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The Effect Of Waste Management On People's Knowledge Level (Case Study In The City Of Yogyakarta)

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Abstract

The Total population in the city of Yogyakarta in 2022 is 376 324 people, with a population density of 11 579 people/km2. The population will impact the amount of waste produced, especially household waste. Household-scale waste management is considered the most effective in reducing the waste handled by the Yogyakarta City government. So that it is essential to socialize waste management activities by providing counseling on how to sort organic and inorganic waste, how to make organic waste into compost, and inorganic waste using the Reduce, Reuse, Recycle Disposal (3R + 1 D) method and the Waste Bank program. People in Yogyakarta City curly know how much waste management affects the public knowledge level. The purpose of the study was to determine the effect of waste management on the level of public knowledge. The research method used quantitative descriptive research with the interview and questionnaire. Respondents have participated in the socialization of waste management in Yogyakarta City. The result of the research is that the effect of waste management will increase the knowledge of the people of Yogyakarta City. Public knowledge will also increase community habits and behavior in waste management using the Reduce, Reuse, Recycle, Disposal (3R + 1 D) and the Waste Bank program spread in Yogyakarta City 448 spread on 14 sub-districts.

Keywords: Community Knowledge Level, Household Waste, Inorganic Waste, Organic Waste, Waste Bank, Waste Management

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1. INTRODUCTION

An ecological approach is an approach used in the field of geography. This approach is about the interaction of living organisms with the environment or the science that studies the relationship between living things and their environment. One of these approaches is used in studying environmental management, namely waste management. Garbage is the residue of daily human activities and or natural processes in solid form (Regulation number 1 of 2012 concerning Environmental Management). According to WHO, waste is something that is not used, not used, unpleasant, or something that is thrown away that comes from human activities and does not happen by itself (Chandra,2007). Household waste is waste produced by one or several families living in a building or dormitory in a village or city. Garbage must receive serious attention. The city of Yogyakarta will have a recorded population of 376 324 people in 2022, with a population density of 11 579 people/km2 (BPS City of Yogyakarta in Figures, 2022). Ensuring this population will impact the amount of waste produced, especially household waste. According to Rineksa (2007), the welfare of society and human civilization has been followed by an increasingly consumptive lifestyle. Suppose this amount of waste is not increased by upgrading and improving the infrastructure for communal waste disposal. It will cause problems, such as waste not being transported so that it can cause various diseases, the environment looking dirty, smelling bad, and so on.

Household-scale waste management is considered the most effective in reducing the waste handled by the Yogyakarta City government. So that it is essential to socialize waste management activities by providing counseling on how to sort organic and inorganic waste, making organic waste into compost, and inorganic waste using the Reduce, Reuse, Recycle Disposal (3R + 1 D) method and the Waste Bank program. People in Yogyakarta City curly know how much waste management affects the public knowledge level. So that the formulation of the problem in this study is how the effect of waste management on the level of public knowledge after the socialization of waste management

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activities in the city of Yogyakarta. The purpose of the study was to determine the effect of waste management on the level of public knowledge.

2. LITERATURE REVIEW

High population growth accompanied by a consumptive lifestyle causes waste problems. As a result, if the waste problem is not handled immediately, the longer the waste will build up, and social conflicts, health problems, and environmental disturbances will arise due to an unhealthy environment and uncomfortable situation. Waste management that is cheap, easy, and efficient or provides benefits and advantages is a big question for the community. After the socialization of waste management activities, questions arise that need to be answered through research on garbage education. The following is a description of these three things:

a. Waste Management

Waste management is systematic and comprehensive and includes the reduction and management of waste. Waste reduction is carried out by a. waste generation limitation; b. waste recycling; and or c. waste reuse. Waste management is carried out by a. sorting, b. collection, c. transportation, d. processing; and e. final waste processing. (Regulation Number 10, 2012 concerning Waste Management). According to Regional Regulation No. 1 of 2012 concerning Environmental Management, waste management is a systematic, comprehensive, and sustainable activity that includes waste reduction and handling. Waste management is a shared responsibility between the community and the Government, including the following action: (a) limiting waste generation, (b) waste recycling, and (c) reuse of waste. Independent Waste Management is Waste Management carried out by the community individually or in groups at the source level. (Regulation Number 10, 2012 concerning Waste Management).

According to Regional Regulation Number 10, 2012 concerning Waste Management, waste management principles are carried out based on the following principles: a. responsibility, b. sustainable, c. benefits, d. justice, e. awareness, f. togetherness, g. safety, h. security, i. local wisdom, j. ecoregion, k. participatory, and l. economic value. Waste management aims to:

1) Cultivate Cleanliness And Beauty Throughout The City Of Yogyakarta;
2) Improve Public Health And Environmental Quality;
3) Make Waste A Resource;
4) Provide Added Value For Market-Oriented Productive, Creative, And Independent Economic Activities;
5) Empowering The Community For Independent Waste Management;
6) Provide Tourist Attractions In The Area; And
7) Reduce the quantity of waste and the impact caused by waste.

From Armen's research, the K-3 program (Order, Cleanliness, and Beauty) is expected to create cleanliness and beauty in the city starting from or starting with creating social order and discipline in the community; in other words, by implementing K-3, especially in waste management. It will make and encourage increased community participation.

The community can play a role in waste management organized by the Regional Government by a. providing proposals, considerations, and suggestions to the Regional Government; b. waste management policy formulation; c. giving advice and opinions in the settlement of waste disputes. Everyone in carrying out waste reduction activities uses materials that can be reused, can be recycled, and or are easily decomposed by natural processes. Each owner/occupant and person in charge of the building is responsible for maintaining the cleanliness of the environment up to the shoulder of the road around their respective yards. To facilitate waste control, each owner/occupant/person in charge of the building provides trash bins in their different yards to collect the daily waste generated. (Regulation Number 10, 2012 concerning Waste Management).

b. Household waste

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Household waste comes from daily activities in the household, excluding feces and specific waste (Perda Number 10, 2012 concerning Waste Management).

Household waste is waste generated by one or several families who live in a building or dormitory in a village or city (Sucipto, 2012).

Solid waste from residential areas or households becomes a contributor to waste. Even if there is a small amount of household waste per day, if every household produces waste per day, the amount of waste that will be generated will be significant. Please note that household waste produces organic waste and inorganic waste. The above will undoubtedly contribute a large amount of waste, organic and inorganic waste viewed from the scope of the area.

Families or households, to date, are the largest producers of waste. More than 60% of the waste sent to the TPA (Final Disposal Site) is waste generated by households (Basriyanta, 2007). Thus, it will be seen in the flow or chart see figure 1:

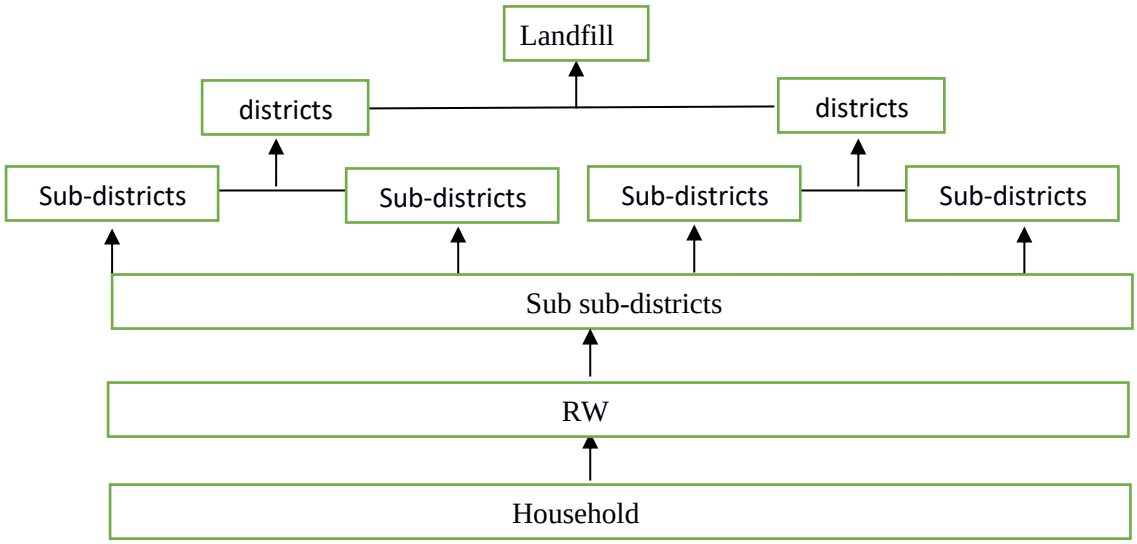

Figure 1. Garbage Donation Delegated To TPA

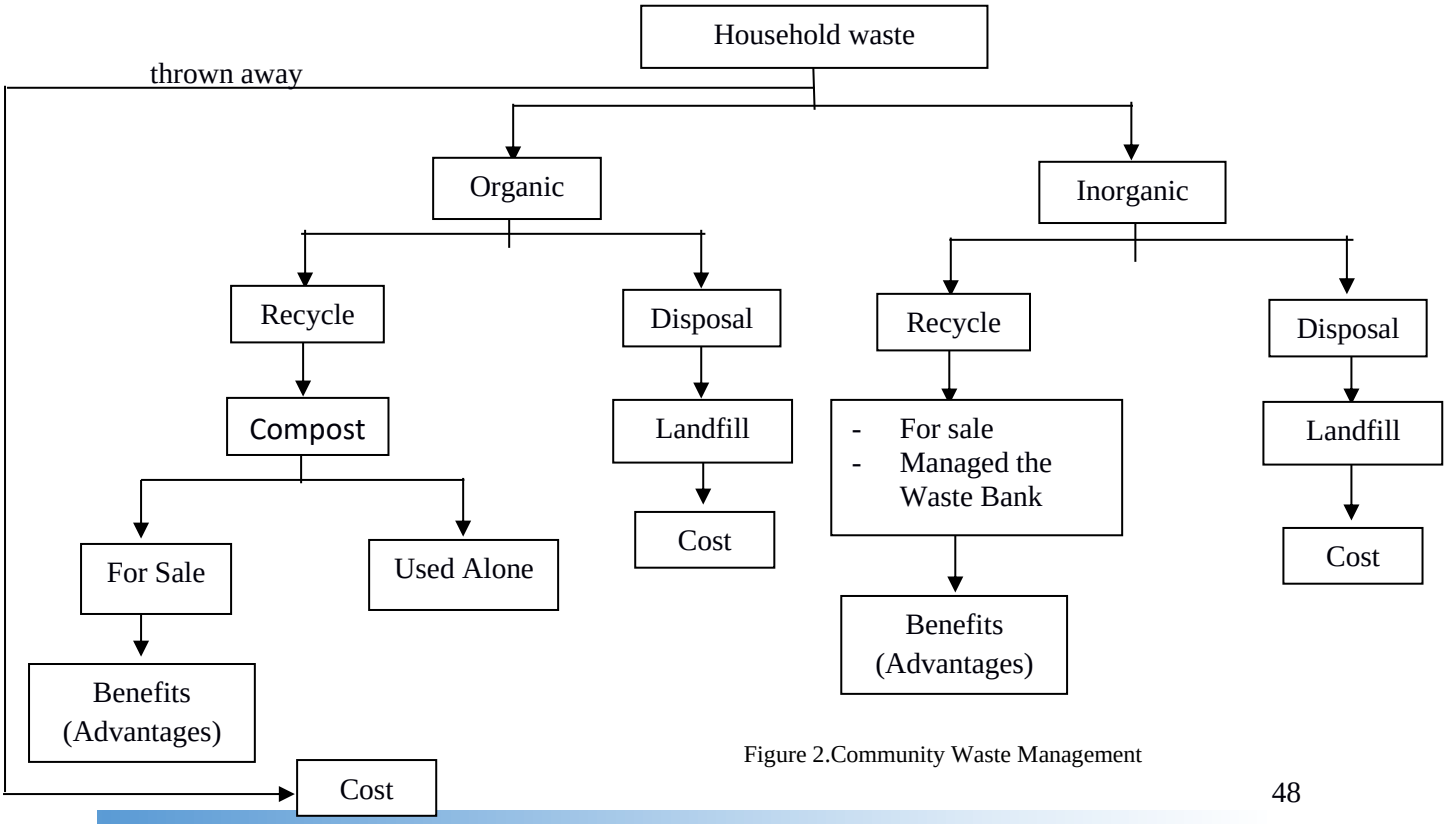

Figure 2.Community Waste Management

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Show two figures above (Figure 1 and Figure 2); it can be seen that if the waste is directly transferred to the TPA, the volume will be higher than if it was managed by the community first in each region. Regarding waste, especially household waste (domestic waste), it will be more effective and efficient if the management is carried out together communally, starting in a small scope (family, village). This is because the family is a core part of a village or region. If each family can manage their own waste effectively and efficiently, it can be ensured that the cleanliness of the surrounding environment is also maintained. In addition, Kampung or RW is a miniature of the region. Suppose the people are aware and willing to work together to manage waste properly and correctly; it can be expected that the village will have a clean, healthy, and pleasant environment (Basriyanta, 2007).

c. Community Knowledge Level

Knowledge can instill an understanding of attitudes, ways of thinking, and behavior to support environmental conservation, especially in waste management. The knowledge about waste management is very influential on community participation in household waste management. People who lack discipline, understanding, and awareness of environmental cleanliness are caused by a lack of education and poor habitual patterns of the population (Bara et al. 2018). Community behaviors are closely related to the level of community perception, attitude, and participation in waste management. Public perception in waste management is a response, view, and community assessment of waste management activities. Community attitude in waste management activities is how the community reacts to waste management activities aimed at a feeling of pleasure or displeasure, agreeing or disagreeing. Meanwhile, community participation is community involvement in waste management activities.

3. RESEARCH METHOD

Research activities in the City of Yogyakarta, Yogyakarta Special Region. Researchers chose this location because it is densely populated and has waste management problems. This type of research is descriptive quantitative research, which analyzes and presents data in a structured manner so that it is easy to understand and conclude (Arikunto, 2011). Descriptive research is conducted to determine the value of independent variables, either one or more variables (independent), without making comparisons or connecting with other variables (Sugiyono, 2017). At the same time, quantitative research is research by obtaining data in the form of numbers or qualitative data that is numbered (Sugiyono, 2017). Then the data obtained from the sample of the research population were analyzed according to the statistical method used and then interpreted by direct interviews with respondents and using a questionnaire as a data collection tool. The way to take a population sample is by purposive sampling, where the sampling method is to determine the characteristics that are by the objectives, namely, the selected respondents are people who have participated in the socialization of waste management activities in the city of Yogyakarta. The variables of this study consisted of the dependent and the independent variables (Table 1). The dependent variable in this study is household waste management, and the independent variable is the level of community knowledge. Household waste management includes habitual patterns in treating waste and community behavior in waste management (related to the level of perception, attitude, and community participation in waste management). Public perception in waste management is a response, view, and community assessment of waste management activities. The community attitude in waste management activities is how the community reacts to waste management activities aimed at a feeling of pleasure or displeasure, agreeing or disagreeing.

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Meanwhile, community participation is community involvement in waste management activities. The community level knowledge of waste management, education level, experience, and age.

Table 1. Research variable

Number	variable	indicator
1.	Household waste management (Y) → dependent	Habits and Behavior
2.	Community knowledge level (X) → Independent	Waste management knowledge, education level, experience, and age

Data processing uses editing techniques to check the data that has been collected in order to avoid errors when recording in the field. That proses coding and tabulation. Then the next step is giving a score or value with a Likert scale based on the distribution of the subject's response to a set of questions. The last stage is to analyze the data descriptively to describe the social reality in the community in waste management. The analysis uses a simple regression test on each research variable that is used to determine the effect of the level of public knowledge on household waste management (Sujarweni, 2014).

4. RESULTS AND DISCUSSION

4.1. Community Knowledge Level

1. Waste Management Knowledge

Knowledge is considered to be able to instill an understanding of attitudes and ways of thinking and supportive behavior in waste management from previous research (Putra et al. 2015) as a means of educating waste management correctly and with an environmental perspective. Knowledge of waste management is very influential on community participation in household waste management as measured by the questions strongly agree, agree, hesitate, disagree, and strongly disagree. From the results of interviews with respondents who have participated in the socialization of waste management in the city of Yogyakarta, 62.07% answered Strongly Agree, 35.86% answered Agree, 2.07% answered doubtfully, 0% answered Disagree, 0% answered Strongly Disagree (Table 2). So from the results obtained, almost all participants in the waste management socialization expressed positively. So from the results of the interview, there was a participant who said that this socialization activity would be followed up in coordination with the government agency responsible for waste management.

Table 2. Respondent's Knowledge About Waste Management

Number	Knowledge Size	Frequency >1 (Person)	%
1	Strongly Disagree	0	0.00
2	Don't agree	0	0.00
3	Doubtful	3	2.07
4	Agree	52	35.86
5	Strongly agree	90	62.07
	Total	145	100

Source: Primary Data Processing, 2021

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2. Education Level

The respondent's last formal education level is considered to determine the level of community knowledge; based on the results of interviews with respondents who participated in the socialization of waste management activities in Yogyakarta City that 6.90% did not go to school (10 people), SD/equivalent as many as 24.14% (35 people), SMP/MTs/equivalent as many as 15.86% (23 people), SMA/MAN/equivalent as many as 46.89% (68 people), Diploma I / II / III as many as 2.07% (3 people), Diploma IV / S1 as many as 4.14% (6 people), Postgraduate (S2/S3) as many as 0% (0 people) (Figure 2). Previous research (Ramon et al., 2015) states that elements of public knowledge about waste management affect community attitudes and actions in waste management. So from this research, the distribution of answers is getting more positive at higher levels of education, see Figure 3.

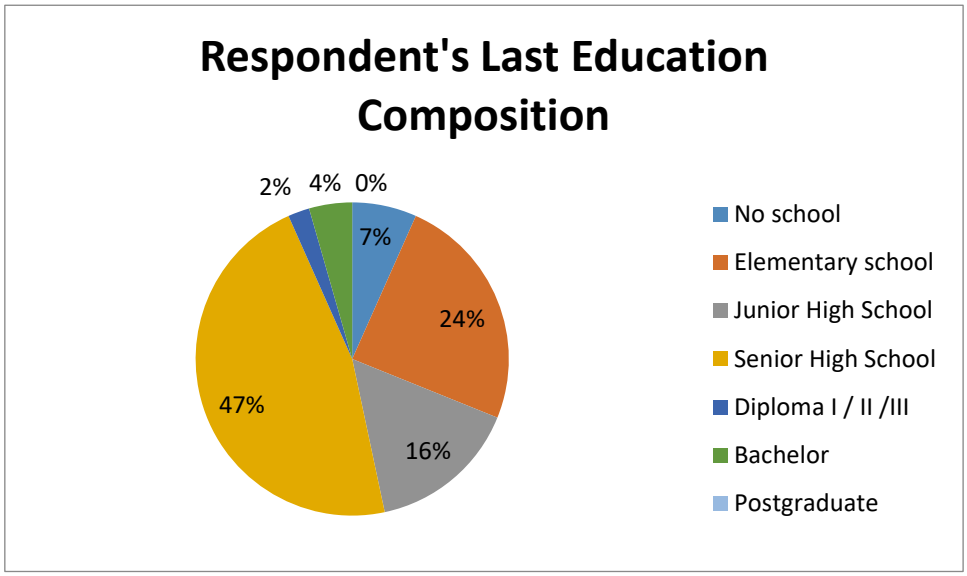

Figure 3. Distribution of Respondent's Last Education

3. Experience

Experience provides added value for respondents; this is measured by their experience or participation in household waste management training counseling activities. From the results of interviews with 145 respondents in the city of Yogyakarta, it is known that 81 people (55.86%) have never participated in waste management training counseling activities, and 64 people (44.14%) have participated. There are even ten waste bank cadres who are active in waste management activities in the RW after attending waste management training counseling (Table 3).

Table 3. Respondents' Participation in Waste Management Training Extension

Number	Activity Participation	Amount (Person)	%
1	Never	81	55.86
2	Ever been	64	44.14
	Total	145	100

Source: Primary Data Processing, 2021

4. Age

Age or the age of a person determines the amount of knowledge obtained. Therefore, age is included in the criteria for the Variable Level of Community Knowledge. From the results of

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interviews with 145 respondents who have participated in waste management socialization activities, it is known that housewives in the 5-year age group are: the age group of 20-24 years 6.89% or as many as ten people, the age group of 25-29 years 4.14% or as many as six people, the age group of 30-34 years 4.14% or as many as six people, the age group 35-39 years 28.96% or as many as 42 people, the age group 40-44 years 17.94% or as many as 26 people, age group 45-49 years 8.97% or as many as 13 people age group 50-54 years 13.79% or as many as 20 people, age group 55-59 years 6.89% or as many as ten people, age group 60 -64 years 4.14% or as many as six people, age group 65-69 years 0% or 0 people, age group 70-74 years 2.07% or three people, age group 75-79 years 2.07% or as many as three people (Figure 4).

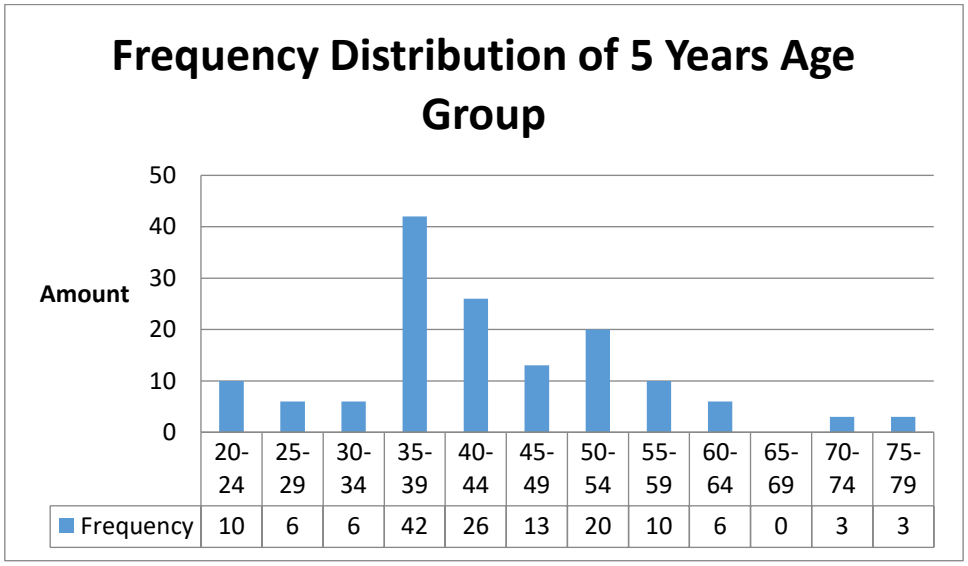

Figure 4. Age Distribution of Respondents (5 Years Age Group)

4.2 Household Waste Management

1. Habits

The pattern of habits in treating waste becomes an assessment of the household waste management variable. Habit factors are generally difficult to change, but the process of changing habits will be something that is possible. Statements measured by the answers Strongly Agree, Agree, Doubtful, Disagree, and Strongly Disagree in getting used to sorting easily decomposed waste from non-biodegradable/non-biodegradable waste based on the type, namely paper, metal/glass, and plastic. By interviewing 145 respondents in the city of Yogyakarta, the following results were obtained (Table 4). One of the respondents in the interview said that "raising awareness by changing the habit of disposing of waste to managing waste, this is so that the waste problem in the city of Yogyakarta is handled from the smallest scope, namely the household."Frequency Distribution of 5 Years Age Group

Table 4. Trash Sorting Habits

Number	Habit Pattern	Frequency (Person)	Percentage (%)
1	Habit Pattern	3	2.07
2	Don't agree	0	0.00
3	Doubtful	42	28.96
4	Agree	81	55.86
5	Strongly agree	19	13.11
	Total	145	100

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Source: Primary Data Processing, 2021

2. Behavior

Community behavior in waste management is related to the level of community perception, attitude, and participation in waste management. Public perception in waste management is a response, view, and community assessment of waste management activities. The attitude of the community in waste management activities is the way the community reacts to waste management activities aimed at a feeling of pleasure or displeasure, agreeing or disagreeing. Meanwhile, community participation is community involvement in waste management activities. Behavioral factors were measured through the answers Strongly Agree, Agree, Hesitate, Disagree, and Strongly Disagree. By interviewing 145 respondents, the following results were obtained (Table 5).

Table 5. The behavior of Respondents in Waste Management

Number	Waste Management Behavior	Frequency (Person)	Percentage (%)
1	Strongly Disagree	0	0.00
2	Don't agree	0	0.00
3	Doubtful	0	0.00
4	Agree	81	55.86
5	Strongly agree	64	44.14
	Total	145	100

Source: Primary Data Processing, 2021

4.3 Research Result

The value of the correlation or relationship (R) is 0.587, which means that there is a relationship between the X variable and the Y variable. From the output, the coefficient of determination (R Square) is 0.345, which implies that the influence of the independent variable (Level of Public Knowledge) on the dependent variable (Household Waste Management) is 34.5%. Calculated F value = 22, 624 with a significance level of 0.000 < 0.05, then the regression model can be used to predict the household waste management variable, or in other words, there is an influence of the community knowledge level variable (X) on the household waste management variable (Y). The value of constant (a) is 18.648, while the value of the level of public knowledge (b/regression coefficient) is 0.691. So the regression equation can be written:

$Y = a + bX$ (1)

$Y = 18{,}648 + 0.691\ X$ (2)

The equation can be translated: The constant of 18.648 means that the consistent value of the Household Waste Management variable is 18.648. The X regression coefficient of 0.691 states that for every 1% addition to the value of the Community Knowledge Level, the value of Household Waste Management increases by 0.691. The regression coefficient is positive, so it can be said that the direction of the influence of the variable X on Y is positive. The more positive the Variable X, the more the Variable Y increases. Based on the Significance value from the Coefficients table, a significance value of 0.000 <0.05 was obtained, so it can be concluded that the Public Knowledge Level variable (X) has an effect on the Household Waste Management variable (Y). Based on the t value, it is known that the calculated t value is 4,756 > t table 2,017, so it can be concluded that the Community Knowledge Level variable (X) has an effect on the Household Waste Management variable (Y).

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5. CONCLUSION

Based on the study result, it can be concluded that the level of knowledge of the people of Yogyakarta City affects household waste management. The increasing knowledge of the community will also increase the habits and behavior of the community in managing household waste.

REFERENCES

Agus Ramon dan Afriyanto Afriyanto. 2015. "Karakteristik Penanganan Sampah Rumah Tangga di Kota Bengkulu". *Jurnal Kesehatan Masyarakat Andalas*. Vol. 10 No.1.

Ahmad Nur Alam Sukrisna Putra dan Alia Fajarwati. 2015. "Kajian Program Pengelolaan Sampah Rumah Tangga Mandiri (Bank Sampah) Berbasis Masyarakat di Kota Yogyakarta". *Jurnal Bumi Indonesia* . Vol. 4 No. 4.

Amasuomo1, E; Baird, J. 2016. The Concept of Waste and Waste Management. *Journal of Management and Sustainability* 6(4):88. DOI:10.5539/jms.v6n4p88.

Arikunto, Suharsimi. 2011. *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.

Armen, Fakhni dan Viviyanti Azwar. 2013. "*Dasar-dasar Manajemen Keuangan Rumah Sakit.* Cetakan Pertama. Yogyakarta: Gosyen Publising.

Bara, Deismon, Jouke J Lasut, Shirly Y .V.I. Goni. 2018. :Peran Disiplin Masyarakat Dalam Menjaga Budaya Hidup Bersih Terhadapt Lingkungan (Suatu Studi di Desa Tuabatu Kecamatan Tampan Amma Kabupaten Talaud)". *Jurnal Holistik,* Tahun l XI No 21.

Chandra, budiman. 2007. *Pengantar kesehatan lingkungan*. Jakarta: Penerbit buku kedokteran EGC

Badan Pusat Statistik Kota Yogyakarta. 2019. *Kecamatan Tegalrejo Dalam Angka Tahun 2019*. Yogyakarta: Badan Pusat Statistik.

DLH Kota Yogyakarta,(2017),Data pengelolaan sampah Kota Yogyakarta, Yogyakarta.

Ferronato, N.; Rada, E.C.; Gorritty Portillo, M.A.; Cioca, L.I.; Ragazzi, M.; Torretta, V. (2019). Introduction of the circular economy within developing regions: A comparative analysis of advantages and opportunities for waste valorization. Journal Environment Management.

Frempong-Jnr, E.Y; Ametepey, S.O; Cobbina, J.E. 2022. Impact of stakeholder management on efficient construction waste management. Smart and Sustainable Built Environment. DOI:10.1108/SASBE-08-2021-0147

Putra, H.P; Damanhuri, E; Sembiring, E. 2019. Sektor Baru Pengelolaan Sampah Di Indonesia (Studi Kasus Di Kota Yogyakarta, Kabupaten Sleman Dan Bantul). *Jurnal Sains Dan Teknologi Lingkungan Page 11-24.*

Putra, H.P. (2021). Pengembangan Pembelajaran dengan Metode GIS (Get-Identify-Solve) pada Mata Kuliah Pengelolaan Sampah Berbasis Masyarakat (PSBM). *Refleksi Pembelajaran Inovatif*

RI (Republik Indonesia). 2012. *Peraturan Daerah Nomor 1 Tahun 2012 tentang Pengelolaan Lingkungan Hidup*. Kota Yogyakarta: Pemerintah Daerah.

RI (Republik Indonesia). 2012. *Peraturan Daerah Nomor 10 Tahun 2012 tentang Pengelolaan Sampah*. Kota Yogyakarta: Pemerintah Daerah.

Rineksa, Setiawan. Oktober, 2007. *Mengurangi Sampah tanpa rupiah*. Buletin Lingkungan Hidup Kalpataru, hal. 2-4.

Seng, B; Spoann, V; Fujiwara, T. (2018). Households' knowledge, attitudes, and practices toward solid waste management in suburbs of Phnom Penh, Cambodia. Waste Management & Research 36(10):0734242X1879080. DOI:10.1177/0734242X18790800

Sucipto, Cecep Dani (2014). *Keselamatan dan Kesehatan Kerja*. Yogyakarta: Gosyen Publishing.

E-ISSN : 2776-4885 || P-ISSN : 2776-4877

Sugiyono. 2017. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.

Sujarweni, Wiratna.2014. *SPSS Untuk Penelitian.* Yogyakarta: Pustaka Baru Press.

E-ISSN : 2776-4885 || P-ISSN : 2776-4877