Accepted Manuscript

Green Products: An Exploratory Study on the Consumer Behaviour in Emerging Economies of the East

Aindrila Biswas, Mousumi Roy

PII: S0959-6526(14)01014-2

DOI: 10.1016/j.jclepro.2014.09.075

Reference: JCLP 4760

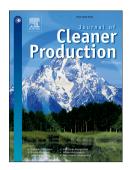
To appear in: Journal of Cleaner Production

Received Date: 12 April 2014 Revised Date: 9 June 2014

Accepted Date: 21 September 2014

Please cite this article as: Biswas A, Roy M, Green Products: An Exploratory Study on the Consumer Behaviour in Emerging Economies of the East, *Journal of Cleaner Production* (2014), doi: 10.1016/i.iclepro.2014.09.075.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Green Products: An Exploratory Study on the Consumer Behaviour in Emerging Economies of the East

Aindrila Biswas and Mousumi Roy*

Department of Management Studies, National Institute of Technology Durgapur, India-713209

The recent years have witnessed a phenomenal change in quantum and pattern of consumption in the

developing nations of the East. Ever increasing consumption is putting a strain on the environment. The present work delves into understanding the relationship between environmental concerns and consumer choice behaviour in purchasing green products in the context of India being a large emerging economy in South East Asia. Attempt has been made to examine the influence of consumption values on sustainable consumer behaviour across consumer segments with preferential green choice approach difference. Multiple linear regression analysis, one-way analysis of variance and other standard statistical analysis of the data collected through questionnaire survey have been done. Results indicate that price sensitivity is high regardless of their choice preference. Social value

done, results material that price sensitivity is man regulatess of their enoise preference, seem value

parameter being the dominant factor influences sustainable consumption behaviour adoption among

the green preferential cluster. Consumption values differ significantly across consumers exhibiting

different preference for products with and without green credentials, being higher for those with

green purchase or consumption experience or notion.

Keywords: Green products, Consumer behaviour, Consumption values, Growing economy,

Environmental impact

*Corresponding author (M.Roy, E-mail: mroy.nitdgp@yahoo.com)

1. Introduction

Rapid economic growth has fostered over-consumption and natural resource exploitation leading to environmental deterioration. The extensive consequences being global warming, environmental degradation (soil, air, and water), ozone layer depletion and life-threatening health hazards. Consumption habits of private households significantly contribute to environmental degradation. Awakened by the severity of environmental deterioration, consumers are gradually changing their attitude, behaviour and approach in matters of consumption.

From 1990s onwards, substantive researches have been undertaken to analyse consumers' buying behaviour of environment-friendly products (Davis, 1992; Ottman 1993). Products which are produced without non-toxic chemicals or are recyclable, reusable, bio-degradable or having eco-friendly packaging and with low detrimental environmental impact at all stages of its life-cycle with the long term goal of preservation of natural environment are termed as green or environment friendly products (OECD, 2009). Lack of information to the consumers about green products often results in an attitude-behaviour gap between their environmental concern and actual buying behaviour thus hindering the market share for green products (Ohtomo and Hirose 2007). Consumer research recognizes consumers' perception about green products, its price and quality(functional value), their urge to seek knowledge (Epistemic value), image concern, peer opinion (Social value), influence of promotional activities and subsidies (Conditional value), desire to exhibit protective role towards environment (Environmental value)may have strong influence and prognosticate sustainable consumption behaviour (Laroche et al., 2001; Sharma and Bagoria, 2012).

Based on these research a theoretical framework is built to examine the influence of several consumption values like product quality, price, value-for money, sense of accomplishment, environmental perceptions, inquisition, contingent circumstances and their trade – offs towards sustainable consumption practices for consumers' with choice preference for products with green credential and those without such preference.

Despite extensive research on consumers' environmental actions, attitudes and apprehension in the context of Europe and USA, such studies are remarkably absent in the context of the developing economies of the East (Schlegelmilch et al., 1994; Minton and Rose, 1997; Arkesteijn and Oerlemens, 2005; Faiers and Neame, 2007; Saxena and Khandelwal, 2010; Boztepe, 2012).

The objective of this paper is to the augment understanding of consumption values reflected in sustainable consumption behaviour. Understanding consumers' choice behaviour for environmentally sustainable products is of importance to the policy makers interested in stimulating the demand for green products, and to the suppliers of the products trying to augment their market share in the market for environmentally sustainable products. Detailed investigation data on two consumer preferential segments, namely those exhibiting choice preference for products with green credential and those without green credential will be used in identifying the influence of consumption values in shrugging off the difference between green preferential and non-green preferential segments.

2. Theoretical background

Based on theoretical perspectives on consumer choice regarding green products, some hypotheses regarding green product purchase decisions are postulated here in which theoretical underpinnings for the hypotheses are drawn from the theory of consumer values that recognizes importance of

consumption values in green product purchasing decision (Long and Schiffman, 2000; Sweeney and Soutar 2001; Laroche et al., 2001). Consumer choice is a function of multiple consumption values. Five such dimensions are functional value, social value, environmental value, conditional value and knowledge value. This study considers all the five constructs to develop a perceived value scale to assess sustainable consumption behaviour across two consumer segments.

2.1. Sustainable consumption behaviour

Consumption has various socio-economic impacts, thus following the idea of paradigm shift, new consumer concerns arise for sustainable consumption. Sustainable consumption refers to the pattern of reduced consumption of natural resources, changing lifestyle and consumption of environment-friendly products to meet the present needs and aspirations of the future generations. Consumption and lifestyles adapted to habits and contexts are prone to change based on certain personal values, perception and information (environmental and knowledge value), influence of social context like image, acceptance, peer group identity (social value) and opportunity like availability of alternatives at competitive pricing (conditional value).

The endeavour to understand the sustainable consumption behaviour has become ubiquitous among the academic groups in the recent years (Wang et.al, 2013). Many models have been developed to explain sustainable consumption behaviour or green consumption behaviour (Wang et.al, 2013; Zhao et.al, 2013). Sustainable consumption behaviour has been studied in various economies to access general pro-environmental behaviour, green consumption behaviour (Wang et.al, 2013; Zhao et.al, 2013), household recycling, waste management behaviour (Barr et.al, 2005) and domestic energy saving behaviour (Gadenne et. al., 2011).

2.2. Influence of consumption values on consumer choice behaviour

2.2.1. Functional value

Functional value is measured by consumers' perception about the product performance as durability, permanence, dependability, reliability, price and quality. It is assessed as the primary driver of consumer choice behaviour in green product purchase decision (Sheth et. al, 1991; Bei and Simpson, 1995). However, in case of high priced products, they might opt for other criteria apart from price for product selection. Beverage consumers in Germany exhibit eco-friendly behaviour although not ready to compromise with price and taste for environmentally compatible packaging (Van et.al. 2009). Higher income group of Taiwanese consumers are likely to pay higher premium, perceiving green products to have superior quality (Tsay, 2010). Consumers' extreme price sensitivity for green purchase doesn't exhibit much environmental responsibility (Malhotra and Maheshwari, 2011). Eventually there has been escalation in number of consumers in developed countries who are taking substantive steps to reduce environmental degradation and are amenable to pay premium for green goods (Laroche et al, 2001; Eriksson, 2004; Lung, 2010). Given these arguments, the following hypothesis can be drawn.

Hypothesis1: sustainable consumption behaviour is positively influenced by functional value.

2.2.2. Social value

Social value measures perceived utility derived from association with one or more social groups. Social pressure is a key driving force behind consumer choice (Sheth at al., 1991; Bei and Simpson, 1995). Environmental behaviours are inspired by sense of social responsibility. However, several

studies suggest that consumers' decisions are influenced more by personal factors like attitude and personality traits rather than social norms or pressure (Shamdasani et al., 1993). Based on this understanding from literature, the hypothesis below may be drawn.

Hypothesis 2: sustainable consumption behaviour is positively influenced by social value.

2.2.3. Conditional value

Conditional value denotes utility derived in a specific situation. Consumer research recognizes that changes in consumer situational variables may affect green product adoption (Ottaman, 1998; Saxena and Khandelwal, 2010; Niemeyer, 2010; Gadenne et al., 2011). This study proposes the hypothesis below.

Hypothesis 3: sustainable consumption behaviour is positively influenced by conditional value.

2.2.4. Environmental value

Environmental value concerns the relatively stable notions about the issues such as limit of the population that earth is reaching, relationship between environment and development. With increase in protective feeling towards the environment, consumers change their consumption pattern and go green (Choi and Kim, 2005; Kilbourne and Pickett, 2008). Recent studies have found that those with higher NEP scores (New Environmental Paradigm) are most likely to engage in pro-environmental behaviour (Wang et.al, 2013). Individual's emotions exhibited towards environmental protection and enhancement of individual responsibility will trigger green purchase decisions (Liu et al., 2010; Rex and Baumann, 2007). Thus hypothesis 4 below may be proposed.

Hypothesis 4: sustainable consumption behaviour is positively influenced by environmental value.

2.2.5. Knowledge value

Knowledge value concerns the perceived utility derived to satisfy the want of knowledge and seeking novelty (Laroche et al., 2001). Consumer inclinations to satisfy a desire for knowledge regarding the product attributes and novelty have favourable impact on consumer behaviour towards buying green products (Tanner and Kast, 2003). Lack of information about green products often results in an attitude behaviour gap between consumer environmental concern and actual buying behaviour (Ginsberg and Bloom, 2004). Thus availability of information may fill the gap. Therefore, this study proposes the following hypothesis.

Hypothesis 5: sustainable consumption behaviour is positively influenced by knowledge value.

3. Methodology

3.1. Measurement Instrument

The survey instrument used for collecting information is segmented into three sections: consumers' demographic characteristics, sustainable consumption behaviour and consumption values to measure consumer choice behaviour for products with green credential and products without green credential. A five-point Likert scale was used on the instrument. The scale ranged from 1 to 5, indicating [1]=Very Low, [2]= Low, [3]=Medium, [4]=High and [5]= Very High, where '1' stands for strong disagreement and '5' represents strong agreement (Lin and Huang, 2012; Wang et.al, 2013). The five items in the questionnaire measuring sustainable consumption behaviour scale (Wang. et. al, 2013) and nineteen items to measure the five consumption values scale (Lin and Huang, 2012) were duly adapted and modified as per the requirements. The instrument was tested and validated.

3.2. Data collection

The study tries to prognosticate the leverage of consumption values on sustainable consumption behaviour (SCB) in the context of the emerging economies with respect to two consumer segments experiencing differential green choice behaviour namely choice preference for products with green credential' (CPWGC) and those with 'choice preference for products without green credential' (CPWOGC). Stratified random sampling technique was applied for data collection and analysis. A structured questionnaire was distributed to 600 consumers at different workshops and conferences on research and environmental awareness held at two different central universities in India between May, 2013 and July, 2013 exhibiting a valid response of 89 per cent. Of the total valid responses, 53 per cent was the segment with preferential approach for products with green credential and the rest 47 per cent had either no prior green purchase or consumption experience or had inhibitions for the same for future. One-way ANOVA was applied to determine whether consumption values differ significantly across groups with different levels of choice behaviour products with or without green credentials. Multiple linear regressions were applied for evaluation of the factors that prognosticate sustainable purchase decision for both the clusters.

3.3. Descriptive statistics

Consumers were classified into two groups- those with 'choice preference for products with green credential' (CPWGC) and those with 'choice preference for products without green credential' (CPWOGC). The descriptive statistics of the scales are provided in Table 1.

3.4 Data analysis

Before testing the hypotheses, reliability tests were conducted for each variable (Table 2). Results show the reliability statistics vary from 0.67 to 0.89 and reliability of the questionnaire has been substantiated (Landis and Koch, 1977).

3.5. Regression analysis for consumers' with choice preference for products without green credential

For the multiple regression analysis, sustainable consumption behaviour for the segment the exhibiting choice preference for products without green credential was modelled as the dependent variable and respectable consumption values as the predictor variables (Table 3). Only two variables are entered in the model with conditional value explaining 23 per cent variance and functional value explaining 2 per cent variance.

4. Results and discussion

4.1. Effect of consumers' value on green choice

In multiple regression analysis, sustainable consumption behaviour of the segment exhibiting choice preference for products with green credential and representing 47 per cent of the sample population was modelled as the dependent variable whereas the corresponding consumption values were modelled as the predictor variables (Table 4). As indicated by the regression for sustainable consumption, the first predictor to enter the model is social value, explaining a variance of 50 per cent. Model entry for the other variables has the following order: knowledge value (0.16), environmental value (0.01), conditional value (0.01) and functional value (0.01). The numbers in the parenthesis indicate incremental gain in \mathbb{R}^2 where the consumption values are significant (p <0.05).

The ordering of the model entry suggests social and knowledge value are more effective in prognosticating sustainable consumption.

4.2. Correlation among consumption values

All the five consumption value scales (Functional, Social, Conditional, Environmental and Knowledge) are positively and significantly correlated with each other (p<0.01) (Table 5). The observed highest coefficient is 0.80 and exists between knowledge value and conditional value. Individual epistemic value is positively correlated with functional value (0.69). Further positive correlation exists between social and functional value (0.66).

4.3. Effects of consumption values on sustainable consumption behaviour

The sustainable consumption behaviour was measured based on a function of all the consumption values for both the segments comprising of 534 respondents (Table 6). The four variables entered in the model with knowledge value explaining 32.7per cent variance, followed by environmental value (4.2%), conditional value (1.9%) and functional value (0.8%). The Variance Inflation Factor (VIF) in the co-linearity statistics being less than 5 for all the predictor variables indicates absence of multi-collinearity problem.

4.4. Effects of green credentials on consumption values

One way Analysis of Variance was performed with the two consumer segments as independent variable and functional, social, environmental, conditional and knowledge values as dependent variables. Analysis (positive p-value less than 0.05) suggests that consumption values regarding sustainable consumption differ significantly across the groups exhibiting differential preferential approach for products with or without green credential. Consumers with 'choice preference for

products with green credential' (CPWGC) tend to have stronger significant concurrence with all the five consumption values than those with 'choice preference for products without green credential' (CPWOGC) (Table 7).

In this study, 'CPWGC' consists of consumers' with green purchase habits or experience or who consider products' environmental impact as one of the major evaluative parameters for both nominal and extended purchase involvement. Based on large scale questionnaire survey of two consumer segments, sway of consumption values on sustainable consumption behaviour in the context of a developing economy has been described. Analysis of variance (Table 7) indicates the level of consumption values for the consumers with green choice preference are significantly higher than those with no such favour.

Considerable variation is observed to exist between the two groups with regard to their consumption values with 'knowledge value' (4.17) being the highest for the consumers' exhibiting a preferential approach towards green products and inquisition to acquire sufficient cognizance about product lifecycle before making purchase decisions. The high 'conditional value' (3.03) for the other cluster reinforces the importance of contingent factors like financial incentives in their purchase decisions. The functional value, social, conditional, knowledge and epistemic value register significant positive impacts on sustainable consumption behaviour in green product purchase decision (Table 4). Social norms, peer group cohesiveness, want of admiration appreciate consumers with choice preference for green credential products, to adopt sustainable consumption practices (0.39). Knowledge perception and environmental labelling or disclosures for products (0.36) with approbatory perception towards environmental protection and society raise the environmental value as well as sustainable consumption (0.13). Discounts, financial incentives or added environmental benefits on products credit sustainable consumption (0.17). Consumers prefer products with green

credential having assurance about the quality standards, price, ingredients and resultant benefits from usage of green products (0.11). The leveraging impact of knowledge value thus necessitates enhanced environmental disclosures of a product's environmental claim.

Although social value was found to be the most important adjudicating factor for the green credential favouring segment, since it seems to influence the other segments' sustainable consumption behaviour, its influence on the overall consumers' sustainable consumption behaviour is insignificant. Both the segments tend to prioritize on the functional and contingent aspects, thus the non-green credential preferring segment abstains from green purchase owing to price sensitivity. The detailed analysis of sustainable consumption behaviour (SCB) clearly shows that knowledge value, environmental concern and want of social prestige do not influence the non-green cluster. The low explanatory power of the consumption values for the CPWOGC shows external moderators like infrastructures, government policy or awareness campaigns being influential in prognosticating their SCB.

Individuals' segments with non-preferential approach for products with green credentials are apprehensive neither about the environmental disclosures nor on product labeling about its lifecycle. Despite inhibitions for green purchase pertaining to price which is often considered exorbitant and unjustified (reducing the consumers' surplus), this non-preferential consumer segment may be considered as potential segment of future green buyers based on the favourable functional value. The cumulative adjusted R² (0.25) suggests that apart from the consumption values there are other parameters which aid to evaluate the sustainable consumption behaviour for individuals without any choice preference for products with green credentials.

Knowledge and environmental values are important determinant of sustainable consumption because it may not only facilitate understanding of environmental issues through want of enhanced product

disclosures or environmental compliance but enhance environmental awareness through promotion of individual realization of responsibility for the environment. For the predicting variables, influence of conditional and functional values are ubiquitous across both the segments irrespective of their choice preferences thus highlighting the price sensitivity concerns among the consumers in a developing market which may relate to constraints in the expansion of green product market. Improvement in green consumption can be achieved through integrating efforts of governments and related industrial sectors advocating sustainable environmental awareness and protection. Awareness campaigns about unprecedented environmental problems by social organizations, governments and corporate sectors can even inculcate morale and value norms among the less educated, highly price-sensitive segment, thereby arousing their environmental conscience so that they can tilt their sustainable consumption behaviour towards the green products and play a critical role towards sustainable development. All-directional publicity system may be used based on TV programs for the spread of environmental value, television being the most important medium of entertainment in the emerging economies.

Studies conducted in European countries, like Greece, Netherlands, Britain reveal that the environmental awareness and green business policy is the aftermath of consumers' environmental awareness (Boztepe, 2012). A substantial portion of the British citizens rated the environment as an immediate and urgent problem (Dembkowski and Hanmer-Lloyd, 1994), while results of survey revealed British adult consumers' preference for products with green credential and willingness to pay premium for the same (Prothero, 1990). With green market alert, the USA market has noticed unprecedented rise in consumption of products with green credential (Van Liere and Dunlap, 1980; Lawrence, 1993; Schlegelmilch et al, 1996).

5. Conclusions

The study successfully explains consumers' motivation to adopt sustainable consumption behaviour. On the consumer segment with preferential approach for products with green credential, the strongest influence behind sustainable consumption behaviour (SCB) comes from peer opinion and social recognition. Positive word-of-mouth and socio-cultural practices also play the role of significant motivators. Marketers producing products with or without green credential should adopt effective mechanisms like under-promise and over-delivery, follow-up to reduce consumers' postpurchase dissonance to prevent spread of negative word-of-mouth thereby hindering sustainable consumption behaviour. Enhancement of knowledge value by means of educational campaigns and more participatory education approach should be promoted for accurate understanding of the environmental knowledge. Manufacturers should try to offer products with sufficient product information on its environmental consequences, compliances and after life disposal. Eco-labeling on products will raise the knowledge value for the green preferential segment and subsequent sustainable consumption behaviour adoption. The line of difference between the green preferential and non-green preferential segments may be shrug off by effective elevation of functional and conditional values, as both being significant prognosticating factors for sustainable consumption behaviour across choice preference category. Taking into consideration the individual's price sensitivity, discounts or subsidies can be offered on green products for boosting their conditional value. Institutional restructuring for creation of economic incentives for environmentally compatible production practices would be effective coupled with educational drivers for promotion of products adding value to the environment. This will eventually influence willingness to purchase analogous products even for the non-preferential consumer segment. The policy makers should enhance overall consumption values to promote sustainable consumption behaviour. Consumers need to be

empowered so that they individually can be effective in combating environmental problems by means of effective household recycling, energy-saving, waste management and consumption practices (Kaiser and Gutscher, 2003; Barr et.al, 2005; Gadenne et. al., 2011). Effective communication strategies focussing on environmental behaviour in tackling environmental issues can enhance the environmental value among the non-green product preferential segment, thus adding one variable in prognosticating their sustainable consumption behaviour.

Finally, coherent sustainable consumption policies across the government departments are needed irrespective of spread of green awareness among consumers. Governments should also offer subsidies and supportive policies to boost industrial sectors in effective promotion of green products thereby tilting the preference of the non-green preferential segment towards the green products subject to bargain-basement in green product pricing. However, due emphasis should not only be given on sustainable consumption behaviour and green consumption but also on the post-consumption phase of after-life disposal of products. Sustainable consumption behaviour should thus be promoted with effective product recycling or extended consumption period or willingness to keep. Consumption values channelize their sustainable consumption although the type of product to be purchased depends on consumers' choice behaviour, perceptions and habits. Availability of discounts or subsidies on products tends to have the highest influence among both the groups, emphasizing on price-sensitivity of both the segments. Environmental and knowledge value is significantly high for the green credential preferring segment than those without similar preference.

References

Arkesteijn, K., Oerlemans, L., (2005). The early adoption of green power by Dutch households: an empirical exploration of factors influencing the early adoption of green electricity for domestic purposes. *Energy Policy*, 33 (2), 183–196

Bamberg, S. (2003). How does environmental concern influence specific environ-mentally related behaviours? A new answer to an old question. *Journal of Environmental Psychology*, 23 (1), 21–32 Barr, S., Gilg, A., & Ford, N., (2005). Defining the multi-dimensional aspects of household waste management: A study of reported behavior in Devon. *Resources, Conservation and Recycling*, 45, 172–192 doi:10.1016/j.resconrec.2004.12.007

Bei, L., Simpson, E., (1995). The determinants of consumers' purchase decisions for recycled products: an application of acquisition-transaction utility theory. *Advances in Consumer Research*, 22 (1), 257-261

Boztepe, A. (2012). Green Marketing and Its Impact on Consumer Buying Behavior. *European Journal of Economic and Political Studies*, 5(1)

Chen, Y.C., Shang, R.A., & Lin, A.K., (2008). The intention to download music files in a P2P environment: Consumption value, fashion, and ethical decision perspectives. *Electronic Commerce Research and Applications*, 7, 411–422

Davis, Joel, J. (1992). Ethics and Green Marketing. *Journal of Business Ethics*, 11(2), 81-87 Eriksson, C. (2004). Can green consumerism replace environmental regulation? A differentiated products example. *Resource and Energy Economics*, 26(3), 281-293

Dembkowski, S. and Hanmer-Lloyd, S. (1994). The environmental attitude-system model: a framework to guide the understanding of environmentally conscious consumer behavior, in Carson, D. et al. (Eds), Marketing: Unity in Diversity. Proceedings of the Annual Conference of the Marketing Education Group, Coleraine, 4-6, 232-41

Faiers, A., Cook, M., Neame, C., (2007). Towards a contemporary approach for understanding Consumer behaviour in the context of domestic energy use. *Energy Policy*, 35 (8), 4381–4390

Gadenne, D., Sharma, B., Kerr, D., Smith, T. (2011). The influence of consumers' environmental beliefs and attitudes on energy saving behaviours. *Energy policy*, 39, 7684-7694

Ginsberg, J.M., Bloom, P.N., (2004). Choosing the right green marketing strategy. MIT Slogan Management review; 46(1), 79-88

Hansla, A., Gamble, A., Juliusson, A., Garling, T. (2008). Psychological determinants of attitude towards and willingness to pay for green electricity. *Energy Policy*, 36 (2), 768–774

Kilbourne, W., Pickett, G., (2008). How materialism affects environmental beliefs, concern and environmentally responsible behaviour. *Journal of Business Research*, 61, 885–893

Laaksonen, M., (1993). Retail patronage dynamics: learning about daily shopping behaviour in contexts of changing retail structures. *Journal of Business Research*, 28 (1, 2), 3-174

Laroche, M., Bergeron, J., Barbaro-Forleo, G., (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18 (6), 503-520

Lawrence, J. (1993). Green product sprouting again: more focused efforts avoid controversy. Advertising Age, 10

Lin, P.C., Huang, Y.H., (2012). The influence factors on choice behaviour regarding green products based on the theory of consumption values. *Journal of cleaner production*, 22, 11-18

Long, M., Schiffman, L., (2000). Consumption values and relationships: segmenting the market for frequency programs. *Journal of Consumer Marketing*, 17 (3), 214-232

MacKay, H., 1999. Turning Point: Australians Choosing their Future. Sydney: MacMillan

Mainieri.T., Barnett, E.G., Valdero, T.R., Unipan, J.B., Oskamp, S. (1997). Green buying: the influence of environmental concern on consumer behaviour. *Journal of Social Psychology*, 137 (2), 189–204

Malhotra, G., Maheshwari, A. 2011. Green marketing – a study on Indian youth. International Journal of Management and Strategy, 2(3)

Minton, A.P., Rose, R.L., (1997). The effects of environmental concern on environmentally friendly consumer behaviour: an exploratory study. *Journal of Business Research*, 40, 37–48

Niemeyer, S. 2010. Consumer voices: adoption of residential energy-efficient practices. International *Journal of Consumer Studies*, 34 (2), 140–145

OECD (2009). Sustainable manufacturing and eco-innovation: towards a green economy Policy Brief. (June)

Ohtomo, S., Hirose, Y. (2007). The dual-process of reactive and intentional decision-making involved in eco-friendly behaviour. *Journal of Environmental Psychology*, 27(2), 117-125

Ottaman, J.A. (1993). Green marketing: Challenges and Opportunities. Lincolnwood: NTC

Prothero, A. (1990). Green consumerism and the societal marketing concept: marketing strategies for the 1990s. *Journal of Marketing Management*, 6(2), 7-103

Rex, E., Baumann, H. (2007). Beyond ecolabels: what green marketing can learn from conventional marketing. *Journal of Cleaner Production*, 15 (6), 567-576

Saxena, R., Khandelwal P. (2010). Can green marketing be used as a tool for sustainable growth?: A study performed on consumers in India- An Emerging economy. *International journal of Environmental Cultural, Economic and Social Sustainability*, 6(2)

Schlegelmilch, B.B., Bohlen, G.M., Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European Journal of Marketing*, 30(5), 35-55

Schlegelmilch, B.B., Diamantopoulos, A. and Bohlen, G.M. (1994). The value of socio-demographic characteristics for predicting environmental consciousness. in Park, C.W. and Smith, D.C.,

Marketing Theory and Applications: The Proceedings of the 1994 American Marketing Association's Winter Educator's Conference, 5, AMA, Chicago, IL, 348-9

Sharma, S.C, Bagoria, H. (2012). Green Marketing: A Gimmick or the Real Deal? *International Journal of Research in Finance and Marketing*, 2(2), 406-414.

Sheth, J., Newman, B., & Gross, B., (1991). Why we buy what we buy: a theory of consumption values. *Journal of Business Research*, 22 (2), 159-170

Straughan, R.D, Roberts J.A., (1999). Environmental segmentation alternatives: a look at green consumer behaviour in the new millennium. *Journal of Consumer Marketing*, 16(6), 558-575

Sweeney, J., Soutar, G. (2001). Consumer perceived value: the development of a multiple item scale. Journal of Retailing, 77 (2), 203-220

Tanner, C., Kast, S. W. (2003). Promoting sustainable consumption: determinants of green purchases by Swiss consumers. *Psychology and Marketing*, 20 (10), 883–902

Tsay Y.Y., (2010). The impact of economic crisis on green consumption in Taiwan. In: Paper presented at the PICMET 2009

Turel, O., Serenko, A., & Bontis, N., (2010). User acceptance of hedonic digital artifacts: A theory of consumption values perspective. *Information & Management*, 47, 53–59 doi:10.1016/j.im.2009.10.002

Van, B.M, Semeijn, J., Keicher, M., (2009). Packaging and pro-environmental consumption behaviour: investigating purchase and disposal decision for beverages. *Environment and Behaviour*, 41(1), 125-46

Van Liere, K.D. and Dunlap, R.E. (1980), "The social bases of environmental concern: a review of hypotheses, explanations and empirical evidence", *Public Opinion Quarterly*, Vol. 44, Summer, 181-97

Vandermere, S., Michael, D.O., (1990). Customers Drive Corporations green. *Long Range Planning*, 23(6), 10-16

Wang. P., Qian. L., Yu. Q.,(2013). Factors influencing sustainable consumption behaviors: a study of rural residents in China. *Journal of Cleaner Production*, 1-14

Zsoka, A., Szerenyi, Z., Szechy, A., & Kocsis, T., (2012). Greening due to environmental education? Environmental knowledge, attitudes, consumer behaviour and everyday pro-environmental activities of Hungarian high school and university students. *Journal of Cleaner Production*. http://dx.doi.org/10.1016/j.jclepro.2012.11.030

Table 1
Descriptive Statistics of the constructs under study

•					
	CPW	OGC	CPWGC		
	[N=47%]		[N=53%]		
Constructs	Mean score	Std. Deviation	Mean score	Std. Deviation	
Functional Value	2.94	0.86	3.64	0.73	
Social Value	2.95	0.89	3.66	0.51	
Conditional Value	3.02	0.87	4.08	0.64	
Environmental value	2.96	0.87	3.56	0.45	
Knowledge Value	2.76	1.01	4.17	0.78	
Sustainable green purchase behaviour	3.11	1.24	3.85	0.41	

Table 2
Reliability analysis

Consumption values	Cronbach's alpha
Functional Value	0.77
Social Value	0.71
Conditional Value	0.81
Environmental Value	0.67
Knowledge Value	0.89

 $\label{eq:continuous} \textbf{Results of regression for the non-green credential preferring cluster}$

Independent	Regression coefficients	Variable	Cumulative adjusted R ²	VIF	Model
Variables		significance	7		significance
Conditional Value	0.34	0.000	0.23	1.81	0.000
Functional Value	0.21	0.005	0.25	1.81	

 $\label{eq:continuous} \mbox{ Table 4}$ Results of regression for the green credential preferring cluster

Independent	Regression coefficients	Variable	Cumulative adjusted R ²	VIF	Model
Variables		significance			significance
Social Value	0.39	0.000	0.50	1.71	0.000
Knowledge Value	0.36	0.000	0.66	2.57	
Environmental Value	e 0.13	0.001	0.67	1.40	
Conditional Value	0.17	0.000	0.68	1.68	
Functional Value	0.11	0.022	0.69	1.91	

^{***} p<= 0.001; * p<=0.05

Table 5

Correlations between the consumption values

Variables	Functional Value	Social Value	Conditional Value	Environmental Value	Knowledge Value
Functional Value	1	0.66**	0.61**	0.59**	0.69**
Social Value		A	0.67**	0.66**	0.66**
Conditional Value			1	0.54**	0.80**
Environmental Value				1	0.53**
Knowledge Value					1

^{**} p<= 0.01

Table 6

Results of regression for both the segments

Independent	Regression coefficients	Variable	Cumulative adjusted R ²	VIF	Model
Variables		significance			significance
Knowledge Value	0.20	0.002	0.33	3.46	0.000
Environmental Value	e 0.16	0.000	0.37	1.67	
Conditional Value	0.24	0.000	0.39	2.98	
Functional Value	0.15	0.004	0.40	2.20	

Table 7
Results of analysis of variance for both the consumer segments

00***
00***
16*
00***
00***
00***
00***
00***
00***
00***
00***
00***
00***
94
00***
00***
-
00***
50
00***
50
00***
0 9 0 0

products before purchase.

*** p <= 0.001; * p <= 0.05(CPWGC) choice preference for products with green credential; (CPWOGC) choice preference for products without green credential

Table 8 **Results of Hypotheses**

Hypotheses	CPWGC	CPWOGC
H1 Sustainable consumption behaviour is positively influenced by functional value.	Supported	Supported
H2Sustainable consumption behaviour is positively influenced by social value.	Supported	
H3Sustainable consumption behaviour is positively influenced by conditional value.	Supported	Supported
H4Sustainable consumption behaviour is positively influenced by environmental value.	Supported	
H5 Sustainable consumption behaviour is positively influenced by knowledge value.	Supported	