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The Correlation of Education and Income Toward Community Behaviors in Disposing Waste to Sago River of Pekanbaru

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Abstract

Sanitary Office of Pekanbaru recorded the waste produced by around 1.3 million residents of Pekanbaru is 500 tons / day or 2.6 kilograms per recident everyday. During 2016, recorded flooding incidents in Pekanbaru and around Riau Province occurred because of the damage of river boundary. The main Sources of water pollution was domestic and household wastes. The human behavior was the biggest cause of environmental damage. The aim of this research was for finding out the correlation of education and income toward community behaviors in disposing household waste to sago river. This research included into quantitative type with crossectional approach. Independent variable of the research was education and income. The population was all of housewives living around sago river about 974 people. The sample was about 284 people who selected by Stratified Random Sampling technique. The instrumen used was questionnaire and observation sheet. The primary data was from questionnaire and abservation sheet, while secondary data was taken from Sukaramai Village Office of Pekanbaru. The data was analyzed by chi square test with $\alpha=0,05$. The result of this research showed that there was a significant correlation of respondent s' education and income with value $\alpha < 0,05$. It will be used for the further research which was for desigining a suitable program for handling the waste in the Sago River of Pekanbaru.

Keywords: education, income, waste disposal behavior

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1. Introduction

Waste is a material that is not used anymore or thrown away from various sources like human or natural activities that do not have economic value. Sources of waste include household, agriculture, urban, corporate, hospital. Rapid urban population growth has an impact on increasing the amount of waste produced. According to data from the Ministry of Environment and Forestry (KLKH), in 2015, nearly 68 percent or the majority of the water quality in 33 provinces in Indonesia was heavily polluted status. The main Sources of water pollution was domestic and household wastes [1].

Sanitary Office of Pekanbaru recorded that the waste produced by around 1.3 million residents of Pekanbaru is 500 tons / day or 2.6 kilograms per population in one day. During 2016, recorded flooding incidents in Pekanbaru and around Riau Province occurred because of the damage of river boundary. Meanwhile, garbage dumped carelessly by millions Pekanbaru residents in the river flow made it hampered and causing flooding in Pekanbaru.

Various types of Waste, like *degradable or non degradable,* will be mixed together into one which causing various problems such as pollution like odor, soil or water pollutions. If the garbage is disposed into the river or on the river boundary, namely "Trash Island", and the inevitable flood disaster can come everywhere [2].

Based on a preliminary survey conducted on 20 respondents on April 3, 2017 in a settlement near the Sago River watershed, Sukaramai Village, Pekanbaru, it was found that 80 percent of respondents were reluctant to throw garbage in its place because it was a hereditary habit, they did not know the impact of throwing garbage into river and there was no a waste management system. The results of the analysis of the physical, chemical and biological parameters of the Sago river water carried out with the preliminary survey were the Sago River had been contaminated.

Around the Sago river, there were densely populated residential areas, besides that there was also a market which was a trade center in Pekanbaru causing so much waste production, the traders did not pay attention to cleanliness, besides that some of the settlements were visible from their physical conditions, river water was murky, smelly, and filled with garbage, this condition was possibility because the behavior of the people around the Sago river in disposing of household garbage was still not right anymore. The presence of sediments from waste can accelerate siltation and allow clogging of the river, so that the drainage channel whose main function is to prevent flooding will no longer be able to carry out its functions.

The General Purpose of this research was to find out the correlation of Education and Income toward the behavior of the community in disposing of household waste in the Sago River. While, the Special Purpose were to find out the correlation of education and the behavior of the community in disposing household garbage in the Sago river and also to find out the correlation of income and the behavior of the community in disposing household garbage in the Sago river.

2. Research Method

This research included into quantitative type with analytic design through *Cross Sectional* approach. In Cross Sectional study, the subject was observed only once through measurement and observation on the variables at the same time with the aim to see the independent variable and the dependent variable carried out during data processing.

This research was conducted in Sukaramai Village where settlements around the Sago River in Pekanbaru. This research was planned for approximately 1 year (12 months) and would begin after the signing of the research contract.

The population of this research was all housewives who lived in the area around the Sago River, Sukaramai, Pekanbaru, which were as as many as 1067 people. Samples were part of the population. In this case researcher used a formula for taking the sample.

$$n = \frac{N}{1 + N(d)^2}$$

$$n = \frac{974}{1 + 974(0,05)^2}$$

$$n = \frac{974}{1 + 974(0,0025)}$$

$$n = 283,55 = 284 \text{ people}$$

The sampling technique used in this research was the Stratified Random Sampling. The data source was secondary data like monographic data from the Sukaramai village office about the people's livelihood and their average income. While, the Primary data was in the form of respondent data that contains education, and income.

In this research, the instrument used was a questionnaire which was for finding out the data about education and income from the residents around the Sago River and their behaviors in disposing household waste on the river.

The data collected of the research were primary and secondary data. The secondary data was obtained from existed data on Sukaramai Village profile of Pekanbaru. The primary data was obtained by questionnaire, research subjects' interview and direct observation at the research location. Data analysis was adjusted to the variables to be tested. The analysis used was univariate analysis and bivariate analysis.

3. Results

3.1. Univariate analysis

The results of univariate analysis described the independent and dependent variables. The dependent variable described below was the behavior of the community in disposing of garbage and independent variables were education, income, knowledge, facilities and attitudes.

TABLE 1: Distribution of Respondents' Frequency.

No	Variabel	Frekuensi	Persentase (%)
	Variabel Dependen		
1	Perilaku Membuang Sampah		
	Buruk	168	59.2
	Baik	116	40.8
	Jumlah	284	100
	Variabel Independen		
1	Pendidikan Responden		
	Pendidikan dasar ≤9 tahun	148	52.1
	Pendidikan dasar > 9 tahun	136	47.9
	Jumlah	284	100
2	Pendapatan Responden		
	Rendah	163	57.4
	Tinggi	121	42.6
	Jumlah	284	100

Based on Table 1, it was found that the respondents who had bad behavior in disposing garbage were about 168 (59.2%), the respondents who had ≤ 9 years of basic education were 148 (52.1%), the respondents with low income were around 163 (57.4%).

3.2. Bivariate analysis

The results of bivariate analysis determined the correlation of independent and dependent variables as below:

TABLE 2: Analisis Bivariat.

Variabel	Perilaku Membuang Sampah					P Value	OR (95% CI)
	Buruk		Baik		Total		
	n	%	n	%	n (%)		
Pendidikan Responden							
Pendidikan dasar ≤9 tahun	98	66.2	50	33.8	148 (100)	0,016	1.848 (1.145–2.982)
Pendidikan dasar > 9 tahun	70	51.5	66	48.5	136 (100)		
Total	168	59.2	116	40.8	284 (100)		
Pendapatan Responden							
Rendah	108	66.3	55	33.7	163 (100)	0,007	1.996 (1.233–3.233)
Tinggi	60	49.6	61	50.4	121 (100)		
Total	168	59.2	116	40.8	284 (100)		

Based on the results of the bivariate analysis in table 2, it can be concluded that:

1. Respondents who had basic education of ≤9 years had bad behavior in disposing of trash were 1.8 times compared to respondents with basic education> 9 years

2. Respondents who had low income had bad behavior in disposing of garbage were 1.9 times compared to respondents with high income

4. Discussion

4.1. Univariate analysis

4.1.1. Waste disposal behavior

From the results of the research, it was found that respondents with bad waste disposal behavior were 168 (59.2%). Waste management was related to the behavior of people who produced waste. Handling garbage Started from upstream would make the waste problem to be simpler. Disenchanting the community as a waste producer to not produce large amounts of waste and not throw away carelessly will reduce waste problems.

4.1.2. Education

The result of the research was found 148 respondents with basic education of ≤ 9 years around (52.1%). From this result, we knew that most of the community was low educated. Education was a benchmark that was most useful for determining socioeconomic status and had a fairly good level of accuracy. This variable could be recorded general categories, uneducated, educated, secondary school, higher education and special training categories. For people who only had 7 years of basic education, they showed a more progressive appearance [3].

4.1.3. Income

From the results of the research, it was found that respondents who categorized low income were 163 (57.4%). From this result, it was known that the majority people were low-income people. Low socioeconomic conditions were generally close related to a variety of health problems. If measured by currency values, the poor people used just a little of their income for cooking nutritious food, having clean water needs, buying clothing and living in nice house. They worked to live without any residue to utilize health

services. Health was often not too much taken care of them. So that, by increasing public education, it hopes the awareness of health values will also increase.

4.2. Bivariate analysis

4.2.1. The correlation of education to waste disposal behavior

The results of the research were concluded that there was the correlation of education and waste disposal behavior. Respondents with basic education of ≤9 years had bad behavior in disposing of trash were 1.8 times compared to respondents with basic education of > 9 years.

The level of education can influence a person's behavior in conducting waste management. In Lawrence Green's theory, it was said that health education had an important role in changing and strengthening the behavior. Because education could make the peoples understand and aware the waste dangerous to the environment, especially the dangers of pollution to human health [3].

The results showed that there was still a lack of respondents' ability to understand the right disposal and waste management.

4.2.2. The correlation of income and waste disposal behavior

From the results of the research, it can be concluded that there was the correlation of income and waste disposal behavior. Respondents with low income had bad behavior in throwing garbage were 1.9 times compared to respondents with high income.

This result was in line with the theory which stated that the level of income will affect a person's ability to make waste disposal facilities. According to WHO, there were 4 reasons that causing someone to behave, such as resources like money. Another opinion stated that economic factors can encourage and inhibit the community to participate in health development [3].

The results of the research indicated that the level of income influenced people's behavior in disposing of household waste in the river. Because of limited funds, the community was not able to have suggestions for landfills, so people often throw garbage directly into the river or vacant land.

5. Conclusion

1. There was the correlation of education and waste disposal behavior. Respondents with basic education of ≤ 9 years had bad behavior in disposing waste were 4.5 times compared to respondents with basic education of > 9 years.

2. There was the correlation of income and waste disposal behavior. Respondents with low income had bad behavior in disposing waste were 14.9 times compared to respondents with high income.

Acknowledgment

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