

No plastic bag campaign day in Malaysia and the policy implication

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Abstract The weekly *No Plastic Bag Campaign Day* comprises of an added charge of MYR 0.20 (USD 0.06) per plastic bag in supermarkets and grocery stores. The objective is to reduce plastic bag consumption and save the environment. However, the campaign has provoked a range of reactions from the public including consumers, policy makers, environmentalists and the plastic industry. Considering consumers as the major consequence, this paper evaluates the impact of the campaign on consumer awareness, knowledge, attitude and behavior and discusses and explores the various implications of the policy. The study gathers a questionnaire survey from 262 households in the State of Johor and employs a semi-structured interview with the relevant stakeholders. A descriptive statistical analysis as well as *T* test and correlations analysis has been performed using the Statistical Software for Social Science. The *T* test analysis explains the complex relationship between attitude and behavior. Consumers are more supportive of the plastic bag ban in the supermarkets but not its extension to other types of public markets. The study records the consumers' behavior-changing process in the three types of anti-consumer behavior, listed as (1) fully anti-consumption (67 %), (2) partial anti-consumption (33 %) and (3) no anti-consumption this last group comprising of those who resent and dissatisfy of the *No Plastic Bag Campaign*. The first type of fully anti-consumption behavior reveals the potential of reusable shopping bag practice to be implemented coupled with the educational Bring Your Own Shopping Bag campaign. The plastic bag levy in Malaysia can be seen as part of the government effort to create a sustainable consumption society; however, it needs a support from the regulatory or legislative framework that will provide clear guidelines and mechanisms for consumers, the retailers, supermarkets and the plastic industry. The implications of plastic bag usage for garbage bin liners as part of the basic

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requirement of the solid waste management reveal the urgency to look at the plastic bag levy from the solid waste management perspective.

Keywords Plastic bag · Plastic bag levy · Anti-consumption behavior · Consumer behavior

1 Introduction

From the consumers' point of view, free plastic bags during shopping have been perceived as a consumer's right and an important factor in shopping convenience (Tan and Mehta 1994). Free plastic bags are a normal provision bearing no cost on the environment. Free plastic carrier bags are considered lacking in economic value; hence, the public does not internalize their true cost of environmental damage (Akulian et al. 2007). The policies that impose charges for plastic bag consumption in the name of environmental friendly practices may not be consumer friendly. The idea of charging for plastic bag is one course of action that creates significant challenge on the part of consumer shopping habits, especially during the major grocery shopping over the weekend.

The *No Plastic Bag Campaign Day* was launched by the Ministry of Domestic Trade, Cooperative and Consumerism (MDTCC) in January 2011 (MDTCC 2012) with the objective to reduce the excessive consumption of plastic bags and save the environment. The campaign was nationwide over selected super/hypermarkets, major retailers and major shopping malls every Saturday at customer-end level. The campaign imposes a MYR 20 (USD 0.6) cents charge per plastic bag. It can be perceived as the plastic bag levy approach unsupported by the regulatory framework as yet. It was stated that the revenue from the plastic bag levy will be used to fund environmental programs (Hoggard 2010). The proscription of free plastic bags for 1 day a week appears as unordinary practice, unacceptable and creates customer resentment during the first three- to 6-month period of the campaign (The Star. January 4, 2010). The campaign receives defiance and protest from the retails, groceries and plastic industry.

The original concept of plastic bag levy or tax is environmental taxation which has focused primarily on producer-generated pollution to internalize the external cost of pollution to the environment (Pigou 1920). The implementation of the plastic bag levy is rather to stimulate consumer behavioral changes, reducing the litter and excessive consumption of plastic (Park 2009). The consumer will have the option to avoid paying for plastic bag by bringing his own grocery bag. In this case, the levy may not function as Pigouvian tax where the marginal benefits of internalization equal the marginal cost of abatement, but rather to give a price signal up to the level that can stimulate the consumers' behavioral changes. This type of plastic bag levy is popular in Denmark, United Kingdom, Ireland (Convery et al. 2007), South Africa (Hasson et al. 2007) and other countries. In most of these countries, the government plays a major role in the practicing plastic bag levy by influencing consumer participation in sustainable consumption that leads to pro-environment behavior.

The plastic bag levy as a mechanism to change consumer behavior in using it needs to be coupled with educational and awareness campaign. The campaign that contains the environmental message on the impact of plastic bag use generally airs through nationwide electronic media by MDTCC. It is continuously supported by the standard campaign materials channeled to the supermarket chain and retails outlet. This aspect needs to be evaluated to measure the deliverability of the campaign message to the consumers'

awareness, knowledge and attitude at least the development of pro-environmental behavior. The consumers' support toward the plastic bag ban campaign provides important information for the policy maker (Sharp et al. 2010; Baker 2010).

According to Wright and Klyn (1998), a specific consumer attitude assumes to predict certain consumer behavior. The self-proclaimed household survey will experience the over-assumptions or over-statements from the respondent. Thus, specific response on the plastic bag extension to other types of market was used to measure their attitude toward plastic bag levy. As mentioned earlier, the *No Plastic Bag Campaign* is only applied in the supermarkets, retails and major shopping malls but not yet on the traditional public market, night market and morning market that operates occasionally. Further analysis will incorporate consumer support to reduce the over-claimed effect of the face-to-face questionnaire survey. At the end, results of the study will provide the relevant information to improve the implementation of plastic bag policy.

From the behavioral perspective, the prohibition of plastic bag can be classified as an anti-consumption behavior which is defined as a resistant against the culture of consumption and the marketing of mass produced (Penaloza and Price 1993). It results from the excessive consumption of plastic bag in modern society forced by the wealthier nations or classes that emerge from the anti-consumption behavior (Iyer and Muncy 2009). To the contrary, anti-consumption behavior has another meaning where it refers to the involvement of consumer emotions such as resentment toward the ban on consumption (Zaves-toski 2002). Anti-consumption behavior was classified as a consumer rebellion, resistance, boycott, counter-cultural movement, ethical consumption and non-consumption (Cherrier 2006). Both sides of the anti-consumption behavior definition in the context of plastic bag levy will be explored in this study. It will contribute to the existing study that analyzes the consumer's behavior of plastic bag proscription on national basis (Sharp et al. 2010; Cherrier 2006; Convery et al. 2007; Hasson et al. 2007).

Several consumer behavioral studies on the impact of plastic bag policy found issues related to declining plastic bag consumption (Dikgang and Visser 2010), inconvenience (Convery et al. 2007) and anti-consumption behavior and attitudes (Sharp et al. 2010). It involves behavioral change processes that need a specific attitude and knowledge on the subject matter (Hines et al. 1987; Wright and Klyn 1998). The application of the plastic bag policy at point of sale gives an immediate effect to the consumer behavioral change (Baker 2010). In addition, the accessibility and visibility of this action fosters the behavioral change of the new emergence of green consumer societies by the middle income class (Cherrier 2006).

While most of the plastic bag levy relates to issues of littering from the solid waste management perspective, this study will link it with the secondary use of plastic bag as bin liners as part of the solid waste management practices in this country. This part is rarely emphasized in most studies on plastic bag levy that relate to consumer's behavioral change (Convery et al. 2007; Hasson et al. 2007; Ayalon et al. 2009; Sharp et al. 2010). It will complement the existing studies such as in Israel (Ayalon et al. 2009), Ireland (Convery et al. 2007) and South Africa (Hasson et al. 2007) where the emphasize was more on the littering problems.

Finally, though the plastic bag levy to force change of consumer behavior, no study has been reported on the evaluation of the consumer's acceptance and analysis of the possible correlations between the consumers' attitude-behavior of plastic bag levy and the consumer's shopping practice during the 1 day of no plastic bag campaign. Besides that, the study identifies current consumer practices on plastic bag usage during the campaign and secondary usage of the plastic bags. The study carried out the discussion on the context of

plastic bag levy to change the consumers' behavior, the possibility of plastic bag levy extension in the other types of market and the related policy implication with the current scenario.

2 Methodology and analysis

Considering the official launch of Plastic Bag Campaign by the Minister of Domestic Trade, Cooperative and Consumerism, Johor was selected to represent the State. The study was conducted through a mixture of quantitative and qualitative methods. The quantitative approach conducted by the household survey was supported by the qualitative approaches using a semi-structured interview with the relevant stakeholders. The stakeholders identified are those affected by the plastic bag campaign including the super/hypermarket, plastic industry, retailers and non-government associations (NGOs).

The face-to-face household survey used the standard questionnaires from the respondents, husband/father, wife/mother or adult above 18 years. The sampling framework developed by the Statistics Department of Malaysia revealed that from the 3,170,500 people of populations in Johor state (Department of Statistic 2006), a total 262 samples were selected to represent the household population.

The qualitative approach was conducted by using semi-structured interviews due to the nature of the study to identify and explore the various issues related to the plastic bag campaign from the stakeholder's view. It is the best way in catching the respondents' point of view and getting the inside information (Harrell and Bradley 2009). The stakeholders interviewed in this study include the consumer association [Federation of Malaysia Consumers Association (FOMCA)], the Consumer Research and Resource Center (CRRC), the Malaysia Plastic Manufacturer Association (MPMA) and Malaysia Plastic Forum (MPF) that represent the manufacturer/industry, the State Environment, Health, Welfare and Caring Society Committee of Penang State Government and the Department of Consumers Affairs, Ministry of Domestic Trade, Cooperative and Consumerism (MDTCC). The supermarket and hypermarket were represented by Ting Supermarket in Penang and Mydin hypermarket as one of the leading hypermarkets involved with the No Plastic Bag Campaign Day.

The eleven-point interval scale was used to obtain the level of sensitivity and relative strength of relationship in the data (Brace 2004). Though the study used a self-reported consumer shopping behavior using own shopping bag in the five (5) instances of shopping visit applied by Sharp et al. (2010), we used a further detailed question on the consumer actions if their own shopping bags was full during shopping on the no plastic bag campaign day. It is part of the exploratory type of study further discussed in the context of anti-consumption behavior, (1) full anti-consumption behavior, (2) partial anti-consumption behavior and (3) no anti-consumption behavior.

The study used the eleven-point (0–10) scale on consumer attitude toward the plastic bag levy according to Sharp et al. (2010) but further applied the scale for the plastic bag levy extension to the other type of markets. A *T* test analysis was conducted to measure the extension of the initiatives to the other type markets such as traditional/wet and night/morning markets as part of the effort to study the consumers' readiness on the extension plan of the plastic bag levy in all types of market. The study uses the SPSS version 18.0 to carry out the analytical statistics. The simple descriptive analysis using frequency/percentage was utilized due to the nature of the study that is still in the stage to explore various consumer responses and practices on the current scenario of plastic bag ban.

3 Result and discussion

3.1 Consumer awareness, knowledge and attitude

Self-claim awareness among the households was high at 94 % on the plastic bag campaign with supermarket and hypermarket ranking the highest at 65 % as the sources of the campaign (Table 1). The result validates the strategic approach for the campaign and the importance of educating/socializing the urgency to ban the plastic bag. In comparison, high support at 96.0 % recorded by respondents who support the plastic bag campaign in South Australia (Sharp et al. 2010) while only 11 % of the respondent in Spain were not aware of the plastic bag campaign as a result of the campaign carried out from 2005 to 2010 (Baker 2010). As a deliberate attempt to change consumer behavior for products and services with the environmental degradation message, the study recognized the de-marketing approach being used in the campaign (Engel et al. 1990; Wall 2005).

The high percentage of consumer support toward the plastic bag ban in the supermarket signifies a positive consumer attitude toward the plastic bag levy. While the consumers' knowledge about the environmental impact of plastic bag resulted in 66 % of consumers knowing that plastic bag campaign will have an impact to reduce the amount of solid waste generated with positive impact on the environment. Both results in general indicate the consumer's support for the plastic bag levy and the deliverability of the campaign message. It supports the statement that the specific behavioral changes need a specific attitude and knowledge on the subject matter by Hines et al. (1987) and Wright and Klyn (1998).

However, when consumers were offered the extension of plastic bag levy to other types of market, the proposal is neglected. As of the present, the plastic bag levy applies to supermarkets, major shopping malls and retailers but not to other types of market such as traditional/public market, night market and morning market. A *T* test analysis presents a significant difference in the consumer's scores that support toward the plastic bag ban in supermarket ($M = 8.83$, $SD = 1.414$) compared to the other types of market ($M = 8.51$, $SD = 1.415$); $t(170) 0.318$, $p = 0.000$ (Tables 2, 3, 4). In general, it shows the un-preparedness of the society for an extension of plastic bag levy.

3.2 Behavioral response to the plastic bag levy

The study measures the correlations of attitude-behavior to support the plastic bag levy using the eleven scale degree of support toward the supermarket and the frequency of consumers bringing their own grocery bags during the campaign in a month. The analysis

Table 1 Source information of no plastic bag day campaign

Various type source of campaign	Sample (<i>n</i>)	Percentage (%)
1. Supermarket/hypermarket	171	65.3
2. Media (radio, television, newspaper)	53	20.2
3. Friend/neighbors	19	7.3
4. Looking consumers bring shopping bags	10	3.8
5. Other family member	5	1.9
6. No comment	4	1.5
Total sample	262	100.0

Table 2 Paired samples statistics

	Mean	Sample (<i>n</i>)	Std. deviation	Std. error mean
1. Supermarket (agree)	8.83	170	1.41	0.11
Other type of market (agree)	8.51	170	1.42	0.11
2. Supermarket (disagree)	1.12	32	1.54	0.27
Other type of market (disagree)	1.66	32	1.72	0.30

Table 3 Paired samples correlations

	Sample (<i>n</i>)	Correlation	Sig.
Supermarket and other type of market (agree)	170	0.77	0.00
Supermarket and other type of market (disagree)	32	0.77	0.00

Table 4 Paired Samples Test

	Paired differences					
	Mean	Std. deviation	Std. error mean	<i>T</i>	<i>df</i>	Sig. (2-tailed)
Supermarket and other type of market (agree)	0.32	0.96	0.07	4.33	169	0.00
Supermarket and other type of market (disagree)	0.53	1.11	0.20	2.72	32	0.01

proves no significant correlations of specific attitude-behavior at $p = 0.17$. The variable of weekly practice of bringing own shopping bag may not be enough to represent the pro-environmental behavior that supports plastic bag levy. Thus, the study may not be able to support the earlier findings on specific attitudes and specific behavior correlations as claimed by Kraus (1995) and Wright and Klyn (1998), but rather than an earlier effort to capture the impact of this initiative to the consumers' attitude and behavior. A further comprehensive study on the supermarket might be needed to grasp the consumers' practices during the plastic bag levy.

Another part of the consumer behavior study on the plastic bag reveals a high percentage (45 %) of secondary use of plastic as garbage bags (Table 5). Consumer opposition toward the plastic bag levy reduces the plastic bag consumption but at the same time forces them to buy more garbage bags. This result supports the 20 % increase of the garbage bag sale in supermarkets while 30 % increase of the garbage plastic bag sales recorded in Selangor states and 40–50 % in Penang states (The Malaysian Insider 2012). The data indicates that the campaign might not attain the objective to reduce the plastic bag consumption but rather burden the consumers for extra garbage bag cost.

At the same time, the study reveals a policy from the solid waste management under the local authority that stipulates only domestic or household waste tied in plastic garbage bag is collected by the garbage truck collector. Such example is the Solid Waste Collection, Removal and Disposal By Laws 2007, Shah Alam City Council. Plastic bag is needed to prevent the contamination of the waste to the garbage bin due to the high moisture content of domestic waste. It is part of the solid waste management practice in Malaysia (DANIDA

Table 5 Secondary use of plastic bag

Various secondary use of plastic bag	Sample (<i>n</i>)	Percentage (%)
1. Reused for garbage bag	225	45.0
2. Reused for carrying goods	159	32.0
3. Thrown in with other waste	68	14.0
4. Reused for shopping	46	9.0
Total sample	498	100.0

2010; New Straits Times, September 2, 2011). Meanwhile, the original concept of plastic bag levy is to control the plastic bag littering problems as part of the solid waste management legislation (Convery et al. 2007). Thus, the plastic bag levy policy normally supported by the amendment of Waste Management Act with anti-litter regulations as such take place in Ireland (Convery et al. 2007), San Francisco (Romer 2010) and South Africa (Hasson et al. 2007). It may lead to different implications in Malaysia's scenario of solid waste management.

Despite the environmental impact of plastic, about 32 % of supermarket plastic carrier bags are reused to bring other things such as 9 % for shopping. Only 14 % of plastic carrier bags that really disposed with other type of waste (Table 5). Other similar studies claimed a sustainable use of plastic bags with 23 % reused for packing other products in Israel (Ayalon et al. 2009), 16 % reused for shopping and 14 % are recycled in South Australia (Sharp et al. 2010). Despite the negative effects of plastic consumption on the environment, from the consumers' behavioral perspective, the plastic bag reuse for various purposes shows a positive consumer behavioral practice. These practices on the other hand have been utilized by the plastic industry to criticize the implementation of plastic bag levy in Malaysia (Hoggard 2010). The 41 % of the secondary use of plastic bag has shown a potential of reusable shopping bag behavior to be implemented. It is a positive approach if coupled with the educational campaign of Bring Your Own Shopping Bag (BYOSB) Campaign rather than emphasizing on the negative approach of No Plastic Bag Campaign.

The survey result shows that during 5 days of the campaign, about 23 % of respondents forgot to bring their own shopping bags, 20 % forgot twice and 16 % of the respondents forgot three times (Table 6). In general, we could say that roughly 60 % of the respondents forgot three times or less to bring their own shopping bags during the campaign day. The result portrays a transition of consumer's behavior as part of the effort to adapt to the plastic bag campaign day. Though this may suggest a conscious anti-consumption behavior as well (Cherrier 2006; Sharp et al. 2010), the consumers that opt not to consume the plastic bag due to the environmental reason were seen as more ethical consumer or pro-environmental behavior (Cherrier 2006; Krajhanzl 2010).

The consumer behavioral response toward the No Plastic Bag Campaign experience temporary reactive response was shown in the supermarket volume of sales cited in local newspaper. There is 30 % decline in the supermarket volume of sales on Saturday campaign during the first three to 6 months of the plastic bag campaign, even though the sales surged on Sunday reported in local newspaper (The Star. January 11, 2010; The Star. January 4, 2010). It appears that the shoppers shift their grocery shopping time to avoid the Plastic Bag Ban Day. This temporary reactive behavior of consumers may need a response through increasing number of days of plastic bag ban and the extension to other types of market to foster consumer adaptability to the new shopping practice.

Further detailed questions on self-claimed consumers bringing their own shopping bags revealed three practices identified as potential voluntary full anti-consumption behavior.

Table 6 Within five (5) times spent in the supermarket when no plastic bag day campaign every Saturday, how many times you forget to bring your own shopping bags?

Forgetful of bring own shopping bags	Sample (<i>n</i>)	Percentage (%)
Ones	61	23.0
Twice	52	20.0
Thrice	43	16.0
Four times	23	9.0
Five times	78	30.0
No comment	5	2.0
Total sample	262	100.0

The three practices are 'Do not buy extra bags, but just put in the trolley' 43 %, 'Kindly fill up and try to maximize own shopping bags 14 %' and 'Buy the woven bag and paper bag' 10 % (Table 7). The total 67 % of those practices support with the 60 % respondents who forgot three times or less to bring own shopping bags during the campaign day. The results reduce the potential possibility of overstatement in self-reported behavior of questionnaire survey type (Wright and Klyn 1998).

At the same time, we recorded 33 % of consumers who buy the plastic bag from supermarket if their own shopping bag is not enough and classify them as a partial anti-consumption behavior (Table 7). It is due to their inconsistency of practice toward plastic bag consumption, they professed to bring their own bags but at the same time buy or use plastic bag. This study reveals another form or practice of partial anti-consumption behavior that has been found in the study of Sharp et al. (2010). Their study classified the consumers who rely on the store-provided bags for those who did not bring own reusable shopping bags during the phasing out period as partial anti-consumption behavior.

Interview with supermarkets involved in the No Plastic Bag Campaign reveal several practices related to consumer's actions such as missing baskets at the supermarket, increase in stolen goods/items and misuse of supermarket trolley to transport goods to the house especially for the supermarkets located adjacent to the residential areas. This negative consumers' behavior was identified as a kind of protest to their previous shopping convenience and classified as no anti-consumption behavior (Penaloza and Price 1993). The phenomenon shows consumer resistance against the cultural attitudes and behavior to avoid the plastic bag levy. This consumer behavior is well understood since providing free plastic bags in supermarket has been expected as a norm and perceived as the right of the consumers. From the perspective of the plastic bag policy, it will take larger administrative burden to the supermarket (Convery et al. (2007)

Table 7 During the plastic bag campaign day, if you bring own shopping bags and not enough, what you usually do?

Various practices if own shopping bags are not enough	Sample (<i>n</i>)	Percentage (%)
1. Do not buy extra bags, but just put in the trolley.	127	43.0
2. Buy the plastic bag MYR 20cent (USD 0.06) from supermarket	99	33.0
3. Kindly fill up and try to maximize own shopping bags	42	14.0
4. Buy the shopping bag such as woven bag and paper bag	29	10.0
Total sample	297	100.0

Supermarkets play a central and focal point of plastic bag campaign in Malaysia where it was stated as part of the company's corporate social responsibility (CSR), while consumers assume that the revenue gained from the plastic bag levy is perceived as benefits to the company. The paradox of CSR complicates the issue due to the nature of company objectives that are more profit oriented than altruistic (Lee et al. 2009). This practice creates a different public image and receives some resistance from the consumers. While the original concept of plastic bag levy stated that the revenue will be channeled to environmental funds to reverse the environmental damage caused by plastics (Convery et al. 2007). Various studies revealed that clear guidelines, mechanism and legislative approach will improve the performance of plastic bag levy initiatives and increase public confidence (Convery et al. 2007; Romer 2010; Dikgang and Visser 2010).

The findings of the interview with the supermarkets support that with the consumer associations, FOMCA and CRRC. It was stated that the inconvenience aspects of shopping practices and the plastic bag levy imposed by the supermarket creates unhappiness for the consumers during the first period of the campaign. Some consumers refuse to pay for plastic bag and think that it was part of the supermarket initiatives to gain more benefit. The complaints include inconvenient shopping practices, refusal of plastic bag fees especially during grocery days and the pre-assumptions that the plastic bag ban is the initiative of the super/hypermarket to get extra money (The Star. January 4, 2010; The Star. January 11, 2010).

The interview with the government officer of MDTCC reveals that part of the no plastic bag campaign—the involvement of supermarket, retailer and major shopping mall—binds legally through the Letter of Agreement (LA) provided by government. It was signed by major retailers, supermarkets and hypermarket chains. The LA states that the revenue from the plastic bags is not part of the enterprise profit but rather of the company's Corporate Social Responsibility (CSR) to conduct educational awareness campaign. This mechanism has been practiced in San Francisco where there was an agreement between the San Francisco's Commissions on the Environment and grocers' coalition in 2005 (Romer 2010). The Plastic Bag Reduction Ordinance that had been launched 2 years after showed a gradual implementation process of total plastic ban. At the same time, the grocery stores were required to provide decomposable plastic, recyclable paper or reusable checkout bags as alternatives for the consumers. The important role of government in setting up a clear guideline and mechanism is needed to support the plastic bag policy.

As part of the de-marketing campaign to change the consumer's behavior by the government, revenues from plastic bag fees were channeled to the environmental fund. Up to now, there is no environmental fund nor did mechanisms establish to channel the revenue collected from the plastic bag levy in Malaysia (result of the interview with MDTCC and supermarket). Due to no centralized revenue collection from the plastic bag levy, it is difficult to measure the effectiveness and the impact of the campaign to the consumers' behavior. The current study has met obstacles in getting the supermarkets to cooperate on tracing the money gathered from the plastic bag levy.

While, in the context of the plastic bag levy for consumers' behavioral changes, the hypothetical environmental fund is commonly used to persuade the consumers behavioral changes (Convery et al. 2007). Besides that, the establishment of environmental fund was supported by setting up administrative and legislative approach by the government such as in Ireland (Convery et al. 2007), South Africa (Dikgang and Visser 2010) and San Francisco (Romer 2010).

Interview with MDTCC and supermarkets stated that the revenue from the plastic bag fee was used for the administrative cost embedded in conducting the various activities by

the supermarkets (Convery et al. 2007; Dikgang and Visser 2010; Romer 2010). The efforts of the supermarkets during No Plastic Bag Campaign Day in Malaysia range from training of the cashier on the importance of plastic bag ban to the consumers, constant reminders on the day before the campaign and the provision of various reusable shopping bags with attractive designs, color and price from MYR 0.90 (USD 0.29) into MYR 4.90 (USD 1.56). A positive approach has been applied by the Japanese general merchandise multinational of AEON, to change the consumer shopping behavior during the no plastic bag campaign. The No Plastic Bag Campaign has been changed into a positive Bring Your Own Bag (BYOB) Campaign.

4 Concluding remarks and policy implication

What has happened in the scenario of Malaysian plastic bag levy can be seen as part of consumers' behavior-changing process in the 1 day a week of no plastic bag campaign in the major supermarkets, retailers and shopping malls. The secondary use of plastic bags to bring other things has shown a potential reusable shopping bag practice to be implemented in Malaysia especially when coupled with the educational campaign of Bring Your Own Shopping Bag Campaign.

The plastic bag levy in Malaysia can be seen as part of the government effort to create a sustainable consumption society embedded in the consumer behavior.

The regulatory or legislative framework that will provide clear guidelines and mechanisms for consumers, the retailers, supermarkets and the plastic industry may be needed. It will increase the consumer's confidence, in addition to retailer and plastic industry involvement.

Though the campaign may not achieve the objective yet to reduce the plastic bag consumption due to the increase in garbage bin liner usage, the research reveals the urgency to look at the plastic bag levy from the solid waste management perspective. The enactment of the Solid Waste and Public Cleansing Management Act 2007 (Act 672) needs to support the anti-litter regulations mostly associated with the implementation of the plastic bag levy instead of encouraging more usage.

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