The Determinants of Intention to Practise Solid Waste Segregation-at-Source among Selangor Households

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Abstract

The environment is increasingly under threat, especially when it comes to the serious problem of solid waste. It has become a challenging burden in most developing countries, including Malaysia. The aim of this research was to assess the levels of attitude, descriptive norm, injunctive norm, and intention to practise solid waste segregation-at-source, as well as to investigate their inter-relationships with the intention to practise solid waste segregation-at-source. 400 households in townships in nine districts in Selangor have been selected using a multi-stage sampling method. The present research has shown that a large group of households surveyed perceived a favourable attitude and a high level of intention to practise solid waste segregation-at-source. The results also revealed that the descriptive norm and the injunctive norm have a positive relationship with the intention to practise solid waste segregation-at-source. The research concludes with policy implications as well as recommendations for future directions of research.

Keywords: attitude, descriptive norm, injunctive norm, intention, solid waste segregation-at-source

1.0   Introduction

Solid waste segregation-at-source is seen as the most essential approach (Akil et al., 2017) in many rapidly growing towns and cities in developing countries (Banerjee & Sarkhel, 2020) to minimise the amount of solid waste generated before being transferred to waste disposal sites and landfills (Wang et al., 2020). However, household solid waste management is identified as a major barrier to local authorities in many urban areas around the world (Moh & Manaf, 2014). In this current context, the segregation of solid waste-at-source is interpreted as an act of distinguishing the different components of "useful" material from the waste stream on the basis of their different

categories at the location where it was produced prior to the collection of waste (Iacovidou et al., 2019).

Statistically, solid waste generation is increasing by more than 90 per cent, with the growing population in Malaysia every 10 years. While the number of solid waste generation is projected to reach 30 000 tonnes by 2020, Malaysian households have, unfortunately, already generated approximately 33 000 tonnes of household waste per day in 2012 (Aja & Al-Kayiem, 2014) compared to approximately 18 000 tonnes in the last 10 years.

Compared to previous literature, research on the attitude and intention of a household to segregate solid waste-at-source is rare. To date, existing literature has explored a variety of general environmental behaviours, including the combination of transport, energy, and food consumption behaviour (Gatersleben et al., 2014), energy-saving behaviour (Ajzen et al., 2011), and recycling (Nigbur et al., 2010). In general, these previous researchers have agreed that attitude is an important predictor of behavioural intention. Unfortunately, it was found that although the individual has a positive attitude towards recycling, they have not been able to practise such positive behaviour that can improve the quality of their natural environment (Cheng & Osman, 2019). This situation explains that people tend to take longer to break old traditions and change their current attitudes and practices (Albaracin & Shavitt, 2018). In addition, Trang et al. (2019) have pointed out that consumers tend to have a negligible attitude towards sustainable products in developing countries. These varied research findings call for a more in-depth investigation of the current scenario regarding the intention to segregate solid waste-at-source among households in Selangor.

The influence of the descriptive norm on individual behaviour is a classical concern for research in the field of social psychology (Ioannou et al., 2013). General research has shown that telling people what other people commonly do is an effective way to bring about some changes in some of the targeted behaviours in a group of individuals, including pro-environmental behaviour (Goh et al., 2017). A few researchers have found that the descriptive norm has an effect on environmental behaviour (Van Cauwenberg et al., 2018). There are also some recommendations for considering the descriptive norm for predicting recycling behaviour (Eriksson & Forward, 2011). To date, however, no existing academic research (Elgaaied-Gambier et al.,

2018) has examined the causal relationship between the descriptive norm and the intention to practise solid waste segregation-at-source.

Besides the descriptive norm, it is worth noting that no previous research has investigated the injunctive norm for understanding the intention of segregating solid waste-at-source. In fact, understanding which injunctive norm feedback is very useful to help guide the formation of certain pro-environmental behaviours in the local communities (Merrill et al., 2016). For this reason, similar research related to energy saving (Ertz et al., 2016; Meijer et al., 2015), excessive drinking (Gronhoj & Thogersen, 2012), and green behaviour (Johe & Bhullar, 2016; Wan & Shen, 2015) has been undertaken with a view to provide an exciting opportunity to fill the literature-based research gap.

As a result, based on the research issues discussed above, the present research aimed at assessing levels as well as interrelationships of attitude, descriptive norm, injunctive norm, and the intention to practise solid waste segregation-at-source between households in Selangor, Malaysia. More specifically, the proposed conceptual framework is shown in Figure 1 and the following are the hypotheses developed for this research:

H_a1: There is a significant relationship between a household's attitude and the intention to practise solid waste segregation-at-source.

H_a2: There is a significant relationship between a household's descriptive norm and the intention to practise solid waste segregation-at-source.

H_a3: There is a significant relationship between a household's injunctive norm and the intention to practise solid waste segregation-at-source.
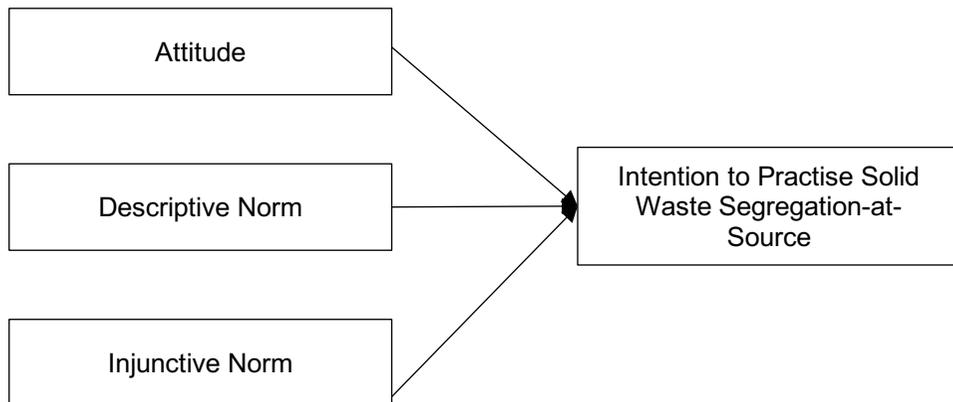
Figure 1 : Proposed Conceptual Framework

2.0   Literature Review

There is an abundance of factors that have been identified related to the extent to which households' intention to practise solid waste segregation-at-source through various previous similar research. This current research focuses on several correlations of intention to practise solid waste segregation-at-source, including attitude, descriptive norm, and injunctive norm. Extensive discussions take place as follows:

2.1   Attitude and Intention to Practise Solid Waste Segregation-at-Source

Previous researchers have shown that personal attitudes play a significant role in promoting the individual's intention to practise pro-environmental behaviour (Li et al., 2018; Pan & Truong, 2018; Pan et al., 2018; Zen et al., 2013). Similar research on household waste sorting practices conducted among 413 households in China concludes that residents with positive and favourable personal environmental attitudes will have higher intentions to participate in household solid waste segregation-at-source (Zhang et al., 2019). This observation is consistent with the findings of the research conducted by Tonglet et al., 2004). Thus, in the context of this current research, the researcher concludes that the intention to segregate solid waste-at-source is mainly catalysed by a personal environmental attitude towards the recycling of solid waste. The present research also proposes that effective awareness-raising programmes should be

organized on a regular basis, with a view to generate a higher intention of practicing segregation of solid waste-at-source among Selangor households.

2.2 Descriptive Norm and Intention to Practise Solid Waste Segregation-at-Source

Nigbur et al. (2010) noted that a descriptive norm could be used to test the respondent's intention to participate in the kerbside recycling programme. These authors further clarified that, in their research, when 527 households in the United Kingdom were asked to what extent they thought their neighbours had a commonly perceived high level of intention to recycle, these specific circumstances tend to lead local households to demonstrate a higher level of intention to recycle in their neighbourhood. The research findings are parallel to the other two papers written by Thomas and Sharp (2013) as well as Thomas et al. (2004). For example, a survey involving 2000 citizens in Western Riverside, London, found an increase in the number of people thought to be practicing recycling from the perceived average of 25 per cent (2002) to 34 per cent (Thomas et al., 2004). Similarly, in Hampshire, 57 per cent of citizens surveyed in 2005 believed that recycling was often practiced by the majority of residents in their neighbourhoods, up from 48 per cent (2004) (Thomas & Sharp, 2013). As a result, current research postulates that households in Selangor will have a higher level of intention to segregate solid waste-at-source if and only if they believe that most people in their housing estates have the same intention.

2.3 Injunctive Norm and Intention to Practise Solid Waste Segregation-at-Source

It is important to note that the injunctive norm had a direct and positive effect in predicting the intention to conserve energy use. In a research by Chen and Knight (2014), 564 employees from nine electrical companies in China were sampled in order to elaborate on the important role of the injunctive norm on energy conservation behavioural intention among their close colleagues. Both researchers focused solely on the injunctive norm rather than the descriptive norm in their research because they believed that the injunctive norm could have a greater impact or long-term effect on environmental behavioural intentions in different situations. In line with their expectations, their

final data showed that the most potent of all variables was the injunctive norm, i.e. the perception of close disapproval of colleagues or the approval of employees' intention to conserve energy at work. In other words, if the surveyed Chinese employees see a stronger approval of the intention to conserve energy among their employees, they will have a greater intention to conserve energy in their workplaces. The trend in this research finding is also consistent with similar research settings (Greaves et al., 2013). As a result, the present researcher assumes that when a group of individuals engages in a specific action that is commonly approved within a culture, the group of individuals will have a higher intention of following suit.

3.0   Research Methodology

3.1   Population and Sampling Design

Residents living in the townships in nine districts in Selangor, namely Sabak Bernam, Ulu Selangor, Kuala Selangor, Gombak, Ulu Langat, Petaling, Klang, Kuala Langat, and Sepang were targeted for this research. The estimated total number of residents was 6,528,400 in 2018. It consisted of 3,395,400 males and 3,133,000 females (Department of Statistics Malaysia, 2020). However, in terms of time, cost, and human resources, it is impossible to investigate every single element of the population as a whole (Singh, 2006) in Selangor. There is therefore a need for an appropriate number of respondents to be included in the research selection process (Malhotra, 2013) rather than a complete census.

In this research, the number of target respondents was initially identified using the sample size determination equation proposed by Yamane (1967), that is 400 respondents. Next, a multi-stage sampling method was used as a sampling technique throughout the research. During stage one, in order to complement the present scope of research, Selangor was selected as a research location on the basis of its unique criteria and background using a purposive sampling method. Subsequently, the sampling procedure was followed by the use of a disproportionate stratified random sampling method to determine the number of targeted respondents in each district in Selangor, as shown in Table 1.

Table 1 : Calculation of the target number of respondents in the nine districts in Selangor

District	Sampling Fraction		Final Sample Size
Sabak Bernam	$\dfrac{126\ 100}{6\ 528\ 400}$	x 400	8
Ulu Selangor	$\dfrac{237\ 600}{6\ 528\ 400}$	x 400	15
Kuala Selangor	$\dfrac{251\ 200}{6\ 528\ 400}$	x 400	15
Gombak	$\dfrac{815\ 200}{6\ 528\ 400}$	x 400	50
Ulu Langat	$\dfrac{1\ 370\ 200}{6\ 528\ 400}$	x 400	84
Petaling	$\dfrac{2\ 157\ 000}{6\ 528\ 400}$	x 400	132
Klang	$\dfrac{1\ 025\ 100}{6\ 528\ 400}$	x 400	63
Kuala Langat	$\dfrac{270\ 100}{6\ 528\ 400}$	x 400	17
Sepang	$\dfrac{256\ 900}{6\ 528\ 400}$	x 400	16

After obtaining the exact number of targeted respondents at each research site, a systematic sampling method was used as the final stage of the sampling procedure. Therefore, the sample was chosen by selecting a random starting point at the research location, regardless of race, gender, language, or religion. The selection of each 10th element was followed consecutively to complete the questionnaire. In other words, the sampling unit would be 10, 20, 30, 40 and so on until the target number of respondents for a specific district had been reached to answer the questionnaire.

On the basis of the willingness of the respondents to participate in this research, the researcher needed to identify potential respondents based on five screening questions as follows:

i. Are you a citizen of Malaysia?
ii. Are you eighteen years old and above?
iii. Do you have a mental health problem?
iv. Are you the one who manages the solid waste at home?

v. Are you a permanent resident of Malaysia? If yes, have you been living at the specific research location for more than five years?

3.2 Research Instrumentation

Quantitative data from this research were collected using a self-administered bilingual questionnaire to obtain a general overview of attitude, descriptive norm, injunctive norm, and the intention of households to practise solid waste segregation-at-source in Selangor, Malaysia. The questionnaire consisted of five sections and was constructed based on the research framework, as shown in Figure 1. The discussion on the measurement of variables is presented as follows:

3.2.1 Respondent's Particulars

The respondents were asked to state their socio-demographic and socio-economic characteristics which included age, sex, ethnic group, highest certificate obtained at school, college, or university, and monthly household income.

3.2.2 Attitude

This research measured attitude using the instruments developed by Ayob et al. (2017), Babaei et al. (2015), Ioannou et al. (2013) as well as Ramayah et al. (2012) based on the Malaysian context. The instrument consisted of fourteen statements and was measured on the basis of a 5-point Likert scale ranging from "1" for "strongly disagree" to "5" for "strongly agree". This was used to indicate the degree of agreement or disagreement between the respondents in each statement. In other words, the respondents were required to assess whether they agreed with the statements by matching their responses to the five response categories in an attempt to reflect their attitude to the intention to practise solid waste segregation-at-source.

3.2.3 Descriptive Norm

Twelve positive statements were designed to investigate the descriptive norm of the respondents with regard to the intention to practise solid waste segregation-at-source. The descriptive norm was measured using the questionnaire proposed in previous researches (Culiberg & Elgaaied-Gambier, 2016; Eriksson & Forward, 2011;

Fornara et al., 2011; Jacobson et al., 2015; Kobis et al., 2016; Koeneman et al., 2017; Lapinski et al., 2017; Park et al., 2009).

It was noted that the rates of the respondents ranged from 1 for "never" to 5 for "always". Respondents were requested to indicate how well each of the twelve different statements described them in a five-point response format. A total of the score would be computed in an attempt to analyse the descriptive norm with the intention to practise solid waste segregation-at-source. Subsequently, the score range was between a minimum score of 12 and a maximum score of 60. As a result, the higher score corresponded to a better descriptive norm on the intention to practise solid waste segregation-at-source.

3.2.4 Injunctive Norm

Twelve positive statements adapted from Fornara et al. (2011), Krieger et al. (2016), Leavens et al. (2018), and Minton and Rose (1997) were used to measure injunctive norm with the intention to practise solid waste segregation-at-source. This section measured how the injunctive norm could have an impact on the intention to practise solid waste segregation-at-source. The five-point Likert-type scale ranging from 1 for "strongly disapprove" to 5 for "strongly approve" was used to rate the respondents' response to the statements in this section. The total score of this construct was then calculated in order to interpret the raw scores in a more manageable manner. Subsequently, the total scores were further broken down into three categories, namely Low (12-27), Moderate (28-44), and High (45-60). To conclude, the higher the score, the higher is the injunctive norm with the intention to practise solid waste segregation-at-source.

3.2.5 Intention to Practise Solid Waste Segregation-at-Source

In this research, eight closed-ended questions were used to measure the intention to practise solid waste segregation-at-source, reflecting the tendency of respondents to perform repeated actions to segregate unwanted household solid waste based on their different recycling potentials. Measurements for the dependent variable were adapted from Ayob et al. (2017), Ghani et al. (2013), and Ioannou et al. (2013). As a result, the five-point Likert scale, which ranges from 1 for "strongly disagree" to 5 for "strongly agree" is used to measure the current dependent variable in this research. As a result, the higher the

score, the higher the respondent's intention to practise solid waste segregation-at-source.

3.3 Reliability of Measurements

The Cronbach's alpha reliability test was conducted on attitude, descriptive norm, injunctive norm, and intention to practise solid waste segregation-at-source to the internal consistency reliability of the items used in the survey instrument. Based on the rule of thumb for the reliability test, the reliability coefficients should be 0.700 or higher (Christie & Higgins, 2012) to show that the necessary data is reliable and valid. However, Bagozzi and Yi (1988) argued that the value of 0.600 was still acceptable for exploratory research. Table 2 shows the summary of Cronbach's alpha reliability for the pre-test and the actual test for this research. According to Table 2, the reliability coefficients of the four variables are beyond 0.700, thus indicating that all the variables were of higher internal consistency to perform the next stage of data analysis.

Table 2 : Reliability test

Variable	Items Analysed	Cronbach's Alpha Reliability	
		Pre-test	Actual test
Attitude	14	0.779	0.741
Descriptive norm	12	0.919	0.783
Injunctive norm	12	0.940	0.934
Intention to practise solid waste segregation-at-source	8	0.919	0.890

3.4 Validity

Face validity is one of the approaches to establishing validity. It refers to a subjective judgement on the operationalisation of construct and judgement, which may be made by non-experts, including pre-test respondents (Hardesty & Bearden, 2004). Thus, feedback from the participants' pre-test was also used to validate the instrument (Bordens & Abbott, 2017). In the meantime, in order to ensure the high appropriateness of this current research, a panel of experts in the fields of consumer behaviour, consumption economics, and housing were gathered to evaluate the instrument before the pre-test. Changes have

been made on the advice of the experts to ensure consistency in the phrases used.

Secondly, the content validity refers to the extent to which the measure covers the breadth of the domain of interest. It addresses the correspondence between the test questions and the variables to be evaluated (Kimberlin & Winterstein, 2008). This concept of match is sometimes interpreted as alignment, with reference to the test variable (Borsboom et al., 2004). As a result, the bilingual questionnaire used in this research was derived from previous literature, either through adoption, adaptation, or slight modification to make it relevant to the current research scope (Cheng et al., 2019).

The criterion validity is the ability of the measure to be correlated with other standard measures of similar constructs or criteria. The researcher must ensure that the measurements used are practical throughout the research. Accordingly, the criterion validity was applied in this research using the results of the correlation coefficient. The higher the correlation, the higher the validity of the instrument (Twycross & Shields, 2004).

4.0 Data Analysis and Discussion

4.1 Respondents' Particulars

Table 3 demonstrates the detailed characteristics of socio-demographic and socio-economic distributions of 400 respondents. The data collected included 37.0 per cent of male and 63.0 per cent of female households. The youngest and oldest respondent in this sample were 21 and 78 years old respectively. The Bumiputera respondents were the largest ethnic group in the sample (72.8%). With respect to the respondents' highest certificate obtained at school, college, or university, 69.5 per cent of the respondents had at least a bachelor's degree. In addition, 24.8 per cent of the respondents' household monthly income ranged from RM3001 to RM5000. However, 46.5 per cent of respondents had household incomes below RM3000 every month. They were therefore eligible for the Cost of Living Aid (BSH) subsistence allowance under the 2019 Annual Budget.

Table 3 : Distribution of respondents' particulars

Item	Number of Respondent	Percentage (%)
Sex		
Male	148	37.0
Female	252	63.0
Age (years old)		
≤ 20	7	1.8
21 – 30	177	44.3
31 – 40	39	9.8
41 – 50	93	23.3
51 – 60	73	18.3
> 61	11	2.8
Ethnic Group		
Bumiputera	291	72.8
Chinese	95	23.8
Indian	8	2.0
Others	6	1.5
The Highest Certificate Obtained at School, College, or University		
UPSR	0	0.0
LCE/*SRP/PMR/PT3*	0	0.0
MCE/*SPM/SPM(V)*	3	0.8
Certificate/HSC/*STP/STPM*	66	16.5
Diploma	11	2.8
Bachelor's Degree	278	69.5
Master's Degree or Ph.D.	42	10.5
Monthly Household Income		
≤ RM3000	186	46.5
RM3001 – RM5000	99	24.8
RM5001 – RM7000	44	11.0
RM7001 – RM9000	20	5.0
> RM9000	51	12.8

4.2 The Levels of Attitude, Descriptive Norm, Injunctive Norm, and Intention to Practise Solid Waste Segregation-at-Source

According to Jitrumluek, Falcioni, Thiengkamol, and Thiengkamol (2019), attitudes can be grouped into unfavourable (14 – 41) and favourable (42 – 70) attitudes. Overall, a large group of Selangor respondents (99.0%) have a favourable attitude. However, 1.0 per cent of respondents have an unfavourable attitude with regards to the intention to practise solid waste segregation-at-source in Selangor. Accordingly, under this circumstance, the results can be concluded that most individuals have a favourable attitude category. In

other words, they have a positive attitude with regards to the intention to practise solid waste segregation-at-source.

The mean summated scores of the descriptive norm are further defined in three categories – Low (12 – 27), Moderate (28 – 43), and High (44 – 60). All of these categories are based on a formula adapted from Tohar et al. (2011). There were 51 respondents (12.8%) who were perceived to have a low level of descriptive norm with regards to the intention to practise solid waste segregation-at-source. Subsequently, 66.5 per cent and 20.8 per cent of respondents were identified at moderate and high levels of the descriptive norm respectively. Accordingly, these results indicate that there was a higher percentage of respondents (66.5%) in Selangor who perceived a moderate level of descriptive norm in their intention to practise solid waste segregation-at-source as a daily environmentally friendly practice.

In order to interpret the raw scores in a more manageable manner, the raw scores of the injunctive norm were classified in proportion to the ranges of values (Varikoden et al., 2011) by adapting the formula used by Tohar et al. (2011). The mean summated scores were further divided into three categories – Low (12 – 27), Moderate (28 – 43), and High (44 – 60). There were 7.3 per cent of respondents who felt that they had a low level of injunctive norm with regards to the intention to practise solid waste segregation-at-source. Subsequently, 52.5 per cent and 40.3 per cent of respondents were identified at moderate and high levels of the injunctive norm respectively. In other words, there was a higher percentage of respondents (52.5%) living in Selangor who had a moderate level of injunctive norm with regards to the intention to practise solid waste segregation-at-source.

Finally, the results for the dependent variable i.e. the intention to practise solid waste segregation-at-source, are further categorised into three levels – Low (8 – 18), Moderate (19 – 29), and High (30 – 40). The majority of respondents (74.5%) felt that they had a high level of intention to practise solid waste segregation-at-source. The number of respondents in the high group was approximately three times higher than the number of respondents in the moderate group. Only 25.5 per cent of the total number of respondents recognised that they had a moderate level of intention to practise solid waste segregation-at-source. No Selangor respondents (0.0%) were identified in the low-level group in this research.

4.3 Hypotheses Testing

This section examines all the hypotheses developed in this research. The Pearson correlation analysis was administered to measure the degree of relationship between the independent variables (attitude, descriptive norm, and injunctive norm) and the dependent variable (intention to practise solid waste segregation-at-source). Table 4 shows the Pearson correlation analysis for the relationship between the selected variables and the intention to practise solid waste segregation-

Table 4 : Pearson correlations between the independent variables and intention to practise solid waste segregation-at-source

Variable	Intention to practise Solid Waste Segregation-at-Source	
	r-value	*p*-value
Attitude	0.074	0.139
Descriptive Norm	0.104*	0.038
Injunctive Norm	0.317***	0.000

Note: * Significant at $p \leq 0.05$ level. *** Significant at $p \leq 0.001$ level.

Hypothesis H_a1 suggested that the attitude has a significant relationship with the intention to practise solid waste segregation-at-source among households living in Selangor. Surprisingly, the results shown in Table 4 were inconsistent with the proposed hypothesis by showing an insignificant relationship at 0.05 level (two-tailed) as denoted by $p = 0.139$ ($p > 0.05$) and $r = 0.074$, which postulate that there is an insignificant relationship between a household's attitude and the intention to practise solid waste segregation-at-source in Selangor. Consequently, Hypothesis H_a1 was not supported.

In this current research, the attitude of Selangor households was found to be insignificant in their intention to engage in solid waste segregation-at-source. The present researcher has assumed that this could be due to the fact that more than one-fifth of the respondents felt uneasy about this specific intention, as it required more effort and time. However, the findings observed in this current research seem to contradict previous research. For example, Pan et al. (2018) found that there is a significant relationship between the attitude and intention to act in a responsible environmental behaviour. The research finding was based on the assumption that the variable attitude exercises considerable influence over the intention to act responsibly on the environment among university tourism students in Taiwan. A further

empirical study conducted by Trang et al. (2019) with more than 309 hotel guests also found that the pro-environmental attitude of the customers significantly affects their intention to practise environmentally friendly activities in a green hotel. Besides the research in the field of travel and tourism marketing, Polk (2003) found that women were more aware of negative environmental impacts and of the intention to reduce car use on a daily basis. In Los Angeles, female citizens tend to display a higher level of pro-environmental attitude, which in turn could have a greater impact on their common transport preferences to more sustainable ones compared to male citizens. For example, cycling, walking, and public transport are used instead of private vehicles (Hsu et al., 2019; White & Sintov, 2017).

The second hypothesis was tested using Pearson correlation analysis, which analysed the relationship between the descriptive norm and intention to practise solid waste segregation-at-source. Hypothesis H_a2 suggested that there is a significant relationship between the descriptive norm and intention to practise solid waste segregation-at-source in households in Selangor. Based on the outputs shown in Table 4, the results showed that there was a significant relationship between the descriptive norm and intention to practise solid waste segregation-at-source, as denoted by $p = 0.038$ ($p < 0.05$) and $r = 0.104$. As a result, Hypothesis H_a2 was supported because the significant value was less than 0.05.

The value of the correlation coefficient (r) showed the strength of the significance of the relationship. According to Cohen (2013), the r-value above 0.50, between 0.30 and 0.49, as well as below 0.30, was considered to be "large", "moderate", and "small" relationship respectively. In the context of this research, the r-value was 0.104. The strength of this significant relationship is therefore seen as a "small" relationship.

In the meantime, the positive r-value has shown that the relationship between the descriptive norm and intention to practise solid waste segregation-at-source has been positive. The present research assumes that when Selangor households have had more influence on the descriptive norm, they tend to have a positive intention to practise the solid waste segregation-at-source (Cheng et al., 2021; Collado et al., 2019; Gronhoj & Thogersen, 2012). In the same vein, Viscusi et al. (2014) argued that the descriptive norm had a significant positive effect on the household recycling intention. On the other hand, this research finding was unparalleled with previous researchers, in

particular Yeomans and Herberich (2014), who disclosed that the descriptive norm was insignificant with the decision to inflate tyres to improve fuel efficiency among 700 gas station customers in the United States of America. However, the influence of the descriptive norm could appear to have a strong impact on the individual's pro-environmental behaviour (Reese et al., 2014), waste reduction behaviour (Reese et al., 2013), and recycling intention (Geiger et al., 2019).

An examination of the correlation between the injunctive norm and intention to practise solid waste segregation-at-source was also carried out, as shown in Table 4. Interestingly, the results revealed that the injunctive norm showed a positive significant relationship in the prediction of intention to practise solid waste segregation-at-source at a 0.001 level (two-tailed) as denoted by $p = 0.000$ ($p < 0.001$) and $r = 0.317$. In this case, there has always been a significant relationship between the independent variable and dependent variable if the p-value is less than 0.001. In conclusion, the Hypothesis H_a3 was supported. As a result, the present research assumes that an increase in the positive injunctive norm can largely be attributed to an increase in their intention to practise solid waste segregation-at-source. However, based on Cohen's (2013) rule of thumb, $r = 0.317$ means that there was only a "moderate" relationship between the injunctive norm and intention to practise solid waste segregation-at-source as the r-value of Hypothesis H_a3 was between 0.30 and 0.49.

This finding was found to be somewhat inconsistent with the findings of previous research. For example, Fornara et al. (2011) and Smith et al. (2012) concluded that the injunctive norm variable was insignificant for a variety of pro-environmental behaviours, including the intention to recycle, self-reported recycling behaviour, and intention to conserve energy among residents in European countries. In particular, affluence may demotivate pro-recycling intentions among respondents due to unenforced legislation regulating the responsibility of the extended producer or the highly disruptive recycling infrastructure (Van Beukering & van den Bergh, 2006). These factors would make environmentally friendly practice time-wasting for them. Similarly, the existence of such demotivating scenarios strongly encourages residents to view their original attitudinal provisions for recycling practices as obstacles (Echegaray & Hansstein, 2017).

5.0   Conclusions, Policy Implications, and Recommendations

This current research was designed to examine attitude, descriptive norm, injunctive norm, and the intention to practise solid waste segregation-at-source among households in Selangor, Malaysia. Respondents were perceived as having a favourable attitude and a high level of intention to practise solid waste segregation-at-source. However, throughout the research they were moderately influenced by the descriptive norm and injunctive norm. Subsequently, the relationship between these key variables was confirmed by a Pearson correlation analysis. Relative results have shown that there have been significant relationships between the households' descriptive norm and injunctive norm with the intention to practise solid waste segregation-at-source only.

On the other hand, the present research was considered to be one of the leading research in Malaysia, and the findings of the research were therefore expected to contribute to the development of a good and reliable data set for non-governmental organisations and voluntary bodies with regard to the intention of practicing solid waste segregation-at-source, in line with the Shared Prosperity Vision 2030 and Sustainable Development Goals. Essentially, the Waste Management Association of Malaysia, Friends of the Earth Malaysia, Malaysian Nature Society, and Greenpeace Malaysia could potentially benefit from this current research and thus work collaboratively to support the solid waste segregation-at-source policy at the social level. Social workers may plan certain community activities to help local households effectively segregate their domestic solid waste. This effort is in line with the findings of the present research, which reported that a higher percentage distribution of respondents could potentially be moderately influenced by the descriptive norm (66.5%) and injunctive norm (52.5%) to inculcate the intention to practise solid waste segregation-at-source as their daily routine. Relevant programmes should therefore be organised frequently in order to strengthen the sense of responsibility in households in order to maintain environmental cleanliness in Selangor, Malaysia.

Ultimately, although the current sampling of potential respondents was sufficient to achieve the objective of this research conducted in Selangor, the generalisation of results to the population as a whole in terms of urban and rural areas in Malaysia is still not guaranteed. This scenario may be due to the perception of local citizens, the availability of local technologies and facilities, as well as

local cultures and educational backgrounds. It therefore suggested that future researches could be more focused across a larger geographical boundary to explain the reliability, validity, and generalisability of the currently studied variables to the different settings of the research location as an effort to better understand this phenomenon.

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