
CONSUMER'S ATTITUDE TOWARDS GREEN PACKAGING: A STUDY ON TRINCOMALEE DISTRICT

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Abstract

The current rapid growth in the economy and the patterns of consumers' consumption and behavior worldwide are the main cause of environmental deterioration. As the environment continues to worsen, it has become a persistent public concern in the developed countries and has recently awakens developing countries to the green movement. In Sri Lankan context, central environmental authority has conducted a survey, according to that Trincomalee District has been identified as poor in recycling and it cause to environment pollution and arisen of most health issues. In this context, this study initiated to find consumers' attitudes toward green packaging with special reference to the Trincomalee District with four objectives, the main objective is to identify whether consumer attitudes towards green packaging is positive or not in Trincomalee District and in addition to that to identify the most effecting factor or factors on consumer attitudes toward green packaging and also to identify the relationship between independent variables (Demographic factor, Product characteristics, Environmental concern and Government role) and dependent variable (Consumer's attitude towards green packaging) and to identify whether consumers attitude towards green packaging is varied according to their demographic factors. 200 consumers were considered for this study in Trincomalee District and they were selected by using random sampling method and data were collected from by using structured questionnaires. Descriptive analysis, correlation analysis, regression analysis and chi square analysis were used in analysis and key findings are consumer's attitude towards green packaging in Trincomalee District is strong positive, most effecting factors on consumer's attitude towards green packaging is product characteristics, all the independent variables have positive relationship with the dependent variable and consumer's attitude towards green packaging is varied according to income level except other demographic factors. Finally, it was concluded that consumers in Trincomalee District highly concern about their environment and their health condition. Therefore, findings of this research contributed to government to identifying what action should be applying to prevent the environment pollution in Trincomalee District and contributed to manufactures by identifying what would be the consumer's response if manufactures used environmental friendly packaging materials for their products.

Keywords: Green packaging, Demographic factor, Product characteristics, Environmental concern, Government role, Consumer's attitude

1. Introduction

Environmental sustainability and business do not always go hand in hand, especially when it comes to product packaging. According to the Association of plastic manufactures, identified that, Packaging (39.6%), Building and Constructions (20.3%), and Automotive (8.5%) are the top three markets for plastics/polythene (Plastic Europe, 2014/2015). While globalization process continues in its full speed across the world, this process has also brought many problems with it. Among those problems, one of the leading issue is environmental unfriendly packaging. Most of the European and Asian country's first option to this waste plastic package is landfilling Major issue of this situation is, these packages remain in the environment for very long a period and doing a massive damage to the environment system.

Because of this, there has been practices of Green packaging concept in the current world. Green packaging uses environmentally sensitive methods, including energy efficiency, recyclable and biodegradable materials, down gauging, reusability and much more. However, move into green packaging from traditional packaging was a costly

process to manufactures and it also is risky decision. When concerning Trincomalee District, major environmental pollution is being happened through environmental unfriendly packaging materials. According to the survey conducted by The Waste Management Unit of the Central Environmental Authority, Monaragala, Badulla, Polonnaruwa, Hambanthota & Trincomalee are identified as poor in recycling. Further, Trincomalee District is being surround by water. Hence, higher damages are done by these environmental unfriendly packaging materials and it is intensively spreading than comparing to other District of the country. Therefore, these environmental unfriendly materials become a major problem to the Trincomalee District (Bandara, Lakmali, & Dissanayaka, 2009). As a result of it, need of green packaging concept now spreading rapidly among the consumers and manufactures. But, success of implementing green package strategy will depend on whether consumers will accept this kind of package or not. Therefore, this research will contribute to the manufactures, to identify whether consumer's attitude regarding green packages is positive or not and what would be the decision of manufacturers regarding to convert their current package strategy into green package strategy.

2. Research Questions of the Study

The research questions for this study are as follows;

- Whether consumer's attitude towards green packaging is positive or not?
- What factors that most effect on consumer's attitude towards green packaging?
- What is the relationship of these factors and the consumer's attitudes towards green packaging?
- Whether consumer's attitude towards green packaging varies with demography of the consumers in Trincomalee District?

3. Objectives of the Study

- To find out the consumer's attitude towards green package is positive or not in Trincomalee District.
- To identify what factors, which mostly effect on the consumer's attitude towards green package.
- To identify the relationship of these factors and the consumer's attitude towards green package.
- To identify whether consumer's attitude towards green packaging varies with demography of the consumers in Trincomalee District.

4. Scope of the Study

This research includes the about the consumer's attitudes towards using of green packages in Trincomalee Districts, and other factors relevant to it. Consumers were selected randomly from the area of Trincomalee District which includes 200 consumers.

5. Literature Review

5.1 Importance of package in business context

In current market place packaging plays a vital role. The European Federation defines packaging as all products made of any materials of any nature to be used for the containment, protection, delivery and presentation of goods, from raw materials to processed goods. Traditionally, packaging intended as a means of protecting and pre-serving goods, handling, transport, and storage of products (Hellstrom & Saghir, 2006). From the consumer perspective, packaging plays a major role when products were purchase. Packaging is crucial, given that it is the first thing that the public sees before making the final decision to buy (Giovannetti, 1995). Packaging has been called the "silent salesman", as it informs us of the qualities and benefits that we are going to obtain if we consume a certain product (Giovannetti, 1995). Currently manufactures used plastic as their primary packaging material without thinking how much of impact is being done through plastic packages on environmental system of the world. This situation has become a reason for many of environmental issues that currently human face. Therefore, new trend is emerging as a solution for above matter, which is "green packaging concept".

5.2 Green Packaging – as a novel marketing trend

Packaging can influence the consumer's mindset of product by its exposure. Scientific studies indicate that packaging allow to attract consumer's attention, transfer valuable product information, position the product in the consumer's mind and differentiate the product from other products (Mohammad & Amin, 2012). Few studies can be found where the environmental product packaging is explicitly studied at the buying stage as one of the determinants of consumers'

product choice (Uusitalo, 1986). Thøgersen (1999) suggests that moral reasoning is likely in the choice of product packaging only when environmental impacts are perceived considerable and there are no other important characteristics (e.g. a high price) involved in the particular purchasing situation. Among them most of the factors sensitively impact on consumer's attitudes towards green packaging.

5.3 Consumer's attitudes towards green packaging

Consumer's attitude represents what consumers like and dislike and consumers' product purchasing decisions were based on their environmental attitudes (Blackwell et al., 2006). And Mansaray and Abijoye (1998) identified that, the quality of the environment depends critically on the level of knowledge, attitudes, values and practices of consumers. According to Thøgersen (1999), concern for the environment is link with the attitude of consumers and into some extent consumers can be actively be a part to solve environmental problems by recycling and choosing environmental friendly products and packages. Consumer's attitude towards green packaging affects more factors such as demographic conditions of the consumers, product characteristics of the particular product, consumer's environmental concern and government role regarding environmental friendly packaging.

5.4 Demographic factors and green package

As a demographic factors age, gender, and income influence to the ecological friendly buying behavior of consumers. Green purchase intention correlates positively with every age and income except for education. Many studies have shown significant differences between men and women in environmental attitudes (Brown & Harris, 1992; Tikka, Kuitunen, & Tynys, 2000) with men having more negative attitudes towards the environment compared to women (Tikka et al., 2000). Women were more likely to buy product with environmental friendly packaging. Because they believe that product was better for the environment (Mainieri, Barnett, Valdero, & Unipan, 1997).

5.5 Products characteristics and green packaging

According to Aertsens et al. (2011) perceived high quality of green products has a positive influence, whereas perceived low quality of green products has a negative influence on consumer green purchase attitude and behavior. When concentrating on product price, Chyong, Phang, Hasan and Buncha (2006) has identified, attitudes are the most consistent explanatory factor in predicting consumers' willingness to pay for green products. Laroche, Bergeron and Barbaro-Forleo (2001), found that 13.1 percent of respondents were willing to pay a higher price for green products.

5.6 Environment concern and Green packaging

Many people may have high ecological concern but have a feeling that the preservation of the environment is the prime responsibility of the government. Tanner and Kast (2003), identified that green packaged food purchases strongly facilitated by positive attitude of consumers towards environmental protection. Krause (1993) observe in his research the strong linkage between attitude and behavior. However, other studies find no significant relationship between attitude towards environmental issues and purchase behavior of environmental friendly product or product with environmental friendly package.

5.7 Government role and Green packaging

The role played by the government in environmental protection is undeniable. Abdul, Abustan and Karwi (2000) reports that individuals, government, and industry, and finance are three equally important factors in the building of individual's positive attitude toward environmental protections. Hence, government plays a vital role by influencing peoples' buying behavior, to buy products that contain in green packages.

a. Methodology

As the data for this study were collected at a single point of time, the study is cross-sectional in time horizon. It guides the data and collection and analysis phase of the research and quantitative research approach is used to conduct the research.

Study population for this research is identified as all consumers who are living currently in Trincomalee District. According, to the Department of Census and Statistics 3,78,182 population is living in 11 D.S Divisions (Divisional Secretariat Divisions) of Trincomalee District in 2012. Total numbers of 200 respondents were selected in order to collect the data required for the study. The samples were chosen through quota sampling technique (each division has

given quota, based on the percentage of population living in Division) and from each quota, simple random sampling was used to select the required number of subjects from each division for the sample.

Table 1 Sample Distribution among Consumers

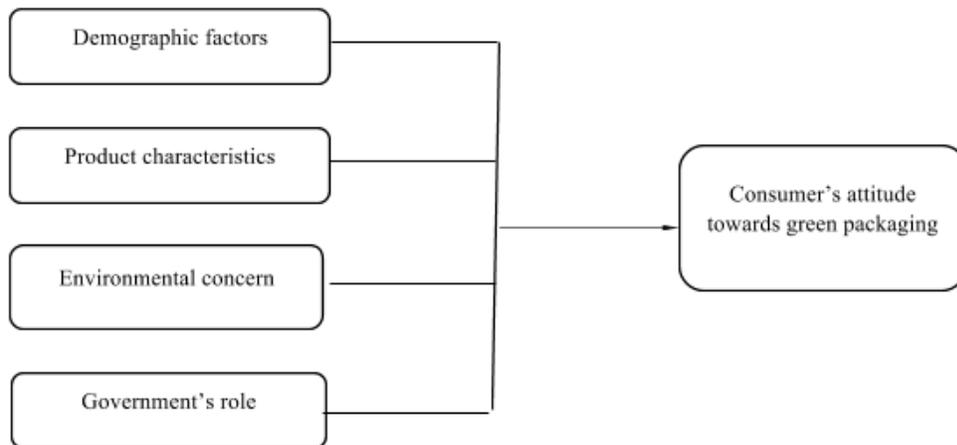
Divisional Secretariat Divisions	Population	Percentage of population (%)	Number of samples
Trincomalee (Town & Gravets	97,234	25.71	51
Padavisripura	11,858	3.14	6
Gomarankadawala	7,339	1.94	4
Kinniya	64,451	17.04	34
Seruwila	13,546	3.58	7
Muthur	56,379	14.91	30
Kanthale	46,641	12.33	25
Kuchchaveli	33,100	8.75	18
Morewewa	7,946	2.10	4
Thambalagamuwa	28,356	7.50	15
Verugal	11,332	3	6
Total	3,78,182	100	200

6.5 Data Collection

Primary and secondary data were incorporated in this study. As a primary data collection, data were collected from the selected sample over a period of two weeks using the questionnaire method. As a secondary data collection, various published and unpublished researches, journals, books, newspaper and internet sources were considered.

6.6 Conceptualization and Operationalization

Figure 1 Conceptual framework



Sources: Chen and Chai (2010); Panahi, Keivandarian and Azizi (2014)

Under the demographic factor, consumer's age, gender and income level were considered as dimensions and under the product characteristics price and quality of the product has been concerned. Responsibility of the consumers, recycling and reuse level of the consumers and environmental knowledge were considered as dimensions of the

environment concern. And finally, investment and establishing rules and regulations were the dimensions of the government role.

Hypothesis Development

The Hypotheses of the research study were developed in order with the research questions as follows,

- H₁** - There is a significant impact of demographic factor on Consumer's attitude towards green packaging.
- H₂** - There is a significant impact of product characteristic on Consumer's attitude towards green packaging.
- H₃** - There is a significant impact of environmental concern on Consumer's attitude towards green packaging.
- H₄** - There is a significant impact of government's role on Consumer's attitude towards green packaging.
- H₅** - There is a relationship between demographic factor and consumer's attitude towards green packaging.
- H₆** - There is a relationship between product characteristics and consumer's attitude towards green packaging.
- H₇** - There is a relationship between environment concern and consumer's attitude towards green packaging.
- H₈** - There is a relationship between government role and consumer's attitude towards green packaging.
- H₉** - Consumer's attitude towards green packaging is varied by gender.
- H₁₀** - Consumer's attitude towards green packaging is varied by age.
- H₁₁** - Consumer's attitude towards green packaging is varied by education.
- H₁₂** - Consumer's attitude towards green packaging is varied by income

6.8 Methods of Measurements of Variables

The independent (consumer's attitude towards green packaging) and dependent variables (Demographic factors, Product characteristics, Environment concern, and Government role) in the research model were measured through seven point Likert scale.

Table 2 Seven point Likert Scale

Perfectly Disagree	Strong Disagree	Disagree	Moderate	Agree	Strong Agree	Perfectly Agree
1	2	3	4	5	6	7

6.9 Method of Data Analysis

According to the characteristics of gathered data through questionnaire, it was analyzed by using Statistical Package for Social Science (SPSS) 19th version. Univariate analysis (Mean and Standard Deviation), Bivariate analysis (Correlation and Regression) and Chi Square Analysis were used to analyse the data.

Table 3 Decision rule for consumer's attitude towards green packaging

Range	Decision attributes
X=1	Perfectly Negative
1<X≤3	Strongly Negative
3<X<4	Weakly Negative
X=4	Moderate
4<X<5	Weakly Positive
5≤X<7	Strongly Positive
X=7	Perfectly Positive

“X” denote Average score (Mean value) of the Consumer's attitude towards green packaging.

a. Results and Discussion

Table 4 Analysis of Reliability of the Instruments

Variable	Cronbach's Alpha
Consumer's Attitude towards green packaging	0.869
Demographic Factor	0.869
Product Characteristics	0.871
Environmental Concern	0.846
Government Role	0.822

The overall Cronbach's Alpha Coefficient values for selected variables indicated a strong internal consistency among the attributes. Therefore, the variables used were concluded as reliable.

7.1 Respondents Characteristics

According to the results of collected data from the sample, there were 94 (48.5%) male respondents and 100 (51.5%) female respondents.

38 respondents were belonging to age between 18 and 27 years' and it represented 19.6%, 60 respondents were belonging to age between 28 to 37 years' and it represented 30.9%, 42 respondents were belonging to age between 38 to 47 years' and it represented 21.8 %, 54 respondents were more than 47 years 'old and it represented 27.8% from the total sample.

23 respondents' education level were below G.C.E O/L and it represented 11.9%, 63 respondents were educated up to G.C.E O/L and represented 32.5%, 85 respondents educated up to level of G.C.E A/L and represented 43.8%, and finally, 23 respondents have a Degree or Diploma and it represented 11.9% from the total sample.

According to the results no one earned income below than Rs. 15,000. 81 respondents earned income between Rs. 15,000 and Rs. 30,000 and it represented 41.8%, 92 respondents earned income between Rs. 31,000 and Rs. 45,000 and it represented 47.4%, 21 respondents earned more than Rs. 45,000 and it represented 10.8 % from the total sample.

7.2 Multiple Regression Analysis

Table 6 Model summary of multiple regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimates
1	0.957	0.915	0.913	0.17510

Table 7 Coefficients table of multiple regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.044	.200		-5.217	.000
Demographic Factor	-0.482	.057	-.627	-8.404	.000
Product Characteristics	.865	.091	.872	9.472	.000
Environmental Concern	.287	.029	.385	10.077	.000
Government Role	.517	.041	.361	12.756	.000

a. Dependent Variable: Consumer's Attitude towards green packaging

Table 8 Simple regression analysis

Method	Linear			
	Demographic factor	Product characteristics	Environmental concern	Government role
R	0.656	0.806	0.867	0.804
R Square	0.430	0.650	0.752	0.646
a- Constant	3.294	1.512	2.297	-0.983
b- value	0.504	0.800	0.648	1.151
Sig. value	0.000	0.000	0.000	0.000

Table 9 Correlation Analysis

		Demographic Factor	Product Characteristics	Environmental Concern	Government Role
Consumer's Attitude towards green packaging	Pearson Correlation	.656**	.806**	.867**	.804**
	Sig. (2-tailed)	.000	.000	.000	.000

Table 10 Chi Square analysis

Personal factor	Items	Number	Mean	Asymp. Sig
Gender	Male	94	6.0851	0.815
	Female	100	6.1200	
Age level	18 – 27	38	6.0737	0.777
	28 – 37	60	6.1867	
	38 – 47	42	5.9833	
	More than 47	54	6.1241	
Education level	Below G.C.E O/L	23	6.0826	0.107
	G.C.E O/L	63	6.0143	
	G.C.E A/L	85	6.1106	
	Degree/Diploma	23	6.3391	
Income level	Below Rs. 15,000	-	-	0.039
	Rs. 15,000-30,000	81	5.9642	
	Rs. 31,000-45,000	92	6.1728	
	More than Rs. 45,000	21	6.3333	

Objective 1 Consumer's attitude towards green packaging

According to the descriptive frequency results, the average value (mean value) shows as **6.1031** and **0.5951** as standard deviation, which indicates mean value can be vary by 0.5951 within the range of 5.5080 - 6.6982. Based on the decision criteria, the average value of the consumer's attitude towards green packaging is in the range of $5 \leq X < 7$ (X denote mean values of consumer's attitude) and it is indicating that there is a **strongly positive attitude** towards green packaging among consumer's in Trincomalee District.

Objective 2 Impact of each independent variable on dependent variable

According to the analyzed data, all the independent variables have significant impact on consumer's attitude towards green packaging. Ansar (2013); Ibok and Etuk (2014); Tanner and Kast (2003) also identified above results. Product

characteristics has best explanatory power the variance of consumer's attitude towards green packaging (B value is 0.865). Therefore, product characteristics is the factor that most effect on consumer's attitude towards green packaging and it explains 80.6% variance of consumer's attitude towards green package. Government role is the second highest, effecting factor on consumer's attitude towards green packaging (B value 0.517) and it explains 64.6% variance of consumer's attitude regarding green packaging. As overall, four independent variables explain 91.5% variance of dependent variable. Consumer's psychological factor, family background, familiarity of the green package concept not considered in this research, therefore, these factors may be the reasons for the unexplained 8.5% of the model.

Objective 3 Relationship between independent and dependent variable

According to the analyzed data, all the independent variables positively correlated with dependent variable. Kodituwakku and Kanagasabai (2013); Chen et al. (2012); Young et al. (2010) also identified the above results in their study. Among the positive correlated variables, highest correlation shown in environmental concern. Demographic factor showed moderate positive correlation with the consumer's attitude towards green packaging.

Objective 4 Identification of consumer's attitude towards green packaging varies with demography of the consumers

Consumer's attitude towards green packaging is not varying based on the gender, age, and education level except income level. Results shows that consumer's attitude towards green packaging is varying based on the income level of the consumers. Rahman (2011); Brown and Harris (1992); Arminda (2010) also identified above results in their study.

5. CONCLUSIONS AND RECOMMENDATIONS

According to the descriptive analysis results and the decision rule, consumer's attitude towards green packaging in Trincomalee District is strongly positive. Hence, researcher finally concludes that consumer's in Trincomalee District are concern about their environment very intensively. Based on the results of regression analysis, most effecting factor to consumer's attitude towards green packaging is product characteristics. Hence, researcher finally concludes that improving product characteristics is more appropriate to increase consumer's attitude towards green packaging. All the variables have positive relationship with consumer's attitude towards green packaging. Among the variables environmental concern was the highest positive correlated variable with consumer's attitude towards green packaging. Consumer's attitude towards green packaging is not varying by consumer's gender, age and education level except income level in Trincomalee District.

The researcher highly recommends that green package concept should be promoted through advertisements, leaflets and posters in Trincomalee District.

Researcher recommends for manufacturers to transform their traditional packaged strategy into green packaged that will lead to get more profits. Furthermore, manufacturers have to be more concern on the quality of the product and durability of the product when it is green packaged. Because consumers were highly concentrate on it.

To the manufacturers those who wish to transform their traditional packaging strategy into green packaging strategy should be provided tax reliefs and loan facilities.

Consumers should be advised in the way of proper recycling method, importance of recycling, harmfulness of environmental unfriendly packages and diseases that can be raised through polluted environment.

Programs should be organized within the Trincomalee District to improve their attitude towards green packaging continuously and also programs should be organized, those can change the traditional buying behavior of consumers (only concern about product price) then consumers will tend to buy products with concern of environmental effect.

Researcher recommend to authorized parties, to establish strong environmental protection policy and to invest more on products package recycle projects which are vital to prevent the current environmental pollution in the Trincomalee District.

Should organize programs in schools, by presenting “importance of buying green packaged products”. Also, have to provide facts to the students about the extent of environmental pollution in Trincomalee District and how massively it damages and pollute the environmental system in the country.

6. REFERENCE

- Abdul, N., Abustan, I., & Karwi, A. B. (2000). Environmental concern: how do young Malaysian fare? *Advances in international business*, 482-494
- Aertsens, J., Mondelaers, K., Verbeke, W., & Buysse, J. (2011). The influence of subjective & objective knowledge on attitude of organic food. *British food journal*, 1353-1378.
- Ansar, N. (2013). Impact of Green Marketing on Consumer Purchase Intention. *Mediterranean Journal of Social Sciences*, 652-655.
- Armind, d. (2010). Green consumer market segmentation: empirical findings. *International Journal of Consumer Studies*, pp 429-436.
- Bandara N.J.A.J, Lakmali W.A.S, Dissanayaka W.A.S.S. (2009, July). <http://environmentlanka.com/blog/2009>. Retrieved from <http://environmentlanka.com>
- Blackwell, R., Miniard, P., & Engel, J. (2006). *Consumer Behavior*. 10th edition. Thomson Higher Education.
- Brown, G., & Haris, C. (1992). The US forest service: Toward the new resource management paradigm? *Society and Natural Resources*, 231-245.
- Chen, J., & Lobo, A. (2012). Organic food products in China: determinants of consumers' purchase intentions. *The International Review of Retail, Distribution and Consumer Research*, 293-314.
- Chen, T. B., & Chai, L. T. (2010). Attitude towards the Environment and Green Products: Consumers' Perspective. *Management Science and Engineering*, Vol. 4, pp. 27-39.
- Chyong, H., Phang, G., Hasan, H., & Buncha, M. (2006). Going green: A study of consumers' willingness to pay for green products in Kota Kinabalu. *International Journal of Business and Society*, 40-54.
- Giovannetti, V. (1995). *El mundo del envase Manual para el disenõ y produccio´n de envases y embalajes*. Mexico City.
- Hellström D. and Saghir M. (2006). Packaging and logistics interactions in retail supply chains. *Packaging Technology and Science*, 20(3) 197-216.
- Ibok, N., & Etuk, S. G. (2014). Socio-Economic and Demographic Determinants of Green Consumption. *International Journal of Managerial Studies and Research (IJMSR)*, 2(9), pp 47-56. Retrieved from www.arcjournals.org
- Kodituwakku, D., & Kanagasabai, K. (2012). Green marketing concept and consumer purchasing intention with special reference to consumer goods.
- Krause, D. (1993). Environmental consciousness: An empirical study. *Journal of Environment and Behavior*, 26-42.
- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). “Targeting consumers who are willing to pay more for environmentally friendly products”. *The Journal of Consumer Marketing*, Vol. 18 No. 6, 503-20.
- Mainieri, T., Barnett, E., Valdero, T., & Unipan, J. (1997). Green buying: The influence of environmental concern on consumer behavior. *Journal of Social Psychology*, 189-204.
- Mansaray, A., & Abijoye, J. (1998). Environmental knowledge, attitudes and behavior in Dutch secondary school. *Journal of Environmental Education*, 4-11.

- Mohammad, Z., & Amin, Z. (2012). Consumers' attitude and purchasing intention toward green packaged foods; A Malaysian perspective. *International Conference on Economics Marketing and Management*, 1-2.
- Rahman, M. (2011). Exploring Price Sensitivity of a Green Brand: A Consumers' Perspective. *World Review of Business Research*, 1 (2), pp 84 - 97.
- Tanner, C., & Kast, S. (2003). Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology & Marketing*, 883-902.
- Thøgersen, J. (1999). The ethical consumer. Moral norms and packaging choice. *Journal of Consumer Psychology*, 439-460.
- Tikka, P., Kuitunen, M., & Tynys, S. (2000). Effects of educational background on students' attitudes, activity levels, and knowledge concerning the environment. *Journal of Environmental Education*, 12-19.
- Uusitalo, L. (1986). *Environmental Impacts of Consumption Patterns*. Aldershot: Gower Publishing Company Ltd.
- Young, W., Hwang, K., McDonald, S., & Oates, C. (2010). Sustainable consumption: green consumer behaviour when purchasing products. *Sustainable Development*, 18(1), 20-31.