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The Factors Affecting Green Brand Equity of Electronic Products in Thailand

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Abstract

This paper aims to study the influence of green brand image, green brand perceived value, green brand trust and green brand loyalty on green brand equity of electronic products in Thailand. A survey was conducted by using questionnaires to collect data from 1,000 people with ages between 20-59 years old; living in Bangkok, Khon Kaen, Chiang Mai or Songkhla Province; and who had had the experience of purchasing electronic products with environmental labels within the previous year. The data collected were analyzed by using descriptive and inferential statistics. Multiple regression analysis was used to test the hypothesis. The results revealed that consumer opinion of the green brand image is at a good level. Additionally, green brand perceived value, green brand trust, green brand loyalty and green brand equity are all at high levels. The results also revealed that factors affecting green brand equity of electronic products in Thailand from strongest to weakest are as follows: green brand loyalty, green brand trust, green brand perceived value and green brand image, with statistical significance at the .01 level.

Keywords: Green brand equity, Green brand image, Green brand perceived value, Green brand trust, Green brand loyalty, Green marketing, Electronic products, Thailand

1. Introduction

Due to the increasing intensification of the natural global warming crisis, people turn their focus on nature conservation and environment more and more. Business organizations need to participate in the green marketing which the business owners must have an environmental conscience from the processes of product designing, manufacturing, packaging and advertising until the products being the hands of consumers in response to continuously increasing and expanding green consumerism (Thailand Environment Institute, 2013). In addition, the consumers are willing to pay higher prices to buy the environmentally friendly products.

The concept of brand equity is important for enterprises. The benefits of strong brand equity, such as reducing insecurity of marketing, margins, and increasing opportunities to distribute the brand give an easier access to the global market (Kang and Hur, 2012). Therefore, many business organizations have taken the green marketing as their implementation in marketing activities and as the marketing strategies to build a competitive advantage as the products are different and better than those of competitors. This can make the brand with an image of being green

organization and also increase opportunities to build a strong brand (Chen, 2010). Therefore, this research studied important factors affecting on the green brand equity as the issue mentioned led this research on this subject.

The electrical product and electronics industry in Thailand is regarded as a major manufacturing base for multinationals. It is important to economy of Thailand. It can make high revenue from exports to the country with a capacity of up to 61.48% of the total world market (Department of Industry Promotion, 2013). On the other hand, electrical products are the products mainly causing environmental pollution and serious impacts. Thus, there are strict rules, regulations or laws to control them in order to protect the international environment. Currently, the consumers are demanding green products that save energy and are environmentally friendly (Mackay et al., 2013). The researcher of this thesis therefore was interested in studying electrical appliances.

From the background and importance of the problem mentioned above, the researcher was interested to study the factors affecting green brand equity of electronic products in Thailand. In the study, the researcher selected four factors: green brand image, green brand perceived value, green brand trust and green brand loyalty. This study could help in making a decision on the brand to create a competitive advantage. It provides a body of knowledge in the field of green marketing to manufacturers, marketers or those who are interested in applying or a guideline for planning the strategies of the brand and creating a strong brand.

2. Literature review

This research was based on a literature review as follows.

2.1 Green marketing theory

Green marketing is a tool for sustainable development and causes a strong brand image composed of a variety of activities, modified or changed in the product design, production, packaging as well as advertising of the product (Rahman and Haque, 2011). Many enterprises apply it as a marketing strategy to determine their marketing position in responding to the needs of green consumers and market competition. The green marketing strategy has two objectives: profits and social responsibility (Mourad and Ahmed, 2012). Some enterprises have sought to provide environmentally friendly products to consumers. The green marketing also makes a good image for the organization as it is a factor supporting a profit increase and building consumer loyalty (Lu, Bock and Joseph, 2013).

Green products are non-toxic products made from recycled materials and use minimal materials in packaging. The enterprises implement the product strategies mixed from the recycling and reducing packaging materials and re-consuming in order to meet the needs of the green consumers. This also increases satisfaction and value (Rizwanalam, 2013). The success of the green products is made possible by the adoption of 3 Cs as follows: Consumer Value Positioning, Calibration of Consumer Knowledge, Credibility of Product Claims (Ottman, Stafford and Hartman, 2006). The green product has its marketing communication, focusing on environment with certified labels, such as ISO 14000 or eco-labeling, a label showing product information with a lesser environmental impact, compared with similar products with the same functions and quality of the determined standard (Borin and Cerf, 2011). Environmental label certified in Thailand are: Green Label, Carbon Footprint, Carbon Reduction, Energy Star for power saving of computers and 'number 5' energy saving label and carbon labeling and etc. (Ministry of Natural Resources and Environment, 2013).

2.2 Brand equity theory

Marketing Science Institute in USA defines brand equity as a set of associations and behavior towards the customers, distribution channels and company owners, facilitating the brand to make more income and increase profits than non-branded products. Brand equity is the value added to the products and services by reflecting the ways of feeling or acting of consumers. It focuses on the brand and price, market share and the ability to make a profit. Brand equity is an asset that is intangible. It has both psychological and financial values towards the organization (Kotler and Keller, 2012). From the model of David Aaker, the brand equity can determine marketing and financial value of the brand strength in the market. The brand equity has five elements driving the value, namely; brand asset as the true copyright, brand awareness, brand loyalty, perceived quality and brand associations (Severi and Ling, 2013).

Brand equity is important because of its benefits in quality signaling, search cost reduction, purchasing risk reduction, symbolic power, and etc. More importantly, strong brand equity is significantly associated with behavioral outcomes such as brand loyalty, identification, commitment, and resonance (Keller, 2008). The brand equity therefore has an important role in the success of marketing resulted in the sales increase and showing a higher market share (Helander and Khalid, 2000).

2.3 Brand image theory

Brand image is what consumers think and feel about the brand. The image is what consumers obtain from learning about products, brands, and enterprises. All have a significant influence on consumer behavior because the products with a good image can create stronger confidence of consumers than the products with a bad image (Chuchai Smithikrai, 2013). Moreover, brand image is similar to the overall image of the brand in the person's mind, reflecting or expressing uniqueness of each brand, raised from marketing activities in presenting the prominent points of the brand to hit the target group (Schiffman and Kanuk, 2007). The positive image is created by the application of marketers trying to connect the strength, interest and uniqueness of the brand with the consumers' memory (Keller, 2008). Therefore, having a strong brand image helps in strengthening competitive advantages if it is well taken care. Good management of the brand helps to prolong business' life and to have a sustainable reputation.

The study of Nawaporn Sukampiranon (2007) found that brand image has a positive relationship with brand equity and is the most influential factor on the brand equity of the leading cosmetic brands in Thailand. In addition, Chen (2010) found that green brand image is positively correlated to the green brand equity, which can be described that green brand image creates green brand equity.

2.4 Brand loyalty theory

The concept of loyalty is likely to repeat purchase intention and to support the brand satisfied with the consistent service use in the future. Thus, it causes making a purchase of the same brand or the same group of the products with the same brand. However, the factors related to the influential situations and effective marketing efforts may be able to make a behavioral change in supporting the brand (Sirivan Serirat, 2011). Brand loyalty is consistent satisfaction and making a purchase of the same products of any company. The study of the consumer habits found that the brand with a more market share has the same group of buyers with the brand royalty (Schiffman and Kanuk, 2007).

Furthermore, brand loyalty is an important component of brand equity because it reduces the vulnerability or the gap of the brand, made by the competitors. This allows organizations to retain customers and avoid spending resources to find new clients (William and Ferrell, 2010). A study by Kang and Hur (2012) found that the green brand loyalty has a strong relationship and influence on the green brand equity. The study of Buil and Martinez (2013) found that the brand royalty has a positive influence on the overall brand equity. In other words, the brand royalty is essential to create the overall brand equity.

2.5 Brand perceived value theory

Perceived value refers to a relationship between a reasonable price and high value recognized which customers expect or the difference between the value the customers get from owning and using products or services, compared with all the costs related to being the owner (Kotler and Keller, 2012). Perceived value is a perception of the goods or services in the consumer minds. It is a value of the good product or service which the consumers perceive. This affects willingness to pay and have a feeling that the product bought is worthwhile. Creating perceived value is a direct link between the enterprises and customers, as a result of elements of experience gained from making a purchase, assessed by comparison of customers between money paid and prior consideration, showing that their decision was correct. This includes the idea that the entire value of the goods is the best (Bourdeau, 2005).

Ng, Butt, Khong and Ong (2013) said that perceived value is an integrated concept to measure the level of understanding of consumers and perceived benefits. It is the perceived value of customers in assessing and comparing the benefits and results from using or receiving services. From the study, it was found that green brand image and brand perceived value have a positive relationship with green brand equity. Also, green brand image and green brand perceived value are an influential medium between credibility perception and green brand equity as well.

2.6 Brand trust theory

Trust refers to expectation which one party promises the other party based on 3 main causes: trust, belief in the truth, popularity and attitude. Trust is the level of self-confidence other people will do as expected (Rizwan et al., 2013). Moreover, trust is a very important factor in building the loyalty and a positive relationship between trust and customer loyalty in the terms of building customer confidence and delivering a quality of service to organizations, which contribute an increase of customer trust (Ndubisi, 2007). Trust in the brand also influences on brand extension and the stage of brand evaluation (Hussain, Mehmood and Khan, 2012).

According to the National Thesis Award (2011), it was found that a green environment has no direct influence on perceived risk of consumers and green brand trust. The social factors have a positive influence on perceived risk of consumers and green brand trust. Both perceived risks of consumers and green brand trust have a positive relationship on the green brand equity in the consumers' perspectives in the green shops.

3. Hypothesis

This research has the following hypotheses.

Hypothesis: *The green brand image, green brand perceived value, green brand trust and green brand loyalty influence the green brand equity.*

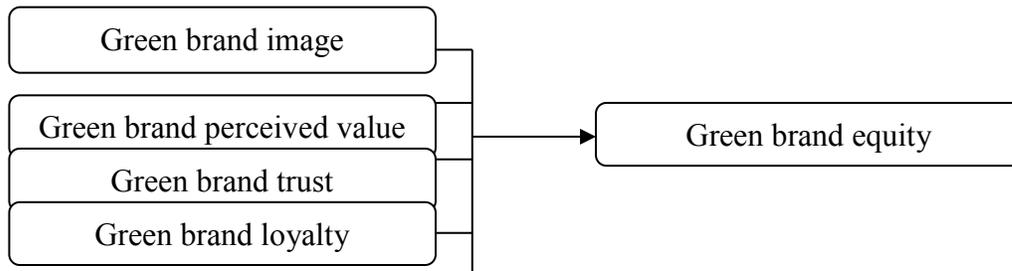
Based on the study of Chen (2010), it was found that green brand image and green trust product have a positive relation to green brand equity. This can be described that green brand image and trust in the green product help in creating green brand equity.

Ng, Butt, Khong and Ong (2013) found that green brand image and green brand perceived value have a positive relationship on green brand equity.

Kang and Hur (2012) found that green brand trust and green affect have a positive influence on green brand loyalty. It was also found that green brand loyalty has a strong influence on green brand equity. This leads to the hypothesis saying that.

The relationship of hypothesized variables are show in the figure 1.

Figure 1: Conceptual Framework



4. Methodology

This study used a questionnaire to collect data in all regions of Thailand.

4.1 Research Population

This study collected data from the Thai population, aged between 20-59 years as they are people of working age, able to make a purchasing decision and have had experience in buying electric appliances with the environmental labels for a period of one year. The sample is a group of residents in four provinces which are the main city of each region, including Bangkok, Chiang Mai, Khon Kaen and Songkhla Province.

4.2 Sampling

This study used the quota sampling to collect the representative samples from various provinces in each region of Thailand. The samples were divided into 4 groups; namely, Bangkok is the representative of the central region, Chiang Mai is the representative of the northern region, Khon Kean is the representative of the northeastern region and Songkhla is the representative of the southern region. The second step uses the purposive sampling by means of a survey called

'personal interviews', composed of 1,000 questionnaires as the tool in collecting data from the samples both males and females, ages between 20-59 years and who had had the experience of purchasing electronic products with environmental labels within the previous year and are the residents in the four provinces.

4.3 Tools used for data collection

The study uses 1,000 questionnaires as a tool to collect data. The questionnaires are tested for the validity and reliability prior to data collection as follows:

- 1) The questionnaire is tested for its validity by presenting it to an advisor for examining its structure and content validity both before and after the trial (Pre-Test) in order to improve the complement and clarity of the questionnaire and to meet with the objectives of this study.
- 2) The revised questionnaire was tried out (Pre-Test) with 30 samples to test its reliability. The test results are shown in Table 1.

Table 1: Reliability test of questionnaire

Variable	Reliability Rate (Alpha)
Consumer's opinion on green brand image	0.835
Consumer's opinion on green brand perceived value	0.849
Consumer's opinion on green brand trust	0.864
Consumer's opinion on green brand loyalty	0.826
Consumer's opinion on green brand equity	0.930

Table 1 shows the level of Alpha more than the significance level at 0.7. Therefore, it can be concluded that the questionnaire is reliable.

4.4 Data analysis

The result processing is conducted by using 'SPSS for Windows' program to calculate the various statistics used in this study: 1) descriptive statistics: percentage, frequency, mean and standard deviation, and 2) inferential statistics analysis by using a multiple regression analysis for hypothesis testing.

5. Conclusions

5.1 Personal data

The questionnaire respondents were male (45.20%) and females (54.80%). The majority of their age is between 20 - 29 years old (67.20%), followed by those aged 30-39 years old (18.50%), 40 - 49 years old (9.80%) and 50 - 59 years (4.50%) respectively.

5.2 Data of electrical product purchase in a one year period

The majority of respondents bought fans, by 22.62 %, followed by 15.33 % of those who bought the refrigerators and 12.71% for irons. For the data of environmental label consideration before buying the brand of electrical products in the last year, the majority of respondents (78.19%) considered labeling efficiency no. 5, followed by labeling energy-efficiency 'Energy Star' at 11.82% and 9.83 % of them considered the green labels. For the last purchased brand of electrical products, the majority of respondents selected appliances brand, Hitachi (16.30%), followed by Toshiba (14.30%) and Samsung (14.10%).

5.3 Data of opinion on green brand image

The level of opinion on the green brand image of consumers in overall was at a good level (mean=3.89). Considered each item, it was found that consumers have an opinion on green brand image at a good level as can be found in all items as follows: the brand has quality, is safe and not harmful to living organisms and environment (mean = 4.02), followed by the brand is reliable in the term of its strong environmental commitment (mean = 3.90), the brand has the reputation of environmental expertise, (mean = 3.86) and the brand with success in the environmental implementation (mean = 3.80).

5.4 Data of opinion on green brand perceived value

The level of opinions on green brand perceived value of consumers in overall was at high level (mean =3.86). Considered each item, it was found that consumers have an opinion on green brand perceived value at a high level as can be found in all items as follows: the brand offers great value and benefits to the environment (mean = 3.89), followed by the brand provides the value and benefits more than loss of time. The effort in purchasing and the power have the mean at 3.86. Worthiness received from the brand is greater than the amount of money paid (mean = 3.85) and brand provides more environmental benefits than other brands (mean = 3.85).

5.5 Data of opinion on green brand trust

The level of opinion on the green brand trust of the consumers in overall was at high level (mean = 3.89). Considered each item, it was found that consumer have an opinion on green brand trust at a high level as can be found in all items as follows: in overall perspective, the brand can be trusted (mean = 4.02), followed by the brand has the reliable environmental image at high level (mean = 3.89). The brand has performed its function in the environmental aspect as expected (mean = 3.86). The brand products can be relied on in its environmental aspect (mean = 3.85) and the brand maintains its promise to improve the environment (mean =3.83).

5.6 Data of opinion on green brand loyalty

The level of opinions on the green brand loyalty of consumers in overall was at high level (mean = 3.90). Considered each item, it was found that consumer have an opinion on green brand loyalty was at high level as can be found in all items as follows: satisfaction and interest in

buying the brand if it is available in stores (mean = 3.99), introducing the brand to the others because it is a product that is environmentally friendly (mean = 3.89), selecting the brand as the first choice because it is an environmentally friendly product (mean = 3.87) and willingness to pay for and buy the brand product at a price higher than other brands because it is the product that provides benefits and environmental responsibility (mean = 3.87).

5.7 Data of opinion on green brand equity

The level of opinion on green brand equity of the consumers in overall was at high level (mean = 3.85). Considered each item, it was found that consumers have an opinion on green brand equity at high level as can be found in all items as follows: interest to purchase the brand more than other brands even if there are similar environmental features (mean = 3.87), interest to buy the brand more than other brands although it can be equally good environmental performance (mean = 3.86), purchasing the brand makes them feel more intelligent than buying other brands even if other brands provide the care for environment similarly (mean = 3.84) and reasonableness of buying the brand to replace other brands because of belief in its environmental obligation (mean = 3.82).

6. Hypothesis test

Hypothesis: Green brand image, green brand perceived value, green brand trust and green brand loyalty influence on the green brand equity.

The analytical results are shown in Table 2.

Table 2: Results analysis of factors affecting the green brand equity

Factors affecting green brand equity	B	SE_B	β (Beta)	t	Sig.
Constant (A)	.424	.109		3.896**	.000
1. Green brand image (X1).	.097	.031	.096	3.119**	.002
2. Green brand perceived value (X2).	.129	.029	.129	4.389**	.000
3. Green brand trust (X3).	.289	.036	.267	7.931**	.000
4. Green brand loyalty (X4).	.365	.033	.343	11.054**	.000
R = .713 R ² = .508 Adjusted R ² = .506					
F = 256.637 SE = .442 Durbin-Watson = 1.824 Sig. = .000					

** Statistical significance is at the 0.01 level.

Based on the results from the test of the factors affecting green brand equity of electronic products in Thailand, it showed that all of four factors: green brand image, green brand perceived value, green brand trust and green brand loyalty have the significance less than .01. This means that green brand image, green brand perceived value, green brand trust and green brand loyalty affect green brand equity. Having considered the factors affecting green brand equity of electronic products, the green brand loyalty is the most influential which has the rate of the standardized regression coefficients (Beta) at 0.343, followed by green brand trust at 0.267, green brand perceived value at 0.129 and green brand image at 0.096 respectively.

This model has a coefficient of determination (R^2) at 0.508. This means that all four factors: green brand image, green brand perceived value, green brand trust and green brand loyalty can explain the changes of green brand equity at 50.8%. Therefore, the regression equation is as follows.

$$Y = 0.424 + 0.097X_1 + 0.129X_2 + 0.289X_3 + 0.365X_4$$

The green brand equity = 0.424 + 0.097 (green brand image) + 0.129 (green brand perceived value) + 0.289 (green brand trust) + 0.365 (green brand loyalty).

7. Discussion

The most influential factor affecting on green brand equity of electronic products in Thailand is the green brand loyalty, followed by the green brand trust, green brand perceived value and green brand image respectively. This is consistent with the findings of Kang and Hur (2012) which found that green brand loyalty has a strong relation, influencing on the green brand equity. Also, it is consistent with the findings of Chen (2010) indicating that the green brand image and green brand trust help in building the green brand equity. The green brand image and green brand trust have a positive relation to the green brand equity. The consistency of these also can be found in the findings of Ng, Butt, Khong and Ong (2013) saying that green brand image and green brand perceived value are an influential mediate between brand credibility and green brand equity. The green brand image and green brand perceived value have a positive relation to the green brand equity.

8. Recommendations and application of research results

8.1 Suggestions for the manufacturers

1) The manufacturers should apply the green marketing strategies for the brand of electronic products by determining the brand position of electronic products to be renowned for their environmental expertise in order to create a green brand image and opportunities to distribute the products and the brand in responding to the environmental requirements of consumers. This can add a strong brand value that contributes to sustainable development.

2) The manufacturers should carry out the research and development of innovation technology in the electronic product design with environmental implementation such as ability to work better than any other generic products, last longer and safe for beings and the environment, worth more than the money paid out in order to build awareness of the green brand. This can help to increase competitiveness in the term of its distinction from the competitor's products.

3) The manufacturers should apply the corporate governance principles in the implementation and environmental performance in the collaboration with the agencies involved with design of environmentally friendly electronic products in order to create the environmental products and build green brand trust of the products for the consumers.

4) The manufacturers should make an impression on the brand quality and should effectively manage the customer relationship which establishes a good relationship with the consumers to maintain the customer loyalty in the green brand, making the brand to be chosen as the first choice.

5) The manufacturers should create green brand equity by creating the green brand loyalty, green brand trust, green brand perceived value and green brand image for electronic products.

8.2 Suggestions for the marketers

1) The marketers can build the green brand equity for the brand of the electronic products by creating the green brand image with reputation in the environmental expertise, creating the green brand perceived value in the green brand products to be worth as the money paid out, creating green brand trust as the product which can be relied on in the environmental aspect, and creating green brand loyalty as the first choice product as it is environmentally friendly. Moreover, Kotler and Keller (2012) said that marketers build the brand equity by creating the right brand knowledge structures with the right consumers. The marketers therefore should target group of consumers, who care about the environment or a group of green consumers, and should build the brand elements such as logos, symbols, characters, slogans, spokespeople, packages and signage associated with the green brand for building strong brands in the long term.

2) The marketers should focus on creating an experience, causing participation in environmental protection between the brand of the electronic products and consumers. This causes the long term brand loyalty.

3) The marketers should emphasize on constant communication, providing information and public relation to create awareness and build the green brand image, green brand perceived value, green brand trust and green brand loyalty.

8.3 Suggestions for the government sector

1) The government should be involved in publicity and dissemination of information about the implementation of environmental responsibility to raise more understanding of people.

2) The government should support the use of the corporate governance principles, social responsibility and environmental protection in the organizations.

8.4 Suggestions for future research

1) This research only studied four influential variable factors: green brand image, green brand perceived value, green brand trust and green brand loyalty affecting on green brand equity. Other factors such as customer on the green brand satisfaction, green brand affect in the term of their relationships and influence on the green brand equity can be studied in the future research.

2) This research studied the opinions of consumers who considered the environmental labels before buying the electric appliances only. The further comparative study on the opinions of consumers who do not consider the environmental labels before making decision to buy the electronic products can be carried out in the future research in the aspects of opinion differences.

3) This research studied one type of electronic products only. Other types of the products related to the environment such as cars, hotels and clothing can be studied in the future research in the case of opinion differences.

4) This research has some limitations in measurement as it is a quantitative research. The future research could be carried out the qualitative research in order to obtain insight information and higher complement.

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