# The Study of Consumer Green Education via the Internet of Things with Green Marketing

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**ABSTRACT**
Environmental protection and green education are important global issues. The Internet of things (IoT) is a new effective communication medium for advertisement and dissemination. To promote the concepts of environment protection with green marketing via the IoT is the aim of the study. Case study and focus group are adopted for experiment and analysis. After qualitative analysis, we use factor analysis and regression analysis to analyze the statistical results of questionnaires. The effective questionnaires returned rate of this research is 282/300(94%). The analysis results of Likert scale show that Cronbach's α for 5 factors are all higher than 0.7 which means the reliability of this research is good. The result of regression analysis also shows that significance of green marketing via the IoT for consumers' green education is obviously effective. This research presents an indispensable and interesting education way to create a multi-win situation for businesses, consumers, governments and our earth.

**Keywords:** Internet of Things, green marketing, green education, interactive advertising, sustainable development

## INTRODUCTION

Green development is a global focus issue. Since the industrial revolution, the global warming has led to change in the ecosystem (Alfredsson, E. C., 2004), the awareness of environment protection is no longer just a slogan, as one of global people we should take action immediately in daily life.

Consumers will choose green products and services gradually because of popular green education. Therefore, commercial companies will observe consumers' behavior to develop marketing strategies, green marketing will be accepted progressively in wide range of innovative markets (Chien, Yuju, 2011). What is IoT? According to the definition on the web site of Wikipedia, the Internet of things (IoT) is the inter-networking of physical devices, vehicles (also referred to as "connected devices" and "smart devices"), buildings, and other items embedded with electronics, software, sensors, actuators, and network connectivity which enable these objects to collect and exchange data (Elgar Fleisch, 2010). IoT is a new internet technology integrating software, hardware and firmware (Ian G Smith, 2012). The commercial companies with the concept of environment protection will

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**State of the literature**

- First, the IoT is the current trend, and the green education is what people rarely concerned, this study combines the IoT with the green education.
- Secondly, to constitute a bridge between the IoT and green education by green marketing, and make an investigation with focus group interview.
- Finally, the results of the focus group interview suggest the hypotheses, then we adopted the mathematic methods to prove the hypotheses are reasonable.

**Contribution of this paper to the literature**

- As a result of focus groups interview, consumers are impressed by the green marketing activities via the IoT, which thereby affects the purchasing rate.
- The results of the mathematical analysis show that the education level of consumer will affect the consumer' attitude towards environmental protection.
- Regardless of gender, age, educational level and income, consumers will be guided by the concept of environmental education via the IoT interaction with green marketing, thereby to change consumers' values and choose the environment friendly goods.
- Therefore, this study provides a new win-win market model for business, environment and consumer.

develop green marketing with the help of IoT application to transfer green messages effectively and attractive more consumers (Luigi Atzori & Antonio Iera & Giacomo Morabito, 2010).

Attitude is the important factor of learning and experiencing. People's psychological reaction to the environment is so called environmental attitude. Green education will enhance people's green attitude. People's attitude always affect their behaviors. Therefore, green marketing is a key promotion activity in the implementation of environmental protection. How to utilize the IoT? IoT generally offer the automatic machine with a friendly interactive interface (Rolf H. Weber, 2010). Interactive interface is a bridge between human beings and machine. Enterprises always create new promotion policy and service methods to attract customers (Luigi Atzori & Antonio Iera & Giacomo Morabito, 2010). Green marketing is a new concept of promotion policy and IoT is a new service method. Integrating green marketing and IoT technology can make the costumers satisfied with green ways of shopping. Managers always consider to bring innovative concepts into the whole enterprise to develop new markets and fortunes (Fraj, E. & Martinez, E., 2006).

Green marketing impels green education, which means companies have to sell their products in a green way, so they can earn more profits and promote their brand value more effectively (Ottman, J. A., 1999). Moreover, the enterprise can carry out their social responsibility.

In the wake of highly developing economy and science, the object of advertisings have already been focusing on the consumers (Hui-Hsin Huang, 2015). Thus, consumers' behavior can not only lead the way to green trend but also reboot the market. Obviously, green marketing and consumers' green education play the important roles for the issue of environment protection. The IoT will be the effective dissemination medium or tool for green marketing and green education even commercial advertisements.

## PURPOSE OF THE RESEARCH

What we do for the environment becomes the most important thing when the facts of global warming and climate changes become true. This research focuses on the effect of people's thoughts and behaviors regarding the issues of green marketing and consumer green education via the IoT.

The purpose of this research is to analyze whether the green marketing can affect consumers and lead to a good result of green education. The result of this study can offer governments and other enterprises a good reference to popularize the concept of environment protection and make a win-win situation.

## LITERATURE REVIEW

### The Internet of Things

Many Governments regard IoT as a very important innovative technology. Japan develops a management system combines green power and the IoT by separated electricity and smart power meters. This system can not only supply to residents and companies, but also exchange power to different areas (Hung, Wan-Chi, 2016).

The technology of artificial intelligence is added value to new generation of IoT. New IoT will be humanized. More and more employees and resources will be utilized on developing new IoT technology (Ian G Smith, 2012). However, the IoT is still based on the technologies of computer and internet, it's possible to be affected by various reasons, such as natural disasters or hackers, only if we have further consideration and safer design, then we can well prepare for the green application of new generation of IoT (Elgar Fleisch, 2010).

### Green Education

Green education is the basic knowledge and persistent learning for the life of human and globe environment protection. It can teach people green concept and change their behaviors by education. Green education is also regarded as the sustainable environmental education (EE) that is the teaching of individuals, and communities, in transitioning to a society that is knowledgeable of the environment and its associated problems, aware of the solutions to these problems, and motivated to solve them. (https://en.wikipedia.org/wiki/Environmental_education & Larijani, M. & Yeshodhara, K., 2008).

It is very important to implant the concept of sustainable environmental protection into the people's minds via popular green education in daily life (David Lewis & Darren Bridger, 2001). We believe tomorrow will be better if everyone can be self-conscious and take the responsibility to execute the behavior of environmental protection.

### Green Marketing

Green marketing is an ideal method that the enterprises can meet the requirements of making their benefits and implementing sustainable environmental protection at the same time. Green marketing tries to examine the relationship between consumers' socio-economic factors and their willingness to pay more for environmental friendly products, finding the percentages that consumers are agreed to pay for green marketing (Ottman, J. A., 1999). Green marketing creates an environment-friendly basis that enterprises can get the maximum profit and consumers can take responsibility for sustainable environmental protection.

According to the rules defined by WTO agreement, enterprises consider the "sustainable environmental development" as a potential competitive advantage source. Environmental attitudes have a significant effect on ecological behavior. (Fraj, E., & Martinez, E., 2006). From the operational point of view, it will be the trend of new business model to implement green behavior and enhance the efficiency and competitiveness of enterprises to content with the needs of consumers and building a better the future of the earth (Schiffman, L. G. & Kanuk, L. L., 2007).

On the whole, this study defines green marketing as a new marketing strategy that takes care of the benefits of enterprises, consumers and the environment in the meantime.

### Interactive Advertising

Interactive advertising is one kind of conversations or dialog, not monolog. The effect of interactive advertising is changed and enhanced from one-way communication to two-way communication (Burton, S., & Lichtenstein, D. R., 1988). Enterprises have to invent the new languages and new style of speaking to impress their consumers. Interactive advertising has entered the era of consumer-dominated, from one way description to mutual communication with consumers (Mehta, A., 2000).

**Table 1.** Three subtopics of sustainable development

| Fairness | Sustainability | Commonality |
|---|---|---|
| Social level | Economic level | Natural ecology level |
| Advocate equitable distribution and flatter people's basic needs on contemporary and future generations. | Advocate sustainable economic growth of protecting the earth. | Advocate human beings and nature live in harmony. |

The Involvement or participation of Consumer allows the interactive advertising model to be set up (Ying-Ru Yen, 2007). However, the participation of consumer combines with interactive advertising will result in the consequence of customization. The consumer is no longer just a bystander of advertising (Daft, R. L. & Lengel, R. H., 1986).

The IoT is closely related to digital media. It is also an effective technology to well implement interactive advertising because of the impact of internet. The use of Internet technology is free from time and space constraints, the enterprise can interactively communicate with consumers and raise consumer involvement with the help of IoT to deepen consumers' impressions and increasing customers' purchasing power.

## Sustainable Development

WCED released a report in 1987 called "Our common future," a definition of sustainable development is announced in the report as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Roseland, M., 2012). Sustainable development can be discussed as follows including three subtopics which are fairness, sustainability and commonality as shown in **Table 1**.

Sustainable environmental development is the basic rule of peace between human beings and nature. Human beings must do their best to maintain the sustainable environment while developing new technologies.

## Case Study Method

### *Case study I: Recycling bottles to cash-Taiwan supermarket "Carrefour Taiwan"*

Carrefour Taiwan which is an agent of Carrefour French, collaborates with local government of Hualien County in Taiwan to set up the automatic recycling services system for environmental protection resources. Consumers throw the recycled bottles into the automatic recycling machine to exchange shopping cash. Carrefour Taiwan designed the first Taiwan automatic recycling machine for environmental protection as shown in **Figure 1** which benefit not only consumers but also environmental protection and the reputation of Carrefour Taiwan.

### *Case study II:  Antarctica Beer Turnstile*

"Do not drive after drinking!" is a very popular slogan of beer. In most cases, these kinds of warnings of beer advertising are just regarded as slogans. Most of the brewers only require themselves to design the slogan in line with the legal norms, and no further step. However, Antarctica implements the slogan of advertising to let a beer can become as a MRT ticket as shown in **Figure 2**. On one hand, they convince people do not drive after drinking, on the other hand, the beer cans can be recycled at the same time. Antarctica fulfills the implementation of environmental protection behavior.

**Figure 1.** The first Taiwan automatic recycling machine for environmental protection (Poja,2016)
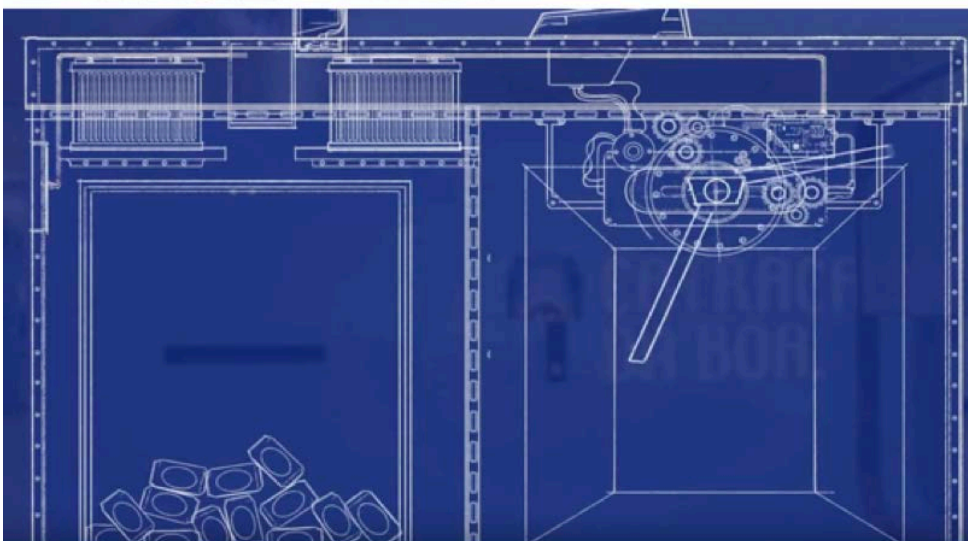


**Figure 2.** Antarctica Beer Turnstile (iThome, 2015)

**Table 2.** Members list of focus group interview

| Code (Male: M; Female: F) | Age | Education level | Task |
|---|---|---|---|
| M01 (Teacher) | 56 | Ph.D. degree | Focus group member |
| M02 (Student) | 22 | Bachelor degree | Focus group member |
| F03 (Student) | 18 | High school | Focus group member |
| M04 (Freelance) | 60 | Junior high school | Focus group member |
| M05 (Freelance) | 40 | Master degree | Focus group member |
| F06 (Office worker) | 35 | Bachelor degree | Focus group member |
| F07 (Housewife) | 38 | High school | Focus group member |
| F08 (Boss) | 29 | Bachelor degree | Focus group member |
| M09 (Temporary worker) | 21 | Junior high school | Focus group member |
| F10 (Office worker) | 25 | Master degree | Focus group member |
| F11 (Student) | 27 | Ph.D. student | Host |

## Focus Group Method

The focus group method means a small group, but including demographically diverse people whose reactions are studied especially in market research or political analysis. This method guides or opens discussions via interview and questionnaire about a new product or something else to determine the reactions that can be expected to represent the subjects' thinking from a larger population (Stewart, D.W., & Shamdasani, P. N., 1990). During this study process, the researcher either takes notes or records the feedback of vital points from the members of the focus group. There are two study cases discussed in this paper, one is Carrefour Taiwan the other is Antarctica Beer.

## DATA COLLECTION

This experiment of focus group interview invited 11 subjects as shown in **Table 2** to attend focus group interview, the ratio of male and female is half and half, the range of subjects' ages from 18 years old to 60 years old, the education levels are between junior high to Ph.D.

## The Results of Focus Group Method

After focus group interview and the privacy survey of cross-comparison, we found that if the condition is the same price of products with green messages, then the subjects whose ages from 22 to 40, average income between $30,000-99,999 NTD, education level above college or higher, would buy the products with green messages. In addition, if the condition is the same price of products with interactive advertising, the subjects whose age from 18 to 21 and over 40 years old, education level under college, average income between $30,000-69,999 NTD, would change the purchasing behavior to choose the product with interactive advertising because of the interesting experience from the interactive advertising. However, if there is no green message or interactive advertising condition, they would still choose the brand they used to buy. In short, the systematic analysis of focus group shows that consumers are willing to pay the products which has interactive advertising with green message, regardless of age, education, and the average income level. Meanwhile, according to the investigation result of focus group method as shown in **Table 3**, we can show that three factors of green marketing, the IoT and consumer interactive communication are necessary and complementary. If missing one of these three factors, it could not achieve the high degree of consumers' involvement and purchasing rate.

**Table 3.** The result of focus group interview

| Research note | Results | |
|---|---|---|
| | **High Purchase Intention** | **High Involvement** |
| If the same price of products with different brands, would you like to choose the product with an interactive advertising? | M01, M02, F03, M04, MO5, F06, F07, F08, M09, F10 | M01, M02, F03, M04, MO5, F06, F07, F08, M09, F10 |
| Why do you choose an interactive advertising brand to buy? | M01, F02, M05, F06, F08, F10 | M01, F02, M05, F06, F08, F10 |
| If the same price of products with different brands, would you like to choose the product with green messages? | M01, M02, F03, MO5, F06, F08, F10 | M01, M02, F03, M04, MO5, F06, F07, F08, M09, F10 |
| What's your concern about environmental protection? | M01, MO5, F06, F07, F08, F10 | M01, M02, F03, M04, MO5, F06, F07, F08, M09, F10 |
| Do you have the impression of the enterprise which has the interactive advertising case? | M01, M02, F03, M04, MO5, F06, F07, F08, M09, F10 | M01, M02, F03, M04, MO5, F06, F07, F08, M09, F10 |
| Do you think that the product with green message is the better? | M01, M04, MO5, F06, F07, F08, F10 | M01, M02, M04, MO5, F06, F07, F08, F10 |
| There are two products, one has interactive advertising with green message the other just has interactive advertising, which product you want to buy? | M01, MO5, F06, F07, F08, F10 | M01, MO5, F06, F07, F08, F10 |
| If there is a product related with environmental protection and health, would you like to buy this kind of environment friendly goods? | M01, MO5, F06, F07, F08, F10 | M01, MO5, F06, F07, F08, F10 |

## HYPOTHESES

In the process of focus group method, this study adopted factor analysis and regression analysis to analyze the questionnaires about the recycling issue under the following assumptions:

**H01:** The higher degree of education, the higher degree of environmental protection concept.

**H02:** The advertising attitude has a positive impact on the consumer purchasing intention.

**H03:** The environmental attitude of consumer has a positive impact on the purchasing intention.

**H04:** Interactive advertising with green marketing via the IoT should have the positive effect of green education to consumers.

We disseminated the network and physical questionnaires in this research, each subject took about 20-25 minutes to fill in the questionnaire. The questionnaires regarding this research were disseminated from the date of 15th April 2017 to 15th May 2017. Total 300 copies were given to 300 subjects. 18 of 300 questionnaires are invalid, there are only 282 valid questionnaires returned, and the overall return ratio of questionnaire is 94%.

## MATHEMATIC METHODOLOGY

This experiment of IoT with green marketing adopted the case of the beer company as the object of research. The first step, arranging the focus group interviews for the subjects with different age, different income and different education level. The second step, we defined four assumptions after finishing the opinion investigation of focus group interview. The third step, we adopted the mathematic methods, such as factor analysis

and regressive analysis, to analyze the consumers' attitude toward IoT with green marketing and the characteristics of consumers and finally prove that the four assumptions above are reasonable.

The design of questionnaire is based on the four key items of consumers' values, consumers' attitude for advertising, consumers' green attitude and consumers' purchasing intention. The definitions of the research variables are as follows:

## The Value Relations of Consumer

The experiment mentioned above utilizes the structure of value relations (Schwartz, S. H., 1992) as a framework. Schwartz derived the following ten basic values: stimulation, self-direction, hedonism, achievement, power, security, conformity, tradition, benevolence, and universalism. Each basic value is described in terms of motivation and goal. A set of more specific value adjectives for expressing the basic value are given in parentheses after each basic value description.

300 subjects were invited to reply the questionnaires which give variable score of 1 to 5 (1: very unimportant, 2: unimportant, 3: no opinion, 4: important, 5: very important, meaning the degree of importance) to be chosen by each subject for each question according to the example of Likert scale.

## Attitude toward Advertising

In this research, we used Likert scale to measure subjects' attitude toward advertising. The questionnaires asked the subjects that "This advertising reminds me not to drive after drinking", "This advertising delivers green concept", "This advertising impressed me", "This advertising makes me want to get the product" and "This advertising changes my habit". The Cronbach's α analysis result of questionnaires for investigating the subjects' attitude toward advertising is 0.903.

## Attitude toward Green (Consumer Environmental Attitude)

We measured how much the subjects agree with the green concept by giving 1 to 5 points of Likert scale to the following questions, "This advertising makes me feel like involving green", "This advertising makes me want to buy and recycle cans and bottles", "This advertising made me satisfied with involving green by showing the data of recycling". The Cronbach's α measured for attitude toward green is 0.891.

## Purchasing Intention

We also measured subjects' purchasing intention following the rules of Likert scale, which include "I'll continue buying this product", "I think it worth buying", "I'm willing to buy their product because of the advertising of no driving after drinking", "I'm willing to buy their product, due to their encouragement of green", "I'll keep buying their products during the next year". The Cronbach's α analysis result of questionnaires for investigating the subjects' purchasing intention is 0.857.

## The Procedure of Data Collection

First of all, regarding consumer characteristics, we adopted factor analysis to figure out the related factors of green value depending on the factor of consumers' value. Furthermore, regression analysis was utilized to find the influent factors of green attitude and green purchasing attitude.

Moreover, regarding green marketing characteristics, we used t-test method for analyzing the relationship between the green marketing and advertising attitude. Meanwhile, the differences of demographic characteristics due to green attitude were also analyzed in t-test.

At last, the influence of purchasing intention resulted from green advertising attitude and green attitude are analyzed and discussed respectively in t-test as well.

**Table 4.** Analysis of personal value factors

| Factor | Question | Factor loadings | | | |
|---|---|---|---|---|---|
| Kind behavior | 1. hardworking | 0.763 | | | |
| | 2. loyal to people | 0.728 | | | |
| | 3. polite | 0.771 | | | |
| | 4. responsibility | 0.743 | | | |
| | 5. honest | 0.711 | | | |
| Power | 6. power | | 0.922 | | |
| | 7. high social stratification | | 0.902 | | |
| | 8. wealth | | 0.653 | | |
| Safety | 9. family safety | | | 0.832 | |
| | 10. social security | | | 0.811 | |
| | 11. national security | | | 0.801 | |
| Achievement | 12. achieve the goal | | | | 0.862 |
| | 13. competent | | | | 0.732 |
| | 14. ambitious | | | | 0.623 |
| | 15. influence | | | | 0.654 |
| Eigenvalues | | 5.026 | 2.301 | 1.654 | 1.513 |
| Cumulative interpretation of variance（%） | | 22.137 | 38.83 | 53.28 | 68.122 |
| KMO value: 0.823 | | Significance：p=0.000<0.05 | | | |

## DATA ANALYSIS AND RESULTS

### Factor Analysis of Personal Value

We adopted the algorithm of principle component analysis (PCA) and the parameter of Varimax to extract the main factor from the raw data of questionnaires as shown in **Table 4**.

The principle of the factor extraction is that eigenvalue must be higher than 1 and the absolute value of factor loading should be higher than 0.6.

According to the result of factor analysis and extraction principle, we got four value factors which include Kind Behavior, Power, Safety and Achievement as shown in **Figure 3**.

After analysis of personal value factors shown in **Table 4**, we extracted four value factors to further inference the reliability analysis.

Regarding the result of reliability analysis, the important parameters Cronbach's α representing reliability value for different factors are 0.879, 0.786, 0.781 and 0.803 for the corresponding factor of Kind Behavior, Power, Safety and Achievement respectively. We can see all of Cronbach's α for different factors are higher than 0.7 which mean the values of reliability are good in this research.

The result of reliability analysis shows that consumers with different genders, ages and revenues whose consuming behavior have no differences on green marketing (p=0.654). However, different education levels of consumers could result in significant difference on green attitude (p<0.05).

After Scheffe test, we found that consumers with graduate school level are higher than consumers with senior and junior school, which means that consumers with higher education level have higher green attitude.
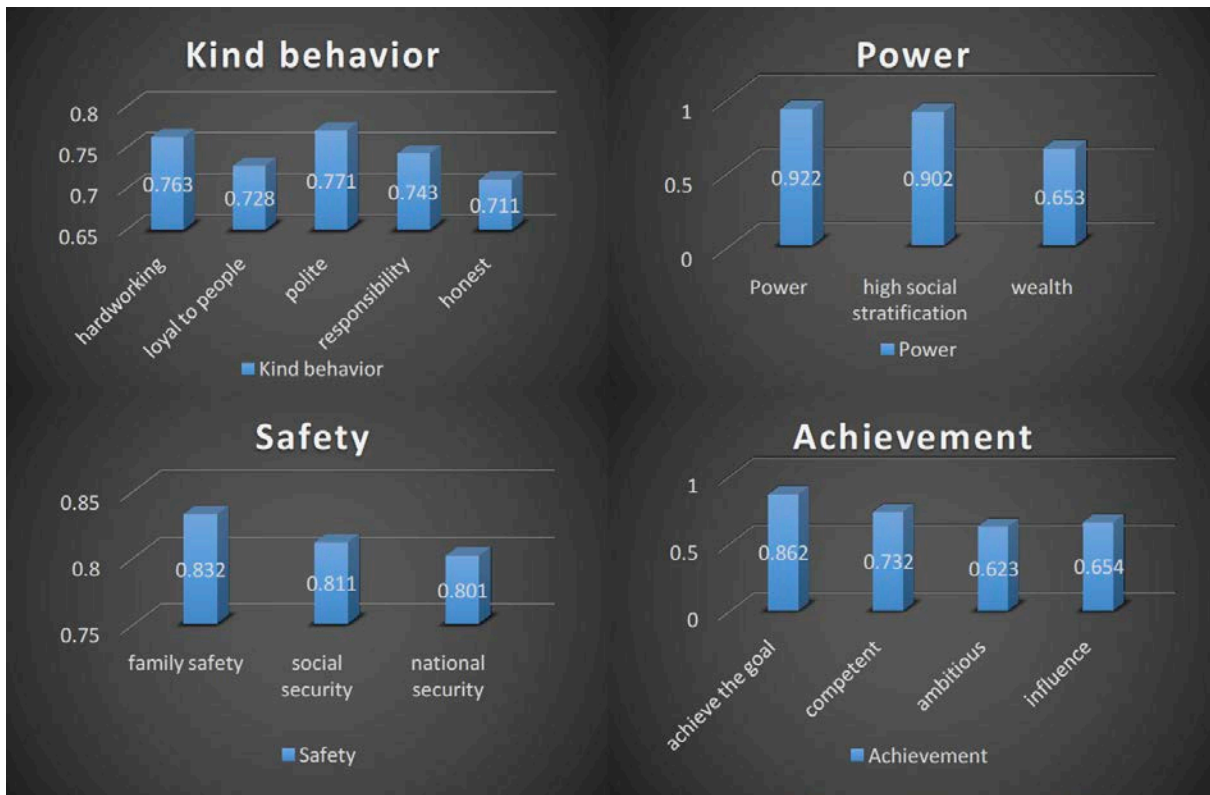
**Figure 3.** Analysis of personal four value factors including Kind behavior, Power, Safety and Achievement

**Table 5.** Advertising attitude of consumer and environmental protection attitude of consumer after regression analysis

|  | Mode one | Mode two |
|---|---|---|
| Advertising attitude of customer | 0.331*** | -- |
| Environmental protection attitude of consumer | -- | 0.273*** |
| Constant term | 13.812*** | 12.892*** |
| $R^2$ | 0.146 | 0.071 |
| F | 54.212 | 24.217 |

Dependent variable: purchase intention

## REGRESSION ANALYSIS

### The Regression Analysis for Advertising Attitude to Purchasing Intention of Consumer

According to the result of regression analysis, we can see great influence on advertising attitude to purchasing intention of consumer ($p < 0.05$; F=54.212, variable $R^2$ =14.6%).

### The Regression Analysis for Environmental Protection Attitude to Purchasing Intention of Consumer

According to the result of regression analysis, we can green attitude has a great impact to purchasing intention ($p < 0.05$; F=24.217, variable $R^2$=7.1%).

## CONCLUSIONS AND RECOMMENDATIONS

The IoT is a new and effective integrated technology based on internet, including hardware, software and firmware. The applications of IoT will be promoted all over the world without time and space constraints in the future. The IoT can let the automatic machine interactively communicate with consumers and raise consumer involvement to deepen consumers' impressions and increase consumers' purchasing power (Ian G Smith, 2012).

According to the results of single factor variance analysis, the most important factor affecting consumers' green attitudes is education. Especially, we found the trend that consumers with graduate school or higher education level, they usually have more social responsibility and are easier to accept the concept of IoT with green marketing. Case study and focus group are adopted for experiment and analysis. After qualitative analysis, we use factor analysis and regression analysis to analyze the statistical results of questionnaires. The effective questionnaires returned rate of this research is 282/300(94%). The analysis results of Likert scale show that Cronbach's α for 5 factors are all higher than 0.7 which means the reliability of this research is good. The results show that the green attitude of consumer has a significant impact to his/her own purchasing intention. The consumers are aware that green products, green information, and the importance of the ecological environment will affect the attitude of consumers on green life, thereby affect the purchasing intention (Hui-Hsin Huang, 2015).

The study found that green marketing via the IoT is the new perspective for education thinking. This is a rare combination issue in the past research. Therefore, the actual case study in Taiwan is still not mature. Nevertheless, this study still gets the conclusion, the advertising attitude of consumer affects purchasing intention of green products obviously. When the consumer has better advertising attitude and perspective about advertising with some green information, as a result, it can not only promote consumer to search the related information of green product and enhance the purchasing intention, but also a good way for the consumer's green education.

According to the research results, we can prove that the following hypotheses are valid.

**H01:** The higher degree of education, the higher degree of environmental protection.

**H02:** The advertising attitude has the positive impact to purchasing intention of consumer.

**H03:** Environmental attitude of consumer has the positive impact to the purchasing intention.

**H04:** Green marketing interactions with consumers via the IoT has the positive effect of green education.

It is recommended that the green marketing related enterprises have to make good use of their own professional technology via the IoT, and combine with integrated innovations to promote their green related products. Based on contingency theory and information processing theory, communication medium are generally more effective for communication of equivocal issues. It will be the responsibility of enterprise to utilize the new technology of IoT. This research offer a new marketing model to take the advantage of preemptive opportunities and create the multi-win situation for businesses, consumers, governments and our earth in the future.

## ACKNOWLEDGEMENTS

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APPENDIX

## Questionnaire 1

1. If the same price of products with different brands, would you like to choose the product with an interactive advertising?

2. Why do you choose an interactive advertising brand to buy?

3. If the same price of products with different brands, would you like to choose the product with green messages?

4. What's your concern about environmental protection?

5. Do you have the impression of the enterprise which has the interactive advertising case?

6. Do you think that the product with green message is the better?

7. There are two products, one has interactive advertising with green message the other just has interactive advertising, which product you want to buy?

8. If there is a product related with environmental protection and health, would you like to buy this kind of environment friendly goods?

## Questionnaire 2

1. Gender：___ (1) Male (2) Female (3) Other___.

2. Age：___

3. Education level：___ (1) Illiterate (2) Primary school (3) Junior high school (4) High school (5) Bachelor degree (6) Master degree (7) Ph.D. degree (8) Other___.

4. Performance：___ (1) No (2) Full-time job (3) Part-time job (4) Other__.

5. Average monthly income for the last year.___(1) No (2) Below NT$20,000 (3) NT$20,000- NT$29,999 (4) NT$30,000- NT$39,999 (5) NT$40,000- NT$49,999 (6) NT$50,000- NT$59,999 (7) NT$60,000- NT$69,999 (8) NT$70,000- NT$79,999 (9) NT$80,000- NT$89,999 (10) NT$90,000- NT$99,999 (11) Above NT$100,000

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