Household food wastage prevention in Malaysia: An Issue Processes Model perspective

(Pencegahan pembaziran makanan bagi isi rumah di Malaysia: Perspektif Model Proses Isu)

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Abstract
Food waste has been a worldwide concern for several decades, but this problem is relatively new in Malaysia context due to increasing amount of food waste in recent years. A total amount of 3,000 tonnes edible food that is still good to consume has been dumped in landfills everyday in Malaysia. Thus, the goal of the study is to provide basic information of knowledge and involvement level and their interaction in food waste prevention among households in Malaysia. This study seeks to further mass communication research in the area of food waste prevention. The Hallahan's Issues Processes Model was used in this study to determine the relationship between knowledge, involvement and food waste prevention behaviour. The convenience sampling method was adopted and the surveys were conducted using the online survey tool, Qualtric. A total of 1,047 respondents was involved in this study. The results supported the hypotheses that the level of knowledge has a positive impact on food waste prevention behaviour only if the households' involvement is high and vice versa. According to this model, Malaysian households fall under the category of an active public, because they recognize the negative consequences and their acceptance that food waste prevention is personally relevant in their daily life. Overall, in term of food wastage prevention relationship, knowledge regarding household food waste has a significant correlation with food waste prevention behaviour (β = .330, t = 3.538, p = .000).

Introduction

Food wastage is now becoming a global phenomenon. Statistics imply an estimated one-third of edible food meant for human consumption is thrown away globally. This constitutes roughly 1.3 billion tons each year (FAO 2011). In the United States alone, the amount of food waste in 2013 reached 37 million tons, where only 5% of that amount (1.84 million tons) was recovered, while the balance, 35 million tons of waste were sent to landfills and incinerators (EPA 2016). Parfit et al. (2010) states that food losses occur at the end of the food supply chain due to behaviour patterns by retailers and consumers. Thus, food and inedible

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parts of food are not included since waste is measured by the food related to human consumption. *Figure 1* shows the overall of food supply chain process.

According to FAO (2014), definition of food loss is defined as 'the decrease in quantity or quality of food'. Food waste is part of food loss and it refers to the food and non-food that have been discarded that still safe and nutritious for human consumption along the entire food supply chain, from primary production to end household consumer level. Food waste is recognised as a distinct part of food loss because the drivers that generate it and the solutions to it are different from those of food losses. High income countries such as Europe contribute the highest rate of food waste from the distribution and consumption level (i.e. household level). In lower income countries such as Sub-Saharan Africa, food losses stem during agricultural and post-harvest stages (Kummu et al. 2012; Parfit et al. 2010). The negative consequences of food waste have been identified as three major aspects: social/ethical, environmental and economic.

Factors influencing food waste

Lately, an increase in attention on food waste problems within the academic and social levels are visible. Radzyminsa (2016) mentioned that the number of studies that indicate food waste as a result of irresponsible behaviour in society has increased. Such studies revealed that food consumption behaviour (e.g. waste reduction, reuse and recycling) are crucial aspect in addressing the food waste problem. At an individual level, it is recognized that people could shape their own behaviours through informed decision making (USAID 2012). Furthermore, Stern (2000) argues

that "behaviours impacting the environment are environmentally significant behaviours whereby changes in behaviour patterns are insufficient in deciding environmentally significant behavioral indicators."

In developed countries, food loss and waste are highly related to consumer behaviour, while the relationship is less certain in developing countries (FAO 2011). The main reason behind this predicament is that in developing countries, it is considered economically and morally unacceptable to waste food where poverty and low-income levels still prevail. In developed countries, the mindset of consumers is the opposite. Nevertheless, drawing public attention to waste reduction is essential during the initial phase in stimulating behavioural change in a developing country.

Research demonstrates that the total quantity of household food waste generated varies as a function of several factors, including household size and composition (WRAP 2009a), household income (Brook 2007), household demographics (Hamilton et al. 2005) and household culture (Parfit et al. 2010). Waste and Resources Action Program (WRAP) research revealed that four main causes of waste food are supermarkets, poor planning/food management, lack of skills and personal choices and lifestyles (WRAP 2007). WRAP (2007) also identified a set of specific reasons for home food waste, including:

a) Excessive purchases – being tempted by sales such as 'buy one, get one free' (BOGOFs)
b) Increasing perishable food purchases – a result of attempting to eat healthier
c) Inadequate food organisation – not eating food in date order
d) Impromptu, rather than methodical, 'spring cleaning' of stored products
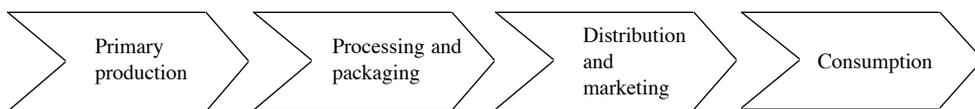
Figure 1. Food supply chain process

e) Hypersensitive to expiration date – won't risk eating food near to its 'best before' date, even if it looks fine
f) Preparing more food than necessary
g) Too fussy with food choices
h) Lifestyle choices – too busy to plan meals or having inconsistent work and social patterns.

Food waste scenario in Malaysia
Drastic economic development, coupled with rising commercialisation and urbanisation, has resulted in large and increasing amounts of food waste in Malaysia. Malaysia wastes 15,000 tons of food daily, including 3,000 tons that are still good for consumption and should not have to be discarded (The Star 2016). The average Malaysian throws away 1.64 kg of waste daily, compared to the worldwide average of 1.2 kg. The above statistics shows alarming, as Malaysia's waste production will increase by 65% to 30,000 tons daily by the year 2020 (Khor 2014). Unconsumed food waste that consists of expired bread, rotten fruits and eggs (not including leftover food) have doubled over the past three years (Jereme et al. 2016).

Bearing critical importance to the food chain is food waste produced at the household level (i.e., waste from private domestic accommodation or residential homes). This is due to the fact that households contribute the highest percentage of food waste generated in Malaysia (*Table 1*) compared to the developed countries (Parfit et al. 2010; Sharp et al. 2010). Differences in income levels is an important influencing factor that contributes to the amount of food waste, with the total amount of food waste higher in urban areas than rural areas (Jereme et al. 2016).

A study conducted by the Solid Waste and Public Cleansing Management (SWCorp) ascertained that on average, each individual meal generated 0.45 kg food that still be consumed per day. Based on this calculation, approximately 15,000 tons of food waste can provide three meals a day to 11 million people (Mohd Pauze 2015). In responding to this issue, the government has taken a proactive way by initiating Save Food Malaysia (MYSaveFood) program in 2015 to spur and nurture constructive efforts in reducing food loss and waste in Malaysia. The current players of MYSaveFood Network include Malaysian Agricultural Research and Development Institute (MARDI), Ministry of Agriculture and Agro-Based Industry (MOA), SWCorp and Ministry of Health (MOH).

Table 1. Food waste generated in Malaysia

Estimated food waste generated in Malaysia	Generation rate		
Sources of food	(tonnes/day)	(tonnes/year)	Percent (%)
Households	8,745	3,192,404	38.23
Wet and night markets	5,592	2,040,929	24.50
Food courts/restaurants	5,319	1,941,608	23.35
Hotels	1,568	572,284	6.87
Food and beverages industries	854	311,564	3.41
Shopping malls	298	108,678	1.30
Hypermarkets	291	106,288	1.28
Institutions	55	26,962	0.32
Schools	45	21,808	0.30
Fast food/chain shops	2521	808	0.26
Total	22,793	8,331,589	100

Source: Jereme, I.A. (2016)

This study attempts to examine the problem from a communication standpoint. On another note, this study goes beyond the campaign effectiveness and considers a theory-based research based on the Issues Processes Model (Hallahan 2001). In particular, this study provides a theoretical supported explanation regarding food waste prevention behaviour by examining its relationships with levels of food waste knowledge and involvement among households in Malaysia.

The communication studies discipline

Issues in communication involve social developments that can exist freely regardless of certain conditions on which they are based. While studies of the issues appear to be increasing within communication studies, knowledge and involvement are variables used as motivation for action or intent to act in many disciplines. As such, knowledge and involvement can be classified as basic measurements to differentiate types of public. This study uses Hallahan's Issue Processes as a theoretical framework as this model comprehends the basic understanding to measure the relationship between knowledge, involvement and food waste prevention behaviour.

The output from this Issue Processes Model is beneficial as guidance for public communication campaign strategies. This public communication campaign is defined as 'purposive attempts to inform or influence behaviours in large audiences within a specified time……to individuals and society' (Rice and Atkin 2009, p. 3). A successful campaign is utilized by creating informative and persuasive messages that are spread along traditional mass media, latest technologies and interpersonal networks (Atkin and Rice 2012). Instead of reaching the broader public, identifying specific segments of the overall population gives an extra benefit to the degree of campaign success. Atkin and Rice (2012) also stated that identifying the audience provides two major strategic advantages;

improving message efficiency and increasing the effectiveness of the campaign. Hence, Hallahan's Issues Processes is chosen as a means to identifying the types of public.

Theoretical framework

Hallahan's Issues Processes Model provides the theoretical framework in understanding the key factors involved in food waste prevention, which are: knowledge, involvement and food waste prevention behaviour. As shown in *Figure 2*, the model outlines the dynamics of issues activation and the types of public involved. According to Hallahan (2001), the model describes "both the antecedent processes of how issues are created and the alternative responses that organizations or institutions could use in responding to such issues. (p. 33)

Based from the model, public is categorised into four areas according to the degree to which they are knowledgeable and involved with a particular issue: active (high knowledge and high involvement), aroused (low knowledge and high involvement), aware (high knowledge and low involvement) and inactive (low knowledge and low involvement). Significantly, the model exhibits the fluidity of individuals to progress from one category to another based on an individual's knowledge and involvement in particular topics or issues. As such, the model not only extends beyond the more traditional definition of public as either active or passive (e.g., Grunig and Repper 1992), it also points out the
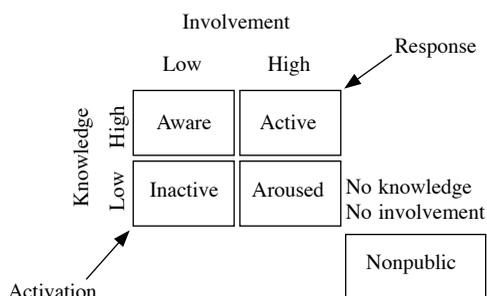
Figure 2. Issue Processes Model (Hallahan 2001)

need for organisations to design different communication strategies using the four groups of the public when addressing an issue. Nevertheless, the model acknowledges the fact that effective communication must begin with a keen understanding of the public regarding their levels of knowledge and involvement with a particular issue. Broom et al. (2000) further stresses that organisations would be able to better understand the relationship by learning the communications, exchanges, trades and linkages between the four categories of public.

Hypothesis of study

Per the Issues Processes Model, the following research hypotheses (H) were developed to examine (1) the relationship between food waste knowledge and food waste prevention behaviour and (2) the relationship between food waste involvement and food waste prevention behaviour.

H1: The level of food waste knowledge is positively correlated with the level of food waste prevention behaviour.

H2: The level of food waste involvement is positively correlated with the level of food waste prevention behaviour.

These hypotheses stipulate that food waste prevention behaviour would be a function of the levels of food waste knowledge and involvement. To lend further credence to the Issues Processes Model which predicts the joint and the interactive influence of knowledge and involvement on behaviour, a third hypothesis was developed to determine if the predictive power of food waste knowledge would be enhanced by food waste involvement and vice versa.

H3: There is an interaction between food waste knowledge and involvement in predicting food waste prevention behaviour.

Methodology

The respondents were recruited through several platforms, mainly from individuals in the researcher's mobile phone's contact list, individuals whom the researcher connects via Facebook and finally through Malaysia Facebook's public group (*Terbaik e-Store*). This group is a business platform and is open to the public in order to promote and sell their products without any restrictions or payments (terbaikestore. com). Members in this group approaching to 354,568 as of August 25th, 2017.

Convenience sampling method was used in this study. This non-probability sampling technique aims to include all subjects in the study that are available at any given time (Babbie 2001). The survey was conducted over a two-week period using the online survey tool, Qualtrics. The hosts of both online groups were contacted to get permission to post an announcement regarding this study.

The participants of this study consisted of 1,047 Malaysian households. A total of 901 respondents indicated their gender of which 608 (67.5%) are females and 293 are males, with 146 respondents choose not to respond. Nine hundred respondents provided their races with the highest percentage (97.4%) are Malays, 0.9% Chinese and closely followed by Indians at 0.7%. Meanwhile, 67% respondents are married while 17.6% are single. Out of 1,047 respondents, 22.8% have a bachelor's degree, 37.8% an associate degree and 28.4% with other levels of education. The highest percentage of annual income (28%) is in the range of less than RM30,000 (USD8,000), while only 5.6% had more than RM99,999 (USD43,000). Most of the respondents live in urban areas (48.8%) followed by sub-urban areas (26.3%).

Survey instrument

The questionnaire comprised of 21 questions which contained measures of self-reported knowledge of food waste, involvement in food waste prevention and food waste

prevention behaviour (shopping routines, household skills). Finally, the respondents were asked a series of demographic questions.

The variables involved in this study are independent variables: food waste knowledge and involvement while the dependent variable is food waste prevention behaviour. Knowledge of food waste was measured by items evaluated through self- reporting, particularly using: general knowledge of a respondent regarding the food waste issue. The variables were measured separately using three dimensions as discussed earlier in this study, which include: social/ethical, environmental and economic where all of them were assessed using nine items.

Scale reliability

Scale reliability was calculated using Cronbach's Alpha (Cronbach 1951), a popular reliability test in research. Tavakol (2011) stated that this test is mandatory for assessors and researchers in order to add validity and accuracy to the interpretation of their data.

Table 2 to *4* present the Cronbach's alphas for food waste knowledge, involvement and prevention behaviour respectively. All alphas were greater than 0.80, indicating acceptable levels of internal consistency. Scale means were then calculated and used as composite measures of these variables in subsequent analyses.

Results

A series of multiple regression tests were performed to test the research hypotheses. The regression model prescribed three sets of relationships: the relationship between knowledge and behaviour (H1), the relationship between involvement and behaviour (H2) and the relationship between the knowledge X involvement interaction term and behaviour (H3). Knowledge, involvement and the interaction terms of knowledge and involvement were treated as a predictor (independent) variables while

Table 2. Reliability – Knowledge

Reliability Statistics

Cronbach's Alpha	No. of items
0.864	9

Table 3. Reliability – Involvement

Reliability Statistics

Cronbach's Alpha	No. of items
0.938	9

Table 4. Reliability – Behaviour

Reliability Statistics

Cronbach's Alpha	No. of items
0.805	11

food waste prevention behaviour was the criterion (dependent) variable. All these relationships, as indicated in earlier parts of the study, are stipulated in the Issues Processes Model. The regression model explained 10.2% of the total variance, which was deemed to be statistically significant $[F(3,655) = 24.697, p <.05]$.

Hypothesis 1 stated that the knowledge of food waste is positively correlated with food waste prevention behaviour. Multiple regression results (*Table 5*) showed that the regression coefficient of food waste knowledge was positive and statistically significant ($\beta = .330$, t = 3.538, $p = .000$). Its shows that higher levels of knowledge are associated with higher levels of food waste prevention behaviour. Hypothesis H1 was, thus, supported.

The second hypothesis (H2) stated that the involvement with food waste is positively correlated with food waste prevention behaviour. Results from the regression analysis supported the hypothesis ($\beta = .521$, t = 3.221, $p = .001$). Higher levels of involvement are associated with higher levels of food waste prevention behaviour.

Hypothesis 3 stated that there is an interaction between food waste knowledge and involvement in predicting food waste prevention behaviour. Supporting the hypothesis, multiple regression results (*Table 5*) showed that the interaction was

Table 5. Regression analysis (H1, H2, and H3)

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.369	0.180	–	7.605	0.000
KNOWLEDGE	0.244	0.069	0.330	3.538	0.000
INVOLVEMENT	0.366	0.114	0.521	3.221	0.001
KNOWLEDGE * INVOLVEMENT	–081	0.038	–0.452	–2.101	0.036

Dependent variable: Behaviour, R square = 1.02, p = .000

significant (β = -.452, t = -2.101, p = .036). *Figure 3* shows in detail the nature of the knowledge X involvement interaction. The Higher level of food waste involvement resulted in higher levels of food waste prevention behaviour, regardless of the level of food waste knowledge. On the other hand, when the level of food waste involvement is low, higher level of food waste knowledge resulted in higher levels of food waste prevention behaviour than lower levels of food waste knowledge. In predicting food waste prevention behaviour, food waste knowledge played a significant role when food waste involvement was low.

Discussion

Food waste is becoming an imperative issue for global communities and is categorised as 'a global problem of enormous economic, environmental and societal significance'. Research has been developed to acquire useful input regarding food waste from different perspectives. In this study, the researchers attempt to shed light on the relationships between knowledge, involvement and household food waste prevention behaviour. The results highlighted the potential importance of knowledge and involvement in creating a positive side to food waste behaviour, which ultimately leads to a reducing in the amount of food waste in Malaysia. Hallahan's Issue Processes Model was applied in this study to determine the food waste prevention behaviour levels of the participants, along with the application of their knowledge
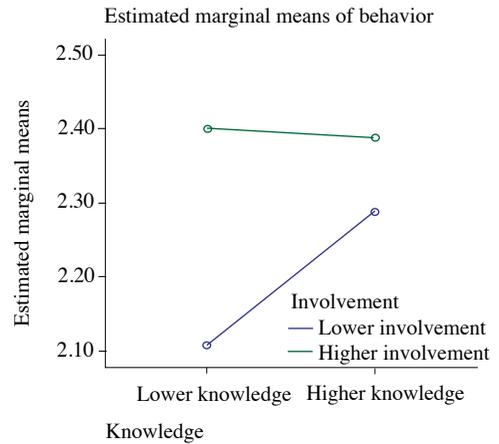
Figure 3. Estimated marginal means of behaviour

procurement and involvement levels of three types of food waste consequences (social/ethical, environmental and economic).

Overall relationship of food wastage prevention

Knowledge and involvement have been established as the important factors that could alter an individual's behaviour in preventing food waste. The results support such a relationship between these variables by proving that knowledge of food waste has a significant correlation with food waste prevention behaviour (β = .330, t = 3.538, p = .000). As such, the results indicated that, those with low levels of knowledge tend to ignore or rather take less action in preventing food waste daily and vice versa. The findings are consistent with those of Cannali (2014) who found that the lack of knowledge had been identified as one of the

factors that commonly influence consumers' behaviour towards the food waste problem. Hence, knowledge about the factors driving of food waste prevention must be increased among Malaysian households using public communication campaigns.

On another note, this study displays that there is a positive correlation between the involvements of household food waste to food waste prevention behaviour (β = .521, t = 3.221, p = .001). It demonstrates that individuals who minimise food waste are the ones with high involvement levels in the food waste issue. Although the basic systemic action comes from a nation's leadership, individual involvement begins where each house acts as a catalyst to reduce waste. This finding corroborates with the ideas of Vermeir (2006), who suggested that, "When people are more involved, they are more willing to tackle the food waste issue." A study by WRAP (2008) further supported that notion where households who found engaged in any food waste activities such as recycling, composting and sorting waste, waste less food than others.

A crucial finding in this research was the interaction between knowledge and involvement in food waste prevention behaviour which showed significance (β = −.452, t = −2.101, p = .036). In other words, level of knowledge has a positive impact on food waste prevention behaviour only if the involvement is high and vice versa. As such, the estimated marginal means were analysed to visualise this finding. Knowledge and involvement give different interpretations of behaviour. From the point of view of knowledge, an individual who has a lower involvement may alter their behaviour to have a more positive approach if they possess higher levels of knowledge. However, the trend is different for involvement. For individuals who have a higher involvement level, prevention of food waste occurs consistently, regardless of their knowledge level. Involvement seems to be a more important factor in tackling food waste issues than

knowledge about reducing household's food wastage. This information again, can act as a guideline for organisations with strategic plans in enhancing the awareness campaigns that focus on public involvement.

Implication
The public are categorised differently based on how they are organised to discuss issues or problems. Once the problem has been recognised, they are easily aroused and moved into the active public stage where involvement increases (Hallahan 2001). Malaysian households fall into the category of active audience because of their beliefs that food waste prevention is personally relevant and acknowledging the consequences, especially economic consequences that might occur such as an increase in food price. These results are consistent with a Grunig's theory that an active public will keenly look for information and react to that information. Grunig's Situational Theory categorises active public as persons with a problem-facing behaviour with high problem recognition and also low constraint recognition (Grunig 1992). In common, these individuals are the leaders on a particular topic. This is an important direction since Atkin and Salmon (2010) suggested that disseminating messages to potential interpersonal influencers/opinion leaders is one of the effective strategies to be used in a communication campaign.

This present study likewise highlights many practical implications. The outcomes of the study may contribute towards enhancing consumers' knowledge, involvement and behaviour by providing general information such as recommendations that formulate strategies for addressing an effective food waste campaign. Effective public communication campaigns regularly concentrate on a particular waste stream and then offer functional, simple to follow guidelines on waste prevention activities. The main obstacle for people in taking action to

reduce their food waste, or effectively participate in such activities, is due to a complete lack of food waste awareness (WRAP 2013) and they are known to have a low understanding of those issues. Hence, these current findings can increase both participation and commitment to food waste prevention activities by individuals. An organisation that is directly involved in food waste management will be better equipped, as knowledge of the population segment was dissected in order to design effective media campaigns.

Although the Malaysia government has actively involved in organising food waste campaigns over the past two years, effective communication only materialises when the government can build a positive relationship with the public by enhancing their attention span and increasing engagements. Nevertheless, both involvement and knowledge are the two crucial aspects in any issue. However, these findings showed that an individual's involvement is slightly more important compared to the individual's knowledge. The onus is on the government to create an effective awareness campaign together with educational programmes and content in which a household could potentially acquire good prevention behaviour techniques as it will elevate the positive attitude of Malaysian households toward food waste issues.

However, a review by Schanes et al. (2018) stated that, food waste reduction approach has to go beyond putting the responsibility solely on individuals. The policy makers have to implement the right policy measures to ensure waste reduction as the preferred option for households. Thus, coupling the awareness campaign and the educational programmes with the policy measures by the government can enhance the success rate of the above initiatives since the policy can enforce rules and bring out the intended behavioural changes to achieve the intended effect (Hocke 2014). Many countries, on the other hand, identifying and properly integrating the complex set of individuals' behavioural factors into policy making has been poorly examined. As suggested by Benyam et al. (2018), behavioural changes are more likely to be attained and sustained if understanding of individual perspectives and the complexities embedded together with the policy. This should be supported by suggestions of the underlying factors that encourage, drive or impede food waste behaviours and practices (Schanes et al. 2018).

In Malaysia, one of the success policy intervention that indirectly managed to reduce quantity of food waste disposal from households is the regulation on 'Separation at Source' under Solid Waste and Public Cleansing Management Act 2007 which enforced in the following states such as Kuala Lumpur, Putrajaya, Johor, Melaka, Negeri Sembilan, Pahang, Kedah and Perlis since September 2015. The process of separating solid waste at source involves separation of solid waste according to waste composition such as recyclable waste, residual waste and bulky/garden waste. This policy regulation helped the households to understand the need for waste separation and how it can save the cost of waste disposal for local authorities and thus made the policy successful and embraced by the households. There are many other measures of the Malaysian Government that are in place to achieve a sustainable food waste management in the future.

Limitations of the study

As with any research, this study also had limitations that may have affected results. First, the households that participated may not represent the average population. The level of knowledge and involvement of households was assessed using a convenient (snowball) sample rather than a random sample. In this design, the chance to participate is not equally to all qualified persons within the target population, thus the results may not represent thenwhole population (Suen 2014). The element of bias, whether big or small, is always there

when using this type of sampling and sampling error cannot be estimated. Still, convenient sampling was adopted since it provides inherent advantages for time and money management. Secondly, the scale measuring food waste behaviour contained self-reported items that could be biased to the estimation of true behaviour. These types of questionnaires mostly rely on the honesty of the respondents. They might have stated higher value for every variable than the actual fact, as this strongly reflects their image on the moral issue of food wastage. However, they should not have felt any pressure to honestly stated the actual condition since they have been informed that the data are going to be anonymous and strictly confidential. This is supported by Hoskin (2012) who discussed several potential problems with self-report measures, including honesty/image management, introspective ability, response bias and ordinal measures.

Conclusion

The hypothesis development at the initial stage of this research managed to conclude that the majority of households are in an active state based on the significant interaction between the knowledge and involvement in food waste prevention behaviours. By all odds, this provides valuable information to help an organisation to create an effective food waste awareness campaign. A certain number of organisations in Malaysia have been actively organising many food waste campaigns over the past two years. Nonetheless, procuring vital information regarding the level of knowledge, involvement of households and an individual's demographic background could lend a helping hand to organisations in creating strategic options to enhance public approaches toward this matter. These approaches could focus on people with different backgrounds and personalities. This further lends credence to the Hallahan Issue Processes Model (2001) which suggests strategies that are effective with an active

public might not be suitable in dealing with lower levels of knowledge and for lower involvement groups. As such, organisations are better off using several strategies to tackle this issue. Interestingly, an individual with a higher level of involvement adopts a more positive behavioural approach toward such matters regardless of the knowledge level possessed. Hence, optimising the level of public involvement provides a positive impact in reducing food waste. The results obtained support the approach of targeting household routines such as making a shopping list before purchasing. Such routines could be further positively impacted by providing proposals on how to deal with food-related activities such as providing booklets or cooking courses. This is in line with observations by Sharp, Giorgi and Wilson (2010) who proposed that it is important to enable, engage and encourage the public by using appropriate campaigns to alter an individual's behaviour.

Findings from this study have essential implications to develop new approaches for an effective awareness campaign and improving efficiency of message dissemination. Communicating with the active public category impose less challenges to organisations. This group is easy to collaborate with and is likely to be organised by leaders and formal structures. Several organisational response strategies have been recommended by Hallahan (2000) which include: 'alter organisation policies, negotiate and bargain with leaders and provide support and nurture'. It is highly possible to implement these in Malaysia through organisations toward creating an effective campaign. As such, implementing such strategies will certainly benefit Malaysian organisations by reducing cost, time and energy in their campaign processes, as they could identify knowledge and involvement of groups more effectively and efficiently.

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Abstrak

Sisa makanan telah menjadi kebimbangan di seluruh dunia selama beberapa dekad, tetapi masalah ini masih baharu di Malaysia disebabkan peningkatan jumlah sisa makanan sejak kebelakangan ini. Sebanyak 3,000 tan makanan yang masih elok dan boleh dimakan telah dibuang di tapak pelupusan setiap hari di Malaysia. Oleh itu, matlamat kajian ini adalah untuk menyediakan maklumat asas pengetahuan dan tahap penglibatan serta interaksi dalam pencegahan sisa makanan di kalangan isi rumah di Malaysia. Kajian ini bertujuan untuk melanjutkan penyelidikan komunikasi massa dalam aspek pencegahan sisa makanan. Model Proses Terbitan Hallahan telah digunakan dalam kajian ini untuk menentukan hubungan antara pengetahuan, penglibatan dan tingkah laku pencegahan sisa makanan. Kaedah pensampelan mudah digunakan dan kaji selidik dijalankan menggunakan alat ukur dalam talian iaitu Qualtric. Seramai 1,047 responden terlibat dalam kajian ini. Hasil kajian telah menyokong hipotesis bahawa tahap pengetahuan mempunyai kesan positif terhadap tingkah laku pencegahan sisa makanan hanya jika penglibatan isi rumah adalah tinggi dan sebaliknya. Menurut model ini, isi rumah Malaysia berada bawah kategori orang awam yang aktif, kerana mereka mengakui akibat negatif dan penerimaan mereka bahawa pencegahan sisa makanan secara peribadi relevan dalam kehidupan seharian mereka. Secara keseluruhan, dari segi hubungan pencegahan pembaziran makanan, pengetahuan mengenai sisa makanan isi rumah mempunyai korelasi yang signifikan dengan tingkah laku pencegahan sisa makanan ($\beta = .330$, t = 3.538, $p = .000$).