Eduvest - Journal of Universal Studies
Volume 4 Number 8, August, 2024
p- ISSN 2775-3735- e-ISSN 2775-3727

DIFFERENCES IN PERCEPTIONS OF WOMEN AND MEN IN WASTE MANAGEMENT IN TENGGILIS MEJOYO DISTRICT, SURABAYA CITY

Susi A. Wilujeng, Andriyanto
Airlangga University Postgraduate School, Universitas Airlangga, Indonesia
Email: susi.agustina.wilujeng-2022@pasca.unair.ac.id, susi.awilu-jeng@gmail.com

ABSTRACT

The waste problem in Surabaya City is caused by the large amount of waste generation, so efforts to reduce at the source of waste must be made, by increasing public awareness and participation. Community participation in Tenggilis Mejoyo Subdistrict, Surabaya in sorting at the source is 37%. In this study, community perceptions of waste management will be analyzed by comparing perceptions between female and male communities. The research was conducted in this sub-district with stratified random sampling, with descriptive statistical analysis to provide an overview of the variables that have been measured, then displayed in the form of graphs and diagrams. This study also tested hypotheses for 11 problem formulations with six variables, namely three independent construct variables (X), two intervening variables, and one dependent construct variable (Y). The results showed that most of the women did not know what household-specific waste was and did not sort their waste because they did not have time. The type of waste that is mostly segregated is small electronic waste and female respondents tend to sell segregated specific waste to collectors. As for men, most of them do not know what household-specific waste is and do not segregate waste because they do not have time. The most segregated type of waste is small electronic waste and male respondents tend to keep the segregated specific waste. Based on the results of hypothesis testing, it can be concluded that in women, most variables affect each other or have a positive influence. Knowledge and norms do not affect intention, while attitude and perception do not affect behavior. In men, only a small number of variables influence each other or have a positive influence. Attitude influences intention, norms influence behavior and perception, and intention influences behavior.

KEYWORDS *Waste management, waste reduction, community roles, differences in perceptions of women and men*

How to cite: Wilujeng, S.A., Andriyanto. (2028). Differences In Perceptions Of Women And Men In Waste Management In Tenggilis Mejoyo Dis-Trict, Surabaya City. *Journal Eduvest*. 4(8), 000-000
E-ISSN: 2775-3727
Published by: https://greenpublisher.id/

INTRODUCTION

Tenggilis Mejoyo sub-district is located in Surabaya City with an area of 5.477 km2, has a growth rate of 0.03% in the last 10 years. The population growth rate that increases from year to year results in the amount of waste continuing to increase, which requires optimal waste management to reduce the amount of waste entering the Benowo Final Processing Site (TPA). Of the total waste generated daily by Surabaya residents, more than 50% of the waste is collected at the TPS. This is because the community still applies the collect-transport-dispose method because most of the waste generated goes to TPS which are scattered in Tenggilis Mejoyo District. Tenggilis Mejoyo sub-district has 4 TPS, 1 TPS 3R, and 13 waste bank units spread throughout the Tenggilis Mejoyo sub-district.

The collect-transport-dispose paradigm causes a large volume of waste to enter the landfill. The residential waste generation rate in Tenggilis Mejoyo Sub-district is 0.29 kg/person/day, with a residential waste composition consisting of 74.43% wet waste, 8.33% plastic, 7.49% paper, 6.71% other waste, 1.09% glass, 0.92% fabric, 0.66% metal, 0.22% rubber, and 0.15% wood. In 2015, Tenggilis Mejoyo District produced 16.84 tons of waste per day. however, in 2020, this number increased to 31.56 tons per day. This indicates that the volume of waste in Tenggilis Mejoyo sub-district has doubled within five years.

This waste problem is not only limited to organic and inorganic waste, but also includes household-specific waste, especially waste containing B3 or B3 waste, the amount of which continues to grow. This has not fully received attention in Tenggilis Mejoyo District. This can be seen from the absence of specific household waste management facilities, such as shelters or special containers. Currently, specific household waste is still disposed of together with non-B3 household waste.

One of the causes of the minimum percentage of waste reduction is the low awareness and participation of the community in reducing waste at the source of waste. The participation of the Tenggilis Mejoyo sub-district community in sorting at the source is 37%. Therefore, the need for a 3R-based integrated waste management system to reduce waste from the source so that only residue is disposed of in the landfill. In this study, we will analyze people's perceptions of waste management in Tenggilis Mejoyo District and compare perceptions between female and male communities.

RESEARCH METHOD

Determination of the sampling area using stratified random sampling. The stratified random sampling method is a sampling method based on strata. Data in the stratified random sampling method is classified into several strata and will be sampled randomly [4]. In this study, the determination of the sampling area is distinguished based on 3 categories of population density, namely low, medium, and high in Table 1.

Table 1 Distribution of Population Density Categories

Category	Population Density Range (Soul/km)^2	Village
Low	9.533 - 10.199	Kutisari
Medium	10.200 - 10.866	Long Jiwo
High	10.867 - 11.533	Kendangsari Tenggilis Mejoyo

The division of levels is carried out based on the population density of each urban village in Tenggilis Mejoyo District. So that 3 urban villages were selected to be the research location, namely Panjang Jiwo Village, Tenggilis Mejoyo, and Kutisari. Waste generation rate and waste composition are measured from household samples. The number of household waste generation measurement samples was determined using the slovin formula and the estimated error used was 10%. The results of the Slovin formula calculation obtained 100 sample households. After knowing the number of households, the proportion of samples for each urban village can be seen in Table 2.

Table 2 Sample Proportion for Each Village

Selected Village	Number of households per neighborhood	Number of Research Samples	Number of Samples per Village
Kutisari	4.676	100	43
Long Jiwo	3.302		31
Tenggilis Mejoyo	2.809		26
Total	**10.787**		**100**

In this study, direct observations were made at TPS and TPS 3R Tenggilis Mejoyo District to find out the existing conditions and waste reduction that has been carried out. Determination of TPS as an observation location was selected using purposive sampling method. The purposive sampling method is a sampling method based on certain considerations such as population characteristics or characteristics that are already known in advance.

Descriptive statistics is the initial data analysis technique to provide an overview of the variables that have been measured. Analysis in descriptive statistics can be in the form of data concentration (Average, Proportion, Mode, Median, etc.) and data distribution (standard deviation, variance, etc.). The results of descriptive statistical analysis are generally displayed in the form of graphs and diagrams.

This study has 11 problem formulations with Six variables, namely 3 independent construct variables (X), 2 intervening variables, and 1 dependent construct variable (Y). To make it easier to understand the flow of data testing, researchers first designed a structural model. The following is a structural model of the research construct variables as follows:

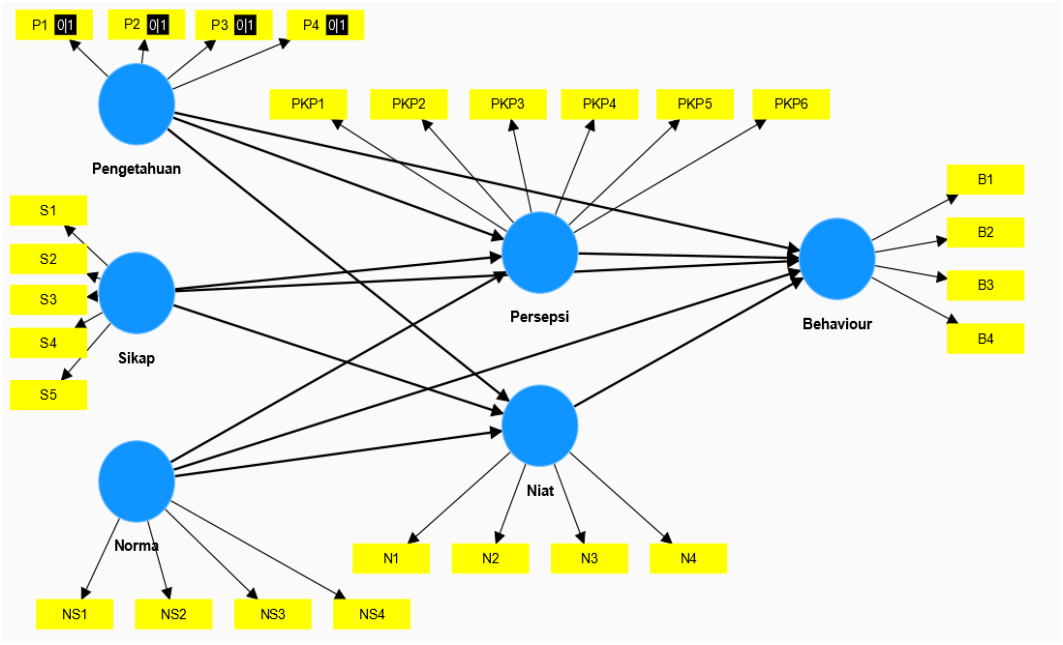

Figure 1 Designing a Structural Model of Contextual Variables Framework

Description :

X_1	:	Knowledge
P1	:	Specific household waste knowledge includes hazardous waste and waste containing hazardous waste.
P2	:	Knowledge of hazardous waste and hazardous waste including electronic waste, medical waste, used packaging waste, and expired waste.
P3	:	Knowledge of specific household waste (waste containing hazardous substances or hazardous waste) has characteristics that can pose a hazard to the environment.
P4	:	Knowledge of household-specific waste segregation is an effort to reduce pollution and potential hazards to the surrounding environment.
X_2	:	Attitude
S1	:	I believe that sorting waste is my responsibility
S2	:	I believe that sorting specific household waste (waste containing hazardous or toxic waste) is an obligation.
S3	:	Sorting out specific household waste (waste containing hazardous substances or hazardous waste) from non-hazardous waste can help reduce the risk of hazardous incidents in the surrounding environment.
S4	:	Depositing hazardous waste into a waste bank is a worthwhile endeavor.
S5	:	Being involved in household-specific waste management is beneficial
X_3	:	Norma
NS1	:	I do household-specific waste segregation (waste containing hazardous substances or hazardous waste) at the encouragement of friends, neighbors, or family
NS2	:	Most residents in my neighborhood support the segregation of household-specific waste (waste containing hazardous or toxic waste)
NS3	:	I dispose of e-waste separately because of environmental pressure

NS4	:	I dispose of household-specific waste (waste containing hazardous substances or hazardous waste) because of the activeness of the local waste bank and its customers.
Z_1	:	Perception
PKP1	:	In my opinion, sorting out household-specific waste (waste containing B3 or B3 waste) is easy
PKP2	:	I can distinguish between household specific waste (waste containing hazardous substances or hazardous waste) and non-hazardous waste.
PKP3	:	I have time to separate household-specific waste (waste containing hazardous substances or hazardous waste) from non-hazardous waste.
PKP4	:	The waste bank makes it easier for me to dispose of household-specific waste (waste containing hazardous or toxic waste).
PKP5	:	Depositing e-waste into a waste bank is very profitable
PKP6	:	Selling e-waste to collectors is very profitable
Z_2	:	Intention
N1	:	I am interested in segregating household specific waste (waste containing hazardous or toxic waste) from non-hazardous waste.
N2	:	I am interested in disposing of electronic waste separately from other waste
N3	:	I am interested in depositing household-specific waste (waste containing hazardous substances or hazardous waste) into a waste bank.
N4	:	If there is a household-specific waste collection facility (waste containing hazardous or toxic waste), I am interested in paying the household-specific waste retribution fee.
Y	:	Behaviour
B1	:	I take the time to segregate household-specific waste (waste containing hazardous or toxic waste) from non-hazardous waste.
B2	:	I have disposed of electronic waste separately from other waste
B3	:	I have deposited household specific waste (waste containing hazardous substances or hazardous waste) to the waste bank
B4	:	I have set aside money to pay for the upcoming levy for household specific waste (waste containing hazardous or toxic waste).

Outer model or measurement model is a model that connects indicators with latent variables. The outer model measurement model involves validity and reliability testing. Validity testing is done through Convergent validity and Discriminant validity. Meanwhile, the reliability test is used to measure the consistency of respondents in answering question items in the questionnaire.

RESULT AND DISCUSSION

In this analysis and discussion chapter, descriptive statistics and inferential statistics are discussed. Descriptive statistics are used to provide an overview of respondents in this study. Meanwhile, the inferential statistics used for analysis in this study are the SEM-PLS (*Structural Equation Modeling-Partial Least Square*) model using *SmartPLS 4 software* developed by Ned Kock. The analysis starts from

model measurement (*outer model*), model structure (*inner model*) and hypothesis testing until getting the model.

Respondent Status

Descriptive statistics are the initial data analysis technique to provide an overview of the variables that have been measured. The results of descriptive statistics in this study can be seen in the following chart

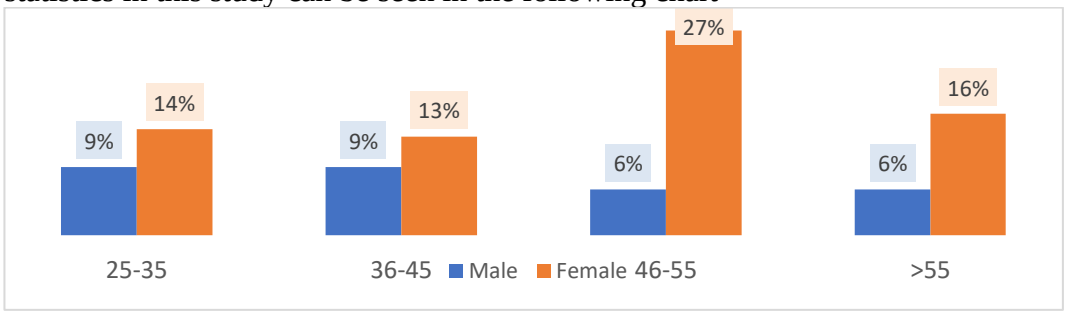

Figure 2 Respondent's Age

The number of samples in this study was 100 people. Based on Figure 3.1, it can be seen that the majority of respondents are in the age range 46-55 years with a total of 33. Then, the majority of male respondents are in the age range 25-35 years and the age range 36-45 years with a total of 9 people in each age range. Meanwhile, the majority of female respondents are aged 46-55 years with a total of 27 people out of a total of 70 female respondents.

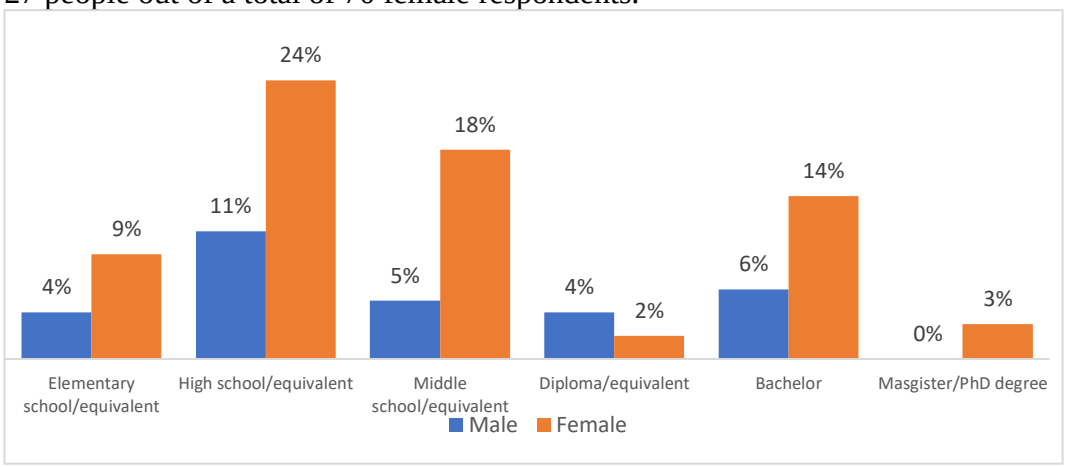

Figure 3 Respondent's Education

Based on Figure 3.2, it can be seen that the majority of respondents' latest education status is high school / equivalent. Female respondents who have the latest education Bachelor (S1) amounted to 14% of the 70 female respondents. Meanwhile, male respondents who have the latest education Bachelor (S1) amounted to 6% of the 30 male respondents. There are 9 female respondents and 4 male respondents who have the last education of elementary / equivalent.

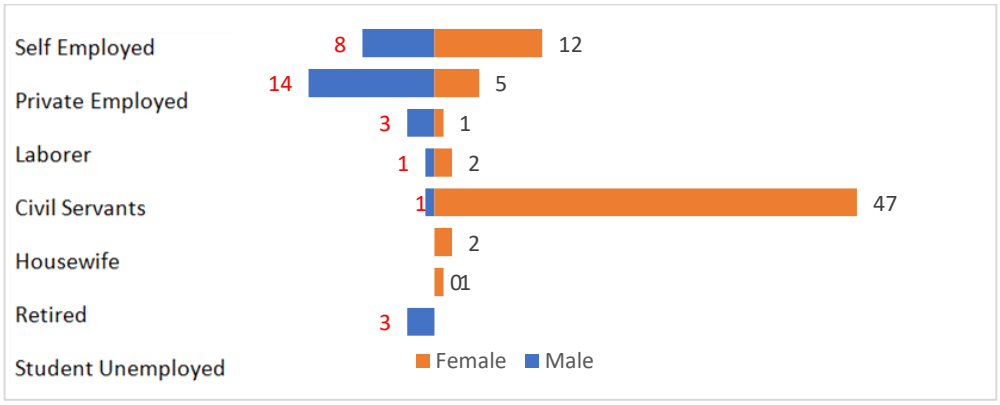

Figure 4 Job Type

Figure 3.3 shows that the majority of male respondents have jobs in the private sector, namely 14 out of a total of 30 male respondents. Then, the majority of female respondents are housewives, namely 47 people out of a total of 70 female respondents.

Waste Management

This study explored respondents' habits in sorting waste. Figure 3.5 shows that both male and female respondents do not segregate waste at home. Only 32% of the 70 female respondents stated that they sorted their waste at home. For male respondents, only 5% out of 30 people stated that they sorted waste at home.

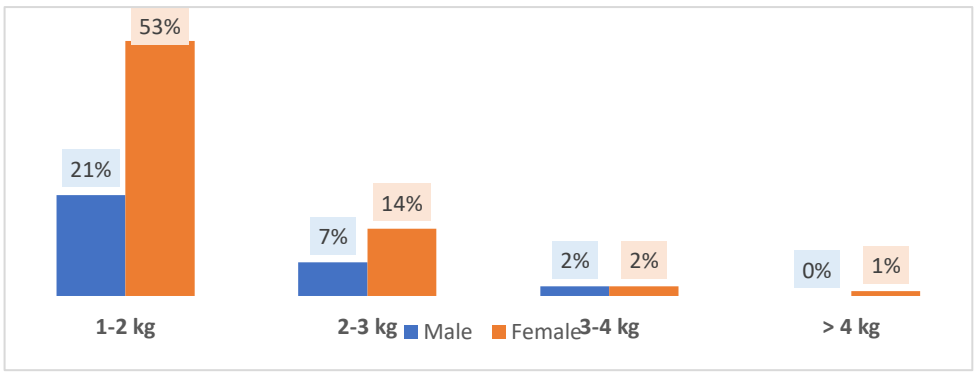

Figure 5 The amount of waste produced

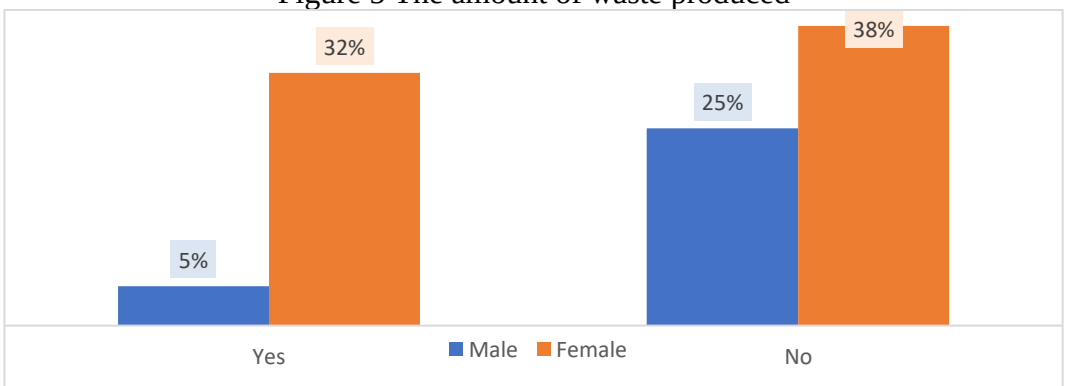

Figure 6 Waste Sorting

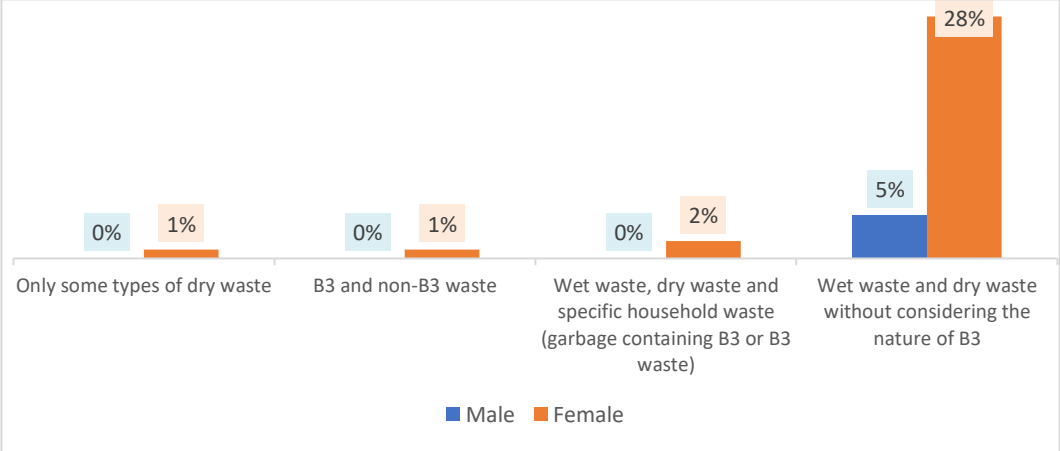

Figure 7 Waste Sorting Method

Respondents who stated that they sorted waste at home had at least 4 ways of sorting waste. Based on Figure 3.6, it can be seen that the majority of female respondents sorted waste by separating wet and dry waste without looking at B3 properties. Likewise, male respondents all stated that they sorted waste by separating wet and dry waste without looking at B3 properties. Then there were 2% of respondents who stated that they sorted waste by separating wet waste, dry waste, and household-specific waste (waste containing B3 or B3 waste). Only 1 female respondent stated that she sorted waste by separating hazardous and non-hazardous waste.

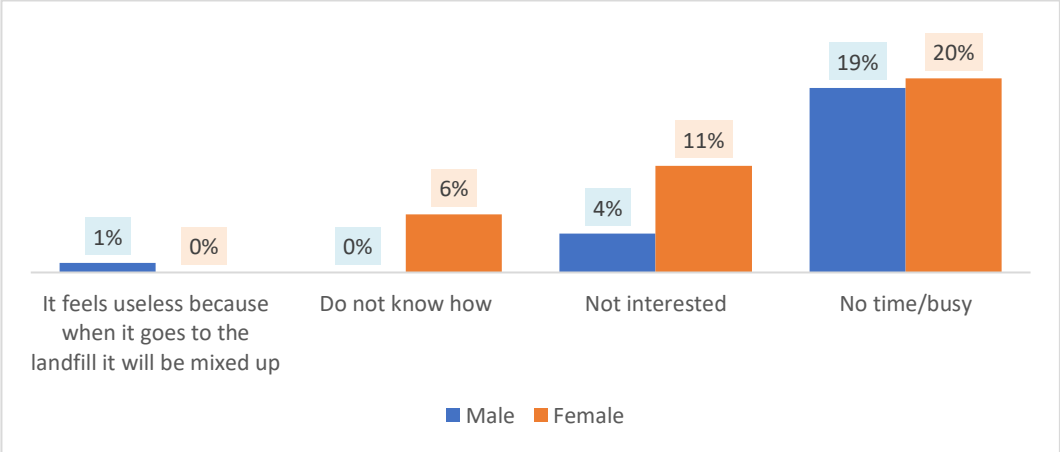

Figure 8 Reasons for not sorting waste

Respondents who stated that they did not sort waste at home had several reasons. Both male and female respondents mostly do not sort waste at home because they have no time or are busy. There were 11% of female respondents and 4% of male respondents who even stated that they were not interested in sorting waste at home. Then there were 6% of female respondents who did not know how to sort waste. And there is 1% of male respondents who stated that they do not sort waste because they feel it is useless because when at the landfill it will be mixed.

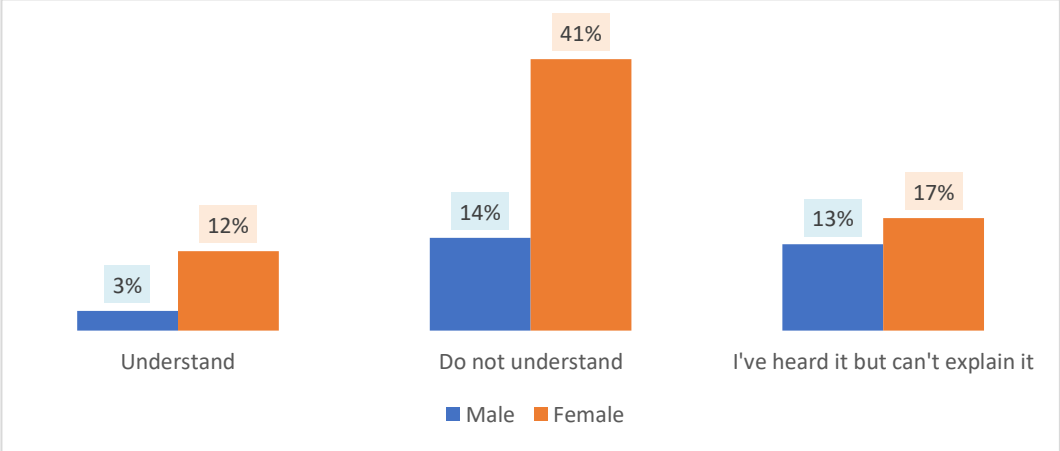

Figure 9 Specific understanding of household waste

Based on Figure 3.8, it can be seen that the specific understanding of household waste in male and female respondents is different. In male respondents, 14% of respondents stated that they did not understand and 13% of respondents stated that they had heard but could not explain. Only 3% of respondents stated that they understood the specifics of household waste. In female respondents, the majority of respondents (42 people) stated that they did not understand and 17% of respondents stated that they had heard but could not explain. Only 12% of respondents stated that they understood the specifics of household waste.

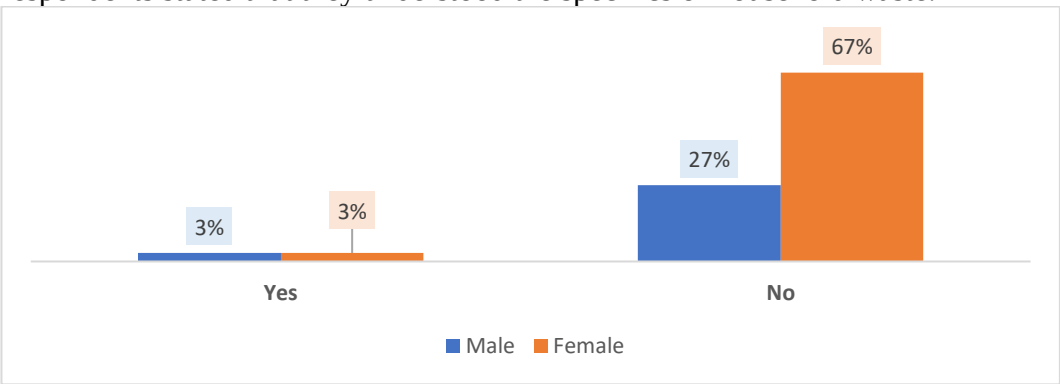

Figure 10 Socialization regarding specific waste

Figure 3.9 shows that the majority of respondents, both male and female, stated that there had never been any socialization on household specific waste (waste containing hazardous or toxic waste). In male respondents, only 3% of 30 male respondents stated that there had been socialization on household-specific waste (waste containing hazardous or toxic waste). Even in female respondents, only 3% of 70 male respondents said that there had been socialization about household-specific waste (waste containing hazardous or toxic waste).

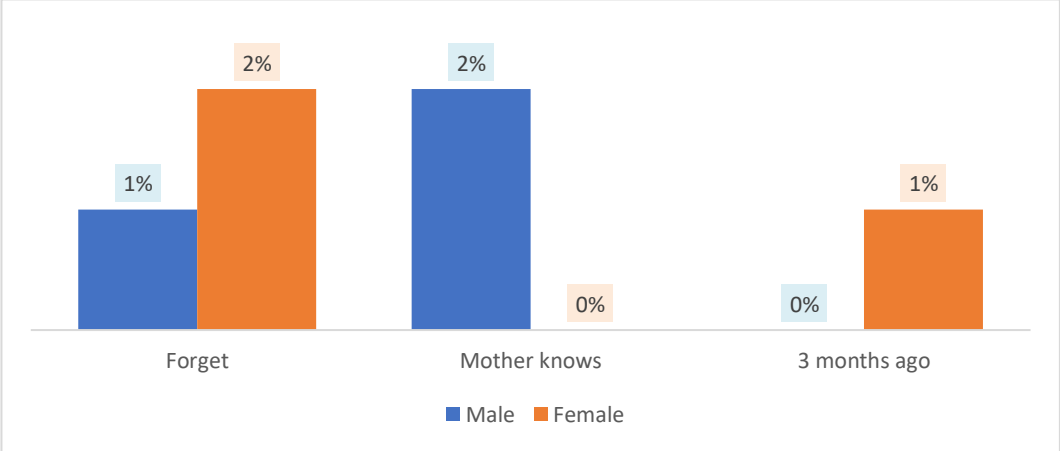

Figure 11 Implementation of Socialization

Then when further exploration was carried out regarding the time of implementation of socialization regarding household specific waste (waste containing hazardous or toxic waste), the majority of male respondents stated that their mother/wife knew/remembered the time, the rest stated that they had forgotten the time of the socialization. Meanwhile, the majority of female respondents had forgotten the time of the socialization and only 1% remembered and stated that the time of the socialization was 3 months ago.

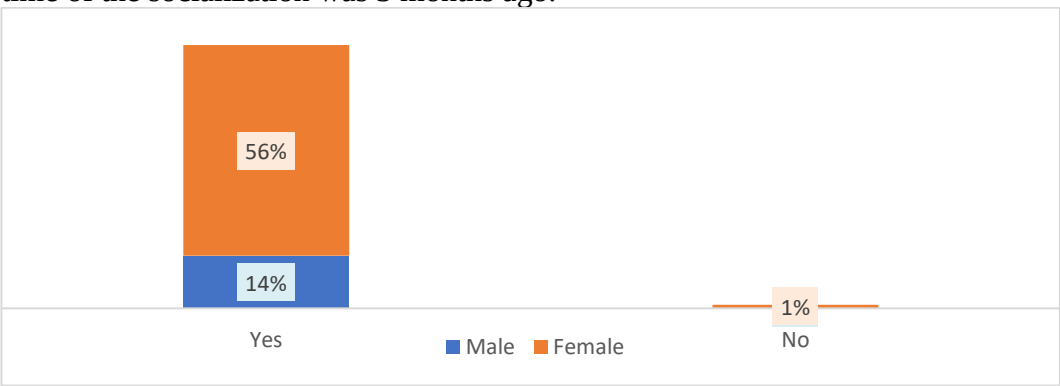

Figure 12 Differences in waste treatment

Regarding the treatment of household specific waste (waste containing hazardous substances or hazardous waste) with non-hazardous waste , figure 3.11 shows that both male and female respondents, the majority have different treatment of household specific waste (waste containing hazardous substances or hazardous waste) with non-hazardous waste. Only 1% in the female respondent category stated that there was no difference in the treatment of household-specific waste (waste containing hazardous or toxic waste) with non-hazardous waste.

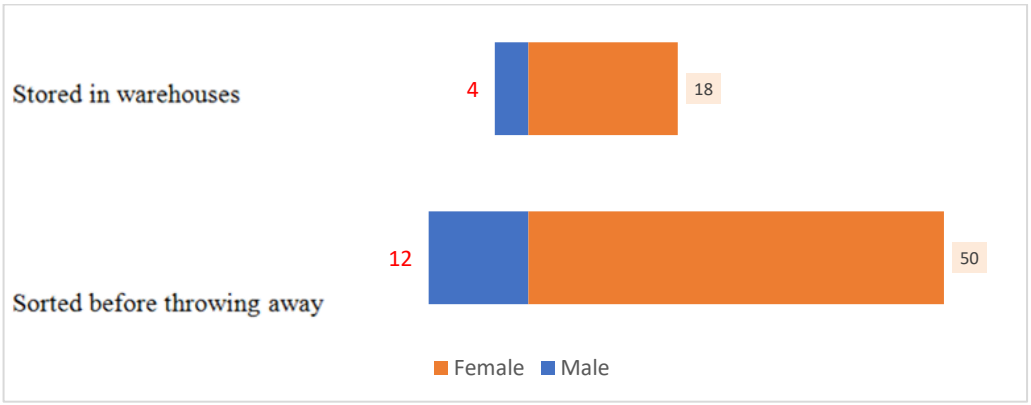

Figure 13 Treatment of Waste

Based on Figure 3.12, it can be seen that both male and female respondents mostly segregate specific household waste (waste containing hazardous or toxic waste) with non-hazardous waste before disposal. In male respondents, there were 4 respondents who stated that they stored waste in the warehouse before disposal. Meanwhile, there were 18 female respondents who stated that they kept the waste in the warehouse before disposal.

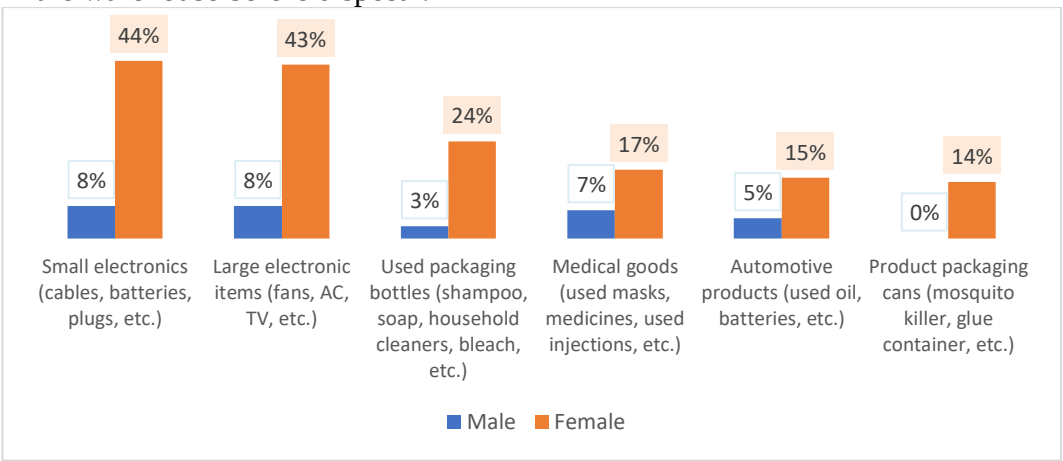

Figure 14 Types of waste sorted

Figure 3.13 shows that small electronic items (cables, batteries, plugs, etc.) and large electronic items (fans, air conditioners, TVs, etc.) are the most commonly segregated types of waste by respondents, both men and women. Meanwhile, household waste such as cans of product packaging (mosquito killer, glue container, etc.) is the least sorted by respondents, both men and women.

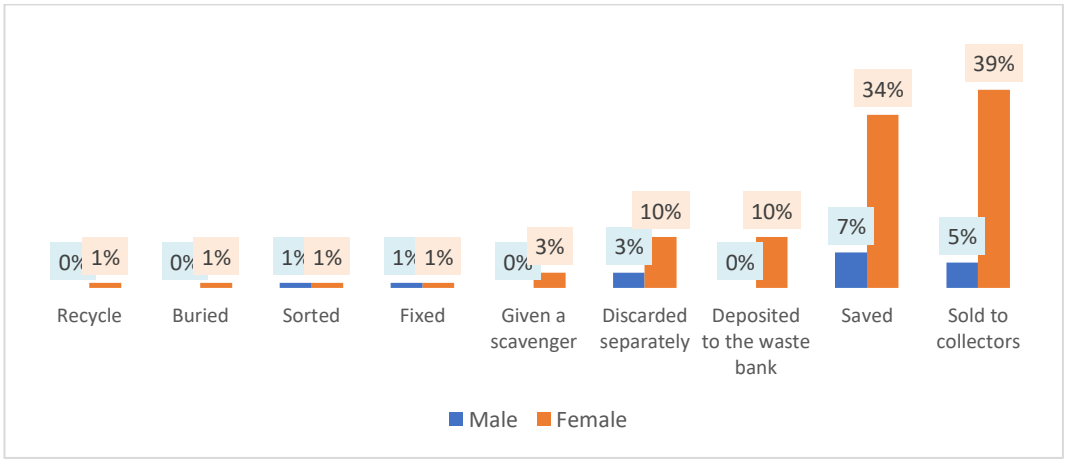

Figure 14 Treatment of waste

The follow-up of respondents after segregating waste can be seen from how they treat the segregated household-specific waste (waste containing hazardous substances or hazardous waste). Figure 3.14 shows that male respondents tend to keep the segregated household-specific waste (waste containing hazardous substances or hazardous waste). Meanwhile, female respondents tend to sell their segregated household-specific waste (waste containing hazardous substances or hazardous waste) to collectors. Only 1% of female respondents stated that they recycle household-specific waste (waste containing hazardous substances or hazardous waste) that has been segregated.

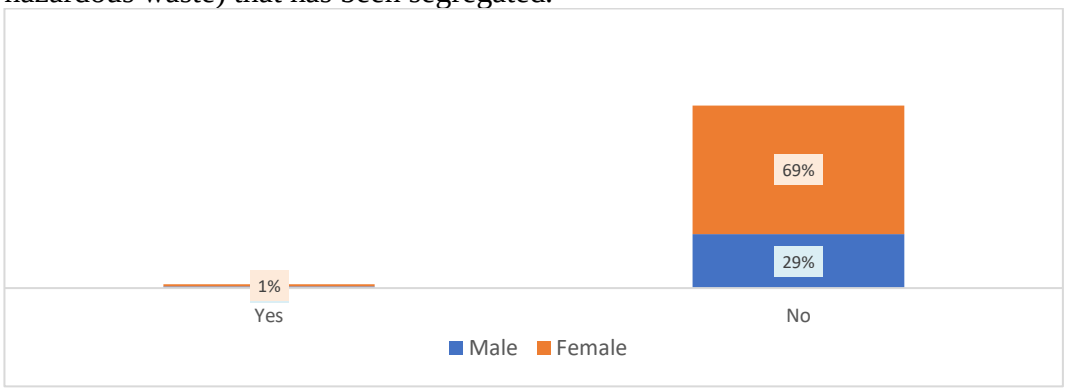

Figure 15 There is a Dangerous Incident

Figure 3.15 shows that the occurrence of hazardous incidents in the home environment due to household-specific waste (waste containing hazardous substances or hazardous waste) is very rare. This can be seen from the figure which shows that both male and female respondents mostly stated that there had never been a dangerous incident in the home environment as a result of household-specific waste (waste containing hazardous substances or hazardous waste). There is only 1% of male and female respondents who stated that there have been dangerous incidents in the home environment due to household specific waste (waste containing hazardous or toxic waste).

If explored further, both male and female respondents stated that the dangerous incidents that had occurred were fires and explosions. Then both men

and women stated that when an incident occurs what residents do is call the fire brigade and make efforts to water the fire.

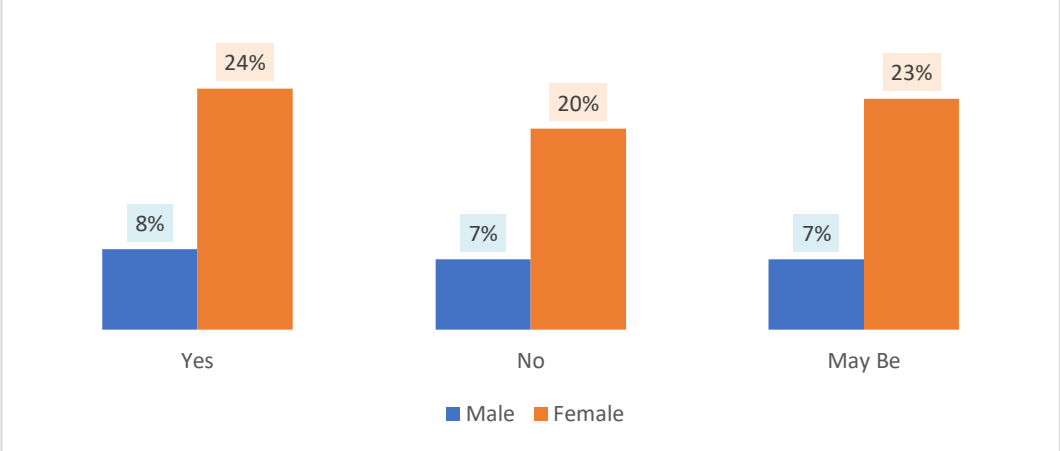

Figure 3.1 There is hope for waste management

In terms of respondents' expectations for the management of household-specific waste (waste containing hazardous substances or hazardous waste), Figure 3.16 shows that both male and female respondents tend to have several expectations regarding waste management. The majority of both male and female respondents expect waste to be collected by waste officers specializing in specific waste. Both male and female respondents also expect the provision of specific waste disposal facilities.

Outer Model Testing

Outer model or measurement model is a model that connects indicators with latent variables. The outer model measurement model involves validity and reliability testing. Validity testing is done through Convergent validity and Discriminant validity. Meanwhile, the reliability test is used to measure the consistency of respondents in answering question items in the questionnaire. The following is a test of each outer model. Here are the results of testing the outer model on respondents with female gender

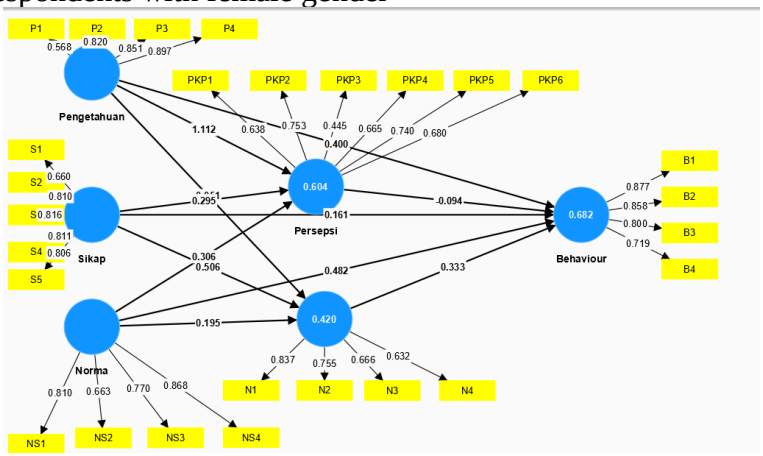

Figure 2 Designing Variable Structural Models after Calculate

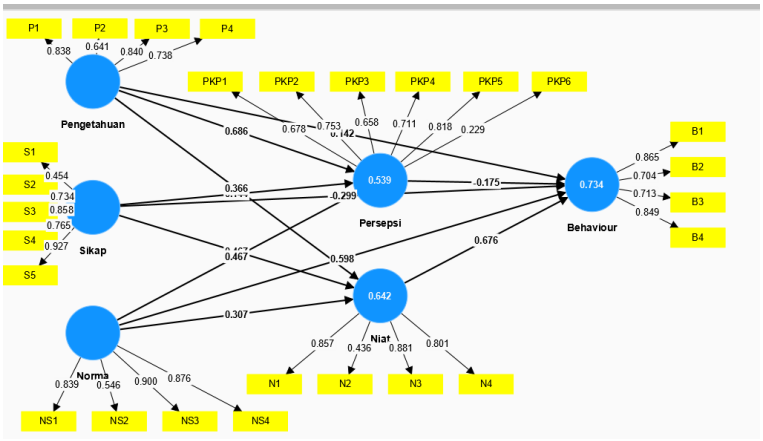

Figure 3 Designing Variable Structural Models after Calculate

Convergent Validity

Convergent validity is the degree to which the measurement results of a concept show a positive correlation with the measurement results of other concepts. Convergent validity is part of the measurement model which in SEM-PLS is usually referred to as the outer model. An indicator is said to have met convergent validity if it has a loading value above 0.5 for the number of indicators of latent variables ranging from 3 to 7 (Ghozali, 2011).

The results of Convergent validity testing are by looking at the Normalized structure loadings and cross-loadings output as follows:

1. Behavior has four indicators, namely B1, B2, B3, and B4, of the four indicators each has a loading factor value for B1 of 0.877, B2 of 0.858, B3 of 0.800, and B4 of 0.719. In accordance with the minimum value of convergent validity is> 0.5, all indicators enter the criteria and are declared valid.
2. Intention has four indicators, namely N1, N2, N3, and N4, of the four indicators each has a loading factor value for N1 of 0.837, N2 of 0.755, N3 of 0.666, and N4 of 0.632. In accordance with the minimum value of convergent validity is> 0.5, all indicators enter the criteria and are declared valid.
3. Norms have four indicators, namely NS1, NS2, NS3, and NS4, of the four indicators each has a loading factor value for NS1 of 0.810, NS2 of 0.663, NS3 of 0.770, and NS4 of 0.869. In accordance with the minimum value of convergent validity is> 0.5, all indicators enter the criteria and are declared valid.
4. Knowledge has four indicators, namely P1, P2, P3, and P4, of the four indicators each has a factor loading value for P1 of 0.568, P2 of 0.820, P3 of 0.851, and P4 of 0.897. In accordance with the minimum value of convergent validity is> 0.5, all indicators enter the criteria and are declared valid.
5. Perception has six indicators, namely PKP1, PKP2, PKP3, PKP4, PKP5, and PKP6, of the six indicators each has a factor loading value for PKP1 of 0.638, PKP2 of 0.753, PKP3 of 0.545, PKP4 of 0.665, PKP5 of 0.740, and PKP6 of 0.680. In accordance with the minimum value of convergent validity is> 0.5, all indicators enter the criteria and are declared valid.

6. Attitude has five indicators, namely S1, S2, S3, S4, and S5, of the five indicators each has a factor loading value for S1 of 0.660, S2 of 0.810, S3 of 0.816, S4 of 0.811, and S5 of 0.806. In accordance with the minimum value of convergent validity is> 0.5, all indicators enter the criteria and are declared valid.

From the results of measuring convergent validity, all indicators are declared valid so that they fall into the convergent validity criteria, which shows the validity of each indicator. From the convergent validity measurement results, there are final indicators that meet the validity test criteria. After the S1, PKP6, and N2 indicators were removed, the researcher re-calculated the PLS algorithm to obtain a new outer loading. Output that explains the relationship between latent variables and their indicators.

Discriminant Validity

Discriminant Validity is the measurement of indicators with latent variables. Measurement of discriminant validity is assessed by looking at the Average Variance Extracted (AVE) value, where the AVE value must be greater than 0.5 in order to be declared valid (Ghozali, 2011). The following are the results of Discriminant validity testing on the Female respondent model which can be seen in the Average Variance Extracted (AVE) output table:

Table 3 Results of the Average Variance Extracted (AVE) test for female respondents

Variables	AVE	Conclusion
Behavior	0.666	Valid
Intention	0.528	Valid
Norma	0.611	Valid
Knowledge	0.631	Valid
Perception	0.537	Valid
Attitude	0.613	Valid

Structure: SmartPLS 2020 Results

Based on Table 8 above, it can be seen that the Average Variance Extracted (AVE) value for the Behavior variable is 0.666, the Intention variable is 0.528, the Norm variable is 0.611, the Knowledge variable is 0.631, the Perception variable is 0.537, and the Attitude variable is 0.613. All of these variables have a loading value above 0.5 so that it can be stated that all variables have met the validity requirements. Then, the results of male respondents can be seen as follows.

Table 4 Results of the Average Variance Extracted (AVE) test for male respondents

Variables	AVE	Conclusion
Behavior	0.618	Valid
Intention	0.727	Valid
Norma	0.644	Valid
Knowledge	0.591	Valid
Perception	0.531	Valid

Variables	AVE	Conclusion
Attitude	0.688	Valid

Structure: SmartPLS 2020 Results

Based on Table 9 above, it can be seen that the Average Variance Extracted (AVE) value for the Behaviour variable is 0.618, the Intention variable is 0.727, the Norm variable is 0.644, the Knowledge variable is 0.591, the Perception variable is 0.531, and the Attitude variable is 0.688. All of these variables have a loading value above 0.5 so that it can be stated that all variables have met the validity requirements.

Composite Reliability

Composite reliability is a statistical technique for measuring the reliability of a construct. And a variable can be said to be good if it has composite reliability with a composite reliability value ≥ 0.7, although it is not an absolute standard. The following is a table of reliability test results on female respondents through composite reliability for each variable in the questionnaire from SmartPLS 6.0:

Table 5 Composite Reliability Test Results for Female Respondents

Variables	Composite Reliability	Conclusion
Behavior	0.849	Reliable
Intention	0.729	Reliable
Norma	0.810	Reliable
Knowledge	0.837	Reliable
Perception	0.750	Reliable
Attitude	0.851	Reliable

Structure: SmartPLS 2020 Results

Based on Table 10 above, it can be seen that the composite reliability value for the Behavior variable is 0.849, the Intention variable is 0.729, the Norm variable is 0.810, the Knowledge variable is 0.837, the Perception variable is 0.750, and the Attitude variable is 0.851. All of these variables have a composite reliability value ≥ 0.7, so it can be said that they have met the reliability requirements. Then, the results of the reliability test on male respondents through composite reliability for each variable in the questionnaire from SmartPLS 6.0:

Table 6 Composite Reliability Test Results for Male Respondents

Variables	Composite Reliability	Conclusion
Behavior	0.832	Reliable
Intention	0.818	Reliable
Norma	0.875	Reliable
Knowledge	0.782	Reliable
Perception	0.781	Reliable
Attitude	0.885	Reliable

Structure: SmartPLS 2020 Results

Based on Table 11 above, it can be seen that the composite reliability value for the Behavior variable is 0.832, the Intention variable is 0.818, the Norm variable is 0.875, the Knowledge variable is 0.782, the Perception variable is 0.781, and the Attitude variable is 0.885. All of these variables have a composite reliability value ≥ 0.7, so it can be said that they have met the reliability requirements.

Cronbach Alpha

Cronbach's alpha is a group of indicators that measure a variable that has good composite reliability if it has an alpha coefficient ≥ 0.6. The following is a table of composite reliability measurement results through alpha cronbach for female respondents:

Table 7 Cronbach's Alpha Test Results for Female Respondents

Variables	Cronbach Alpha	Conclusion
Behavior	0.832	Reliable
Intention	0.700	Reliable
Norma	0.785	Reliable
Knowledge	0.795	Reliable
Perception	0.735	Reliable
Attitude	0.841	Reliable

Structure: SmartPLS 2020 Results

Based on Table 12 above, the Cronbach's alpha value for the Behavior variable is 0.832, the Intention variable is 0.700, the Norm variable is 0.785, the Knowledge variable is 0.795, the Perception variable is 0.735, and the Attitude variable is 0.841. All variables have met the reliability requirements because they meet the predetermined requirements, namely having a value ≥ 0.6.

Inner Model Testing

Inner model or structural model testing aims to see the relationship between constructs or latent variables of a research model. In this section, it is done by looking at the value of the model fit indicates and quality indicates. This test is carried out by looking at the percentage of variance explained, namely by looking at R^2 for the dependent latent construct, Stone-Geisser, Q-Square Test and also looking at the magnitude of the structural path parameter coefficient (Ghozali, 2011). Based on data processing, the resulting coefficient of determination (R-Square) for the female model is as follows:

Table 8 R-Square Value of Female Respondent Model

Variables	R-square	Adjusted R-square
Behavior	0.682	0.657
Intention	0.420	0.393
Perception	0.604	0.586

Structure: SmartPLS 2020 Results

Based on Table 13 above, the R-square shows what percentage of the response variable can be explained by the predictor variables. The higher the R-square, the better the model, and vice versa. Based on the results obtained, the R-

square value for the Intention variable is 0.420, which means that in female respondents the contribution of the influence of the Knowledge, Attitudes, and Norms variables on Intention is 42.0%, while the R-square value for the Perception variable is 0.604, which means that in female respondents the contribution of the influence of the Knowledge, Attitudes, and Norms variables on Perception is 60.4% and the remaining 39.6% is influenced by other variables outside this research model and error. The R-square value for the Behavior variable is 0.682 which means that the contribution of the influence of the Knowledge, Attitudes, Norms, Perceptions, and Intentions variables is 68.2% and the remaining 31.8% is influenced by other variables outside this research model and errors. The R-square value which is greater than 0 indicates that this research model has predictive relevance.

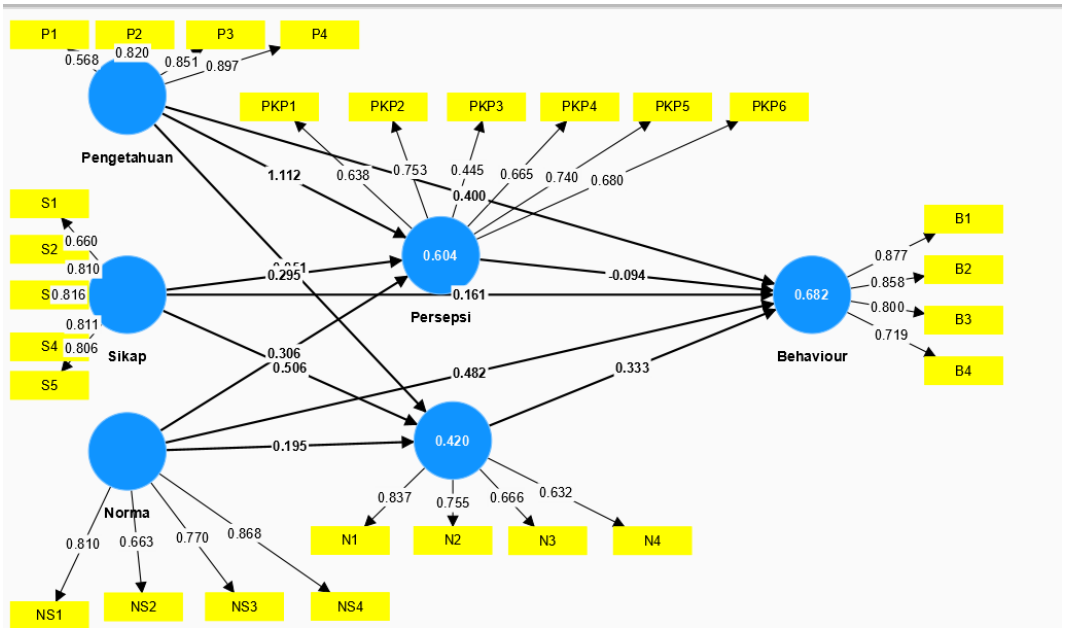

Figure 4.6 Model output results for female respondents
Structure: SmartPLS 6.0 Results

Based on data processing, the coefficient of determination (R-Square) for the Male model is as follows:

Table 9 R-Square Value of Male Respondent Model

Variables	R-square	Adjusted R-square
Behavior	0.735	0.679
Intention	0.653	0.613
Perception	0.482	0.423

Structure: SmartPLS 2020 Results

Based on Table 14 above, the R-square shows what percentage of the response variable can be explained by the predictor variables. The higher the R-square, the better the model, and vice versa. Based on the results obtained, the R-square value for the Intention variable is 0.653, which means that in male respondents the contribution of the influence of the Knowledge, Attitudes, and Norms variables on Intention is 65.3%, while the R-square value for the Perception

variable is 0.482, which means that in male respondents the contribution of the influence of the Knowledge, Attitudes, and Norms variables on Perception is 48.2% and the remaining 51.8% is influenced by other variables outside this research model and error. The R-square value for the Behavior variable is 0.735 which means that the contribution of the influence of the variables Knowledge, Attitudes, Norms, Perceptions, and Intentions is 73.5% and the remaining 26.5% is influenced by other variables outside this research model and errors. The R-square value which is greater than 0 indicates that this research model has predictive relevance.

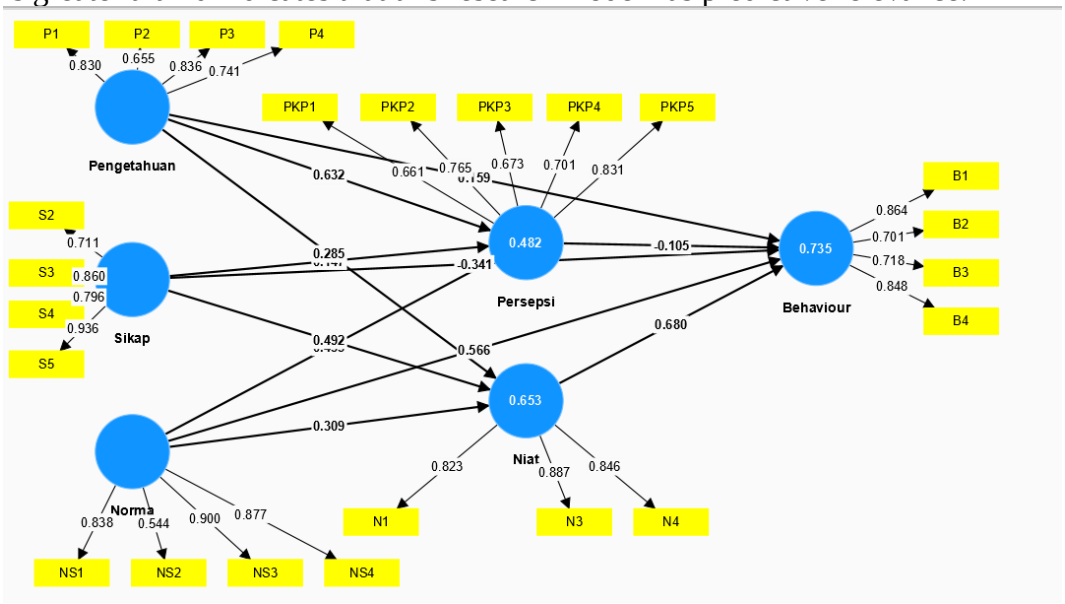

Figure 4.6 Model output results for male respondents
Structure: SmartPLS 6.0 Results

Hypothesis Test

Hypothesis testing is used to explain the direction of the relationship between the independent variable and the dependent variable. This test is carried out by means of path analysis of the model that has been created. The SmartPLS 6.0 program can simultaneously test complex structural models, so that the results of path analysis can be known in one regression analysis. The results of the correlation between constructs are measured by looking at the path coefficients and the level of significance which is then compared with the research hypothesis contained in chapter two. The test results for female respondents and male respondents are as follows.

Table 10 Hypothesis Testing and Path Coefficient for Female Respondents

	Description	Coefficient	P-Value	Ideal	Results
H1	Knowledge→ Behavior	0.400	0.004	<0.05	Influential
H2	Knowledge Intention→	0.051	0.865	<0.05	No Effect
H3	Knowledge→ Perception	1.112	0.000	<0.05	Influential

	Description	Coefficient	P-Value	Ideal	Results
H4	Attitude→ Behaviour	0.161	0.190	<0.05	No Effect
H5	Attitude Intention→	0.506	0.000	<0.05	Influential
H6	Attitude→ Perception	0.295	0.032	<0.05	Influential
H7	Norm→ Behavior	0.482	0.000	<0.05	Influential
H8	Norm Intention→	0.195	0.097	<0.05	No Effect
H9	Norm→ Perception	0.306	0.004	<0.05	Influential
H10	Intention→ Behaviour	0.333	0.002	<0.05	Influential
H11	Perception→ Behaviour	-0.094	0.401	<0.05	No Effect

Structure: SmartPLS Results

Based on table 15, it is known that there are 7 hypotheses that have a p-value <0.05 so that they can be said to have a significant effect. All of these hypotheses have a positive effect. Based on the results listed in table 15, the seven hypotheses are as follows:

1. Knowledge affects behavior with a positive influence. This means that every increase in knowledge value will cause an increase in behavior.
2. Knowledge affects perception with a positive influence. This means that every increase in knowledge value will cause an increase in perception.
3. Attitude affects intention with a positive influence. This means that every increase in attitude value will cause an increase in intention.
4. Attitude affects perception with a positive influence. This means that every increase in attitude value will cause an increase in perception.
5. Norms affect behavior with a positive influence. This means that every increase in the value of norms will cause an increase in behavior.
6. Norms affect perception with a positive influence. This means that every increase in the value of Norms will cause an increase in Perception
7. Intention affects behavior with a positive influence. This means that every increase in the value of intention will cause an increase in behavior.

Then there are 4 hypotheses that have a P-value> 0.05, so it can be said that the four hypotheses have no significant effect. The four hypotheses are as follows:

1. Knowledge has no significant effect on intention
2. Attitude has no significant effect on Behavior
3. Norms have no significant effect on intention
4. Perception has no significant effect on Behavior.

The test results for male respondents are as follows.

Table 11 Hypothesis Testing and Path Coefficient for Male Respondents

	Description	Coefficient	P-Value	Ideal	Results
H1	Knowledge→ Behavior	0.159	0.603	<0.05	No Effect

H2	Knowledge Intention→	0.285	0.329	<0.05	No Effect
H3	Knowledge→ Perception	0.632	0.209	<0.05	No Effect
H4	Attitude→ Behaviour	-0.341	0.177	<0.05	No Effect
H5	Attitude Intention→	0.492	0.003	<0.05	Influential
H6	Attitude→ Perception	0.147	0.597	<0.05	No Effect
H7	Norm→ Behavior	0.566	0.002	<0.05	Influential
H8	Norm Intention→	0.309	0.064	<0.05	No Effect
H9	Norm→ Perception	0.435	0.050	<0.05	Influential
H10	Intention→ Behaviour	0.680	0.000	<0.05	Influential
H11	Perception→ Behaviour	-0.105	0.603	<0.05	No Effect

Structure: SmartPLS Results

Based on table 16, it is known that there are 4 hypotheses that have a p-value <0.05 so that they can be said to have a significant effect. All of these hypotheses have a positive effect. Based on the results listed in table 16, the four hypotheses are as follows:

1. Attitude affects intention with a positive influence. This means that every increase in attitude value will cause an increase in intention.
2. Norms affect behavior with a positive influence. This means that every increase in the value of norms will cause an increase in behavior.
3. Norms affect perception with a positive influence. This means that every increase in the value of Norms will cause an increase in Perception
4. Intention affects behavior with a positive influence. This means that every increase in the value of intention will cause an increase in behavior.

Then there are 7 hypotheses that have a P-value> 0.05, so it can be said that the four hypotheses have no significant effect. The seven hypotheses are as follows:

1. Knowledge does not have a significant effect on Behavior
2. Knowledge has no significant effect on intention
3. Knowledge has no significant effect on Perception
4. Attitude has no significant effect on Behavior
5. Attitude has no significant effect on Perception
6. Norms have no significant effect on intention
7. Perception has no significant effect on Behavior

CONCLUSION

Differences in household-specific waste management based on gender can be summarized as follows: a. Among women, most did not know what household-specific waste was and did not segregate waste because they did not have time. The most common type of waste segregated is small electronic waste and female respondents tend to sell segregated specific waste to collectors. b. Among men, most did not know what household-specific waste was and did not segregate waste due to lack of time. The most common type of waste segregated is small electronic waste and male respondents tend to keep the segregated specific waste.

Based on the results of hypothesis testing, it can be concluded as follows: a. In women, most variables influence each other or have a positive influence. Knowledge and norms do not influence intention, while attitude and perception do not influence behavior. b. In men, only a small number of variables influence each other or have a positive influence. Attitude influences intention, norms influence behavior and perception, and intention influences behavior.

REFERENCES

D. Mandasari, B. Wirjodirdjo, and M. Anityasari, "Improving Waste Bank Facilities as an Effort to Reduce Urban Waste Generation at TPS Surabaya," ITS ENGINEERING JOURNAL, vol. 9, no. 2, pp. 322 - 327, 2020.

Y. Trihadiningrum, I. J. Laksono, Y. Dhokhikah, A. Moesriarti, D. R. Radita, and S, Sunaryo, "Community Activities in Residential Solid Waste Reduction in Tenggilis Mejoyo District, Surabaya City, Indonesia," Journal of Material Cycles and Waste Management, 2015.

M. N. Afriandi, R. Harahap, and J. Sarifah, "Optimization of Waste Management based on Waste Generation and Characteristics in Gedung Johor Village, Medan Johor Subdistrict, Medan City," Journal of Engineering Main Bulletin, vol. 15, no. 3, pp. 287 - 293, 2020.

M. Rahman, M. I. Tabash, A. Salamzadeh, S. Abduli, and S. Rahaman, "Sampling Techniques (Probability) for Quantitative Social Science Researchers: A Conceptual Guidelines with Examples." SEEU Review, vol. 17, no. 1, pp. 42 - 51, 2022.

Notoatmodjo, "Health Research Methodology," Jakarta: Rineka Cipta, 2010.

Environmental Management Performance Information of Surabaya City. Surabaya: Surabaya City Government, 2020.