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Abstract

The study measures the shopper's knowledge and perception about the plastic bag campaign among the urban population. A survey was conducted among 198 shoppers from three different retailers (i.e. hypermarket, supermarket, and convenience store) in Kuala Lumpur. Respondents' knowledge and perception were assessed through a questionnaire. Results show a high number of shoppers (72.7%) participated in the plastic bag campaign. The remaining 27.3% who not participating were given a reason of inconvenient to carry other bags during shopping activity (18.7%) and a plastic bag was lighter and easy to carry (18.2%). The majority of the shoppers (53%) have a moderate level of knowledge about the plastic bag campaign. As for perception, the majority of the shoppers (78.3%, N = 155) have a very good perception of the campaign. The majority (40.9%) of the shoppers agree that the campaign was at the right time and they have highly supported the campaign (53.0%). The chi-Square analysis determined a significant association between the level of shoppers' knowledge with education ($X^2 = 15.902$, $p = 0.003$). Meanwhile, for the perception, significant associations were determined between gender ($X^2=11.078$, $p=0.004$), occupations ($X^2=18.583$, $p=0.046$), marital status ($X^2=11.712$, $p=0.003$), and age group of shoppers ($X^2=17.602$, $p=0.007$). In conclusion, the shopper's participation, knowledge, and perception towards the plastic bag campaign in this study can be considered at a good level.

Keywords: Plastic Bag, Environmental Campaign, Shoppers, Knowledge, Perception, Practice

Introduction

Plastics are made of polymer known as polyethylene (PE) produced from ethylene polymerisation (Kamaruddin & Yusuf, 2012). Ethylene is produced from natural gases extraction and processed to a long-chain polymer consists of carbon and hydrogen. Plastic is categorised based on its density and molecular branching frequency. A classification system established in 1988 has coded plastic into 7 types.

Code 1 is for Polyethylene Terephthalate (PET(E)) plastic, common for household items such as beverage bottles, medicine jars, rope, clothing and carpet fibre. Code 2 is for

High-Density Polyethylene (HDPE) plastic that does not transmit chemicals into the substance it contained (i.e. food, oil, detergent) but it is not for reuse as a food or drinks container. Code 3 is for Polyvinyl Chloride (PVC), mainly used for all types of pipes and tiles. This plastic sometimes can be recycled but it is prohibited for food packaging as it is harmful if ingested. Code 4 is for Low-Density Polyethylene (LDPE) plastic that is commonly used for sandwich bags, squeezable bottles, and grocery plastic bags. LDPE sometimes can be recycled, durable and suitable for reuse purposes for the household. Code 5 is for Polypropylene (PP), a strong plastic that can withstand high temperatures and can be recycled as it is used for food boxes, margarine containers, prescription bottles and bottle caps. Code 6 is Polystyrene (PS), mainly used as food boxes, disposable coffee cups, and plastic cutlery and packing foam and difficult to recycle. Code 7 is Polycarbonate (PC) and Polylactide plastic, often used as baby bottle products, compact discs and storage containers and difficult to recycle (The Society of the Plastic Industry (SPI), 1988).

A plastic bag is made of low-density polyethylene (LDPE) and high-density polyethylene (HDPE) film (Sharma, Moser, Vermillion, Doll, & Rajagopalan, 2014). The plastic bag demand started in the early '80s by the supermarket chains in the United States and the trend continued to replace paper worldwide by the end of the decade (UN Environment Programme, 2018). According to the Euro Monitor International (2013), the plastic products market had increased bluntly by 165% between 2007 to 2012 its global production has increased rapidly since the 1950s and currently exceeds 288 million tonnes per year (Plastic Europe, 2013).

Five trillion plastic bags per year were used worldwide and global plastic production was projected to nearly double in the next 15 years. Improper disposal of used plastic bags could produce long-term damage to the ecosystem and the natural environment (United Nations Environment Program, UNEP, 2014). A study by the Ocean Conservancy in 2015, found that 8 million tonnes of plastic were dumped into the world's oceans every day, with more than half (60%) of the waste being contributed by the coastal countries.

Plastic can be recycled, reprocessed into a secondary material or disposed of in a landfill (Geyer et al., 2017; Kuczynski et al., 2010). The degradation of plastic takes 400 to 1000 years, depending on the light energy. This process may leach out toxic chemicals that can accumulate in the food chain and potential for hormone disruption in animals and humans (Ritch et al., 2009; Aldred, 2007). Plastic bags degradation process in landfills also released greenhouse gases (GHGs) into the atmosphere where the highest percentage was contributed by CO₂. Landfills contribute 20% of greenhouse gases emission which results in global warming that leads to climate change. According to the Union of Concerned Scientists (2017), CO₂ is among the major heat-trapping gases that stayed longer in the atmosphere that lead to global warming. Global warming may cause heatwaves, rise in seawater levels, prolonged drought and flooding, malnutrition, El Nino effects, and an increase in infectious diseases (Patz and Kovats, 2002). Greenhouse gases emission has a 95% probability of increasing in earth temperatures over the past 50 years (Global Climate Change (GCC), 2018).

The widespread use of plastic bags also creates concern about plastic shopping bag littering (Kamaruddin & Yusuf, 2012). The total number of plastic bags distributed by retailers do seem startling with 8 billion annually (WRAP, 2005). A study on the plastic bag ban mention that a stronger and more rational policy such as imposing a charge on plastic bags in stores is needed and the important ways for improving public awareness is education and technologies.

Many countries around the world have banned plastic bags usage due to public outcry over the negative impacts on human health, the environment and agriculture (Moharam & Moqtari, 2014). Malaysian government through the Ministry of Domestic Trade, Cooperative and Consumerism has introduced a campaign of “No Plastic Bag” for every Saturday (MDTCC, 2012) in 2011 to discourage plastic bag usage. The shoppers have to pay 0.20 cents for a plastic bag during this campaign. The state government of Selangor has implemented the campaign actively and has avoided the usage of plastic bags among retail businesses since January 1st, 2017 from Saturday to every day. The state also aims to be free of polystyrene containers following the launch of the campaign to promote Selangor’s plastic-free policy beginning in 2018 (Official Portal Selangor State Government, 2018). The state has been successful in the campaign as most public showing positive reactions and increased level of awareness among consumers (Kamaruddin & Yusuf, 2012). Penang state government is among the first state that launches the plastic bag campaign back in July 2009. They have extended the implementation policy to every day. (Penang Government Malaysia, 2016). Asmuni et al (2015) in their observation study highlighted that consumers participation in the “No Plastic Bag on Saturday Campaign” is moderate, where 50% of 560 consumers are willing to pay for plastic bags. Kamaruddin and Yusuf (2012) also indicate that shoppers were reluctant to bring their recycle bags on Saturday and they highlight the charges for a plastic bag is a fair price. Both of these studies indicate public voluntary anti-consumption of plastic bags ranged from moderate to low.

To date, there are not many studies done to assess the knowledge and perception of the public towards the plastic bag campaign since its launch. The level of shoppers knowledge and perception towards plastic bag campaigns in the country is also unknown. Therefore, this study was conducted to assess the public knowledge and perception about the plastic bag campaign to provide an understanding of the extent of these indicators among the public in the country. These elements are important to be assessed because the success of the environmental campaign is based on public participation.

Materials and Method

This study was conducted between March to June 2019 among shoppers in selected three urban areas of Kuala Lumpur (i.e. Sri Petaling, Kepong, and Cheras), mainly located at the city centre and mostly populated with a mixed development comprising residential and commercial lands, educational institution, hypermarkets, shopping complex, and over 100 retail shop or stalls. The assessment was done at three types of retailers; convenience stores, supermarkets and hypermarkets to have a wide range of respondents involved as these stores provide a wide price range and shopping convenience level. The hypermarket is where almost all products are sold and convenient for the consumer as it has a larger area with a combination of supermarkets and department stores. Supermarket offers a wide selection of products, larger and has wide selection but smaller and limited compared to a hypermarket. A convenience store is a small retail business that stocks a limited range of household goods and groceries. It offers more essential items and has a relatively narrower range of products compared to supermarkets and hypermarkets. This store operates on a smaller floor area.

The questionnaire was distributed to 198 respondents, sampled from 396 shoppers at the observed retail stores through convenience sampling, who are willingly participating in the survey. The sample size has considered the estimated proportion of consumer participation in the campaign based on previous studies by Nizam et al (2016) and Asmuni et al (2015), the standard error associated with 95% confidential interval (1.96), and standard

error associated with 80% power of the study (0.842). The sample size is sufficient for statistical analysis but cannot be generalized to all populations in the country.

A structured questionnaire was adopted and modified from Safitri et al., (2013) who did a study about the policy implication of the no plastic bag campaign among Malaysian; and Musa, Hayes, Bradley, Clayson, & Gillibrand, (2016) who did a study on measures aimed at reducing plastic bag usage and consumer behaviour in the United Kingdom. The questionnaire has 21 questions divided into Part A; the sociodemographic background, Part B; the consumers' knowledge about the campaign and Part C; the consumers' perception of the campaign. The questionnaire was developed in English and Malays and was validated by the expert panel in solid waste management from the Department of environmental and occupational Health Sciences, in Universiti Putra Malaysia.

The questions on the consumers' perception of the plastic bag campaign consisted of 5 Likert-scale; highly agree (5 points), agree (4 points), neutral (3 points); disagree (2 points) and highly disagree (1 point). Based on these scales, the perception scores were divided within the possible ranges of scores between 7 to 35 points. The score obtained for each of the respondents was counted and the range was calculated where each total score was divided with the maximum scores (35) and multiplied by 100%. The percentage represented as the final score and classified accordingly into four main quartiles of (0-25% (Low); 26-50% (moderate); 51-75% (high); 76- 100% (very high) (Nagra, 2010).

Statistical analyses were performed using SPSS Statistics Version 25. The sociodemographic characteristics, knowledge, and perception were summarized by descriptive analysis. Chi-square test was used to determine the association between type of retailers, sociodemographic, and period of shopping with shoppers'.

Results and Discussion

Sociodemographic of respondents

Table 1 highlight the sociodemographic characteristic of respondents in this study. The majority respondents are female (n = 120, 60.6%), Malay (n = 123, 62.1%) aged between 20 to 39 years old (n = 135, 68.2%) and students (41.4%). The majority of respondents have tertiary education (73.7%) and are single. The statistical analysis shows no significant difference in the selection of retailers by the sociodemographic characteristics except for occupation and education level. Students (45.1%) are mostly do shopping at the hypermarket while respondents working in the private sector (36.5%) preferred the supermarket. Unemployed respondents (3.5%) and housewives (3.0%) were known to be the least consumer that does shopping in all three types of retailers.

Respondents participated in the plastic bag campaign

Table 2 showed more than half of the respondents in this study participate in the plastic bag campaign (n = 144, 72.7%). Respondents who did not participate in the plastic bag campaign (27.3%) stated that it was inconvenient to carry bags during shopping (18.7%) and easier to use plastic bags instead (18.2%). The habit of bringing own bag while shopping was frequently practised by 13.6% to 22.7% of respondents in this study and occasionally by 31.8% (n = 63) respondents.

High participation of the public in the plastic bag campaign was possibly due to the banned of plastic bag usage and the imposed of specific charges for its purchase during the campaign. This is similar to China where the banned on plastic bags has minimized usage and improved public awareness on environmental protection (Xing X et al., 2009). According to Poortinga, Whitmarsh, & Suffolk, (2013), a duration of six months or more is needed to build

a new habitual routine of bringing a bag to the shops. The common reasons why plastic bags has become a selection of consumer is because of their durability, cheapness, feasibility, and lightweight (Adane & Muleta, 2011; Joseph et al., 2016). In addition, the mismatched sizes and unwieldy shapes of most recycled or reusable bags make it difficult to be used and kept. Moreover, people tend to forget to bring it along while shopping and it is less convenient than just getting a plastic bag at the store (Small Footprint Family, 2017). knowledge, and perception.

Figure 1 indicates the most common reason for consumers purchasing plastic bags in this study is because they forgot to bring their bags (71.7%). Other reasons include reusing the plastic bag as a secondary use (39.4%), it is convenient to use a plastic bag (29.3%) and the charge imposed for a plastic bag is cheap (15.2%). This is consistent with Joseph et al., (2016) study, where most respondents are willing to pay for a plastic bag as the charge is considered cheap and most of those willing to purchase plastic bags are least aware of the effect that plastic can do to the environment. In Europe, the effect of the tax on plastic bags in retail

Table 1: Sociodemographic characteristic of respondents in this study

		Total (N=198)		Type of retailer						X ² (p-value)
				Hypermarket (n=66)		Supermarket (n=66)		Convenience store (n=66)		
		n	%	n	%	n	%	n	%	
Gender	Male	78	39.4	28	35.9	25	32.1	25	32.1	0.827
	Female	120	60.6	38	31.7	41	34.2	41	34.2	
Ethnic group	Malay	123	62.1	43	35.0	40	32.5	40	32.5	0.646
	Chinese	45	22.7	16	35.6	16	35.6	13	28.9	
	Indian	27	13.6	7	25.9	9	33.3	11	40.7	
	Others	3	1.5	0	0.0	1	33.3	2	66.7	
Age group	Under 19	39	19.7	18	27.3	10	15.2	11	16.7	0.300
	20-39	135	68.2	42	63.6	47	71.2	46	69.7	
	40-59	21	10.6	4	6.1	9	13.6	8	12.1	
	60 and older	3	1.5	2	3.0	0	0.0	1	1.5	
Occupation	Unemployed	7	3.5	3	42.9	2	28.6	2	28.6	0.026 *
	Student	82	41.4	37	45.1	28	34.1	17	20.7	
	Housewives	6	3.0	1	16.7	3	50.0	2	33.3	
	Self-employed	19	9.6	4	21.1	4	21.1	11	57.9	
	Civil servant	21	10.6	3	14.3	6	28.6	12	57.1	
	Private	63	31.8	18	28.6	23	36.5	22	34.9	
Education level	Primary	1	0.5	0	0.0	0	0.0	1	100.0	0.039 *
	Secondary	51	25.8	12	23.5	14	27.5	25	49.0	
	Tertiary	146	73.7	54	37.0	52	35.6	40	27.4	
Marital Status	Single	146	73.7	53	36.3	46	31.5	47	32.2	0.326
	Married	52	26.3	13	25.0	20	38.5	19	36.5	

outlets gave a dramatic reduction of 90% in plastic bag usage and associated with the reduction in littering and negative landscape effects (Convery, McDonnell & Ferreira, 2007). A study in Toronto City finds that the levy or plastic tax charge has increased the use of reusable shopping bags by 3.4% (Rivers & Young, 2016). Another example, the Plastic Bag Reduction Ordinance (“PBRO”) adopted by San Francisco in 2007 prohibit the usage of non-compostable plastic bags by the supermarket to reduce the environmental impact of plastic bag checkout consumption. The PBRO is referenced as a bag tax in Ireland and claims a 90% of reduction in plastic checkout bag usage of the Irish ordinance (Klick & Wright, 2012).

Figure 2 highlights the majority (n=169, 85.4%) of respondents reused the purchased plastic bag from stores as a garbage bag. Other purpose includes carrying goods (40%) and reused as shopping bag (23.2%). However, 26.3% of them throw plastic with other waste (Figure 2). This mainly depends on consumers perspective towards plastic bag as plastic shopping bag is not merely being called single-use bags but it also served as multipurpose bag. The plastic bag can be reused as a garbage bag, and recycled for carrying goods and as a reusable shopping bag. For instance, plastic bags have been reused to recycle organics, reused for household, and recycled in Toronto (Canadian Plastics Industry Association, 2012).

Table 2: Descriptive summary of consumers’ participation in the campaign

Questions /statement	Percentage of total respondents (%) N=198
Frequency of shopping in a month	
Every week	41(20.7)
Once a week	45(22.7)
Twice a week	26(13.1)
Occasionally	86(43.4)
Participate in the plastic bag campaign	
Yes	144(72.7)
No	54(27.3)
Frequency bring own bag while shopping	
Very frequently	27(13.6)
Frequently	45(22.7)
Occasionally	63(31.8)
Rarely	9(4.5)
Not Participate	54(27.3)
	Yes
	No

Reasons for NOT participating in the campaign

(respondents can answer more than one answer)

It is inconvenient to carry other bags during shopping	37(18.7)	161(81.3)
The use of plastic bags during shopping does not affect the environment	11(5.6)	187(94.4)
A plastic bag is lighter and easy to carry	36(18.2)	162(81.8)
Able to pay for the plastic bag	12(6.1)	186(93.90)

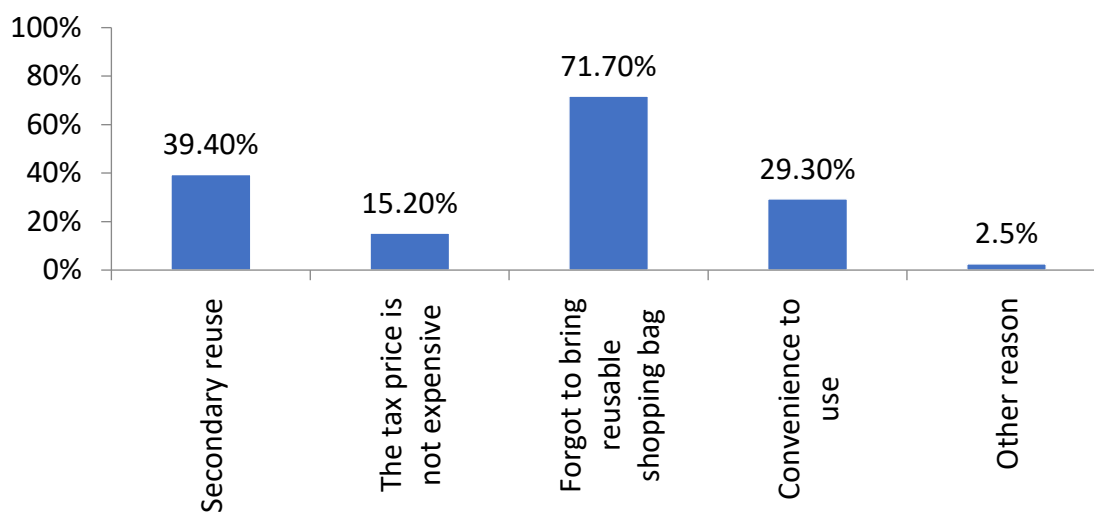


Figure 1: Reason for purchasing plastic bags during a shopping trip

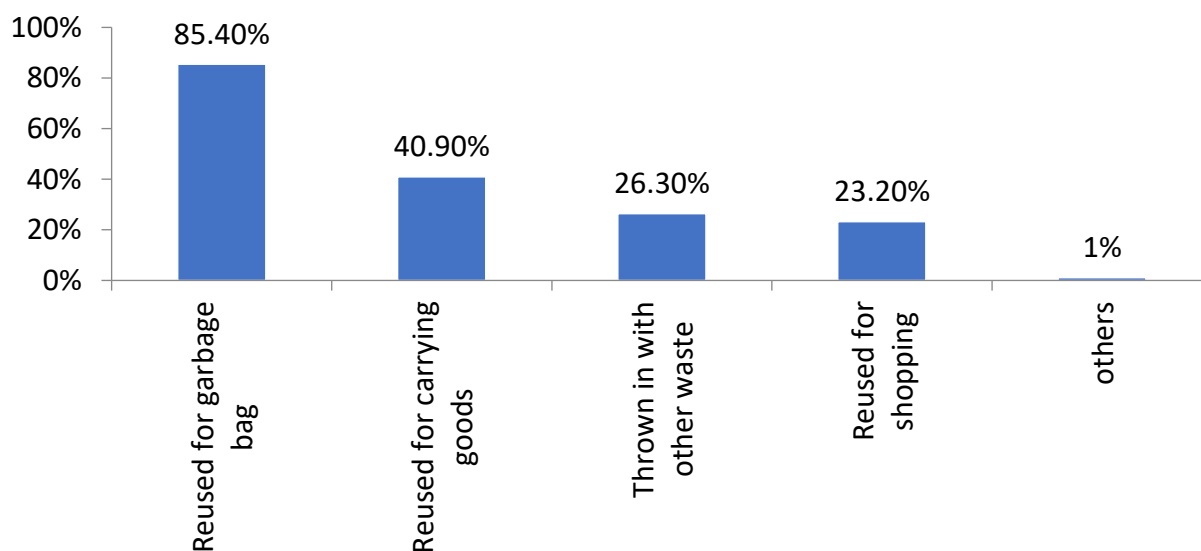


Figure 2: Methods of reusing the purchased plastic bag

Shoppers knowledge about the plastic bag campaign

The knowledge level about the plastic bag campaign among respondents in this study is moderate (53%, n=105). About 33.3% (n = 66) respondents have a high level of knowledge and 13.6% have a poor level of knowledge (n=27). Table 3 highlights the respondents' knowledge about the plastic bag campaign where the majority of respondents (83.8%) know about the campaign. Most of the respondents (66.7%) were aware of the information provided regarding the campaign at the shopping mall they visited. They know that reducing plastic bag usage is better than recycling them (88.4%) and reduction in plastic bags can reduce the solid waste volume (87.9%). They are also highly aware (75.3%) of the greenhouse gas GHGs emission from plastic and its effect on human health as well as its pollution to the environment.

Knowledge about the environmental campaign is important as the environmental behaviour is regularly documented with a locus of control, awareness, culture and beliefs, attitudes, knowledge, education and many others factor (Cheah & Phau, 2011). Public participation in any environmental activities was influenced by their knowledge and is potential works to change their behaviour. A study by Chen et al, (2012) reported that environmental knowledge plays a significant role in developing positive environmental behaviour. Consumers' Ecoliteracy also known as environmental knowledge level towards the "No Plastic Bag Day" results in a positive and significant environmental behaviour development (Kuppusamy & Gharleggi, 2015).

Table 3: Shoppers knowledge of the No Plastic Bag Campaign

No	Questions /statement	Answer		
		Percentage of total respondents N=198 (%)		
		Yes	No	Not sure
1.	Do you know about the " No plastic bag campaign' in your area?	166(83.8)	18(9.1)	14(7.1)
2.	Is the plastic bag campaign in your area implemented every day of the week?	92(46.5)	57(28.8)	49(24.7)
3.	Is there any information regarding the plastic bag campaign available at the shopping mall you are visiting?	132(66.7)	32(16.2)	34(17.2)
4.	Do you know reducing plastic bag usage is better than recycling them?	175(88.4)	13(6.6)	10(5.1)
5.	Do you know that plastic bag may release gases such as methane, ethylene, and carbon dioxide as soon as it is exposed to light for degradation?	139(70.2)	33(16.7)	26(13.1)
6.	Do you know plastic bags can pollute the environment?	191(96.5)	2(1.0)	5(2.5)
7.	Do you know reduced the usage of plastic bags can reduce the amount of solid waste disposal?	174(87.9)	13(6.6)	11(5.6)
8.	Do you know about greenhouse gases emission (GHG) and their effects on human health?	149(75.3)	24(12.1)	25(12.6)
9.	Do you know a single plastic bag can generate 0.03kg of carbon dioxide (CO ₂) gases depending on its size, weight and thickness?	64(32.3)	82(41.4)	52(26.3)
10	Do you know the paper bag is better than plastic because it is biodegradable?	174(87.9)	11(5.6)	13(6.6)

Respondents Perception about the Plastic Bag Campaign

The respondents perception towards the plastic bag campaign in this study (78.3%, N = 155) was very good, 18.2% (n = 36) has good perception and 3.5% (n = 7) has moderate perception. Table 4 showed the majority (40.9%) of respondents agreed that the campaign is at the right time and they highly supported the campaign (53.0%). Besides, 38.9% of the respondents agreed that it is convenient to bring their shopping bag during a shopping trip, 62.6% of respondents know that this campaign can help protect the environment and 45.5% of respondents highly agree to practice the campaign every day. Most of the respondents agree that the charge of 0.20 cents on every purchase of plastic bags is reasonable. Half of the

respondents (61.6%) highly agree that plastic bag usage contributes to environmental. Overall, results in this study indicate a positive consumer perception and attitude perhaps towards the plastic bag campaign and levy (Safitri et al., 2013; Zen et al., 2013). Moreover, imposing a charge on plastic bag usage is an effective measure for controlling consumers' plastic bag purchasing habits (Zhu, 2011). In addition, bringing own shopping bag during a shopping trip is one of the effective incentives to gain motivational effects that can eventually influence consumers' behaviour (Jakovcevic et al., 2014). In Europe, the fact that consumer behaviour was significantly influenced by a tax on the products or a levy gave advantages to the policymakers in securing more environmental campaigns and increasing public awareness (Convery, McDonnell & Ferreira, 2007) pollution.

Table 4: Shoppers Perception on No Plastic Bag Campaign

No	Questions /statement	Answer				
		Percentage of total respondents N= 198 (%)				
		Highly agree	Agree	Neutral	Disagree	Highly disagree
1.	Do you agree that the campaign is at the right time?	81(40.9)	87(43.9)	19(9.6)	9(4.5)	2(1.0)
2.	Do you agree with the campaign?	105(53.0)	73(36.9)	16(8.1)	3(1.5)	1(0.5)
3.	It is convenient to bring our shopping bag	77(38.9)	61(30.8)	40(20.2)	13(6.6)	7(3.5)
4.	This campaign can protect the environment	124(62.6)	64(32.3)	7(3.5)	2(1.0)	1(0.5)
5.	This campaign should be practised every day	90(45.5)	59(29.8)	36(18.2)	8(4.0)	5(2.5)
6.	The plastic charge of 0.20 cents per purchase is reasonable	67(33.8)	60(30.3)	33(16.7)	26(13.1)	12(6.1)
7.	Plastic bag usage contribute to environmental pollution	121(61.1)	57(28.8)	15(7.6)	4(2.0)	1(0.5)

The association between type of retailers and sociodemographic, and period of shopping with shoppers knowledge and perception

The level of knowledge was significantly associated with the education level in this study ($X^2 = 15.902$, $p = 0.003$) (Table 5). Knowledge about the environmental campaign is vital for any awareness campaign and it is usually associated with the education level. For instance, students usually were considered as knowledgeable public by the means of academic curriculum. They understand various public health issues concerning the society that may influence their behaviour towards the environmental awareness campaign. They were also the ones were responsible for the education of health-related activities in the community (Abhigyan, 2008). However, the higher levels of education did not make one's behaviour suddenly responsible towards the environment. The influential Stern Review on climate change noted that those who currently have education about climate change in school will help to shape and support policymakers in the future and the society thus supporting the

international debate for today's policy-makers for much stronger action. This is consistent with a study in Mangalore city India where 93.5% of professionals were aware of health hazards associated with the usage of plastics (Joseph et al., 2016).

Table 5: Association between the type of retailers and socio-demographic, with the level of knowledge of consumers'

Variables		Level Knowledge of Consumers N= 198(%)			X ²	p-value
		Poor	Moderate	high		
Type of retailers	Hypermarket	9(13.6)	32(48.5)	25(37.9)	1.440	0.837
	Supermarket	8(12.1)	36(54.5)	22(33.3)		
	Convenience store	10(15.2)	37(56.1)	19(28.8)		
Gender	Male	14(17.9)	40(51.3)	24(30.8)	2.083	0.353
	Female	13(10.8)	65(54.2)	42(35.0)		
Ethnic group	Malay	19(15.4)	66(53.7)	38(30.9)	3.699	0.717
	Chinese	4(8.9)	23(51.1)	18(40.0)		
	Indian	4(14.8)	15(55.6)	8(29.6)		
	Others	0(0.0)	1(33.3)	2(66.7)		
Age group	Under 19	9(23.1)	21(53.8)	9(23.1)	8.860	0.182
	20-39	13(9.6)	71(52.6)	51(37.8)		
	40-59	5(23.8)	11(52.4)	5(23.8)		
	60 and older	0(0.0)	2(66.7)	1(33.3)		
Education	Primary	1(100.0)	0(0.0)	0(0.0)	15.902	0.003*
	Secondary	12(23.5)	29(56.9)	10(19.6)		
	Tertiary	14(9.6)	76(52.1)	56(38.4)		
Marital status	Single	19(13.0)	76(52.1)	51(34.9)	0.684	0.710
	Married	8(15.4)	29(55.8)	15(28.8)		
Occupation	Not working	2(28.6)	3(42.9)	2(28.6)	9.535	0.482
	Student	11(13.4)	39(47.6)	32(39.0)		
	Housewives	2(33.3)	3(50.0)	1(16.7)		
	Self-employed	3(15.8)	13(68.4)	3(15.8)		
	Civil servant	2(9.5)	14(66.7)	5(23.8)		
	Private	7(11.1)	33(52.4)	23(36.5)		

Table 6 shows the association between types of retailers and sociodemographic with respondents perception where a significant association was found with gender ($X^2=11.078$, $p=0.004$), occupations ($X^2=18.583$, $p=0.046$), marital status ($X^2=11.712$, $p=0.003$) and age group ($X^2=17.602$, $p=0.007$). The statistical analysis shows no significant association between perception with the type of retailers ($X=2.683$, $p=0.612$), race ($X^2=7.512$, $p=0.276$), and education level ($X^2=6.095$, $p=0.192$).

Female was found to mostly agree with the campaign in this study. Students ($N=73$, 89.0%) and private sector employees ($N=50$, 79.4%) have a good perception of the campaign. The marital status is dominantly led by single respondents ($N=119$, 81.5%) and aged 20 to 39

years old (N=103, 76.3%) tend to agree more with the campaign. Women and men, shoppers were the secondary stakeholders for the consumption of plastics and management of post usage of plastic materials that create demand through their buying behaviours and have the potential to affect their environment (Lynn, Rech, & Gabizon, 2016). A study stated that women had spent most of their financial resources on the basic needs for the household such as food and clothing, or articles for health than men do as they often related to buying expensive items such as homes, cars, and electronic equipment (Spranz, Schlüter, & Vollan, 2018).

Table 6: Association between types of retailers and socio-demographic of consumers' with their level of perception on the "No Plastic Bag Campaign"

Variables		Shoppers range of perception of the campaign N=198(%)			X ²	p-value
		Moderate	High	Very high		
Type of retailers	Hypermarket	2(3.0)	12(18.2)	52(78.8)	2.680	0.613
	Supermarket	4(6.1)	10(15.2)	52(78.8)		
	Convenience store	1(1.5)	14(21.2)	51(77.3)		
Gender	Male	3(3.8)	23(29.5)	52(66.7)	11.301	0.004*
	Female	4(3.3)	13(10.8)	103(85.8)		
Ethnic group	Malay	5(4.1)	23(18.7)	95(77.2)	0.458	5.699
	Chinese	0(0.0)	10(22.2)	35(77.8)		
	Indian	2(7.4)	2(7.4)	23(85.2)		
	Others	0(0.0)	1(33.3)	2(66.7)		
Age group	Under 19	1(2.6)	2(5.1)	36(92.3)	23.484	0.001*
	20-39	2(1.5)	30(22.2)	103(76.3)		
	40-59	3(33.3)	3(14.3)	15(71.4)		
	60 and older	1(33.3)	1(33.3)	1(33.3)		
Education	Primary	0(0.0)	0(0.0)	1(100.0)	6.268	0.180
	Secondary	1(2.0)	15(29.4)	35(68.6)		
	Tertiary	6(4.1)	21(14.4)	119(81.5)		
Marital status	Single	1(0.7)	26(17.8)	119(81.5)	13.557	0.001*
	Married	6(11.5)	10(19.2)	36(69.2)		
Occupation	Not working	0(0.0)	2(28.6)	5(71.4)	20.535	0.025*
	Student	1(1.2)	8(9.8)	73(89.0)		
	Housewives	1(16.7)	1(16.7)	4(66.7)		
	Self-employed					
	Civil servant	1(5.3)	7(36.8)	11(57.9)		
	Private	1(4.8)	8(38.1)	12(57.1)		
		3(4.8)	10(15.9)	50(79.4)		

*p-value <0.05 is statistically significant, Chi-square test.

Conclusion

This study indicated that consumer perceptions and expectations of plastic bags vary across types of the retailer and sociodemographic characteristics. This study provided data on the knowledge and perception of respondents towards plastic bags and the campaign. A limited study was done on consumer knowledge and perceptions on a plastic bag, thus this study identify the factors which stimulate buying decisions and understanding regarding the campaign. This study shows respondents knowledge about the plastic bag campaign is at a moderate level but they have a very good perception of the campaign. Despite the moderate level of knowledge, high participation was observed in the plastic bag campaign. The finding shows those who did not take part in the campaign stated that it was inconvenient to carry bags during shopping found and easier to use a plastic bag instead. Furthermore, a reasonable charge imposed on the plastic bag is considered cheap and payable among the respondents. The knowledge about the campaign was significantly associated with the education level in this study while the perception was significantly associated with gender, occupations, marital status and age group. These indicators can work as baseline information for the structure of future campaigns to influence the behaviour change among consumers. This indicates the readiness of consumers to change of behaviour and the authority responsibility in developing alternative ways or improvement on the campaign for more plastic bag consumption reduction in the future.

One of the limitations of this study is the result cannot be generalized to all populations in the country. The result is limited to small sample sizes that only represent a certain location in the country may not represent the whole scenario of the campaign. Limitations in terms of the number of respondents in this study may reduce the significant association between the indicators of the success in the campaign as plenty of rejection happened during the questionnaire sessions and limited time for the researcher to collect the data for this research. As for the future study, more samples size and locations involved may help a better representation of the results towards the plastic bag campaign in the country. Even though this may be the limitation of the present research, but result in the present study can indicate some trend and baseline information for future studies to be developed. A comparison between locations with and without campaigns may give a better trend of data to help the researcher understand the factor that influences the success of the campaign. The data could be comparative by states and the importance and effectiveness of the campaign with behaviours can be described. In the future, the public can broadly debate on the management of plastic bags imposed on society, whether they were returned to the environment or otherwise. A major concern was from the raised of the issue demanding further clarification from the authority.

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