 15. ANOVA of X^7 on Y.

ANOVA [a]						
	Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	65.105	1	65.105	0.861	0.354 [b]
	Residual	22529.092	298	75.601		
	Total	22594.197	299			

[a]. Dependent Variable: Y.
[b]. Predictors: (Constant), X^7.

16. The Influence of X^1, X^2, X^3, X^4, X^5, X^6, and X^7 on Y

To determine the collective influence of X^1, X^2, X^3, X^4, X^5, X^6, and X^7 on Y, a simple regression analysis was conducted. The results of the analysis are presented in **Table 16**.

Based on **Table 16**, it can be seen that the significance value of F = 0.000 is less than α = 0.05. This indicates that X^1, X^2, X^3, X^4, X^5, X^6, and X^7 collectively have an effect on Y. To determine the magnitude of this influence, the results of the multiple regression analysis are presented in **Table 17**.

Based on **Table 17**, it can be seen that the R^2 value = 0.496. This figure indicates that X^1, X^2, X^3, X^4, X^5, X^6, and X^7 collectively have an impact on Y of 49.60%. To determine the contribution of X^1, X^2, X^3, X^4, X^5, X^6, and X^7 to Y, the results of the continued regression analysis are presented in **Table 18**.

Based on **Table 18**, it can be understood that X^1, X^3, and X^7 have T-values that are greater than α = 0.05. Therefore, X^1, X^3, and X^7 do not contribute to Y.

(1). Contribution of X^2 to Y: The analysis shows that T = 0.000. This means that X^2 contributes to Y. The Beta value is 0.288, indicating that the contribution of X^2 to Y is 0.288 while considering X^1, X^3, X^4, X^5, X^6, and X^7.

(2). Contribution of X^4 to Y: The analysis shows that T = 0.000. This means that X^4 contributes to Y. The Beta value is 0.350, indicating that the contribution of X^4 to Y is 0.350 while considering X^1, X^2, X^3, X^5, X^6, and X^7.

(3). Contribution of X^5 to Y: The analysis shows that T = 0.000. This means that X^5 contributes to Y. The Beta value is 0.493, indicating that the contribution of X^5 to Y is 0.493 while considering X^1, X^2, X^3, X^4, X^6, and X^7.

(4). Contribution of X^6 to Y: The analysis shows that T = 0.000. This means that X^6 contributes to Y. The Beta value is 0.257, indicating that the contribution of X^6 to Y is 0.257 while considering X^1, X^2, X^3, X^4, X^5, and X^7

Table 16. ANOVA of X^1, X^2, X^3, X^4, X^5, X^6, and X^7 on Y.

ANOVA [a]						
	Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	11209.183	7	1601.312	41.070	0.000 [b]
	Residual	11385.014	292	38.990		
	Total	22594.197	299			

[a]. Dependent Variable: Y.
[b]. Predictors: (Constant), X^7, X^3, X^6, X^1, X^4, X^2, X^5.

Table 17. Model Summary of X^1 on Y.

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.704 [a]	0.496	0.484	6.24418

[a]. Predictors: (Constant), X^7, X^3, X^6, X^1, X^4, X^2, X^5.

Table 18. Regression Coefficients of X^1 on Y.

Coefficients [a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	49.327	7.451		6.620	0.000
	X1	0.318	0.156	0.089	2.034	0.043
	X2	0.547	0.087	0.288	6.279	0.000
	X3	0.051	0.068	0.034	0.740	0.460
	X4	0.488	0.071	0.350	6.848	0.000
	X5	0.624	0.076	0.493	8.198	0.000
	X6	0.564	0.115	0.257	4.895	0.000
	X7	0.307	0.214	0.061	1.432	0.153

[a]. Dependent Variable: Y.

3.2. Discussion

The findings of this study indicate that the behavior of the Bugis community in developing vernacular house models in coastal areas of South Sulawesi Province falls into a moderate category based on indicators such as layout, facade, cross-section, and supporting facilities. This behavior is influenced by factors such as knowledge, motivation, attitude, locus of control, concern, and income level in developing the vernacular house models. Therefore, improving these factors could enhance the behavior of the Bugis community in developing vernacular house models in the coastal areas of South Sulawesi Province. The results of this study indicate that the behavior of the Bugis community in developing vernacular house models in the coastal areas of South Sulawesi Province is classified as moderate based on indicators such as layout, facade, cross-section, and supporting facilities. This behavior is influenced by factors such as knowledge, motivation, attitude, locus of control, concern, and income level in developing vernacular house models. Therefore, increasing these factors can improve the behavior of the Bugis community in developing vernacular house models in the coastal areas of South Sulawesi Province. The results of the study are supported by research conducted by Hartawan, which states that traditional Bugis architecture is still thick in terms of elements of trust in the construction process. The existing elements of trust are actually positive elements that expect safety for residents and the social environment of society. The element of trust in its role as a basis for consideration in the past seems to have shifted due to the development of science and technology[17]. Based on Hartawan's opinion above, it becomes clear the role of this study to re-explore local wisdom which Hartawan calls the element of trust to be used as material and consideration in order to develop the Bugis vernacular house model in the coastal areas of South Sulawesi Province, Indonesia.

The knowledge of the Bugis community about devel-

oping vernacular house models is considered moderate. This knowledge has yet to contribute significantly, either individually or in combination with other variables, to influencing behavior. However, it is important to improve this knowledge to positively influence behavior. The knowledge of the Bugis community about developing traditional house models is considered moderate. This knowledge has not yet made a significant contribution, either individually or in combination with other variables, in influencing behavior. However, this knowledge is important to improve in order to positively influence behavior. This can happen if knowledge about local culture, especially local wisdom, has begun to be abandoned, such as the results of Haerawan's research above. This indication is supported by the results of research by Octavia et al, which states that the acculturation of local culture with the original culture is very lacking, this can be seen from the shape of the building that has not changed and the absence of local wisdom that has been adapted into the form of traditional houses. The loss of symbolic meaning to architectural elements such as the meaning of decorative motifs that no longer indicate social status but only function as building decoration (ornaments) and the function of the room is only limited to the needs of the homeowner without paying attention to the philosophy of the original culture [18].

The motivation of the Bugis community in developing vernacular house models is also categorized as moderate. Motivation positively influences behavior and contributes to it. Therefore, motivation should be enhanced to continue having a significant and positive impact on behavior.

The attitude of the Bugis community towards developing vernacular house models in coastal areas is also moderate. This attitude influences and contributes to the behavior of the Bugis community in developing these models. Hence, the attitude should be maintained and improved to positively impact behavior.

The locus of control within the Bugis community about developing vernacular house models is categorized as moderate. It influences behavior and contributes to it. Thus, enhancing the locus of control will further reinforce positive behavior.

Commitment within the Bugis community towards developing vernacular house models is also considered moderate. Commitment has a positive effect and contributes to behavior. Therefore, it needs to be maintained and improved to further enhance behavior.

Concern among the Bugis community about developing vernacular house models in the coastal areas of South Sulawesi is also moderate. This concern influences and contributes to the community's behavior. Therefore, increasing this concern will have a significant positive impact.

The income level of the Bugis community in relation to developing vernacular house models is classified as low and does not significantly contribute to behavior. Therefore, improving income levels through financial support and business opportunities is essential.

The Theory of Planned Behavior (TPB), developed by Ajzen, is highly relevant in analyzing human behavior, including the Bugis community's behavior in developing vernacular house models. According to TPB, behavior is influenced by three main factors: 1) Attitudes toward the behavior: the attitude of the Bugis community toward vernacular house models plays a key role in determining whether they will maintain or develop these traditional houses; 2) Subjective norms: social and cultural norms within the Bugis community may support or hinder the development of vernacular houses; 3) Perceived behavioral control: the extent to which the Bugis community perceives control over their choices—whether in technical skills, knowledge, or economic resources—also influences their decisions regarding vernacular house models [19].

Social capital within the Bugis community includes elements such as trust, norms, and networks. As Bourdieu and Putnam argue, social capital can enhance the collective ability to preserve cultural heritage, including vernacular houses. Networks and trust among Bugis community members may help maintain traditional house designs, especially if there is collective motivation to do so [20, 21].

Maslow's hierarchy of needs can also help explain the motivation behind the Bugis community's behavior. Basic needs, such as security (against floods), are a priority, and once these needs are met, attention may shift to higher needs like aesthetics and cultural identity through vernacular architecture [22].

Cultural Adaptation Theory suggests that communities adapt to their physical and social environments. In the case of the Bugis in coastal areas, cultural adaptation to environmental conditions (such as climate, coastal topography, and natural disaster risks) shapes the form of vernacular houses.

Arnold Toynbee, also highlights how environmental challenges encourage civilizations to adapt, including through vernacular architecture [23].

Research on vernacularism and the environment, as noted by Oliver, suggests that vernacular houses are often designed according to local environmental conditions [24]. This aligns with the behavior of the Bugis community, which seeks to adapt their house designs to the coastal environment.

4. Conclusion

This study reveals that the behavior of the Bugis community in developing vernacular house models in the coastal areas of South Sulawesi is categorized as moderate, influenced by factors such as knowledge, motivation, attitudes, locus of control, concern, and income levels. Among these factors, motivation and attitudes have a significant impact on behavior, while knowledge and locus of control contribute moderately. The low-income level poses a major challenge to preserving vernacular houses, limiting the community's ability to develop house models that blend local wisdom with modern needs. These findings highlight the importance of education, training, and economic empowerment to enhance motivation, attitudes, and knowledge, ultimately fostering better behavior in cultural preservation. Furthermore, efforts are needed to strengthen the community's locus of control, enabling them to take confident initiatives in preserving traditions without excessive reliance on external support.

Author Contributions

This research was carried out collaboratively by lecturers from the Department of Civil Engineering and Planning Education, Faculty of Engineering, Makassar State University, so that all authors in this article contribute according to their respective capacities. R. as the Head of Research, prepared the research proposal, and offered it to fellow lecturers to collaborate in this research. M.Y.B. as the coordinator in data collection, N.P. as the Coordinator in data analysis, report writing, and writing research articles, then M.L. was tasked with translating and editing research articles, and assisting the main researcher to submit to reputable international journals, and assisting in revising journal articles based on instructions from the Journal Editor and Reviewer.

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Informed Consent Statement

Before we carried out this research, we first carried out a legal process, by obtaining a permit from the authorities. And for this purpose, the permit number in question is: Permit Number: 1739/UN36.11/LP2M/2024.

Data Availability Statement

Regarding data availability, every study certainly has data to be analyzed. And our data is generally reflected in the research results presented in this article, so we think that there is no need for additional data to be sent specifically.

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Conflicts of Interest

We the Authors state that there are no conflicts of interest to declare in the research and writing of this article, so it is free from conflicts of interest.

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