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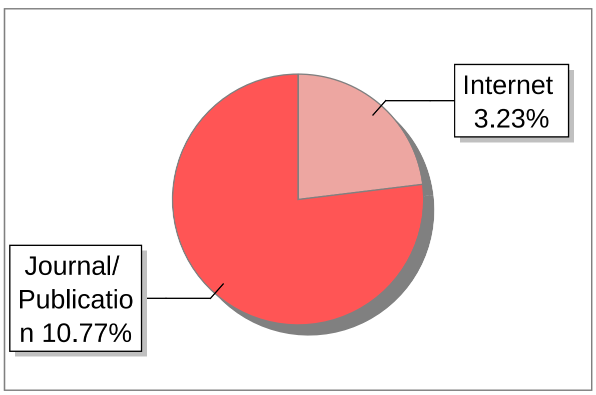

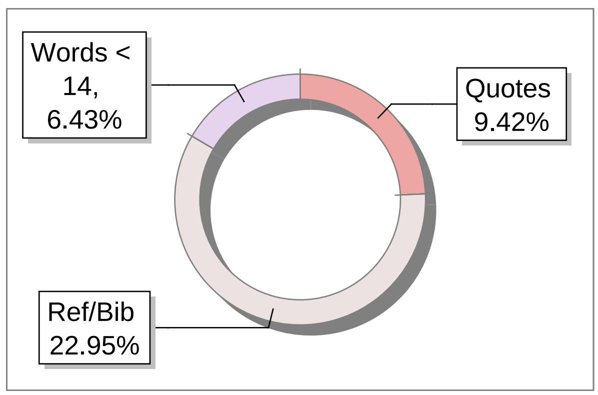

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FACILITY WASTE COLLECTION LOCATION CRITERIAS CONSIDERING IMPORTANT RATING OF COMMUNITY USING 4THE ANALYTICAL HIERARCHY PROCESS (AHP) METHOD

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ABSTRACT: Waste management is an elaborated problems faced by the Government. Waste management problems should be studied comprehensively from several aspects, such as operational, technical, financial, institutional, regulatory, and community roles. This research aimed to identify the criteria for providing temporary collection facilities and services from a community perspective. Determining the criteria commenced by distributing an open questionnaire to the community surrounding the facility. Reference studies are carried out to reinforce the opinions of community. The Analytical Hierarchy Process (AHP) method was used to determine each criterion's importance level. 5The research was conducted in 75 facilities in three sectors (eight sub-districts) in Yogyakarta. The sampling technique applied purposive sampling according to the population proportion in each sub-district. The number of sample size implemented the Slovin method. 26The research results show that almost all sub-districts in these three sectors had two identical highest criteria, namely health criteria (24%) and distance criteria (22%). These two highest criteria need to be the Government's primary consideration rather than initially focusing more on the operational side of waste collection.

KEYWORDS: *Facility waste collection; Community perspective; Analytical Hierarchy Processes; Importance Level*

1.0 INTRODUCTION

The government, in this case the Environmental Service, is obliged to manage urban waste. Rapid population growth can contribute to an increase in waste volume Based on data from the Yogyakarta City Central Statistics Agency [1], the population growth of Yogyakarta City in 2017 was 3,762,167 people, while in 2018, it expanded to 3,802,872 people in the city. Based on data from the Yogyakarta Special Region Provincial Planning and Development Agency [2], the volume of waste produced in DIY (Yogyakarta Special Region) from 2015 to 2017 shows an increase as seen in Figure 1. Municipal waste generation is collected at temporary waste collection sites. which must be provided and managed by the Yogyakarta City Environmental Service. Facilities are provided at several points close to the community or waste sources.

Research related to municipal solid waste is mostly approached from the perspective of the government as the part that responsible for collecting urban waste [3]—[5]. So management will be approached from several criteria such as collection facility capacity, waste collection vehicle capacity, selection of facility locations, collection methods, collection scheduling, collection vehicle routes. Lack of consideration or not considering the community as users of facilities.

The complexity of the waste problem needs to be studied and depends on more than just the government. As a provider and manager of facilities, the government is obliged to evaluate several facilities that have been built. Effective and efficient municipal waste (MSW) management has been widely accepted and recognized as a new factor in future social development, which requires not only technical innovation but also the involvement of every stakeholder as well as social, economic, and psychological components [6]—[9]. Rubbyatna [9] explains that solid waste is closely related to several aspects, namely technical, operational, financial, institutional, regulatory, and community aspects. Associations with social aspects can directly or indirectly involve the community (assisting activities) or indirectly (financial, perception, and material needs).

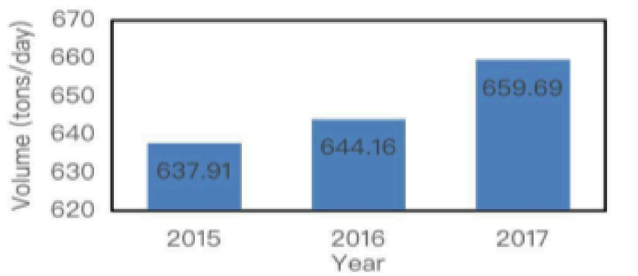

Figure 1 : Waste generation growth in DIY [2]

The request to close several temporary waste collection sites in Yogyakarta City [10] is an eye-opening fact that not all facilities provided follow community considerations. This fact is a **research gap** that shows the importance of the community's role in determining temporary waste collection facilities because, in the end, the community will feel these facilities' advantages and disadvantages. Several studies related to the social dimensions of municipal waste management [8], [9], and [11]. constitute a management framework. This **technical study** tries to identify the social dimensions of the factors needed in developing temporary waste collection sites from a community perspective. This study will be a basis for continuing research related to integrated municipal waste management (technical aspects, economic aspects and social aspects).

Several previous studies on urban waste management considered the government's need to collect waste and determine the number of facilities, considering new social and community dimensions as a framework. **Uniqueness** of this study identifies the technical needs of the community for the development of temporary waste collection facilities using the AHP method. It is hoped that this study can provide input that bridges the needs of the community and the government with the hope that the community will be comfortable collecting according to the facilities provided in the area where they live.

The study is based on the steps in Figure 3. The study begins with identifying factors that will be taken into consideration by decision–makers as an open questionnaire. The results of open identification were combined with literature studies to obtain seven criteria and twenty–eight sub–criteria [8], [9], [12], [13]. Before the instrument was distributed to respondents, the face validity process was carried out to obtain a reliable instrument. The process continues by processing the respondents' assessments to calculate the consistency ratio of the respondents' assessments. The overall assessment results are declared consistent if the CI value is less than 0.1. The study continues with evaluation, synthesis, and conclusions.

According to Rubbyatna [9], face validity determines whether the instrument in the questionnaire measures the desired concept. Face validity refers to people's opinions regarding the credibility of the test because irrelevant questions in the questionnaire will affect the validity of test results and produce less credible (trustworthy) answers.

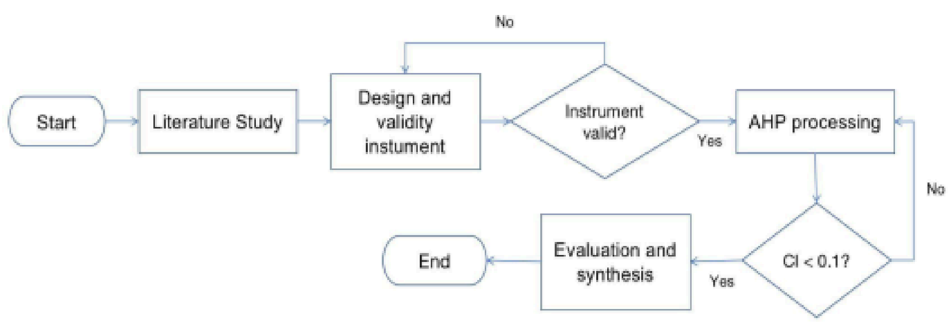

Figure 3: Flow process diagram

The primary research objects used in this research are people living around 75 facility points in eight sub–districts, R1 – R8 [14]. The sampling technique used was purposive sampling based on the proportion of the population of each sub–district. Respondents are residents or waste managers around the facility point. The number of samples was determined using the Slovin's method[15]. Secondary data is data obtained indirectly from sources related to this research, namely data from observations and references.

Researchers used several methods to obtain criteria and data ranking criteria. Several methods used include observation, interviews, and questionnaires. Research observations were carried out by observing the surrounding conditions directly. Interviews were conducted by asking questions directly to the informant. Researchers obtained seven criteria and twenty-eight subcriteria.

The decision-making approach involves many decision makers, and many of the criteria most frequently used by previous researchers [16]—[18] iare the analytical hierarchy process (AHP). An important side that is sometimes overlooked is consideration[9]. When we consider the dynamics of today's ever-changing environment that we have never seen before, making the right choices based on adequate and aligned goals is a critical factor, even for organizational survival.

Basically, the procedure or steps and process analysis process hierarchy (AHP) are as follows [19] :

i. Define the problem and set goals. If the AHP is used to choose alternatives or set alternative priorities, at this stage, an alternative development is carried out.

ii. Arranging problems into a hierarchy so that complex problems can be viewed in terms of detail and measurable.

iii. This process results in weighting or contributing factors to the achievement of objectives so that the component with the highest weight has priority handling. Priority results from a pairwise comparison matrix between all elements at the same hierarchical level where:

$$\gamma_{max} = \frac{\gamma_{max_{k_1}} - \gamma_{max_{k_n}}}{n} \quad (1)$$

iv. Calculates the consistency value of the CI index where:

$$CI = \frac{Y_{max}}{n-1} \quad (2)$$

v. Conduct consistency (CR) testing of comparison between elements obtained in each hierarchy. By formula

$$CR = \frac{CI}{RI} \quad (3)$$

where CI is between 0 and 0,1 so the weighting of the criteria is accepted.

3.0 RESULT AND DISCUSSION

Based on the procedures or initial steps of AHP, this research is motivated by the issue of inefficiency in goverment-provided facilities. Hence, an evaluation should be conducted. The assessment emphasizes aspects of the community's perspective on what and how the community's needs for temporary waste collection facilities are prioritized.

Identification of needs was performed randomly on 30 respondents (community) around the facility points. The results of open identification combined with literature studies can be seen in Figure 4, in wich seven criteria and 28 sub-criteria were obtained. Seven criteria include distance, accessibility, comfort, capacity, health, management, and facilities.

Next, Figure 4 become the fondation for creating a questionnaire to determine the level of importance, which was examined for face validity [9], [20] before being distributed. Based on the Slovin method, taking into consideration the total population in the three sectors as 251,010 people with an error rate of 10%, 100 respondents should be questioned. The number of respondents was then distributed to eight sub-districts proportionally.

The AHP method was used for data processing on the level of importance (weighting). Respondents representing the community were questioned to compare one criterion with another and then compare one sub-criterion with another. Researchers refrained from using alternatives in this research, therefore, data processing would stop if each criterion and sub-criterion weight or level of importance had been found. Data processing was conducted with all data obtained from various sub-districts, each sub-district, and globally using Equation 1.

Journal ofAdvancedManufacturingTechnology (JAMT) AHP justifies the consistency ratio (CR) to assess the consistency of respondents' assessments. CR was calculated by comparing the consistency index value to the random index (RI). The formula calculates the CI value (Equation 2), while the RI value refers to Table 2. Since seven criteria were used in ranking TPA criteria, the RI value for this study was 1.32. CR value (Equation 3): the CR value for both criteria and sub-criteria was less than 0.1, thus the results of the respondents' assessments in these eight areas are consistent (Table 3). After all the weights of all respondents' criteria and sub-criteria were declared consistent, the criteria and sub-criteria are ranked. To obtain the global order, the weights of all sub-criteria were indexed to procure the global weights (Table 4). Figure 4: Hierarchical structure to determining temporary landfill Table 2 : Random consistency index (RI) N (Size of Matrix) 3 4 5 6 7 8 9 10 11 12 RI (Random Index) 0.58 0.9 1.12 1.24 1.32 1.41 1.45 1.49 1.51 1.54 Table 3 : RI, CI and CR per Region R1 R2 R3 R4 R5 R6 R7 R8 RI (Random Index) 1,32 1,32 1,32 1,32 1,32 1,32 1,32 1,32 CI (Consistency Index) 0,05 0,07 0,06 0,03 0,03 0,03 0,01 0,03

CR (Consistency Ratio)	0,04	0,05	0,05	0,02	0,02	0,02	0,01	0,02

Figure 5 depicts the results of using the AHP method to process the importance levels of the seven criteria in eight sub-districts. In the figure, the 'health' criterion, the most important criterion in the global calculation (Table 4. column 7), is only sometimes at the lowest point. The 'health' criterion is the most critical in four sub-districts, namely R1, R3, R6 and R7. In sub-districts R2, R4, and R5, the 'distance' criterion is the most important, followed by the 'health' criterion as the next (second) most important criterion. The government could not provide partial determination, so, priority considerations for facility development would use global calculations (Table 4).

Table 4 is a recapitulation of the weight of each criterion, the weight of the global criteria (all respondents), and the ranking of criteria and sub-criteria. The ranking (column 7) is based on the importance weight of global criteria (column 2), namely health criteria at 24%, distance at 22%, accessibility at 15%, comfort at 12%, management at 11%, land capacity at 9% and facilities at 7%.

The most crucial weighting criterion result is the 'health' criterion. This phenomenon **is in line** with what was conveyed by Isabelle Deportes in the article by Jing Ma and Keith W. Hipel [8], that temporary waste collectio have the potential to impact public health, especially vulnerable groups. Waste collection facilities should prioritize controlling environmental pollution from microorganisms that may concentrate in soil, water, and biota. Health criteria in developing waste collection facilities **have to become** a waste management policy for the regional government of one country [21].

Distance and accessibility are the second-rank criteria that are necessary for either the community when collecting waste from their residences to facilities or for the government (Environmental Service) when doing so from collection facilities to the final disposal sites. This result **is in line** with the results of research by Yeomans (2016) [5]. People ask for a facility location that is 'close' to their residence. People also need facilities that are easily accessible; if necessary, when they do not need to get out of the vehicle (drive-through). People who live very close to facilities need comfort from unpleasant views and smells. Therefore, facilities require initial management and processing, such as selecting types of organic and non-organic waste, types of waste that can be recycled, and what constitutes hazardous waste. In this manner, these facilities should have an adequate facility area to accommodate waste from the surrounding community, for sorting, and for accessing waste collection vehicles.

Table 4 : Weight, global weight, and rangking criteria and sub criteria

Criteria		Sub Criteria		Global Weight	Ranking	
J	0,22	J1	0,34	0,08	2	2
		J2	0,35	0,08	2	
		J3	0,19	0,04	4	
		J4	0,12	0,03	5	
A	0,15	A1	0,16	0,02	6	3
		A2	0,26	0,04	4	
		A3	0,15	0,02	6	
		A4	0,18	0,03	5	
		A5	0,25	0,04	4	
K	0,12	K1	0,35	0,04	4	4
		K2	0,29	0,03	5	
		K3	0,23	0,03	5	
		K4	0,13	0,01	7	
KL	0,09	KL1	0,22	0,02	6	6
		KL2	0,22	0,02	6	
		KL3	0,44	0,04	4	
		KL4	0,12	0,01	7	
KS	0,24	KS1	0,41	0,10	1	1
		KS2	0,22	0,05	3	
		KS3	0,22	0,05	3	
		KS4	0,15	0,04	4	
P	0,11	P1	0,32	0,04	4	5
		P2	0,18	0,02	6	
		P3	0,21	0,02	6	
		P4	0,28	0,03	5	
F	0,07	F1	0,40	0,03	5	7
		F2	0,20	0,01	7	
		F3	0,40	0,03	7	

The results of community considerations are then used to create a model for determining facilities from a social aspect. This model for determining facilities from social aspects will then be integrated into a large city waste management model. Several previous researchers stated that waste management in large cities must be integrated, holistic and systemic [3], [21]—[23]. Apart from that, waste management must also be a solution accepted by the community, emphasizing preserving the environment and choosing affordable technology that guarantees public health [21].

Integrated big-city waste management, which has to be in line with social sustainability, can be included in the development of the RL [24] network model. There are several factors and asset characteristics that are closely related to various sustainability vectors: environmental (gas emissions and solid waste management), social (health and welfare, safety and social justice), and economic (improving the circular economy and maintaining industries that are sensitive to image) [3], [23].

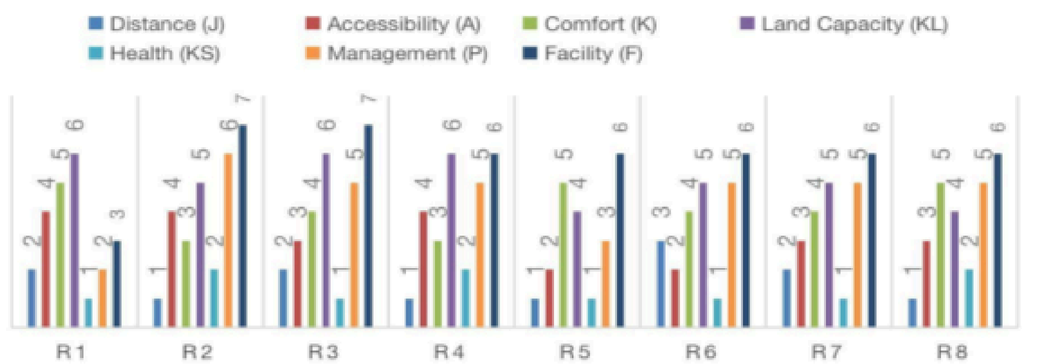

Figure 5 : The results of processing weights for each criterion from eight districts (R1 — R8)

4.0CONCLUSIONS

In general, the community in eight sub-districts stated that seven criteria needed to be considered when constructing temporary waste collection facilities.

Based on the level of global importance, the existence of sub-criteria for temporary waste dumps does not harm the surrounding community's health. Health criteria have the highest priority, meaning that these sub-criteria are the most important according to society compared to other sub-criteria. The second highest level of importance is the sub-criteria for the distance of the temporary landfill, which is close to residential areas. The third level of importance comes from accessibility criteria.

Future research is modeling the needs of DLH as a manager and collector of urban waste (technical operations), community needs, and investment and maintenance costs.

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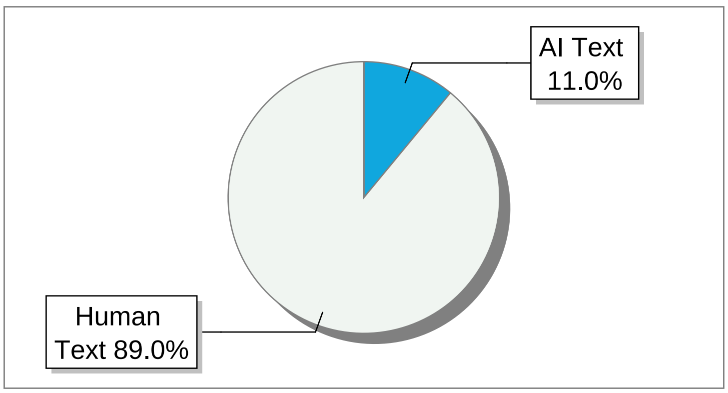

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Journal ofAdvancedManufacturingTechnology (JAMT) FACILITY WASTE COLLECTION LOCATION CRITERIAS CONSIDERING IMPORTANT RATING OF COMMUNITY USING THE ANALYTICAL HIERARCHY PROCESS (AHP) METHOD APurwani 1* , SFauzia 1 , and ULinarti 1 1 Faculty of Industrial Technology, University Ahmad Dahlan , Ringroad Selatan, Tamanan, 55191,Yogyakarta Indonesia. *Corresponding Author’s Email anniepurwani@ieuadacid Article History Received xxxxx; Revised xxxx; Accepted xxxx ABSTRACT Waste management is an elaborated problems faced by the Government. Waste management problems should be studied comprehensively from several aspects, such as operational, technical, financial, institutional, regulatory, and community roles. This research aimed to identify the criteria for providing temporary collection facilities and services from a community perspective. Determining the criteria commenced by distributing an open questionnaire to the community surrounding the facility. Reference studies are carried out to reinforce the opinions of community. The Analytical Hierarchy Process (AHP) method was used to determine each criterions importance level. The research was conducted in 75 facilities in three sectors (eight sub- districts) in Yogyakarta. The sampling technique applied purposive sampling according to the population proportion in each sub-district. The number of sample size implemented the Slovin method. The research results show that almost all sub-districts in these three sectors had two identical highest criteria, namely health criteria (24%) and distance criteria (22%). These two highest criteria need to be the Governments primary consideration rather than initially focusing more on the operational side of waste collection. Journal ofAdvancedManufacturingTechnology (JAMT) KEYWORDS Facility waste collection; Community perspective; Analytical Hierarchy Processes; Importance Level 10 INTRODUCTION The government, in this case the Environmental Service, is obliged to manage urban waste. Rapid population growth can contribute to an increase in waste volume Based on data from the Yogyakarta City Central Statistics Agency [1], the population growth of Yogyakarta City in 2017 was 3,762,167 people, while in 2018, it expanded to 3,802,872 people in the city. Based on data from the Yogyakarta Special Region Provincial Planning and Development Agency [2], the volume of waste produced in DIY (Yogyakarta Special Region) from 2015 to 2017 shows an increase as seen in Figure Municipal waste generation is collected at temporary waste collection sites. which must be provided and managed by the Yogyakarta City Environmental Service. Facilities are provided at several points close to the community or waste sources. Research related to municipal solid waste is mostly approached from the perspective of the government as the part that responsible for collecting urban waste [3]–[5]. So management will be approached from several criteria such as collection facility capacity, waste collection vehicle capacity, selection of facility locations, collection methods, collection scheduling, collection vehicle routes. Lack of consideration or not considering the community as users of facilities. The complexity of the waste problem needs to be studied and depends on more than just the government. As a provider and manager of facilities, the government is obliged to evaluate several facilities that have been built. Effective and efficient municipal waste (MSW) management has been widely accepted and recognized as a new factor in future social development, which requires not only technical innovation but also the involvement of every stakeholder as well as social, economic, and psychological components [6] – [9]. Rubbyatna [9] explains that solid waste is closely related to several aspects, namely technical, Journal ofAdvancedManufacturingTechnology (JAMT) operational, financial, institutional, regulatory, and community aspects. Associations with social aspects can directly or indirectly involve the community (assisting activities) or indirectly (financial, perception, and material needs). Figure 1 Waste generation growth in DIY [2] The request to close several temporary waste collection sites in Yogyakarta City [10] is an eye-opening fact that not all facilities provided follow community considerations. This fact is a research gap that shows the importance of the communitys role in determining temporary waste collection facilities because, in the end, the community will feel these facilities advantages and disadvantages. Several studies related to the social dimensions of municipal waste management [8], [9], and [11]. constitute a management framework. This technical study tries to identify the social dimensions of the factors needed in developing temporary waste collection sites from a community perspective. This study will be a basis for continuing research related to integrated municipal waste management (technical aspects, economic aspects and social aspects). Several previous studies on urban waste management considered the governments need to collect waste and determine the number of facilities, considering new social and community dimensions as a framework. Uniqueness of this study identifies the technical needs of the community for the development of temporary waste collection facilities using the AHP method. It is hoped that this study can provide input that bridges the needs of the community and the government with the hope that the community will be comfortable collecting according to the facilities provided in the area where they live. 20 METHODOLOGY Journal ofAdvancedManufacturingTechnology (JAMT) The study is based on the steps in Figure The study begins with identifying factors that will be taken into consideration by decision-makers as an open questionnaire. The results of open identification were combined with literature studies to obtain seven criteria and twenty-eight sub-criteria [8], [9], [12], [13]. Before the instrument was distributed to respondents, the face validity process was carried out to obtain a reliable instrument. The process continues by processing the respondents assessments to calculate the consistency ratio of the respondents assessments. The overall assessment results are declared consistent if the CI value is less than 01. The study continues with evaluation, synthesis, and conclusions. According to Rubbyatna [9], face validity determines whether the instrument in the questionnaire measures the desired concept. Face validity refers to peoples opinions regarding the credibility of the test because irrelevant questions in the questionnaire will affect the validity of test results and produce less credible (trustworthy) answers. Figure 3 Flow process diagram The primary research objects used in this research are people living around 75 facility points in eight sub-districts, R1 - R8 [14]. The sampling technique used was purposive sampling based on the proportion of the population of each sub-district. Respondents are residents or waste managers around the facility point. The number of samples was determined using the Slovin's method[15]. Secondary data is data obtained indirectly from sources related to this research, namely data from observations and references. Researchers used several methods to obtain criteria and data Journal ofAdvancedManufacturingTechnology (JAMT) ranking criteria. Several methods used include observation, interviews, and questionnaires. Research observations were carried out by observing the surrounding conditions directly. Interviews were conducted by asking questions directly to the informant. Researchers obtained seven criteria and twenty-eight subcriteria. The decision-making approach involves many decision makers, and many of the criteria most frequently used by previous researchers [16]–[18] iare the analytical hierarchy process (AHP). An important side that is sometimes overlooked is consideration[9]. When we consider the dynamics of todays ever-changing environment that we have never seen before, making the right choices based on adequate and aligned goals is a critical factor, even for organizational survival. Basically, the procedure or steps and process analysis process hierarchy (AHP) are as follows [19] i. Define the problem and set goals. If the AHP is used to choose alternatives or set alternative priorities, at this stage, an alternative development is carried out. ii Arranging problems into a hierarchy so that complex problems can be viewed in terms of detail and measurable. iii This process results in weighting or contributing factors to the achievement of objectives so that the component with the highest weight has priority handling. Priority results from a pairwise comparison matrix between all elements at the same hierarchical level where (1) iv. Calculates the consistency value of the CI index where (2) v. Conduct consistency (CR) testing of comparison between elements obtained in each hierarchy. By Journal ofAdvancedManufacturingTechnology (JAMT) formula (3) where CI is between 0 and 0,1 so the weighting of the criteria is accepted. 30 RESULT AND DISCUSSION Based on the procedures or initial steps of AHP, this research is motivated by the issue of inefficiency in goverment-provided facilities. Hence, an evaluation should be conducted. The assessment emphasizes aspects of the communitys perspective on what and how the communitys needs for temporary waste collection facilities are prioritized. Identification of needs was performed randomly on 30 respondents (community) around the facility points. The results of open identification combined with literature studies can be seen in Figure 4, in wich seven criteria and 28 sub-criteria were obtained. Seven criteria include distance, accessibility, comfort, capacity, health, management, and facilities. Next, Figure 4 become the fondation for creating a questionnaire to determine the level of importance, which was examined for face validity [9], [20] before being distributed. Based on the Slovin method, taking into consideration the total population in the three sectors as 251,010 people with an error rate of 10%, 100 respondents should be questioned. The number of respondents was then distributed to eight sub-districts proportionally. The AHP method was used for data processing on the level of importance (weighting). Respondents representing the community were questioned to compare one criterion with another and then compare one sub-criterion with another. Researchers refrained from using alternatives in this research, therefore, data processing would stop if each criterion and sub-criterion weight or level of importance had been found. Data processing was conducted with all data obtained from various sub-districts, each sub-district, and globally using Equation Journal ofAdvancedManufacturingTechnology (JAMT) AHP justifies the consistency ratio (CR) to assess the consistency of respondents assessments. CR was calculated by comparing the consistency index value to the random index (RI). The formula calculates the CI value (Equation 2), while the RI value refers to Table Since seven criteria were used in ranking TPA criteria, the RI value for this study was 132. CR value (Equation 3) the CR value for both criteria and sub-criteria was less than 01, thus the results of the respondents assessments in these eight areas are consistent (Table 3). After all the weights of all respondents criteria and sub-criteria were declared consistent, the criteria and sub-criteria are ranked. To obtain the global order, the weights of all sub-criteria were indexed to procure the global weights (Table 4). Figure 4 Hierarchical structure to determining temporary landfill Table 2 Random consistency index (RI) N (Size of Matrix) 3 4 5 6 7 8 9 10 11 12 RI (Random Index) 058 09 112 124 132 141 145 149 151 154 Table 3 RI, CI and CR per Region R1 R2 R3 R4 R5 R6 R7 R8 RI (Random Index) 1,32 1,32 1,32 1,32 1,32 1,32 1,32 1,32 CI (Consistency Index) 0,05 0,07 0,06 0,03 0,03 0,03 0,01 0,03 Journal ofAdvancedManufacturingTechnology (JAMT) CR (Consistency Ratio) 0,04 0,05 0,05 0,02 0,02 0,02 0,01 0,02 Figure 5 depicts the results of using the AHP method to process the importance levels of the seven criteria in eight sub-districts. In the figure, the health criterion, the most important criterion in the global calculation (Table column 7), is only sometimes at the lowest point. The health criterion is the most critical in four sub-districts, namely R1, R3, R6 and R7. In sub-districts R2, R4, and R5, the distance criterion is the most important, followed by the health criterion as the next (second) most important criterion. The government could not provide partial determination, so, priority considerations for facility development would use global calculations (Table 4). Table 4 is a recapitulation of the weight of each criterion, the weight of the global criteria (all respondents), and the ranking of criteria and sub-criteria. The ranking (column 7) is based on the importance weight of global criteria (column 2), namely health criteria at 24%, distance at 22%, accessibility at 15%, comfort at 12%, management at 11%, land capacity at 9% and facilities at 7%. The most crucial weighting criterion result is the health criterion. This phenomenon is in line with what was conveyed by Isabelle Deportes in the article by Jing Ma and Keith W. Hipel [8], that temporary waste collectio have the potential to impact public health, especially vulnerable groups. Waste collection facilities should prioritize controlling environmental pollution from microorganisms that may concentrate in soil, water, and biota. Health criteria in developing waste collection facilities have to become a waste management policy for the regional government of one country [21]. Distance and accessibility are the second-rank criteria that are necessary for either the community when collecting waste from their residences to facilities or for the government (Environmental Service) when doing so from collection facilities to the final disposal sites. This result is in line with the results of research by Yeomans (2016) [5]. People ask for a facility location that is close to their residence. People also need facilities that are easily accessible; if necessary, when they do not need to get out of the vehicle (drive-through). People who live very close to Journal ofAdvancedManufacturingTechnology (JAMT) facilities need comfort from unpleasant views and smells. Therefore, facilities require initial management and processing, such as selecting types of organic and non-organic waste, types of waste that can be recycled, and what constitutes hazardous waste. In this manner, these facilities should have an adequate facility area to accommodate waste from the surrounding community, for sorting, and for accessing waste collection vehicles. Table 4 Weight, global weight, and rangking criteria and sub criteria Criteria Sub Criteria Global Weight Ranking J 0,22 J1 0,34 0,08 2 2 J2 0,35 0,08 2 J3 0,19 0,04 4 J4 0,12 0,03 5 5 A 0,15 A1 0,16 0,02 6 3 A2 0,26 0,04 4 A3 0,15 0,02 6 A4 0,18 0,03 5 A5 0,25 0,04 4 K 0,12 K1 0,35 0,04 4 4 K2 0,29 0,03 5 K3 0,23 0,03 5 K4 0,13 0,01 7 7 KL 0,09 KL1 0,22 0,02 6 6 KL2 0,22 0,02 6 KL3 0,44 0,04 4 KL4 0,12 0,01 7 KS 0,24 KS1 0,41 0,10 1 1 KS2 0,22 0,05 3 KS3 0,22 0,05 3 KS4 0,15 0,04 4 P 0,11 P1 0,32 0,04 4 5 P2 0,18 0,02 6 P3 0,21 0,02 6 P4 0,28 0,03 5 F 0,07 F1 0,40 0,03 5 7F2 0,20 0,01 7 F3 0,40 0,03 7 The results of community considerations are then used to create a model for determining facilities from a social aspect. This model for determining facilities from social aspects will then be integrated into a large city waste management model. Several previous researchers stated that waste management in large cities Journal ofAdvancedManufacturingTechnology (JAMT) must be integrated, holistic and systemic [3], [21]–[23]. Apart from that, waste management must also be a solution accepted by the community, emphasizing preserving the environment and choosing affordable technology that guarantees public health [21]. Integrated big-city waste management, which has to be in line with social sustainability, can be included in the development of the RL [24] network model. There are several factors and asset characteristics that are closely related to various sustainability vectors environmental (gas emissions and solid waste management), social (health and welfare, safety and social justice), and economic (improving the circular economy and maintaining industries that are sensitive to image) [3], [23]. Figure 5 The results of processing weights for each criterion from eight districts (R1 – R8) 40CONCLUSIONS In general, the community in eight sub-districts stated that seven criteria needed to be considered when constructing temporary waste collection facilities. Based on the level of global importance, the existence of sub- criteria for temporary waste dumps does not harm the surrounding communitys health. Health criteria have the highest priority, meaning that these sub-criteria are the most important according to society compared to other sub-criteria. The second highest level of importance is the sub-criteria for the distance of the temporary landfill, which is close to residential areas. The thirdJournal ofAdvancedManufacturingTechnology (JAMT) level of importance comes from accessibility criteria. Future research is modeling the needs of DLH as a manager and collector of urban waste (technical operations), community needs, and investment and maintenance costs. REFERENCES [1] B. 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