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GREEN CONSUMER BEHAVIOR: CHIANG MAI THAILAND

Abstract:

For several decades, environmental consciousness has been highlighted. Such many consumers have been progressively participate in green activities and tend to be green consumers. A survey was adopted and sampling of 1,200 consumers who purchased green products or eco-friendly products in Chiang Mai, Thailand. This paper focuses on the segmentation of consumers into five shades; lifestyle of health and sustainability, neutralities, drifter, conventional and unconcern group based on their buying behavior and psychographic toward green consumption by applying cluster analysis. The different characteristics, purchasing patterns and awareness of environment of each segment of green consumer has been analyzed. Moreover the result from multiple regression analysis indicates that both demographic and psychographic-behavior variables are significant factors influencing degree of green consumption

Keywords:

Green Consumer, Green Consumption, Market Segmentation

JEL Classification: A10

1. Introduction

Over the past decade, environmental sustainability and climate change awareness had become international attention (Bergin-Seer and Mair, 2009) as it reflects in choices of consumers purchasing more environmental friendly products. Manufacturers are also conscious more about environment and quality of life for the next generation. Even governments legislate and regulate production and consumption in order to decrease negative impact on environment. It gives rise to “Sustainable Development” trend that refers to conformity of development under objectives of environment, economy, and community, which will create positive impact for well-being in the present and future (Čiegis, Ramanauskienė and Startienė, 2009).

Products that produced to fulfill the green lifestyle is labeled as “green product”, which produced by natural process and clean technology with no chemical substance. Besides, the products are recyclable. The group of people that consume green product are called “green consumer”. They are consumer of “niche market” and are minority comparing to mass consumer but they have high purchasing power and the number of green consumer are significant continuously increasing. In 2008, the estimation of international trade value of green product was 500 million US dollars (Berry, 2007). Refer to AirDye (2011) survey, It stated that the demand of green product in 2009 increased 15 percent from 2008 and two third of green product consumption remained the same even though the consumers got some impact from economic downturn (Airdye, 2011).

In Thailand, many consumers made an increasing demand for green product. The number also demonstrated a rise in many places for selling organic products. However there is very few empirical research on this topic. The lacking of empirical study is the main cause that domestic green marketing is not successful. That is why the study about green consumer behaviour: Chiang Mai Thailand are scrutinized to answer this question. This study aims to investigate green consumer behavior in order to have better understanding about green consumption. It is crucial to examine consumer characteristic. This research is a pilot project that study green consumers in Chiang Mai area.

2. Green Consumer

At the present, there is no conclusion about the definition of green consumer. However, there are some scholars defined the meaning of green consumer. For instance, Wind (2004) clarified that green consumers are consumer who response to green marketing and have eco-friendly lifestyle, or Scypa (2006, cited in Banytė, Brazionienė and Gadeikienė, 2010) described green consumer as people who consume eco-friendly products. They are not trend followers but truly concern about environmental problem. They also seek for some certificate or credential to prove that those products are eco-friendly before making decision. Furthermore, green consumer is motivated to purchase green product even if its quality is lower or the price is higher than ordinary products (Banytė, Brazionienė and Gadeikienė, 2010).

In order to categorize classes of green consumers or shades of green consumers. This paper applies the regulation from Natural Marketing Institute (NMI) that classify green consumers as five different groups by environmental awareness intensity as followed

1) Lifestyle of Health and Sustainability: LOHAS

The LOHAS consumers have strong attitudes regarding personal and planetary health. They are the most intense environmentalists or environmental activists. They adapt themselves and carry out seriously. The majority of this group is middle-aged female who got married. LOHAS consumers perceive health and environmental preserve as the same matter or closely connected together. They admire products that good for themselves and planet. Besides, they rate product value over price.

2) Naturalites

The Naturalites consumers concern about environment but not so intensive. Their major interest is more in health issue. They tend to purchase products that are safe for themselves and their family. Though they do not seriously think about environment but they started to involve in environmental preservation.

3) Drifter

The Drifter consumers do not pay attention or understand environmental problem that well. They are mainstream consumers or trend followers, mostly young adult or city people.

4) Conventional

The Conventional consumers do not actively concern about environment but participate in some activity that serves their own purposes, for example, buying energy saving refrigerator to decrease their electricity bills. They are economizers that is why they are clever in recycling and reuse.

5) Unconcerned

The unconcerned consumers have no interest in environmental issue at all. The majority of the group has below-average income and low-educated so that they do not care about product choosing or environmental preservation at all.

3. Data

The survey was conducted with 1,200 observations in four districts of Chiang Mai province that were Amphoe Meuang and three Amphoe in second layer; Amphoe Mae Rim, Amphoe San Sai, and Amphoe Saraphi. Respondents were randomly approached at 16 markets, stores and supermarkets that were selected at a variety of different locations to ensure that a range of customer types were included in this study. After eliminating incomplete questionnaires, there were 1,040 samples for analysis. The respondents who lived in Amphoe Meaung is 39.90 percent of total respondents, Amphoe Mae Rim was 20.10 percent, Amphoe San Sai was 20.00 percent, and Amphoe Saraphi was 20.00 percent. Respondent characteristic is shown in Table 1

Table 1 Characteristic of Sample

Characteristic		Percent	Characteristic		Percent
Sex	Male	36.73 %	Age	Average age	40.36 Years old
	Female	63.27 %	Household Size	The average number of family member	3.59

Characteristic		Percent	Characteristic		Percent
Marriage	Single	39.40 %	Number of children under 15 Years old	The average number of children under 15 Years old	1.26
	Married	52.20 %		Householder	Yes
	Others	8.40%	No		73.30%
Occupation	Government Officer	12.20 %	Education Level	Under diploma	37.90%
	Business owner	33.60 %		Diploma	17.20%
	Employee	26.80 %		Bachelor's degree	41.50%
	Retried/House wife	2.80%		Higher than the Bachelor's degree	3.40%
	Others	24.60 %			
Household Income	< 20,000 Baht	20.50 %	Income	< 10,000 Baht	31.10%
	20,000 – 30,000 Baht	42.10 %		10,000 – 20,000 Baht	60.90%
	30,001 – 40,000 Baht	31.10 %		20,001 – 30,000 Baht	7.40%
	> 40,000 Baht	6.40%		> 30,000 Baht	0.70%

Source: Survey

Table 1 shows the descriptive and summary statistics of socioeconomic variables, the results show that 658 of respondents (63%) were female. The average ages of respondents were 40.36 years old. The number of respondents graduate bachelor degree were about half of the sample (41.50%). Monthly household income was chosen as the indicator of family welfare status. In case of the household size, the average family members were 3.59. In the survey there were 689 household that having children under 15 years old living in household.

4. Result

This part presents the result of the study divided into two sections that are green consumer classification and green consumer behavior.

4.1 Green Consumer segmentation

As mentioned above, this study segment green consumer into five categories following concept of Natural Marketing Institute (NMI). Cluster analysis is implemented in

order to classify consumer groups by using average three aspects of consumer behavior and attitude, which are

- 1) Frequency of green consumption
- 2) Frequency of environmental activity participation
- 3) Attitude about green product

The result is presented in Table 2

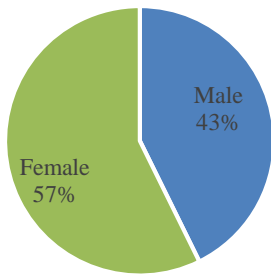
Table 2: Five Groups of Green Consumer categorized by Cluster Analysis

Group of green consumer	Number	Percent	Mean
LOHAS	96	9.23	3.92
Naturalites	204	19.62	3.57
Drifter	290	27.88	3.29
Conventional	349	33.56	3.00
Unconcerned	101	9.71	2.60
Total	1,040	100.00	-

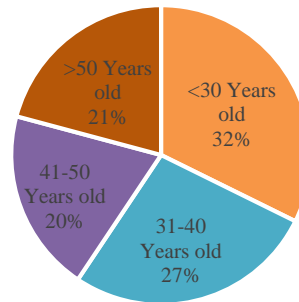
Table 2 illustrates that 33.56 percent of the respondent are Conventional and only 9.23 percent are LOHAS. It is interesting that 9.71 percent of the respondent are Unconcerned whereas 27.88 percent and 19.62 are Drifter and Naturalites respectively. So the overall perspective revealed that major population in Chiang Mai has moderate green consumer. Some of them concern about environment but they are only moderate green consumer. The characteristics of green consumer in five groups are represented below

Characteristics of LOHAS

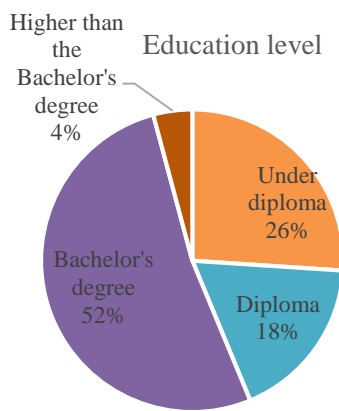
Sex



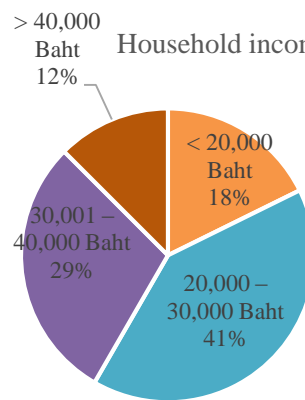
Age



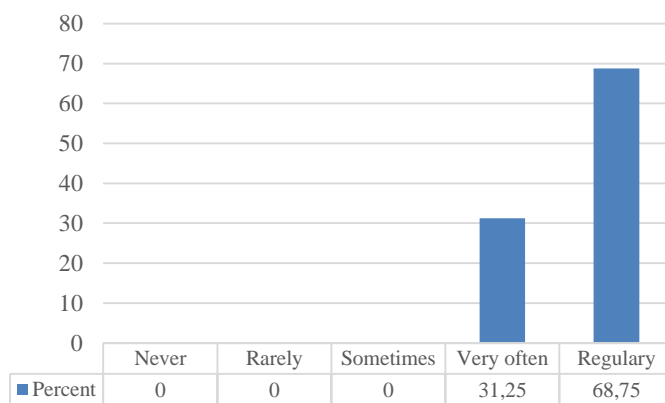
Education level

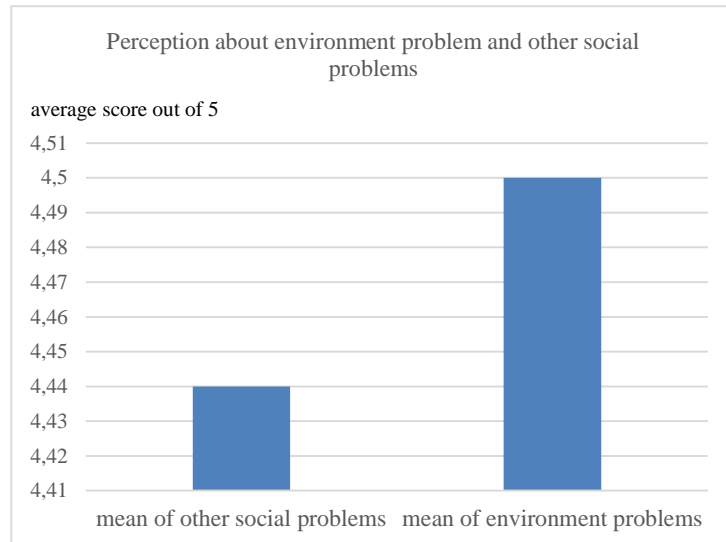


Household income



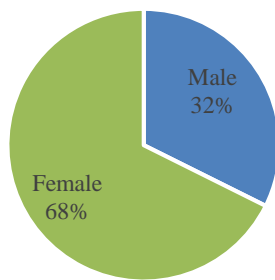
Frequency of green product consumption



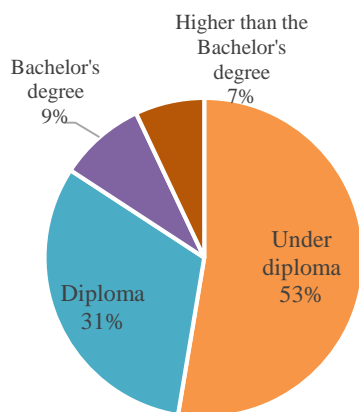
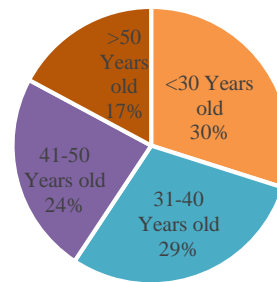


Characteristics of Naturalites

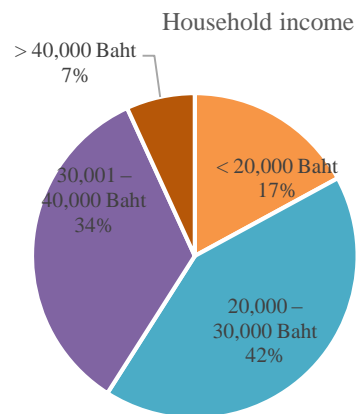
Sex



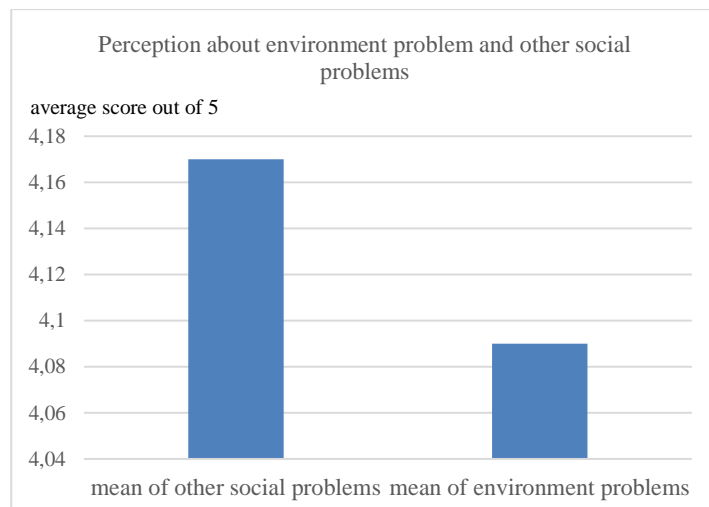
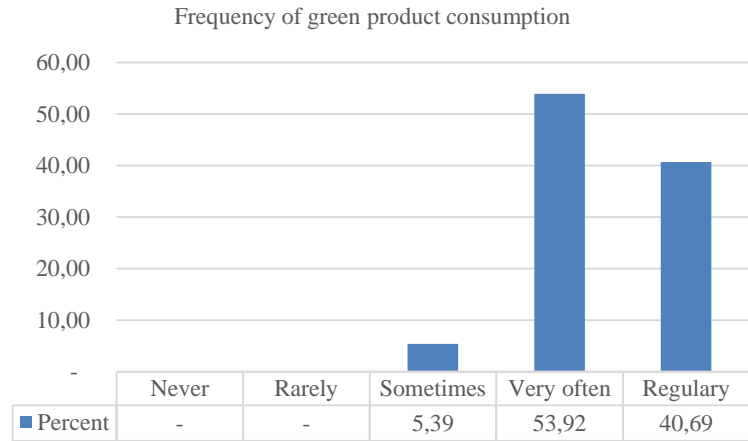
Age



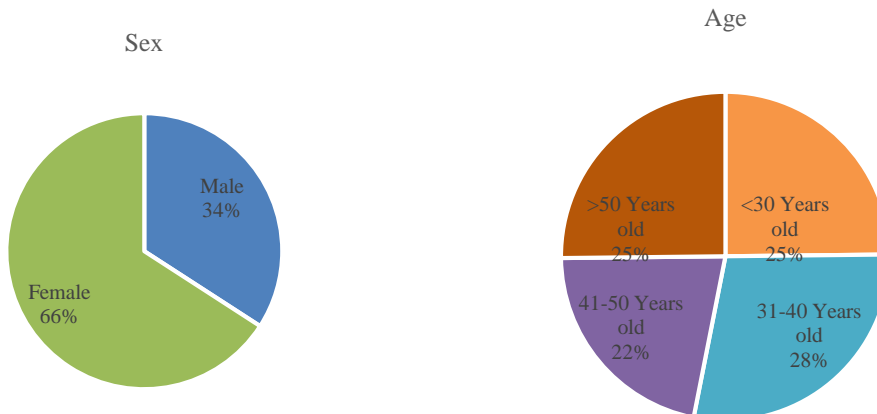
Education level

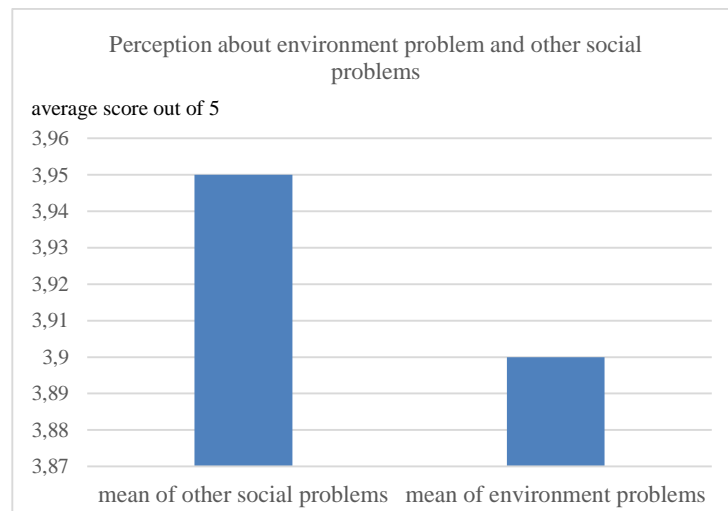
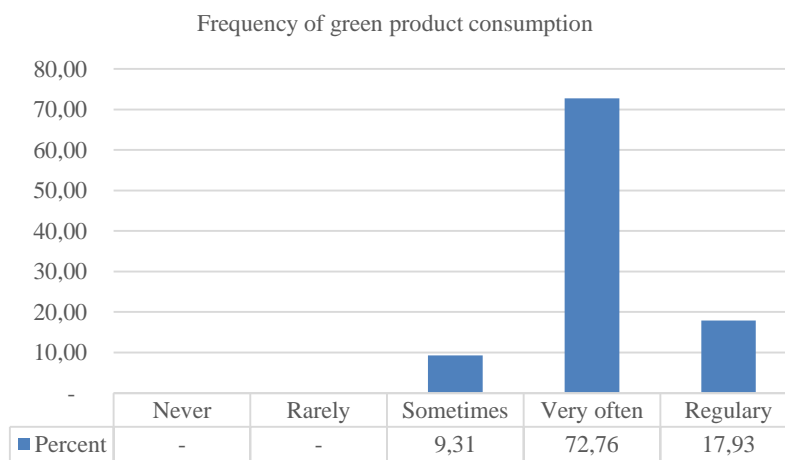
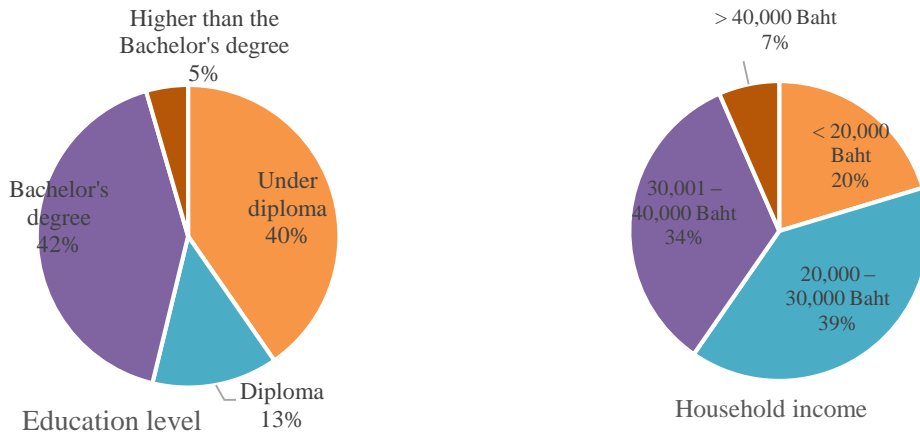


Household income



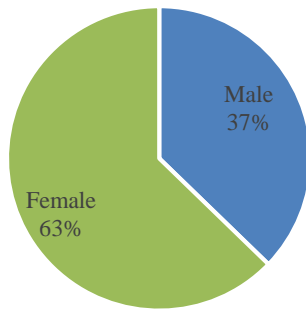
Characteristics of Drifter



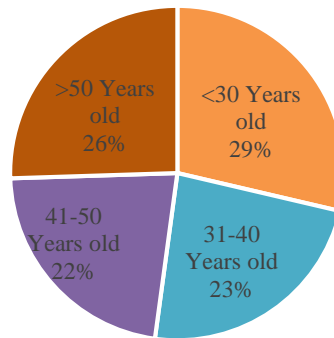


Characteristics of Conventional

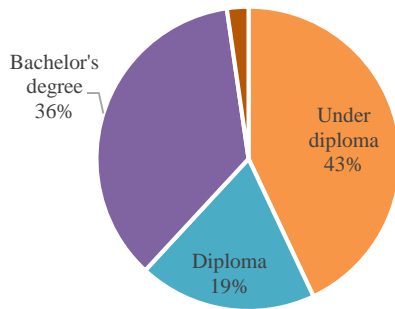
Sex



Age

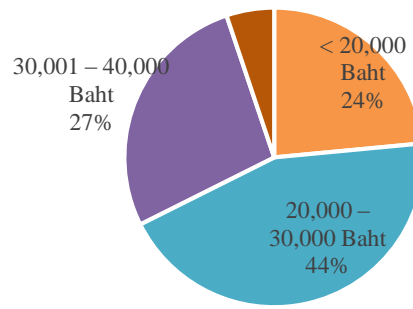


Higher than the Bachelor's degree
2%



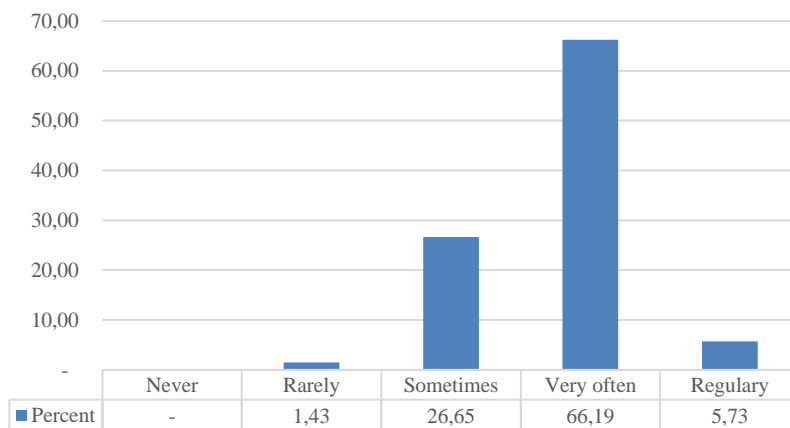
Education level

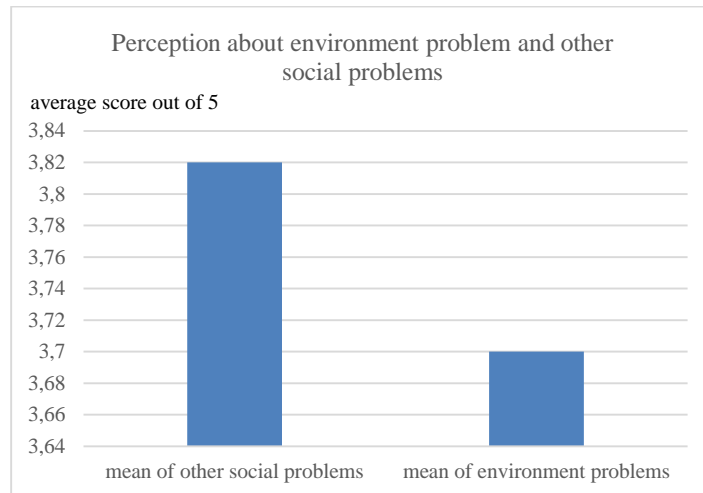
> 40,000 Baht
5%



Household income

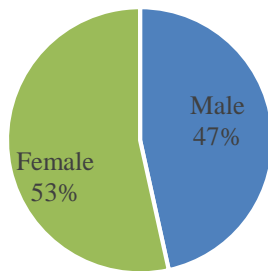
Frequency of green product consumption



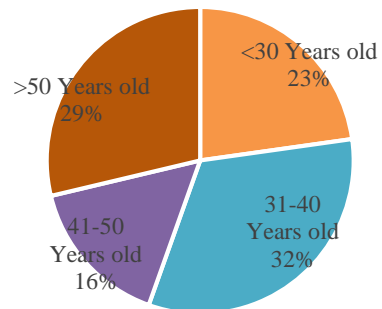


Characteristics of Unconcerned

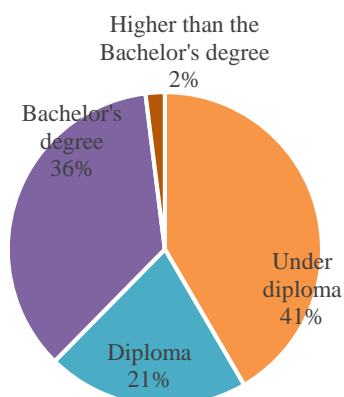
Sex



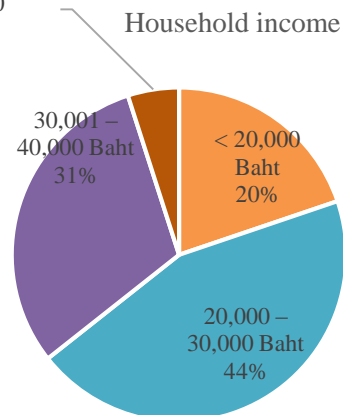
Age

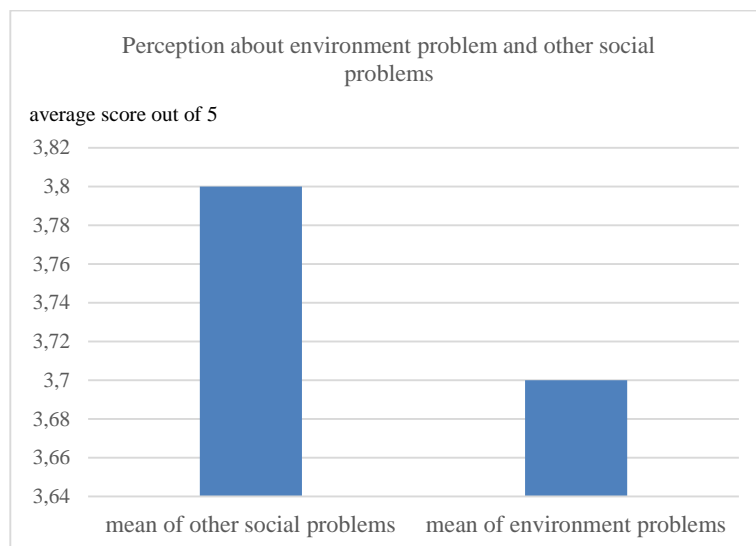
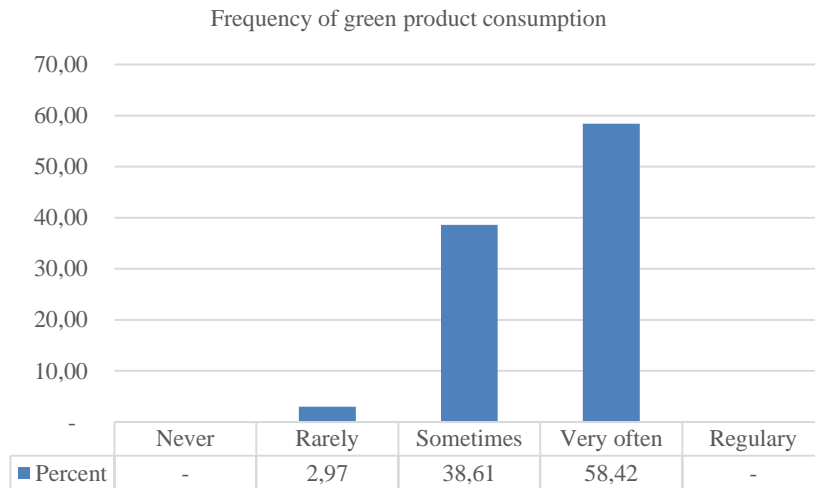


Education level



Household income





In addition when testing the knowledge of respondent about green product by using 12 questions. In these set of question there are three questions that do not match green product characteristics. They are the third question, “It is good quality product”, the sixth question, “Product is not expensive”, and the ninth question, “Product is easy to buy”. These attributes are not limited to only green product. Considering the answers could grade consumers’ knowledge level about green product from number of wrong answers because it reflected consumers’ understanding level about green product.

The result shows that 4.80 percent or 50 respondents answered one question incorrectly. There are 74 of the participants gave two wrong answers that equal to 7.10 percent of all participants. Lastly, the respondents that answered them all wrong are 82.80 percent or 860 people. On the contrary, there are only 50 respondents or 4.8 percent who answered them all correctly. From the data retrieved, it illustrated that there are very less participants who really understand and know about green product.

4.2 Green Consumption Pattern

This section is separated as two parts, which are average frequency of green consumption and elements that influence green consumer behavior. The Ordinary Least Square is utilized as an analysis method. To evaluate about green consumption pattern respondents were asked the following questions: “How often do you use eco-friendly products in the following categories?. Rating from “Never”, “rarely”, “sometimes”, “Very Often” and “Regularly”

Table 3 Average Frequency of Green Consumption

Product Catagory	Mean (\bar{X})	S.D
1. Ordinary Fabric Bag	2.65	0.86
2. Bagasse Packaging eg. Bio-Foam	1.93	0.81
3. Number Five Energy Saving Light Bulb	3.04	0.90
4. Recycled Paper eg. Idea Green Paper	2.30	0.99
5. Natural Cosmetics eg. Skin Food, Body Shop, Oriental Princess	2.59	0.99
6. Organic Food eg. Doi Kham Pesticide Residue Free Vegetable	2.93	0.76
7. Hybrid Car	1.03	0.27
8. Bio-Diesel Fuel eg. B5	1.27	0.72
9. “Green Label” Products	2.86	0.77
10. Refilled Product eg. Refilled detergent	2.88	0.81
Total	2.35	0.79

From Table 3, Most of the respondents often use these eco-friendly products with medium frequency (average at 2.35 out of 5 and S.D. at 0.79). The most three popular products are number five energy saving light bulb, organic food, and refilled products respectively. On the other hand, products that the respondents have barely use are hybrid car, and Bio-Diesel such as B5.

From there, I examined the impact of various dependent variables on average green consumption using Ordinary Least Square. The independent variables are compose of gender, household income, level of education , household status, number of children under 15, household size, and age. The result is illustrated in Table 5

Table 4 Factors that influence green consumption using fundamental economic and social data

Variable	Detail
Sex	Male = 1
	Female = 0
Household Income (Fincome)	< 20,000 Baht = 1
	20,000 – 30,000 Baht = 2
	30,001 – 40,000 Baht = 3
	> 40,000 Baht = 4
Education level (Edu)	Under diploma = 1
	Diploma = 2

Variable	Detail
	Bachelor's degree = 3 Higher than the bachelor's degree = 4
Householder (Head)	Yes = 1 No = 0
Number of children under 15 Years old	The average number of children under 15 Years old
Household Size (Mem)	The average number of family member
Age	Age (Year)

Table 5 Result

Factor	Coefficient ($\hat{\beta}$)	T-test	Sig
Constant	3.347	26.967	0.000
Sex	-0.003	-0.079	0.937
Age	-0.002	-1.464	0.144
Mem	-0.044	-2.587	0.010
Child	0.012	0.448	0.654
Head	0.072	1.546	0.123
Edu	0.110	5.395	0.000
Fincome	0.057	2.554	0.011

Note: R square (R^2) = 0.077, Adjusted R square = 0.070, F = 12.241, $p < 0.000$

$$\hat{B} = 3.347 - 0.003\text{Sex} - 0.002\text{Age} - 0.044\text{Mem}^{**} + 0.012\text{Child} + 0.072\text{Head} + 0.11\text{Edu}^{***} + 0.057\text{Fincome}^{**} + \varepsilon$$

*** = Significance at 0.000, ** = Significance at 0.05, * = Significance at 0.10

The result shows that F-Statistic equals 12.24 that means the independent variables such as gender, age, education, household status, number of children under 15, household size, and household income affect green consuming behavior at 0.01 significance level.

When consider demographic variables I found that gender, age, household status and number of children under 15 do not influence frequency or intensity of being green consumer statistically significant.

Household size has a negative relationship with green consumption at the 95% confidence level. The minus sign presents that when the amount of household member decreases the frequency of green consumption increase. The reason might be price of green products that are quite expensive so big family tends to spend less for green products in order to reduce the overall household expense.

Education is strongly positively significant at the 99% confidence level. It means that high-educated people are intense green consumer. They concern about environmental problem and have strongly environmental preserved behavior.

Household income is a strong significant source of green consumption. The positive sign means that high income consumer tend to consume green products than low income family. The reason is many green products are expensive compare to ordinary products in the market. This extra expense is not a problem for those who have higher purchasing

power. Furthermore, many green products are distributed to limited shop or market. In other words, there is a certain level of transaction cost in purchasing green product.

However, the attributes that affect green consumption behavior are not only demographic but also psychographic-behavior. That is why an importance of environment problem in consumers' perspective (MeanPro) variable is added to this study. MeanPro variable derived from median of severe level of environmental problem in respondents' opinion. When MeanPro value is high, it means the respondents concern or give importance about environmental problem more than the others. The outcome is drawn in Table 6.

Table 6 The Attributes that influence green consuming behavior with importance of environment problem variable (MeanPro)

Factor	Coefficient ($\hat{\beta}$)	T-test	Sig
Constant	2.601	17.139	0.000
Sex	0.020	0.533	0.594
Age	-0.001	-0.822	0.411
Mem	-0.035	-2.127	0.034
Child	0.012	0.493	0.622
Head	0.050	1.121	0.263
Edu	0.103	5.184	0.000
Fincome	0.038	1.770	0.077
MeanPro	0.186	8.075	0.000

Note: R square (R^2) = 0.132, Adjusted R square = 0.125, F = 19.527, $p < 0.000$

$$\hat{B} = 2.601 - 0.020\text{Sex} - 0.001\text{Age} - 0.035\text{Mem}^{***} + 0.012\text{Child} + 0.050\text{Head} + 0.103\text{Edu}^{***} + 0.038\text{Fincome}^* + 0.186\text{MeanProblem}^{***}$$

*** = Significance at 0.000, ** = Significance at 0.05, * = Significance at 0.10

The result shows that household size, education and household income are factors that have effect on intensity of green consumption in the same direction statistically significant. Furthermore, MeanPro also affects intensity of green consuming statistically significant. It can be interpreted that consumer who pay seriously attention in environmental problem is more intensive green consumer than people who do not care about environmental problem. On the other hand, if there is environmental campaign to raise awareness about environment preservation as a lifestyle rather than a trend, it might help reducing current environmental situation.

After that, I also added perspective variable into the model, which are mean level of green consuming attitude (MeanCha), average frequency of environmental activity participation (MeanInvolve), and mean of sensitivity of green consumption (MeanSen). The result is presented on Table 7.

Table 7 Factors that define green consuming behavior with perspective elements

Factor	Coefficient ($\hat{\beta}$)	T-test	Sig
Constant	0.797	4.433	0.000
Sex	-0.009	-0.265	0.791
Age	-0.002	-1.727	0.085
Mem	-0.032	-2.181	0.029
Child	0.009	0.406	0.685
Head	0.030	0.771	0.441
Edu	0.062	3.537	0.000
Fincome	0.050	2.631	0.009
MeanPro	0.050	2.502	0.012
MeanCha	0.211	5.928	0.000
MeanInvolve	0.275	8.079	0.000
MeanSen	0.204	5.470	0.000

Note: R square (R^2) = 0.340, Adjusted R square = 0.333, F = 48.199, $p < 0.000$

$$\hat{B} = 0.797 - 0.009\text{Sex} - 0.002\text{Age} - 0.032\text{Mem}^{**} + 0.009\text{Child} + 0.030\text{Head} + 0.062\text{Edu}^{***} \\ + 0.050\text{Fincome}^{**} + 0.054\text{MeanProblem}^{**} + 0.211\text{MeanCha}^{***} \\ + 0.275\text{MeanInvolve}^{***} + 0.204\text{MeanSensitive}^{***}$$

*** = Significance at 0.000, ** = Significance at 0.05, * = Significance at 0.10

The result from Table 7 shows that household size, age, education and MeanPro influence intensity of green consumption and all perspective variables that added on to the model are strongly positively significant at the 99% confidence level. That means the result from multiple regression analysis indicates that both demographic and psychographic-behavior variables are significant factors influencing degree of green consumption.

5. Conclusion

The main objectives of this research are to scrutinize green consumption behavior, acknowledgement, and perspective of consumer about green product in Chiang Mai area, and to study consumer segment.

The study found that respondent has very less knowledge and understanding about green product. After classified green consumer into five group, the result shows that 33.56 percent of respondent are Conventional and only 9.23 percent are LOHAS. It is interesting that 9.71 percent of the respondent are Unconcerned. Therefore the overall perspective revealed that major population in Chiang Mai has moderate green consumer. Some of them concern about environment but they are only moderate green consumer

When asking the respondents to compare environmental problem with other problems, they gave importance to environmental problem and other problems at the same level. After applied Ordinary Least Square to analyze attributes that affect green consumer behavior the result proved that household size, education, household income impact green consumption intensity. Moreover, psychographic-behavior also influence green consumer behavior.

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