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Abstract. Most of the solid waste generation sources come from housing activities. The types of house buildings located in the Palembang is a traditional building which made from wood construction and a permanent house which made from concrete construction. The aim of this study is to calculate the amount of waste generation and to study the community behavior in waste management. The research used an observation and questionnaires that took place in 3 location of the traditional housing and 3 location of the permanent housing with 20 respondents for each location. The results showed that the waste generation in the traditional housing was 1.51 liters/person/day and the permanent housing was 1.63 liters/person/day. The collecting system in traditional housing was taken by the garbage cart every 1 days, while in permanent housing was taken by motorcycle, pick-up car, or dump truck every 1 or 2 days. The questionnaire results showed that 96,67% of the traditional housing and 91,67% of the permanent housing disposed of the waste in a mix condition. Amount of 6,67 % from the traditional housing and 0% of permanent housing managed their waste into compost. Amount of 15 % from traditional housing and 3,33% of permanent housing sold their waste. Based on the results, it can be concluded that the permanent housing has the largest number of waste generation and the people in traditional housing had a tendency to manage the waste better than the permanent housing.

INTRODUCTION

The population growth, living place, and urbanization are the factors which cause the rate of waste generation in the developing city [1]. This waste generation has a direct impact on the waste management system consisting the waste storage, the waste collection system, and the waste transporting system. The solid waste management system for urban areas, especially in Palembang should be implemented properly and systematically. The effective preventing problem of waste management system needs an information about the characteristics of the waste generating sources, especially on residential [5]. Most of the solid waste generating sources from household activities were 55-80% [3]. In Palembang, there are some households that have different types of buildings are occupied. The house building types can be grouped into traditional residential and permanent residence. Traditional residential is built with wood construction while permanent residential built with concrete construction. Solid waste from residential consist of organic and inorganic waste with a certain amount of waste. The amount of solid waste generation in other place has many variations based on the community lifestyle and culture [4]. In support, the improving waste management systems required data on waste generation characteristics from the source, namely residential. From this introduction above, that will need to comparative study on residential solid waste management system based on the type of building in the Palembang. The purpose of this study is to calculate the amount of waste generation by the sources and to study about people's behavior in waste management.

RESEARCH METHOD

The research methodology used an observation and questionnaires that took place in 3 location of the traditional residential and 3 location of the permanent residential with 20 respondents for each location (show Table 1) by using

Slovin Formula sampling with e = 10%. The method of measure waste generation using Indonesian National Standard (SNI) 19-3964-1994 and the sample will be taken randomly for 3 days in research location. Questionnaires is contained questions about behavior in waste management and this result was analyzed using Spearman Correlation with SPSS 17 program. The questionnaires variables are education, income and age that influence with behaviour in waste management. From the result of this correlation can be conclude what variables are related or not related.

TABLE 1. Research Location and Number of Samples

| Sample	Location	Code	Number of Samples
Traditional Residential	Jalan Ki Merogan Kecamatan Kertapati	A1	20
	Jalan Ali Gatmir Kecamatan Ilir Timur II	A2	20
	Jalan Sultan Moh Mansyur Kecamatan Ilir Barat II	A3	20
Permanent Residential	Perumahan Poligon Baru Kecamatan Gandus	B1	20
	Perumahan Jakabaring Komplek OPI Kecamatan Seberang Ulu I	B2	20
	Perumahan Villa Sukamaju Kecamatan Sako	B3	20
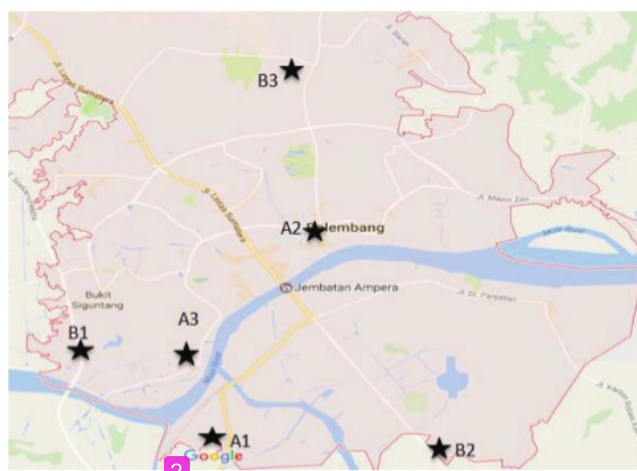
FIGURE 1. Map of research location

Waste generation (kg/person/day) :

$$= \frac{average\ of\ total\ weight}{total\ number\ weight\ sample} \tag{1}$$

Volume of waste generation (liter/person/day) :

$$= \frac{average\ of\ total\ volume}{total\ number\ volume\ sample} \tag{2}$$

RESULT AND DISCUSSION

The waste collection system in the research location was collect waste from the storage points and door to door of some households every day by using collectors service or not. Based on this research, there are so many different collection systems that can be seen in the Table 2.

TABLE 2. Condition Existing of Collection System

Sample Code	Type of House Building	Collection System
A1	Traditional Residential	In the road side and collect by dump truck once a day and was delivered to landfill, free charged
A2		In road side, was collected by cart and was delivered to collection place once a day, was charged of Rp10,000.00/month
A3		Was collected by self and was delivered to collection place every day
B1	Permanent Residential	Was collected by cart and was delivered to collection place once a day, was charged of Rp20,000.00/month
B2		Was collected by motorcycle and was delivered to collection place once a day, was charged of Rp20,000.00/month
B3		Was collected by pickup car and was delivered to landfill twice a day, was charged of Rp25,000.00/month

In Table 2 showed that permanent residential use the cart garbage, motorcycle and pickup car to collect their waste into collection place or landfill. This system was charged with Rp20,000 until Rp25,000 every house per month. This is different from traditional residential that used cart garbage and dump truck to collect their waste and some of the traditional residential collected waste by their self into collecting place without charge. The amount of waste generation is related to population, so this is very important to know that will be produced by household [2]. Based on the Table 3 the amount of weight generation in traditional residential is large than permanent residential because there are so many organic wastes which makes the weight increased and the volume decreased. These differences are caused by the activity of them that the permanent residential has more activity to use inorganic things such as paper, plastic, etc. than the traditional residential use more organic things [6].

TABLE 3. Amount of Waste Generation in Sample Location

Sample Code	Number of people in house	Weight Waste (kg/house/days)	Volume Waste (liters/house/days)
A1	5	4.81	7.03
A2	5	2.63	6.75
A3	4	3.43	4.39
Average		3.62	6.06
B1	5	3.04	6.48
B2	5	3.44	6.71
B3	5	2.99	6.35
Average		3.16	6.51

The behavior of the community in waste management is done by giving a questionnaire on the respondent in the location of the study. From the questionnaire results showed that the profile of the respondents can be seen in the below. From the Table 4-6 showed that the majority of respondents from the traditional and permanent residential has a job as an entrepreneur with the level of education is a senior high school (SHS). The amount of 75% traditional residential respondents have an income between Rp1,000,000 to Rp2,500,000, while the permanent residential earning more than Rp. 2,500,000.

TABLE 4. Respondent Working

Type of Work	Traditional Residential	Permanent Residential
Employee	5%	18.33%
Labor	3.33%	0 %
Entrepreneur	58.33%	55.00%
Housewife	33.33%	26.67%

TABLE 5. Respondent Education

Education	Traditional Residential	Permanent Residential
Elementary School	28.33%	3.33%
Junior High School (JHS)	18.33%	6.67%
Senior High School (SHS)	53.33%	61.67%
University	0 %	28.33%

TABLE 6. Respondent Income

Income	Traditional Residential	Permanent Residential
At least Rp 1.000.000	11.67%	0 %
Between Rp 1.000.000 – Rp 2.500.000	75%	15.00%
More than Rp 2.500.000	13.33%	85.00%

Respondents have answered about behavior of waste management Table 7. at home is 3.33% of traditional residential and 8.33% of permanent residential do not separate solid waste when discarded.

TABLE 7. Respondent of Behavior in Solid Waste Management

Behavior of Waste Management	Traditional Residential (%)		Permanent Residential (%)	
	No	Yes	No	Yes
Waste is mixed before disposed	3.33	96.67	8.33	91.67
Made compost	93.3	6.67	100	0
Selling waste	85	15	96.67	3.33

In variable behavior of waste management into compost. the amount of 6.67% traditional residential respondents and 0% of permanent residential answered to do compost. while 15% of respondents traditional residential and 3.33% of permanent residential answered to sell the recycle solid waste. Based on the results. it can be concluded that the permanent residential has the largest number of waste generation and the people in traditional residential had a tendency to manage the waste better than the permanent residential because they have differences of income and education [6].

TABLE 8. Correlation of Behavior and Respondent Profile at Traditional Residential Using Spearman Correlation

Behavior in Waste Management	Education	Income	Ages
Waste is mixed before disposed	0.255	-0.226	0.016
Made compost	0.239	0.043	-0.185
Selling waste	-0.259	-0.024	-0.018

Based on Table 8. is the result of the correlation between the variables of education. income and age of the respondent to the traditional residential behavior of waste management. Education variable has a biggest correlation value of the other variables while the variable age has the smallest correlation. Education variable has a positive correlation with variable 'mixed waste' and 'made compost' that means if the level of education is higher than the respondent will tendency separate and made compost from their solid waste. The education variable has a negative correlation to 'selling waste'. that means the level of education is higher so the respondent will not tendency selling the solid waste.

TABLE 9. Correlation of Behavior and Respondent Profile at Permanent Residential Spearman Correlation

Behavior in Waste Management	Education	Income	Ages
Waste is mixed before disposed	-0.143	-0.112	0.012
Made compost	0	0	0
Selling waste	-0.196	-0.182	-0.242

From Table 9 above showed that there are have a correlation between education and income variable to behavior in waste management which have a negative correlation that means if the level of education and income are higher than the respondent does not it. 'made compost' variable do not have a correlation to education. income and age variable. The difference of correlation between traditional residential and permanent residential was education variable has positive correlation for traditional residential in 'waste mixed' and 'made compost' while permanent residential has a negative correlation in 'waste mixed' and 'selling waste'. Hence. the education and income variable tendency influenced the behavior in waste management.

CONCLUSION

Amount of 6.67 % from the traditional residential and 0% of permanent residential managed their waste into compost. Amount of 15% from traditional residential and 3.33% of permanent residential sold their waste. Based on the results. it can be concluded that the permanent residential has the largest number of waste generation and the people in traditional residential had a tendency to manage the waste better than the permanent residents. From correlation analysis using Spearman Correlation show that the education and income variable tendency influenced the behavior in waste management.

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