



The Impact of environmental orientation and Sustainability Innovation on Sustainable Consumer Behavior: The Role of Education as Mediator

Dr. Sultan Tahir Mehmood
Walden University Minnesota U.S.A

Dr. Syed Ali Raza Hamid
Hamdard University – Islamabad

Dr. Sidra Kiani
Semi State Medical University Kazakhstan
Surrey University – NHS UK

Dr. Naila Tahir
AMC Medical College

Dr. M. Raza Tahir
Semi State Medical University Kazakhstan

Engineer Mohammad Hammad
New Castle University UK

ABSTRACT

The present research has been conducted to assess the mediating role that education through different modes could play in formulating sustainable consumer behavior. Moreover, the impact of environmental orientation on sustainability innovation has also been assessed. A non-probability judgmental survey approach has been used in the study. This way of sampling intended to include 161 respondents in total as a focus group where all the respondents are professionals either from business firms or from educational institutions. The research instrument in this study has been pretested and developed by the researcher based on an interview guide for unstructured interviews that elicited first-hand information; the information obtained has been linked with concurrent researches. The study has revealed that environmental orientation and sustainability as innovation can lead to a sustainable consumer behavior. Moreover, all different modes of education play a role of mediation between sustainability innovation and sustainable behavior but no mediation has been reported between environmental orientation and sustainable behavior.

Key Words: Consumers Behavior, Sustainability, Education, Marketing, Environment

INTRODUCTION

Sustainable behavior is a mindset that needs to be inculcated in people. Since the concern for environment is growing among the nations of the world, sustainable marketing has become a center of attraction for the corporate world. This concern primarily focuses on reconstructing people's attitude that incorporates a socially responsible behavior. It can be unequivocally observed around that economies, communities and societies show a concern for a better and clean environment but still that concern needs to be translated into behavior. Green marketing is one of a kind which suggests incorporating sustainable marketing practices into new

product development, starting from production phase through to disposal - illustrating a precautionary measure against ecological hazards by businesses. Ecological alternatives are being adopted in the developed world but the initiatives do not erase the footprints that human civilization has left as a consequence of industrialization and new developments in the last one hundred years.

This study intends to fill that vacuum by investigating the right opportunities and actions which developed countries have pursued to bring about sustainability among consumers and what effect if any has been witnessed in sustainable consumer behavior. Since sustainable marketing efforts showed potential for all stakeholders (Varman & Costa, 2008), this study also seeks to determine stimulants for sustainable consumer behavior initiated at the corporate level as well as the social level. In this regard, education by far plays a pivotal role in shaping sustainable behavior (United Nations, 1993, Agenda 21, paragraph 36.3).

This doctrine is supported by the fact that in countries like the United States and the UK, institutions are being asked by large corporations to include environmental education in their curricula. For instance in UK, experts have suggested curriculum development panels to include such contents related to environment which may possibly develop key skills among students to practice environmentalism (Quality Assurance Agency for Higher Education, 2000). This practice would inspire graduates to adopt pro-environmental behavior and promote it when they start as working professionals. However, it still remains to be ascertained whether education and awareness is motivating consumers to develop sustainable behavior. The Scandinavian countries have recently proven to have implemented the most successful education systems in terms of knowledge and skill development. Coincidentally, these countries are also leaders in environmental protection and conservation. But it still remains to be seen how much of pro-environmental behavior results from a formal, curriculum based environmental education and whether sustainable consumption forms as a result of such behavior. At a time when the Sustainability Decade 2005-2015 (UN Earth Summit) is nearing its end, it becomes all the more pertinent to determine how much we have collectively achieved and reformed. Where developed countries in Europe and elsewhere have succeeded in implementing sustainability education in the curricula, a vast majority of underdeveloped and developing countries have lagged behind.

Developing countries are far behind in incorporating education as a tool to embrace environmentalism.

The present study is a follow up to a preliminary finding of the researcher that people in developing countries are not ready to adopt such behavior because of many socio-economic factors including a lack of ecological knowledge and awareness (Hamid, 2012). In the light of that framework, this study would determine how strong a role education and strategic predisposition might play in affecting sustainable consumer behavior in developing countries. The present study would help countries like Pakistan to revamp educational policies for the wellbeing of nature and environment and to create market trends leaning towards 'corporate environmentalism' (Banerjee, 2003). In addition, it is the right time that corporations in developing countries must be predisposed towards embedded sustainability. According to the definition of Dow Jones Sustainability (2010), "A sustainable corporation is one that aims at increasing long-term shareholder value by integrating economic, environmental and social growth opportunities into its corporate and business strategies".

LITERATURE REVIEW

Other than creating long-lasting consumer oriented products and ecologically friendly production by the firms, socially responsible practices by firms have also become a yardstick of competition among business organizations to form sustainable behaviors. The initiatives have been taken by businesses to pursue those sustainable practices which can be translated simply into sustainable consumer behavior (Engardio et al. 2007). Nevertheless, the efforts made by the governments and organizations of different countries for environmental sustainability, determinants of such behavior still remain unexplored and unknown in terms of effectiveness and success (Peattie, 2001), therefore, as part of such efforts today, research in the domain of marketing seeks to find the determinants of sustainable behavior (Menon & Menon 1997; Mick 2006).

The present research intends to enquire about strategic predisposition orientation and prospective need triggers and as related factor affecting sustainable consumer behavior, it is still to be assessed how these factors could be proved critical in shaping sustainable consumer behavior. Before embarking upon investigating whether corporate strategic predisposition embeds environmental orientation and sustainability as innovation, it remains inquisitive does the use of sustainable products by companies have any potential to hone consumer behavior towards sustainability (Mostafa, 2007). This is evident in production and launching of sustainable products in the form of biodegradable material and nontoxic plastic packaging material, recycled non-hazardous paper, alternative energy products such as solar geysers and hybrid cars and metal free electrical and electronic equipment. Yet another category is of food products that contain ingredients safe for human health where consumer behavior can be assessed.

Sustainability as innovation has been experienced in terms of technologies such as genomics, bio mimicry, information technology, nanotechnology, and renewable energy that have been ensued by current businesses. Firms have started developing such technologies which ensure conservation for their future sustainable growth. Some of them have invested in solar, wind, and other renewable technologies to replace their existing technologies which were earlier dependent on traditional sources of energies like petroleum or gas. Similarly hybrid power systems have been developed in the auto-motive sector which claims increased fuel efficiency. The automotive sector has also focused its attention around the hydrogen fuel cell technology. Basically at the core of all these kinds of technological developments lies innovation which gives boost to sustainable consumption of business firms and its stakeholders. This innovation has led to the formation of sustainable behavior of the end users of such technologies. The foremost importance can be implied through the concept of "green innovation" which has been incorporated in hardware or software innovation using technologies which employ energy-saving, corporate environmentalism, waste recycling, and green product designs. A kind of innovation that is meant to increase capabilities of sustainable behavior (Lai et al., 2003). In spite of such remarkable awareness by the corporate world, sustainability has not been substantially able to translate into a sustainable behavior.

SUSTAINABILITY AS INNOVATION – SOME REAL EXHIBITS

By taking look on some real examples of corporate giants, it may be well estimated how innovation can help businesses solve the issue of sustainability by applying R&D, Supply Chain Innovation as value creation process.

1. Firms in China have invested enormously in institutional reforms and resources with the help of skilled human resource and have developed soft technologies responsible for creating a healthier environment.
2. At the time when Singapore was being separated from Malaysia in 1965, an agreement came into being stating that supply of water will be provided by Malaysia to Singapore as Singapore had no tangible means of water supply around. This apparent reliance empowered Singapore to develop its own source of water supply in the form of water recycling plants. This created a source of treatments for residual and salt water and sewage into drinkable water. Hyflux, an international company had pursued the program.
3. A US based office supplies retailer Staples is producing and supplying office products on the basis of cost effectiveness and most efficient ways operating the business. The Company has managed to reduce its energy costs by reconfiguring its warehouses, and also applying reengineering in its processes.
4. Interface – A US based Company manufacturing carpets developed a business model The Company introduced to its customers a carpet leasing program under which carpets will be leased out to its customers for shorter span and once carpets are worn out they will be returned for recycling purposes. A program focusing on conserving energy, saving environment from being polluted by chemicals. This will have greater positive impact on environment as corporate plan for the year 2020.
5. Wal-Mart is straight away employing operations where its stakeholders are regularly evaluated to ensure efficiency in supply chain in the form of reduced carbon footprints (emissions). The project is known as Carbon Disclosure Project.
6. A Swedish Company Tetra Pak specializing in packaging collaborates with its customers during their product development process. During this process, the Company meticulously considers consumers well-being by producing and processing its products/packaging in the safest way.
7. An Indian consumer goods and agribusiness conglomerate incorporated “triple bottom line” philosophy. The Company is reinvigorating farmers in the form of providing them with ideas and schemes of efficient consumption of water, conservation of rainwater and other healthier ways beneficial in harvesting.

The propensity to adopt sustainable consumer behavior is primarily backed by a stimulus in the form of education and then the varying modes for imparting education. It is a presumable proposition that education would be the greatest determinant of sustainable behavior, but coupled with other factors like environmental orientation, and innovation. Considering the theory of trying, not the entire population is likely to be inclined towards sustainability. Jensen (2002) suggests that students are the pillars who by gaining necessary education can later exhibit useful knowledge and application of environmentally friendly approaches. In this regard, a model has also been presented by Jensen emphasizing students to develop a mind frame for sustainability. Nurturing sustainability particularly through formal education is gaining importance and is gradually becoming a mandatory part of education at all levels in the developed world. Supporting sustainable behavior with education, the role of management education is inevitable (Benn & Martin, 2010). Management schools have been advocating issues like CSR and ethics but no noteworthy contribution has been made towards entailing sustainability through business curricula.

Promoting environmental education is thus becoming a beneficial practice in OECD countries. The special environmental initiatives being taken in this regard by these countries are standards and mandatory labels, taxes and charges on all polluting elements, subsidies and incentives for ecological promotions, communication campaigns, education, voluntary labeling,

corporate reporting, advertising, public procurement, understanding consumer behavior, combining policy instruments, and Institutionalizing sustainable consumption programs (OECD, 2006a). A study in New Zealand was conducted which produced insignificant results about eco labeling. The products which were labeled green could not impel consumers to purchase green products. This might be due to malfunctioning of eco-labels or disinformation regarding the benefits of ecology with products (D'Souza et al., 2006). The researcher's previous study alarmingly proved that sustainable consumption in general and green purchase in particular was not looked upon as necessary by even highly educated sectors of the population. The natural conclusion of that research held a lack of environmental education and awareness responsible for the indifferent attitude. In other words, the sensitivity of customers to think, feel and act has not yet been constructed into a strategic predisposition that internalizes the values of sustainable environment to advance the good of society. At the end of the sustainability decade, it remains to be seen whether business firms preaching sustainability through practices become only preachers of sustainability or do they predispose towards reconstructing sustainable behavior.

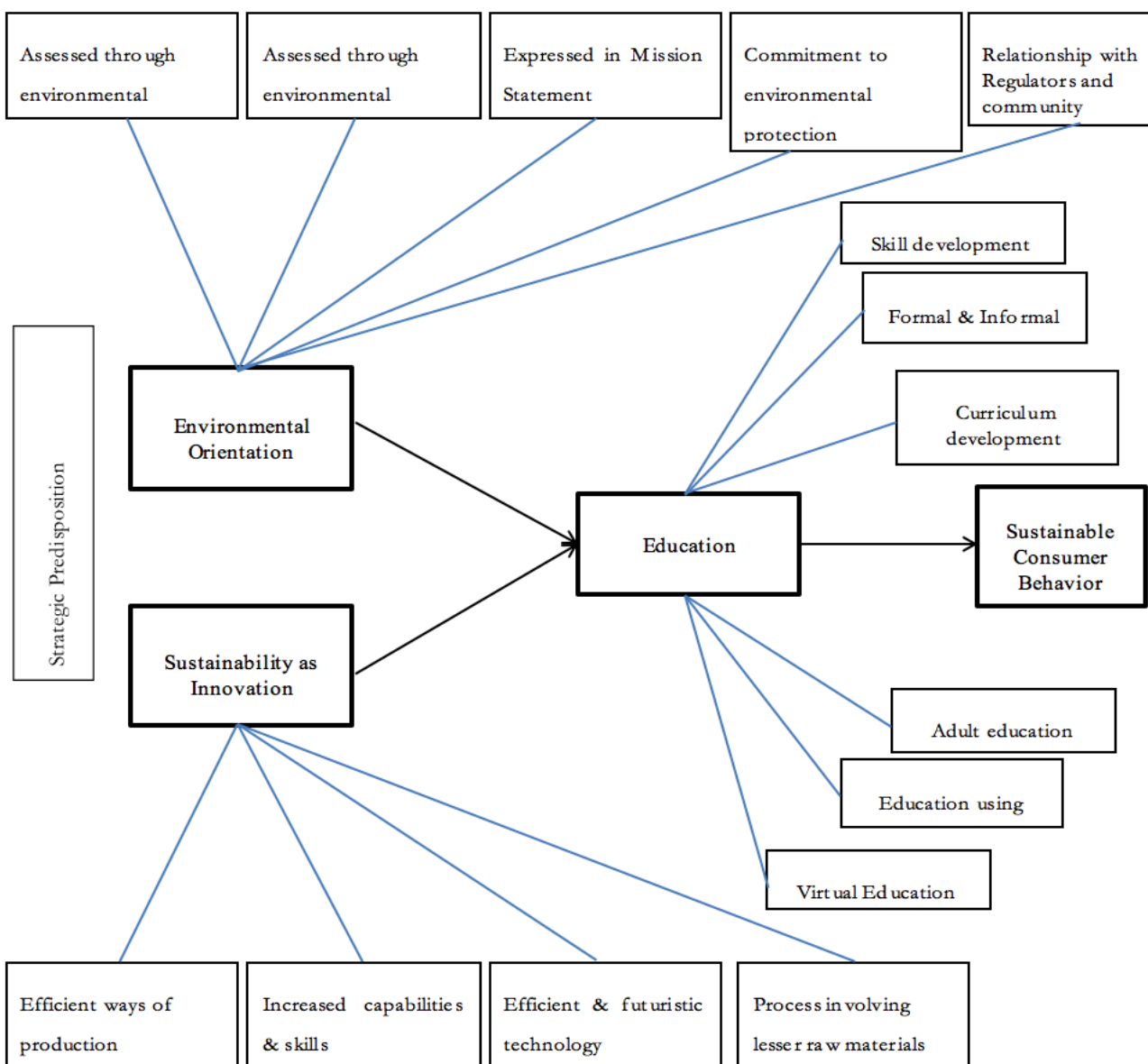
RESEARCH OBJECTIVES

This study has the following objectives:

- 1) Reconstructing attitude which creates value for sustainable behavior.

RESEARCH QUESTION

“How far purpose oriented and meaningful initiatives in the form of strategic predisposition (environmental orientation, sustainability as innovation) and need triggers will internalize values of sustainable behavior”.

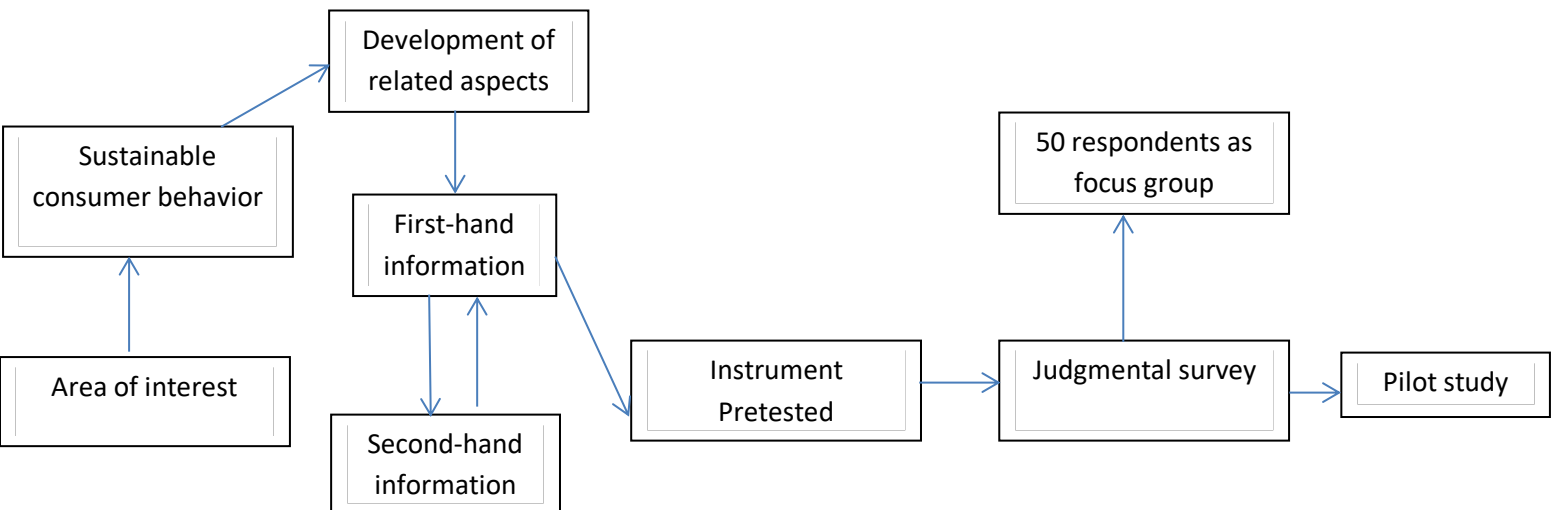


RESEARCH DESIGN

Sampling and Measurement Tool

Sustainable consumer behavior is not only reflected in consumers but other stakeholders are also synchronized in efforts towards creating sustainable behaviors. Knowing this phenomenon, a non-probability judgmental survey approach has been followed in the study. This way of sampling has intended to include 161 respondents in total as a focus group where all the respondents are professionals either from business firms or from educational institutions. These respondents are considered representative of corporate-initiated environmental predisposition, education-dependent environmental concern, and personal consumers. A few of respondents initially responded as focus group (Gummesson, 1991) and this was primarily done in the pilot study which enables the researcher in pretesting of the instrument. The research instrument in this study has been developed by the researcher based on an interview guide for unstructured interviews that elicited first-hand information; the information obtained has been linked with concurrent researches. The nature of research necessitated further an increased data to reach the research findings.

Flowchart



Demographic Profile of Sample

Demographic Variable	Category	Frequency	Percentage
Gender	Male	116	72%
	Female	45	28%
Education	Under Graduate	29	18%
	Graduate	65	40%
	Post Graduate	67	42%
Income	200000 and above	18	11%
	100000 to 150000	90	56%
	Less than 100000	53	33%
Profession	Corporate Exe	111	69%
	Educationists	50	31%

The table given above comprises demographics of participants of research. Male participants are 72 percent and female participants constitute 28 percent of the total. All participants have considerable level of education where 42 percent people possess post-graduation qualification and 18 percent have undergraduate qualification. The income profile of the respondents is such that 11% respondents earn monthly income of Rupees 200000 and above, 56% have monthly income between 100000 to 150000 and 33% earn less than 100000 thousand rupees per month. Professionally and academically qualified people have been chosen for the research i.e. 50 respondents are educationists and 111 are corporate executives.

DATA ANALYSIS AND FINDINGS

The items of the instrument have been pretested to the proposed sample. Keeping in view the research model, mediation has been run to see the effects of need triggers i.e. education through various modes and emulation. Also regression and correlation have been used. The analysis have explored the underlying pattern in aspects of Strategic Predisposition (Environmental Orientation and Sustainability through Innovation) that can be explained by the aspects of Education, namely, Skill Development, Formal and Informal Education, Adult Education, Virtual Education, Education through Media, and Curriculum Development. These different aspects of the mediating variable have been considered as factors which could explain a pattern of variability and similarity in components of the independent variable, Strategic Predisposition.

**Table 1. Correlation
Correlations**

		EO	INNOVATION	SCB
EO	Pearson Correlation	1	.456**	.228**
	Sig. (2-tailed)		.000	.000
	N	161	161	161
INNOVATION	Pearson Correlation	.456**	1	.266**
	Sig. (2-tailed)	.000		.000
	N	161	161	161
SCB	Pearson Correlation	.228**	.266**	1
	Sig. (2-tailed)	.000	.001	
	N	161	161	161

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation analyses of the three variables show that there is significant and positive relationship among the variables. EO is significant related with SCB and IN at 0.456 and 0.228 respectively. IN is significantly related with SCB at (0.266). The statistical analysis endorses that positive EO and IN can lead to a sustainable consumer behavior.

**Mediation Explained
Table.2**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.844	.144		19.713	.000
	EO	.173	.059	.228	2.947	.004
	IN	.428	.115	.282	3.705	.000
	Edu	.203	.042	.361	4.884	.000

The test for mediation has been run using the mediation criteria of Baron and Kenny (1986) through SPSS. The relationship of the three variables (Edu, Emu and SCB) describe that SCB has significant relationship with different modes of education i.e. EDU. This favors the hypothesis which states that different modes of education play a role of mediation for innovation towards sustainable consumer behavior. But on the other hand, EO does not mediate sustainable consumer behavior and the relationship has found to be insignificant.

DISCUSSION & RESULTS

The research goal is to understand strategic predisposition of corporations and the mediating impact of education or emulation on sustainable consumer behavior. The proposed conceptual model has been aimed to know whether the designated sample of 161 respondents will elicit response in the light of education or emulation and may possibly exhibit sustainable consumer behavior. These implications can further enunciate the possible means that help people form sustainable behavior. In this study, two direct relationships and one mediation relationship have been studied. The study indicates that there is a significant relationship between Innovation processes of companies and consumer behavior. The other important aspect of this study is to find the mediation between different modes of education and innovation thus affecting consumer behavior. The study concludes that there is a mediating effect on behavior of the educational modes and emulation.

CONCLUSION AND LIMITATIONS

This study is dedicated to sustainability, as this variable has proven its urgency and vitality for the survival of the environmental resources, societal wellbeing and contribution by firms for the planet earth. With these aims and the research questions in mind, it has drawn the following conclusions.

- The universities should maintain mandatory sustainable entrepreneurship centers and educate graduating students about sustainable practices and consumption behavior.
- The sustainable consumer behavior, products and services should be included in National policy and promoted by all actors and practiced by all stake holders & agencies.
- It has been established theoretically and proven statistically during the course of research that consumer behavior is sustainable when its environmental impacts are minimal. *It would have exceeded the scope of this study to also look at the economic and the social dimension of sustainability of consumer behavior in relation to the environmental one.*
- However, the integration of these three dimensions must be taken up in public debate, seminars and conferences by universities on regular basis in order to better define sustainable development and sustainable consumer behavior. A related topic for debate is the environmental responsibility that should be taken by different actors in society. It is a prerequisite for more sustainable behavior by consumers that they feel that their share of responsibility is fair compared to what is taken by other actors such as the government or the private sector.
- In order to claim that one's behavioral practice is more environmentally sustainable than another, the environmental impacts need to be quantified. The impact needs to be evaluated for the entire lifecycle. The scientific verification of environmental impacts will also enhance the credibility of strategies to promote more sustainable consumer behavior.
- The general population should know very well that how much an automobile and aerial vehicles produce carbon in the atmosphere during the period of its life cycle and the impact of toxic chemicals processes on environments.
- The awareness, exposure and skills development is a key to success of sustainable behavior and healthy society. Many consumers are not performing more sustainable consumption practices because they are skeptical about what their options and about the credibility of actors who promote more sustainable consumer behavior. The image of these actors needs to be improved if a strategy to promote more sustainable consumer behavior should be effective.
- Sustainable consumer behavior was found to be multifaceted. Attitudinal factors, personal capabilities and external contextual factors influence sustainable consumer behavior. Environmental awareness is not a reliable predictor for more sustainable consumer behavior because non-environmental orientations, as well as the personal capabilities and the external contextual factors usually have a stronger influence. Most research so far however has focused on attitudinal factors.
- More research into the personal capabilities as well as external contextual factors is needed. Of particular interest to research would be socio-demographic factors such as gender or the existence of children in a household. From the external factors, the social environment was found to be rather strong and would merit further research.

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