ANALYSIS COMMUNITY ENERGY BEHAVIOR ENVIRONMENTALLY

Irwan Syarif[1]
Hamsu Abdul Gani[2]
Nurlita Pertiwi[3]
Andi Nur Putri[4]
Muh.Rais[5]

[1,2,3]Population and Environmental Education, Post Graduate Program, Universitas Negeri Makassar
[4,5]Technical Enginering, Patria Artha University

e-mail: firaysnawri88@email.com

ABSTRACT

The increasing consumption of electrical energy coupled with the dwindling availability of fossil energy sources has resulted in a world energy crisis, especially in Indonesia. The government has begun to take solution steps to save the world's energy, such as policies to use renewable energy as alternative energy and energy conservation. The purpose of this study is to identify the energy-saving behaviour of the community as a step to follow government regulations regarding the implementation of energy conservation. By using a quantitative approach, this study also aims to determine what factors encourage a person to consume electrical energy that is environmentally sound. Environmentally sound energy behaviour is expected to be one of the solutions in solving the problem of the world energy crisis in addition to the use of renewable energy as alternative energy and a benchmark for public awareness of energy problems.

Keywords: energy conservation, energy behaviour, environment

1) INTRODUCTION

The human need for energy is increasing day by day. The energy used today comes from natural resources, namely oil and natural gas. However, overexploitation of oil and natural gas has resulted in depleting supplies.

Based on the mandate of the 1945 Constitution article 33 that energy resources are natural resources controlled by the state and used for the greatest prosperity of the people so that it becomes a consideration for the enactment of Law no. 30 of 2007 concerning energy which describes that Energy is managed based on the principles of benefit, rationality, fair efficiency, increased added value, sustainability, community welfare, preservation of environmental functions, national resilience, and integration by prioritizing national capabilities.

The increase in the need for electrical energy (Watt-hour = Wh) is not in line with the increase in the supply of electrical energy, where the installed power capacity is still fixed, while the needs of the community continue to increase in line with the number of residents and their supporting activities. Taking into account that the national economic power growth averages 6.1 percent annually and the national population grows by 1.3 percent annually, the estimated national electricity demand according to the 2008-2027 National General Electricity Plan is estimated to reach an average of 9.2 percent annually.

The understanding of energy conservation as a practical action has also not developed in the community due to the scarcity of information dissemination or campaigns on energy conservation techniques. The government is still too little or slow in paying attention to the energy conservation movement. The government is also still implementing the wrong energy price policy, which makes energy conservation not an option that must be done by the community. Energy conservation as a pillar of energy management has almost been neglected in development planning and practice in the country for quite a long time. As a result, although not all components of society have adequate access to energy, energy consumption in Indonesia is considered wasteful, even including the most wasteful in Asia.

The National Coordinator of Publish What You Pay (PWYP) Indonesia in 2020 said that Indonesia's energy consumption growth averaged 4% per year. This increase is inseparable from Indonesia's economic growth, also driven by Indonesia's population growth. National electricity consumption continues to show an increase along with increasing access to electricity or electrification as well as changes in people's lifestyles (Embu, 2018). Based on data from the Ministry of Energy and Mineral Resources, Indonesia's electricity consumption in 2020 reached 1,012 Kilowatt per Hour (kWh) per capita, up 5.9% from the previous year. For this year, the government targets public electricity consumption to increase to 1,129 kWh per capita. National electricity consumption in 2020 is projected at 905 kWh per capita according to the Electricity Procurement Business Plan (RUPTL) of PT Perusahaan Listrik Negara (PLN). This figure will increase to 1,147 kWh per capita in 2022 and continue to rise to 1,505 kWh per capita by the end of 2027.

Saving electrical energy is a goal that can only be achieved by changing people's behavior. In order for behavior change to occur, awareness of the importance of environmentally friendly behavior in this case energy saving is important. A person's interest or desire to behave in a certain way leads to intention. Intention is a decision to behave in a certain way, or an urge to act according to a goal, whether consciously or not (Dewi, 2018). Relying on the Theory of Planned Behavior, intentions are influenced by three factors, namely attitudes towards behavior, subjective norms, and perceived behavioral control. The strength of the intention is the most important thing to predict a person's behavior. The stronger a person's intentions, the stronger the behavior displayed or carried out.

Theory of Planned Behavior

Ecological behavior is an action that contributes to environmental sustainability and conservation (Maknun, 2011). Ecological behavior or what can be referred to as pro-environmental behavior has many terms as stated above. However, these various terms refer to the same concept, namely environmental friendliness. Pro-environmental behavior aims to reduce or provide solutions related to environmental problems (Homburg & Stolberg, 2006). Pro-environmental behavior is best seen as a combination of self-interest and concern for others, creating the next life, other living things or the ecosystem as a whole (Bamberg & Moser, 2007).

One related theory is the theory of planned behavior (TPB) from Ajzen which explains that there are three antecedent variables, namely (1) attitudes towards behavior, (2) subjective norms and (3) behavioral control. The three antecedent variables that have been mentioned influence the formation of an individual's behavioral intention, which in this case is pro-environmental behavior (See Fig.1) (Greaves, Zibarras , & Stride, 2013).

Figure 1. Schematic representation of theory planned behaviour
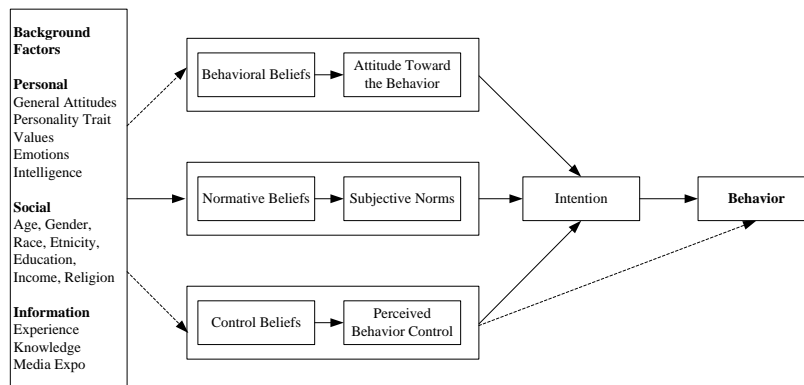
2) METHODS

This research was conducted in Pattalassang and Sombaopu Subdistricts, Gowa Regency, South Sulawesi Province in Indonesia. This is one area that has a lot of housing and is a densely populated area in the Gowa district. This study uses a quantitative approach, to identify people's energy-saving behaviour through community responses to government regulations and to find out the motives that influence the behaviour of consumers of environmentally friendly electrical energy.

Figure 2. Research Framework
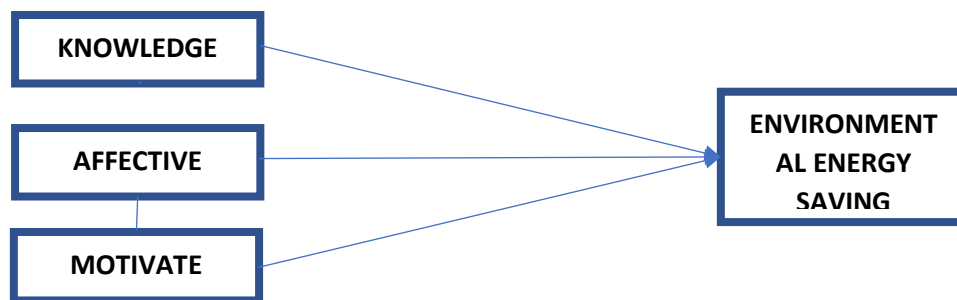
This research is a correlational study, which looks at the relationship between people's knowledge about energy-saving behaviour, the relationship between people's attitudes and energy-saving behaviour and what motivations influence energy-saving behaviour. Characteristics of respondents in this study are household electricity customers type R1 and R2.

Research Variables

Knowledge is everything that PLN electricity customers know about government regulations and policies on energy conservation and customer knowledge about the energy crisis and its impacts.

Affective is an aspect that includes the characteristics of people's behaviour such as feelings, interests, attitudes, emotions, and values related to the response to government regulations and policies regarding energy conservation and the impact of the energy crisis.

The motivational aspect is the encouragement of electricity customers to perform energy-saving behaviour as a form of community involvement in energy conservation.

Data analysis

The Statistical Package for Social Sciences (SPSS) version 21 was used to analyse the data. Using tiered regression analysis to determine the most important factors that influence the behaviour of consumers of environmentally friendly electrical energy in Gowa Regency.

3) RESULTS

This section discusses the statistical summary of the variables used and the estimation results of the model. Table 1 shows that the total sample of observations in this study was 564 individuals representing household information. In terms of independent variables, almost all data are measured on a non-ratio measurement scale, namely Knowledge, Avektive and Motivation Knowledge levels are presented on an ordinal scale, and the coding follows a standard. The average level of knowledge of the respondents is 14,238 with a standard deviation of 1.398. This figure implies that the respondent's average length of time is an individual's behavior that is influenced by knowledge.

Tabel 1. Statistik Deskriptif Variabel Terikat dan Variabel Bebas

No	Variable Description	No of	Mean and	Minimum	Maximum
Dependent Variables					
1	Electricity. Value 1=subjective reported that knowledge affects individuals' daily use of electricity; 0 otherwise	564	0.362 (0.480)	0	1
Independent Variable					
2	Knoledge	564	43.693 (14.238)	12	108
3	Affective	564	0.459 (0.498)	0	1
4	Motivation	564	0.2003 (0.4002)	0	1

Based on the results of the research that has been done, the knowledge variable has a very significant correlation to changes in people's behaviour, especially energy-saving behaviour that is environmentally sound. The knowledge that must be possessed by the community to cultivate energy behaviour is:
(1) Knowledge of government regulations or government policies related to energy conservation.,
(2) Knowledge of the energy crisis and its consequences.

The results showed that the public did not know about government regulations and government policies related to energy conservation and the use of new and renewable energy. Some respondents also did not know about the energy crisis and the impact of the energy crisis.

The Apex aspect also has a significant correlation with changes in people's energy-saving behaviour. Apex is also strongly influenced by the knowledge possessed by the community. Aspects of motivation are influenced by 2 factors, namely internal factors and external factors. These two factors lead people to choose to take an action or behaviour. Internal factors are related to the economic conditions of the community, education level, personality, and attitudes possessed by the individual community. While external factors are related to reference groups, social class, culture and communication.

4) DISCUSSION

Things that need to be discussed are methods of disseminating information about government regulations or policies on energy conservation, educating the public about energy-saving behavior and growing people's motivation to adopt environmentally sound energy behavior. Further

research needs to be done on the influence of socio-economic conditions, government policies, knowledge of sustainability on people's motivation in the use of household electricity that is environmentally sound.

5) CONCLUSION

Based on the results of the study, it can be seen that knowledge of energy behaviour is included in the main categories that can affect the behaviour pattern of using electrical energy in the community. While the results of the static descriptive analysis show that knowledge greatly influences behaviour in applying environmentally sound energy. Based on the results of the study, it can be seen that knowledge of energy behaviour is included in the main categories that can affect the behaviour pattern of using electrical energy in the community. While the results of the static descriptive analysis show that knowledge greatly influences behaviour in applying environmentally sound energy.

REFERENCES

Azwar, Saifuddin. (2013). *Human Attitude (Theory and Its Measurement)*. Yogyakarta: Student Library.

Bamberg, S., & Moser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of the psycho-social determinants of pro-environmental behavior. *Journal of Environmental Psychology*, 27,14–25.

Clegg, B. (2001). *Instant Motivator: 79 Instant Ways to Grow Motivation*. Jakarta: Erlangga.

Danim, Sudarwan. (2012). *Leadership Motivation and Group Effectiveness*, Edition 2. Jakarta: PT Rineka Cipta Utama.

Hobbs, P. R., Sayre, K. & Gupta, R. (2008). The Role of Conservation Agriculture in Sustainable Agriculture. *Royal Society of London Philosophical Transactions B: Biological Sciences*, 363, 543-555.

Hogg, MA and D Abrams. (1993). *Social Psychological Motivation Group Perspective*. Great Britain: Wheat Harvester.

Homburg, A. & Stolberg, A. (2006). Explaining Pro-Environmental Behavior With A Cognitive Theory of Stress. *Journal of Environmental Psychology*, 26, 1– 14.

Law No. 30 of 2007 on energy

Minister of Energy and Mineral Resources Regulation No. 13 of 2012 concerning Savings in Electricity Consumption.

Presidential Instruction Number 13 of 2011 concerning Energy and Water Saving

Sardiman, A.M. (2016). *Teaching and Learning Interaction and Motivation*. Jakarta: King Grafindo Persada.

Sarwono, Solita. (1993). *Sociology of Health*. Yogyakarta: Gadjah Mada University Press.

Sembel, Dantje T. (2015). *Environmental Toxicology*. Yogyakarta: Andi Publisher.

Setiawan, A. (2013). The Effect of Work Discipline and Motivation on Employee Performance at the Kanjuruhan Regional General Hospital, Malang. *Journal of Management Science (JIM)*, 1(4).

Sugiyono. (2006). *Qualitative Quantitative Research Methods and R&D*. Bandung: Alphabeta

Suharyat, Y. (2009). Relationship between Attitudes, Interests and Human Behavior. *Journal Region*, 1(3), 1-19.