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Factors Affecting The Public Acceptance Towards Waste Separation At Household Level

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Abstract

The willingness and ethical behaviour of the locals are crucial to the effectiveness of trash separation at the source. Malaysia has a low participation percentage in waste separation, hence it is urgent to encourage household garbage separation practises. Even though the Separation at Source Initiative (SSI) mandated by the Solid Garbage and Public Cleansing Management became mandatory required residents to separate waste in their homes, households continued to oppose the SSI. It is important to carefully examine the elements that influence and forbid waste separation practises at the source; this requires additional research on several acceptance characteristics, including social behaviour, culture, and policy change. The purpose of this paper to determine the factors of acceptance towards separation waste disposal at household level, to identify the most factors contribute to the acceptance of public toward waste separation and to investigate public environmental concern toward waste problem. The scope of this research is focuses on the perception of Malaysian public household and how likely they want to associate with waste disposal, involve young adult generation that engage with daily domestic waste. The research study is decided to focus on the state of Melaka and part of Kedah state. The sample size of respondents has been determined by using formula developed by Krejcie and Morgan (1970) will be targeted the total of 231 respondents. The reliability for the questionnaires was significant with Cronbach‟s Alpha value was 0.853. This can be concluded that culture, social behavior and policy change have a positive relationship with willingness to change to waste separation at household

***Keywords*:** Public Acceptance, Waste Separation.

1. Introduction

Population growth has led to an increase in generation of daily waste in Malaysia. Segregation waste disposal is an issue that is challenging to manage of any urban area. Malaysia as a develop country that experience rapid industrialization and urbanization are facing the effects on environment from the increasing of waste generated. Food waste is a major component of generated waste for about 45 percent and contains high organic compounds. Due to un-separated waste, more than 30 percent potentially recyclable materials such as paper, plastic, aluminum and glass are still directly disposed of in landfills (The Star,2017).

This situation is needed to be change considering that 16.76 million tons of waste which are 70 percent from household and 30 percent form waste commercial waste is expected to be generated by nearly 30 million Malaysians in the year 2020, the Malaysian government plans to reduce the waste disposed of in landfills as a result, waste segregation solution is not only have economic value, but also have environmental important. The main objective of waste management is to reduce the amount of waste being generated, and as impact reducing on the disposal costs, the effect on the environment and the consequences on human health as well (Agamuthu et. all,2009). The normal solid waste management system practiced in developing country brings many problems (Manaf.et all,2009): (i) limited collection of waste coverage and irregular collection services; (ii) open dumping and burning without control of air and water pollution; and (iii) the breeding of insect such as vermin and flies.

By the year 2020, the reduction shall amount to 40 percent through 22 percent recycling and 80 percent intermediate treatment such as waste-to-energy, composting, and material recovery (Malaysia Kini, 2015). In this study also, researcher would like to highlight the public acceptance towards segregation of waste disposal as well as the factors that contribute to willingness to respond. Segregation wastes refer to the separation of wet waste and dry waste. Waste also can be segregated on basic of biodegradable or non-biodegradable.

2. Literature Review

In general, municipal solid waste (MSW) is a collection of various solid wastes by towns and cities from different type of household activities. MSW include of everyday waste that we used before then throw away, such as clothing, furniture, product packaging, bottle, food scraps and appliances. They come from vary source which are from resident, industrial, institution, commercial and city area (Gaurav.K, 2014). MSW is segregate and classify according to their physical state composition). which are organic and inorganic waste. Organic waste comes from plant and animal include the food waste, paper waste and rubber waste. Besides that, inorganic wastes are consisting of metal waste, tin waste, glass waste, and plastic waste.

In other perspective, municipal solid waste is classified as based on its biodegradable categories which fully biodegradable (some organic waste, paper and textiles), partially degradable (some organic waste, disposable napkin and sanitary waste) and non-degradable (metals, glass and electronic waste) (Jha et. al. 2011). However, regardless of its origin and type of material, it shows the natural resources as well as raw material usage is incomplete to the end of recycle process. Hence, it is a huge loss to the country and individual itself not to utilize the waste and generate cost saving. The studies regarding waste separation management and characteristics are still limited and the efficiency of the solid waste management system in Malaysia is the major constraint (Seow Ta Wee 2012; Jha et. al. 2011).

The rate of pattern change in solid waste generation is affected by several factors such as demography and urban lifestyle (Vergera and Tchobanoglous, 2012). This figure is estimated to keep increasing as the urbanization process continuous in Malaysia expected to be up to 36.8 million in 2040 (Department of Statistic Malaysia, 2013). Hence the consumption and disposal rates are escalating faster than Malaysia‟s utilities can handle. National Ministry of Urban Wellbeing, Housing and Local Government revealed in 2015, statistic of Malaysians produce an average of 30,000 tons of waste per day and only of 5 % of it are recycled. Over 10 years, from 2003 to 2013, the generation of municipal solid waste had increase to 91% (Clean A study indicates that in average a household in Malaysia generate waste and throw away around 0.5-0.8 kg uneaten food per day (Chien Bong et al, 2016). Statistic from Solid Waste Corporation of Malaysia (SWCorp)

revealed that in 2015 food waste in Malaysia reaches 15,000 tonns daily, including 3000 tones that is still able for consumption and not supposed to be discarded (Malaysia Kini, 2016). Local Government Authority indicates in a study that food waste and other organic waste contribute 47% of the total waste generated, follow by paper 15%, plastics 14% and others the rest. The percentage of municipal solid waste composition in Malaysia are shows in Table 1.

Table 1: Municipal solid waste composition in Malaysia

Compositions/ Percentage(%)	2002	2003	2004	2005	2006	2007	2010
Food waste	32	56.3	37.4	49.3	45	42	43.5
Mixed plastic	16	13.1	18.9	9.7	24	24.7	25.2
Mix paper	29.5	8.2	16.7	17.1	7	12.9	22.7
Textiles	3.4	1.3	3.4	--	--	2.5	0.9
Rubber and leather	2	0.4	1.3	--	--	2,5	--
Wood	7	1.8	3.7	--	--	5.7	--
Yard wastes	--	6.9	3.2	--	--	--	--
Ferrous	3.7	2.1	2.7	2	6	5.3	2.1
Glass	5.5	1.5	2.6	3.7	3	1.8	2.6
Others	1.9	8.4	10.4	18.2	15	25.74	1.8
Total	100	100	100	100	100	100	100

(Source; Ministry of Housing and Local Government, 2011)

2.1 Current Waste Management Practices in Malaysia

In context of Malaysia, solid waste is managed by the Ministry of Housing and Local Government (MHLG) with the participant of private sector as well. The Solid Waste and Public Cleansing Management Act 2007 are Malaysian laws which enacted to provide the guideline and regulate the management control of solid waste for the purpose of maintaining proper environmental health. Solid waste management started from the storage of household waste, commercial waste or industry waste within municipal area. Usually, the household wastes stored are packed using variety sizes and color of plastic bags before discarded into large garbage bags. However, waste separations are not practiced by Malaysian household (Goh Ban Lee, 2011).

Malaysia government is committed to improve environmental health and the quality of citizen‟s life. Enhancing solid waste management is crucial as one of the strategies in order to achieve this goal. Several act and initiative regarding solid waste management have been introduced in Malaysia since late1960 (Sreenivasan et al, 2012). In year 2015, new systems that go for the enforcement of waste separation have been formally implemented under Act 672 of the Solid Waste and Cleansing Management Act 2007. This act makes it compulsory for citizen to separate their household waste according to categories. The programmed involving 7 states in Malaysia which are Putrajaya, Kuala Lumpur, Johor, Melaka, Negeri Sembilan, Kedah, Perlis and Pahang with at least 52 local authorities included (Solid Waste and Public Cleansing Management Corporation, 2011). However, implementation of this act is not successful due to lack of continuity of waste

separation activity and the unsatisfied among citizen for their quality service and operation cost (Rozita, 2014).

2.2 Insight from International Experience

Developing country such as Germany and Japan have employed different regulation to manage waste efficiently. In Germany, selective systems of waste disposal are being used. Generally, every household has 4bins; a black, a green, a blue and a yellow one. All the waste must be sorted according to the material it consists of and dispose separately to each of the categorize bins. Meanwhile in Japan, wastes are categorized into four different types and each type has their own collection date. All the categorized wastes are classified into colored garbage bag that are sold in supermarket and convenience stores. Garbage collection dates, collection area and collection rules are differed from one town to another (Verity, 2014).

Besides, Naming and Shaming campaign has been used in Hong Kong to control of undesired behavior of littering. In 2015, Hong Kong launches a city-wide campaign „The Face of Litter" which used of DNA to be testing to construct the portrait of the perpetrator (Justin, 2015) Similarly in 2014, Boston Borough Council, the council use CCTV evidence to encourage citizen to dispose the waste properly. Apart from the government regulation initiatives regarding waste separation, the communities itself must take waste disposal seriously. Activation of social norms in communities to achieve separation behaviour can also be effective. Studies found that higher level of education and provision of information of environmental issue beneficial to promoting citizen"s participation (Jones et al, 2010).

2.3 Community Acceptance

The launch of Separation at Source Initiative (SSI) under Solid Waste and Public Cleansing Management Act 2007 (Act 672) as implemented effectively in September 2015 by the SWCorp become an indicator that frosting the need of waste segregation behavior at the household level. Therefore, a systematic analysis and research of waste separation practice is crucial for behavioral changing. In the Triangular Model of Acceptance by Wustenhagen (2007) explain that acceptance is formed into three categories which are social-politic acceptance, community acceptance and market acceptance. Social-political acceptance is a social acceptance involving key of stakeholder, policy makes and public. Community acceptance refers to the acceptance local stakeholder, authorities and the community towards of specific project. Meanwhile, in the third categories of acceptance involve the market acceptance explaining the adoption of new product or project by the investors, organization and the community itself (Wustenhagen, 2007). However, socio-political acceptance and market acceptance are not being discussed and out from this research.

Community acceptance is the one the important roles to indicates the implementation of the waste separation rules and behavior. Hence community is look like an integral part of the social existence that influences the overall population. Social community acceptance defined that the people signal towards things that they want to be include in their group or relationship (Leary, 2010). It also represents the ability to accept and tolerate differences and diversity in other people. There is difference variable that influencing the waste separation behaviors. Convenient, moral norms, information and social concern are the strongest predictor for household segregate behavior (Miafodzyeva and Brandt, 2013). The involving of the household in residents to separate their waste raised the awareness and educates them to be more responsible to separate waste at

source.

2.4 Theoretical Framework

The theoretical framework shows the factors that affecting the public acceptance toward waste separation. The theoretical framework is created based on the different variable influencing community acceptance and behavioral.

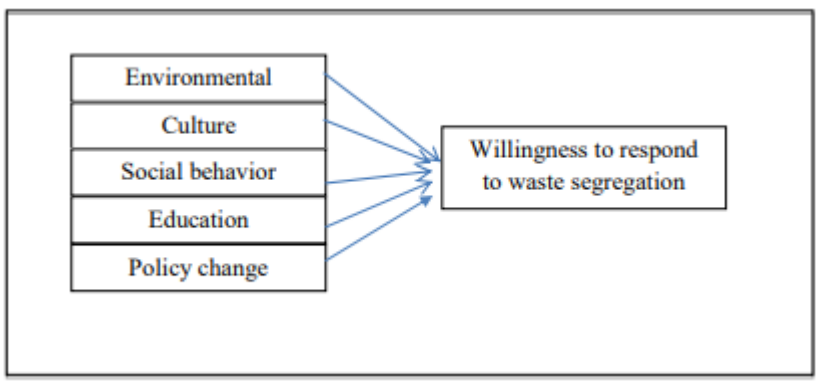

Figure 1: Theoretical Framework

3. Methodology and Analysis

This research is conducting by applying the quantitative research method as the study is dependent on the statistical data that will be collected from distributing the questionnaire to the mostly household in Melaka. According to Cresswell, J.W (2013), research methodological has three types which are qualitative, quantitative and mixed method. Quantitative analysis is defined as point up objective measurement, statistical, numerical or mathematical analysis of data collected through questionnaire, poll, and surveys or by manipulating the pre-existing statically data using the computational techniques (Babbie, 2010). The data were collected in the standard manner, where the statement of question that being ask are expressed clearly so that the respondent understood in the same way to ensure the data is valid. This methodology principally associated with survey research strategy and conducted using questionnaire. Questionnaire is a structured technique for data collection that consists of a series of questions, written or verbal, that a respondent answer.

3.1 Data Analysis

The questionnaire has been amended and validated by an expert prior to the commencement of actual data collection to obtain the authentic and useful information for the study. The reliability of questionnaires for pilot study was analysed by using reliability test in IBM SPSS Statistics software Version 21. After the actual data collection has been conducted, all the data and information gathered and analysed by using the same software to identify the descriptive analysis on community attitude and their knowledge on waste disposal separation; and Pearson correlation between the community participation on recycling programmed and their

attitude and knowledge on garbage disposal separation. The results will show in the form of descriptive statistics, frequency analysis, reliability analysis, regression analysis and Pearson correlation

3.2 Sample and Procedure

Melaka has been selected as a study area which was located 148 km southeast of Malaysia‟s city Kuala Lumpur with 1,664 hectares of the area. According to Department of Statistics (2015), there was about 872,900 numbers of populations in the study area. The sample size of respondents has been determined by using formula developed by Krejcie and Morgan (1970) will be targeted the total of 231 respondents. The respondents were randomly selected at the whole area of Melaka targeted active young adult generation that involve with daily waste. Sample size determination is the act of choosing the number of observations or replicates to include in the statistical sample. Hence, sample size is judged based on the quality of the resulting estimates, alternatively sample size may be assessed based on power of hypothesis test.

Sampling design is made up of two elements which are sampling method and estimator. Sampling method refers to the condition of rules and the procedure by which some elements of the population are included in the sample. Meanwhile the estimator‟s process is for calculating the sample statistics. Different sampling methods may use different estimators. Besides, there are two main types of sampling technique which is probability sampling and non-probability. Probability sampling is a technique of sampling in which the subjects of the population that have the equal opportunity to be selected as the representative sample. Non-probability sampling wherein, the researcher is not known that which individual from the population that will be selected as a sample.

3.3 Pearson Correlation Coefficient

Pearson Correlation Coefficients is used to measure the strength of the positive linear relationship between two variables. The correlation is estimated by the sample correlation coefficient, r. In this research Pearson Correlation Coefficient will be used to analyse the relationship between the variable and the five elements that is environment concern, culture, social behaviour, education and policy change. This element will use to determine the relationship between dependent variable which is the public acceptance toward waste separation at household level.

3.4 Multiple Regressions

Multiple Regressions analysis is used to test the finding in the relationship between the dependent variable and a set of independent variables. This technique will determine whether independent relate to the positive variation toward dependent variables. For this research, researcher will use this technique to analyse the relationship between the environment concern, culture, social behaviour, education and also policy change towards public acceptance on waste separation at household level.

3.5 Pilot Testing

Pilot test is using to verifying the major functionality of the system before going into production. Before the questionnaire are distribute, pilot tests are conduct to analyse whether the questionnaire are relevant and related to the research study. Pilot test also a small scale of the preliminary study conducted in

preparation for complete research. Apart from pilot testing, it is also a method to recognize the validity and reliability of the questionnaire. In Pilot Testing, a selected group of young adult tries the questionnaire test and provides the feedback before full deployment of the overall questionnaire. It also able for researcher to be determine which question that are failed to be answer by the respondent and require researcher to review the process again. It is the important stages in a research study to identify potential problem areas and any deficiencies in research instrument. With the used of Pilot Testing it helps in early detection of flaws in the questionnaire.

3.6 Validity

Validity based on Cooper and S.Schindler (2003) is the extent to which differences found with a measuring tools reflect true differences among respondents to be tested. There are two types of validity that are external validity and internal validity. External validity is defined as the data obtained can be generalized in larger group or context across persons, settings and times. While internal validity is the ability to measured what it is supposed to measure and affected by controlling some of the major variable. In this research external validity was tested on the pilot respondent to measure on whether the questionnaire was able to be understood. Internal validity is whether the construct of questions is correct. Every item must have the relevant questions to ensure the results are reliable.

3.7 Reliability

Reliability is an estimation of the degree of which the measurement is free or random or unstable. Reliability refers to whether your data collection techniques and analytic procedures would produce consistent findings if they were repeated by a different researcher according to Saunders et al, (2012). This will ensure that the broader scientific community will accept the hypothesis and emphasize the findings. To certify the questionnaire are reliable thus researcher need to ensure the pilot test conducted result are consistent.

4. Results and Discussion

The data that have been collected will be briefly explained in this chapter. The data will be tested and analyse using frequency analysis, descriptive analysis, the Cronbach‟s Alpha reading, also the multiple regression, correlation and significant values. The data that had showed will determine the relationship between the factors affecting the public acceptance towards waste separation at household level.

4.1 Reliability Analysis

For reliability analysis, researcher uses the Cronbach‟s Alpha to determine the inner consistency of the questionnaire that had been asked. The range of the Cronbach‟s Alpha coefficient is between 0 to 1. The greater the value of Cronbach‟s Alpha that closer to 1 the greater the internal consistency of the items in the

scales. Most common alpha‟s value is range from 0.70 to 0.95 consider good and acceptable. The result presented in Table 4.1, shows the reliability statistics for knowing the reliability values of 24 questions. There are five independent variable are being tested which are environment concern, culture, social behavior, education, policy change, and one dependent variable involve in this research which is willingness to respond. The pilot test is being tested on 30 respondents that covered majorly of young generation.

Table 4.1: Reliable Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.853	0.848	24

N=30

Table 4.1 shows that the Cronbach‟s Alpha coefficient for this research is 0.816 which had a good internal consistency with those 24 questions listed in the questionnaire regarding the independent variable and dependent variable of this research. From this Cronbach‟s Alpha result, it can be concluding that the results collected are consistent and reliable. Hence the data gathered from this questionnaire are accepted.

4.1 Descriptive Analysis

4.1.1 Members of Household

Table 4.2: Members of Household

Members of household	Frequency	Percentage
1-2 person(s)	22	9.5
3-4 persons	67	28.9
5-6 persons	96	41.4
More than 6	47	20.3
Total	**232**	**100.0**

Based on table 4.2 the researcher could obtain the highest percentage number of household members is at 41.4% having 5-6 persons at the frequency of 96. For the next second highest recorded at 28.9% which indicates the frequency of 67 number of respondents having 3-4 persons of household members. Next, 20.3% of the respondents are having more than 6 persons of household members with the frequency of 47 of the respondents. For 9.5% of the respondent stated that they are having 1-2 person(s) of household members, with the frequency of 22 numbers of respondents.

4.1.2 How Frequent to Disposed Waste Generated at Home

Table 4.3: Frequent to Disposed Waste Generated at Home

	Frequency	Percentage
Everyday	102	44
Once a week	50	21.6
Few times a week	66	28.4
Rarely	14	6
Total	**232**	**100.0**

From the table 4.3 which state the frequency to disposed waste generated at home, the highest percentage is at 44% with the frequency of 102 numbers of respondents disposed their waste every day. For 28.4% of respondent disposed their waste generated a few times a week, which recorded the frequency of 66 numbers of respondents. Next, 21.6% of respondents disposed their waste once a week with the frequency stated is at 50 and 6% of the respondent rarely disposed their waste generated at home which indicates 14 numbers of respondents.

4.1.3 Separations of Waste at Home

Table 4.4: Separations of Waste at Home

Waste Separation	Frequency	Percentage
Yes	193	83.2
No	39	16.8
Total	**232**	**100.0**

Based on the table 4.4, the researcher can state the highest percentage is at 83.2% which the respondents do not separate different types of waste at home at the frequency of 193 numbers of respondents meanwhile 16.8% of respondents do separate their waste at home which indicates the frequency of 39 respondents.

4.1.4 Descriptive Analysis of Independent and Dependent Variable

4.1.4.1 Environment Concern

Table 4.5 shows the means and standard deviation for the Environment Concern variable. In this variable all questions had achieved means more than 4.0. The lowest means recorded is at EC3 with 4.25 which the

respondents are asked about awareness of environment at their places. It shows that the respondents are slightly aware of their surroundings. Meanwhile, the highest means is at EC4 with 4.60, where respondent respond to the improper waste management increase the population of disease vectors.

Table 4.5: S Environment Concern

Item	Description	M	SD
EC1	Burning garbage would effect on health risks.	4.53	.637
EC2	Illegal dumping polluting the water bodies	4.54	.657
EC3	I am aware the condition of environment at my place.	4.25	.684
EC4	Improper waste management increases the population of disease vectors.	4.60	.533

4.1.4.2 Culture

Table 4.6 shows the means and standard deviation for the Culture variable. In this variable, all questions had achieved means more than 4.0. The lowest means is at CU2 questions which the respondents are asked about recycling habits. It shows that some of the respondents are not truly involve in recycling the items that can be reused. Meanwhile, the highest means is at CU1 which the recycle makes world a better place with 4.65 mean statistics.

Table 4.6: Culture

Item	Description	M	SD
CU1	Recycle makes world a better place.	4.65	.513
CU2	I often recycle the items that can be reused.	4.32	.590
CU3	It is important to separate plastic bottle and food leftover in different container.	4.45	.548
CU4	Waste separation cultures will successfully when everybody is doing that.	4.46	.595

4.1.4.3 Social Behavior

Table 4.7 shows the means and standard deviation for Social Behavior variable. In this variable all question had achieve means more than 4.0 except for SB1 and SB4 question which the respondent is asked about benefits of waste separation on their time and individual role in waste management. It shows that respondent is not well exposed to waste separation make them questionable for the worthiness of their time and their roles. The highest means is at SB3 with 4.18, where the respondents are aware of their responsibility to support the waste separation effort. This will give good feedback for future research about waste separation.

Table 4.7: Social Behavior

Item	Description	M	SD
SB1	Waste separation benefits are worth my time.	3.85	.761
SB2	Separations of waste help prevent wasteful behavior.	4.10	.741
SB3	It my responsibility to support in the waste separation effort.	4.18	.716
SB4	I play important role in waste management in the community.	3.98	.744

4.1.4.4 Education

Table 4.7: Education

Item	Description	M	SD
ED1	I know the goods of waste separation.	4.14	.801
ED2	I know the different between biodegradable and non-biodegradable waste.	3.91	.822
ED3	Information regarding waste management is important to educate citizen about waste.	4.36	.642
ED4	Public education about proper waste management is one way to reduce the problem.	4.44	.614

Table 4.8 shows the mean and standard deviation for Education variable. Most all the items achieve the means more than 4.0 which make the respondent satisfy with the question. The lowest means obtained is at 3.91 which at ED2 question. In ED2, respondent had been asked about the different between biodegradable and nonbiodegradable waste. It shows that respondents are still lack of knowledge regarding classify type of waste. Meanwhile, the highest means obtained in ED4 which is 4.44, shows that respondent are aware that public education is important to reduce the waste problem.

4.1.4.5 Policy Chance

Table 4.9 shows the means and standard deviation for Policy Change variable. In this variable all the question had achieved the means above 4.0. The highest means is at PC4, with the means obtained is 4.27. It shows that respondents are more anticipate towards new regulation regarding waste separation and supportive toward them. Meanwhile, the lowest means is at PC3 with 4.16 means statistics where the respondents had been asked about their participation in the new regulation of waste separation if they are being introduced. However, the means is not too low compared to others that shows respondent are participative towards waste separation efforts.

Table 4.9: Policy Chance

Item	Description	M	SD
PC1	Policy changes can make better improvement toward waste management.	4.19	.703
PC2	New regulation regarding waste separation should be enforcing.	4.25	.724
PC3	I will likely to participate if the new regulations regarding waste separation are being introduced.	4.16	.672
PC4	Poor support towards waste separation effort could lead to policy failed.	4.28	.728

4.1.4.6 Willingness to Chance

Table 4.10 shows the means and standard deviation for Willingness to Change variable. In this variable the entire question had achieved means above 4.0 which indicates the respondents are showing the positive respond towards waste separation. The highest means is at WR4, where the respondent had been asked about their engagement to receive more information regarding waste separation in future. It shows that, respondents are curious and want to learn more about waste separation and disposal. Meanwhile the lowest means obtained is at WR1 with 4.02. This shows that some respondents are still questionable whether it is practically or not to practice waste separation at home.

Table 4.10: Willingness to Chance

Item	Description	M	SD
WR1	It is practical for me to practice waste separation at home.	4.02	.732
WR2	I am willing to separate waste to make recycling more efficient.	4.04	.717
WR3	I am willing to corporate and participate in public awareness / public education programs.	4.12	.692
WR4	I like to receive more information about waste separation and disposal in future	4.24	.624

4.1.5 Multiple Regression Analysis

According to Saunders, Lewisand Thornhill (2016), multiple linear regression is extend from the simple linear regression which suitable for those research that aims to analyze one dependent variable with two or more independent variable.In other words, adjusted R square is a modification of R2 , it is only adjusting for the number of terms in a data set. The negative value in Adjusted R Square mean the data set have variable that do not facilitate in forecast the response, and it is good when the value is closer to 1. The Std. Error of the estimate is similar to the root mean squared error. In this research, researcher using multiple regression to analyze the relationship between independent variable (Environment Concern, Culture, Social Behavior, Education and Policy Change) towards dependent variable (Willingness to Change)

Table 4.11: Model Summary of Multiple Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.653[a]	.426	.413	1.63954
a. Predictors: (Constant), Policy Change, Culture, Social Behavior, Environment Concern, Education.				

Table 4.11 indicates the relationship the relationship between independent variable which are Environment Concern, Culture, Social Behavior, Education, Policy Change and Willingness to Change as dependent variable. From the result analysis using Multiple Regression Analysis (MRA), the Correlation Coefficient (R) value is 0.653 which have a moderate relationship. Its means that the respondent is not expose well to the factors affecting the public acceptance towards waste separation at household level. Moreover, positive sign of R implies a positive relationship. Besides that, the value of R square is 0.426, which means 42.6% of variance in public acceptance towards waste separation at household can be explained by the factors of environment concern, culture, social behavior, education and policy change. Therefore, the remaining percentage of R square that influence by other factors such as facilities, services and others. In other words, there are an external motivation factors than variables used for this research influenced the respondent's towards accepting the waste separation.

All the data and finding gathered through questionnaire among 232 respondents and had been analyzed through SPSS Version 23.0. The data analysis that had been used for this study consists of descriptive analysis (frequency), result of validity and reliability analysis, correlation, regression analysis, hypothesis and lastly the summary. Those useful data and information had been recorded into tables, figured and graphical presences. Besides, for the result of validity and reliability analysis, it used Cronbach"s Alpha value where 30 respondents had been chosen to carry out the reliability test. For Cronbach"s Alpha result, it will generate the result to determine either independent variables (environment concern, culture, social behavior, education and policy change) represented good result or not. Next, descriptive analysis is conducted to identify the variable for this research. Pearson"s Correlation Coefficient and Multiple Regression Analysis are conducted to find out the relationship between independent variable and dependent variable

5. Conclusion and Recommendation

The first research objective researcher could get reached with analysis of Pearson correlation coefficient and multiple regressions by using SPSS software. The result and finding shows that all independent variables (environment concern, culture, social behavior, education and policy change) are positively associates to dependent variable (willingness to change to waste separation at household level). However, only three independent variables were significant. There were culture, social behavior and policy change. The p values

that represent the significance were between 0.00 and 0.05 for all three variables. Meanwhile, the p value for environment concern and education was 0.038 and 0.059. Thus, the researcher concluded that culture, social behavior and policy change lead to the factor that affecting public acceptance towards waste separation at household level while environment concern and education does not much impact the factors that that affecting public acceptance towards waste separation at household level.

The multiple regression analysis also answered the research objective three by identifying the most significant value that represents most the most influencing factor that affecting the public acceptance towards waste separation at household level. The analysis also explained impact level of independent variables on dependable variable. The output of the regression began with R value which was 0.653 and the R Square coefficient 0.426. This proved that the factors had 42.6 percentage contributions to the willingness to change toward waste separation at household level. Meanwhile (100% - 42.6% =57.4%) was contributed by other elements in the willingness to accepting waste separation. The significant level in ANOVA which was 0.000 (below 0.005) signified that the multiple regressions were right choice of analysis to examine the factors that affecting public acceptance towards waste separation at household level. Moreover, the significant level of each independent variable had effect on willingness to change except for the environment concern and education. The significant value of policy change was 0.000 which the highest that signified the most influence relationship with the willingness to change towards waste separation at household level.

The outcome of the study was supported by the previous research by (Sreenivasan.Jet al, 2012). They stated that waste reduction is achievable through several levels. One of them is to reduce waste per capita with the support of government policy initiatives. Waste separation effort also useful to develop recyclable behavior among citizens. The statement proved that policy change make by higher authority gives huge impact towards willingness to change to waste separation.

Thus, the third objective was achieved through analysing the mean score and frequency table for the environmental concern questions that were included in the survey questionnaire earlier. The questionnaires are using 5 point Likert scale to show the degree of agreement to the statement. All the result is then correlated to the willingness to change toward waste separation to conclude regarding public awareness and environmental concern towards waste problem. This result was supported by the previous research done by Krajhanzl, (2010). It is stated that not all people are aware and concern about environmental issues at their surrounding and willingly to conserve the environment. Moreover, Neo.S, Chong.W and Rahmalan.A, (2015) state that people might concern about it but they do not doing it. They know what is better for environment but it does not comply with the intention to preserve it. People that are environmentally not practicing to care do not understand their actual roles to protect environment.

Few recommendations can be suggested by researcher for the future research. The researcher highly recommends the future study to conduct the research that can include sample in larger area of research. Besides that, through this research, it can achieve the accurate result of elements that given significant effect to the willingness to change to waste separation at household level. Besides that, future researchers need to know how to attract the respondent to answer the questionnaire with full attention. It is important to choose the right respondent so that the respondent can be reliable and answer the questionnaire with honest. This will give huge impact to the overall data collection. Moreover, researcher recommended to include larger number of respondent in future reseach. The number of respondent that is higher than 300 can obtained more accurate data and results. This is because, small number of respondent that covered up large area could lead

to the research imbalance. Lastly, the researcher highly recommended creating more independent variable so that it creates more factors that influencing public acceptance towards waste separation. This is because with more factors or variable should make the future study to understand more about waste separation. The more factors also can make the public have more choice while choosing the criteria in determining the acceptance towards waste separation.

Based on the research had been made which about the factors that affecting public acceptance towards waste separation at household, researcher can conclude that majority of the respondents are agree with the questionnaires that distributed to them. This can be seen in data analysis on chapter 4 which based on the result of hypothesis test; three over five independent variables such as culture, social behavior and policy change have a positive relationship with willingness to change to waste separation at household level. In addition, the factor or independent variable that mostly influenced the willingness to change to waste is policy change factor with the strongest correlation that is 0.536. Besides, environment concern among citizen towards separation waste is still considered low as they are not ready to the separation phase that took a lot of effort to success. Moreover, separation waste in Malaysia is not yet to be a culture hence the implement of the waste separation policy might be challenging. However, from the previous chapter, this can be concluded that culture, social behavior and policy change have a positive relationship with willingness to change to waste separation at household level. In addition, the factor or independent variable that mostly influenced the willingness to change to waste is policy change factor with the strongest correlation that is 0.536. All these three factors need to be focuses on to develop the separation behavior among citizen and also can benefit the future research.

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