

Research Article

Community Behavior in Using Electrical Energy in Maros Regency

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Abstract

The objectives of this study are as follows: (1) to determine the behavior of the community using electrical energy in Maros Regency, (2) to determine the knowledge of electrical energy, local wisdom, and attitudes towards the environment of the community using electrical energy in Maros Regency, (3) to determine the influence of knowledge of electrical energy, local wisdom, and attitudes towards the environment, individually and collectively on the behavior of the community using electrical energy in Maros Regency? This study is classified as a correlational study. The study was located in Maros Regency. The population of this study was the community (head of family/KK) who lived in Maros Regency. The sample areas were Bantimurung and Simbang Districts selected using the purposive sampling method. Respondents (samples) were 50 heads of families who used electrical energy in their respective homes. The research variables consist of: (1) dependent variable (Y), and (2) independent variables (X). The dependent variable is the behavior of the community using electrical energy (Y). The independent variables are: (a) knowledge of electrical energy (X1); (b) local wisdom (X2); and (c) environmental attitudes (X3). The data analysis techniques used are: (1) Descriptive statistical analysis, (2) inferential statistical analysis. The inferential statistical analysis models used are: (1) simple regression analysis and (2) multiple regression analysis. The results of the study indicate that (1) the behavior of people using electrical energy in Maros Regency is classified as efficient, (2) knowledge of electrical energy, local wisdom, and attitudes towards the environment of people using electrical energy in Maros Regency are classified as high, (3) knowledge of electrical energy, local wisdom, and attitudes towards the environment, have an effect individually and together on the behavior of people using electrical energy in Maros Regency.

Keywords

Energy, Using, Electricity, Behavior, Local Wisdom

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1. Introduction

Government Regulation No. 70 of 2009 concerning Energy Conservation states that energy conservation is a systematic, planned and integrated effort to conserve domestic energy resources and increase the efficiency of their use. Electrical Power is the amount of energy absorbed or produced in a circuit. Energy sources such as electrical voltage will produce electrical power while the load connected to it will absorb the electrical power. In other words, electrical power is the level of energy consumption in an electrical circuit.

The conditions of the community in Maros Regency using electrical energy in their respective homes vary greatly. This is greatly influenced by many factors. These factors are likely to be: (1) knowledge of electrical energy possessed by the occupants of the house, (2) their attitude towards the environment as a whole, (3) local knowledge or local wisdom possessed, (4) environmental conditions that may provide opportunities, and (5) other internal and external factors. The assumptions as described earlier are in line with the behavioral theory by Hines, et al. and Hungerford and Volk which are better known as responsible environmental behavior. In this theory, it is explained that behavior is influenced or shaped by: (a) personal factors, including attitudes and motivations; (b) knowledge of the issue; (c) acting skills, (d) skills in applying knowledge, and (e) other situational factors. [1]

Research on the behavior of people using electrical energy in Maros Regency has never been conducted. Likewise, the factors that influence have never been studied. Therefore, it is interesting to study. In addition, research on the influence of knowledge of electrical energy, local wisdom, and attitudes towards using electrical energy on the behavior of using electrical energy in Maros Regency has also never been conducted.

The problem in this study is formulated as follows: 1) How is the behavior of the community using electrical energy in their respective homes in Maros Regency? 2) How is the knowledge of electrical energy, local wisdom, and attitudes towards the environment of the community in Maros Regency? 3) Do knowledge of electrical energy, local wisdom, and attitudes towards the environment, individually and collectively influence the behavior of the community using electrical energy in their respective homes in Maros Regency?

The objectives of the study are as follows: 1) To determine the behavior of the community using electrical energy in their respective homes in Maros Regency. 2) To determine the knowledge of electrical energy, local wisdom, and attitudes towards the environment of the community in Maros Regency. 3) To determine the influence of knowledge of electrical energy, local wisdom, and attitudes towards the environment, individually and collectively on the behavior of the community using electrical energy in their respective homes in Maros Regency.

2. Literature Review

Notoatmodjo states that behavior is an activity or activity of the organism concerned, which can be observed directly or indirectly [2]. Jiang states that behavior is an individual's action or reflection caused by psychological aspects, such as knowledge, perception, intention, desire and attitude. [3] Furthermore, it is said that behavior is influenced by internal and external factors. Internal factors are: knowledge, attitude, motivation, and concern. External factors are: family environment, social conditions, local wisdom, and culture.

Notoatmodjo and Kusriani basically state that knowledge is memory or what is known about materials that have been studied which are based on scientific reasoning. [4] Soekanto states that knowledge is an impression in the human mind as a result of using the five senses. [5] Furthermore, Notoatmodjo states that knowledge consists of three components, namely: cognitive, affective and psychomotor components [2]. Sartini basically state that local wisdom is a local advantage that is based on values, norms, ethics, knowledge, technology, and behavior owned by a community group and traditionally institutionalized which is used to overcome life and living problems [6]. Marfai states that one of the characteristics of local wisdom is being able to survive against outside culture [7]. Abu Ahmadi basically states that attitude is a tendency to respond and behave in a certain way towards certain objects [8]. Azwar and Mar'at state that the components of attitude consist of: (a) cognitive components related to beliefs, ideas, and concepts, (b) affective components concerning a person's emotional life, and (c) conation components which are tendencies. [9, 10]

In Government Regulation Number 70 of concerning Energy Conservation, it is stated that energy conservation is a systematic, planned and integrated effort to conserve domestic energy resources and increase the efficiency of their use. [11] Electrical Power is the amount of energy absorbed or produced in a circuit. Energy sources such as electrical voltage will produce electrical power while the load connected to it will absorb the electrical power. In other words, electrical power is the level of energy consumption in an electrical circuit (<http://teknikelektronika.com/> Muhammad Ardi states that a house is part of a settlement which is an environment where humans live to carry out life which is equipped with social, economic, cultural, electricity, roads, and other service infrastructure and is a subsystem of the city as a whole [12]. In Law No. 4 of it is stated that a house is a building that functions as a place to live or a residence and a means of fostering a family. [13] Muhammad Ardi stated that a house is a place of residence that meets the requirements for a decent life. Furthermore, Muhammad Ardi stated that a house is a place for humans to live, carry out the process of socialization, interact socially and introduce culture. [12] Law No. 32 of concerning Environmental Protection and Management states that the environment is a unity of space, and all objects, power, conditions and living things, including humans and their be-

havior that affect the continuity of life and the welfare of humans and other living things. [14] Soerjani, et al. stated that the environment is a life system where there is human intervention in the ecosystem order. [15]

3. Research Methods

This research is classified as correlational research. The location of the research is Maros Regency. The population of this research is the community (head of family/KK) who live in Maros Regency. The sample areas are Bantimurung District and Simbang District, Maros Regency, selected using the purposive sampling method. Respondents or samples in each sample area are 25 Heads of Families (KK) selected using the purposive sampling method and (referring to the Arikunto approach, Thus, the number of sample members is 50 heads of families. The research variables consist of: (1) dependent variable (Y), and (2) independent variable (X). The dependent variable is the behavior of the community in using electrical energy (Y). The independent variables are: (a) knowledge of electrical energy (X1); (b) local wisdom (X2); and (c) environmental attitudes (X3). Data collection was carried out by providing questionnaires and knowledge tests to all sample members. The data analysis techniques used were descriptive statistical analysis and inferential statistical analysis. The inferential analysis models used are: (1) simple regression analysis and (2) multiple regression analysis.

4. Research Results and Discussion

4.1. Research Results

The results of the descriptive statistical analysis of the behavior of the community using electrical energy in homes in

Maros Regency, South Sulawesi Province, from 15 behavioral questionnaire items analyzed using the Likert Model, showed that the behavior was in the low category. The average value = 32.6. Maximum = 48, and minimum = 25.

The results of the descriptive statistical analysis of knowledge about electrical energy (X1) of the community in Maros Regency, South Sulawesi Province from 15 True-False model questions analyzed, showed that the knowledge was in the low category. The average value = 5.21. Maximum = 8, and minimum = 2.

The results of the descriptive statistical analysis of local wisdom or local knowledge related to electrical energy (X2) of the community in Maros Regency, South Sulawesi Province, from 15 True-False model questions analyzed, showed that the local wisdom was in the low category. The average value = 5.2. Maximum = 8, and minimum = 1.

The results of the descriptive statistical analysis of attitudes towards the environment (X3) of the community in Maros Regency, South Sulawesi Province, from 15 statements or attitude questions analyzed by referring to the Likert Model, show that the attitude is in the low or negative category. Average value = 34.82. Maximum = 48, and minimum = 22.

To determine whether or not there is an influence of knowledge about electrical energy on the behavior of the community using electrical energy in homes in Maros Regency, South Sulawesi Province, the following are the results of the inferential statistical analysis of the simple regression model X1 against Y (Anova Table) in Table 1.

In Table 1, it can be seen that the significance $F = 0.000 < \alpha 0.05$. This figure shows that X1 has an effect on Y. R Square = 0.672. This figure shows that the effect of X1 on Y is 67.20%. This effect is quite large. Beta X1 = 3.49. This figure shows that X1 contributes to Y by 3.49.

Table 1. Anova X1 against Y.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2261.83	1	2261.83	299.58	.000 ^b
	Residual	362,86	48	7.55		
	Total	2624.69	49			

a. Dependent Variable: Y

b. Predictors: (Constant), X1; R Square = .672; Beta X1= 3,49.

To determine whether or not there is an influence of local wisdom on people's behavior in using electricity in homes in Maros Regency, South Sulawesi Province, the following is the

result of the inferential statistical analysis of the simple regression model X2 on Y (Anova Table) in Table 2.

Table 2. Anova X2 against Y.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	2261.83	1	2261.83	299.58	.000 ^b
1	Residual	362.86	48	7.55		
	Total	2624.69	49			

a. Dependent Variable: Y

b. Predictors: (Constant), X2; R Square = .608; Beta X2= 3.27.

In **Table 2**, it can be seen that the significance of $F = 0.000 < \alpha 0.05$. This figure shows that X2 has an effect on Y. R Square = 0.608. This figure shows that the effect of X2 on Y is 60.80%. Beta X2 = 3.27. This figure shows that X2 contributes to Y by 3.27. To determine whether or not there is an influence of environmental attitudes (X3) on people's behavior in using electricity in homes in Maros Regency, South Sulawesi Province, the following is the result of the inferential statistical analysis of the simple regression model X3 on Y (Anova Table) in **Table 3**.

Table 3. Anova X3 against Y.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	230.,47	1	2301.47	322.33	.000 ^b
1	Residual	342.90	48	7.14		
	Total	2644.37	49			

a. Dependent Variable: Y

b. Predictors: (Constant), X3; RSquare = .556; Beta X3 = 2.68

In **Table 3**, it can be seen that the significance of $F = 0.000 < \alpha 0.05$. This figure shows that X3 has an effect on Y. R Square = 0.556. This figure shows that the magnitude of the influence of X3 on Y is 55.60%. Beta X3 = 2.68. This figure shows that X3 contributes to Y by 2.68. To determine whether or not there is an influence of knowledge of electrical energy (X1), local wisdom (X2), and environmental attitudes (X3) together on the behavior of people using electrical energy in homes in Maros Regency, South Sulawesi Province (Y), the following are the results of the inferential statistical analysis of the multiple regression model X1, X2, and X3 on Y (Anova Table) in **Table 4**.

Table 4. Anova X1, X2, and X3 against Y.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	3562.79	1	3562.79	354.15	.000 ^b
1	Residual	462.81	46	10.06		
	Total	4025.6	49			

a. Dependent Variable: Y; b. Predictors: (Constant), X1, X2, dan X3; R Square = .898

Table 4 shows that the significance $F = 0.000 < \alpha 0.05$. This figure shows that X1, X2, and X3 have a joint effect on Y. The effect is very significant, which is 89.80%.

4.2. Discussion

The results of the descriptive statistical analysis of people's behavior in using electrical energy at home in Maros Regency, South Sulawesi Province show that this behavior is in the low category. This behavior is in accordance with the socio-economic conditions of the community in Maros Regency. This means that people are not wasteful in using electrical energy. If the community is wasteful in using electrical energy, the consequence is that they will pay expensive electricity bills. Therefore, the behavior of people in Maros Regency in using electrical energy must be maintained.

The results of the descriptive statistical analysis of knowledge about electrical energy in Maros Regency, South Sulawesi Province is in the low category. This community's knowledge needs to be improved so that they can be more efficient in using electrical energy in the future. Knowledge of electrical energy in Maros Regency has a positive effect on the behavior of using electrical energy. Therefore, public knowledge of using electrical energy needs to be improved so that they do not depend on local PLN officers when there is a power outage in their respective homes.

The results of the descriptive statistical analysis of local wisdom or local knowledge related to electrical energy in Maros Regency, South Sulawesi Province are in the low category. Local wisdom related to the use of electrical energy in Maros Regency has a positive effect on the behavior of using electrical energy. Therefore, local wisdom in using electrical energy needs to be maintained and improved so that in the future the community will be wiser in using electrical energy in their respective homes.

The results of the descriptive statistical analysis of attitudes towards the community environment in Maros Regency, South Sulawesi Province are in the low category. Environmental attitudes related to the use of electrical energy in Maros Regency have a positive effect on the behavior of using electrical energy. Therefore, the community's attitude towards using electrical energy needs to be maintained and improved so that in the future the community will be wiser in using electrical energy in their respective homes.

5. Conclusion

Based on all the previous descriptions, the conclusions of this study are as follows: 1) The behavior of people using electrical energy in their homes in Maros Regency, South Sulawesi Province is in the low or economical category, 2) Knowledge of electrical energy, local wisdom, and attitudes of people in Maros Regency, South Sulawesi Province are in the low category, and 3) Knowledge of electrical energy, local wisdom, and attitudes have an individual and collective in-

fluence on the behavior of people using electrical energy in Maros Regency, South Sulawesi Province.

Conflicts of Interest

The authors declare no conflicts of interest.

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