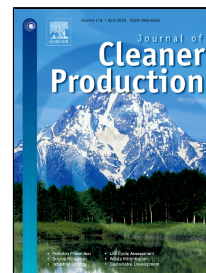# Accepted Manuscript

A Fresh Look at Understanding Green Consumer Behavior among Young Urban Indian Consumers through the Lens of Theory of Planned Behavior

Khan Md.Raziuddin Taufique, Sridhar Vaithianathan

Please cite this article as: Khan Md.Raziuddin Taufique, Sridhar Vaithianathan, A Fresh Look at Understanding Green Consumer Behavior among Young Urban Indian Consumers through the Lens of Theory of Planned Behavior, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro. 2018.02.097

A Fresh Look at Understanding Green Consumer Behavior <u>among Young Urban Indian Consumers</u> through the Lens of Theory of Planned Behavior

Khan Md. Raziuddin Taufique[a*], Sridhar Vaithianathan[b]

[a]Department of Marketing, Curtin University, CDT 250, 98009 Miri Sarawak, Malaysia
Contact Phone: +60 85 443939, E-mail: khan.taufique@curtin.edu.my

[b]Institute of Management Technology, Hyderabad, Shamshabad Mandal, RR District, Hyderabad 501218, India.
Contact Phone: +91 9989904245, E-mail: sridhar.v@imthyderabad.edu.in

*Corresponding author[1]

---

[1] Permanent address of the corresponding author: BRAC Business School, BRAC University, 66 Mohakhali, Dhaka 1212, Bangladesh

Abstract

Rapid economic growth and resulting overconsumption have accelerated environmental deterioration worldwide, prompting escalated consumption-related environmental concerns. This study attempts to explore the antecedents of ecologically conscious consumer behavior (ECCB) among young urban consumers in India – an emerging market experiencing rapid economic growth with increased urbanization and changes in consumption patterns that are contributing to environmental hazard. The empirical study including a literature review uses Theory of Planned Behavior integrating environmental attitudes, subjective norms, perceived consumer effectiveness, and behavioral intention in the model to investigate their influence on ECCB. The results suggest that attitudes and perceived consumer effectiveness both have a significant direct and indirect positive influence on ECCB. In addition, it would appear that the subjective norm, a measure of social demand, does not have any significant influence on behavioral intention leading to ECCB – contrary to established findings in a collective society considered in this study. This paper concludes with policy implications of the findings for marketers and policymakers, as well as potential directions for further research.

Keywords: pro-environmental consumer behavior, green marketing, Theory of Planned Behavior (TPB), perceived consumer effectiveness (PCE)

1. Introduction

Research by the Intergovernmental Panel on Climate Change (IPCC) indicated that recent global warming is caused by human activity and, in particular, consumption patterns (Dermody, 2011). Hefty economic growth and resulting overuse of natural resources, overconsumption, and sometimes even irresponsible consumption have triggered environmental deterioration worldwide (Chen and Chai, 2010; Tuna and Özkoçak, 2012), which has prompted global attention. Individual consumer participation is essential for curbing this rapidly growing global environmental problem (Steg and Vlek, 2009). The recent IPCC report (Intergovernmental Panel on Climate Change, 2016) indicated that global energy consumption and associated emissions can be substantially reduced through changes in consumption patterns, adoption of energy savings measures, dietary change, and reduction in food wastes. Hence, addressing environmental degradation requires a modification in consumption behavior based on a better understanding of the factors affecting individual's actions toward ecologically conscious consumption behavior (ECCB).

Yet while studies on pro-environmental consumer behavior are considerable in the context of developed markets, such studies are still at the infant stage in many emerging markets including in Asia. This is validated by Biswas and Roy's (2015a, 2015b) calls for new research efforts to examine the progression of pro-environmental consumer behavior in the Asian region. Adding to this, such emerging markets should be considered an ideal context for replicating as well as advancing marketing theory due to extreme within-country heterogeneity in socioeconomic, demographic, cultural, and overall living standards of the consumers (Burgess and Steenkamp, 2006). Urban landscapes in emerging markets are particularly important, as consumers usually have more opportunity to act in an environmentally responsible manner within the larger cities (as opposed to the rural areas) where they have more stores and a wider selection of products.

As an emerging economy, India is also reportedly one of the fastest progressing countries in the world in terms of addressing environmental issues and improving environmental quality (World Bank, 2010). Many Indian firms are adopting green marketing in line with government regulations, as well as changes in consumer preferences (Bhatia and Jain, 2013). For example, Godrej Consumer Products offers additional incentives to consumers for exchanging their old

2

products with the latest environmentally friendly products. Furthermore, major media group NDTV has initiated a 'Greenathon' campaign to raise environmental awareness. Some other Indian firms are encouraging consumers to use recycled shopping bags (e.g. Titan, Tanishq). Adding further substance, as India's leading mobile operator, Idea Cellular Limited promotes the awareness of conserving trees, while Kansai Nerolac Paints has removed hazardous heavy metals from its paints and is marketing lead-free paints. Such initiatives are also noticeable at the government level. For example, Indian Prime Minister Narendra Modi launched the country's first National Air Quality Index (NAQI) in 2015 (Skymetweather, 2015) with plans to reduce carbon emissions by 33% to 35% by 2030 (The Christian Science Monitor, 2015). This government also introduced a 'green' tax on car sales in February 2016 to fight against high levels of air pollution (Reuters, 2016), which aligned with recent research findings that about 88% of Indian consumers feel good when they purchase sustainably produced products (Unilever, 2017).

Yet even though government agencies and local businesses are initiating many conservation measures, environmental degradations are on the rise in India. According to the United Nations Environmental Program (2011), India was ranked seventh among the most environmentally hazardous countries in 2011, with overuse of resources causing the country to lose its natural habitats (WWF, 2016). One general cause of environmental deterioration is the increased and sometimes irresponsible consumption activities (Biswas and Roy, 2015b). For example, 70% of India's air pollution is sourced from vehicle emissions (Nittala, 2014), and the country's ever-growing urbanization is expected to cause more pollution and other environmental hazards (Vij, 2012). It has been estimated that India will top the world in car usage by 2050 (Ramanathan, 2004).

Thus, the country has a long way to go to protect its environment while accommodating rapid economic growth, urbanization, and advanced lifestyle. In particular, increasing urbanization, changing lifestyle, and growing consumption would appear to be complicating the handling of solid waste in India (Vij, 2012). Thus, individual ECCB can play a crucial role in limiting environmental hazards. This notion is also supported by the World Bank (2011) prediction that

marketers have an opportunity to develop environmentally friendly technologies and products in India.

While much research to understand pro-environmental consumer behavior is evident in the context of developed countries, such research is conspicuously scarce in India (Bhatia and Jain, 2013; Khare, 2015). Like many other emerging markets, the scarcity of research on understanding pro-environmental consumer behavior among Indians has been well documented (e.g. Bhatia and Jain, 2013; Khare, 2015). Even though survey report (Unilever, 2017) has indicated Indian consumers are increasingly becoming ecologically concerned in their buying behavior, research examining the antecedents of their pro-environmental consumer behavior is only found in several studies (Biswas and Roy, 2015a, 2015b; Khare, 2015; Kumar et al., 2017; Sangroya and Nayak, 2017; Verma and Chandra, 2017; Yadav and Pathak, 2016).

This current study first conducted a review of those few past studies on ECCB in the Indian context, to help identify the current state of knowledge as well as gaps needing to be explored. This study has also unfolded potential antecedents in predicting pro-environmental consumer behaviors of educated young urban Indian consumers, applying the Theory of Planned Behavior (TPB, 1985) framework, one of the most predictive persuasion theories in understanding behavioral intentions. The study emphasizes on the young consumers because well-educated young people seem to be more concerned about environment (Liere and Dunlap, 1980), and 65% of Indian population are millennial (born after 1980) (Goldman Sachs, 3026). Adding to that, Goldman and Sachs (2016) suggested that Indian 'Educated Urban Mass' (people having an undergraduate degree) is the most important cohort for consumption. Therefore, understanding pro-environmental consumer behavior of educated young generation, who represents future consumers and future of the society (Hume, 2010; Kanchanapibul et al., 2014), is crucial for developing sustainable marketing strategies specific to the target group. Lastly, via a synthesis of past studies and the findings of this study, the issues that future researchers should integrate into their studies to better understand the factors influencing ECCB in the India context have been pinpointed.

4

2. Literature and hypotheses

A literature review was conducted to understand the current state of research on ECCB in India, and to find gaps to be explored. Out of 31relevant articles published up to 2017, only four studies were built on robust theoretical foundation. One of these used the Theory of Consumer Socialization, which only captured the social structural variables of age, gender, and education, and socialization agents of family, peer, and media (Muralidharan et al., 2016). The other three studies used TPB as a framework, with two (Verma and Chandra, 2017; Yadav and Pathak, 2016) only capturing behavioral intention (not the actual/reported behavior) and the other (Kumar et al., 2017) not incorporating perceived behavioral control, which has often been found to influence ECCB (e.g. Cleveland et al., 2012; Yadav and Pathak, 2016; Zhao et al., 2014). In fact, it is commonly recommended that both behavioral intention and actual behavior are incorporated into models for predicting pro-environmental consumer behavior, as the failure to include the intention variable in some previous studies probably contributed to the low correlation between environmental attitudes and behavior (Follows and Jobber, 2000). Moreover, three of these four studies collected data from student samples, which may cause problems with the generalizability of the findings (Peterson and Merunka, 2014). No other studies (out of the 31) were built on any robust theory and/or model, with most survey-based and descriptive in nature.

This current study captures both behavioral intention and actual behavior (reported) under the TPB framework, where both direct and indirect influences of attitudes, subjective norms, and perceived consumer effectiveness (PCE) on pro-environmental consumer behavior are examined. Furthermore, it collected data from consumers of two major age groups (18-24 and 25-34) to enhance the generalizability of the findings. One of the limitations of past studies was focusing on only student sample in India (e.g. Heo and Muralidharan, 2017; Verma and Chandra, 2017; Yadav and Pathak, 2016).

According to Roberts (1996, p. 222), "ecologically conscious consumers are defined as those who purchase products and services which they perceive to have a positive (or less negative) impact on the environment". Roberts and Bacon (1997) subsequently argued that it is therefore essential for policymakers and marketers to have a clear understanding of the antecedents of pro-

5

environmental consumer behavior for promoting such behavior. In line with this, Kinnear et al.'s (1974) earlier work on ecological marketing identified two dimensions of consumers' ecological consciousness: attitudes that express concern for ecology; and purchasing behavior that is consistent with conservation of the environment. This conception is inconsistent with a range of models of consumer behavior (e.g. TPB) which suggest that consumer attitudes lead to behaviors (Ajzen, 1985). Past studies also confirm the attitude-behavior relationship in the context of ECCB (e.g. Flamm, 2009; Oreg and Katz-Gerro, 2006; Polonsky et al., 2012), although some researchers have suggested there is also sometimes an attitude-behavior gap (e.g. Boulstridge and Carrigan, 2000; Leire and Thidell, 2005).

TPB has been proven to be both applicable and powerful (Bamberg, 2003) in predicting pro-environmental behavioral intention as well as consumption behavior across a wide range of eco-friendly contexts, such as organic food (e.g. Scalco et al., 2017), green hotels (e.g. Verma and Chandra, 2017), energy-efficient products (e.g. Ha and Janda, 2012), and recycling behavior (e.g. Park and Ha, 2014).The TPB model suggests that attitudes and subjective norms influence intentions, which in turn result in behaviors. This study has been built on such a TPB framework, which has proven to be applicable in past studies investigating the association between environment-related attitudes and corresponding behaviors (e.g. Kanchanapibul et al., 2014; Yazdanpanah and Forouzani, 2015). This study has therefore integrated attitudes, subjective norms, and PCE as the antecedents of behavioral intentions. The corresponding model then links intentions to self-reported ECCB (see Figure 1 below).
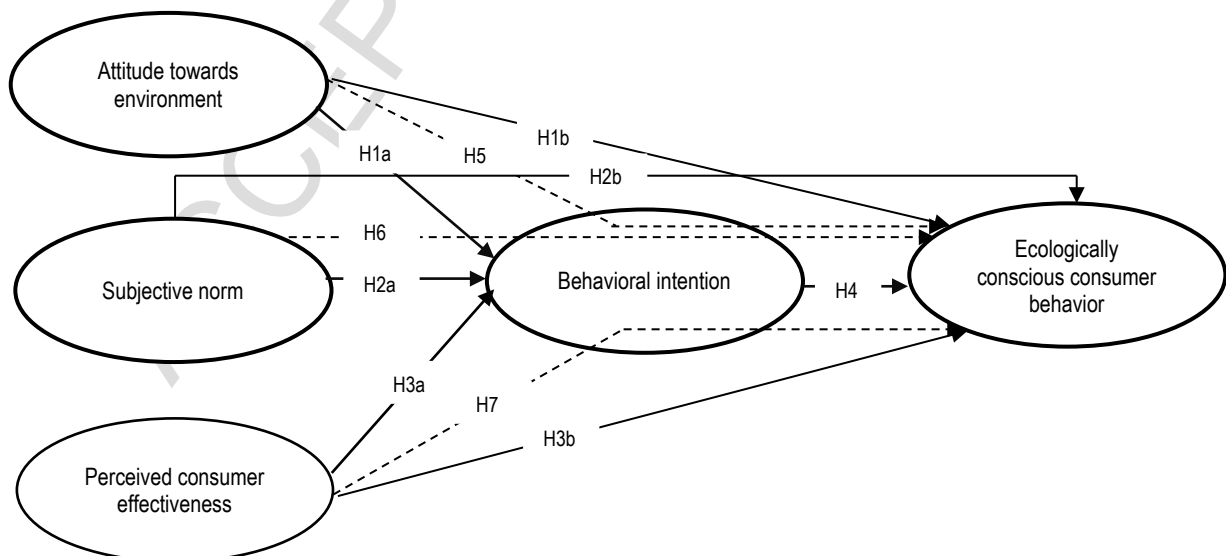
_____Direct effect

--------Mediation/indirect effect

Figure 1: Hypothesized model

2.1 Attitudes toward environment

In the TPB framework, attitude is referred to as one of the determinants of behavioral intention. This means that attitude toward a behavior is interpreted as the extent of an individual's favorable or unfavorable assessment of a particular behavior (Ajzen, 1991). In the environmental context, attitude is defined as "cognitive and affective evaluation of the object of environmental protection" (Bamberg, 2003, p. 21). In line with this, some authors have argued that consumers with greater ecological concern are more likely to be pro-environmental in their consumption behavior (e.g. Rex and Baumann, 2007; Wang et al., 2014). As such, environmentally conscious consumers are more likely to have the intention of adopting environmentally responsible consumption behavior.

Ellen et al. (1991) first argued that a significant antecedent of ECCB is consumers' general attitude toward environmental protection. Since then, many studies have affirmed that environmental attitude is one of the strongest predictors influencing environmental behavior (e.g. Ellen, 1994; Zhao et al., 2014; Zsóka, 2008). The influence of attitudes on behavioral intentions regarding pro-environmental consumer behavior is also evidenced in some studies in Indian context (e.g. Verma and Chandra, 2017; Yadav and Pathak, 2016). For example, the two previously cited studies found a significantly positive influence of attitude on green purchase intention. However, neither of these studies examined the mediating effect of behavioral intention in the attitude-behavior relationship, even though Follows and Jobber (2000) recommended this for pro-environmental consumer behavior. This review of the literature led to the following hypotheses in this study:

> **H1a:** *Consumers' attitudes toward the environment have a significantly positive influence on pro-environmental behavioral intentions.*
> **H1b:** *Consumers' attitudes toward the environment have a significantly positive influence on ECCB.*

7

2.2 Subjective norm

'Subjective norm' refers to the individual's assessment of others' preferences and support for a behavior (Werner, 2004). These 'others' may include family members, friends, co-workers, or any other reference groups. Many social campaigns have effectively used this social norm of conformity to shape behavior by suggesting the 'desirable' behavior of the majority (Perkins, 2003). This social norm is also claimed to be effective in pro-environmental consumer behavior (Biswas and Roy, 2015b; Yadav and Pathak, 2016). For example, Biswas and Roy (2015b) found that the most significant influence of pro-environmental consumption behavior comes from peer influence and social recognition. In a more recent study in India, Verma and Chandra (2017) reported that subjective norm has a significantly positive influence on green hotel visit intention among local consumers.

The influence of subjective norm is alike the influence of different reference groups on consumer behavior, as commonly referred to in marketing and consumer behavior literature (e.g. Hsu et al., 2006; Yang et al., 2007). The influence of the subjective norm or reference group on consumer behavior is also culture-specific, where individual behavior in collective society (e.g. India) is more likely to be influenced by others (Markus and Kitayama, 1991). For example, Lee and Green (1991) argued that the relative importance of subjective norm on individuals' behavior is influenced by cultural differences in different countries. This notion also proved to be valid in a further study on consumers' recycling behavior in rural China (a collective society) (Tang et al., 2011). Thus, the following hypotheses were proposed here:

> **H2a:** *Subjective norm (social compatibility) has a significantly positive influence on pro-environmental behavioral intention.*
> **H2b:** *Subjective norm (social compatibility) has a significantly positive influence on ECCB.*

2.3 Perceived consumer effectiveness

PCE indicates the extent of an individual's confidence in their personal efforts in solving a problem (Weiner and Doescher, 1991). PCE is similar to self-efficacy (Bandura, 1986), referring to the belief in an individual's capability to attain goals through personal effort. In an

environmental context, PCE can be an individual's internal locus of control, such as their personal efforts that can make a difference in conserving the environment (Cleveland et al., 2012). Kinnear et al. (1974) first used PCE as a personality variable to predict environmental concern. It was later measured as one of the attitudinal variables in predicting consumer behavior and subsequently as a direct predictor of ECCB (Roberts, 1996). Thus, the current study measures attitude and PCE as two different constructs in pro-environmental behavioral studies (Ellen et al., 1991), where "an attitude represents a summary evaluation of an individual's beliefs or feelings about an issue, while PCE represents an evaluation of the self in the context of the issue" (Berger and Corbin, 1992, p. 80). Furthermore, empirical evidence suggested that an individual's degree of control on their ability to perform the behavior significantly influences their behavior (Bandura et al., 1980). Studies on pro-environmental consumer behavior in collective society (e.g., China and India) have also confirmed the positive influence of PCE on behavioral intension and/or actual behavior (e.g. Yadav and Pathak, 2016; Zhao et al., 2014). This has led to the development of the following hypotheses in this study:

> **H3a:** *PCE has a significantly positive influence on pro-environmental behavioral intention.*
> **H3b:** *PCE has a significantly positive influence on ECCB.*

2.4 Behavioral intention

Behavioral intention refers to an individual's degree of determination and willingness to perform specific behavior, which is often determined by attitude and subjective norm (Ajzen, 1988). Ajzen (1988) suggested that such higher levels of willingness are likely to result in a better chance of performing the behavior. Although the behavioral intention model was developed in individualistic society (i.e., USA), cross-cultural examination found the model applicable in collective society as well (Lee and Green, 1991). Thus, the importance of incorporating the intention variable in models for understanding pro-environmental consumer behavior has been emphasized in past studies, particularly those that believe its exclusion often contributed to the low correlation between environmental attitudes and behaviors (Follows and Jobber, 2000).

Environmentally responsible consumers are said to be more willing to act for environmental betterment. In line with this, Lin and Huang (2012) argued that when two products are thought to be identical, environmental aspects become key decision criteria in consumers' product evaluation. Green consumerism has started to emerge in the Asian region (Gurau and Ranchhod, 2005), along with consumers' willingness to help conserve the environment (Harris, 2006). Based on these findings, the following hypothesis was proposed here:

H4: *Consumers' pro-environmental behavioral intention will positively influence ECCB.*

This study also tested the indirect effects in its proposed model. The rationale for examining the mediation effects was that if it is hypothesized that B mediates the relationship between A and C, it is not sufficient to examine only the direct relationship between A and B and between B and C (Baron and Kenny, 1986). This reasoning of mediation effects is also customary in predicting environmental behavior within the TPB framework (e.g. Flamm, 2009; Oreg and Katz-Gerro, 2006). For example, a meta-analytic SEM (structural equation modeling) conducted by Bamberg and Möser (2007) confirmed that pro-environmental behavioral intention mediates the influence of all other psycho-social variables on ECCB. As such, in the proposed model behavioral intention was hypothesized to mediate the relationship between independent and dependent variables. On this premise, the following hypotheses were put forward to examine the indirect effects:

H5: *The relationship between attitudes toward environment and ECCB is mediated by behavioral intention.*
H6: *The relationship between subjective norms and ECCB is mediated by behavioral intention.*
H7: *The relationship between PCE and ECCB is mediated by behavioral intention.*

3. Method
3.1 Measures
Previous validated instruments were adopted in the current study to ensure content validity of the scales used in the current study (Hair et al., 2006). Following Hinkin's (1998) guidelines, all

items were simply written and concise. Three academics from the departments of marketing, economics, and environmental development, and another five postgraduate students subsequently evaluated the items to remove ambiguity and redundancy, and to improve clarity. Seven items were adopted from Lee (2011) to measure consumer attitudes toward the environment. A nine-item scale for measuring subjective norm and six-item scale for measuring behavioral intention were adopted from Minton and Rose (1997). In addition, Roberts' (1996) four-item scale was used for measuring PCE, and pro-environmental consumer behavior was measured using 17 items from Roberts' (1996) original 30-item ECCB scale. Lastly, a seven-point Likert-type scale (1=strongly disagree; 7=strongly agree) was used.

3.2 Sample and data collection

An online survey was used to collect the data. A pre-test with 15 students was first performed. Subsequently, the questionnaire was slightly modified with respect to the level of knowledge required and the wording of the questions. There was no criticism regarding the layout or the length of the survey. Furthermore, no respondent at pre-test stage complained about the format of the questionnaire or the time it took to complete the study.

The respondents for the primary data collection were mostly recruited via a snowball sampling technique, which was carried out by sending emails to this study's researchers' LinkedIn network members (Indians only) who forwarded the questionnaire to their peers (Indians only). The email invited them to participate in the study and contained a link to the online survey. Survey invitations were sent to about 700 email contacts, guaranteeing anonymity and confidentiality for the respondents, and informing them that the gathered data would be published in academic or scientific publications. Two follow-up emails were then sent in the gap of 15 days.

Overall, 175 usable responses were received, yielding a 25% response rate which is consistent with most online survey response rates (e.g. Deutskens et al., 2004). Most of the respondents were from Hyderabad (95), while the number of responses from New Delhi and Kolkata were 51 and 29 respectively. Of the total respondents, 59.4% were male, 61.8% had a graduate degree,

and 37.5% had a postgraduate degree. The age brackets of the majority of respondents were 18-24 years (67.9%) and 25-34 years (23%).

4. Analysis and results

4.1 Measurement model: reliability and validity

Partial Least Squares-Structural Equation Modeling (PLS-SEM) (Lohmoller, 1988) was used to test the hypotheses via SmartPLS 3 software (Ringle et al., 2014). This approach has proven to be superior to covariance-based structural equation modeling (CB-SEM) in most studies where sample size is relatively small (Chin and Newsted, 1999; Reinartz et al., 2009). Based on the methodological procedures suggested by Chin (1998), Hair et al. (2011), and Marcoulides and Saunders (2006), a priori reflective measurement model was performed to test the reliability and validity of the constructs before proceeding with the analysis of the structural model. The initial measurement model indicated that 13 items needed to be removed because they exhibited loadings below 0.708 (Hair Jr et al., 2016), leaving 30 items for the subsequent structural model to test the hypotheses. Table 1 presents the final measurement model's results.

Table 1: Questionnaire items and the result of measurement model (factor loading, reliability, and validity)

Attitudes toward the Environment (*composite reliability = .942, average variance extracted = .845*)	Factor loading
In my view, it is very important to raise environmental concern among our people in India.	0.944
In my view, more environmental protection works are needed in India.	0.876
In my view, it is essential to promote green living in India.	0.936
Subjective norm (composite reliability = 948, average variance extracted = .723)	
Most of my friends think I should recycle household garbage.	0.817
Most of my neighbors think I should use environmentally friendly household products.	0.839
Most of my neighbors think I should recycle.	0.853
Most of my co-workers think I should use environmentally friendly household products.	0.881
Most of my co-workers think I should recycle.	0.869
Most of my family members think I should use environmentally friendly products.	0.850
Most of my family members think I should recycle.	0.843
PCE (*composite reliability = .821, average variance extracted = .697*)	
When I buy products, I try to consider how my use of them will affect the environment and other consumers.	0.829
Each consumer's behavior can have a positive effect on society by purchasing products sold by socially responsible companies.	0.840
Behavioral intentions (*composite reliability = .906, average variance extracted = .618*)	
I would be willing to sign a petition to support an environmental cause.	0.765
I would consider joining a group or club which is concerned with the environment.	0.840
I would be willing to pay more taxes to support greater government control of pollution.	0.748

12

I would be willing to pay more each month for electricity if it meant cleaner air.	0.801
I would be willing to stop buying products from companies guilty of polluting the environment even though it might be inconvenient for me.	0.749
I would be willing to make personal sacrifices for the sake of slowing down pollution even though the immediate results may not seem significant.	0.808

ECCB (*composite reliability = .952, average variance extracted = .625*)

When there is a choice, I always choose the product that contributes to the least amount of pollution.	0.749
If I understand the potential damage to the environment that some products can cause, I do not purchase those products.	0.777
I have switched products for ecological reasons.	0.873
I make every effort to buy paper products made from recycled paper.	0.817
Whenever possible, I buy products packaged in reusable containers.	0.773
When 1 have a choice between two equal products, I always purchase the one less harmful to other people and the environment.	0.812
I try only to buy products that can be recycled.	0.705
I do not buy household products that harm the environment.	0.757
I try to buy energy-efficient household appliances.	0.771
I have purchased a household appliance because it uses less electricity than other brands.	0.813
I have replaced light bulbs in my home with those of smaller wattage so that 1 will conserve on the electricity I use.	0.774
I have purchased light bulbs that were more expensive but saved energy.	0.854

Table 1 shows that composite reliabilities of the constructs are higher than the minimum requirement of 0.70, and the values of constructs' convergent validity (Average Validity Extracted – AVE) are higher than the 0.50 minimum value (Hair et al., 2012). In addition, all loadings are above the threshold of 0.708 (Hair et al., 2016), and the associated *t*-statistic is statistically significant (Anderson and Gerbing, 1988; Hulland, 1999). The level of statistical significance for the associated *t*-statistic was computed by means of a bootstrap resampling method of 500 subsamples, with the same number of cases as in the original sample (Henseler et al., 2009). The Fornell-Larcker criterion (Fornell and Larcker, 1981) demonstrated that the square root of AVE values of all the reflective constructs was higher than the inter-construct correlations, indicating discriminant validity (see Table 2 below). Furthermore, all indicator loadings were higher than their respective cross-loadings, providing further evidence of discriminant validity.

Table 2: Fornell-Larcker criterion (for confirming discriminant validity)

	Attitude	Behavioral intention	ECCB	PCE	Subjective norm
Attitude	*0.919*				
Behavioral intention	0.633	*0.786*			
ECCB	0.678	0.775	*0.791*		
PCE	0.647	0.668	0.770	*0.835*	

| Subjective norm | 0.444 | 0.474 | 0.569 | 0.539 | *0.850* |

Note: Italic diagonal values represent squared root of AVE values, and off-diagonal values represent the correlations of each construct with other constructs.

4.2 Structural model: hypotheses testing

This study also evaluated the structural model (Chin, 1998) on three most relevant criteria: (1) the path coefficients, along with the value of the *t*-statistics; (2) the coefficient of determination (R^2) (Falk and Miller, 1992); and (3) the Stone-Geisser criterion (Q^2) (Geisser, 1975; Stone, 1977). In addition, a post-hoc power analysis was performed (Marcoulides and Saunders, 2006), because the sample size is relatively small (175 respondents). This analysis was implemented with the statistical package G + Power 3 (Faul et al., 2007), which revealed that for the structural model and the sample, the power value was 0.99 (α = 0.05 and f2 = 0.15), exceeding the minimum requirement of 0.80 recommended by Cohen (1988).

This study tested all hypotheses in the structural model using a bootstrap sample of 5,000 with a bias-corrected confidence interval method (α = 0.05). Table 3 below presents the corresponding results.

Table 3: Hypotheses testing and structural results

Hypothesis	Effect	Indirect effects	Direct effects	*t*-statistics	*P*-value	Hypothesis supported (Y/N)
H1a	Direct effect of ATT on BI		0.325	4.183	0.000	Yes
H1b	Direct effect of ATT on ECCB		0.281	4.376	0.000	Yes
H2a	Direct effect of SN on BI		0.116	1.589	0.112	No
H2b	Direct effect of SN on ECCB		0.178	2.807	0.005	Yes
H3a	Direct effect of PCE on BI		0.395	4.981	0.000	Yes
H3b	Direct effect of PCE on ECCB		0.493	6.339	0.000	Yes
H4	Direct effect of BI on ECCB		0.382	5.957	0.000	Yes
H5	Indirect effect of ATT on ECCB through BI	0.124		3.379	0.001	Yes
H6	Indirect effect of SN on ECCB through BI	0.044		1.523	0.128	No
H7	Indirect effect of PCE on ECCB through BI	0.151		3.842	0.000	Yes

R^2 (BI) = 0.525
R^2 (ECCB) = 0.743

Note: ATT = attitudes toward environment; BI = behavioral intention; SN = subjective norm; PCE = perceived consumer effectiveness; ECCB = ecologically conscious consumer behavior.

As shown in Table 3, the R^2 values for both behavioral intention (0.53) and ECCB (0.74) indicate that the proposed model has good predictive accuracy (Hair et al., 2016). The study also analyzed Q^2 values using blindfolding (Geisser, 1975; Stone, 1977) to cross-validate the predictive relevance of the constructs. The Q^2 values were 0.0308 (behavioral intention) and 0.459 (ECCB), suggesting acceptable levels of predictive relevance (Chin and Newsted, 1999).

When analyzing the hypothesized relationships in the proposed model (Table 3), the results provided no support for the hypothesis (H2a) of the direct relationship, because the effect of subjective norm on behavioral intention was non-significant (β= 0.116, p=0.112). However, the results supported all other hypotheses of direct relationships: attitudes towards environment has positive influence on behavioral intention (H1a: β= 0.325, p= 0.000) and ECCB (H1b: β= 0.281, p= 0.000); subjective norm has direct positive effect on ECCB (H2b: β= 0.178, p= 0.005); PCE is positively related to behavioral intention (H3a: β= 0.395, p= 0.000) and ECCB (H3b: β= 0.493, p= 0.000); and behavioral intention is positively related to ECCB (H4: β= 0.382, p= 0.000).

This study also analyzed the indirect effects of attitudes, subjective norms, and PCE on ECCB through consumer behavioral intention. The results indicated that two hypotheses of indirect effects were supported. That is, consumer attitudes toward the environment have a significantly positive indirect influence on ECCB through behavioral intention (H5), and PCE has a significantly positive indirect influence on ECCB through behavioral intention (H7). However, the results indicated that the indirect effect of subjective norm on ECCB via behavioral intention (H6) was not supported.

5. Discussion and implications

This study has attempted to understand the current state of green consumer behavior research in India, and to determine the antecedents of pro-environmental consumer behavior as well as their relative importance in the context of urban Indian consumers. In summary, the review of

15

the literature revealed that previous studies had some inadequacies with regard to theoretical robustness as well as the generalizability of the results, which are outlined in the literature review section. For example, only few studies were built on strong theoretical foundation such as TPB, which only captured behavioral intention (not the behavior) or did not include all TPB constructs, and included a student sample only. In an effort to offset some of these shortcomings, this study has attempted to provide a fresh look at the antecedents of ECCB in the context of young urban Indian consumers. This empirical study was designed entirely around the TPB model (Ajzen, 1991) in a single framework, in order to understand the effects of different antecedents on consumer behavior.

These results suggest that attitudes toward the environment have a significantly direct and positive influence on behavioral intention as well as on ECCB. They also indicate that attitude has a significantly indirect and positive influence on ECCB via behavioral intention. These results are in line with the original TPB model, indicating attitude as an important antecedent to the behavioral intention and actual consumer behavior. Moreover, the direct effect results from this study are consistent with past studies on pro-environmental consumer behavior in other contexts, suggesting attitude as a strong predictor of such pro-environmental consumer behavior (e.g. Chan and Lau, 2002; Ramayah et al., 2012).

The subjective norm, referring to perceived social demand to perform any specific behavior, was found to be insignificant with regard to direct effect on behavioral intention as well as indirect effect on ECCB via behavioral intention, even though the direct effect on ECCB was significant. A relatively weaker impact of subjective norm on behavioral intention and/or actual behavior was also evident in some past studies (e.g. Cialdini and Trost, 1998; Trafimow and Finlay, 1996) including in the context of green consumption behavior among young Indian consumers (e.g. Kumar et al., 2017; Paul et al., 2016). Although it might not be expected in collective societies like India, this is potentially a new addition to the literature, indicating that the distinction between individualism and collectivism is fading among young educated consumer segment, perhaps due to evolving consumption patterns fueled by economic growth and greater access to resources. Another possible reason is what some scholars (e.g. Bamberg and Möser, 2007; Stern, 2005) have argued, that in the context of pro-environmental consumer

behavior, personal norms (rather than social norms) relating to the environment have a predictive influence. Personal norms differ from social norms in that they refer to internal standards concerning a particular behaviour rather than reflecting externally imposed rules (Kallgren et al., 2000) , which is also often experienced as the feeling of moral obligation or norm. The moral norms refer to the perceived moral obligation or responsibility to perform, or not to perform, certain behavior (Ajzen, 1991; Kaiser, 2006), and there is evidence of a relationship between this and environmentally concerned behavior in the literature (Thøgersen, 2007). For example, Petschnig et al. (2014) reported the positive influence of personal norms on purchase intention of alternative fuel vehicle, and Tan et al. (2017) indicated the influence of moral norms on purchase intention for energy-efficient household appliances.

In the context of Indian urban young consumers, this study has identified that the most prominent factor influencing their pro-environmental behavior is PCE. This measures the extent to which individuals believe their personal actions make a difference in solving environmental problems. This finding is supportive of many past studies claiming that PCE has the highest explanatory power in predicting environmentally friendly behavior (e.g. Kinnear et al., 1974; Roberts, 1996; Vicente-Molina et al., 2013). The essence of these results of the current study is that Indian urban young consumers feel strongly that they can do something to help environmental protection, and most try to consider the social impact of their purchases.

The results clearly show that consumers' attitude toward environment and perceived consumer effectiveness influence on ECCB of Indian young consumers in more or less the same way as they do in developed countries (e.g. Kaiser et al., 1999; Wells et al., 2011) as well other developing countries (e.g. Ramly et al., 2012; Zhao et al., 2014). However, as indicated above, unlike other developed countries (e.g. Liobikienė et al., 2016; Mancha and Yoder, 2015) as well as developing countries (e.g. Nguyen et al., 2017; Tang et al., 2011) where subjective norm was found to influence significantly positively on pro-environmental behavioral intention, the result of the current study is unique in the context of Indian urban young consumers where the direct effect of subjective norm on behavioral intention and indirect effect on behavior are insignificant. This result is also consistent with two very recent studies on Indian young consumers as cited before.

17

The results of the study have some possible policy implications. First, the results revealed that consumers' attitudes toward the environment are strongly positively related to their pro-environmental behavior. As it was recommended to be suitable for developed market like USA (e.g. Chen and Lau, 2002), local and global marketers as well as environmentalists should work out communication plans that enable favorable attitudinal changes towards ECCB in developing country contexts like India. This could be done by creating and communicating environment-related product information, and illustrating how eco-friendly products as well as pro-environmental consumption behavior can help limit environmental harm. It was predicted in this study that this approach would positively enhance consumers' attitudes toward the environment and thereby produce more favorable responses toward pro-environmental consumption behavior. Furthermore, it is essential for urban India, as this country is one of the worst in the region with regards to environmental deterioration.

Second, the strong positive influence of PCE on ECCB suggests that young consumers at the personal level believe their individual efforts can contribute to environmental protection. Marketers may enhance this self-belief by incorporating more facts about utilitarian benefits for both the consumers (e.g. health benefits of eco-friendly products) and for the environment (e.g. low CO_2 emission) on product packaging and/or advertising messages. As Heo and Muralidharan (2017) suggested, marketers may also boost self-belief by using positive testimonials of actual consumers who helped protect the environment by practicing ECCB.

Third, the insignificant relation of subjective norms to pro-environmental behavioral intention suggests that marketers may have to move away from the traditional way of managing marketing activities targeted exclusively on the collectivistic nature of cultures like India. Despite the limited generalizability of the sample, these results emphasize that standardize communication policy for promoting green consumption may not be suitable across all collective societies. For example, being a collective society, the group conformity was found to be salient among Chinese consumers where subjective norms were seen to influence strongly on ECCB (e.g. Chan and Lau, 2002; Tang et al. 2011). On the contrary, results of the current study suggest, particularly for young urban segment, that individualistic traits play strong role in ECCB. That is, marketing efforts might also need to be targeted from an individualistic perspective. Hence, the concept of

PCE should be integrated accordingly by the marketers or policymakers while designing their strategies for environmentally sustainable products.

6. Conclusions, limitations and future research

In addition to its review of past studies, this current study is one of the first that has attempted to understand ECCB using a TPB framework incorporating both behavioral intention and reported behavior in urban Indian context. This study has revealed some interesting findings such as the insignificant influence of subjective norms in a collective society and the most significant influence of PCE (both direct and indirect effect) compared with other factors in the TPB model on ECCB. Specifically, the insignificant influence of subjective norm on behavioral intention/behavior in a collective society is a new addition to the existing body of knowledge.

This study has some limitations that tempt avenues for further research. One major limitation is the limited geographical coverage and the small sample size. This study suggests that TPB fits in the Indian context in predicting ECCB, and hence further research is recommended by applying the TPB model and integrating some new constructs in relation to other Indian cities with more representative and larger sample of different age groups. First, in line with the non-significant influence of subjective norm, this result indicates a need to incorporate personal and moral norms in the model. It is also argued that the inclusion of moral norms in place of subjective norms may improve the explanation of behavior in TPB framework, particularly in situations that are morally oriented in nature (Armitage and Conner, 2001; Kaiser, 2006). Second, another option for probing into the insignificant influence of subjective norm is to break it down into different groups (e.g. family, co-workers, friends, neighbors) to explore whether a certain group has a (non)significant influence on ECCB. Third, additional studies should investigate whether there is any unorthodox influence of subjective norm on urban and/or rural consumers, since rural consumers are known to be more collectivist and environmentally conscious (Sehrawet and Kundu, 2007). This study was focused on young educated Indian consumers. Future studies should look at whether the influence of different antecedents on EECB varies across different age groups and education levels. This could be examined by using the demographic variables (e.g., age, education) as moderating variables (Peattie, 2010; Sreen et al., 2018).

Future studies may also integrate other important constructs like different types of environmental knowledge to better understand pro-environmental consumer behavior. For example, recent studies found that both general environmental knowledge and issue-specific knowledge (e.g. eco-label knowledge) significantly influence attitudes toward environment (e.g. Polonsky et al., 2012; Taufique et al., 2017). While current study conceptualized attitude in general terms toward overall environment, future study might formulate attitudes toward a particular type of pro-environmental behavior (as opposed to pro-environmental behavior in general). Moreover, future research could apply the TPB framework with additional constructs in the context of more specific green consumer behavior (e.g. green product purchase behavior, recycling behavior). This study only investigated self-reported consumer behavior, which may not always translate to the actual behavior. Hence, future studies could investigate consumers' actual behavior in terms of buying and other consumption-related behavior.

References

Ajzen, I., 1985. From intentions to actions: A theory of planned behavior, in Kuhl, J., Beckman, J. (Eds.), Action-control: From cognition to behavior, Springer, Heidelberg, Germany, pp. 11-39.

Ajzen, I., 1988. Attitudes, personality, and behavior. Open University Press, Milton-Keynes.

Ajzen, I., 1991. The theory of planned behavior. Organizational Behavior and Human Decision Processes. 50(2), 179-211.

Anderson, J.C., Gerbing, D.W., 1988. Structural equation modeling in practice: A review and recommended two-step approach. Psychological bulletin. 103(3), 411-423.

Armitage, C.J., Conner, M., 2001. Efficacy of the theory of planned behaviour: A meta-analytic review. British Journal of Social Psychology. 40, 471-499.

Bamberg, S., 2003. How does environmental concern influence specific environmentally related behaviors? A new answer to an old question. Journal of Environmental Psychology. 23(1), 21-32.

Bamberg, S., Möser, G., 2007. Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. Journal of Environmental Psychology. 27(1), 14-25.

Bandura, A., 1986. Social Foundations of Thoughts and Action: A Social Cognition Theory. Prentice-Hall, Englewood Cliff, NJ.

Bandura, A., Adams, N.E., Hardy, A.B., Howells, G.N., 1980. Tests of the generality of self-efficacy theory. Cognitive Therapy and Research. 4, 39-66.

Baron, R.M., Kenny, D.A., 1986. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology. 51(6), 1173-1182.

Berger, I.E., Corbin, R.M., 1992. Perceived consumer effectiveness and faith in others as moderators of environmentally responsible behaviors. Journal of Public Policy and Marketing. 11(2), 79-89.

Bhatia, M., Jain, A. 2013. Green marketing: A study of consumer perception and preferences in India. Electronic Green Journal. 1(36).

Biswas, A., Roy, M., 2015a. Leveraging factors for sustained green consumption behavior based on consumption value perceptions: Testing the structural model. Journal of Cleaner Production. 95, 332-340.

Biswas, A., Roy, M., 2015b. Green products: An exploratory study on the consumer behaviour in emerging economies of the East. Journal of Cleaner Production. 87, 463-468.

Boulstridge, E., Carrigan, M., 2000. Do consumers really care about corporate responsibility? Highlighting the attitude-behavior gap? Journal of Communication Management. 4(4), 355-368.

Burgess, S.M., Steenkamp, J.B.E., 2006. Marketing renaissance: How research in emerging markets advances marketing science and practice. International Journal of Research in Marketing. 23(4), 337-356.

Chan, R.Y.K., Lau, L.B.Y., 2002. Explaining green purchasing behavior. Journal of International Consumer Marketing. 14(2-3), 9-40.

Chen, T.B., Chai, L.T., 2010. Attitude towards the environment and green products: Consumers' perspective. Management Science and Engineering. 4(2), 27-39.

Chin, W.W., 1998. The partial least squares approach to structural equation modeling, in Marcoulides, G.H. (Ed.), Modern Methods for Business Research, Lawrence Erlbaum Associates, Mahwah.

Chin, W.W., Newsted, P.R., 1999. Structural equation modeling analysis with small samples using partial least squares, in Hoyle, R.H. (Ed.), Statistical Strategies for Small Sample Research, Sage, Thousand Oaks, CA, pp. 307-341.

Cialdini, R.B., Trost, M.R., 1998. Social influence: Social norms, conformity and compliance, in Gilbert, D.T., Fiske, S.T., Lindzey, G. (Eds.), The Handbook of Social Psychology, McGraw-Hill, Boston, pp. 151-192.

Cleveland, M., Kalamas, M., Laroche, M., 2012. 'It's not easy being green': Exploring green creeds, green deeds, and internal environmental locus of control. Psychology and Marketing. 29, 293-305.

Cohen, J., 1988. Statistical power analysis for the behavioral sciences. Lawrence Earlbaum Associates, Hilsdale, NJ.

Dermody, J. (ed.), 2011. Green Consumerism: An A-to-Z Guide (vol. 6). Sage.

Deutskens, E., De Ruyter, K., Wetzels, M., Oosterveld, P., 2004. Response rate and response quality of internet-based surveys: An experimental study. Marketing Letters. 15(1), 21-36.

Ellen, P.S., 1994. Do we know what we need to know? Objective and subjective knowledge effects on pro-ecological behaviors. Journal of Business Research. 30(1), 43-52.

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

Falk, R.F., Miller, B., 1992. A Primer for Soft Modeling. The University Akron Press, Akron.

Faul, F., Erdfelder, E., Lang, A., Buchner, A., 2007. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavioral Research Methods. 39(2), 175-191.

Flamm, B., 2009. The impacts of environmental knowledge and attitudes on vehicle ownership and use. Transportation Research, Part D: Transport and Environment. 14(4), 272-279.

Follows, S.B., Jobber, D., 2000. Environmentally responsible purchase behavior: A test of a consumer model. European Journal of Marketing. 34(5/6), 723-746.

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

Geisser, S., 1975. The predictive sample reuse method with applications. Journal of the American Statistical Association. 70(350), 320-328.

Goldman Sachs, 2016. http://www.goldmansachs.com/our-thinking/pages/macroeconomic-insights-folder/rise-of-the-india-consumer/report.pdf (accessed 17 January 2018).

Gurau, C., Ranchhod, A., 2005. International green marketing: A comparative study of British and Romanian firms. International Marketing Review. 22(5), 547-561.

Ha, H.Y., Janda, S., 2012. Predicting consumer intentions to purchase energyefficient products. J. Consumer Mark. 29(7), 461 e469.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., Tatham, R.L., 2006. Multivariate Data Analysis, sixth ed. Pearson Prentice Hall, Upper Saddle River, NJ.

Hair Jr, J.F., Hult, G.T.M., Ringle, C., Sarstedt, M., 2016. A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage Publications.

Hair, J.F., Ringle, C.M., Sarstedt, M., 2011. PLS-SEM: Indeed a silver bullet. Journal of Marketing Theory and Practice. 19(2), 139-152.

Hair, J.F., Sarstedt, M., Ringle, C.M., Mena, J.A., 2012. An assessment of the use of partial least squares structural equation modeling in marketing research. Journal of the Academy of Marketing Science. 40(3), 414-433.

Harris, P.G., 2006. Environmental perspectives and behavior in China synopsis and bibliography. Environment and Behavior. 38(1), 5-21.

Henseler, J., Ringle, C.M., Sinkovics, R.R., 2009. The use of partial least squares path modeling in international marketing. Advances in International Marketing. 20, 277-319.

Heo, J., Muralidharan, S., 2017. What triggers young Millennials to purchase eco-friendly products? The interrelationships among knowledge, perceived consumer effectiveness, and environmental concern. Journal of Marketing Communications. DOI:10.1080/13527266.2017.1303623.

Hinkin, T.R., 1998. A brief tutorial on the development of measures for use in survey questionnaires. Organizational Research Methods. 1(1), 104-121.

Hsu, C. H., Kang, S. K., & Lam, T. (2006). Reference group influences among Chinese travelers. *Journal of Travel Research*, *44*(4), 474-484.

Hulland, J., 1999. Use of Partial Least Squares (PLS) in strategic management research: A review of four recent studies. Strategic Management Journal, 195-204.

Hume, M., 2010. Compassion without action: examining the young consumers consumption and attitude to sustainable consumption. Journal of World Business. 45 (4), 385-394.

Intergovernmental Panel on Climate Change, 2016. https://www.ipcc.ch/news_and_events/docs/misc/160111_PR_AR5_Synthesis_Report_language_versions_final.pdf (accessed 9 November 2017).

Kaiser, F.G., 2006. A moral extension of the theory of planned behavior: Norms and anticipated feelings of regret in conservationism. Personality and Individual Differences. 41(1), 71-81.

Kaiser, G.K., Wölfing, S., Fuhrer, U., 1999. Environmental attitude and ecological behavior. Journal of Environmental Psychology. 19 (1), 1–19.

Kallgren, C.A., Reno, R.R., Cialdini, R.B. 2000. A focus theory of normative conduct: When norms do and do not affect behavior. Personality and Social Psychology Bulletin. 26(8), 1002-1012.

Kanchanapibul, M., Lacka, E., Wang, X., Chan, H.K., 2014. An empirical investigation of green purchase behavior among the young generation. Journal of Cleaner Production. 66, 528-536.

Khare, A., 2015. Antecedents to green buying behavior: A study on consumers in an emerging economy. Marketing Intelligence & Planning. 33(3), 309-329.

Kinnear, T.C., James, C.T., Sahrudin, A.A., 1974. Ecologically concerned consumers: Who are they? Journal of Marketing. 38(2), 20-24.

Kumar, B., Manrai, A.K., Manrai, L.A., 2017. Purchasing behaviour for environmentally sustainable products: A conceptual framework and empirical study. Journal of Retailing and Consumer Services. 34, 1-9.

Lee, K., 2011. The role of media exposure, social exposure and biospheric value orientation in the environmental attitude-intention-behavior model in adolescents. Journal of Environmental Psychology. 31(4), 301-308.

Lee, C., Green, R.T., 1991. Cross-cultural examination of the Fishbein behavioral intentions model. Journal of International Business Studies. 22, 289-304.

Leire, C., Thidell, Å., 2005. Product-related environmental information to guide consumer purchases–a review and analysis of research on perceptions, understanding and use among nordic consumers. Journal of Cleaner Production. 13(10), 1061-1070.

Liere, K. D. V., Dunlap, R. E., 1980. The social bases of environmental concern: A review of hypotheses, explanations and empirical evidence. Public Opinion Quarterly, 44(2), 181-197.

Lin, P.C., Huang, Y.H., 2012. The influence factors on choice behavior regarding green products based on the theory of consumption values. Journal of Cleaner Production. 22(1), 11-18.

Liobikienė, G., Mandravickaitė, J., Bernatonienė, J., 2016. Theory of planned behavior approach to understand the green purchasing behavior in the EU: A cross-cultural study. Ecological Economics, 125, 38-46.

Lohmoller, J.B., 1988. The PLS Program System: Latent variables path analysis with partial least squares estimation. Multivariate Behavioral Research. 23(1), 125-127.

Mancha, R. M., Yoder, C. Y., 2015. Cultural antecedents of green behavioral intent: An environmental theory of planned behavior. Journal of Environmental Psychology, 43, 145-154.

Marcoulides, G.A., Saunders, C., 2006. PLS: A Silver bullet? Management Information Systems Quarterly. 30(2), 1.

Markus, H.R., Kitayama, S., 1991. Culture and the self: Implications for cognition, emotion, and motivation. Psychological Review. 98(2), 224.

Minton, A.P., Rose, R.L., 1997. The effects of environmental concern on environmentally friendly consumer behavior: An exploratory study. Journal of Business Research. 40(1), 37-48.

Muralidharan, S., Rejón-Guardia, F., Xue, F., 2016. Understanding the green buying behavior of younger Millennials from India and the United States: A structural equation modeling approach. Journal of International Consumer Marketing. 28(1), 54-72.

Nguyen, T. H., Phan, T. M. N., Le, T. T. P., 2017. The influence of attitude, control on availability, subjective norm and green trust on young Vietnamese consumers' organic cosmetic purchase intention. ICFE 2017, 552.

Nittala, R., 2014. Green consumer behavior of the educated segment in India. Journal of International Consumer Marketing. 26(2), 138-152.

Oreg, S., Katz-Gerro, T. 2006. Predicting proenvironmental behavior cross-nationally: Values, the Theory of Planned Behavior, and Value-Belief-Norm Theory. Environment and Behavior. 20(10), 462-483.

Park, J., Ha, S., 2014. Understanding consumer recycling behavior: Combining the theory of planned behavior and the norm activation model. Family and Consumer Sciences Research Journal. 42(3), 278-291.

Paul, J., Modi, A., Patel, J., 2016. Predicting green product consumption using theory of planned behavior and reasoned action. Journal of Retailing and Consumer Services, 29, 123-134.

Peattie, K., 2010. Green consumption: Behavior and norms. Annual Review of Environment and Resources, 35.

Perkins, H. 2003. The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook For Educators, Counselors, and Clinicians. Jossey-Bass, San Francisco.

Peterson, R.A., Merunka, D.R., 2014. Convenience samples of college students and research reproducibility. Journal of Business Research. 67(5), 1035-1041.

Petschnig, M., Heidenreich, S., Spieth, P., 2014. Innovative alternatives take action – Investigating determinants of alternative fuel vehicle adoption. Transp. Res. Part A: Policy Pract. 61, 68-83.

Polonsky, M.J., Vocino, A., Grau, S.L., Garma, R., Ferdous, A.S., 2012. The impact of general and carbon-related environmental knowledge on attitudes and behavior of US consumers. Journal of Marketing Management. 28(3-4), 238-263.

Ramanathan, S.K., 2004. India to top in car volumes by 2050. http://www.rediff.com/money/2004/oct/23car.html (accessed 17 March 2016).

Ramayah, T., Lee, J.W.C., Lim, S., 2012. Sustaining the environment through recycling: An empirical study. Journal of Environmental Management. 102, 141-147.

Ramly, Z., Hashim, N.H., Yahya, W.K., Mohamad, S.A., 2012. Environmentally conscious behavior among Malaysian consumers: An empirical analysis. Jurnal Pengurusan 35, 111 – 121.

Reinartz, W., Haenlein, M., Henseler, J., 2009. An empirical comparison of the efficacy of covariance-based and variance-based SEM. International Journal of Research in Marketing. 26(4), 332-344.

Reuters, 2016. India slaps levy on new car sales in fight against pollution and congestion. https://in.reuters.com/article/india-budget-autos/india-slaps-levy-on-new-car-sales-in-fight-against-pollution-and-congestion-idINKCN0W21SB (accessed 5 December 2017).

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

Ringle, C.M., Wende, S., Becker, J.M., 2014. Smartpls 3. SmartPLS, Hamburg.

Roberts, J.A., 1996. Green consumers in the 1990s: Profile and implications for advertising. Journal of Business Research. 36(3), 217-231.

Roberts, J.A., Bacon, D.R., 1997. Exploring the subtle relationships between environmental concern and ecologically conscious consumer behavior. Journal of Business Research. 40(1), 79-89.

Sangroya, D., Nayak, J.K., 2017. Factors influencing buying behavior of green energy consumer. Journal of Cleaner Production. 151, 393-405.

Scalco, A., Noventa, S., Sartori, R., Ceschi, A., 2017. Predicting organic food consumption: A meta-analytic structural equation model based on the theory of planned behavior. Appetite.

Schwartz, S.H., 1973. Normative explanations of helping behavior: A critique, proposal, and empirical test. Journal of Experimental Social Psychology. 9(4), 349-64.

Sehrawet, M., Kundu, S.C., 2007. Buying behavior of rural and urban consumers in India: The impact of packaging. International Journal of Consumer Studies. 31(6), 630-638.

Skymetweather, 2015. 6 important eco-friendly steps taken by Narendra Modi Government. https://www.skymetweather.com/content/weather-news-and-analysis/6-important-eco-friendly-steps-taken-by-narendra-modi-government/ (accessed on 12 December 2016).

Sreen, N., Purbey, S., Sadarangani, P., 2018. Impact of culture, behavior and gender on green purchase intention. Journal of Retailing and Consumer Services. 41, 177-189.

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

Stern, P.C., 2005. Understanding individuals' environmentally significant behavior. Environmental Law Reporter. 35(11), 10785-10790.

Stone, M., 1977. An asymptotic equivalence of choice of model by cross-validation and Akaike's criterion. Journal of the Royal Statistical Society. Series B (Methodological), 44-47.

Tan, C.S., Ooi, H.Y., Goh, Y.N., 2017. A moral extension of the theory of planned behavior to predict consumers' purchase intention for energy-efficient household appliances in Malaysia. Energy Policy. 107, 459-471.

Tang, Z., Chen, X., Luo, J., 2011. Determining socio-psychological drivers for rural household recycling behavior in developing countries: A case study from Wugan, Hunan, China. Environment and Behavior. 43(6), 848-877.

Taufique, K.M.R., Vocino, A., Polonsky, M.J., 2017. The influence of eco-label knowledge and trust on pro-environmental consumer behaviour in an emerging market. Journal of Strategic Marketing. 25(7), 511-529.

The Christian Science Monitor, 2015. India's plan to reduce carbon emissions: Could it really work? https://www.csmonitor.com/Environment/2015/1003/India-s-plan-to-reduce-carbon-emissions-Could-it-really-work (accessed 12 December 2016).

Thøgersen, J., 2007. Consumer decision making with regard to organic food products, in Vaz, M.T.D.N., Vaz, P., Nijkamp, P., Rastoin, J.L. (Eds.), Traditional Food Production Facing Sustainability: A European Challenge. Ashgate, Farnham.

Trafimow, D., Finlay, K.A., 1996. The importance of subjective norms for a minority of people: Between-subjects and within subjects analyses. Personality and Social Psychology Bulletin. 22(8), 820–828.

Tuna, Y., Özkoçak, L., 2012. The first step to communication with environmentally responsible consumers: Measuring environmental consciousness of Turkish consumers. Online Journal of Communication and Media Technologies. 2, 131-147.

Unilever, 2017. Report shows a third of consumers prefer sustainable brands https://www.unilever.com/news/Press-releases/2017/report-shows-a-third-of-consumers-prefer-sustainable-brands.html (accessed 6 December 2017)

United Nations Environment Program (UNEP), 2011. World Conservation Monitoring Centre. http://www.unep-wcmc.org (accessed 17 March 2016).

Verma, V.K., Chandra, B., 2017. An Application of Theory of Planned Behavior to predict young Indian consumers' green hotel visit intention. Journal of Cleaner Production. 172, 1152-1162. Manuscript in preparation.

Vicente-Molina, M.A., Fernández-Sáinz, A., Izagirre-Olaizola, J., 2013. Environmental knowledge and other variables affecting pro-environmental behavior: Comparison of university students from emerging and advanced countries. Journal of Cleaner Production. 61, 130-138.

Vij, D., 2012. Urbanization and solid waste management in India: Present practices and future challenges. Procedia-Social and Behavioral Sciences, 37, 437-447.

Wang, P., Liu, Q., Qi, Y., 2014. Factors influencing sustainable consumption behaviors: A survey of the rural residents in China. Journal of Cleaner Production, 63, 152-165.

Weiner, J.L., Doescher, T.A., 1991. A framework for promoting cooperation. Journal of Marketing. 55(2), 38-47.

Wells, V. K., Ponting, C. A., Peattie, K., 2011. Behaviour and climate change: Consumer perceptions of responsibility. Journal of Marketing Management, 27, 808–833.

Werner, P., 2004. Reasoned action and planned behavior, in Peterson, S.J., Bredow, T.S. (Eds.), Middle Range Theories: Application to Nursing Research, Lippincott Williams & Wilkins, Philadelphia, pp. 125-147.

World Bank, 2010. The little green data book. http://wwwwds.worldbank.org / external / default / WDSContentServer/IW3P/IB/2010/07/06/000333038 20100706034730/Rendered/PDF/555420PUB0litt1PI19564496001PUBLIC1.pdf (15 December 2015).

World Bank, 2011. Environment assessment, country data: India. http://data.worldbank.org/country/india (accessed 15 December 2015).

WWF, 2016. http://awsassets.panda.org/downloads/lpr_2016_full_report_low_res.pdf (accessed 9 November 2017).

Yadav, R., Pathak, G.S., 2016. Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior. Journal of Cleaner Production. 135, 732-739.

Yang, J., He, X., & Lee, H. (2007). Social reference group influence on mobile phone purchasing behaviour: a cross-nation comparative study. International Journal of Mobile Communications, 5(3), 319-338.

Yazdanpanah, M., Forouzani, M., 2015. Application of the Theory of Planned Behavior to predict Iranian students' intention to purchase organic food. Journal of Cleaner Production. 107, 342-352.

Zhao, H.H., Gao, Q., Wu, Y.P., Wang, Y., Zhu, X.D., 2014. What affects green consumer behavior in China? A case study from Qingdao. Journal of Cleaner Production. 63, 143-151.

Zsóka, Á.N., 2008. Consistency and "awareness gaps" in the environmental behavior of Hungarian companies. Journal of Cleaner Production. 16(3), 322-329.