Impact of culture, behavior and gender on green purchase intention

Naman Sreen[a],[*], Shankar Purbey[a], Pradip Sadarangani[a]

[a] Indian Institute of Management, Shillong, India

ABSTRACT

Green purchase can have an impact on organization bottom line. It also helps to build a positive public image, brand, and goodwill in the marketplace. The purchasing intention for the green products varies across culture, gender and individual behavior of a person.

This paper examines the impact of individual behavior on green purchase intention by applying constructs from Theory of Planned Behavior (TPB). A conceptual model is developed in this research by linking cultural values from Hofstede dimensions and value orientation model by Kluchhohn and Strodtbeck (1961) to determinants of green purchase intention. The paper also examines the role played by gender on purchase intention through culture and behavior. Collectivism and Long-term orientation (LTO) dimensions are included from Hofstede and Man-nature orientation is included from Kluchhohn and Strodtbeck (1961) model.

The findings of the study suggest that collectivism is significantly related to all three predictors (attitude, subjective norms and Internal PBC) of green purchase intention in TPB whereas LTO is insignificantly related to attitude towards green products while examining the direct effects. Green purchase intention is also significantly related to Man-nature orientation.

The research shows the path to translate cultural values, norms, and beliefs of an individual into purchase intention. Therefore, the research provides an insight to practitioners and policy-makers on how to increase intention towards green products.

The study concludes that the awareness level regarding green products among individuals in India is still a matter of concern and therefore, practitioners and policymakers need to take efforts to make them knowledgeable about the same.

1. Introduction

India in the past two decades has achieved phenomenal economic growth by institutionalizing an open trade policy and improving its' financial market development (Agrawal, 2015). The rapid economic growth in India has come up with several unwelcomed consequences. There has been a rise in air and water pollution that has affected the infant mortality rates and life expectancy rates (Striessing et. al., 2013).

The recent surveys predict India to be the most populous country in the world by 2050 (Population Reference Bureau (PRB), 2001). India is one-third the size of China and with such growth in population, India may suffer shortages such as water scarcity and land shortage. Such shortages will cause further environmental degradation such as deforestation, soil erosion, and water pollution. Population growth and economic development have led to environmental calamities in India.

As a result, businesses and consumers have now realized the need to protect the natural resources and there have been changes in the production and consumption patterns of business and consumers.

Consumers are now more sensitive towards social and ethical considerations of organizations (Chen, 2001). Consumers see companies today not only as profit centres but also as establishments sensible to social problems. Therefore, organizations have started focusing on 'Sustainability' as a business goal by adopting green marketing strategies to promote the purchase of green products to existing and potential consumers. Green products are products that strive to protect the natural environment by using energy conservative resources and reducing the use of toxic agents, pollution, and waste (Ottman, 1992). Previous research has shown that individuals who are more concerned about the environment are more likely to purchase green products (Sarumathi, 2014). This trend is referred to as green consumption (Anderson and Cunningham, 1972), the assumption behind this trend is that purchasing choices express not only price and quality preferences (Monroe, 1976) but also norms, values, and beliefs (Caruana, 2007).

There is limited availability of literature in Indian context regarding green consumption behavior. Maheshwari (2014) argues that there is a lack of knowledge and awareness regarding the green products in India.

---

* Correspondence to: Indian Institute of Management, Shillong, Meghalaya Nongthymmai, Mayur Bhanj Complex, India.
E-mail address: naman.fpm16@iimshillong.ac.in (N. Sreen).

Dupont green living survey (2014) supports her claim by showing that awareness level regarding green products in India (63%) is much lower than that of developed countries such as Canada (78%) and USA (73%). Low awareness levels can be attributed to organizations not developing green products for the Indian market (Green Purchasing Network of India, 2014). The awareness levels can be improved by educating customers and building better products (Bonini and Oppenheim, 2008). Singh and Bansal (2012) suggested that more knowledge regarding green products will help build better attitudes towards green products.

It has been discussed that Indian consumers are concerned about the degradation of the environment (Dupont green living survey, 2014) and feel guilty about the impact they have on the environment (Greendex Survey, 2012). Saxena and Khandelwal (2010) argued that high concern of people regarding environmental issues and willingness of people to buy green products should encourage organizations to produce more green products. However, having a concern about the environment does not always translate into purchase behavior (Akehurst et al., 2012). In India, in spite of environmental concern shown by the people, green consumption has not taken off and therefore, it has become important to analyse variables that may impact purchase intention of Indian consumers regarding green products.

In the past, the socio-demographic factors such as age, income, gender, and location were the main parameters used to explain consumer green preferences (Straughan and Roberts, 1999). But various demographic studies showed different results and hence were considered of limited value in profiling green consumers (Diamantopoulos et al., 2003). At the end, it was argued that these socio-demographic factors act as moderators and not as determinants of consumer green preference (Peattie, 2010).

Barber et. al. (2010) suggests that researchers should investigate consumers' attitude, sustainability practices and purchase intentions for green products. Various attitude models have been developed that may help to investigate attitude and purchase intentions for green products. The focus of this paper is to use one such attitude model i.e. Theory of planned behavior (TPB) (Ajzen, 1991) to explain the purchase intention of green products. Theory of planned behavior has four constructs that explain the purchase behavior: a. Attitude towards the product, b. Subjective norms, c. Perceived behavioral control (PBC) and d. Purchase intention (Ajzen, 1991). Most studies in Indian context found that an extension of TPB explains more variance for green purchase intention than TPB (Paul et al., 2015; Rambalak Yadav et. al, 2017), therefore, they used the extension of TPB in their research. Paul et al., 2015 studied the impact of environmental concern on attitude towards green products, subjective norms, PBC and intention to use green products. Ramablak Yadav et. al, (2017) studied the impact of TPB predictor constructs (attitude, subjective norms, PBC) on intention to use green products, they extended the TPB model by also studying the impact of willingness to pay a premium and perceived value on intention to use green products. One way to analyse consumer green preference may be to understand values that consumers' possess. Values may be stated as desired end-states that guide action and behavior of individuals' towards specific objects and can actually serve as criteria for testing the actions that people make (Schwartz and Bilsky, 1987) via determinants such as beliefs, attitudes, and norms (Steg and De Groot, 2012). However, till now there has been no clear consensus on the interrelationship between green purchase intention and value (Tilikidou and Delistavrou, 2014; Nguyen et al., 2017) and relationship varies across different cultures (Soyez, 2012).

Culture is an important dimension to explain consumer behavior and has been used in previous studies to explain consumer purchase behavior for green products mostly in the developed market (Joreiman et al., 2004; Sarigöllü, 2009). Culture has been defined as a collective programming of the mind that distinguishes the members of one group or category of people from others (Hofstede, 1980). To the best of our knowledge no literature in Indian context has created a path from cultural values to predictor TPB constructs and from predictor TPB constructs to intention

to use green products. This research intends to cover this gap by creating the path from cultural dimensions to predictor TPB constructs and then to intention to use green products in an Indian context.

Dimensional models are of great use to understand the operations of the culture (Marieke De Mooij, 2013). Hofstede dimensions have been extensively used to understand the purchase intention of consumers across cultures. Studies done on consumer purchase intention has included five dimensions namely power distance, individualism versus collectivism, uncertainty avoidance, masculinity and long-term orientation (Hofstede, 2001). However, amongst these five dimensions, Collectivism and long-term orientation (LTO) are the most accepted dimensions for determining green purchase intention (Leonidou et al., 2010; Cho et al., 2013). Most of the previous studies have ignored the use of framework developed by Kluchhohn and Strodtbeck (1961) which was amongst the first frameworks to discuss value orientations for understanding culture theory. Cultural values have been categorized into five orientations as per the framework namely relationship orientation, man-nature orientation, man-himself orientation, past-time orientation and personal-activity orientation (Kluchhohn and Strodtbeck, 1961).

This research includes Hofstede dimensions and value orientation model by Kluchhohn and Strodtbeck (1961). As the focus of this study is on green purchase behavior, collectivism and long-term orientation dimensions is applied from Hofstede dimensions and Man-nature orientation is applied from Kluchhohn and Strodtbeck (1961) model to determine the impact of cultural values on green purchase intention. Man-nature orientation states that a man should live in harmony with nature and not try to master it. Chan (2001) included this dimension to understand green purchase behavior of Chinese consumers. In an Indian context, authors did not find any literature that checked the impact of man-nature orientation on environmentally friendly products in India. In India, there seems to be a high man-nature orientation since Indians worship different forms of nature such as mountains, animals, and rivers. Previous research has not focused on this orientation which is likely to impact purchasing intention in India and might showcase a better picture to marketers regarding the behavior of individuals.

India is a heterogeneous country and consists of various subcultures that have their separate values, beliefs, and norms. Therefore, performing a study of cultural orientations on a national level as done in most of the developed countries (Soyez, 2012; Boeve-de Pauw and Van Petegem, 2013) may be of limited value. Knowing individual tendencies may provide a better picture to marketers for the question regarding the green purchase intention of the consumers. Therefore, this study examines individual behavior contrary to previous studies that have been mostly focused on examining national behavior.

As discussed earlier socio-demographic constructs may be used as moderating variables in profiling green consumers. Amongst the various socio-demographic constructs, issues related to gender have received limited attention in case of environmental studies (Zelezny et al., 2000) especially in an emerging market scenario (Lee, 2009). Therefore, to cover this gap authors take gender as a moderating variable to understand differences between gender perceptions towards green purchase intention. This is the first study in an Indian context that includes the impact of variables such as Collectivism, Long-term orientation, Gender and Man-Nature orientation and understand their impact on the green purchase intention of the consumers by linking these variables with TPB predictor constructs (attitude, subjective norms and PBC).

Moreover, the research also provides insights regarding an emerging market such as India. Besides, theoretical contribution it may also assist policymakers and practitioners in promoting pro-environmental behavior.

2. Review of literature & hypothesis development

2.1. Theory of planned behavior

Theory of planned behavior (TPB) has been confirmed to be superior than other psychological models to predict human behavior that

requires ones' control (Ajzen, 1991) and has been found out to be one of the most significant social psychological theories to predict human behavior (Dean et al., 2012).

TPB was first developed as an extension to the theory of reasoned action. Theory of reasoned action (TRA) states that behavioral use of a product is derived from intention to use that product which is derived from the attitude towards that product and subjective norms (Ajzen, I., & Fishbein, M., 1980).

TPB has one extra construct perceived behavioral control in addition to attitude and subjective norms to predict purchase intention (Ajzen, 1991). TPB claims that likelihood of performing a particular behavior increases if an individual has a positive attitude towards that behavior, social approval for that behavior and more control to perform that behavior (Ajzen, 1991). Previously TPB has been extensively applied in many studies related to environmental issues such as recycling (Chan, 1998; Shaw, 2008; Begum, Siwar, Pereira, & Jaafar, 2009; Ramayah et al., 2012), water saving technology (Lynne, Casey, Hodges, & Rahmani, 1995), and environmental attitude (Kaiser, Wölfing & Fuhrer, 1999). In India, recent studies on green product behavior have used an extension of TPB (Paul et al., 2015; Geetika et.al., 2017; Rambalak Yadav et.al., 2017). The model has been validated in an Indian context to determine green purchase intentions in these studies. As mentioned before, TPB consists of three predictor constructs (attitude, subjective norms and PBC) that predict intention to use a particular product (in our case, green products). In the next section, authors establish the relationships between these constructs.

2.1.1. Attitude

Attitude is defined as a psychological path that determines favor or disfavor of an individual towards a specific object (Eagly and Chaiken, 2007). Theory of planned behavior claims more positive the attitude is towards a particular behavior more are the chances of an individual to perform that behavior (Ajzen, 1991). Various empirical studies in the past have supported the claim that there is a positive association between attitude and purchase intentions (Bredahl, 2001; Chen, 2007; Michaelidou and Hassan, 2010; Lane and Potter, 2007; Sheppard et al., 1988; Tang and Medhekar, 2010).

Previous studies on green products and environment-related behaviors have also supported the claim that attitude and green purchase intention have a positive association. (Aman et al., 2012; Barber et al., 2009; Flamm, 2009; Yadav and Pathak, 2016; Alwitt and Pitts, 1996; Diamantopoulos et al., 2003; Ellen et al., 1991; Teng, 2009; Mostafa, 2009; Stone et al., 1995; Straughan and Roberts, 1999; do Paço and Raposo, 2009; Albayrak et al., 2013).

Recent studies in an Indian context argues that among all TPB predictor constructs, attitude has the highest direct influence on consumers' green purchase intention (Paul et al., 2015; Geetika et.al., 2017; Rambalak Yadav et.al., 2017). Therefore, the hypothesis is formulated as:

H (1):. Among all TPB predictor constructs, attitude towards a green product will have the highest positive impact on the green purchase intention.

The attitude in the previous literature has been studied using general attitudes towards the environment and specific attitudes towards eco-friendly products. A conflict is present between individual and collective gains, under such a scenario social norms may act as a reference point for estimating the green purchase intention of the consumer (Biel and Thøgersen, 2007). In fact, one survey found that social influence is the most important driver for green purchase intention (Lee, 2008).

2.1.2. Subjective norms

Subjective norms are perceived social influences/pressures because of which an individual might indulge himself/herself in a particular behavior (O' Neal, 2007). Consumers, when are uncertain of the consequences of a particular behavior, might seek support from others (Bratt, 1999).

Past studies have shown the significant interrelationship between attitude and subjective norms (Chang, 1998; Shimp and Kavas, 1984; Vallerand et al., 1992; Tarkiainen and Sundqvist, 2005). These studies found out that a path exists from subjective norms to attitude formation and then to purchase intention. In the Indian context (Geetika et. al, 2017) found that there was no direct significant relationship between social influence and attitude towards using organic clothing. There is dearth of literature that checks the direct relationship between subjective norms and attitude towards green products. This study intends to fill this gap by checking interrelationship between subjective norms and attitude towards green products by forming the hypothesis:

H(2(a)):. For green products, subjective norms have a direct positive impact on attitude.

Previous studies have also suggested that subjective norms are the principal predictor of purchase intention (Harland et al., 1999; Kaiser and Gutscher, 2003; Sparks and Shepherd, 1992). A study on electric car usage found a significant relationship between subjective norms and electric car usage (Moons and De Pelsmacker, 2012). In India, contradictory results have been found, while few studies show that there is no direct significant relationship between subjective norms and green purchase intention (Paul et al., 2015; Geetika et.al., 2017), some recent studies predict there is a significant direct relationship between subjective norms and green purchase intention (Rambalak Yadav et.al., 2017). Therefore, it has become important to do more research on this relationship to understand its' impact on green purchase intention in India. Hence, the hypothesis is formulated as:

H(2(b)):. For green products, subjective norms have a direct positive impact on the green purchase intention.

If a consumer has a positive attitude towards the environment and subjective norms (social confirmation), but has limited resources and ability (skills and confidence) then also it may not translate into green purchase intention.

2.1.3. Percieved behavioral control

Ajzen (1991) explains PBC as the "perceived ease or difficulty of performing a behavior". Further PBC has been divided into Internal and external PBC. An individual having high internal PBC, perceives that he/she has more control over the internal personnel resources, such as required skills, confidence, planning, and ability, required to perform a particular behavior (Armitage and Conner, 1999). External PBC explains individuals' perception regarding his/her ability to overcome external limitations, such as time and money, required to perform a particular behavior (Kidwell and Jewell, 2003).

External and Internal PBC might act as a parameter to form a favorable or unfavorable attitude towards a particular behavior. Many researchers in the past have felt that PBC is just a complementary for measuring attitude (Leach, Hennesy, and Fishbein, 2001; Trafimow and Duran, 1998). For green products, in the Indian scenario the relationship between PBC and attitude has not been tested and hence, authors test this relationship by forming the hypothesis:

H(3(a)):. For green products, perceived behavioral control has a direct positive impact on attitude.

As per recent research, the main reasons for not buying green products by environmentally conscious consumers can be attributed to higher price and lower availability of such products (Barbarossa and Pastore, 2015). Similarly, other previous studies have also found the control beliefs such as time, cost, effort, and availability affecting the purchase intention of the consumers (Tanner and Kast, 2003; Barbarossa and De Pelsmacker, 2016). Therefore, green consumption requires consumers to overcome such barriers and inconveniences (Kalafatis et al., 1999; Steg, 2008; Gleim et al., 2013; de la Rue du Can

et al., 2014; Barbarossa and Pastore, 2015). Higher the perceived behavioral control over such barriers higher will be the intention of the consumers to buy green products. (Ko and Jin, 2017; Tanner and Kast, 2003; The Ninh Nguyen, Antonio Lobo, Steven Greenland, 2017). A recent study in India (Vasanthi et.al., 2016) found out the main reasons behind green products not doing well is because of perceived higher price, lower availability and lack of knowledge regarding these products. This study failed to find out the impact of these factors on green purchase behavior. Indian studies on environmentally friendly products found a significant relationship between PBC and intention to use green products (Kishore et.al., 2015; Paul et al., 2015; Geetika et.al., 2017; Rambalak Yadav et.al., 2017). Hence, the hypothesis:

H(3(b)):. For green products, perceived behavioral control has a direct positive impact on the green purchase intention.

2.2. Cultural dimensions

To understand the differences in consumers' engagement regarding culture one can assume that differences in social relationships guide customers' reactions and perceptions (Bolton et al., 2010). Therefore, it is important for marketers to understand consumer's culture and their norms.

2.2.1. Collectivism

Collectivism is the degree to which people in a society are integrated into groups (Hofstede, 2011). In a collectivist culture, people from birth onwards are members of strong in-groups and often have extended families. In such a culture the in-group protects each of its members for unconditional loyalty (Hofstede, 2011).

People in collectivist culture are more willing to share the scarce resources with other people of the same society (SinhaandVerma, 1987) and develop a positive attitude towards behavior that helps the society to prosper (McCarty and Shrum, 1994). Previous studies found a positive association between collectivism and environmental attitude (The Ninh Nguyen, Antonio Lobo, Steven Greenland, 2017; Chan, 2001; McCarty and Shrum, 2001; Leonidou et al., 2010). Hence, the hypothesis is:

H(4(a)):. For green products, collectivism has a direct positive impact on attitude.

Social norms and social conformance are of extreme importance in a collectivist society to transit an environmentally friendly buying behavior (Ahn et al., 2012). Social conformance gives confidence and motivates the individual to reinforce environmental friendly behavior because an individual feels that society at large supports his decision. Individuals in a collectivist society make decisions that favor society (Hofstede, 2001). Triandis (2004) in his study found that collectivist society showed a strong association with subjective norms. Other studies also found a strong association between subjective norms and collectivism (Chan, 2000, 2001; Lee, 2009). Therefore, the hypothesis is formulated as:

H(4(b)):. For green products, collectivism has a direct positive impact on social norms.

Individuals in collectivist societies are more willing to perform a behavior that benefits the society at large even though that behavior might be inconvenient for those individuals. Moon et al. (2008) found that consumers in a collectivist society were willing to pay extra than consumers in an individualistic society for products that were considered beneficial for the society. For the consumers that value group norms recycling is important and not of much concern (McCarty and Shrum, 1994, 2001). These studies illustrates that individuals in a collectivist society have more perceived behavioral control in deciding the products that are beneficial to the society. Therefore, the hypothesis is formulated as:

H(4(c)):. For green products, collectivism has a direct positive impact on perceived behavioral control

Previous studies in an emerging market context have suggested contradictory outcomes for the impact of collectivism on green purchase intention. Geetika et.al, (2017) and Thøgersen & Zhou, (2012) suggested that for the products that have not reached the masses, collectivism in a society does not impact the green purchase behavior or intention. Whereas, another study on emerging market (The Ninh Nguyen, Antonio Lobo, Steven Greenland, 2017) shows that collectivist societies possess a strong willingness to buy green products. Therefore, it would be interesting to see the results of above hypotheses. This research helps in understanding the impact of collectivism, through mediators such as attitude towards green products, subjective norms, and PBC, on green purchase intention in an Indian context. Further, research in the Indian context would be even more interesting as India has a mix of individualistic and collectivist beliefs (Jai B.P. Sinha et.al, 2001). Hofstede score of 48 on a collectivistic- individualistic scale also suggests India to be a mix of both orientations. This research also helps in understanding the values that Indian consumers consider while making a decision for green purchase. It would be fascinating to analyse whether individuals hold collectivist or individualistic beliefs while making decisions regarding green products.

2.2.2. Long-term orientation (LTO)

Study across twenty-three countries found that people in countries with Confucian teaching were hard working and believed that most important life events occur in future (Chinese Culture Connection, 1987). Hofstede called this dimension as long-term orientation and added it as his 5th dimension. A long-term oriented person preserves social traditions, adheres to family values, and considers reliability, responsiveness, and empathy to be very important (Furrer et al., 2000). People with long-term orientation have a positive attitude towards environmental products since it is beneficial for the future (Leonidou et al., 2010). Previous research has shown that long-term oriented people have a positive attitude towards environmental or green products (Joreiman, Van Lange, and Van Vugt, 2004; Sarigöllü, 2009). Therefore, the hypothesis is formulated as:

H(5 (a)):. For green products, LTO has a direct positive impact on attitude.

Long-term oriented people has a tendency to seek opinions from others before making any purchase decision if they are not sure about future benefits (Sharma, 2010). In case of green products, where people are not sure whether this will benefit the environment in the long run, subjective norms might play an important role to determine green purchase intention (Bratt, 1999). Therefore, the hypothesis is formulated as:

H(5(b)):. For green products, LTO has a direct positive impact on social norms.

"Sustainable development is a development that meets the needs of the present without compromising the needs of future generations to meet their own needs" (Brundtland, 1987). LTO people believe in this definition. Long-term oriented people choose behaviors that are beneficial for the future generations even though there might be some inconvenience (personnel costs) in carrying out that behavior (Thøgersen and Grunert-Beckmann, 1997). People with long-term orientation are hardworking (Soares et al., 2007; Yoo et al., 2011) and therefore will put extra effort to choose a behavior favorable for the future. Therefore, the hypothesis is formulated as:

H(5(c)):. For green products, LTO has a direct positive impact on perceived behavioral control

There is limited literature available (The Ninh Nguyen, Antonio Lobo, Steven Greenland, 2017) in an emerging market scenario that has
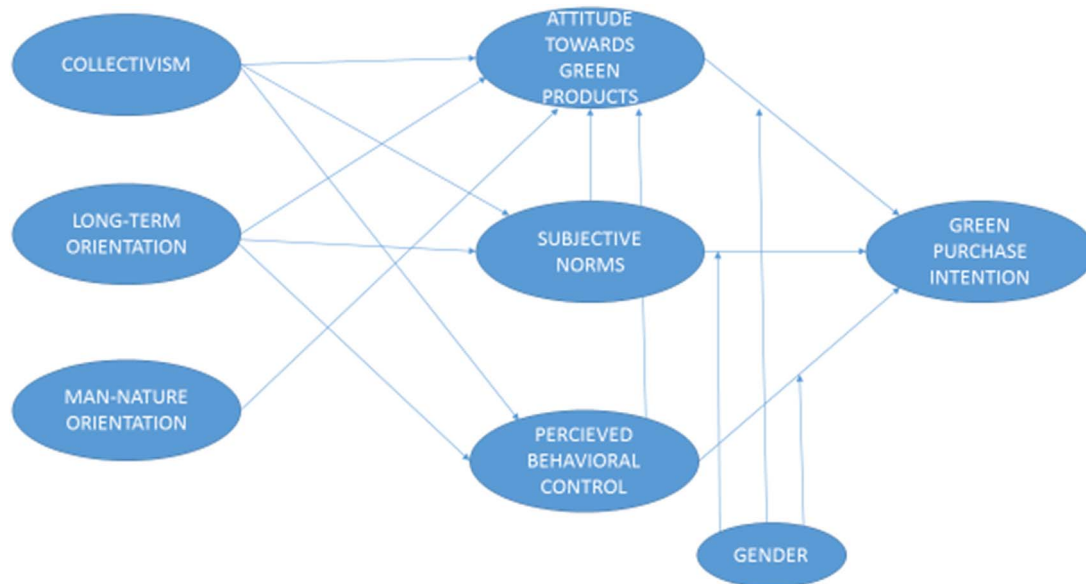
Fig. 1. Proposed research framework.

created a path from LTO construct to green purchase intention through mediators such as attitude towards green products, subjective norms and PBC. The Ninh Nguyen, Antonio Lobo and Steven Greenland, (2017) did research on Vietnamese consumers that has a high score of 57 on long-term orientation scale by Hofstede. It would be interesting to see whether similar relationship of LTO and green purchase intention can be established for a country with an intermediate score (India: 51) on this dimension. To the best of authors' knowledge, there is no literature in the Indian context that has checked the impact of LTO on green purchase intention. Therefore, this research intends to bridge the gap by checking the above hypotheses for the Indian context.

2.2.3. Man nature orientation

Man-nature orientation has been defined as an ability of an individual to live in harmony with nature (Kluchhohn and Strodtbeck, 1961). Low man-nature oriented societies believe that they have dominance over nature (Jandt, 2004) whereas high man-nature oriented societies live in harmony with the nature. Therefore, societies having a high man-nature orientation may tend to possess a positive attitude towards green products. Previous research found out a positive association between man-nature orientation and attitude (Wijaya, 2009). In India, one may assume people to possess high man nature orientation as Indian society is dominated by Hinduism and in Hinduism people worship different forms of nature (tree, mountains and animals) and therefore, expected to live in harmony with nature. There is no literature in an Indian context that has checked the relationship of man-nature orientation on green purchase intention. Also, in the global context there are limited studies that establish the relationship of man-nature orientation on green purchase intention through a mediator such as attitude towards green products (Wijaya, 2009; Chan, 2001). Therefore, there is a need to cover this gap by having more research on this relationship. Hence, the hypothesis is formulated as:

H(6(a)):. For green products, man-nature orientation has a direct positive impact on attitude.

2.3. Gender as a moderating variable

Men and women behave differently and this difference can be explained because of the different socialization process that men and

women undergo (Blocker and Eckberg, 1997; Davidson and Freudenburg, 1996). Gender socialization theory argues that boys and girls go through different socialization process from early childhood and therefore develop different social expectations and values (Chodorow, 1978; Gilligan, 1982). For example, In India, boys learn to be more competitive, unemotional and are expected to be sole bread earner for the family when they grow up, whereas girls learn to be more compassionate and cooperative since they are assumed to take a role of nurturing caregiver when they grow up. Previous research found that women are more concerned than men about the environmental problems and hence have a more positive attitude towards products that protect the environment (Schahn and Holzer, 1990; Tarrant and Cordell, 1997; Lee, 2009). Zelezny et al. (2000) found that women possessed stronger environmental attitude than men across fourteen countries. Therefore, the hypothesis is formulated as:

H(7(a)):. The positive association of attitude with green purchase intention will be greater for women than men

There is limited literature to observe the impact of peer influence on gender in making a green purchase decision. Past gender studies have found that females are more susceptible to social conformity (Chen-Yu et al., 2002). Past studies also found that women were more motivated and influenced by social interactions for making their purchase behaviors (Noble et al., 2006; Lee, 2009). Therefore, the hypothesis is formulated as:

H(7 (b)):. The positive association of Subjective norms with green purchase intention will be greater for women than men

Environmental concern is a multifaceted construct which refers to the extent to which people are concerned about the environmental problems and even willing to pay a premium for green products (Dunlap and Jones, 2002). Since, women are more concerned about the environment, they will exhibit an environmentally friendly behavior even if it is inconvenient (money, time, self-efficacy) for them (Lee K, 2009). Therefore, the hypothesis is formulated as:

H(7(c)). The positive association of PBC with green purchase intention will be greater for women than men.

All the above hypotheses in the proposed research framework are represented in the Fig. 1.

3. Research methodology

3.1. Population and sample

The target population for the research is educated urban consumers. Previous literature has found that educated individuals' are more knowledgeable about green products and hence, will be able to comprehend the green context (Hedlund, 2011; Han et al., 2010; Han and Kim, 2010; Alwitt and Pitts, 1996). Therefore, minimum education qualification for the target population is kept as graduates. The minimum education level (graduation) also ensures minors are not part of the study as they may not be able to comprehend the green context (Chan, 2011).

However, it is not economical as well as feasible to survey all educated urban consumers. Hence sampling procedure has been adopted for getting appropriate and meaningful responses. As the population size is very large authors calculated sample size for the infinite population at 99% confidence level and allowing 4% level of precision. The sample size that came by this way is 1040. Further, an additional 5% is added for covering invalid response. Thus a sample size of 1100 is decided for this study and a quota sampling technique is used to select the respondent through an online survey.

3.2. Measures

The questionnaire was developed using scales developed in previous literature (See Appendix A). The measures/items of each construct were measured using 5 point Likert Scale. "1" was anchored as "STRONGLY DISAGREE" and "5" was anchored as "STRONGLY AGREE" on the scale.

Measures for collectivism are adapted by using the scale developed by Sharma (2010). There are six collectivism measures which help to test the importance of group goals over individual goals, the well-being of group members, the willingness of group members to stick together even if they don't agree with each other and whether the time spent with the group is enjoyed or not by the group member. LTO measures are adapted by using the scale developed by (Yoo et. Al, 2011). Measures of LTO show a persons' ability to work hard for success in future, manage money for future, work for future in spite of failure, give up fun today for future and make long-term plans. Chan (2001) developed five measures for the construct man-nature orientation through focus group exercises. This research adapted Chan (2001) work for developing the measures for the man-nature orientation construct. The main aim of the measures is to check the extent to which individuals are ready to live in harmony with nature. One of the measures for this construct use reverse scale (measure with reverse scale: Being the master of the world, human beings are entitled to deploy any of the natural resources as they like®).

Environmental attitude measures are adapted from a scale developed by (McCarty and Shrum, 1994). The measures are measuring an individuals' preference for green products over conventional products and his perception regarding the importance of green products to save the environment. Subjective norms, PBC and purchase intention measures are adapted from a scale developed by (Armitage and Conner, 1999). Measures of subjective norm help to measure the influence of others in the society on your purchasing decision. Measures of PBC check an individuals' ability to put extra effort to get the green product, his perceived confidence regarding the product and his perceived control over his decision to buy the product. Measures of purchase intention are predicting an individuals' intention to buy the green product in his next purchase or long term.

3.3. Data collection

Data has been collected across various states in India through an online survey using a quota sampling technique to make sure that educated Indian consumers who are at least graduates are chosen. For ensuring the educational qualification of respondent, questionnaires were sent to the participants of different educational institutes involved in teaching minimum graduate students. Different institutions communities available on social media platform were chosen for the same purpose. For further ensuring the same, questionnaire also has a question on demographic profile regarding educational qualification. A survey can simply be defined as a series of questions that help to get self-reported characteristics of a population (Baxter and Babbie, 2004; Fraenkel and Wallen, 2006). An online survey technique is appropriate for this research because: 1.The target population for this research is educated urban consumers and it is convenient for these consumers to fill up an online survey, 2. The aim of this research is to cover wide geographical area across India and therefore, an online survey technique is a cost-effective method to reach such wide audience and 3.Since, the aim of this study is to understand consumer decisions in their natural settings, a survey technique is considered appropriate for understanding consumer decisions in their natural settings (Pinsonneault and Kraemer, 1993).

Online survey questionnaires were distributed through e-mails and social media platforms to eleven hundred respondents out of which four fifty-two valid responses were received (Response rate: 41.09%). To increase the response rate, respondents were given some gifts for filling up the survey such as mobile recharge voucher. Regarding the sample size, fifteen to twenty observations per item are considered desirable (Hair et.al., 1998). Further, Kline (2011) has advocated that ten observations per item are also considered good enough. The study has thirty items in total and therefore, the desirable number of observations are four hundred fifty (30*15 = 450).The sample consists of four hundred fifty-two respondents and hence, meets the priori condition. Out of the four hundred fifty-two respondents, majority of the respondents (35.8%) reported their income to be above 6 lakhs per annum, most of them were postgraduates (42.7%) with male to female ratio of 3:2 i.e. 60% of the respondents were male and 40% were female. The profiles of these four hundred fifty-two persons are presented in Table 1 on the basis of gender, education, and income respectively.

3.4. Research tool

The inputs used in framing the model for green purchase intention are derived from empirical investigation. Structural and analytical modeling techniques have been used for establishing the model for green purchase intention. Following tools have been explicitly used in this research work.

1. Confirmatory Factor Analysis.
2. Structural Equation Modeling (SEM).

4. Data analysis

A four step process is done to perform data analysis. First, a preliminary test is done to remove measures of each construct that are not

Table 1
Respondent profile.

Variable	Categories	Frequency	Percentage of respondent
Gender	Male	271	60%
	Female	181	40%
Education	Doctorate	20	4.42%
	Graduate	239	52.87%
	Postgraduate	193	42.70%
Income	6 lakhs per annum and above	162	35.80%
	Between 2 and 4 lakhs per annum	87	19.20%
	Between 4 and 6 lakhs per annum	72	15.90%
	Less than 2 lakhs per annum	131	29%

Table 2
Factor loading and outer VIF of measures.

Representation of measures	Factor Loadings	Outer VIF
att1	0.757	1.471
att2	0.839	2.187
att3	0.839	2.188
att4	0.788	1.57
socinf1	0.84	1.57
socinf2	0.826	1.601
socinf3	0.808	1.41
pbc1	0.778	1.688
pbc2®	0.058 (Removed)	
pbc3®	−0.341(Removed)	
pbc4	0.751	1.473
pintention1	0.883	1.471
pintention2	0.909	2.187
pintention3	0.817	2.188
coll1	0.747	2.534
coll2	0.663	1.676
coll3	0.745	1.567
coll4	0.528 (Removed)	
coll5	0.769	1.473
coll6	0.652	1.471
longtrm1	0.762	1.788
Longtrm2	0.781	1.06
Longtrm3	0.829	1.06
Longtrm4	0.796	2.254
Longtrm5	0.584	2.534
mannature1	0.895	1.567
mananture2	0.911	1.6
mannature3®	−0.194 (Removed)	
mannature4	0.291 (Removed)	

Note: Att: Attitude; SN: Subjective norm; PBC: Perceived behavioral control; pintention: purchase intention; coll: Collectivism; longtrm: Long term orientation; mannature: Man-nature orientation.

able to explain enough variance in the construct. Second, Confirmatory Factor analysis is performed to check model fit, common method bias, and reliability and validity of the model. Third, hypotheses are tested

by structural equation modeling (SEM) using SmartPLS 3.0. Last, moderation effect due to different gender roles is checked using multi-group SEM in SmartPLS 3.0.

4.1. Preliminary analysis

To predict internal consistency of reliability, factor loading scores are calculated for each measure of each construct. Measures with factor scores of less than 0.55 are removed from the model because they cannot explain enough variance in the construct. The measures removed are painted red in Table 2. Please note that measures/questions with symbol ® are reverse scale measures/questions.

Two measures of PBC (I cannot pay more to buy green products (Factor Loading: 0.058) and I require a lot of time to search for green products (Factor Loading: −0.341), two measures of man-nature orientation (Being the master of the world, human beings are entitled to deploy any of the natural resources as they like (Factor Loading: −0.194) and Human beings are only part of nature Factor Loading: 0.291) and one measure of collectivism (Family members should stick together, even if they do not agree (Factor Loading: 0.528)) are eliminated from the model to make it a better fit.

After removing two measures of PBC, only two measures are left namely perceived confidence and perceived control that only measure Internal PBC and hence, PBC has been renamed as Internal PBC (Armitage and Conner, 1999).The final structural extended TPB model is presented in Fig. 2.

4.2. Reliability and validity of the model

Since, the data was collected from the same respondent for both predictor variables and dependent variable through the same instrument/questionnaire using the same method (online survey) there might be a problem known as common method bias (Heppener et al., 2008). Harmans' one-factor test was done using SPSS 16.0 to check if there is any common method bias. Harmans one factor test is an un-rotated exploratory factor analysis done on the instrument or questionnaire. In
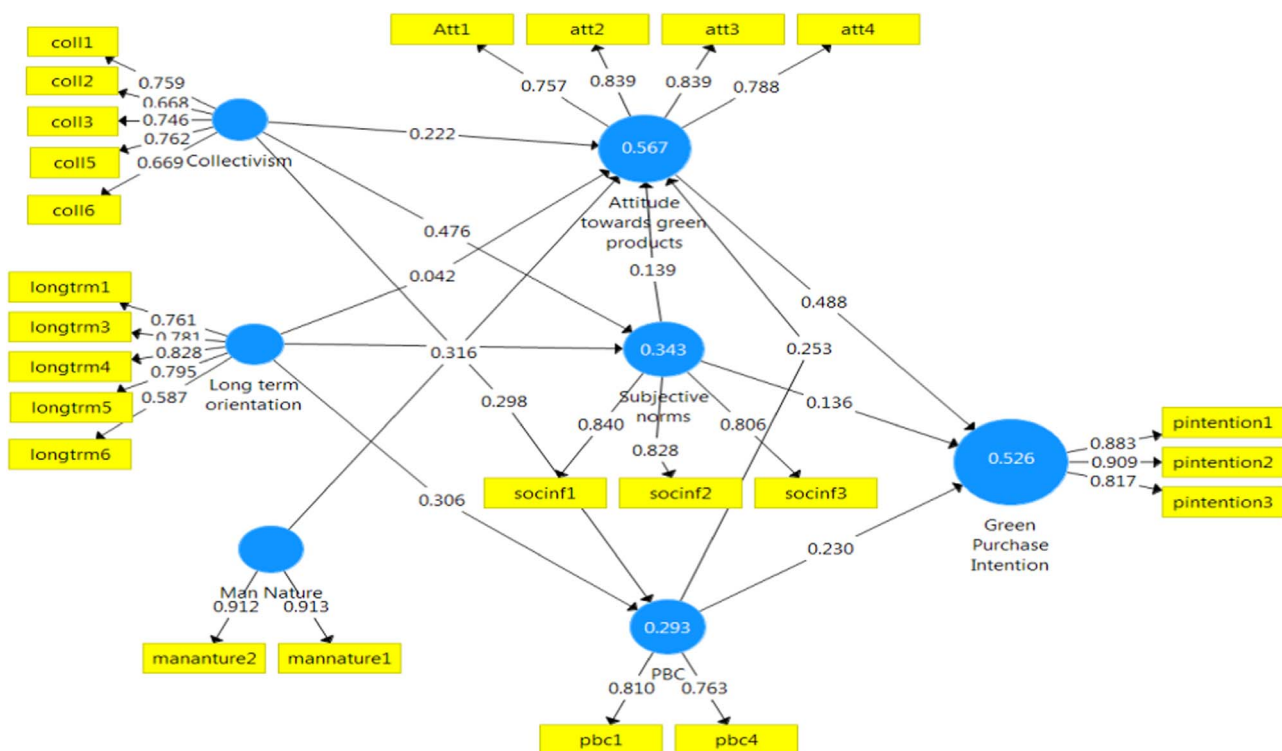

Fig. 2. Structural extended TPB model.

Table 3
Discriminant validity.

	Attitude towards green products	Collectivism	Green Purchase Intention	Long term orientation	Man Nature	Internal PBC	Subjective norms
Attitude towards green products	**0.807**						
Collectivism	0.629	**0.722**					
Green Purchase Intention	0.685	0.621	**0.871**				
Long term orientation	0.524	0.605	0.54	**0.755**			
Man Nature	0.615	0.57	0.527	0.516	**0.912**		
Internal PBC	0.555	0.483	0.554	0.486	0.379	**0.787**	
Subjective norms	0.509	0.572	0.474	0.446	0.393	0.393	**0.825**

Note: Diagonal value show square root of AVE for each construct.

Table 4
Convergent and construct validity.

Constructs	Composite reliability	Average variance extracted (AVE)
Collectivism	0.845	0.522
Long term orientation	0.868	0.57
Internal Perceived behavioral control	0.765	0.619
Attitude towards green products	0.881	0.651
Subjective norms	0.864	0.68
Green Purchase intention	0.904	0.758
Man-Nature orientation	0.908	0.832

this test, if a single factor cannot explain majority (0.50) of the variance then there is no common method bias problem. In this research, the single factor could only explain 39% of the variance of the entire instrument and hence there is no common method bias.

A Square Root Mean Residual (SRMR) score of less than 0.09 is considered as a good fit for model (Hu and Bentler, 1999).This model fits well with SRMR score of 0.069 for the saturated model and 0.074 for the estimated model.

Discriminant validity is checked through a method proposed by Fornell and Larcker, (1981). In this method, a researcher compares the square root of Average Variance Explained (AVE) of each construct with the shared variance between constructs and if the square root of AVE is greater than the shared variance between constructs then the researcher can claim discriminant validity between constructs. Table 3 shows that discriminant validity exists in the model since the square root of AVE of each construct is greater than the shared variance between the constructs.

Convergent validity is checked through Average Variance Explained (AVE). The scores ranged from 0.522 to 0.832 surpassing the recommended level of 0.50 for average variance explained (Fornell and Larcker, 1981).The construct validity is checked through composite reliability scores. The composite reliability scores found that the data is

reliable for each construct with scores ranging from 0.704 to 0.908 (shown in Table 4) which are higher than the recommended level of 0.70 (Fornell and Larcker, 1981). Hence the above-stated model is a good fit, reliable and valid model.

Multicollinearity is checked using outer VIF values and inner VIF values. Inner VIF values check the multicollinearity between the constructs and outer VIF value check multicollinearity between the measures/items of the constructs. VIF value of less than five shows that there is no multicollinearity problem (Rogerson, 2001). Many previous literature have stated that tolerance VIF value can be considered ten (e.g., Hair et al., 1995; Kennedy, 1992; Marquardt, 1970; Neter et al., 1989). The range of outer VIF and inner VIF values for the model came out to be much lesser than the recommended tolerance limits of VIF values and hence this model does not persist multicollinearity problem. The individual values of outer VIF are given in Table 1 and the inner VIF values are shown in Table 5.

5. Results

5.1. Hypothesis testing

5.1.1. Direct and indirect effect

To identify the direct and indirect relationship among constructs t-values and beta-coefficients have been calculated using SmartPLS 3.0 at 95% confidence interval level. These values are shown in Table 6. This study finds the significant direct relationship of the 3 predictors (attitude towards green products, subjective norms, and internal PBC) with green purchase intention. Collectivism has a significant direct relationship with all 3 predictors of green purchase intention whereas LTO has an insignificant direct relationship with attitude towards green products. Man-nature orientation shows a significant direct relationship with attitude towards green products.

Collectivism, LTO, and Man-nature orientation impact green purchase intention indirectly. Although LTO showed an insignificant direct relationship with attitude towards green products, it does impact attitude towards green products indirectly.

Table 5
Inner VIF.

	Attitude towards green products	Collectivism	Green Purchase Intention	Long term orientation	Man Nature	Internal PBC	Subjective norms
Attitude towards green products			1.688				
Collectivism	2.211					1.576	1.576
Green Purchase Intention							
Long term orientation	1.824					1.576	1.576
Man Nature	1.603						
Internal PBC	1.444		1.48				
Subjective norms	1.551		1.382				

Table 6
t-values and beta-coefficients.

Paths	Direct effect	Indirect effect	Total effect
Attitude towards green products_ - > Green Purchase intention	9.567 (0.488)		10.059 (0.488)
Collectivism - > Attitude towards green products	3.473 (0.208)	5.177 (0.412)	7.143 (0.363)
Collectivism - > Internal Perceived behavioral control	3.166 (0.167)		6.103 (0.298)
Collectivism - > Subjective norms	9.052 (0.476)		9.716 (0.476)
Collectivism - > Green Purchase intention		8.823 (0.311)	
Internal Perceived behavioral control - > Attitude towards green products	5.829 (0.236)		6.259 (0.253)
Internal Perceived behavioral control - > Green Purchase intention	5.692 (0.231)		8.553 (0.354)
Long term orientation - > Attitude towards green products	0.816 (0.039)	4.879 (0.099)	2.803 (0.142)
Long term orientation - > Internal Perceived behavioral control	4.630 (0.245)		5.869 (0.306)
Long term orientation - > Subjective norms	2.819 (0.149)		2.826 (0.159)
Long term orientation - > Green Purchase intention		4.565 (0.161)	
Man-Nature orientation - > Attitude towards green products	5.183 (0.310)		5.332 (0.316)
Man-Nature orientation - > Green Purchase intention		4.957(0.154)	
Subjective norms - > Attitude towards green products	2.612 (0.121)		3.077 (0.139)
Subjective norms - > Green Purchase intention	3.125 (0.135)		4.51 (0.204)

Note: The values in the table above are in the format: t-value (beta coefficient).

Table 7
Moderation effect of gender.

Relationship	Path Coefficients (FEMALE,N-181)	Path Coefficients (Male, N-271)	Path Coefficients-difference (|Female-Male |)	p-Value (Female vs Male)
Attitude towards green products - > Green Purchase intention	0.423	0.521	0.098	0.344
Internal Perceived behavioral control - > Green Purchase intention	0.194	0.235	0.041	0.622
Subjective norms - > Green Purchase intention	0.232	0.097	0.136	0.099

5.1.2. Hypotheses results

Hypothesis testing using SmartPLS 3.0 at 95% confidence interval predicted H1,H2(a),H2(b),H3(a),H3(b),H4(a),H4(b),H4(c),H5(b),H5(c) and H6(a) to be significant, whereas, H5(a) is insignificant.

5.2. Examining the moderation effect of gender

The moderation effect of gender is tested using multi-group analysis in SmartPLS 3 0.0. The two groups comprised of Male (N = 271) and Female (N = 181). For both the groups, SRMR score is found to be less than 0.09, which indicates a good fit. Though the path coefficients varied but the difference is not significant (as shown in Table 7). Therefore, hypothesis H7 (a), H7 (b) and H7 (c) are rejected.

6. Discussion and implications

The study not only checks the impact of attitude, subjective norms and PBC on green purchase intention but creates a path from cultural values to green purchase intention through mediators such as attitude, subjective norms, and PBC. Gender is taken as a moderating variable to test the perceptual differences regarding green purchase intention.

The results in Table 7 predict that there is no influence of gender on these relationships at 95% confidence interval contrary to previous research by Lee. K, (2009) in Hong Kong. But, at 90% confidence interval the result predicts female to be more influenced by subjective norms than men (see Table 7). The roles in society of genders are established through the cultural socialization process. In India, mostly women are the home caretakers and men are sole bread earners. Female children are socialized to be caregivers and it is assumed that they will

take care of the child and other household activities. Since, women stay at home and are closer to the family members, they are more influenced by others in the society. Most of the buying decisions for the home products are made by women in India. Therefore, knowing ways to influence female gender for green products is of significant importance for practitioners and policymakers. The results provide an important point for the practitioners by letting them know females are more influenced by what others say. Practitioners and policymakers can establish opinion leaders to increase green purchase intention among women.

Collectivism has a significant relationship with Attitude, Subjective norms, and Internal PBC (see Table 6) similar to the results of previous literature (The Ninh Nguyen, Antonio Lobo, Steven Greenland, 2017) and contrary to predictions by Thøgersen and Zhou, (2012). Collectivism has the strongest relationship with subjective norms similar to a previous study (Chan, 2001). The results show that although India is a mix of both collectivistic and individualistic beliefs (Jai B.P. Sinha et.al, 2001) people showcase more of collectivistic beliefs while making decisions regarding green products. People in collectivist societies will sacrifice their individual goals for group goals and hence will try to make decisions that society approves. Indian traditional family structure has been a joint family structure harbouring three to four generations all living in the same household and has been more collectivist. Although with recent advances in liberalization, globalization, and growth of urban areas, collectivist societies in India have been breaking up into nuclear families but still, most of the families possess collectivist beliefs. Government and marketers need to focus on instilling collectivistic beliefs on the individualistic groups so that purchase intention for green products can be increased amongst these groups. The acceptance

of green products may help to install more positive beliefs regarding green products. This can be done by making consumers' aware about societal benefits from these products. Furthermore, collectivist beliefs can be built by showing movies and advertisements that showcase family values, tradition and importance of the relationships with the family members. LTO shows a significant direct relationship with subjective norms and internal PBC but contrary to previous literature it shows an insignificant direct relationship with attitude towards green products (The Ninh Nguyen, Antonio Lobo, Steven Greenland, 2017) (see Table 6). One possible reason for this insignificant relationship may be the lack of availability of green products in the Indian market. Because of which, there is a lack of knowledge regarding the benefits of these products in the long term. The result of no significant relationship between LTO and attitude towards green products also showcase that a country with intermediate score on LTO (Indian Hofstede score: 51) does not have the same relationship with attitude towards green products as does the country with high score on LTO (Vietnam Hofstede score: 57). Indian societies believe in karma and believe the time is not static. The belief of karma states that whatever you do in past or present will impact your future. Developing more of this belief with respect to green products through communication channels may help to create a long-term view of green products in the mind of the consumers.

Man nature orientation shows a significant relationship with attitude towards green products which is in accordance with a previous study done in China (Ko and Jin, 2017). One possible reason for this can be the religious beliefs of Hinduism who worship all forms of nature and believe in preserving the nature. The government should try to keep these beliefs alive so that people live in harmony with nature and not try to dominate nature. Living in harmony with nature will encourage people to have a positive association towards green products since green products help to minimize the damage to nature

The results support the theory of planned behavior by showing a significant relationship amongst the three constructs i.e. attitude towards green products, subjective norms and internal PBC with purchase intention for green products. Attitude towards green products shows the highest impact (beta-coefficient: 0.488) on green purchase intention similar to previous studies done on environmentally friendly products in an Indian context (Paul et al., 2015; Geetika et al., 2017; Rambalak Yadav et al., 2017). Subjective norms have a significant relationship with green purchase intention contrary to previous research was done on environmentally friendly products in an Indian context (Paul et al., 2015; Geetika et al., 2017). Besides that, the study also focuses on the impact of subjective norms and PBC on attitude towards green products. In case of green products, there are limited literature available on such relationships especially in an emerging market scenario (Geetika et al., 2017). Contrary to previous research in an Indian context on organic clothing by Geetika et.al.,(2017), this research finds a significant relationship between subjective norms and attitude towards green products. The study also finds a significant path from Internal PBC to attitude towards green products. Such a relationship between Internal PBC and attitude towards green products has not been tested before for green products and hence, provide new insights. The findings show that subjective norms and Internal PBC impact the attitude towards green products.

Green marketing is still in a nascent stage in India. In the rest of the world, there has been a lot of skepticism regarding the benefits and quality of green products and accusations of wrong advertisement claims regarding green products. The government and marketers need to create credible advertisements as well as manufacturer need to create credible green products so that a positive attitude can be built regarding green products from the nascent stage itself. Building positive attitude towards green products will not only help to increase intention regarding green products but will also help to create a sustainable future for the country as these products are more environmental friendly.

The Indian government in the past has created awareness regarding the environmental issues with the help of initiatives such as Swach Bharat Abhiyan but has failed to put forward legislative approach for organizations to promote procurement and manufacturing of green products. The government has tried in the past to increase knowledge about green products with schemes such as The Indian Eco-mark Scheme, Energy Efficiency Labelling Scheme in India, and National Programme for Organic Production (NPOP) but the results have not been very encouraging because of low involvement of industry stakeholders. India is still at the initial stage of green consumerism with more and more people now wanting products beneficial to the environment. Policy makers and marketers need to work together to create knowledge about the benefits of green products and knowledge about the labels that identify green products. More availability of green products may help to create better knowledge for identifying green products. Therefore, the government should create policies that encourage organizations to manufacture more of such products.

7. Limitations and future research

The focus of this research has been to provide an individual level study with the constructs of TPB. The research created a unique model that links cultural values with the constructs of TPB to determine green purchase intention. It also effectively looks at the moderating impact of gender. Practitioners may get a clear picture to promote green products in India by understanding the consumers' beliefs, norms and attitudes towards green products with the help of this research. This research may also provide as a basis for studying the similar impact of cultural values on green purchase intention for other emerging markets.

Although the research covers a lot of concepts but still has limitations that can help researchers to extend this study. The possibilities of future research can be classified into five major points.

Firstly, the focus of this research has been on a broad product category such as green products. Green products can be subdivided into various sub- product categories such as organic food, green electrical appliances, etc. Further research can be done on a specific product category and the impact of variables studied in this research can be tested for subcategories of green products.

Secondly, more exogenous variables can be added in this research such as environmental concern, self-identity, consumers' egoistic values and personal values. This might provide a further clear picture to practitioners for implementing strategies

Thirdly, only one moderator variable, Gender, has been tested in this research. Further research can include the impact of more moderator variables such as age, income and education.

Fourthly, this research can act as a basis to do cross-sectional research between two countries such as China and India, USA and India. That research can help understand the differences between the cultures and provide practitioners with different approaches to succeed in such countries.

Lastly, a longitudinal study can be performed to see the impact of the shift in culture on purchase intention of the consumers over time.

Appendix A

Attitude towards green products (McCarty and Shrum, 1994)
Environmental protection is important to me when making product purchases
I believe that green products help to reduce pollution (water, air, etc.)
I believe that green products help to save nature and its resources
Given a choice, i will prefer a green product over a conventional product
Subjective norms (Armitage and Conner, 1999)
People who are important to me thinks that I should buy green products
My interaction with people influences me to buy green products
My acquaintances would approve of my decision to buy green products
Percieved behavioral control (Armitage and Conner, 1999)
It is entirely my decision to buy green products
I cannot pay more to buy green products®
I require a lot of time to search for green products®
I am confident about credibility of green product labels (ex: energy efficient rating such as 5-star energy efficient)
Green purchase intention (Armitage and Conner, 1999)
I intend to buy green products
I plan to purchase green products
I will purchase green products in my next purchase
Collectivism (Sharma, 2010)
The well-being of my group members is important for me
Individuals should only pursue their goals after considering the welfare of the group
I work hard for the goals of a group, even if it does not result in personal recognition
Family members should stick together, even if they do not agree
I enjoy sharing items and spending time with my group members
People who are important to me want me to buy green products
Long term orientation (Yoo et. Al, 2011)
I tend to use my money carefully in present so that I can save it for future
Failure does not stop me from trying again and again
I work hard for success in future
I would like to be secure in the future and hence I prefer long term planning
I don't mind giving up today's fun for success in the future
Man-nature orientation (Chan, 2001)
It is important for me to understand the ways of nature and act accordingly
I should maintain harmony with nature
Being the master of the world, human beings are entitled to deploy any of the natural resources as they like®
Human beings are only part of nature

References

Agrawal, Pradeep, 2015. The role of exports in India's economic growth. J. Int. Trade Econ. Dev. 24 (6), 835–859.

Ahn, J.-M., Koo, D.-M., Chang, H.-S., 2012. Different impacts of normative influences on pro-environmental purchasing behavior explained by differences in individual characteristics. J. Glob. Sch. Mark. Sci.: Bridg. Asia World 22 (2), 163–182.

Ajzen, I., 1991. The theory of planned behavior. Organ. Behav. Human. Decis. Process. 50 (2), 179–211.

Akehurst, G., Afonso, C., Martins-Gonçalves, H., 2012. Re-examining green purchase behavior and the green consumer profile: new evidences. Manag. Decis. 50, 972–988. http://dx.doi.org/10.1108/00251741211227726.

Albayrak, T., Aksoy, Ş., Caber, M., 2013. The effect of environmental concern and scepticism on green purchase behavior. Mark. Intell. Plan. 31 (1), 27–39.

Alwitt, L.F., Pitts, R.E., 1996. Predicting purchase intentions for an environmentally sensitive product. J. Consum. Psychol. 5 (1), 49–64.

Aman, A.H.L., Harun, A., Hussein, Z., 2012. The influence of environmental knowledge and concern on green purchase intention the role of attitude as a mediating variable. Br. J. Arts Soc. Sci. 7 (2), 145–167.

Anderson, W.T., Cunningham, W.H., 1972. The socially conscious consumer. J. Mark. 36 (3), 23–31.

Armitage, C.J., Conner, M.T., 1999. Distinguishing perceptions of control from self-efficacy: predicting consumption of a low-fat diet using the theory of planned behavior. J. Appl. Social. Psychol. 29 (1), 72–90.

Barbarossa, C., De Pelsmacker, P., 2016. Positive and negative antecedents of purchasing eco-friendly products: a comparison between green and non-green consumers. J. Bus. Ethics 134 (2), 229–247.

Barbarossa, C., Pastore, A., 2015. Why environmentally conscious consumers do not purchase green products: a cognitive mapping approach. Qual. Mark. Res.: Int. J. 18 (2), 188–209.

Barbarossa, Camilla, Pastore, Alberto, 2015. Why environmentally conscious consumers do not purchase green products: a cognitive mapping approach. Qual. Mark. Res.: Int. J. 18 (Issue: 2), 188–209. http://dx.doi.org/10.1108/QMR-06-2012-0030.

Barber, N., Taylor, C., Strick, S., 2009. Wine consumers' environmental knowledge and attitudes: influence on willingness to purchase. Int. J. Wine Res. 1 (1), 59–72.

Baxter, L.A., Babbie, E.R., 2004. The basics of communication research. Wadsworth/Thomson, New York.

Biel, A., Thøgersen, J., 2007. Activation of social norms in social dilemmas: a review of the evidence and reflections on the implications for environmental behavior. J. Econ. Psychol. 28 (1), 93–112.

Blocker, T.J., Eckberg, D.L., 1997. Gender and environmentalism: results from the 1993 general social survey. Social. Sci. Q. 78 (4), 841–858.

Boeve-de Pauw, J., Van Petegem, P., 2013. A cross-cultural study of environmental values and their effect on the environmental behavior of children. Environ. Behav. 45 (5), 551–583.

Bolton, L.E., Keh, H.T., Alba, J.W., 2010. How do price fairness perceptions differ across culture? J. Mark. Res. 47 (3), 564–576.

Bonini, Sheila, Oppenheim, Jeremy, 2008. Cultivating the Green Consumer. Stanford Social Innovation Review.

Bratt, C., 1999. The impact of norms and assumed consequences on recycling behavior. Environ. Behav. 31 (5), 630–656.

Bredahl, L., 2001. Determinants of consumer attitudes and purchase intentions with regard to genetically modified foods: results of a cross-national survey. J. Consum. Policy 24 (1), 23–61.

Brundtland (1987). Brundtland Report: Our common future.

Caruana, R., 2007. A sociological perspective of consumption morality. J. Consum. Behav. 6, 287–304.

Chan, K., 2000. Market segmentation of green consumers in Hong Kong. J. Int. Consum. Mark. 12 (2), 7–24.

Chan, R.Y.K., 2001. Determinants of Chinese consumers' green purchase behavior. Psychol. Mark. 18, 339–413.

Chang, M.K., 1998. Predicting unethical behavior: a comparison of the theory of reasoned action of the theory of planned behavior. J. Bus. Ethics 17 (16), 1825–1833.

Chen, C., 2001. Design for the environment: a quality-based model for green product development". Manag. Sci. 47, 250–263.

Chen, M.F., 2007. Consumer attitudes and purchase intentions in relation to organic foods in Taiwan: moderating effects of food-related personality traits. Food Qual. Prefer. 18 (7), 1008–1021.

Chen-Yu, J.H., Seock, Y.K., 2002. Adolescents' clothing purchase motivations, information sources, and store selection criteria: a comparison of male/female and impulse/nonimpulse shoppers. Fam. Consum. Sci. Res. J. 31 (1), 50–77.

Chinese Culture Connection, 1987. Chinese values and the search for culture-free dimensions of culture. Journal of Cross-Cultural Psychology, 18, 143-164.

Cho, Y.-N., Thyroff, A., Rapert, M.I., Park, S.-Y., Lee, H.J., 2013. To be or not to be green: exploring individualism and collectivism as antecedents of environmental behavior. J. Bus. Res. 66 (8), 1052–1059.

Chodorow, N.J., 1978. The reproduction of mothering. University of California Press, Berkeley.

Davidson, D.J., Freudenburg, W.R., 1996. Gender and environmental risk concerns. Environ. Behav. 28, 302–339.

Dean, M., Raats, M.M., Shepherd, R., 2012. The role of self-identity, past behavior, and their interaction in predicting intention to purchase fresh and processed organic food. J. Appl. Social. Psychol. 42 (3), 669–688.

Diamantopoulos, A., Schlegelmilch, B.B., Sinkovics, R.R., Bohlen, G.M., 2003. Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. J. Bus. Res. 56 (6), 465–480.

Dunlap, R.E., Jones, R.E., 2002. Environmental concern: conceptual and measurement issues. In: Dunlap, R.E., Michelson, W. (Eds.), Handbook of environmental sociology. Greenwood Press, Westport, CT, pp. 482–524.

Dupont green living survey, 2014. ⟨http://www.dupont.com/products-and-services/industrial-biotechnology/articles/india-green-living-study.html⟩).

Eagly, A.H., Chaiken, S., 2007. The advantages of an inclusive definition of attitude. Social. Cogn. 25 (5), 582–602.

Ellen, P.S., Wiener, J.L., Cobb-Walgren, C., 1991. The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. J. Public Policy Mark. 10 (2), 102–117.

Flamm, B., 2009. The impacts of environmental knowledge and attitudes on vehicle ownership and use. Transp. Res. Part D: Transp. Environ. 14 (4), 272–279.

Fraenkel, J.R., Wallen, N.E., 2006. How to design and evaluate research in education. McGraw-Hill, New York.

Furrer, O., Liu, B.S.-C., Sudharshan, D., 2000. The relationships between culture and service quality perceptions: basis for cross-cultural market segmentation and resource allocation. J. Serv. Res. 2, 355–371.

Gilligan, C., 1982. In a Different oice. Harvard University Press, Cambridge, MA.

Gleim, M.R., Smith, J.S., Andrews, D., Cronin Jr, J.J., 2013. Against the green: a multi-method examination of the barriers to green consumption. J. Retail. 89 (1), 44–61.

Green Purchasing Network of India, 2014. Communicating Green Products to Consumers in India to promote Sustainable Consumption and Production.

Greendex Survey, 2012. OnlineLink: ⟨http://www.sustainablebrands.com/news_and_views/articles/nat-geo-greendex-survey-reveals-consumer-paradox⟩.

Hair Jr., J.F., Anderson, R.E., Tatham, R.L., Black, W.C., 1995. Multivariate Data Analysis, 3rd ed. Macmillan, New York.

Han, H., Kim, Y., 2010. An investigation of green hotel customers' decision formation: developing an extended model of the theory of planned behavior. Int. J. Hosp. Manag. 29, 659–668.

Han, H., Hsu, L.-T., Sheu, C., 2010. Application of the Theory of Planned Behavior to green hotel choice: testing the effect of environmental friendly activities. Tour. Manag 31, 325–334.

Harland, P., Staats, H., Wilke, A.M., 1999. Explaining pro-environmental intention and behavior by personal norms and the theory of planned behavior. J. Appl. Social. Psychol. 29 (12), 2505–2528.

Hedlund, T., 2011. The impact of values, environmental concern, and willingness to accept economic sacrifices to protect the environment on tourists intentions to buy ecologically sustainable tourism alternatives. Tour. Hosp. Res 11 (4), 278–288.

Hofstede, G., 1980. Culture's Consequences: International Differences in Work-Related Values. Sage Publications, Newbury Park, CA.

Hofstede, G., 2001. Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations. Sage Publications, Thousand Oaks, CA.

Hofstede, G., 2011. Dimensionalizing Cultures: the Hofstede Model in Context. Online Read. Psychol. Cult. 2 (1). http://dx.doi.org/10.9707/2307-0919.1014.

Jandt, F.E., 2004. An Introduction to Intercultural Communication: Identities in a Global Community, 4th ed. Sage Publication, Thousand Oaks, CA.

Joreiman, J.A., Van Lange, P.A.M., Van Vugt, M., 2004. Who cares about the environmental impact of cars: those with an eye toward the future. Environ. Behav. 36, 187–206.

Kaiser, F.G., Gutscher, H., 2003. The proposition of a general version of the theory of planned behavior: predicting ecological behavior. J. Appl. Social. Psychol. 33 (3), 586–603.

Kalafatis, S.P., Pollard, M., East, R., Tsogas, M.H., 1999. Green marketing and Ajzen's theory of planned behavior: a cross-market examination. J. Consum. Mark. 16 (5), 441–460.

Kidwell, B., Jewell, R.D., 2003. An examination of perceived behavioral control: internal and external influences on intention. Psychol. Mark. 20 (7), 625–642.

Kluchhohn, F., Strodtbeck, F., 1961. Variations in Value Orientations. Peterson, Evanston, IL.

Ko, Seung Bong, Jin, Byoungho, 2017. Predictors of purchase intention toward green apparelproducts: a cross-cultural investigation in the USA and China. J. Fash. Mark. Manag.: Int. J. 21 (Issue: 1), 70–87. http://dx.doi.org/10.1108/JFMM-07-2014-0057.

Leach, M., Hennesy, M., Fishbein, M., 2001. Perception of easy-difficulty: attitude or self-efficacy? J. Appl. Social. Psychol. 31, 1–20.

Lee, K., 2008. Opportunities for green marketing: young consumers. Mark. Intell. Plan. 26 (6), 573–586.

Lee, K., 2009. Gender differences in Hong Kong adolescent consumers' green purchasing behavior. J. Consum. Mark. 26 (2), 87–96.

Leonidou, L.C., Leonidou, C.N., Kvasova, O., 2010. Antecedents and outcomes of consumer environmentally friendly attitudes and behavior. J. Mark. Manag. 26 (Nos 13–14), 1319–1344.

Maheshwari, Dr. Shruti P., 2014. Awareness of green marketing and its influence on buying behavior of consumers: special reference to Madhya Pradesh, INDIA". AIMA J. Manag. Res., Febr. 2014 8 (1/4) (ISSN 0974 – 497).

McCarty, J., Shrum, L., 1994. The recycling of solid wastes: personal values, value orientations, and attitudes about recycling as antecedents of recycling behavior. J. Bus. Res. 30, 53–62.

McCarty, J., Shrum, L., 2001. The influence of individualism, collectivismand locus of control on environmental beliefs and behavior. J. Public Policy Mark. 21, 93–104.

Michaelidou, N., Hassan, L.M., 2010. Modeling the factors affecting rural consumers' purchase of organic and free-range produce: a case study of consumers' from the Island of Arran in Scotland, UK. Food Policy 35 (2), 130–139.

Monroe, K.B., 1976. The influence of price differences and brand familiarity on brand preferences. J. Consum. Res. 3 (1), 42–49.

Mooij, Marieke De, 2013. "Chapter 6: Culture and Cultural Dimensions", Book: Human and Mediated Communication Around the World. Springer.

Moon, J., Chadee, D., Tikoo, S., 2008. Culture, product type, and price influences on consumer purchase intention to buy personalized products online. J. Bus. Res. 61 (1), 31–39 (pp.).

Moons, I., De Pelsmacker, P., 2012. Emotions as determinants of electric car usage intention. J. Mark. Manag. 28 (Nos 3–4), 195–237.

Mostafa, M., 2009. Shades of green: a psychographic segmentation of the green consumer in Kuwait using self-organizing maps. Expert Syst. Appl. 36 (8), 11030–11038.

Noble, S.M., Griffith, D.A., Adjei, M.T., 2006. Drivers of local merchant loyalty: understanding the influence of gender and shopping motives. J. Retail. 82 (3), 177–188.

Ottman, J.A., 1992. Industry's response to green consumerism. J. Bus. Strategy 13, 3–7.

do Paço, A., Raposo, M., 2009. Green' segmentation: an application to the Portuguese consumer market. Mark. Intell. Plan. 27 (3), 364–379.

Paul, Justin, Modi, Aswin, Patel, Jayesh, 2015. Predicting green product consumption using theory of planned behavior and reasoned action. J. Retail. Consum. Sevices. http://dx.doi.org/10.1016/J.JRETCONSER.2015.11.006.

Peattie, K., 2010. Green consumption: behavior and norms. Annu. Rev. Environ. Resour. 35, 195–228.

Pinsonneault, A., Kraemer, K., 1993. Survey research methodology in management information systems: an assessment. J. Manag. Inf. Syst. 10 (1), 75–106.

Population Reference Bureau (PRB), 2001. World population data sheet, Washington, D.C.

Rogerson, P.A., 2001. Statistical Methods for Geography. Sage, London.

de la Rue du Can, S., Leventis, G., Phadke, A., Gopal, A., 2014. Design of incentive programs for accelerating penetration of energy-efficient appliances. Energy Policy 72, 56–66.

Sarigöllü, E., 2009. A cross-country exploration of environmental attitudes. Environ. Behav. 41 (3), 365–386.

Sarumathi, S., 2014. Green purchase behavior–a conceptual framework of socially conscious consumer behavior. Glob. J. Financ. Manag. 6 (8), 777–782.

Saxena, R., Khandelwal, P.K., 2010. Can green marketing be used as a tool for sustainable growth?: a study performed on consumers in India- an emerging economy. Int. J. Environ., Cult., Econ. Social. Sustain. 6 (2), 277–291.

Schahn, J., Holzer, E., 1990. Studies of individual environmental concern: the role of knowledge, gender, and background variables. Environ. Behav. 22 (6), 767–786.

Schwartz, S.H., Bilsky, W., 1987. Toward a universal psychological structure of human values. J. Personal. Social. Psychol. 53 (3), 550–562.

Sharma, P., 2010. Measuring personal cultural orientations: scale development and validation. J. Acad. Mark. Sci. 38 (6), 787–806.

Sheppard, B.H., Hartwick, J., Warshaw, P.R., 1988. The theory of reasoned action: a meta-analysis of past research with recommendations for modifications and future research. J. Consum. Res. 15 (3), 325–343.

Shimp, T.A., Kavas, A., 1984. The theory of reasoned action applied to coupon usage. J. Consum. Res.

Sinha, J.B.P., Verma, J., 1987. Structure of collectivism. In: Kˇagitcibasi, C. (Ed.), Growth and progress in cross-cultural psychology. Swets &Zeitlinger, Lisse, The Netherlands, pp. 123–129.

Soares, A.M., Farhangmehr, M., Shoham, A., 2007. Hofstede's dimensions of culture in international marketing studies. J. Bus. Res. 60 (3), 277–284.

Soyez, K., 2012. How national cultural values affect pro-environmental consumer behavior. Int. Mark. Rev. 29 (6), 623–646.

Sparks, P., Shepherd, R., 1992. Self-identity and the theory of planned behavior: assessing the role of identification with green consumerism. Social. Psychol. Q. 55 (4), 388–399.

Steg, L., 2008. Promoting household energy conservation. Energy Policy 36 (12), 4449–4453.

Steg, L., De Groot, J.I.M., 2012. Environmental values. In: Clayton, S.D. (Ed.), The Oxford Handbook of Environmental and Conservation Psychology. Oxford University Press, New York,NY, pp. 81–93.

Stone, G., Barnes, J.H., Montgomery, C., 1995. ECOSCALE: a scale for the measurement of environmentally responsible consumers. Psychol. Mark. 12 (7), 595–612.

Straughan, R.D., Roberts, J.A., 1999. Environmental segmentation alternatives: a look at green consumer behavior in the new millennium. J. Consum. Mark. 16 (6), 558–575.

Striessnig, Erich, Wolfgang, Schopp, Amann, Markus, 2013. Effects on well-being of investing in cleaner air in India. Environ. Sci. Technol. 47 (23), 13222–13229.

Tang, Y., Medhekar, M., 2010. Drivers of green power electricity purchase in Australia. Asia J. Bus. Res. 1 (1), 80–96.

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

Tarkiainen, A., Sundqvist, S., 2005. Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. Br. Food J. 107 (Nos 10/11), 808–822.

Teng, L., 2009. A comparison of two types of price discounts in shifting consumers' attitude and purchase intentions. J. Bus. Res. 62 (1), 14–21.

The Ninh Nguyen, Antonio Lobo, Steven Greenland, 2017. "The influence of cultural values on greenpurchase behavior", Marketing Intelligence & Planning, Vol. 35 Issue:, pp. 3377–3396, doi: http://:doi.org.10.1108/MIP-08-2016-0131.

Thøgersen, J., Grunert-Beckmann, S.C., 1997. Values and attitude formation towards emerging attitude objects: from recycling to general, waste minimizing behavior. Adv. Consum. Res. 24 (1), 182–189.

Tilikidou, I., Delistavrou, A., 2014. Pro-environmental purchasing behavior during the economic crisis. Mark. Intell. Plan. 32 (2), 160–173.

Trafimow, D., Duran, A., 1998. Some tests of the distinction between attitude and perceived behavioral control. Br. J. Social. Psychol. 37, 1–14.

Triandis, H.C., 2004. The many dimensions of culture. Acad. Manag. Exec. 18 (1), 88–93.

Vallerand, R.J., Deshaies, P., Cuerrier, J.P., Pelletier, L.G., Mongeau, C., 1992. Ajzen and Fishbein's theory of reasoned action as applied to moral behavior: a confirmatory analysis. J. Personal. Social. Psychol. 62 (1), 98–109.

Varshneya, Geetika, Pandey, Shivendra K., Das, Gopal, 2017. Impact of Social Influence and Green Consumption Values on Purchase Intention of Organic Clothing: a Study on Collectivist Developing Economy. Glob. Bus. Rev. 18 (2), 478–492. http://dx.doi.org/10.1177/0972150916668620.

Wijaya, T., 2009. Studi perilaku membeli makanan organik.Research Project. Program Doktor UGM, Yogyakarta.

Yadav, R., Pathak, G.S., 2016. Young consumers' intention towards buying green products in a developing nation: extending the theory of planned behavior. J. Clean. Prod. 135 (1), 732–739.

Yadav, Rambalak, Pathak, Govind, 2017. Determinants of consumers' green purchase behavior in a developing nation: applying and extending the theory of planned behavior". Ecol. Econ. 134, 114–122. http://dx.doi.org/10.1016/j.ecolecon.2016.12.019.

Yoo, B., Donthu, N., Lenartowicz, T., 2011. Measuring Hofstede's five dimensions of cultural values at the individual level: development and validation of CVSCALE. J. Int. Consum. Mark. 23 (Nos 3–4), 193–210.

Zelezny, L.C., Chua, P., Aldrich, C., 2000. Elaborating on gender differences in environmentalism. J. Social. Issues 56, 443–457.

Further reading

Consumer choice and the environment- A worldwide tracking survey, GreenDex, National Geographic (⟨http://environment.nationalgeographic.com/environment/greendex⟩).

Diekmann, A., Preisendörfer, P., 1998. Environmental behavior: discrepancies between aspirations and reality. Ration. Soc. 10 (1), 79–102.