

# A Study of Factors Affecting Customer's Attitude toward Intention to Purchase Green Electronic Products at an IT Mall in Beijing, China

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**Abstract**—This study investigates the relationship between man-nature orientation, ecological effect, attitude toward green purchase, green perceived value, subjective norm and green trust of green electronic products purchase intention. To do so, a survey was conducted by distributing 450 questionnaires in 3 selected IT malls in Beijing, China. The Pearson Correlation was used for the data analysis. According to the hypothesis testing results, all of the null hypotheses were rejected. All variables were verified as factors that positively affect green purchase intention. Based on these results, it can help government and green marketer to better understand how environmental issues influenced customer's attitude toward green purchase intention, and what factors affected customer's green purchase intention. As a result, it seems that the government needs to adjust law or regulation to remain customer's environmental concern; the green marketer needs to develop business strategy to increase customer perceived value and trust to increase green purchase intention.

**Keywords**—Green electronic products, environmental, man-nature orientation, ecological effect, attitude toward green purchase, green perceived value, subjective norm, green trust and green purchase intention.

## I. INTRODUCTION

CURRENTLY, China is the largest electronic products manufacturing in the world. But at the same time, Head (1996) [8] stated that the problem of environmental degradation has been going on for a longtime. An electronic industry brings serious environmental disasters to China that not only destroys the natural environment but also endangers human health. Such as hazardous material "Lead" which polluted water and air even human body. Fortunately, there are more and more Chinese citizens who have realized the case of environmental problems, which are rooted in the catastrophic pollution from the worldwide industrial production activities (Chen, 2011) [5].

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Previous studies stated that man-nature orientation, ecological effect, attitude toward green purchase, green perceived value, subjective norm, and green trust is an important factor of customer green purchase intention, perceived value and customer satisfaction is an important factor of customer loyalty.

In this study, the researcher was focused on the factors influence customer's attitude toward intention to purchase green electronic products. Therefore, the researcher focuses on the relationship between man-nature orientation, ecological effect, attitude toward green purchase, green perceived value, subjective norm and green trust towards green electronic products purchase intention at an IT mall in Beijing, China. The researcher was focused on the customers who have no experience but the intention to purchase green electronic products at an IT mall in Beijing, China.

## II. LITERATURE REVIEW

### A. MAN-NATURE ORIENTATION

Man-nature orientation can be defined as the friendly performance of humans toward nature, because of the love of nature and the performance of protecting nature behavior (Churchaill, 1979) [6]. Miles (1992) [15] defined Chinese always like to keep things like what they are. This concept is published in Tao Te Ching, Lao Tzu who has written this classic text and impact Chinese way of thinking for more than 1000 years.

### B. ECOLOGICAL EFFECT

Chan and Yam (1995) [4] defined the ecological impact may be different variables affecting individual behavior responses. Maloney and Ward (1973) [11] stated the ecological effect is the personal and emotional responses to environmental issues. The ecological effect adjusted from Maloney (1975) [14] defined as ecological scale for evaluating how people affect the correlative issues of ecological.

### C. ATTITUDE

Attitude can be defined as the degree that an individual expresses his or her liking or dislike to measure a particular behavior in question (Ajzen, 1980) [1]. Thus attitude as a factor to predict consumer's buying intention and buying behavior,

and the consumer has a more positive attitude toward an action; the consumer has a high intention that will lead to performing the action under their control. Kassarian (1971) [10] stated that an individual's attitude is a determining factors that helps forecast the relation of the protection against air pollution activities.

**D. PERCEIVED VALUE**

Petterson and Spreng (1997) [18] defined green perceived value as the consumers' overall evaluation of green products and service, and it based on if it will meet the consumers' environmental protection aspirations, sustainable development expectations as well as green demands. Perceived value is represented as the net benefit of the consumers' overall assessment through the evaluation of a products or service (Bolton and Drew, 1991) [2].

**E. SUBJECTIVE NORM**

Subjective norm is represented as an individual's perceived pressure from society to perform their necessary actions. Ajzen (1991) [1] Mentioned subjective norm as a symbol of social factors, the personal subjective influenced by social pressure, so it influences persons to think about whether they should perform a specific behavior. Lee (2008) [12] pointed out that the current society and social influences have a key role to promoting the purchase of green products, especially in the adolescent population. Moreover, Kalafatis et al (1999) [9] mentioned the friends, parents, religious organizations and other unique reference of personal subjective norms.

**F. GREEN TRUST**

Green trust is a willingness to depend on one object based on the belief or expectations resulting from its credibility, benevolence, and ability about the environmental performance (Ganesan, 1994) [7] . Rousseau et al., (1998) [19] mentioned trust is the individual with the positive expectation to accept the other party's behavior or intention.

**F. INTENTION**

O'keefe (2002) [16] defined the behavioral intention as the most useful factor to predict the individual's action under many circumstances including those in the "green market". Intention can be explained as the concept of wants that consumers want to do, it also help to predict individual's behavior feasibility in the future. Othman (2000) [17] stated that the idea of intention might have influenced the consumer making purchase decisions towards the green products.

**III. RESEARCH FRAMEWORK AND METHODOLOGY**

**A. Research Framework**

Base on the several previous usefully theoretical frameworks as a base knowledge to help the researches to improve and create a new research framework to study the green electronic products purchase intention at IT mall in Beijing, China. In the conceptual framework, green electronic purchase intention, the dependent variable, was affected by six independent variables;

man-nature orientation, ecological effect, attitude toward green purchase, green perceived value, subjective norm, and green trust. The conceptual framework is shown in Fig.1. There were 6 hypotheses formulated based on the conceptual framework and they are shown as follows:

H1: There is a relationship between man-nature orientation and consumer's attitude toward green electronic products.

H2: There is a relationship between ecological effect and consumer's attitude toward green electronic products.

H3: There is a relationship between consumer's attitude and intention to purchase green electronic products.

H4: There is a relationship between green perceived value and intention to purchase green electronic products.

H5: There is a relationship between subjective norm and intention to purchase green electronic products.

H6: There is a relationship between green trust and intention to purchase green electronic products.

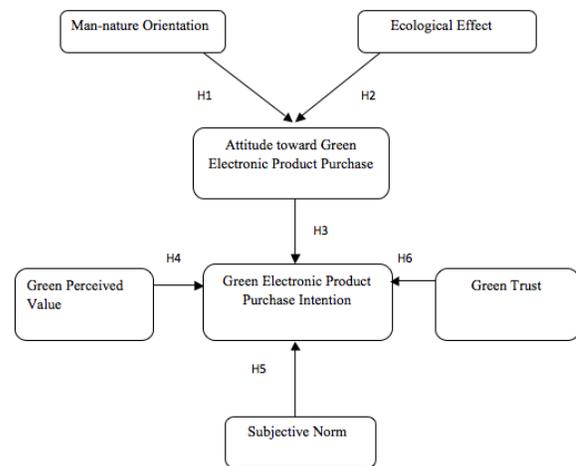


Fig.1. The factors affecting customer's attitude toward intention to purchase green electronic products at an IT mall in Beijing, China.

**B. Research Methodology**

The purpose of this study is to investigate the factors affecting customer's attitude toward intention to purchase green electronic products at IT mall in Beijing, China.

This paper describes six independent variables that are man-nature orientation, ecological effect, attitude toward green purchase, green perceived value, subjective norm, and green trust and their effect toward the dependent variable, green electronic products purchase intention. All 450 questionnaires were distributed to target population in 3 selected IT mall in Beijing, China. In order to help the respondents to clearly and easily understand the questionnaire, the translation from English to the Chinese language was necessary because most of the Chinese people can understand it. The questionnaires consisted of five sections with 36 questions that represent one screening question, six independent variables, the dependent variable and five demographic factors. The researcher used simple random sampling, quota sampling and convenience non-probability sampling. The researcher selected the

descriptive research methodology instrument to evaluate each variable. This means that the outcome of the research would be described by examining the relationship between different variables.

#### *Sampling procedure*

The researcher applied the both probability and non-probability sampling method to find the sampling unit in this study. In this study, the researcher applied simple random sampling, quota sampling and Convenience sampling to determine the target respondents and collected data; all details are as follows:

#### *Step 1: Simple Random Sampling*

Simple random sampling is the best know probability sample, which means each number of the population has an equal chance to being selected sample (Zikmund, 2003) [20]. In this research, the researcher used a simple random sampling to collect the data from 3 selected IT mall in Beijing, China.

#### *Step 2: Quota Sampling*

Zikmund (2003) [20] defined the quota sampling method is the one of techniques of the non-probability to represent the miscellaneous subgroup from the population. Therefore the

study collected total 450 data from 3 selected IT mall, which are 150 questionnaires from each.

#### *Step 3: Convenience Sampling*

Convenience sampling means the sampling refer to pick up the unit or individual who is convenience or available to complete the questionnaires by Zikmund (2003) [20]. The convenience sampling method was used in this research to collect data from anyone who was available. In this research, the researcher distributed the questionnaires to customers who has never purchase green electronic products but intent to purchase electronic product and available to answer the questionnaire at the 3 selected IT mall in Beijing, China.

## IV. RESEARCH AND FINDINGS

There are six hypotheses set up to be tested according to the request of this research. A Pearson Correlation Coefficient test is applied to examine the relationship between each independent variable and dependent variable. After analyzing the hypotheses, all the null hypotheses were rejected. The results are summarized as follows:

TABLE I  
SUMMARY OF HYPOTHESES TESTING

Hypothesis Statements	Statistical Test	Correlation	Level of Significant	Results
H1a: There was a relationship between man-nature orientation and consumer's attitude toward green electronic products	Pearson's Correlation	0.250**	0.000	Rejected H1o
H2a: There was a relationship between ecological effect and consumer's attitude toward green electronic products.	Pearson's Correlation	0.224**	0.000	Rejected H2o
H3a: There was a relationship between consumer's attitude and intention to purchase green electronic products	Pearson's Correlation	0.313**	0.000	Rejected H3o
H4a: There was a relationship between quality of physical environment and perceived value.	Pearson's Correlation	0.473**	0.000	Rejected H4o
H5a: There was a relationship between subjective norm and intention to purchase green electronic products.	Pearson's Correlation	0.555**	0.000	Rejected H5o
H6a: There was a relationship between green trust and intention to purchase green electronic products	Pearson's Correlation	0.688**	0.000	Rejected H6o

## V. SUMMARY AND CONCLUSIONS

The researcher focused on the man-nature orientation, ecological effect, attitude toward green purchase, green perceived value, subjective norm, green trust and demographic factors to determine customer green electronic products purchasing intention based on the data analysis. Accordingly, the highest percentage of all respondents were male, with aged between 21 to 25 years old, has been studying at university with a monthly income less than 2,000 Yuan. Moreover, for hypothesis testing, the data had been analyzed by using SPSS program (Statistical Package for the Social Science) to test the hypotheses and find the results for this research.

According to the findings of the (6) hypotheses, all hypotheses have positive relationship between each variable, there was a weak positive relationship between man-nature orientation and attitude toward green purchase, ecological effect and attitude toward green purchase, attitude toward green purchase and green electronic products purchase intention; there was a moderate positive relationship between green perceived value and green electronic products purchase intention, subjective norm and green electronic products purchase intention; there was a strong positive relationship between green trust and green electronic products purchase intention.

## VI. RECOMMENDATIONS

This study contributes to the knowledge within the green electronic products industry and relative industries, even government, to provide a high quality of green electronic products in Beijing, China. According to the data analysis of this study, all of the variables in this conceptual framework had significant values. Therefore, here are several recommendations about strategies and plans to develop and improve the green market to attract more potential green customer in the future, the researcher would like to suggest several recommendations as follows:

According to the result of hypothesis one, two and three, man-nature orientation, ecological effect and attitude toward green purchase has significant relationship on customer green electronic products purchase intention as a weak relationship. It implies that, the China government should encourage citizens environmental concerns, to teach environmental education to the different levels of the country's education system, cooperate with the business community to operate the green concept to build customer's positive green purchase attitude through the internet, television, radio, newspaper and textbooks.

The result of the hypothesis four showed that, there was significant relationship between green perceived value and green electronic products purchase intention. Kotchen and Reiling (2000) [11] stated that perceived value is the benefit that a customer expects that they will get from the products or service. As a result, if the perceived value matches or higher than their expectation it would bring satisfaction and will deliver a purchase. If the marketer wants to succeed in this new green challenge, they should maximize the advantage of the green products, make it more valuable, durable and environmentally protected. It should be good for innovation and also follow the regulation or laws to control the whole product life cycle since producing, packaging, contributing, and recycling to make sure the products has "environmental friendly" features, such as making with green labeling which can help people easily recognize the difference between green and non-green products.

The result of the hypothesis five indicated that, subjective norm has significant relationship with green electronic products purchase intention. Based on the Chinese culture, Chinese people are easily affected by people around them, therefore, researcher would like to suggest the marketer to use special ways to do marketing promote, such as hiring popular or well-know person as green products ambassador to operating green advertising and the social influence of celebrities could help green marketers send a positive message to the customers.

According to the result of hypothesis six, green trust has significant relationship with green electronic products purchase intention. Trust is a key factor affecting people's willingness to change money based on their information. Green trust reflects the customers' expectation about products performance on its credibility, benevolence and ability in environmental protection. Thus, the researcher would like to suggest marketer to increase or keep trust level of customers because this is a

major concern in the green market. In order to enhance green trust in the green electronic products, green marketers should build their trust level as high as they can, any type of certificates that can improve how trustworthy a products is, which will consequently encourage customers to feel more comfortable purchasing green products. To try to build trust in the market; green marketer should follow the steps of information openness which shows all of the materials to the customers.

## FURTHER RESEARCH

First, this study focused on some factors affecting customer who have no experience in green electronic products purchase intention at IT mall in Beijing, China only. However, study in the future could be designed for the actual green electronic product user within satisfaction as an important factor to help the researcher to get better understand of customer's expectations from purchasing green electronic products. Second, this study only analyzed the factors that affect the customer's green purchase intention. Future studies can examine the green purchase behavior, in order to increase study's practicability. Third, the population in this study only in Beijing, China, different characteristics of customers could be found within different cultures, thus future study can consider non-Chinese customer as a population of research. Four, this study was limited in the understanding of green electronic products purchase intention. In further studies, the researcher can explore more factors to analyze green products; also the researcher would like to suggest a new topic, such as the perception toward green products packaging labels, and after-sales service about green products.

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#### REFERENCES

- [1] Ajzen, I., & Fishbein, M. (1980). *Understanding attitude and predicting social behavior*. New Jersey: Prentice Hall, Englewood Cliffs.
- [2] Baker et al., (1994). The Influence of Store Environment on Quality Inferences and Store Image. *Journal of A Cadenty of Marketing Science*, 22(4), 328 – 39.
- [3] Bolton, R. N. and Drew, J. H. (1991). A multistage model of consumers' assessment of service quality and value. *Journal of Consumer Research*, 17(4), 375-384.  
<http://dx.doi.org/10.1086/208564>
- [4] Chan, R.Y.K. and Yam, E. (1995). Green movement in a newly industrializing area: a survey on the attitudes and behaviour of the Hong Kong citizens. *Journal of Community & Applied Social Psychology*, 5, 273-284.  
<http://dx.doi.org/10.1002/casp.2450050405>
- [5] Chen, Y. S. (2011). Green organizational identity: sources and consequence. *Management Decision*, 49( 3), 384-404.  
<http://dx.doi.org/10.1108/00251741111120761>
- [6] Churchill, A.G.Jr., and Iacobucci, D. (2002). *Marketing research: Methodological foundations*(8th ed), Ohio: south- western
- [7] Ganesan, S. (1994). Determinants of Long-Term Orientation in Buyer-Seller Relationships, *Journal of Marketing*,58(2), 1–19.  
<http://dx.doi.org/10.2307/1252265>
- [8] Head, J. W. (1996). China: environmental legislation: Report on recent developments. *East Asian Executive Reports*, 15, 13–14.
- [9] Kalafatis, P.S., Pollard, M., East, R., and Tsogas, H.M (1999). Green marketing and Ajzen's theory of planned behavior: A cross-market examination. *Journal of Consumer Marketing*, 16(5), 441-460.  
<http://dx.doi.org/10.1108/07363769910289550>
- [10] Kassarijan, H. H. (1971). Personality and Consumer Behavior: A Review, *Journal of Marketing Research*, 8, 409-18.  
<http://dx.doi.org/10.2307/3150229>
- [11] Kotchen, M., and Reiling, S. (2000). Environmental attitudes, motivations, and contingent valuation of nonuse values: a case study involving endangered species. *Ecological Economics*, 32, 93-107.  
[http://dx.doi.org/10.1016/S0921-8009\(99\)00069-5](http://dx.doi.org/10.1016/S0921-8009(99)00069-5)
- [12] Lee ,K.,(2008).Opportunities for green marketing: young consumers, *Marketing Intelligence & Planning*. 26,537-586  
<http://dx.doi.org/10.1108/02634500810902839>
- [13] Maloney, M. P., Ward, M.P., and Braucht, G.N (1973).Ecology: Let's hear from the people: An objective scale for the measurement of ecological attitude and knowledge. *American Psychologist*, 583-586.  
<http://dx.doi.org/10.1037/h0034936>
- [14] Maloney, M. P., Ward, M.P., and Braucht, G.N (1975). Psychology in action: A revised scale for the measurement of measurement of ecological attitude and knowledge. *American Psychologist*, 787-790  
<http://dx.doi.org/10.1037/h0084394>
- [15] Miles, T. H. (1992). *Tao Te Ching: About the way of nature and its powers/Lao Tzu: A translation with commentary*. New York: Avery.
- [16] O'Keefe, D. J. (2002). *Persuasion Theory & Research: (2nd ed)*, Sage Publication Inc.
- [17]Othman, M. N. (2000), Kesedaran terhadap alam skitar: Kajian perbandingan diantara pengguna Melayu dan Cina di Bandar, *Malaysian Journal of Consumer and Family Economic*, 3,42-50.
- [18]Patterson, P. and Spreng, R. (1997). Modeling the relationship between perceived value,satisfaction and repurchase intention in a business-to-business, service context: anempirical examination, *International Journal of Service Industry Management*, 8(5), 414-34.  
<http://dx.doi.org/10.1108/09564239710189835>
- [19] Rousseau, D. M., Sitkin, S. B., Burt R. S., and C. Camerer (1998), 'Not so Different After All: A Cross- Discipline View of Trust', *Academy of Management Review*, 23(3), 393–404.  
<http://dx.doi.org/10.5465/AMR.1998.926617>
- [20]Zikmund, G. W. (2003). *Business research methods* (7th ed). Ohio: South- Western