

**AN EMPIRICAL ANALYSIS OF GREEN MARKETING – A CASE STUDY OF
GOVERNMENT’S PLASTIC REDUCTION POLICY**

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ABSTRACT

In the wake of the rise of environmental awareness around the globe, both eco-friendly organizations and enterprises are proactively initiating movements promoting environmental protection and “love the earth”. Companies that produce green products tend to fix costly prices in response to the high cost which comes along during manufacturing process, leading to poor consumption behavior of the consumers. However, it is believed that more and more consumers will emphasize the issue so long as strengthened advocacies are carried out to inspire consumers’ purchasing enthusiasm through social events over a longer period of time. The questionnaire was based on: (1) a review of the literature and (2) discussions with experts. The final questionnaire was divided into three parts: Green marketing survey, Government’ Plastic Reduction Policy survey and Population variable survey. This study has collected 268copies via online questionnaire. Analyzed by Pearson correlation coefficient, the correlation coefficient of government’ Plastic Reduction Policy towards green marketing is 0.736, showing that government’s ban on sale of plastic bags and green marketing are highly correlated.

Keyword: Corporate image, Environmental protection, Green marketing, Government’ Plastic Reduction Policy.

1. INTRODUCTION

Modern people are paying more and more attention to environmental protection. Not only do they carry environmentally friendly chopsticks and reluctant to use plastic bags, but they also require that the products they use are environmentally friendly, safe to use, and recyclable, and enterprises are introducing green concept when selling their products. Generally, products were to meet customer needs and create corporate profits. When buying goods, most consumers do not think if they would harm the environment but are more concerned about their practicality and convenience. Due to increasing awareness of the concept of green consumption, consumers also hope that the industry can make greener products by taking ecological protection and natural human harmony into account and providing a better solution to the earth.

In the wake of environmental protection issues being highly valued by the governments in

various countries, they have further affected the people's consumer behavior. Green products and green marketing have gradually become the operating strategies of numerous companies, prompting them to incorporate environmental protection into product designs, raw materials, production, marketing, services, after-sales services, and other processes. Regardless of the past or present, green marketing conveyed by the government or manufacturers will have a massive impact on future personal buying habits of consumers amid the new green consumption trend. Meanwhile, the government's semi-compulsive policy has also enhanced the green consumption habits of consumers

The global awareness of environmental protection has become more and more critical. The environmental protection groups and companies are actively initiating environmental protection and love the planet campaigns. Green marketing serves the purposes of selling products that are ecologically safe, recyclable, decomposable, anti-pollution, energy control, and other advantages. Studies have shown that consumers will gradually change their purchasing behavior due to environmental concerns (Diamantopoulos et al., 2003). Manufacturers of green products have to raise their prices to cope with the excessive-high production costs at the beginning, resulting in consumers' reluctance to buy them. However, as long as the green products were promoted long term following the environmental protection concept, they will stimulate consumers' purchase desire through public relations activities. It was believed that more consumers would pay more and more attention to this issue in the future.

This study aims to explore the consumers' opinions on green marketing to reflect the government's vigorous attempt to promote green environmental protection. The government's Plastic Reduction Policy was taken as an example by this study to find ways to help green environmental protection, thereby enhancing consumer environmental awareness and proactively purchase the relevant green products.

2. LITERATURE REVIEW

2.1 Green Marketing

Green marketing arises from minimizing the environmental pollution of each link from the life cycle of the products and the process of obtaining, manufacturing, selling, consuming, and discarding the raw materials. Many companies focus on design and production but ignore the importance of marketing. Green marketing can show a company's green management characteristics by integrating them into the entire supply chain marketing. They include the collection of green information, exploration of green products, and shaping up a green image, which has a significant impact on the corporate image of a company.

Kotler & Armstrong (1991) believe that green marketing refers to products produced by the manufacturers that are safe and complying with environmental protection standards, and the outer packaging materials are recyclable, reusable, and decomposable. These products can prevent pollution more effectively and use energy more efficiently. Schoell&Guiltinan (1993) pointed out that green marketing is the development and implementation of marketing programs to enhance the environmental image of the organization. Amin et al. (2015) regard green marketing as a sales method that applies environmental protection demands, ideas, and practices to the life cycle of each product. Degirmenci&Breitner (2017) indicates that green marketing should integrate environmental protection demands into the design, production, and the packaging process to obtain a sales

model. From the above viewpoints, we can refer that green marketing is any part or a link to the overall production process that enhances environmental pollution prevention.

Green marketing is defined as: (1) An emerging marketing method to cope with environmental protection issues that the society is increasingly concerned about, placing equal emphasis on consumer needs, the interests of manufacturers, and maintaining a natural environment. (2) Marketing activities carried out by the government or public welfare unit to preserve the environment. (3) Marketing activities promoted by the environmental protection units to remind and awaken the public's environmental consciousness. Following the promotion of environmental protection issues and enhancing the concept of green environmental protection will significantly reduce environmental harm throughout the process of using consumer products. The rise of this green phenomenon will also make more people attach more importance to the attitude of green consumption.

Kärnä et al. (2003) proposed green marketing is a tool that firms can use to gain monetary goals by fulfilling buyers' needs. More specifically, firms should be responsible in terms of ethically choosing the sources of their raw materials and products as well as services and processes that are planet- and people-friendly. Green marketing for business activities of the firms need the support of an integrated set of marketing mix components (e.g., package and product design; selection of channel; promotion; communication; pricing) as this represents the firm's value offering to the customer satisfaction (Mahmoud, et al., 2017). The green marketing strategies can assume some significant costs at the beginning; they finally generate positive effects on customers' satisfaction and have a positive impact on the operation cost. Nevertheless, these green marketing strategies should be accompanied by a follow-up of customer opinions (Mele, et al., 2019). Khan, et al., (2020) suggested several reasons develop green marketing mix and eco-labeling strategies: (1) to improve service and product value; (2) to enhance a firm's image; (3) to gain competitiveness; (4) to comply with environmental pressures; and (5) to seek new markets or opportunities (Khan, et al., 2020).

2.2 Government' Plastic Reduction Policy in Taiwan

The current social pollution, particularly plastic pollution, has been severe. According to statistics, the volume of plastic products in the world had risen from 1.5 million metric tons in 1950 to 200 million metric tons in 2002, and reached the present amount of 300 million metric tons per year (Chen, 2015). There is widespread use of plastics, and yet we cannot incinerate them, thus resulting in more severe pollution issues. Since the 1950s, global plastic waste has doubled every 11 years. Even if only 1% of the waste would eventually enter the seas, it would generate 300,000 metric tons of plastic waste in the oceans every year (Gilver, 2015). It reveals the problems that marine life may consume them accidentally to result in malnutrition, or unable to digest them to result in death. All these events will transfer to the food chain where toxic substances and heavy metals adhered to the plastics will eventually go into the body of human beings. Therefore, various countries are actively promoting plastic reduction policies. In recent years, Taiwan has also begun to ban the use of plastic bags, encourage the use of environmentally friendly trash bags, or suggest consumers to bring their reusable shopping bags. The government will expand such practice to various industries in the future.

3. RESEARCH METHOD

3.1 Questionnaire Design

The questionnaire was based on: (i) a review of the literature (Hartmann&Apaolaza-Ibáñez, 2001; Hansla, et al., 2007; Huang, et al., 2019; Chen,et al., 2019; Han& Zhang, 2020)and (ii) discussions with experts. The final questionnaire was divided into three parts, as follows:

1. *Green marketing survey*: responses requested on a Likert-type scale of 1 to 5 (with 1 representing ‘extremely disagree’ and 5 representing ‘extremely agree’);
2. *Government’ Plastic Reduction Policy survey*: responses requested on a Likert-type scale of 1 to 5 (with 1 representing ‘extremely disagree’ and 5 representing ‘extremely agree’); and
3. *Population variable survey*: Gender, marriage status, Age, education degree and occupation status.

After revising the questionnaire about green marketing, the study has supplemented with the following viewpoints:

1. The green policies promoted by the government will affect my choice of green products.
2. I think that products supported under green marketing are of substantial help to environmental protection.
3. Shopping in stores with green labels is beneficial to the environment.
4. The products I use are designed to be environmentally friendly and will not cause pollution.
5. For the sake of the future, I will continue to use environmentally friendly-labeled products.
6. The integrity of environmental information will affect my choice of purchasing green products.
7. I am willing to pay a higher price to buy green products to reflect environmental protection.
8. Environmental reasons will prompt me to purchase products that will cause less environmental pollution issues.
9. I will pay attention if the products I buy have complied with environmental standards.
10. I will try my best to use recycled products.

After performing an in-depth discussion on the government’ questionnaire on Plastic Reduction Policy, the study has summarized with the following viewpoints:

1. I will carry environmentally friendly bags with me in response to the government’ Plastic Reduction Policy.
2. The Plastic Reduction Policy has a mandatory effect on society to urge consumers to develop a habit of carrying environmentally friendly bags.
3. I think the Plastic Reduction Policy will significantly reduce environmental pollution.
4. I will bring environmentally friendly chopsticks/straws rather than disposable tableware.
5. I will advocate for people around me to reduce the use of disposable plastic bags.
6. I will reuse the plastic bags repeatedly.
7. I think the government should fully implement a ban to provide plastic bags.
8. I will try my best not to use plastic bags when buying goods.

4. EMPIRICAL ANALYSIS

4.1 Sample Data

The study collect questionnaires online distributed from January to April 2020, 268 copies were

collected. The results of the questionnaire indicated that 108 respondents were accounted for by males(54.1%), 159 of them are unmarried (59.33%), 116 of them fall in the age range of 21-30 (43.28%), 207 of them have a university education background (77.24%), 112 of them were students (41.79%) as shown in Table 1.

Table 1. Descriptive statistics of sample population

Items	Demographic factors	No	Percent
Gender	Male	145	54.10
	Female	123	45.90
Marriage status	Married	109	40.67
	Unmarried (Divorce)	159	59.33
Age	Below 20	23	8.58
	21-30	116	43.28
	31-40	51	19.03
	41-50	63	23.51
	Above 51	15	5.60
Education degree	Below higher school	13	4.85
	College/University	207	77.24
	Above Master	48	17.91
Occupation status	Students	112	41.79
	Office holder	65	24.25
	Industry	29	10.82
	Service industry	47	17.54
	Other	15	5.60

4.2 Sample Narrative Statistical Analysis

4.2.1 Green marketing analysis

The results of green marketing analysis were shown in Table 2. The average value of the green marketing survey was found to be 3.96 with a standard deviation was 0.92. Therein, the top five items with highest agree level were No 2 I think that products supported under green marketing are of substantial help to environmental protection; No 6 The integrity of environmental information will affect my choice of purchasing green products; No 3 Shopping in stores with green labels is beneficial to the environment; No 5 For the sake of the future, I will continue to use environmentally friendly-labeled products; and No 1 The green policies promoted by the government will affect my choice of green products.

Table 2. Frequency distribution of green marketing survey

Items	ME	SD	Order
1. The green policies promoted by the government will affect my choice of green products.	3.94	0.92	5
2. I think that products supported under green marketing are of substantial help to environmental protection.	4.58	0.84	1
3. Shopping in stores with green labels is beneficial to the environment.	3.91	0.82	6
4. The products I use are designed to be environmentally friendly and will not cause pollution.	3.67	0.95	8
5. For the sake of the future, I will continue to use environmentally friendly-labeled products.	3.99	0.89	4
6. The integrity of environmental information will affect my choice of purchasing green products.	4.42	0.93	2
7. I am willing to pay a higher price to buy green products to reflect environmental protection.	3.38	0.91	10
8. Environmental reasons will prompt me to purchase products that will cause less environmental pollution issues.	3.86	0.89	7
9. I will pay attention if the products I buy have complied with environmental standards.	4.33	0.94	3
10. I will try my best to use recycled products	3.49	1.07	9
Total	3.96	0.92	

4.2.2 Government’ Plastic Reduction Policy analysis

The results of government’ Plastic Reduction Policy survey were shown in Table 3. The average value of the government’ plastic reduction policy survey was found to be 4.02 with a standard deviation was 0.93. Therein, the top five items with highest agree level were No 1. I will carry environmentally friendly bags with me in response to the government’ Plastic Reduction Policy. No 8. I will try my best not to use plastic bags when buying goods. No 3. I think the Plastic Reduction Policy will significantly reduce environmental pollution. No 6. I will reuse the plastic bags repeatedly. and No 4. I will bring environmentally friendly chopsticks/straws rather than disposable tableware.

Table 3 Frequency distribution of government’ Plastic Reduction Policy survey

Items	ME	SD	Order
1. I will carry environmentally friendly bags with me in response to the government’ Plastic Reduction Policy.	4.61	0.83	1
2. The Plastic Reduction Policy has a mandatory effect on	3.74	0.86	6

society to urge consumers to develop a habit of carrying environmentally friendly bags.			
3. I think the Plastic Reduction Policy will significantly reduce environmental pollution.	4.16	1.17	3
4. I will bring environmentally friendly chopsticks/straws rather than disposable tableware.	3.83	0.96	5
5. I will advocate for people around me to reduce the use of disposable plastic bags.	3.49	0.95	8
6. I will reuse the plastic bags repeatedly.	4.09	0.76	4
7. I think the government should fully implement a ban to provide plastic bags.	3.67	1.03	7
8. I will try my best not to use plastic bags when buying goods.	4.56	0.91	2
Total	4.02	0.93	

4. 3 .Reliability Analysis

Reliability test was used to measure if the tool is consistent and reliable, and Cronbach Alpha was generally used as a benchmark to measure the reliability of the questionnaire. If Cronbach Alpha was greater than 0.7, it has high reliability; and if it falls between 0.35-0.7, the reliability was barely acceptable (Nunnally, 1978). The results were shown in Table 4. As the overall reliability value of 0.838 and 0.765 was greater than 0.7, it shows a high reliability and indicates that the scale has a high consistency and reliability.

Table 4. Reliability analysis

Variables	Items	Cronbach’s Alpha
Green marketing	10	0.838
Government’ Plastic Reduction Policy	8	0.765

4.4 Correlation analysis

To explore whether there was a correlation between the green marketing and government’ plastic reduction policy of consumers, *Pearson* product-moment correlation analysis was used by the study. The results of the *Pearson* product-moment correlation analysis were shown in Table 10. There was a positive correlation between green marketing and government’ Plastic Reduction Policy, and the correlation coefficient between green marketing and government’ Plastic Reduction Policy was 0.736, indicating that they were highly correlated with each other.

Table 5 .Correlation analysis table

Variables		Green marketing	Government’ Plastic Reduction Policy
Green marketing	Pearson	1	0.736
	<i>Significance (two-tailed test)</i>		0.000
	No	191	191
Government’ Plastic Reduction Policy	Pearson	0.736	1
	<i>Significance (two-tailed test)</i>	0.000	
	No	191	191

*: p<0.05

4.5 Discussions

Many scholars studied the driving factors of green innovation and believed that green innovation is more influenced by government regulation, market pull, and technology drive (Huang, et al., 2019; Sun, et al., 2020). The utilization efficiency of resources has become an important factor in measuring the competitiveness of the national manufacturing industry. Green manufacturing have also become an important means for some countries to seek competitive advantages (Han, H. & Zhang, 2020). With the advocacy of environmental protection issues and the enhancement of the concept of green environmental protection, green marketing has become one of the trends actively promoted by enterprises today. However, the increasingly serious environmental pollution and the gradual rise of green marketing make it urgent to change the economic development model (Sun, et al., 2020). Thus, consumers are no strangers to green marketing. The management implications of the green marketing management is described as follows: Most companies can establish a green management mechanism to bring them tangible and intangible business opportunities. On the negative side, they can significantly reduce corporate operating costs by implementing resource conservation and recycling to reduce various pollutions caused by corporate activities. On the positive side, they can manage their businesses with the concept of “green marketing” to effectively highlight the differences between themselves and their competitors, but also establish an excellent social welfare image to enhance their competitiveness and further bring in profits. The environmental protection label symbolizes the environmental protection concept of “recyclable, low pollution, and resource-saving.” Consumers can choose environmentally friendly products based on the environmental protection label. It also means that when purchasing the goods, they can simultaneously take care of the earth to preserve its purity and prevent pollution.

The management implications of the government's Plastic Reduction Policy are described as follows: Plastic waste cannot be easily decomposed naturally in a short period. Besides continuing to promote one-time reduction measures for plastic products, the government hopes that more companies will cooperate with the policy to reduce plastic bags, and the residents to respond to the new life movement of "bring your reusable bag, use repeatedly, use less." The aims are to reduce the use of disposable products, change the discarding lifestyle, cherish resources together, and protect the earth with action. "Plastic reduction" has become a hot topic in Taiwan. The activity intends to invite all people to respond and join the ranks of plastic reduction, change their living habits, and implement plastic reduction at the source. It is essential to regulate some stores not to provide plastic bags free through the Plastic Reduction Policy. The public must pay to purchase the plastic bags if necessary. It is hoped that the payment will reduce consumers' dependence on plastic bags and remind them to carry environmental protection bags with them when shopping.

5. CONCLUSIONS

In terms of products, companies that are currently using green marketing always give consumers an impression of high product prices, which hinders the consumers' willingness to buy, and affects their behaviors and generate an adverse effect instead. The government's Plastic Reduction Policy and growing consumers' awareness of the policy have significantly reduced the use of plastic bags. However, some shops, especially breakfast shops, roadside stalls, etc., have no choice but to provide plastic bags. The effectiveness of this government's Plastic Reduction Policy will be hard to achieve and can only be fulfilled if all industries can respond. Corporate marketing campaigns have a positive effect on corporate image. Under the hot issue of global warming, if companies use green color as an appeal to communicate its corporate image, they can generate a considerable impact on consumers regardless of constructing the corporate image or enhancing the product purchase intention. We also hope that manufacturers can avoid using excessive packaging when manufacturing their products. It can help reduce the use of plastics significantly, protect the environment, and generate less harm to the earth. These are what the study wishes to convey.

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