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Item Type	Article
Authors	Trivedi, Rohit;Patel, J.D.;Acharya, N.
Citation	Trivedi RH, Patel JD and Acharya N (2018) Causality analysis of media influence on environmental attitude, intention and behaviors leading to green purchasing. Journal of Cleaner Production. 196: 11-22.
DOI	<a href="https://doi.org/10.1016/j.jclepro.2018.06.024">https://doi.org/10.1016/j.jclepro.2018.06.024</a>
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Download date	2026-04-14 21:09:53
Link to Item	<a href="http://hdl.handle.net/10454/16300">http://hdl.handle.net/10454/16300</a>

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**Link to publisher's version:** <https://doi.org/10.1016/j.jclepro.2018.06.024>

**Citation:** Trivedi RH, Patel JD and Acharya N (2018) Causality analysis of media influence on environmental attitude, intention and behaviors leading to green purchasing. *Journal of Cleaner Production*. 196: 11-22.

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- Trivedi, R., Patel, D., & Acharya, N. (Forthcoming) Causality analysis of media influence on environmental attitude, intention and behaviors leading to green purchasing. *Journal of Cleaner Production*

## **Causality analysis of media influence on environmental attitude, intention and behaviors leading to green purchasing**

### **Abstract**

This research provides a comprehensive delineation of the process that leads to the formation of green behavior by including the role played by media and attitude towards environment-friendly packaging, along with ecological concern and perceived consumer effectiveness. The study offers a parsimonious framework that measures the major antecedents of environmental attitude divided into inward and outward orientation. Moreover, it also measures the effects of these environmental attitudes and attitude towards green packaging on green purchase intention. A total of 308 usable questionnaires were obtained from Indian consumers and data analysis was conducted using confirmatory factor analysis and structural equation modeling. The results show that inward environmental attitude and attitude towards green packaging play a pivotal role in shaping green purchase intention. Surprisingly, outward environmental attitude was found to be non-significant. Findings offer implications for marketing managers and public policy makers, as well as reveal fruitful avenues for further research.

**Keywords:** Green packaging, media influence, ecological concern, green purchase behavior, structural equation modeling, perceived consumer effectiveness

### **1. Introduction**

An increasing focus on understanding attitudes, beliefs and behavior of consumers in relation to ecological issues and products that are least harmful to environment helps reduce waxing

environmental problems (Roberts & Bacon, 1997) and at the same time results in creating new environment-friendly product offerings to increase market share in otherwise highly cluttered and competitive markets (Rundle-Thiele et al., 2008; Zhou, 2018). In the past, it has been suggested that with consumers' heightened environmental concern, not only in developed (Obermiller, 1995; Barber et al., 2009) but also in developing economies (Lee et al., 2012; Singh & Gupta, 2013; Chen & Tung, 2014; ), positive inclination towards environment-sensitive products and green purchase behavior has increased significantly (Kilbourne & Pickett, 2008).

As identified by Leonidou et al. (2010) and Trivedi et al. (2015), research on environment-conscious consumer behavior has increased exponentially in recent past. Finding a link between environment-friendly consumer attitude and green purchase behavior is one of the emerging streams of research under the broader domain of green marketing. Under this research stream, researchers in the past measured environment-friendly consumer attitude in the context of recycling, energy conservation, environmental activism and other environment-friendly activities (McCarty & Shrum, 2001; Laroche et al., 2001).

From these studies, it has been observed that there exists a strong positive linkage between environment-friendly consumer attitude and active participation in various activities and programs that support environmental preservation. Some studies also reported that active involvement in such activities results in some inconvenience to consumers, either in terms of increased cost or physical efforts (Shabecoff, 1993). Still, an increased momentum and enthusiasm have been observed among green consumers in both developed as well as developing

countries. On similar lines, a few researchers also found a significant relationship between green attitude and green consumer purchase intention (Mostafa, 2007).

However, Diamantopoulos et al. (2003) and Leonidou et al. (2010) argue that there is inadequate understanding about consumers' eco-friendly attitude-intention-behavior link. Literature has so far treated the measurement of environmental attitude and behavior in a composite manner (Sarigöllü, 2009). Unlike previous researchers, Leonidou et al. (2010) proposed to divide environmental attitude into inward and outward factors, where inward environmental attitude refers to the attitude of an individual consumer towards environmental issues, while outward environmental attitude refers to perceived collective action required from various facets of society to protect the environment. Leonidou et al. (2010) argued that it is necessary to understand the role played by these two factors separately in resultant the intention-behavior link. However, there are no subsequent studies conducted that specifically explore this attitude-intention-behavior link empirically in a parsimonious framework.

Although a few factors like perceived consumer effectiveness (Kang et al., 2013) and ecological concern (Roberts & Bacon, 1997; Chen & Tung, 2014) were found to have an effect upon green purchase, influencing factors were typically studied in piecemeal fashion, and very little is known about their inter-relationship and the mediating role played by environmental attitude. Considering this, Biswas and Roy (2015) called for new research efforts to examine the progression of consumers' attitudes, intentions, and behavior towards green products in a more integrated way.

Additionally, the research on choice of product packaging and its impact on household waste and environmental consequences gained momentum in the last decade (e.g., Roper & Parker, 2006). Bech-Larsen (1996) suggested that there exists a small group of consumers with a strong need for green packaging. Considering this, Rokka and Uutisalo (2008) recommended adding attitude towards product packaging as one of the important determinants of consumer choice modeling. However, a detailed literature review suggests that although packaging constitutes a very important determinant in consumers' purchase decisions, consumers' attitude towards environment-friendly packaging has not been given its due importance as a major factor influencing green purchase behavior in consumer choice modeling. Although a few studies examined the effect of environment-friendly packaging as one of the product attributes affecting consumers' general attitude towards products (e.g., Schwepker & Cornwell, 1991; Thøgersen, 1999; Barber, 2010), the effect of the same on green purchase behavior is still to be examined.

In a similar vein, it is believed that media can significantly influence environmental concern of consumers (Rios et al., 2006; Paco & Raposo, 2008). Media plays a significant role by delivering relevant information, thereby strengthening individual and collective environmental concern and shaping long-term environmental attitude (H'mida, 2006; Paco & Raposo, 2008). However, Carrete et al. (2012) questioned the role of media in influencing environmental concern and argued that due to consumer skepticism, media may not play a significant role in shaping environmental concern or attitude. However, the empirical links measuring influence of media on environmental concern and environmental attitude of consumers are yet to be established. This study attempts to fill all of these voids in green marketing literature by understanding the

antecedents of green consumer attitude and its relationship with green purchase behavior in a set of Indian consumers.

The study has five major objectives: a) to empirically understand the effect of perceived consumer effectiveness, media influence and ecological concern on environmental attitude, b) to measure the effect of ecological concern on attitude towards environmental-friendly packaging, c) to explore the differential effect of inward and outward environmental attitude on green purchase intention, d) to measure the influence of attitude towards environment-friendly packaging on consumers' green purchase intention, e) to investigate the link between green purchase intention and green purchase behavior. Overall, this study makes a pioneering attempt to empirically understand consumers' eco-friendly attitude-intention-behavior link in a more integrated way by considering the role of media and green packaging holistically.

The remainder of the paper is organized into the following parts: In the second part, literature on green marketing in Asian context, environmental attitude, perceived consumer effectiveness, ecological concern, media and attitude towards environment-friendly packaging is reviewed and linked to green purchase intention and behavior. The next section provides research methodology and data analysis. Finally, findings of the study and their practical implications are provided along with limitations of this research and direction for future research.

## **2. Literature Review**

### **2.1 Environmental Attitude – Inward and outward**

To understand behavior of ecologically conscious consumers, environmental attitude has been identified as one of the primary and most important antecedent variable that determines subsequent purchase intention and behavioral action of green consumer (Martin & Simintrias, 1995; Chen & Tung, 2014; Perrea et al., 2014; Prete et al., 2017). Milfont (2007) described environmental attitude in terms of ‘psychological tendency’ that results in the perceptions or beliefs regarding environment. Bohlen et al. (1993) observed that conceptualizing and measuring consumers’ environmental attitude and behavior is one of the important issues in green marketing literature. Researchers explored the links between environmental attitudes and behavioral intentions ranging from specific environmental preservation acts like recycling (McCarthy & Shrum, 2001) to consumption behavior actions like willingness to pay a higher price for environment-friendly products (Laroche et al., 2001). Although such a pro-environmental attitude results in either some form of physical or behavioral inconveniences or increased cost (Shabecoff, 1993), cognitive consistency theory (Festinger, 1957) supports such an attitude because consumers with positive environmental attitude depict increased motivation to take pro-environmental actions (Leonidou et al., 2010).

Such pro-environmental action is embedded in behavior to such a degree that consumers internalize preservation of environmental resources and its importance as the primary dominant force for long-term human-nature relationship and wellbeing (Shabecoff, 1993). For example, an individual with negative feelings about wasting food may not only regulate his/her cooking and food consumption habits, but may expect government to take corrective actions with sound policy initiatives. He/she may also expect unified response from multiple stakeholders since it is

difficult for an individual to enforce sustained positive food consumption and food-resource preservation behavior at a societal level (Fransson & Garling, 1999).

Leonidou et al. (2010) attempted to operationalize how individuals evaluate various pro-environmental actions by proposing two constructs, viz. 'Inward environmental attitude' and 'Outward environmental attitude'. In this, inward environmental attitude is referred to as, "attitudes referring to the abuse of the environment by individual consumers (p. 1322)" wherein the role played by an individual towards environmental preservation is accorded utmost importance and therefore, the perceived need for individual efforts to protect the environment is considered a dominant force (Leonidou et al., 2010).

On the other hand, outward environmental attitude is defined as "attitudes about the perceived need for social, political and legal changes to protect the environment" (Leonidou et al., 2010, p. 1322). Here, instead of considering an individual as the focal point in long-term environmental resource preservation, all the key stakeholders like government, not-for-profit organizations and society at large are expected to participate actively by shaping policy, initiating foundational changes, and taking corrective action for balancing human-nature relationship (Van Liere & Dunlap, 1980; Leonidou et al., 2010)

## **2.2 Environmental Concern**

Environmental concern has been commonly defined as the awareness about the environmental problems and the willingness of a person to be a part of the solution (Dunlap & Jones, 2002). Zimmer et al. (1994) defined environmental concern as "a general concept that can refer to

feelings about many different green issues (p. 234)". Environmental concern has been quite often conceptualized as unidimensional construct that ranges from low to high concern towards environment at large (Milfont & Duckitt, 2004). On similar lines, Van Liere and Dunlap (1980) observed that environmental concern may be a fairly broad concept, but it is best represented by concern about pollution and natural resources.

Fransson and Garling (1999) specifically conceptualized environmental concern from value orientations perspective such as self-interest, anthropocentric altruism (referred to as belief that degraded environment poses a threat to well-being of people) and eco-centricity. In one of the earlier studies, Maloney et al. (1975) discovered that those consumers who depict higher environmental concern are more ready than others to change their behavior and explore green product alternatives. Subsequent to their research, various other studies have found positive associations between environmental concern and environment-friendly behavior (Bang et al., 2000; Kim & Choi, 2005; Straughan & Roberts, 1999; Kim & Han, 2010; Laroche et al., 2001; Paco & Rapose, 2009; Suki, 2016).

Crosby et al. (1981) argued that environmental concern acts as a precursor to positive attitude towards environmental preservation. Indeed, an individual's environmental concern stems from his or her fundamental belief or value (Schultz, 2000) and influences subsequent attitude, finally leading towards specific behavioral action ranging from recycling to the purchase of environment-friendly product. As identified by Kim and Choi (2005), this relationship depicts a well-established hierarchical model of value-attitude-behavior that has been studied in various contexts (McCarty & Shrum, 1994) and holds true for understanding green purchase behavior.

Alwitt and Pitts (1996) found that environmental concern significantly and positively influences attitude towards environment-friendly products. De Grott and Steg (2007) show that people with higher environmental concern are more likely to depict a positive attitude towards using eco-friendly parking facilities. Tang and Lu (2013) also found a positive link between environmental concern and consumer attitude while studying Chinese consumers. Paco and Raposo (2009) also argued that attitude of consumers towards eco-friendly behavior turns positive as environmental consciousness increases, and that consumers are more likely to behave in an environment-friendly manner. However, none of the previous studies investigated the link between environmental concern and two separate aspects of consumer attitude, viz. inward and outward environmental attitude. Considering this, it is hypothesized that:

*H<sub>1</sub>: Environmental concern positively influences inward environmental attitude.*

*H<sub>2</sub>: Environmental concern positively influences outward environmental attitude.*

In a few of the studies, it has been found that there is a significant difference between consumers with high and low environmental concern with respect to information receptivity about sustainable products (Bamberg, 2003; van Birgelen et al., 2009). Magnier and Schoormans (2015) reported that people with low environmental concern respond to packaging claims differently from people with high environmental concern. Schwepker and Cornwell (1991) found a strong link between environmental concern and attitude towards environment-friendly packaging in America. Barber (2010) showed that consumers purchasing green wines are highly concerned about environment. Such consumers have a more favorable attitude towards environment-friendly packaging, which further stimulates green behavior. However, none of the

previous studies have focused on this relationship in the context of emerging economies. Therefore, it has been hypothesized that:

*H<sub>3</sub>: Environmental concern positively influences attitude towards environment-friendly packaging.*

### **2.3 Perceived Consumer Effectiveness**

Environmental concern does not always translate into consumers' environment-friendly behavior (Vermeir & Verbeke, 2008). It has often been found that although consumers believe that environmental preservation is important, their actual behavior does not reflect their belief or concern (Butler & Francis, 1997). This discrepancy between environmental concern and actual environment-friendly behavior has been reported in numerous studies (e.g. Domina & Koch, 1998; Ritch & Schröder, 2012).

Perceived consumer effectiveness (PCE) has been found as one of the important determinant to fill this gap between environmental concern and environment-friendly behavior (Roberts, 1996). PCE has been defined by Berger and Corbins (1992) as “the evaluation of self in context to the issue (p.80)”. In environmental behavior context, Ellen et al. (1991) defined PCE as the consumers' perception about the extent to which their actions can make a difference in solving environmental problems. Ellen et al. (1991) with empirical evidence showed that PCE is distinct from environment concern or attitude.

In the past, it has been proven that perceived consumer effectiveness is also situation- or issue-specific (Vicente-Molina et al. 2018). PCE has been studied by various researchers as an

important determinant of consumer's environment-friendly behavior (Ellen et al., 1991; Roberts, 1996; Awad, 2011; Zhao et al., 2018). While a few researchers tried to establish direct relationship between perceived consumer effectiveness and environment-friendly buying behavior (e.g. Taufique and Vaithianathan, 2018), most of the studies found that the effect of perceived consumer effectiveness on buying behavior is mediated by attitude (e.g. Berger & Corbin, 1992; Gupta & Ogden, 2006; Cho et al., 2013; Jang et al., 2015).

Vermeir and Verbeke (2008) found that among Belgian consumers, a higher level of perceived consumer effectiveness results in a positive attitude, and translates into buying of environment-friendly products. Kim and Choi (2005) conducted a study of American consumers and found that PCE indirectly influences purchase behavior through environment-friendly attitude. However, due to lack of empirical evidence about consumers in emerging economies, it has been hypothesized that:

*H<sub>4</sub>: Perceived consumer effectiveness positively influences inward consumer attitude.*

*H<sub>5</sub>: Perceived consumer effectiveness positively influences outward consumer attitude.*

## **2.4 Media Influence**

Agenda-setting theory (McCombs & Shaw, 1972) proposes that media play a very critical role in influencing people's perception and in directing their thoughts towards a specific agenda or person. McCombs et al. (1997) expanded the agenda-setting theory by proposing that media do not only influence people about what to think (first-level agenda setting), but also direct their thought about specific people, object or issue (second-level agenda setting). First-level agenda setting is used in green marketing, when media emphasize global warming as a prominent

environmental issue facing mankind, and second-level agenda setting is used when media highlight excessive use of fossil fuels leading to the problem of global warming. Various studies (e.g., Curtin & Rhodenbaugh, 2011) have examined the agenda-setting effects of media on public agenda. Fernando et al. (2014) used agenda-setting theory to understand the use of online media to set the agenda for consumers' environmental concern in green-washed advertisement claims.

Media often play a critical role in delivering important information to consumers so as to influence their collective environmental concern (Rios et al., 2006; Yu et al., 2017). Zucker (1978) believed that environmental issues are more sensitive to media coverage compared to other social issues. In one study conducted by Environmental Leader and Media Buyer Planner (2009), it was found that almost eighty percent of marketers planned to increase their marketing budget on green marketing in order to tap more environment-conscious audience. Thus, based upon past media research and relationship proposed by earlier researchers like H'mida (2006) that are yet to be empirically tested, it has been hypothesized that:

*H<sub>6</sub>: Media coverage of environmental issues positively influences environmental concern.*

Moreover, it has also been proposed in the past that media can directly influence consumers' environmental attitude and behavior related to various issues like energy, pollution levels, and consequences of ecological degradation (Butler, 1990; Wagner, 1997; Muralidhan et al., 2016). Holbert et al. (2003) found that the use of news media positively influence pro-environmental behavior and attitudes. However, in one of the studies, Qader and Zainuddin (2011) found that media exposure does not significantly influence environmental attitude among Malaysian

respondents. Importantly, consumption-linked coverage of environmental attitudes in media may change the perception of consumers about the degree of their control in protecting the quality of environment. Media can change an individual consumer's attitude about his/her environment-unfriendly excess consumption behavior with immediate effect (Mikami et al., 1995). Therefore, it is postulated that:

*H7: Media coverage of environmental issues positively influences consumers' inward environmental attitude.*

Many times, as observed by Mikami et al. (1995), media coverage of the environmental issues brings gradual and cumulative long-term effects among various stakeholders and society at large by creating awareness and acceptance of the role played by government and other legislative bodies. Media over-emphasis on the generic nature of environmental issues may also lead consumers to believe that political and legal systems are inefficient to handle environmental issues promptly and competently. However, none of the researchers in the past investigated the influence of media coverage of environmental issues on outward environmental attitude. Therefore, we hypothesize that:

*H8: Media coverage of environmental issues positively influences consumers' outward environmental attitude.*

## **2.5 Environmental Attitude and Purchase Intention**

Many studies have shown that consumers with inward positive environmental attitude are more likely to buy environment-friendly products and may work as strong brand advocates for environment-friendly products in their social circles (Homer & Kahle, 1988; Balderjahn, 1988;

Hume, 1991; Martin & Simintrias, 1995; Alwitt & Pitts, 1996; Roberts & Bacon, 1997; Kilbourne & Pickett, 2008; Paladino & Ng, 2013; Varela-Candamio et al., 2018). While comparing American consumers with their Chinese counterparts, Chan and Lau (2001), found that Chinese consumers showed a significant relationship between attitude and behavioral intention to purchase environment-friendly products. In one other study on Chinese consumers, Chan (2001) also found a positive relationship between consumers' attitude towards environment and their green purchase intention.

Jain and Kaur (2004) found that positive environmental concern and attitude have significant effect on willingness to pay for environment-friendly products. In another study in India, Yadav and Patahk (2016) used theory of planned behavior to understand green product purchase behavior taking perceived value as a focal construct. Verma and Chandra (2018) found Indian consumers' environmental attitude to be most important determinant of green hotel visit intention. Singh and Verma (2017) reported that Indian consumers' favorable environmental attitude has significantly positive effect on purchase intention for organic food product. However, there is a clear dearth of literature on the differential effect of inward and outward environmental attitude on purchase intention for environment-friendly products. Considering the positive link between composite environmental attitude and purchase intention; and the lack of empirical evidence separating two types of environmental attitudes, we posit that (Figure 1):

*H<sub>9</sub>: Consumers' inward environmental attitude results into increased intention to purchase environment-friendly products.*

Consumers may go over and above private action and participate proactively in various social, political, legal, and other issues to contribute towards environmental protection (Fransson & Garling, 1999). This outward environmental attitude directly and significantly affects public policy-making (Stern, 2000). Kassarian (1971) found attitude toward air pollution as the most important determinant of preference for less harmful gasoline to the environment. Some scholars who studied the effect of ecological attitudes and intentions on actual behavior of Asian consumers found that there is a positive association between the two (Chan, 2001; Mostafa, 2007; Singh & Gupta, 2013). However, the specific relationship between outward environmental attitude and purchase intention still remains to be empirically investigated and therefore, it has been hypothesized that:

*H<sub>10</sub>: Consumers' outward environmental attitude results in increased intention to purchase environment-friendly products.*

## **2.6 Attitude towards Environment-friendly Packaging**

To date, packaging research has been primarily oriented towards understanding communicative functions of packaging (e.g., labeling, color, size, etc.) on consumers' decision-making process. However, very little attention has been paid to environment-friendly packaging as an alternative with the required functional characteristics that have the least harmful effect on environment (e.g., Bone & Corey, 2000; Rokka & Uutisalo, 2008; Steins et al., 2017). Delia (2010) suggested that the degree of environmental pollution due to packaging could be used as an indicator of environment-friendliness of packaging.

Companies are increasingly using sustainable packaging in response to consumers' increasing concern about environmental issues (Olsen et al., 2014). Recently, many companies have started

using small recyclable cartons for product packaging and there is an increasing trend of abandoning the use of plastic bottles or bags for product packaging (Rokka & Uutisalo, 2008). In a few countries, governments have since long banned certain types of plastic packaging or imposed higher taxes on packaging made with contents harmful to the environment (Kovacs, 1988). With this, increased focus on post-use management of product packaging and on growing amount of household waste is considered one very important reason behind the increased attention to green packaging (Bone & Corey, 2000).

In western countries, it has been observed that there is a small but strong niche of consumers that prefer to purchase goods with biodegradable packaging (Kirkpatrick, 1990; Bech-Larsen, 1996; Minton & Rose, 1997; Barber, 2010; Pereira & Lemke, 2013) and therefore more products are entering market with environment-friendly packaging (Magnier and Schoormans, 2015). Indeed, more than 90 percent of European citizens insist that companies should proactively engage in recycling and reduce the use of plastic in product packaging (European Commission, 2014). Nittala (2014) found that among educated Indian consumers, opinions about the use of plastic carry bags and about banning the same can be used to segment those who are willing to purchase green products and those who are unwilling.

Laroche et al. (2001) found that consumers with higher environmental concern pay attention to packaging and make sure recycled material is used for packaging. But at the same time, it is found that since consumers are unable to differentiate between more environment-friendly and less environment-friendly packaging alternatives, the use of environment-friendly packaging is lower (Bech-Larsen, 1996). Praksh and Pathank (2017) suggested that attitude towards product

packaging is one important area that requires attention so as to build consumer confidence in buying environment-friendly products. Suki (2014) also suggested the use of green product packaging with self-declarative claims to help consumer in choosing products with green alternative. Rokka and Uutisalo (2008) suggested adding green packaging as an important element in consumer-choice modeling. Considering this, it has been hypothesized that:

*H<sub>11</sub>: Attitude towards environment-friendly packaging exerts a positive influence on consumers' purchase intention of environment-friendly products.*

## **2.7 Green Purchase Behavior**

In line with Kilbourne and Pickett (2008), Leonidou et al. (2010) defined green purchase behavior as "...preference and use of products that are friendly to the environment and/or have been produced using ecological processes and material (p. 1327)". Although there is an increasing awareness about environmental preservation and willingness to act in a manner that results into environmental preservation, it has been observed that there exists an 'intention-behavior' or 'value-action' gap. More than 30 percent of consumers who have shown higher environmental concern do not depict green purchasing behavior (Young et al., 2010). A sizable number of scholars studied this gap between willingness and actual behavior of consumers towards environment-friendly behavior from a variety of perspectives (Mintel, 1995; Crane, 2000). One of the reasons behind this has been perceived consumer risk in buying green products in terms of quality, performance or environmental consequences of their decision (Follows & Jobber, 2000). Other variables like culture, finance, lifestyle, personality may also influence the final link between intention and action of buying environment-friendly products (Akehurst et al., 2012; Liu et al., 2016).

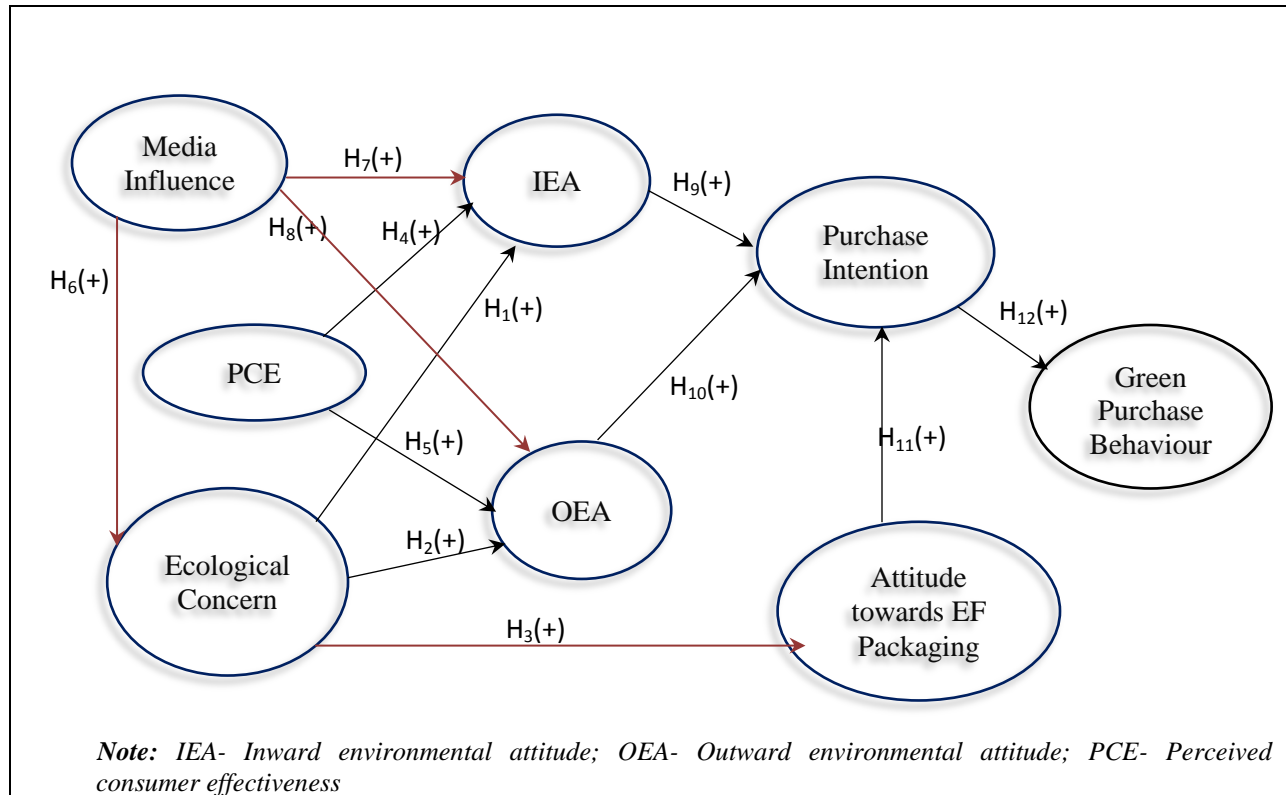
The investigated relationship between green purchase intention and green purchase behavior in western countries has been saddled with mixed results. Although there are some studies that indicated a strong relationship between the two (Chan & Yam, 1995; Chan & Lau, 2000; Chan, 2001; Bamberg, 2003; Bamberg & Moser, 2007; Liu et al., 2010; Rezai et al., 2013), a few other researchers found the link to be either weak or non-existent (Wong et al., 1996; Crane, 2000; Akehurst et al., 2012). Considering this, it has been hypothesized that:

*H<sub>12</sub>: Green purchase intention positively influences green purchase behavior.*

### **3. Proposed Research Model**

The research framework used in this study is shown in Figure 1. The focus of the study was the role of environmental attitude comprised of inward and outward orientation on green purchase behavior. The effect of media and green packaging were also a novel aspect of this study in green marketing domain.

**Figure 1: Research framework**



#### 4. Methods

As green concepts investigated in this study are very difficult to understand and comprehend for Minors (Chan, 2001), sample ideally consists adults as they hold greater ability to compare and evaluate available choices and make a selection. Apart, green context is easily understood by educated people (Hedlund, 2011; Paul et al. 2016). Therefore, quota sample of people aging more than 18 years with reasonably educated composed of ideal sample to target. The use of non-probability sampling method was obvious as most internet based survey does not have available exhaustive sampling frame (Morris et al. 2003).

Furthermore, the research study was conducted in India since it has a wider geographical area. Reaching the maximum number of respondents in a cost-effective manner was equally

important; therefore online survey through web was chosen (Zikmund, 1997). Internet samples were obtained by creating a sampling frame of e-mail addresses on ad-hoc basis (Zikmund et al. 2010). Almost, 2600 e-mails appending link of survey was sent to respondents resulting into collection of 369 samples. Of which, 61 respondents were aged less than 18 years and thus dropped. Finally, 308 usable responses were the resultant of this web survey approach which was much higher than the recommended value of at least 200 responses (Hair et al., 1998; Kelloway, 1998) for structural equation modeling.

Sample background information was checked to see how accurately the sample represents the population. The sample is evenly distributed gender-wise. Of 308 respondents, 60.1% of respondents were female (n=185). Age-wise, 42.2% of the respondents were 17-31 years old (n=130), followed by 26.3% in the age group of 32-40 years (n=81). Education-wise, 43% of respondents did post-graduation (n=132), and 41.2% were graduates (n=127). 49% of respondents (n=151) had income levels higher than Rs. 50,000 per month. Thus the sample is dominated by young, female, educated, and higher income respondents.

#### **4.1 Measures**

We have used well-established scale from past studies to measure consumers' eco-friendly attitude-intention-behavior link as mentioned in Figure 1. All the measurement constructs used in the present study are frequently used in green marketing literature and were validated in multiple studies to measure consumer response in the context of green consumption behavior. A 4-item *inward environmental attitude scale* (IEA) and a 4-item *outward environmental attitude scale* (OEA) were adopted from Leonidou et al. (2010). One item in OEA scale was dropped in further

analysis as it was suggested in face validity test that there was poor contextual fit. A 4-item *perceived consumer effectiveness scale* (PCE) was adopted from Straughan and Roberts (1999) and Kim (2011). A 5-item *environmental concern scale* (EC) was taken from Johnson et al. (2004) study. Attitude towards environment-friendly (EF) packaging scale consisting of 4 items was adopted from Lee (2009) and modified. Two statements were added to capture consumers' packaging orientations such as reusing and refilling (Einsmann, 1992; Johri & Sahasakmontri, 1998; Kim & Damhorst, 1999).

A 3-item *media influence* scale was adopted from Rahbar and Wahid (2011) and the roles of newspapers and magazines were added to capture the concept. A 3-item *purchase intention* scale was adopted from Taylor and Todd (1995) and Mostafa (2007), and modified. Finally, *green purchase behavior* was measured with four items, which were adopted from Kilbourne and Pickett (2007) and Leonidou et al. (2010). All the scale items used in this study were measured on a seven-point Likert-type scale ranging from “strongly disagree (1)” to “strongly agree (7)” (appendix I).

#### 4.2 Reliability of Scale

Cronbach's Alpha ( $\alpha$ ) was computed in SPSS 20.0 for testing reliability of scales of each latent variable. Alpha value of 0.6 was recommended for survey based research threshold (Hair et al., 2009). Table 1 reveals that all the alpha values ranging from 0.87 to 0.97 were higher than the cut-offs. These statistics signal scales' internal consistency.

**Table 1: Reliabilities statistics**

Scale	No. of items	Cronbach's Alpha ( $\alpha$ )	Standardized loadings ( $\lambda$ )*	AVE	Composite Reliability
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Perceived Consumer Effectiveness (PCE)	PCE1	0.87	0.789	0.67	0.89
	PCE2		0.900		
	PCE3		0.623		
	PCE4		0.919		
Environmental concern (EC)	EC1	0.97	0.868	0.85	0.96
	EC2		0.966		
	EC3		0.933		
	EC4		0.889		
	EC5		0.947		
Inward environmental attitude (IEA)	IEA1	0.93	0.939	0.74	0.92
	IEA2		0.887		
	IEA3		0.800		
	IEA4		0.805		
Outward environmental attitude (OEA)	OEA1	0.96	0.946	0.87	0.95
	OEA2		0.911		
	OEA3		0.940		
Attitude towards EF packaging (PKG)	PKG1	0.88	0.835	0.69	0.90
	PKG2		0.882		
	PKG3		0.647		
	PKG4		0.930		
Purchase intention (PI)	PI1	0.94	0.917	0.80	0.92
	PI2		0.922		
	PI3		0.851		
Green purchase behaviour (GPB)	GPB1	0.94	0.942	0.77	0.93
	GPB2		0.834		
	GPB3		0.903		
	GPB4		0.839		
Media influence (MI)	MI1	0.96	0.898	0.89	0.96
	MI2		0.952		
	MI3		0.979		

*Note:*\*all factor loadings are significant at  $p < 0.05$  level

## 5. Data Analysis

Structural equation modeling (SEM) was performed in two stages through Analysis of Moment Structure (AMOS) 19.0 version (Anderson & Gerbing, 1988; Arbuckle, 2006). Confirmatory factor analysis (CFA) was carried out in stage one to examine the adequacy and quality of measurement through establishment of reliability, convergent and discriminant validity, i.e., measurement model analysis. Stage two tested the causal relationships among latent variables,

i.e., structural model analysis. Multiple indicators were used to assess the goodness of fit such as  $\chi^2$  (*Chi – square*)/*df* < 3 , CFI (comparative fit index)  $\geq 0.9$ , TLI (Tucker-Lewis index)  $\geq 0.9$ , PNFI (parsimonious normed fit index)  $\geq 0.5$ , and RMSEA (root mean square error of approximation)  $\leq 0.08$  (Byrne, 2001).

### **5.1 The Measurement Model**

The measurement model (Figure 1) was assessed via CFA. Maximum likelihood estimation (MLE) method was used as it affords a stable means of assessing parameter complications (Suki, 2016). All the goodness-of-fit (GOF) statistics were close to acceptable limits ( $\chi^2=1493.48$ ;  $df=377$ ;  $p<0.001$ ;  $\chi^2/df=3.961$ ; CFI=0.917; TLI=0.904; PNFI=0.774; RMSEA=0.098). In order to get GOF within acceptable limit, fit-statistics were improved by adding paths based on the largest decrease in chi-square value through modification indices (MI) (Chou & Bentler, 1993). GOF statistics showed adequate fit ( $\chi^2=1074.97$ ;  $df=361$ ;  $p<0.001$ ;  $\chi^2/df=2.978$ ; TLI=0.936; CFI=0.947; PNFI= 0.866; RMSEA=0.078).

#### *Convergent validity*

According to Hair et al. (1998), establishment of convergent validity and discriminant validity evidences achievement of construct validity. Many studies used the criteria of significant factors loadings with values above 0.5. Admittedly, convergent validity is also evidenced if all Average Variance Extracted (AVE) values  $\geq 0.5$  (Fornell & Larcker, 1981) and composite reliabilities  $\geq 0.7$  (Hair et al. 1998). Table 1 also shows that all composite reliabilities were above 0.7, factors loadings were above 0.7. This indicates that convergent validity was established.

#### *Discriminant validity*

The evidence of discriminant validity was gathered from comparing shared variance with all other constructs with latent construct's unique variance (Fornell & Larcker, 1981). Average variance extracted (AVE) is the average amount of variance in indicator variables that a construct is managed to explain. It was found that the square root of AVE was more than the squared internal correlations among constructs of study as suggested by Fornell and Larcker (1981). Table 2 indicates that discriminant validity was achieved.

**Table 2: Discriminant validity**

Variable	PCE	EC	IEA	OEA	PKG	PI	GPB	M
<b>PCE</b>	<b>0.82</b>							
<b>EC</b>	0.69	<b>0.92</b>						
<b>IEA</b>	0.70	0.60	<b>0.86</b>					
<b>OEA</b>	0.70	0.88	0.64	<b>0.93</b>				
<b>PKG</b>	0.75	0.71	0.71	0.71	<b>0.83</b>			
<b>PI</b>	0.73	0.72	0.71	0.73	0.83	<b>0.90</b>		
<b>GPB</b>	0.66	0.62	0.68	0.61	0.76	0.78	<b>0.88</b>	
<b>M</b>	0.65	0.78	0.52	0.76	0.62	0.65	0.57	<b>0.94</b>
<b>Mean</b>	3.49	2.87	3.55	2.72	3.49	3.27	3.72	3.03
<b>Std. Dev.</b>	1.50	1.78	1.67	1.80	1.55	1.84	1.66	1.82
<b>Skewness</b>	0.713	1.22	0.607	1.245	0.728	0.760	0.519	1.034
<b>Kurtosis</b>	-0.307	0.137	-0.825	0.158	-0.395	-0.743	-1.031	-0.144

*Note:* Bold values on diagonal shows square root of AVE (Average Variance Extracted) for each construct; PCE= perceived consumer effectiveness; EC=ecological concern; IEA= inward environmental attitude; OEA=outward environmental attitude; PKG= attitude towards EF packaging; PI= purchase intention; M=media influence; GPB= green purchase behaviour

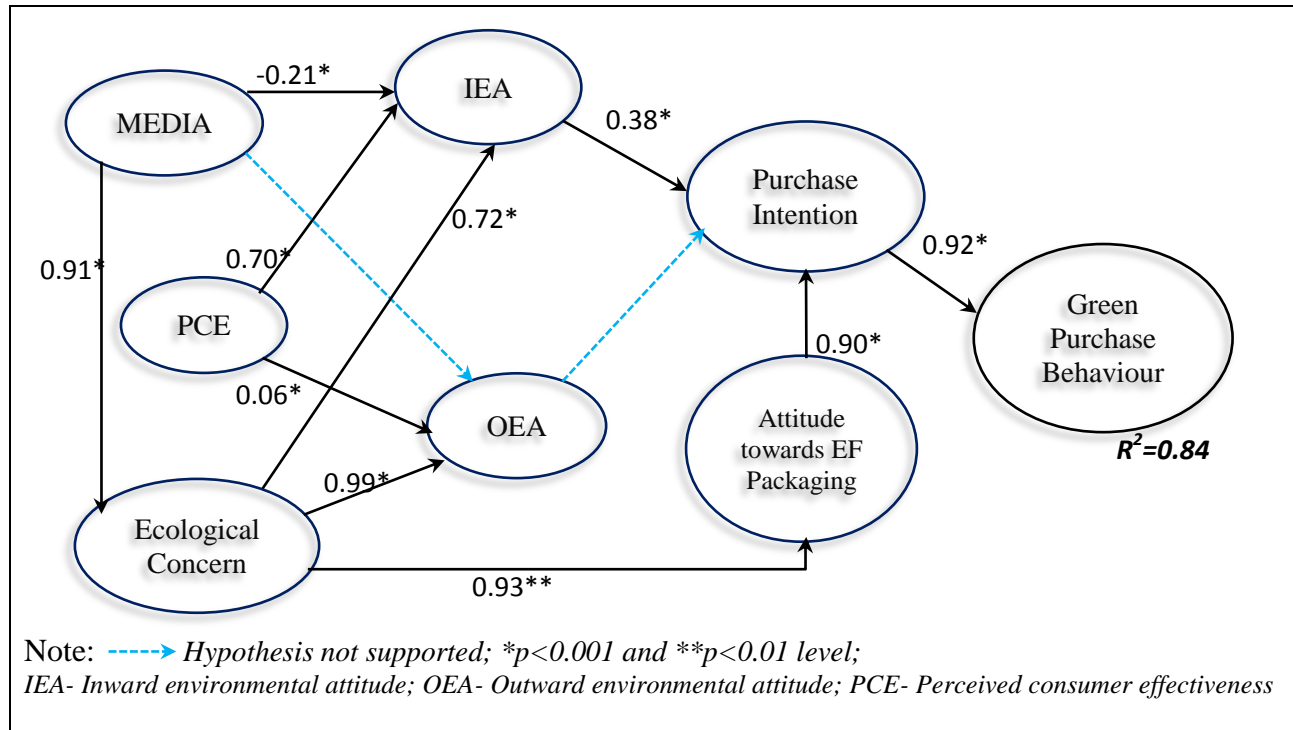
Furthermore, Table 2 shows that kurtosis values of scales were well below the threshold of  $\pm 10$  and skewness of all items was well below the threshold of  $\pm 2$ . This indicates that bell-shaped normal distribution approximated the data (Suki, 2015).

## 5.2 Structural Model

Having a reasonably well-fitting measurement model, Structural equation modeling (SEM) was used to test the hypothesized structural model. AMOS was used to estimate the path coefficients of the relationship between constructs in path analysis. Structural model represents set of one-or more dependence relationships linking the hypothesized model's constructs (Hair et al. 1996). To test such dependence relationships, model contains direct and indirect effect of construct on other construct (Hair et al. 1996). The proposed model contains many intervening constructs such as IEA, OEA etc. that requires the testing of indirect effects on purchase intention. The fit of the structural model is as follow:  $\chi^2=2018.48$ ;  $df=393$ ;  $p<0.001$ ;  $\chi^2/df=5.136$ ; CFI=0.879; PNFI=0.772; RMSEA=0.116. GOF statistics achieved poor fit and further improvement could be therefore needed (Marcoulides & Schumacker, 1996).

Based on the modification index, those paths were added which decrease the chi-square value most. The fit statistics indicate reasonable model-fit ( $\chi^2=1617.9$ ;  $df=377$ ;  $p<0.001$ ;  $\chi^2/df=4.292$ ; CFI=0.908; PNFI=0.766; RMSEA=0.078). The analytical results supported the research model with an explanatory power of 84 per cent, as shown in Figure 2. This is also depicted in the structural path coefficients (Table 3).

### **Figure 2: Structural model**



Purchase intention was found to positively influence green purchase behavior ( $\beta = 0.91$ ,  $t = 21.786$ ;  $p < 0.001$ ). Green packaging was found to be positively related to purchase intention ( $\beta = 0.98$ ,  $t = 8.785$ ;  $p < 0.001$ ), which was also influenced positively by IEA ( $\beta = 0.432$ ,  $t = 11.787$ ;  $p < 0.001$ ). However, no relationship was observed between purchase intention and OEA ( $p > 0.05$ ). With regard to environmental attitude, PCE was found to be conducive to the formation of IEA ( $\beta = 0.634$ ,  $t = 14.089$ ;  $p < 0.001$ ) and OEA ( $\beta = 0.070$ ,  $t = 3.467$ ;  $p < 0.001$ ). PCE-OEA link was significant but very weak. Moreover, ecological concern was found to be a significant determinant of OEA ( $\beta = 0.996$ ,  $t = 16.539$ ;  $p < 0.001$ ), and of attitude towards EF packaging ( $\beta = 0.802$ ,  $t = 17.448$ ;  $p < 0.001$ ) and IEA ( $\beta = 0.60$ ,  $t = 7.291$ ;  $p < 0.001$ ). More aptly, media influence was found to be positively related to environmental concern ( $\beta = 0.881$ ,  $t = 19.187$ ,  $p < 0.001$ ), and negatively related to IEA ( $\beta = -0.165$ ,  $t = -2.146$ ;  $p < 0.001$ ), but failed to influence OEA ( $p > 0.05$ ) (Table 3).

**Table 3: Standardized regression weights with direct, indirect and total Effects**

<b>Paths</b>	<b>Coefficients (<math>\beta</math>)</b>	<b>t-value</b>	<b>Hypothesis Supported</b>	<b>Direct effect</b>	<b>Indirect effect</b>	<b>Total effect</b>
<b>PI→GPB(+)</b>	0.92	21.786*	Yes	0.916	---	0.916
<b>PKG→PI(+)</b>	0.90	8.785*	Yes	0.899	---	0.899
<b>IEA→PI(+)</b>	0.38	11.787*	Yes	0.383	---	0.383
<b>OEA→PI(+)</b>	-0.16	-1.682	No	-0.162	---	-0.162
<b>PCE→IEA(+)</b>	0.70	14.089*	Yes	0.698	---	0.698
<b>PCE→OEA(+)</b>	0.06	3.467*	Yes	0.063	---	0.063
<b>EC→IEA(+)</b>	0.72	7.291*	Yes	0.724	---	0.724
<b>EC→OEA(+)</b>	0.99	16.539*	Yes	0.995	---	0.995
<b>EC→PKG(+)</b>	0.93	0.742**	Yes	0.933	---	0.933
<b>M→IEA(+)</b>	-0.21	-2.146*	Yes	-0.206	0.661	0.455
<b>M→OEA(+)</b>	0.01	0.052	No	0.003	0.908	0.911
<b>M→EC(+)</b>	0.91	19.187*	Yes	0.913	---	0.913

Note: \* $p < 0.001$  level; \*\* $p < 0.01$  level; PKG= Attitude towards EF packaging; M=Media influence

Table 3 depicts the direct and indirect effects of variables as postulated in a structural model. It was found that media influenced inward environmental attitude more through indirect effect (0.661) than through direct effect (-0.206). Similarly, outward environmental attitude was also influenced by media more through indirect effect (0.908); direct effect was insignificant (0.0003).

## 6. Discussion and Implications

The present paper examined the journey of environmental attitude, intentions and behavior formation for green products in a holistic manner. Moreover, an attempt is also made to understand and empirically investigate major antecedents of consumers' environmental attitude formation that eventually influences green behavior. Attitudes as postulated in Theory of Reasoned action (Ajzen, 1981) are the stable predictors of green behaviors (Prakash and Pathak,

2017) and studied extensively in the field of green marketing to predict behaviors (Singh and Verma, 2017; Zhao et al. 2018).

Turning to the specific hypothesis, the results confirmed the influence of perceived consumer effectiveness on inward and outward environmental attitudes in line with previous studies (e.g., Jang et al., 2015). Consistent with value-belief-norm theory (Stern et al., 1995), consumers believing in their ability to solve environmental problems displayed higher inward environmental attitude and this may result into frequent purchase of environmental friendly products (Cho et al., 2013). Green companies should target consumers with high PCE and convert them as opinion leaders to finally create a niche, wherein these green consumers act as green brand evangelists.

However, the influence of PCE on outward environmental attitude was much weaker ( $\beta = 0.06$ ) than on inward environmental attitude ( $\beta = 0.70$ ). Consumers' self-belief and individual abilities do not allow them to believe that their "public" involvement with environmental issues can make any significant difference in perusal of environmental behaviors. Green behavior is perceived as inconvenient and time consuming (Follows & Jobber, 2000), therefore, government should allocate more resources to motivate consumers. Policy makers should communicate to the public that increased standard of green living will benefit the environment and create a feeling of wellbeing (Leonidou et al., 2010).

In line with previous studies (e.g., Crosby et al., 1981; Alwitt and Pitts, 1996; Tang and Lu, 2013), it was found that environmental concern influences both inward ( $\beta = 0.72$ ) and outward environmental attitudes ( $\beta = 0.99$ ) positively. Therefore, consumer segment with higher

environmental concern can be identified, targeted and nurtured carving out a loyal green consumer-base. It is also to be noted that their concern about environment is reflected in urging social and political changes that help environmental preservation. Thus, various activation campaigns with greater involvement of environmentally concerned consumers can bring positive changes to society. They can also help brands achieve strong brand identity as environment-friendly brands. Advertising and promotion can also be geared up highlighting the impact of consumers with higher outward environmental attitude, who have the power to make some profound changes.

Not-for-profit organizations can also induce attitudinal changes by using media as well as targeted social media marketing campaigns to create environmental awareness, and reinforce environmental resource preservation attitude among concerned citizens. Finally, consumers with higher EC form a large consumer segment (Vermillion & Peart, 2010; Ertz et al., 2016) and therefore green marketers must pay attention to effectively communicate with this segment in order to achieve greater penetration of green products. Rightly positioned strategies are essential in green products market, but they must also be supplemented through effective marketing programs, tailored in accordance with the consumers depicting higher inward environmental attitude.

Media ( $\beta = 0.91$ ) also significantly influence environmental concern among consumers (Yu et al., 2017). In line with Rios et al. (2006), our results highlight that media's ever-increasing attention to highlight various environmental issues can really shape higher environmental concern among consumers. Media influence was significant, but surprisingly negative to inward

environmental attitude ( $\beta = - 0.21$ ). The main reason may be the over-reliance on media, coupled with inappropriate message strategy in their advertisements, which failed to provide enough persuasion. However, media influence failed to shape outward environmental attitude directly because of inappropriate selection of supporting arguments or inappropriate agenda setting.

Indeed, environmental concern mediates the influence of media on outward environmental attitude (indirect effect=0.908) more than on inward environmental attitude (indirect effect=0.661). Mass media is the major media in India through which people acquire information. While setting agenda related to environmental issues, media should highlight immediate detrimental effects of chosen environmental issues in a national campaign to raise environmental concern of consumers. To maximize the impact, publicizing statistics of various environmental issues in newspapers and magazines would be an effective media strategy as visuals with numbers are recalled most easily. Furthermore, government should have more environment-related advertisements. It should convey a strong message through providing recycling facilities, special education programs on eco-sustainability, and by rewarding people who execute exceptional green decisions (Leonidou et al., 2010).

Government can initiate some sustainability initiatives by promoting certain events like “Vancouver Marathon” or “Boston Marathon”. Green marketers are advised to promote these events through media, appropriating target audiences and encouraging green behavior among environmentally concerned consumers. Such participatory programs with the right kind of engagement strategies along with mass media reporting will surely enhance the motivation to adopt general green behavior reflected through outward environmental attitudes (Leonidou et al.,

2010). Such aggressive attempts from government can help build confidence in concerned consumers about their ability to bring change in environmental consumption.

Importantly, green purchase intentions are also influenced by attitude towards EF packaging ( $\beta = 0.90$ ). Thus, green marketers are advised to create awareness about green packaging used and its impact on environment (Nittala, 2014). Information about green labels for packaging can be provided so that consumers can easily identify green products. In fact, government should take an initiative in communicating to consumers about which packaging materials are environment-friendly; or it can develop some unanimous mechanism for identifying such materials. Policy for packaging norms can be strengthened in order to provide self-declarative claims about packaging materials and post-use disposal.

Consumer education regarding green packaging can eventually increase green purchases. For example, consumers prefer recycled paper over plastic recycling as they are not aware that recyclable PET and its per cent use in bottles (30 per cent in CocaCola bottles using PlantBottle® technology), or that gas based technology tops reduce the density of plastic used in bottles (Mucell® technology employed by Unilever) (Magnier & Scoormans, 2015). This implies that government should formulate green policy with provisions for promotional incentives to companies that use genuine green packaging (Rahbar & Wahid, 2011).

Overall, this study contributes to the extant literature by proposing empirically testable model that helps to identify and confirm the role of media influence and green packaging on environmental attitude and green purchase behavior in the context of emerging economies. With

this, this study is the first one that draws a clear distinction between inward and outward environmental attitudes differently influencing green purchase intention leading to formation of green purchase behavior. These two levels of environmental attitudes in fact co-exist, and triggering them effectively may enhance individuals' green purchase behavior. Lastly, this study also measured the relation of perceived consumer effectiveness and ecological concern on formation of inward and outward environmental attitude in a parsimonious framework with empirical insights that helps researchers, marketers and public-policy makers alike to better understand green consumers in emerging economies.

Like all studies, this study has inherent limitations. This study has used consumers' purchase behavior for general green products. Its scope can be broadened by considering some specific green products. Moreover, it is important that intention and behavior are measured at the same time and the variations in antecedent factors caused by changes in their environmental concern and inward-outward environmental attitudes. A longitudinal study can provide more relevant insights for predicting green purchase behaviors more accurately. Furthermore, it is helpful to draw comparisons between developed and developing economies as their environmental concern and their private and public environments are highly dynamic. This study has not considered product or product category specific green behavior. The generalizability of the results is limited since the study was conducted on an Indian sample who were highly educated and had high incomes. This study has not linked culture with attitude-intention-behavior relationships. Future studies can utilize culture as a focal construct and understand green purchase behavior from cultural orientations perspective. Furthermore, study rests on self-reported behaviors and thus due care is to be taken as it affects the research conclusions.

## References

- Akehurst, G., Afonso, C., & Gonçalves, H.M. (2012). Re-examining green purchase behaviour and the green consumer profile: new evidences. *Management Decision*, 50(5), 972-988.
- Alwitt, L., & Pitts, R.E. (1996). Predicting Purchase Intentions for an Environmentally Sensitive Product. *Journal of Consumer Psychology*, 5, 49- 64.
- 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.
- Arbuckle, J. L. (2006). Amos (version 7.0) [computer program]. Chicago: SpSS.
- Awad, T. A. (2011). Environmental segmentation alternatives: buyers' profiles and implications. *Journal of Islamic Marketing*, 2(1), 55-73.
- Balderjahn I. (1988). Personality variables and environmental attitudes as predictors of ecologically responsible consumption patterns. *Journal of Business Research*, 17, 51–56.
- Bamberg, S. (2003). How does environmental concern influence specific environmentally related behaviors? A new answer to an old question. *Journal of Environmental Psychology*, 23, 21-32.
- Bamberg, S. and Mošer, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meat-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, 27, 14-25.
- Bang, H.K., Ellinger, A. E., Hadjimarcou, J., & Traichal. P. A. (2000). Consumer concern, knowledge, belief, and attitude toward renewable energy: An application of the reasoned action theory. *Psychology and Marketing*, 17 (1), 6–26.
- Barber, N. (2010). Green wine packaging: targeting environmental consumers. *International Journal of Wine Business Research*, 22(4), 423-44.
- Barber, N., Taylor, C. & Strick, S. (2009). Wine consumers environmental knowledge and attitudes: influence on willingness to purchase. *International Journal of Wine Research*, 1(1), 59-72.
- Barber, N.(2010). 'Green' wine packaging: targeting environmental consumers. *International Journal of Wine Business Research*, 22(4), 423 - 444.
- Bech-Larsen, T. (1996). Danish consumers' attitudes to the functional and environmental characteristics of food packaging. *Journal of Consumer Policy*, 19, 339–363.
- Berger, I., & Corbin, R. M. (1992). Perceived Consumer Effectiveness and Faith in Others as Moderators of Environmentally Responsible Behaviors. *Journal of Public Policy & Marketing*, 11(fall), 79-89.
- Biswas, A., & Roy, M., (2015) Leveraging factors for sustained green consumption behavior based on consumption value perceptions: testing the structural model. *Journal of Clean Production*, 95, 332-340.
- Bohlen G, Schlegelmilch B. B., & Diamantopoulos A. (1993) Measuring ecological concern: a multi-construct perspective. *Journal of Marketing Management*, 9, 415–430.
- Bone, P.F. & Corey, R.J. (2000). Packaging ethics: perceptual differences among packaging professionals, brand managers and ethically-interested consumers. *Journal of Business Ethics*, 24, 199–213.
- Butler, D. (1990, June). A deeper shade of green. *Management Today*, 158–167.
- Butler, S.M., & Francis, S. (1997). The effects of environmental attitudes on apparel purchasing behavior. *Clothing and Textiles Research Journal*, 15, 76–85.

- Byrne, B. M. (2001). Structural equation modeling with AMOS, EQS, and LISREL: Comparative approaches to testing for the factorial validity of a measuring instrument. *International journal of testing*, 1(1), 55-86.
- Chan, R. (2001). Determinants of Chinese consumers' green purchase behaviour, *Psychology and Marketing*, 18(4), 389-413.
- Chan, R. & Lau, L. (2001) Explaining Green Purchasing Behavior: A Cross-cultural study on American and Chinese consumers. *Journal of International Consumer Marketing*, 14 (2/3), 9-40.
- Chan, R.Y.K., & Yam, E. (1995). Green movement in a newly industrializing area: a survey on the attitudes and behavior of the Hong Kong citizens. *Journal of Community and Applied Social Psychology*, 5(1), 273-84.
- Chan, R.Y.K. & Lau, L.B.Y. (2000). Antecedents of green purchases: a survey in China. *Journal of Consumer Marketing*, 17(4), 338-357.
- Chen, M. & Tung, P. (2014). Developing an extended Theory of Planned Behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221-230.
- Chen, M.F., & Tung, P.J., (2010). The moderating effect of perceived lack of facilities on consumers' recycling intentions. *Environment and Behavior*, 42(6), 824-844.
- Cho, Y. N., Thyroff, A., Rapert, M. Park, S. Y., & Lee, H. J. (2013), To be or not to be green : Exploring individualism and collectivism as antecedent of environmental behavior. *Journal of Business Research*, 66, 1052-1059.
- Chou, C. P., & Bentler, P. M. (1993). Invariant standardized estimated parameter change for model modification in covariance structure analysis. *Multivariate behavioral research*, 28(1), 97-110.
- Crane, A. (2000). Marketing and the natural environment: what role for morality? *Journal of Macromarketing*, 20(2), 144-54.
- Crosby, L.A., Gill, J.D., & Taylor, J.R. (1981). Consumer voter behavior in the passage of the Michigan container law. *Journal of Marketing*, 45, Spring, 19-32.
- Curtin, P. A., & Rhodenbaugh, E. (2001). Building the News Media Agenda on the Environment: A Comparison of Public Relations and Journalistic Sources. *Public Relations Review*, 27 (2), 179-95.
- De Grott, J., & Steg, L. (2007). General beliefs and the theory of planned behavior: The role of environmental concerns in the TPB. *Journal of Applied Social Psychology*, 37(8), 1817-1836.
- Delia, D. (2010). Review concerning the functions of packaging, available at: [www.faqs.org/periodicals/201001/2002253261.html](http://www.faqs.org/periodicals/201001/2002253261.html) (accessed 4 February 2016).
- Diamantopoulos, A., Schlegelmilch, B.B., Sinkovics, R.R., & Bohlen, G.M. (2003). Can sociodemographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *Journal of Business Research* 56, 465-80.
- Domina, T., & Koch, K. (1998). Environmental profiles of female apparel shoppers in the Midwest, USA. *Journal of Consumer Studies and Home Economics*, 22 (3), 147-161.
- Dunlap, R.E., & Jones, R.E. (2002). Environmental concern: conceptual and measurement issues, in Dunlap, R.E. and Michelson, W. (Eds), *Handbook of Environmental Sociology*, Greenwood Press, Westport, CT, 482-524.
- Einsmann, H. (1992). The environment: an entrepreneurial approach. *Long Range Planning*, 25(4), 22-24.

- Ellen, P., Wiener, J., & Cobb-Walgren, C. (1991). The role of perceived consumer effectiveness in motivating environmentally conscious behaviours. *Journal of Public Policy and Marketing*, 10, 102–117.
- Ertz, M., Karakas, F., & Sarigöllü, E. (2016). Exploring pro-environmental behaviors of consumers: An analysis of contextual factors, attitude, and behaviors. *Journal of Business Research*, 69(10), 3971-3980.
- Environmental Leader and Media Buyer Planner (2009) Green marketing: What works; what doesn't – a marketing study of practitioners? [http://www.aimme.es/archivosbd/observatorio\\_oportunidades/GreenMarketingReport\\_ExecutiveSummaryEL.pdf](http://www.aimme.es/archivosbd/observatorio_oportunidades/GreenMarketingReport_ExecutiveSummaryEL.pdf), accessed on 3rd February, 2016.
- European Commission. (2014). Attitudes of Europeans towards waste management and resource efficiency. last accessed 18.10.15. available at: [http://ec.europa.eu/public\\_opinion/flash/fl\\_388\\_en.pdf](http://ec.europa.eu/public_opinion/flash/fl_388_en.pdf).
- Fernando, A., Suganthi, L., & Sivakumaran, B. (2014). If you belong, will they follow? Using online media to set the agenda for Consumer Concerns on “Greenwashed” environmental claims, *Journal of Advertising*, 43 (2), 167-180.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston,IL: Row Peterson.
- Follows, S. B., & Jobber, D. (2000). Environmentally responsible purchase behaviour: a test of a consumer model. *European journal of Marketing*, 34(5/6), 723-746.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, 18(3) 382-388.
- Fransson, N., & Garling, T. (1999). Environmental concern: conceptual definitions measurement methods, and research findings. *Journal of Environmental Psychology*, 369-382.
- Greendex (2014), available at <http://environment.nationalgeographic.com/environment/greendex/> (accessed February 3, 2015).
- Gupta, S., & Ogden, D.T., (2009). To buy or not to buy? A social dilemma perspective on green buying. *Journal of Consumer Marketing*, 26 (6), 376-391.
- Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998), *Multivariate Data Analysis*, 5th ed., Macmillan, New York, NY.
- Hair, J.F., Black, W.C., Babin, B.J. Anderson, R. E. 2009. *Multivariate Data Analysis*, Seventh ed. Person Education, London.
- Hedlund, T. 2011. The impact of values, environmental concern, and willingness to accept economic sacrifices to protest the environment on tourists intentions to buy ecologically sustainable tourism alternatives. *Tour Hosp. Res.* 11 (4), 278-288.
- H'Mida, S., (2006). Factors contributing in the formation of Consumers' Environmental Consciousness and shaping green purchasing decision, *International Conference on Computers and Industrial Engineering*, 2009.
- Holbert, R. L., Kwak, N., & Shah, D. V. (2003). Environmental concerns, patterns of television viewing, and proenvironmental behaviors: Integrating models of media consumption and effects. *Journal of Broadcasting and Electronic Media* 47 (2), 177–196.
- Homer, P.M., & Kahle, L.R. (1988). A Structural Equation Test of the Value-Attitude- Behavior Hierarchy. *Journal of Personality and Social Psychology*, 54, 638-646.
- Hume S. (1991). Consumer doubletalk makes companies wary. *Advertising Age* 62(October 28): GR4.

- Jain S.K., & Kaur, G. (2004). Green Marketing: An Attitudinal and Behavioural Analysis of Indian Consumers. *Global Business Review*, 5(2), 187-205.
- Jang, Y., Kim, W. & Lee, H. (2015). Coffee shop consumers' emotional attachment and loyalty to green stores: The moderating role of green consciousness. *International Journal of Hospitality Management*, 44, 146-156.
- Johnson, C., Bowker, J., & Cordell, H. (2004). Ethic variation in environmental belief and behavior: An examination of the new ecological paradigm in a social psychology context. *Environment and Behavior*, 36, 157-186.
- Johri, L. M., & Sahasakmontri, K. (1998). Green marketing of cosmetics and toiletries in Thailand. *Journal of Consumer Marketing*, 15(3), 265-281.
- Kai, S.B., Chen, O.B., Chuan, C.S., Seong, L.C., & Kevin, L.L.T. (2013). Determinants of willingness to pay for organic products. *Middle-East Journal of Scientific Research*, 14 (9), 1171-1179.
- Kang, J., Liu, C. & Kim, S. (2013). Environmentally sustainable textile and apparel consumption: the role of consumer knowledge, perceived consumer effectiveness and perceived personal relevance. *International Journal of Consumer Studies*, 37, 442-452.
- Kassarjian, H.H. (1971). Incorporating ecology into marketing strategy: the case of air pollution. *Journal of Marketing*, 35(7), 61-5.
- Kelloway, E. K. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage.
- Kilbourne, W., & Pickett, G., (2008). How materialism affects environmental beliefs concern, and environmentally responsible behaviour. *Journal of Business Research*, 61(9), 885-893.
- Kim, H. S., & Lynn Damhorst, M. (1999). Environmental attitude and commitment in relation to ad message credibility. *Journal of Fashion Marketing and Management: An International Journal*, 3(1), 18-30.
- Kim, Y., & Choi. S.M. (2005). Antecedents of green purchase behavior: An examination of collectivism, environmental concern, and PCE. *Advances in Consumer Research*, 32, 592-599.
- Kim, Y., & Han, H., (2010). Intention to pay conventional-hotel prices at a green hotel- a modification of the theory of planned behavior. *Journal of Sustainable Tourism*, 18(8), 997-1014.
- Kim, Y. (2011). Understanding green purchase: The influence of collectivism, personal values and environmental attitudes, and the moderating effect of perceived consumer effectiveness. *Seoul Journal of Business*, 17(1), 65-92.
- Kirkpatrick, D. (1990). *Environmentalism: The New Crusade*, Fortune, 12 February, 44-52.
- Kovacs, W.L. (1988). The coming era of conservation and industrial utilization of recyclable materials. *Ecology Law Quarterly*, 15(4), 537-602.
- Laroche, M., Bergeron, J., & G. Barbaro-Forleo. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503-21.
- Lee, K. (2009). Gender differences in Hong Kong adolescent consumers' green purchasing behavior. *Journal of Consumer Marketing*, 26(2), 87-96.
- Lee, K., (2008). Opportunities for green marketing: young consumers. *Marketing Intelligence & Planning*, 26 (6), 573-586.

- Lee, N., Choi, Y., Youn, C., & Lee, Y. (2012). Does green fashion retailing make consumers more eco-friendly? The influence of green fashion products and campaigns on green consciousness and behavior. *Clothing and textiles research journal*, 30(1), 67-82.
- Leonidou, L., Leonidou, C., & Kvasova, O. (2010). Antecedents and outcomes of consumer environmentally friendly attitudes and behaviour. *Journal of Marketing Management*, 26, 1319-1344.
- Liu, X., Wang, C., Shishime, T. & Fujitsuka, T. (2010). Sustainable Consumption: Green Purchasing behaviors of urban residents in China. *Sustainable Development*, 20, 293-308.
- Liu, H., McCarthy, B. & Chen, T. (2016). Green food consumption in China: Segmentation based on attitudes toward food safety. *Journal of International Food & Agribusiness Marketing*, 28(4), pp. 346-362.
- Magnier, L. & Schoormans, J. (2015). Consumer reactions to sustainable packaging: The interplay of visual appearance, verbal claim and environmental concern. *Journal of Environmental Psychology*, 44, 53-62.
- Maloney, M.P., Ward, M.P., & Braucht, G.N. (1975). A revised scale for the measurement of ecological attitudes and knowledge. *American Psychologist*, July, 787-92.
- Marcoulides, G.A. & Schumacker, R.E. (1996). *Advanced structural equation modeling*. Mahwah, NJ: Erlbaum.
- Martin, B. & Simintiras, A.C. (1995). The Impact of Green Product Lines on the Environment: Does What They Know Affect How They Feel? *Marketing Intelligence & Planning*, 13(4), 16-23.
- McCarty, J., & Shrum, L. (2001). The influence of individualism, collectivism and locus of control on environmental beliefs and behavior. *Journal of Public Policy & Marketing*, 21, 93-104.
- McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public opinion quarterly*, 36(2), 176-187.
- McCombs, Maxwell, Juan Pablo Llamas, Esteban Lopez-Escobar, & Federico Rey (1997). Candidate Images in Spanish Elections: Second-Level Agenda-Setting Effects. *Journalism and Mass Communication Quarterly*, 74(4), 703-17.
- Milfont, T.L. (2007), cited in Tan, B.C. (2011). The roles of knowledge, threat, and PCE on green purchase behavior. *International Journal of Business Management*, 6(12), 14-26.
- Milfont, T.L., & Duckitt, J. (2004). The structure of environmental attitudes: a first-and second-order confirmatory factor analysis. *Journal of Environmental Psychology*, 24, 289-303.
- Mikami, S., Takeshita, T., Nakada, M. and Kawabata, M. (1995). The media coverage and public awareness of environmental issues in Japan. *International Communication Gazette*, 54(3).
- Mintel (1995), The Second Green Consumer Report, Mintel, London.
- 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, 37-48.
- Morris, Jon D., Chongmoo Woo, and Chang-Hoan Cho (2003). Internet Measures of Advertising Effects: A Global issue. *Journal of Current Issues and Research in Advertising*, 25 (Spring), 25-43.
- Mostafa, M. (2007). Gender differences in Egyptian consumers' green purchase behavior: the effects of environmental knowledge, concern and attitude. *International Journal of Consumer Studies*, 31, 220-229.

- Mostafa, M. (2007). A hierarchical analysis of the green consciousness of the Egyptian consumer. *Psychology and Marketing*, 445–473.
- Muralidharan, S., Rejon-Guardia, F. and 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.
- Nittala, R. (2014). Green consumer behavior of the educated segment in India. *Journal of International Consumer Marketing*, 26,2, 138-152.
- Obermiller, C. (1995). The Baby Is Sick/The Baby Is Well: A Test of Environmental Communication Appeals. *Journal of Advertising*, 24(2), 55–70.
- Olsen M.C., Slotegraaf, R.J., & Chandukala, S.R. (2014). Green claims and message frames: how green new products change brand attitude. *Journal of Marketing*, 78, 11-137.
- Ottman J.A., Stafford E.R., & Hartman, C.L. (2006). Avoiding green marketing myopia. *Environment* 48(5), 22–36.
- Paco, A., & Raposo, M. (2009). Green” segmentation: an application to the Portuguese consumer market. *Marketing Intelligence and Planning* 27(3), 364–379.
- Paladino, A. & Ng, S. (2013). An examination of the influences on green mobile phone purchases among young business students: an empirical analysis. *Environmental Educational Research*, 19(1), 118-145.
- Paul, J., Modi, A., and Patel J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*, 29, 123-134.
- Perrea, T., Grunert, K.G., Krystallis, A., Zhou, Y., Huang, G. and Hue, Y. (2014). Testing and validation of a hierarchical value-attitudes model in the context of green food in China. *Asia Pacific Journal of Marketing and Logistics*, 26(2), 296-314.
- Prakash, G., & Pathak, P. (2017). Intention to buy eco-friendly packaged products among young consumers of India: A study on developing nation. *Journal of Cleaner Production*, 141, 385-393.
- Prete, M. I., Piper, L., Rizzo, C., Pino, G., Capestro, M., Mileti, A., . . . Guido, G. (2017). Determinants of Southern Italian households’ intention to adopt energy efficiency measures in residential buildings. *Journal of Cleaner Production*, 153, 83-91.
- Qader, I., & Zainuddin, Y. (2011). The influence of media exposure, safety and health concerns, and self-efficacy on environmental attitudes towards electronic green products. *Asian Academy of Management Journal*, 16(2), 167-186.
- Rahbar, E. & Wahid, N. A. (2011). Investigation of green marketing tools' effect on consumers' purchase behavior. *Business Strategy Series*, 12(2), 73 – 83.
- Rezai, G., Teng, P., Mohamed, Z. & Shamsuding, M.N. (2013). Consumer willingness to pay for green food in Malaysia. *Journal of International Food & Agribusiness Marketing*, 25, 1-18.
- Rios, F., Martí'nez, T., Moreno, F. & Soriano, P. (2006). Improving attitudes toward brands with environmental associations: an experimental approach. *The Journal of Consumer Marketing*, 23(1), 26-34.
- Ritch, E.L., & Schröder, M.J. (2012). Accessing and affording sustainability: the experience of fashion consumption within young families. *International Journal of Consumer Studies*, 36, 203–210.
- Roberts, J.A. (1996). Green consumers in the 1990s: profile and implications for advertising. *Journal of Business Research*, 36, 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.
- Rokka, J., & Uusitalo, L. (2008). Preference for green packaging in consumer product choices – Do consumers care? *International Journal of Consumer Studies*, 32(5), 516-525.
- Roper, S., & Parker, C. (2006). How (and where) the mighty have fallen: branded litter. *Journal of Marketing Management*, 22, 473–487.
- Rundle-Thiele, S., Paladino, A., & Apostol, S.A.G.Jr. (2008). Lessons learned from renewable electricity marketing attempts: A case study. *Business Horizon*, 51, 181-190.
- Sarigöllü, E. (2009). A cross-country exploration of environmental attitudes. *Environment and Behavior*, 41, 365-386.
- Schultz, P. (2000). Empathizing with nature: The effects of perspective taking on concern for environmental issues. *Journal of Social Issues*, 56, 391-406.
- Schweper, Charles H. Jr., & Bettina Cornwell (1991). An Examination of Ecologically Concerned Consumers and Their Intention to Purchased Ecologically Packaged Products. *Journal of Public Policy & Marketing*, 10 (2), 77-101.
- Shabecoff, P. (1993). *A fierce green fire: The American environmental movement*. New York, NY: Hill and Wang.
- Singh, N., & Gupta, K. (2013). Environmental attitude and ecological behavior of Indian consumers. *Social responsibility journal*, 9(1), 4-18.
- Steenis, N. D., van Herpen, E., van der Lans, I. A., Ligthart, T. N., & van Trijp, H. C. (2017). Consumer response to packaging design: The role of packaging materials and graphics in sustainability perceptions and product evaluations. *Journal of Cleaner Production*, 162, 286-298.
- Stern, P.C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407-24.
- Stern, P. C., Dietz, T., Abel, T. D., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human ecology review*, 6(2), 81-97.
- Straughan, R., & Roberts, J., (1999). Environmental segmentation alternatives: a look at green consumer behavior in the new millennium. *Journal of Consumer Marketing*, 16(6), 558 – 575.
- Suki, N.M. (2014). Investigating the Measurement of Consumer Ecological Behaviour, Environmental Knowledge, Healthy Food, and Healthy Way of Life. *International Journal of Social Ecology and Sustainable Development* 5(1), 12-21.
- Suki, N.M. (2016). Consumer environmental concern and green product purchase in Malaysia: structural effects of consumption values. *Journal of Cleaner Production*. 1-11.
- Tang, Y., and Lu, P. (2014). Chinese consumer attitude and purchase intent towards green products. *Asia-Pacific Journal of Business Administration* 6(2), 84-96.
- Taufique, K. M. R., & Vaithianathan, S. (2018). 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*, 183, 46-55.
- Taylor, S., & Todd, P. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International journal of research in marketing*, 12(2), 137-155.

- Thøgersen, J. (1999). The ethical consumer: Moral norms and packaging choice. *Journal of Consumer Psychology*, 22, 439-460.
- Trivedi, R.H., Patel, J.D., Savalia, J.R. (2011). Pro-environmental behavior of consumers: A taxonomy and its implications for the green marketers. *South Asian Journal of Management*, 18(4), 121-132.
- Trivedi, R.H., Patel J.D., and Savalia, J.R. (2015). Pro-environmental behaviour, locus of control and willingness to pay for environmental friendly products. *Marketing Intelligence & Planning*, 33(1), 67-89.
- van Birgelen, M., Semeijn, J., & Keicher, M. (2009). Packaging and proenvironmental consumption behavior: Investigating purchase and disposal decisions for beverages. *Environment & Behavior*, 41, 125-146.
- Van Liere, Kent & Dunlap, Reiley (1980). The social Bases of Environmental Concerns: a Review of Hypotheses, Explanations, and Empirical Evidence. *Public Opinion Quarterly*, 181-197.
- Varela-Candamio, L., Novo-Corti, I., & García-Álvarez, M. T. (2018). The importance of environmental education in the determinants of green behavior: A meta-analysis approach. *Journal of Cleaner Production*, 170, 1565-1578.
- Verma, V. K., & Chandra, B. (2018). An application of theory of planned behavior to predict young Indian consumers' green hotel visit intention. *Journal of Cleaner Production*, 172, 1152-1162.
- Vermeir, I., & Verbeke, W. (2008). Sustainable food consumption among young adults in Belgium: theory of planned behavior and the role of confidence and values. *Ecological Economics*, 64, 542-553.
- Vermillion, L. J., & Peart, J. (2010). Green Marketing: making sense of the situation. In Allied Academies International Conference. Academy of Marketing Studies. Proceedings (Vol. 15, No. 1, p. 68). Jordan Whitney Enterprises, Inc.
- Vicente-Molina, M., Fernández-Sainz, A., & Izagirre-Olaizola, J. (2018). Does gender make a difference in pro-environmental behavior? The case of the Basque Country University students. *Journal of Cleaner Production*, 176, 89-98.
- Wagner, S. A. (1997). Understanding green consumer behavior: A qualitative cognitive approach. London: Routledge.
- Wong, V., Turner, V., & Stoneman, P. (1996). Marketing strategies and market prospects for environmentally friendly consumer products. *British Journal of Management*, 7(3), 263-81.
- Yadav, R. and Pathak, G. S. (2016). Determinants of consumers' green purchase behavior in a developing nation: applying and extending the theory of planned behavior. *Ecological Economics*, 134, 114-122.
- Young, W., Hwang, K., McDonald, S., & Oates, C. (2010). Sustainable consumption: green consumer behaviour when purchasing products, *Sustainable Development*, 18, 20-31.
- Yu, T.-Y., Yu, T.-K., & Chao, C.-M. (2017). Understanding Taiwanese undergraduate students' pro-environmental behavioral intention towards green products in the fight against climate change. *Journal of Cleaner Production*, 161, 390-402.
- Zhao, R., Geng, Y., Liu, Y., Tao, X., & Xue, B. (2018). Consumers' perception, purchase intention, and willingness to pay for carbon-labeled products: A case study of Chengdu in China. *Journal of Cleaner Production*, 171, 1664-1671.

- Zhou, Y. (2018). The role of green consumers under competition: A mixed blessing? *Journal of Cleaner Production*, 170, 857-866.
- Zikmund, W.G. (1997). *Business Research Methods*, Dryden Press, Fort Worth.
- Zikmund, W.G., Babin, B. J., Carr, J. C. & Adhikari, A. & Griffin., M. (2010). *Business Research Methods- A South Asian Perspective*, Cengage Learning. 8e.
- Zimmer, M., Stafford, T., & Stafford, M. (1994) Green issues: dimensions of environmental concern. *Journal of Business Research*, 30, 63–74.
- Zucker H.G. (1978). The variable nature of news media influence. In *Communication Yearbook*, Vol. 2, Ruben BD (ed.). Transaction: New Brunswick, NJ; 225–245.

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## **Appendix I: Measures of the study with items**

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### **Inward environment conscious attitude**

- I am very concerned about the environment.
- I would be willing to reduce my consumption to help protect the environment.
- I would give part of my own money to help protect wild animals.
- I have asked my family to recycle some of the things we use.

### **Outward environment conscious attitude**

- Major political change is necessary to protect the natural environment.
- Major social changes are necessary to protect the natural environment.
- Humans are severely abusing the environment.

### **Perceived consumer effectiveness**

- Each person's behaviour can have a positive effect on society by signing a petition in support of promoting the environment.
- I feel I can help solve natural resource problem by conserving water and energy.
- There is not much I can do about the environment (R).
- I feel capable of helping solve the environment problems.

### **Ecological concern**

- I am extremely worried about the state of the world's environment and what it will mean for the future generations.
- Mankind is severely abusing the environment.
- When humans interface with nature it often produces disastrous consequences.
- The balance of nature is very delicate and easily upset.
- Humans must live in harmony with nature in order to survive.

### **Green packaging**

- I am in lookout for social labeling on the package which says "an eco-friendly product"
- The reusable milk bottles is more appropriate than milk cartons
- I bring my own bottle for refilling than buy a new one
- The recyclable paper packaging would be preferred over non-recyclable plastic.

### **Media influence**

- I agree TV channels like NDTV with Greenathon have enhanced knowledge about green products.
- Newspapers and Magazines are a good source of propagating environment issues.
- The environment consciousness has been created by the role of media lately.

### **Purchase intention**

I prefer buying environmental friendly products.  
Buying environmental friendly products have long term benefits.  
I feel a sense of accomplishment buying eco-friendly products.

***Green purchasing behaviour***

I buy environmentally friendly products whenever possible.  
I buy organic food whenever possible.  
I use products made from recycled materials whenever possible.  
I recycle household waste, whenever possible.

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