Journal of Business Research 76 (2017) 77–88

Contents lists available at ScienceDirect

Journal of Business Research

Values influencing sustainable consumption behaviour: Exploring the contextual relationship☆

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ARTICLE INFO

Article history:
Received 1 January 2016
Received in revised form 13 March 2017
Accepted 14 March 2017
Available online xxxx

Keywords:
Values
Sustainable consumption behaviour
Attitude
Perceived Consumer Effectiveness
Internally oriented values
Externally oriented values

ABSTRACT

The purpose of this paper is to develop and test a theoretical model that explains that the influence of personal values on sustainable consumption behaviour is moderated by the cultural and consumption context in which the relationship is studied. Data is collected using survey questionnaires, conducted both online and offline, with diverse set of population and total 526 responses are used for assessing validity and reliability by applying PLS based structural equation modelling. The paper identifies fresh set of value dimensions that drive sustainable consumption practices. It is further seen that attitude is more likely to moderate the relationship for internally oriented values than externally oriented values. Thus, the paper significantly extends the previous research on the relationship between values and sustainable consumption behaviour. The findings of this paper have significant contributions for practitioners who wish to sell sustainable products in different cultural contexts.

1. Introduction

Some researchers view sustainable consumption behaviour as an act of voluntary simplicity or anti-consumption (Shaw & Moraes, 2009; Black, 2010) whereas others define it as the adoption of green lifestyle practices (e.g. Gilg, Barr, & Ford, 2005). Diverse views and explanations make sustainable consumption behaviour a complex phenomenon to explain and predict. Some marketers and policy makers have stressed the need to understand social and institutional actions that may encourage the progress of environment-friendly behaviour among consumers (Vlek & Steg, 2007; Phipps, Ozanne, Weaver, et al., 2013). Others have proposed an exploration of the role of personal values in influencing sustainable behaviours (Thøgersen & Ölander, 2002; Grunert & Juhl, 1995; Sener and Hazer, 2008). The important question, therefore, is whether consumers adopt sustainable consumption behaviour due to intrinsic motivation or because of social desirability or both? The extant literature is ambiguous in answering this question. This paper explores the variations in the influence of different kinds of values on different categories of sustainable consumption behaviour.

According to Zukin and Maguire (2004), consumption is a social, cultural and economic process of choosing goods. It enables individuals to form and express their identity. Holbrook and Hirschman (1982) conducted a study to show that the experiential processes that focus on the symbolic, hedonic and aesthetic nature of buying behaviour are important components of consumption. Consumption decisions are therefore likely to be influenced by specific values and beliefs of individuals. Every culture has some unique beliefs, values and practices, resulting in varied consumption behaviours.

This study conducted in India is specifically of interest because traditional and religious beliefs in India have recognized the importance of the relationship between man and nature and have advocated people's responsibility towards nature and society (Kala & Sharma, 2010). According to the Advaita philosophy the same 'atman' (soul) is present inside everyone, including nature (Ranganathananda, 1995, p. 83). A better understanding of Indian philosophy may lead to a solution for the current ecological problems of the world.

In this study, we have employed a framework called the Holistic Values Survey (HVS) (Sharma, 2015), an extension of Schwartz's values. Although most researchers refer to the Schwartz Values Scale (SVS) (1994) in diverse contexts in cross-cultural value studies (Smith &

☆ We are thankful to Prof. Dwarika Prasad Uniyal and Prof. Rajesh Chandwani for providing constructive comments that helped us improving the paper.

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http://dx.doi.org/10.1016/j.jbusres.2017.03.010
0148-2963/

Schwartz, 1997), they did not include individual and culture specific items in the values scale. The comprehensive HVS scale enabled us to show how culture specific values impact sustainable consumption behaviour differently from universal values.

1.1. Contributions of the current research

This research makes multiple notable contributions to the literature. In the past two decades many researchers who had examined the impact of cross-cultural values on consumption behaviour had mostly used the Schwartz Value Survey (SVS) (1994) and the Portrait Value Questionnaire (PVQ) to measure values. There is, however, a need to incorporate culture specific aspects of values for accurate results. We have used the more relevant Holistic Values Scale (HVS) which adds Indian culture specific values, extending the Schwartz Values Scale and thus stretches the applicability of the values scale. We found that in addition to the biospheric values (identified by Stern & Dietz, 1994), many non-biospheric values such as compassion, acceptance, universalism, and tradition, are also instrumental in guiding people's sustainable consumption behaviour. Importantly, we have demonstrated that the strength of the values - sustainable consumption behaviour relationship varies depending on the level of sustainable consumption behaviour. There are three levels of sustainable consumption behaviour identified in the study, 'high', 'medium' and 'low', which represent the amount of effort involved in the adoption of corresponding sustainable consumption behaviours.

Second, this study examined the moderating role of a theoretically relevant construct, 'environmental attitude', in the values — sustainable consumption behaviour relationship. We found that attitude is likely to moderate the relationship more for a certain set of values than for others. More specifically, in the sustainable consumption context, we found the moderating impact of an environmental attitude minimal when values that impact sustainable consumption behaviour are oriented towards others, while it was maximum when values were oriented towards the self.

Finally, we assessed the moderating impact of Perceived Consumer Effectiveness (PCE) on the environmental attitude — sustainable consumption behaviour relationship. Literature establishes the moderating variable of PCE (Berger & Corbin, 1992); but we have demonstrated that the moderation effect of PCE is behaviour specific. We have clearly shown that PCE moderates the attitude-behaviour relationship only in the case of higher level sustainable consumption behaviour and not otherwise.

The next section explains sustainable consumption behaviour and briefly reviews the current understanding of the values-sustainable consumption behaviour relationship in literature. We then propose our hypotheses and explain the methodology used to conduct this empirical study and present the study results. Finally, we discuss our findings and present the scope for further research.

2. Theoretical development and hypotheses

What do we mean by sustainable consumption behaviour? What do people gain by such behaviour? The Oslo Symposium on Sustainable Consumption (1994) defined it as '*the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations.*' Sustainable consumption involves a satisfaction of basic needs without compromising the earth's carrying capacity and putting the life of future generations at risk. Current consumption patterns across the world are unsustainable causing adverse social, environmental and economic side effects (Kilbourne, McDonagh, & Prothero, 1997; Burroughs, 2010). Sustainable consumption, change in people's perceptions, peer impact on adoption of sustainable practices, promotion, impact of lifestyle, etc. are issues that have been explored in depth within the sustainable consumption research agenda (Tanner and Wölfing Kast, 2003; Hobson, 2002).

Research scholars have increasingly focused their attention on sustainable practices with an emphasis on individual level characteristics and marketing activities through which the attitude of people towards sustainable consumption can be influenced. As the interest in understanding sustainable consumption behaviour and practices has gained momentum the field has seen contributions from the disciplines of psychology, economics and sociology. These contributions have opened new perspectives on marketing processes and initiatives. Scholars interested in the psychological foundations of sustainable consumption behaviour have begun to explore certain key psychological variables like attitude (Stern & Dietz, 1994), values (Thøgersen and Ölander, 2002) and personality (McDonald, Oates, Young, & Hwang, 2006).

Since the initial the environmental objectives are comparatively unfamiliar to individuals, the role of values and beliefs in the formation of environmental attitudes becomes important (Stern & Dietz, 1994). Values have a major influence on people's behaviour and need-fulfilling consumption decisions (Wang & Lin, 2009; Lages and Fernandes, 2005). The role of values in understanding the challenging field of consumer behaviour is powerful to the extent that even back in 1978 Clawson and Vinson stated that '*Values may prove to be one of the more powerful explanations of and influences on consumer behaviour. They can perhaps equal or surpass the contributions of other major constructs including attitudes, product attributes, and degree of deliberation, product classifications, and life styles.*' People pursue specific values by engaging in activities that express or promote the attainment of those values (Schwartz & Bardi, 2001), where they adjust their values to fit into the context of consumption. The context is characterised by both culture as well as the consumption. Value systems of people in different cultures are influenced by society, religion and belief systems, which determine the reasons for which people engage in sustainable consumption behaviour. Minton, Kahle, and Kim (2015) examined the link between religion and sustainable behavioural patterns and found that Buddhists are more likely to participate in sustainable behaviours than others.

2.1. Conceptualization of values

The term 'values' has been developed upon in several disciplines including economics, psychology, sociology, philosophy and anthropology, long before its importance in understanding consumer behaviour was realized in marketing (Vinson, Scott, & Lamont, 1977). Schwartz summed up the conceptualization of the term 'values' in literature as 'the concepts or beliefs about desirable end states or behaviours that transcend specific situations, guide selection or evaluation of behaviour and events and are ordered by relative importance' (Schwartz & Bilsky, 1987, Schwartz, 1994). This definition by Schwartz is the widely used definition of values in consumer behaviour literature.

Values in different cultures differ to a large extent because of cultural dissimilarities, social systems, social class, gender, occupation, education, religion, and political orientation (Rokeach, 1973). '*The variations in individuals' personal, societal, and cultural experiences generate value differences, as well as the stability of values and value systems*' (Xiao & Kim, 2009). We selected India as the cultural context of this paper because we found Indian culture to be exceptionally rich spiritually. '*India's ancient culture, rich in spiritual culture is unmatched by any other culture in the world and its value system which is based on, and aims at, direct realization of the ultimate reality, holds great promise for the future welfare of the humanity*' (Bhajanananda, 1996, p. 30). Ranganathananda (1995, p. 160) also emphasized that the strong point of Indian tradition is its vision of the spiritual dimension of human values and personality. The exploration of Indian values that profess an enduring spiritual, intellectual and cultural foundation for an environment friendly value system and a balanced sustainable lifestyle (Kala & Sharma, 2010) may provide valuable insights in the domain of sustainable consumption behaviour.

Marketing literature has identified biospheric values such as unity with nature and protecting the environment (Stern & Dietz, 1994) as those that influence sustainable consumption behaviour. However, the predictive power of biospheric values is quite intuitive and marketers still struggle to establish value based explanations of individual motivations of sustainable practices. Further, the significance of biospheric values is found to be limited to Western culture (de Groot and Steg, 2007). This paper establishes a much broader and widely applicable base of values for environmental beliefs, norms and actions. Most of the studies in the environmental domain that study relationship between values and behaviour (Thøgersen & Ölander, 2002; Verplanken & Holland, 2002) used the Schwartz Values Scale (SVS) (Schwartz, 1994). Schwartz proposed a general and comprehensive scale of 56 values. However, SVS has been criticized for not capturing the distinctive characteristics of cultures. Schwartz, in his own paper (Schwartz, Melech, Lehmann, Burgess, & Harris, 2001), mentioned India as a country where SVS did not get much support. As an alternative, Schwartz et al. (2001) developed a new instrument called the Portrait Values Questionnaire (PVQ) consisting of 40 statements to measure human values representing 10 motivational values. Recently PVQ has also been criticized for methodological issues. Researchers such as Perrinjaquet, Furrer, Usunier, Cestre, and Valette-Florence (2007) and Knoppen and Saris (2009) found a high correlation between some of the motivational factors in PVQ using confirmatory factor analysis.

The intuitiveness of Indian culture, dominance of the spiritual component in the conception of value items along with other subtle differences lead us to believe that we need a values scale that is a good representative of the unique values of India while at the same time containing the universal values as identified by Schwartz. Hence, we have formulated a new values scale named the Holistic Values Scale (HVS) (Sharma, 2015), which extends the PVQ scale of Schwartz by adding new motivational values such as Self enrichment, Compassion, Self-evolution and Uprightness to it. The instrument details about 15 motivational type values along with personal values that represent each motivational type and is defined at the end in Appendix A.

2.2. Hypotheses development

As per the above discussion, the criteria adopted by individuals to justify their behaviour may be shaped considerably by culture specific values. Thus we find that in different consumption and location contexts different values may impact behaviour. The Indian perspective on the importance of the environment is based on traditional and religious beliefs regarding the relationship between man and nature, dependence of humans on nature, and the responsibility of society towards preserving the environment. According to the Bhagavad Gita, Chapter 10, God is omnipresent, present even in objects like rivers, mountains, lakes, flora, animals, minerals, earth, stars as well as planets (Chidbhavananda, 1992). Yajnas, the rituals of sacrifice are performed to create a pure and nurturing atmosphere which prevent the growing of pathogenic organisms (Misra & Kapur, 2014). Indian values, therefore, may specifically receive greater priority in guiding sustainable consumption behaviour. Use of the Holistic Values Scale enabled us to compare the relative importance of specifically Indian and universal values in impacting sustainable consumption behaviour for Indian consumers. We expected Indian values to be more likely to impact sustainable consumption. Accordingly:

H1. Personal values impact sustainable consumption behaviour.

H2. Indian values are more important in impacting sustainable consumption behaviour in India than other values.

The importance of attitudes in establishing a link between values and behaviour is studied in literature (Homer & Kahle, 1988). Some studies (Clawson & Vinson, 1978; Barnea & Schwartz, 1998; Neuman, 1986) have reported the direct influence of values on behaviours. Some other studies show that attitudes interfere in this relationship in different roles (Homer & Kahle, 1988; Vaske & Donnelly, 1999). Extant research that studied the values-attitude behaviour relationship has mostly identified a mediating role of attitude between values and behaviours (Vaske & Donnelly, 1999; Dibley & Baker, 2001).

A few researchers have identified attitude as a possible moderator variable in the relationship between personal values and behaviour (Maio and Olson, 1994). They found that while attitude moderates the relationship between values and behaviour, the values-behaviour relation was found to be stronger in the values-expressive attitude condition than in the utilitarian attitude condition. Unfortunately, the work of Maio and Olson (1994) is the only major study that explored the possibility of attitude as a moderator. The current understanding of the values-attitude-behaviour relationship would be enriched further with the exploration of the likelihood of attitude moderation.

Researchers such as Homer and Kahle (1988) and Kluckhohn and Strodtbeck (1961) identified two new dimensions of values: internally oriented and externally oriented values. Internally oriented values motivate a person to engage in activities that are valued by one's self while external values are oriented towards others; the motivation is influenced by interaction with others. Homer and Kahle (1988) proposed that internally oriented values influence attitude and the formation of attitude impacts behaviour. External oriented values were not found to be related to attitude formation. Tyagananda (1996, p. 6) also recognized a difference between self-oriented values and group-oriented values. Individuals with self-oriented versus those with others' oriented values may conceive and take decisions differently. In the case of self-oriented values such as self-enrichment and accomplishment, people reflect the approaches and objectives that are more desirable for themselves as individuals. A self-oriented individual may not engage in environment friendly behaviour unless he has a positive attitude towards the environment. One way that attitudes are shaped is through social influence. Thus, an individual with group oriented values feels motivated to engage in behaviour that has gains for his group or society at large.

Sustainable consumption behaviour involves an effort that has a positive impact on the lives of other people. The relationship between externally oriented values and sustainable consumption behaviour may therefore be strong. It may not be impacted by any other variable such as environmental attitude. On the other hand, for internally oriented values, an environmental attitude may moderate the relationship between values and sustainable consumption behaviour. Hence, the following hypotheses:

H3a. Environmental attitude moderates the relationship between internally oriented values and sustainable consumption behaviour.

H3b. Environmental attitude doesn't moderate the relationship between externally oriented values and sustainable consumption behaviour.

Perceived Consumer Effectiveness (PCE) is defined as a domain-specific belief that the efforts of an individual can make a difference in the solution to a problem (Ellen, Wiener and Cobb-Walgren, 1991). The basis of this concept is that an individual's intention or actual action is affected by the degree to which he/she believes that his/her actions can bring a positive or negative change in a situation. Though the role of PCE as a direct predictor of behaviour was well researched, Berger and Corbin (1992) stated that the PCE has a moderating role in the influence of attitude on behaviour, in addition to the direct impact. Sustainable consumption behaviour requires the conscious effort of consumers to behave in a manner that may not be exhibited by a large number of people. Berger and Corbin (1992) found that PCE not only impacts environment friendly behaviours, but also systematically enhances or inhibits the influence of attitudes on behaviours. Researchers have not investigated if the strength of the moderating effect of PCE on the attitude-behaviour relationship depends on the type of sustainable

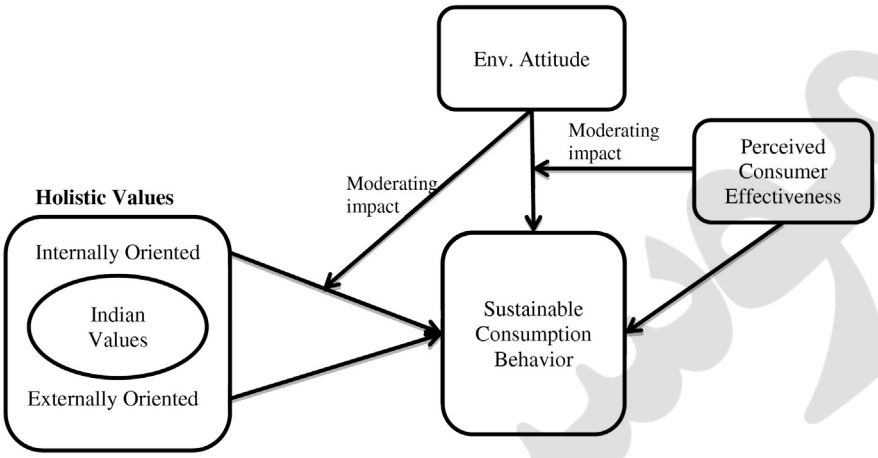

Fig. 1. The proposed conceptual framework.

consumption behaviour. Here the purpose is more exploratory, so the generalized hypotheses are:

H4a. Perceived Consumer Effectiveness (PCE) positively impacts sustainable consumption behaviour.

H4b. : Perceived Consumer Effectiveness (PCE) moderates the relationship between attitude and sustainable consumption behaviour.

The proposed conceptual framework for the study is shown in Fig. 1.

3. Methodology

To test the hypotheses primary data was collected using self-reported survey questionnaires. The questionnaire used in the survey had five sections: measures for demographic, socio-economic and media-graphic variables in the first section; measures for personal values in section two; measures for environmental attitude in section three; Perceived Consumer Effectiveness in section four, and measures for sustainable consumption behaviour in section five. Scales for all the constructs were adapted from the literature.

An 81-item Holistic Values Scale (HVS) was used to measure the values of the respondents. The HVS with underlying motivational values and the corresponding value items is presented in Appendix 1. HVS uses a 6-point asymmetric bipolar categorical scale to enable the respondent to think and take a particular point of view rather than merely taking a neutral stand. Respondents were asked to check one of the six points labelled: very much like me, like me, somewhat like me, a little like me, not like me, and not like me at all. As proposed, at the motivational level, HVS not only extends Schwartz values by adding new motivational dimensions that are universal, but also identifies four Indian specific motivational value dimensions: Self Enrichment, Compassion, Self-Evolution and Uprightness. A few exemplary questions that represented Indian specific motivational values include 'It is important to him to clean his mind daily by erasing the negative and dirty thoughts about himself and others', 'He believes that personal credit for anything is irrelevant and is a symbol of ignorance', 'It is important to him not to do to others, what he does not want to be done to himself', 'It is important to him to have his actions in accordance to his thoughts and words', etc.

Environmental attitude was measured using a 15-item revised New Environmental Paradigm (NEP) scale (Dunlap, Van Liere, Mertig & Jones, 2000). The scale has been widely used as a measure of environmental attitude in the world and has been employed in numerous studies over the last 15 years (Mostafa, 2007; Fielding, McDonald, & Louis, 2008; Steg and Vlek, 2009). As per Dunlap et al. (2000), Environmental Attitude is 'the degree to which people are aware of problems regarding the environment and support efforts to solve them and/or indicate a willingness to contribute personally to their solution'. In the NEP scale, for each of the items, respondents were asked to indicate the extent to which they agree or disagree with the statements such as 'Humans are seriously abusing the environment', 'Humans were meant to rule over the rest of nature', 'The so-called "ecological crisis" facing humankind has been greatly exaggerated', etc., by rating each on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Perceived Consumer Effectiveness (PCE) was measured using five items given by Kim and Choi (2005). Respondents were asked to indicate their level of agreement/disagreement with statements such as 'I can protect the environment by buying products that are friendly to the environment', 'There is not much that I can do about the environment', etc., on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Sustainable consumption behaviour was measured using 19 questions of the type 'How often do you X' using a 5-point scale with the labels 'never', 'rarely', 'half of the times', 'often', and 'always/every time', where X refers to each of sustainable consumption behavioural statements adopted from the work of Thøgersen and Ölander (2002). Standard questions that measure demographic, socio-economic and media-graphic variables were included in the questionnaire. The questionnaire was constructed in English. Before the final data collection, the questionnaire was subjected to pre-testing with 37 respondents to identify and remove any possible problems. Responses were tested for overall Cronbach's alpha for all items, which was found to be equal to 0.92. After removing the problems pointed out by the respondents, the final data was collected.

A total of 686 participants filled up the questionnaire, out of which 526 questionnaires were found usable.[1] The questionnaire was administered both online and offline. Since we studied the link between personal values and sustainable consumption behaviour, we wanted to capture the values and behaviour of a diverse set of respondents. Online respondents were participants from various short term or weekend courses at a premier management institute, with considerable experience and from diverse backgrounds. Regular post graduate students were not included in the sample because of their comparatively homogenous and relatively less experienced profile. The total number of online responses were 294. Later, data was also collected offline to further increase response diversity. To this end offline data was collected during two train journeys between Delhi and Bangalore (total distance of 10,000 km) in India. Data was collected from passengers travelling in different classes (first class, 2 tier AC, 3 tier AC, and Sleeper) so that

[1] This data was a part of a larger study where the questionnaire consisted of five sections respectively on demographic information, personal values, attitude, perceived consumer effectiveness and sustainable consumption behaviour. This paper has used the data from all the sections. The first two sections of the same questionnaire were also used as data in another paper, currently published with SSRN (Sharma, 2015).

Table 1
Demographic information of the respondents in two survey studies.

Description	Online data N	Online data %age	Offline data N	Offline data %age	Description	Online data N	Online data %age	Offline data N	Offline data %age
Gender					Employment				
Male	218	74.14	178	76.7	Employed for wages	181	61.56	157	67.6
Female	76	25.85	54	23.3	Self-employed	35	11.9	15	6.5
Age					Out of work	2	0.68	2	0.9
20–24	10	3.4	29	12.5	Homemaker	7	2.38	5	2.1
25–29	96	32.65	92	39.6	Student	69	23.46	48	20.7
30–34	128	43.53	64	27.6	Retired	0	0	5	2.1
35–39	41	13.94	23	9.9	Education				
40–44	13	4.74	9	3.9	Under grad	11	3.74	12	5.2
45–49	5	1.7	3	1.3	Grad	70	23.8	103	44.4
50–54	1	0.34	2	0.8	Post grad	197	67	113	48.7
55–59			5	2.1	Doctorate	16	5.44	4	1.7
60–64			3	1.3					
65 or above			2	0.9					
Marital status					Monthly household income				
Single	94	31.97	112	48.2	<5000	4	1.36	2	0.9
Married	196	66.66	119	51.3	5000–10,000	4	1.36	8	3.4
Divorced	4	1.36	1	0.5	10,000–20,000	10	3.42	21	9.1
Widowed	0	0	0	0	20,000–50,000	63	21.57	92	39.7
					50,000–100,000	77	26.36	56	24.1
					>100,000	134	45.9	53	22.8

there was increased diversity among the respondents in terms of their age, income levels, education qualification and occupation. The detailed classification of the demographic characteristics of the respondents in two studies is provided in Table 1.

4. Analysis of values-attitude-behaviour relationship

4.1. Measurement model

We applied the Partial Least Square (PLS) path modelling (Chin, 1998; Fornell & Bookstein, 1982) for the analysis and estimation using the software SmartPLS 2.0 (Ringle, Wende, & Will, 2005) to investigate the conceptual model and to test our hypotheses. Researchers have found PLS to be a robust method, distribution free and with powerful predictive capabilities (Chin, 1998; Fornell & Bookstein, 1982). We adopted a multi-stage approach (Henseler & Chin, 2010) to estimate the path model, starting with the base model as shown in the Fig. 2. Interaction effect between the variables and subsequent impact was estimated in the consecutive stages.

Before testing the model we conducted a factor analysis of the 19 items of sustainable consumption behaviour using principal component analysis in SPSS with 526 cases using VARIMAX rotation. 3 factors accounted for 70% of the total variance explained. The derived components explained 50% or more of the variance in each of the variables, i.e., they had a communality >0.50. The Kaiser-Meyer-Olkin value for the data was 0.81. Barlett's test of significance level was 0.000. Factor Loadings are presented in Table 2.

Six items were loaded on Factor 1. The mean response (on a scale of 5 where 1 means 'never' and 5 means 'always') of these items was the highest among all other items, so the factor was named 'low sustainable consumption behaviour', since a majority of the people reported these behaviours. This factor contained behaviours such as 'turning off lights while leaving a room', 'using CFLs at home', and 'turning off water while brushing'. The mean response for another six items loaded on a single factor was found to be the lowest among all. As a result, this factor was named 'high sustainable consumption behaviour'. Some representative behaviours include 'use cycle to work', 'use bus to work', 'buying organic food', 'rainwater harvesting', etc. The third factor had seven items loaded on it and had a mean response between the other two factors. It was named 'medium sustainable consumption behaviour' and had items like 'kitchen waste composting', 'segregation of household waste', and 'deliver newspapers for recycling', among others.

Before testing the paths and their coefficients using bootstrapping, we tested the basic measurement model (Fig. 2) for reliability and validity of various scales that were used in the study using PLS. The initial cross loadings indicated that some items for 'Attitude' had loadings <0.5. Subsequently, the model was modified and run multiple times, deleting one item at a time till the loadings of all the remaining items were >0.5. The factor loadings of all the 5 items of PCE, 6 items of high sustainable consumption behaviour, 7 items of medium sustainable consumption behaviour and 6 items of low sustainable consumption behaviour were significant while loadings of 4 items out of 15 items for environmental attitude were not significant, hence deleted.

Validity and reliability of various scales was further established using Average Variance Explained (AVE), which should be >0.50 (Fornell & Larcker, 1981); composite reliability, which should be >0.70 (Nunnally & Bernstein, 1994), and Cronbach's alpha, which should be >0.60 (Hair, Sarstedt, Ringle, & Mena, 2012; Henseler, Ringle, & Sinkovics, 2009). Convergent validity of all the constructs appeared excellent as all AVE levels exceeded 0.50 (Table 3). Further, all constructs achieved high composite reliability of 0.75 and higher. The value of Cronbach's alpha for these constructs was >0.6 (Table 3). Thus, the construct validity of the scales in the model was established.

Further, since the square root values of AVE for all constructs were higher than even the highest inter-construct correlations, discriminant validity of all constructs was also established (Table 3) Fig. 2 here.

To test the hypotheses, the PLS algorithm was run, followed by the bootstrapping algorithm, with 526 cases and 526 samples. Table 4 lists the path coefficients of the relationship between values and behaviour, corresponding *t*-statistics and the level of significance. Path coefficients from Compassion and Universalism to Medium Sustainable Consumption Behaviour and from Benevolence, Compassion, Self-direction, Tradition and Universalism to High sustainable consumption were found to be significant at $p < 0.5$. Further, path coefficients from Acceptance to Medium level sustainable consumption and High sustainable consumption behaviour were significant at $p < 0.1$. Also, it was interesting to find that some values had a positive relationship with different categories of sustainable consumption behaviour, while for others, the relationship was negative. Thus, some values do have an impact on sustainable consumption behaviour, partially supporting Hypothesis 1. Incidentally, our results showed that values don't influence low level sustainable consumption behaviour. Not all kinds of sustainable behaviours are thus influenced by personal values. In fact some values are more likely to impact behaviour in the sustainable consumption

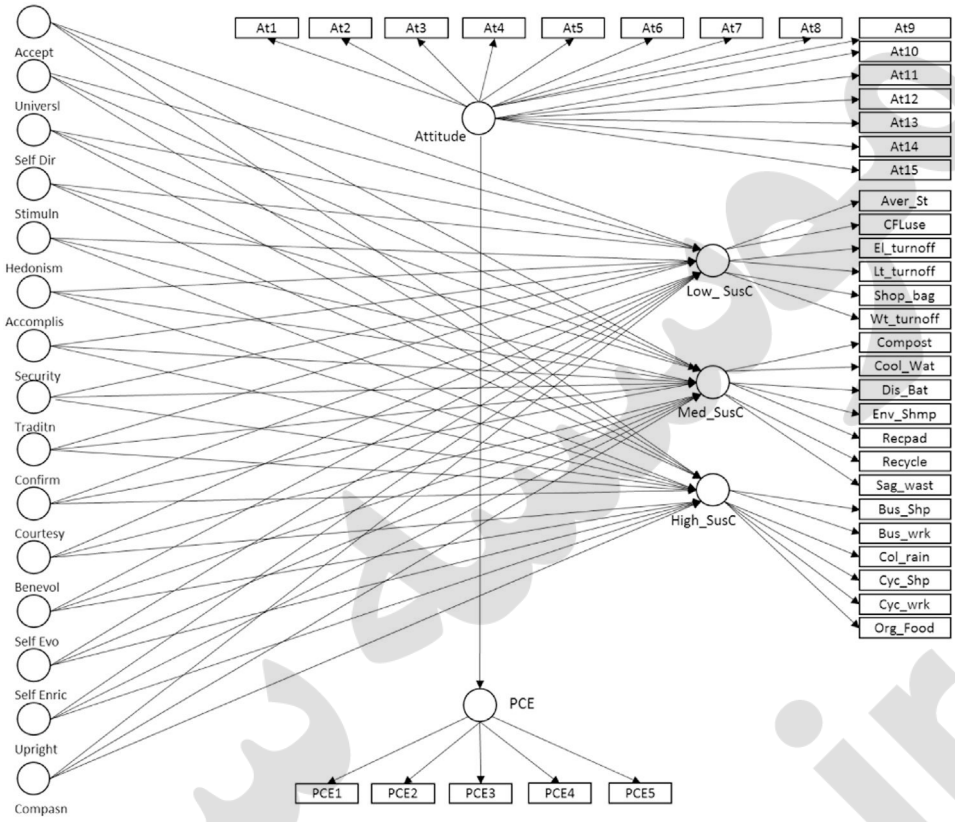

Fig. 2. Path diagram of the basic measurement model.

context. 'Acceptance', 'Benevolence', 'Compassion', 'Self-direction', 'Self-enrichment', 'Self-evolution', 'Tradition' and 'Universalism' influence at least one level of sustainable consumption behaviour (Table 4). No significant relationship was found between other value dimensions and sustainable consumption behaviour.

We used subgroup analysis to test Hypothesis 2, which proposes that the strength of the relationship between Indian values and behaviour is more significant as compared to the relationship between Schwartz universal values and behaviour. Subgroup analysis has been used in literature to capture the moderating effect of variables on relationships (Sharma, Durand, & Gur-Arie, 1981; Ping, 1995). The difference in the means of the top and bottom 33% of entries for 15 value dimensions, sorted in ascending order using average sustainable consumption behaviour, for each of the three levels of sustainable consumption behaviours was tested for statistical significance using F-test (Table 5). As expected, for all other levels of sustainable consumption behaviour (low, medium, high and total), the mean scores across two subgroups for all Indian values (Compassion, Self-evolution, Uprightness, Self-enrichment) were found to be significantly different except for Uprightness for high sustainable consumption behaviour. For only five out of the eleven value dimensions representing Schwartz PVQ items, the difference between means was found to be significant (Table 5). This outcome supports Hypothesis 2.

Since all Indian values in the survey influenced sustainable consumption behaviours, whereas only certain universal values influenced sustainable consumption behaviours, people who strongly adhere to Indian values are more likely to engage in sustainable consumption behaviours than those who do not adhere to Indian values.

Table 2
Sustainable consumption behaviour factor components.

Component matrix	Components		
	1	2	3
Organic food	0.139	**0.451**	−0.043
Travel via bus to work	0.249	**0.817**	−0.112
Travel via bus for shopping	0.188	**0.808**	−0.134
Travel via cycle to work	−0.12	**0.792**	0.006
Travel via cycle for shopping	−0.137	**0.743**	−0.028
Turnoff TV, music system etc., when not in use	**0.567**	−0.486	0.077
Turnoff light when not in room	**0.605**	−0.557	0.094
Turnoff water while brushing	**0.569**	−0.472	0.142
Use of CFLs in house	**0.584**	−0.398	0.123
Environment friendly shampoo	−0.154	0.094	**0.547**
Recycle	−0.257	0.127	**0.56**
Kitchen waste compost	−0.172	0.26	**0.519**
Segregation of waste	−0.198	0.24	**0.566**
Watering garden when day is cool	0.227	0.279	**0.468**
Rain water harvesting	0.293	**0.545**	−0.126
Take own bag to shopping	0.562	0.069	0.053
Use recycled pad for writing	0.311	0.255	**0.611**
Dispose-off batteries at a recycling place	0.266	0.241	**0.466**
Average star rating of electronic products	**0.578**	−0.019	−0.074

Extraction method: principal component analysis.
KMO value: 0.81; Bartlett's level of significance: 0.000.
Factor components that are significant (values >0.4) are bold emphasized.

4.2. Analysis of moderating effects

The moderating role of attitude in the value-attitude-behaviour hierarchy model was also tested with SmartPLS using a product-indicator approach. The structural model was run using SmartPLS 2.0 with 526 cases and 200 samples. Results of the moderating effect of environmental attitude are presented in Table 6. A significant moderating impact of environmental attitude was found in the relationship between *acceptance*, *universalism*, *accomplishment*, *courtesy*, *self-enrichment*, *uprightness and self-evolution* and different levels of sustainable consumption behaviour. Values such as *self-enrichment*, *self-evolution*, *accomplishment and uprightness* are self-oriented values. These results support Hypothesis 3a. In the case of others-oriented values, except for

Table 3
Construct properties and inter-construct correlations.

Construct	AVE	CR	Cr. alpha	Inter-construct correlations*																		
				Ac	Ah	At	Bv	Cm	Cf	Cu	Hd	HSc	LSc	MSc	PCE	Su	Sd	SE	Sv	St	Td	Uv	Ut
Acceptance (Ac)	0.54	0.76	0.62	***0.73***																		
Accomplishment (Ah)	0.52	0.92	0.92	-0.07	***0.72***																	
Attitude (At)	0.50	0.77	0.67	-0.23	0.12	***0.71***																
Benevolence (Bv)	0.57	0.84	0.74	0.53	-0.01	-0.20	***0.75***															
Compassion (Cm)	0.55	0.81	0.66	0.43	0.04	-0.30	0.50	***0.74***														
Conformity (Cf)	0.59	0.81	0.75	0.29	0.16	-0.11	0.41	0.34	***0.77***													
Courtesy (Cu)	0.65	0.84	0.72	0.36	0.05	-0.18	0.49	0.43	0.54	***0.80***												
Hedonism (Hd)	0.56	0.70	0.73	0.18	0.19	-0.15	0.28	0.24	0.21	0.25	***0.75***											
High_SC (HSc)	0.50	0.74	0.58	-0.24	0.04	0.17	-0.11	-0.21	-0.09	-0.10	-0.15	***0.71***										
Low_SC (LSc)	0.59	0.80	0.67	-0.18	0.10	0.25	-0.12	-0.17	-0.07	-0.07	-0.06	0.15	***0.77***									
Med_SusC (MSc)	0.50	0.78	0.64	-0.28	0.07	0.28	-0.18	-0.26	-0.11	-0.20	-0.14	0.43	0.48	***0.70***								
PCE	0.50	0.77	0.62	-0.27	0.01	0.42	-0.32	-0.38	-0.21	-0.25	-0.25	0.26	0.37	0.42	***0.71***							
Security (Su)	0.56	0.83	0.79	0.27	0.31	-0.20	0.38	0.39	0.38	0.41	0.35	-0.16	-0.12	-0.15	-0.33	***0.75***						
Self Direction (Sd)	0.57	0.84	0.76	0.34	0.12	-0.18	0.35	0.21	0.14	0.16	0.25	-0.02	-0.09	-0.09	-0.12	0.24	***0.76***					
Self Enrichment (SE)	0.52	0.89	0.87	0.51	-0.07	-0.25	0.56	0.65	0.34	0.54	0.19	-0.20	-0.14	-0.28	-0.32	0.37	0.28	***0.72***				
Self Evolution (Sv)	0.58	0.82	0.74	0.50	-0.01	-0.23	0.48	0.52	0.27	0.42	0.18	-0.15	-0.17	-0.25	-0.26	0.34	0.35	0.72	***0.76***			
Stimulation (St)	0.53	0.82	0.70	0.31	0.19	-0.14	0.35	0.34	0.18	0.26	0.41	-0.13	-0.06	-0.15	-0.22	0.35	0.51	0.27	0.29	***0.73***		
Tradition (Td)	0.52	0.81	0.75	0.23	0.19	-0.10	0.38	0.51	0.44	0.45	0.20	-0.06	-0.09	-0.13	-0.25	0.38	0.01	0.48	0.30	0.16	***0.72***	
Universalism (Uv)	0.60	0.86	0.78	0.62	0.05	-0.31	0.54	0.47	0.30	0.36	0.27	-0.19	-0.14	-0.20	-0.31	0.43	0.50	0.47	0.46	0.38	0.25	***0.78***
Uprightness (Ut)	0.61	0.83	0.69	0.46	0.01	-0.25	0.49	0.55	0.30	0.34	0.21	-0.16	-0.16	-0.22	-0.28	0.33	0.36	0.58	0.56	0.36	0.29	0.43	***0.78***

* Diagonal elements (bold in italics) represent the square root of AVE for that construct. Off Diagonal entries are the correlations between the latent variables.

acceptance and courtesy, there was no moderating impact of attitude formation. Thus, the proposed Hypotheses 3b is partially supported.

Hypotheses 4a and 4b were also tested using SmartPLS 2.0 where the PLS algorithm was run followed by the bootstrapping algorithm with 526 cases and 526 samples. *t*-Statistic for the relationship between PCE and all the three levels of sustainable consumption behaviour was significant (Table 7). The results were in line with the findings of Ellen et al. (1991). This conclusion supports Hypothesis 4a. Interestingly, PCE had a *moderating effect* only on the relationship between attitude and *High sustainable consumption* behaviours. The path coefficients for the other two levels of behaviour were non-significant (Table 7). Thus, Hypothesis 4b is partially supported.

4.3. Role of demographic variables as determinants of value preferences

We wanted to check if certain demographic variables explain the individual differences in personal values. Two value dimensions, "tradition" and "security" showed significant differences across two different age groups (<25 years vs. between 35 and 40 years of age). Means for the age group 35–40 years was lower (lower is better), which implies that they give more importance to these two values. The findings have some implications for sustainable consumption behaviour, since 'tradition' influences high sustainable consumption behaviour (Table 8).

Next, differences on the basis of education were significant for the values of compassion, courtesy, tradition and benevolence and the mean values were lower for more educated individuals. This means that education results in better appreciation of values that impact people's interaction with others in society.

Higher income people significantly valued hedonism and accomplishment more than the lower income people and as the income level increased, the importance of values such as self-enrichment, compassion, conformity, courtesy, tradition, benevolence and security decreased. It may be inferred therefore, on an average, the richer an individual is, the more likely is he to become self-centric and self-satisfied.

We also found that the environment in which a person spent his/her initial years considerably impacts his/her value priorities. Indian values of 'Self-enrichment', 'Compassion', 'Self-evolution' and 'Uprightness' along with a few other values including 'courtesy', 'acceptance', 'benevolence' and 'self-direction' had significantly lower mean values for a person who reported that his initial years were spent in rural areas as compared to a person whose initial years were spent in metropolitan cities.

5. General discussion

In this study, we have examined the relationship between values and sustainable consumption behaviour by the categorization of sustainable consumption behaviours into three different levels. We have identified a new set of cultural specific value dimensions that impact these three levels of behaviours. Values such as compassion, acceptance, universalism, tradition, etc., at the motivational level have shown a significant positive relationship with sustainable consumption behaviour. This opens up new horizons for advancements in the domain of sustainable consumption and at the same time enhances the understanding of human psychology behind engaging in such behaviours.

We have interpreted the path coefficients in Table 8 to further elaborate on the impact of values. Since the directions of the values and sustainable consumption behaviour scales were opposite, a negative path coefficient implies a positive direct relationship between values and behaviour. Path coefficients for the value dimensions: 'acceptance', 'compassion' and 'universalism' had a positive relationship with medium and high sustainable consumption behaviours. Understandably people who respect others or who are compassionate towards others, who desire to alleviate others' sufferings and who consider society as an extended family, show higher inclination towards adoption of sustainable

Table 4
Path coefficients and corresponding t-values for values-behaviour relationship.

	Low SusC behaviour			Medium SusC behaviour			High SusC behaviour		
Values	Path coefficient	*t* value	Significance	Path coefficient	*t* value	Significance	Path coefficient	*t* value	Significance
Acceptance→	−0.090	1.776	No	−0.181	3.354**	Yes	−0.203	3.191**	Yes
Accomplishment→	0.104	1.352	No	0.036	0.794	No	0.020	0.448	No
Benevolence→	0.033	0.836	No	0.100	1.890	No	0.127	2.056*	Yes
Compassion→	−0.053	0.902	No	−0.124	1.991*	Yes	−0.188	2.169*	Yes
Conformity→	−0.006	0.151	No	0.027	0.858	No	−0.039	0.856	No
Courtesy→	0.046	1.117	No	−0.058	1.373	No	0.057	1.183	No
Hedonism→	0.012	0.375	No	−0.021	0.599	No	−0.071	1.420	No
Security→	−0.022	0.701	No	0.034	0.898	No	−0.070	1.607	No
Self direction→	−0.078	1.587	No	0.038	1.016	No	0.131	2.211*	Yes
Self enrichment→	0.109	1.575	No	−0.069	1.235	No	−0.151	1.838	No
Self evolution→	−0.104	1.847	No	−0.063	1.286	No	0.069	1.129	No
Stimulation→	0.057	1.263	No	−0.047	1.173	No	−0.062	1.180	No
Tradition→	−0.048	1.116	No	0.032	0.772	No	0.111	2.260*	Yes
Universalism→	−0.042	0.952	No	−0.078	1.963*	Yes	−1.024	2.016*	Yes
Uprightness→	−0.035	1.038	No	−0.009	0.273	No	−0.018	0.450	No

* $p < 0.05$.
** $p < 0.01$.

behaviours. This explains the positive relationship found between compassion and acceptance and higher levels of sustainable consumption behaviour. Since the value dimension 'universalism' includes values such as tolerance and protection of nature, including unity with nature and protecting the environment, the finding of a positive relationship with sustainable consumption behaviour is quite intuitive.

A strange but significant negative relationship was found between 'self-direction' and high sustainable consumption behaviour. According to Schwartz (1994), the self-direction value is derived from organismic needs for mastery and from the interaction requirements of autonomy and independence. A self-directed person is independent and loves freedom. He may not like to live according to the social norms. This could be the possible reason that self-direction negatively impacts the high sustainable consumption behaviour. There is an extra effort involved to live an environment-friendly life. Two value dimensions, Benevolence and Tradition, exhibited a negative impact on high sustainable consumption behaviour. These results are certainly counter-intuitive. A possible explanation could be the fact that a person who values tradition and benevolence in his life is more conservative, cares for his family and is devout and responsible. Since high sustainable

Table 5
Sub-group analysis for values-sustainable consumption behaviour relationship.

	Total SusC behaviour		High SusC behaviour		Medium SusC behaviour		Low SusC behaviour	
Values	Mean Bottom 33% Top 33%	*p*-Value of differences in means	Mean Bottom 33% Top 33%	*p*-Value of differences in means	Mean Bottom 33% Top 33%	*p*-Value of differences in means	Mean Bottom 33% Top 33%	*p*-Value of differences in means
Compassion	2.55	0.000	2.49	0.005	2.55	0.000	2.55	0.000
	2.18		2.32		2.16		2.23	
Self evolution	2.65	0.000	2.55	0.001	2.63	0.000	2.64	0.000
	2.16		2.28		2.16		2.12	
Uprightness	2.54	0.000	2.44	0.215	2.53	0.000	2.52	0.000
	2.21		2.36		2.22		2.18	
Self Enrichment	2.89	0.000	2.84	0.000	2.88	0.000	2.86	0.000
	2.44		2.55		2.43		2.45	
Conformity	2.67	0.080	2.71	0.149	2.68	0.070	2.63	0.080
	2.46		2.54		2.46		2.43	
Courtesy	2.55	0.001	2.48	0.030	2.69	0.001	2.64	0.001
	2.2		2.26		2.19		2.2	
Tradition	3.18	0.230	3.24	0.222	3.22	0.059	3.13	0.230
	3.03		3.07		3		3.06	
Benevolence	2.43	0.001	2.45	0.009	2.43	0.000	2.46	0.001
	2.14		2.24		2.13		2.13	
Acceptance	2.71	0.000	2.68	0.000	2.7	0.000	2.72	0.000
	2.23		2.33		2.23		2.19	
Universalism	2.23	0.000	2.18	0.055	2.2	0.000	2.29	0.000
	1.84		2.02		1.82		1.85	
Self direction	2.09	0.026	2.08	0.543	2.1	0.125	2.2	0.026
	1.32		2.03		1.99		1.93	
Stimulation	2.82	0.000	2.83	0.006	2.83	0.001	2.83	0.000
	2.48		2.57		2.51		2.53	
Hedonism	2.97	0.332	3.07	0.588	3.04	0.199	3.04	0.332
	2.86		2.99		2.89		2.91	
Accomplishment	2.85	0.169	2.87	0.112	2.97	0.860	2.81	0.169
	3		3.06		2.95		3.06	
Security	2.36	0.061	2.37	0.569	2.38	0.004	2.39	0.061
	2.15		2.3		2.12		2.21	

Table 6
Path coefficients and t-values with attitude as the moderator variable.

Values * Attitude	Low SusC behaviour			Medium SusC behaviour			High SusC behaviour		
	Path coefficient	*t* value	Sig.	Path coefficient	*t* value	Sig.	Path coefficient	*t* value	Sig.
Acceptance * Attitude→	−0.303	2.051*	Yes	−0.435	3.930**	Yes	−0.549	2.754**	Yes
Accomplishment * Attitude→	−0.149	0.417	No	−0.380	0.963	No	0.676	2.026*	Yes
Benevolence * Attitude→	−0.328	1.279	No	−0.250	1.282	No	−0.248	0.808	No
Compassion * Attitude→	−0.264	0.799	No	−0.288	1.356	No	−0.376	1.295	No
Conformity * Attitude→	0.110	0.646	No	0.077	0.373	No	0.173	0.557	No
Courtesy * Attitude→	−0.100	0.453	No	−0.363	2.025*	Yes	0.286	0.899	No
Hedonism * Attitude→	0.019	0.220	No	0.025	0.220	No	0.370	1.236	No
Security * Attitude→	0.127	0.645	No	0.111	0.513	No	0.290	0.835	No
Self direction * Attitude→	−0.188	0.732	No	0.046	0.758	No	0.184	0.763	No
Self Enrichment * Attitude→	−0.275	0.919	No	−0.385	2.943**	Yes	−0.555	1.966*	Yes
Self Evolution * Attitude→	−0.401	2.306*	Yes	−0.401	3.410**	Yes	−0.457	1.284	No
Stimulation * Attitude→	0.249	1.571	No	−0.156	0.826	No	−0.207	1.589	No
Tradition * Attitude→	0.136	0.775	No	0.091	0.644	No	0.095	0.493	No
Universalism * Attitude→	−0.384	2.237*	Yes	−0.429	2.667**	Yes	−0.663	2.748**	Yes
Uprightness * Attitude→	−0.214	1.503	No	−0.390	2.933**	Yes	−0.694	2.345*	Yes

* $p < 0.05$.
** $p < 0.01$.

consumption behaviour currently demands more effort and cost, a person with these values and priorities may be averse to incur higher costs in terms of money as well as time.

We also found that Indian values are a significant predictor of behaviour in the Indian cultural contexts and the values-behaviour relationship is stronger for Indian specific values as compared to other universal values. This result substantiates the argument that there is a need to capture the exceptions in the value structures existing in diverse cultures. The addition of Indian values has enriched the literature on values and has provided an opportunity to reassess the application of values scales across cultures.

Our results also exhibited the existence of the moderating role of attitude in the relationship between values and behaviour for internally oriented values. A possible explanation for the same is that internal values, when supplemented with a positive attitude towards sustainability, inspire people to adopt sustainable behaviour. Externally oriented values are oriented towards others, so are not moderated by attitude formation, while their relationship with sustainable behaviour is studied. These findings are new and contribute to the extant literature. They are in contrast to the established literature on the relationship between attitude, values and behaviour. Previous research suggests either a bivariate relationship between values and behaviour or a mediating role of attitude in the values-attitude-behaviour link. In addition, these studies had never tried to find if this hierarchy of relationships shows variation for different categories of values. Our findings demonstrate that a significant moderating role of environmental attitudes exists only in the case of *internally oriented values*, such as self-enrichment and self-evolution. These results will inspire marketers to modify their advertising message to target not just personal values, but also focus on attitude towards sustainable consumption. Significantly, this is the first study where, in case of PCE, the moderating effect was found to be behaviour specific and that PCE further enhances the probability of indulgence in sustainable consumption behaviours for an individual having a positive attitude towards the environment only for high level sustainable consumption behaviours.

Table 7
Moderating effect of PCE.

	Original sample (O)	T statistics (|O/STERR|)	Significance
Attitude → High_SC	0.0246	0.5033	No
Attitude → Med_SC	0.1037	2.1382*	Yes
Attitude → Low_SC	0.0669	1.8491	No
Attitude → PCE	0.4391	10.2631**	Yes
PCE → High_SC	0.172	2.4693*	Yes
PCE → Med_SC	0.338	7.0513**	Yes
PCE → Low_SC	0.3262	5.8395**	Yes
Attitude * PCE → High_SC	0.4494	1.9656*	Yes
Attitude * PCE → Med_SC	−0.1528	1.3555	No
Attitude * PCE → Low_SC	−0.1853	1.345	No

* $p < 0.05$.
** $p < 0.01$.

5.1. Managerial implications

Increased environmental problems in the world and unsustainable habits and consumption behaviours of individuals are encouraging marketers to create sustainable variants of their existing brands. Environmentally friendly products are no longer categorized as niche products but are now mainstream. Consumers are concerned about the state of the environment, but at the same time they are not ready to change their consumption practices. This paper provides insights on how to improve consumer adoption of sustainable options. Though the study is focused on a limited geographical region, it provides valuable insights regarding the motivation of consumers to try higher levels of sustainable consumption alternatives.

Table 8
Significance of values-sustainable consumption behaviour relationship and moderating role of attitude.

				Attitude moderation		
Holistic values scale	High SCB	Medium SCB	Low SCB	High SCB	Medium SCB	Low SCB
Self direction	Yes					
Hedonism						
Security						
Conformity						
Courtesy					Yes	
Tradition	Yes					
Accomplishment				Yes		
Benevolence	Yes					
Universalism	Yes	Yes		Yes	Yes	Yes
Stimulation						
Acceptance	Yes	Yes		Yes	Yes	Yes
Self enrichment				Yes	Yes	
Compassion	Yes	Yes				
Self evolution					Yes	Yes
Uprightness				Yes	Yes	

This paper has implications for multinational companies trying to enter India. Such companies introduce products with an expectation that value priorities of individuals would inspire them to buy those offerings which resonate with their values. However, differences in the value systems across cultures make such propositions difficult. Similarly, the subset of values that impact sustainable buying behaviour also varies across cultures, thus introducing greater challenge to marketers selling sustainable products. We provide an actionable framework that examines the relationships among a hierarchy of variables: personal values, attitudes and sustainable consumption behaviour that marketing managers of multinational companies can apply to localize their products in India.

Our findings show that a new set of values can be leveraged by marketers for planning the introduction of a sustainable product in the market. Respondents' categorization, based on place of birth and place of initial education do reveal differences in value orientations, thus providing an excellent reason for a need to customize products and messages for segmented markets. People with a rural background and from joint families showed a preference for values such as Self-Enrichment and Compassion and we found that these values impact sustainable buying behaviour. The proportion of such customers in developing nations like India is quite high. Similarly, the fact that value priorities of individuals also differ based on income levels can be leveraged to provide different offerings to different income groups. In general, the paper provides sufficient key linkages between values and sustainable consumption behaviour that can be used as a tool to target the right customers when conventional methods of segmentation are receiving serious criticism.

One of the greatest challenges that brand managers face is the positioning of their brand against the myriad competing brands that offer similar features. Marketing communication requires a meaningful proposition for the targeted customers, particularly while selling sustainable products and services. The findings of this paper inform the marketing managers about the psychological conditions of their customers that influence them to look for certain salient attributes in the products and form their preferences. Such information will help managers to create apt advertising messages for their customers based on personal values.

5.2. Implications for the policy makers

Policy makers across the world are facing the challenge of encouraging people to engage in consumption behaviours that are sustainable. While the current initiatives are focusing on positively and negatively incentivizing people for indulging in more eco-friendly behaviour, a values based identification of people's sustainable choices has not received the attention it deserves. Policy makers need to design their programs and communication strategies such that they are more efficient and effective. Insights from this paper can guide the policymakers towards creating and communicating benefits that may promote responsible and sustainable consumption behaviour in India. This can be achieved by making it more relevant to the targeted segment of people by relating the communication message with the personal values of those people. Specifically, the significant relationships found between values such as compassion, acceptance, benevolence, universalism and tradition, sustainable consumption behaviour and the perceived effectiveness of individuals' efforts offers significant knowledge for policy makers. Attention to these identified values while creating communication messages may enable successful implementation of environment friendly programs and schemes.

6. Limitations and future research directions

We found certain values to be more influential in our selected context and as such our addressal of only the Indian context is a limitation of this paper. Future research can concentrate on similar studies in other countries and diverse cultures. Initially, the Holistic values scale can be empirically tested and if needed, can be expanded to add unique values respective to corresponding countries. Subsequently, studies to test how new values impact sustainable consumption behaviours of people in those countries can be conducted. This paper will have significant implications for cross-cultural research on the understanding of sustainable consumption behaviour.

This paper also has possibilities of extension into international marketing from domestic marketing in India. The Indian diaspora is currently present across the world in different countries. The findings of this paper, therefore, can be tested on Indians across countries. It would be interesting to observe if the results remain the same or vary. The explanations of the results will further extend the current understanding of the values-sustainable consumption behaviour relationship.

Further, there is an opportunity for future research where researchers can apply the findings on actual eco-friendly products and study consumer motivations for purchasing those products. Would the kind of effort and time required in purchasing different products alter the role values play in influencing a decision? What if the target segment is diverse in terms of values? These aspects demand further research.

Appendix A. Holistic values scale

Definition: motivational types	Values included	Indian value/universal value Self focused/other focused
1. Self enrichment: orientation of values implicitly or explicitly towards self so as to enrich the character	Absence of egoism; aspiration; contentment; humility; purity; simple living high thinking; satisfaction; unpretentiousness; well being of all	Indian value Self focused value
2. Compassion: an ability to feel for others as we feel for ourselves	Sacrifice; respect of an individual; hospitality; payment of debts; non-violence; inspiration to give; gratitude; doctrine of actions and deeds	Indian value Other focused value
3. Self evolution: evolution of the mind and the self	Equanimity; forbearance; self control; self improvement; self knowledge	Indian value Other focused value
4. Uprightness: to think, say and do what is righteous, what is true and for which a person need not repent later	Integrity; no jealousy; truthfulness	Indian value Self focused value
5. Conformity: restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms	Obedient; self-control	Universal value Other focused value
6. Courtesy: act of politeness, kindness and graciousness	Honouring parents and elders; politeness	Universal value Other focused value
7. Tradition: respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide	Devout; accepting portion in life; respect for tradition; detachment; faith	Universal value Other focused value
8. Benevolence: preservation and enhancement of the welfare of people with whom one is in frequent personal contact	Honest; loyal; responsible; true friendship; a spiritual life; mature love; meaning in life; humble; moderate	Universal value Other focused value
9. Acceptance: accepting other despite their faults or social status	Forbearance; equality; broad-minded	Universal value Other focused value Universal value

(*continued*)

Definition: motivational types	Values included	Indian value/universal value Self focused/other focused
10. Universalism: understanding, appreciation, tolerance, and protection for the welfare of all people and for nature	Protecting the environment; a world of beauty; unity with nature; social justice; wisdom; a world at peace; inner harmony	Other focused value
11. Self-direction: independent thought and action—choosing, creating, exploring	Creativity; curious; freedom; choosing own goals; self reliance	Universal value Self focused value
12. Stimulation: excitement, novelty, and challenge in life	Courage; a varied life; an exciting life	Universal value Self focused value
13. Hedonism: pleasure and sensuous gratification for oneself	Pleasure; enjoying life	Universal value Self focused value
14. Accomplishment: representation of achievements that reflects one's social power, authority and respect	Social power; authority; wealth; preserving my public image; social recognition; successful; capable; influential; intelligent; self-respect	Universal value Self focused value
15. Security: safety, harmony, and stability of society, of relationships, and of self	National security; social order; family security; healthy; sense of belonging	Universal value Partially both self and other focused

References

Barnea, M. F., & Schwartz, S. H. (1998). Values and voting. *Political Psychology*, *19*(1), 17–40.

Berger, I. E., & Corbin, R. M. (1992). Perceived consumer effectiveness and faith in others as moderators of environmentally responsible behaviors. *Journal of Public Policy & Marketing*, 79–89.

Bhajanananda (1996). Values, yoga and reality in Vedanta Kesari. *Values: The key to a meaningful life*. Madras: Sri Ramakrishna Math Printing Press.

Black, I. (2010). Sustainability through anti-consumption. *Journal of Consumer Behavior*, *9*(6), 403–411.

Burroughs, J. E. (2010). Can consumer culture be contained? Comment on "Marketing Means and Ends for a Sustainable Society". *Journal of Macromarketing*, *30*(2), 127–132.

Chidbhavananda, S. (1992). *The Bhagvad Gita*. Tamil Nadu: Sri Ramakrishna Tapovanam.

Chin, W. (1998). Commentary: Issues and opinion on structural equation modelling. *MIS Quarterly*, *22*(1), 3.

Clawson, C. J., & Vinson, D. E. (1978). Human values: A historical and interdisciplinary analysis. *Advances in Consumer Research*, *5*(1), 396–402.

Dibley, A., & Baker, S. (2001). Uncovering the links between brand choice and personal values among young British and Spanish girls: A laddering study. *Journal of Consumer Behavior*, *1*, 77–93.

de Groot, J. I. M., & Steg, L. (2007). Value orientations and environmental beliefs in five countries: Validity of an instrument to measure egoistic, altruistic and biospheric value orientations. *Journal of Cross-Cultural Psychology*, *38*, 318–332.

Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). New trends in measuring environmental attitudes: Measuring endorsement of the new ecological paradigm: A revised NEP scale. *Journal of Social Issues*, *56*(3), 425–442.

Ellen, P. M., Wiener, J. L., & Cobb-Walgren, C. (1991). The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. *Journal of Public Policy and Marketing*, *10*, 102–117.

Fielding, K. S., McDonald, R., & Louis, W. R. (2008). Theory of planned behaviour, identity and intentions to engage in environmental activism. *Journal of Environmental Psychology*, *28*(4), 318–326.

Fornell, C. G., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.

Fornell, C. G., & Bookstein, P. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing Research*, *19*(4), 440–452.

Gilg, A., Barr, S., & Ford, N. (2005). Green consumption or sustainable lifestyles? Identifying the sustainable consumer. *Futures*, *37*(6), 481–504.

Grunert, S. C., & Juhl, H. J. (1995). Values, environmental attitudes, and buying of organic foods. *Journal of Economic Psychology*, *16*(1), 39–62.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modelling in marketing research. *Journal of the Academy of Marketing Science*, *40*, 414–433.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modelling in international marketing. *Advances in International Marketing*, *20*, 277–320.

Henseler, J., & Chin, W. W. (2010). A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modelling. *Structural Equation Modeling*, *17*(1), 82–109.

Hobson, K. (2002). Competing discourses of sustainable consumption: Does the rationalisation of lifestyles' make sense? *Environmental Politics*, *11*(2), 95–120.

Holbrook, M. B., & Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings and fun. *Journal of Consumer Research*, *9*, 132–140.

Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology*, *54*(4), 638–646.

Kala, M., & Sharma, A. (2010). Traditional Indian beliefs: A key toward sustainable living. *Environmentalist*, *30*, 85–89.

Kim, Y. S., & Choi, S. M. (2005). Antecedents of green purchase behavior: An examination of collectivism, environmental concern and PCE. *Advances in Consumer Research*, *32*, 592–599.

Kilbourne, W., McDonagh, P., & Prothero, A. (1997). Sustainable consumption and the quality of life: A macromarketing challenge to the dominant social paradigm. *Journal of Macromarketing*, *17*(1), 4–24.

Kluckhohn, F. R., & Strodtbeck, F. L. (1961). *Variations in value orientations*.

Knoppen, D., & Saris, W. (2009). Do we have to combine values in the Schwartz' human values scale? A comment on the Davidov studies. *Survey Research Methods*, *3*(2), 91–103.

Lages, L., & Fernandes, J. (2005). The SERPVAL scale: A multi-item instrument for measuring service personal values. *Journal of Business Research*, *58*(11), 1562–1572.

Maio, G. R., & Olson, J. M. (1994). Value-attitude-behavior relations: The moderating role of attitude functions. *British Journal of Social Psychology*, *33*, 301–312.

McDonald, S., Oates, C. J., Young, C. W., & Hwang, K. (2006). Toward sustainable consumption: Researching voluntary simplifiers. *Psychology and Marketing*, *23*(6), 515–534.

Minton, E., Kahle, L., & Kim, C. (2015). Religion and motives for sustainable behaviors: A cross-cultural comparison and contrast. *Journal of Business Research*, *68*(9), 1937–1944.

Misra, G., & Kapur, P. (2014). Recovering the potentials of non-Western psychological perspectives: Combining Chinese and Indian perspectives. *Culture and Psychology*, *20*(3), 440–450.

Mostafa, M. M. (2007). A hierarchical analysis of the green consciousness of the Egyptian consumer. *Psychology and Marketing*, *24*(5), 445–473.

Neuman, K. (1986). Personal values and commitment to energy conservation. *Environment and Behavior*, *18*(1), 53–74.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York: McGraw-Hill.

Perrinjaquet, A., Furrer, O., Usunier, J. C., Cestre, G., & Valette-Florence, P. (2007). A test of the quasi-circumplex structure of human values. *Journal of Research in Personality*, *41*(4), 820–840.

Ping, R. A., Jr. (1995). A parsimonious estimating technique for interaction and quadratic latent variables. *Journal of Marketing Research*, 336–347.

Phipps, M., Ozanne, L., Weaver, T., et al. (2013). Understanding the inherent complexity of sustainable consumption: A social cognitive framework. *Journal of Business Research.*, *66*(8), 1227–1234.

Ranganathananda, S. (1995). *Eternal values for a changing society: Education for human excellence*. Bhartiya Vidya Bhawan: Bombay, 111.

Ringle, C., Wende, S., & Will, A. (2005). Smartpls 2.0 (m3) beta. Hamburg: http://www.smartpls.de

Rokeach, M. J. (1973). *The nature of human values*. New York: Free Press.

Schwartz, S. H., & Bilsky, W. (1987). Toward a psychological structure of human values. *Journal of Personality and Social Psychology*, *53*, 550–562.

Schwartz, S. H. (1994). Are there universal aspects in the content and structure of values? *Journal of Social Issues*, *50*, 19–45.

Schwartz, S. H., & Bardi, A. (2001). Value hierarchies across cultures: Taking a similarities perspective. *Journal of Cross-Cultural Psychology*, *32*, 268–290.

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., & Harris, M. (2001). Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology*, *32*, 519–542.

Sener, A., & Hazer, O. (2008). Values and sustainable consumption behavior of women: A Turkish sample. *Sustainable Development*, *16*(5), 291–300.

Sharma, R. (2015). Reinventing the universal structure of human values: Development of a new holistic values scale. Retrieve from SSRN http://ssrn.com/abstract=2594605

Sharma, S., Durand, R. M., & Gur-Arie, O. (1981). Identification and analysis of moderator variables. *Journal of Marketing Research*, *291-300*.

Shaw, D., & Moraes, C. (2009). Voluntary simplicity: An exploration of market interactions. *International Journal of Consumer Studies*, *33*(2), 215–223.

Smith, P. B., & Schwartz, S. H. (1997). Values. In C. Kagitcibasi, & M. H. Segall (Eds.), *Handbook of cross-cultural psychology* (pp. 77–118). Boston, MA: Allyn and Bacon.

Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, *29*(3), 309–317.

Stern, P. C., & Dietz, T. (1994). The value basis of environmental concern. *Journal of Social Issues*, *50*(3), 65–84.

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

Thøgersen, J., & Ölander, F. (2002). Human values and the emergence of a sustainable consumption pattern: A panel study. *Journal of Economic Psychology*, *23*(5), 605–630.

Tyagananda (1996). Introduction in Vedanta Kesari. *Values: The key to a meaningful life*. Madras: Sri Ramakrishna Math Printing Press.

Vaske, J. J., & Donnelly, M. P. (1999). A value-attitude-behavior model predicting wildland preservation voting intentions. *Society & Natural Resources*, *12*(6), 523–537.

Verplanken, B., & Holland, R. W. (2002). Motivated decision making: Effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology*, *82*, 434–447.
Vinson, D. E., Scott, J. E., & Lamont, L. M. (1977). The role of personal values in marketing and consumer behavior. *Journal of Marketing*, *41*(2), 44–50.
Vlek, C., & Steg, L. (2007). Human behavior and environmental sustainability: Problems, driving forces, and research topics. *Journal of Social Issues*, *63*(1), 1–19.
Wang, C. L., & Lin, X. (2009). Migration of Chinese consumption values: Traditions, modernization and cultural renaissance. *Journal of Business Ethics*, *88*, 399–409.
Xiao, G., & Kim, J. O. (2009). The investigation of Chinese consumer values, consumption values, life satisfaction and consumption behaviors. *Psychology and Marketing*, *26*(7), 610–624.
Zukin, S., & Maguire, J. S. (2004). Consumers and consumption. *Annual Review of Sociology*, 173–197.