

## DEMOGRAPHIC DIFFERENCES AMONG INDIAN PRIMARY SCHOOL CHILDREN'S ENVIRONMENTALLY SUSTAINABLE CONSUMPTION BEHAVIOR

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**Abstract:** This paper aims to examine how a demographic factor such as gender impacts environmental attitude, environmental concern, environmental awareness, peer influence, parental influence, and environmentally sustainable consumption behavior (ESCB) in primary school children. A total of 649 (male and female) primary school children participated through multi-stage random sampling. Surveys were distributed across 84 primary schools in Bhiwadi, Alwar (India). Principal Component Analysis with varimax rotation was performed to examine whether the data in the current study could be reduced to the meaningful factors. T test indicates that gender has a significant relation on the predictors of ESCB. Regression Analysis explains environmental attitude and peer influence to be the most important predictor of ESCB among male primary school children, while environmental concern as the main predictor among female primary school children. Parental influence and environmental awareness were not the significant predictor among either male or female school children. This study should provide useful information to green marketers, policy makers and teachers. Teachers and marketers should enhance environmental awareness by deploying various strategies, material to enhance concern for environment.

**Keywords:** Environmental sustainable consumption behavior, Environmental attitude, Peer Influence, Environmental awareness, Environmental Concern, Gender.

### 1. INTRODUCTION

The world today suffers from dangerously high levels of depletion of natural resources, water pollution, air pollution, ground water pollution, toxic chemicals and soil pollution, ozone layer depletion, global warming, loss of biodiversity, extinction of wildlife and loss of natural habitat, nuclear wastes and radiation issues (Anand, 2013). Factors responsible for degradation of the environment include rapid population growth, poverty, urbanization, and industrialization.

India makes up 2.4 percent of the world's land, while supporting 16 percent of the world's population (Census, 2011). The government of India and the people too have, in recent times, realized how the various threats to the environment are

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some of the primary causes of disease and health issues in India, and how they are impacting the long-term livelihood in India.

According to Juwaheer (2005), technological innovation, such as growth of alternate fuels, energy-efficient appliances, and recycling of waste materials, reduces environmental degradation and helps conserve resources while also reducing pollution. Many scientists and environmentalists however hold that solutions to environmental problems do not lie in technology alone (Hardin 1993; Stern, Young, and Druckman, 1992). They suggest that individuals with a higher level of environmental concern are more likely to engage in ecological behavior. To advance a country's green revolution, Rajyalakshmi (2014) supports McGougall's (1993) statement that "the role of the consumer is essential, as 30% to 40% of environmental degradation has been brought about by consumption activities of private households".

Consumers need to adopt environmentally sound behavior that leads them to reduce the use of natural resources and recycle household waste. More importantly, if consumers exhibit a high degree of sustainable consumption behavior, marketers will be strongly motivated to adopt green marketing.

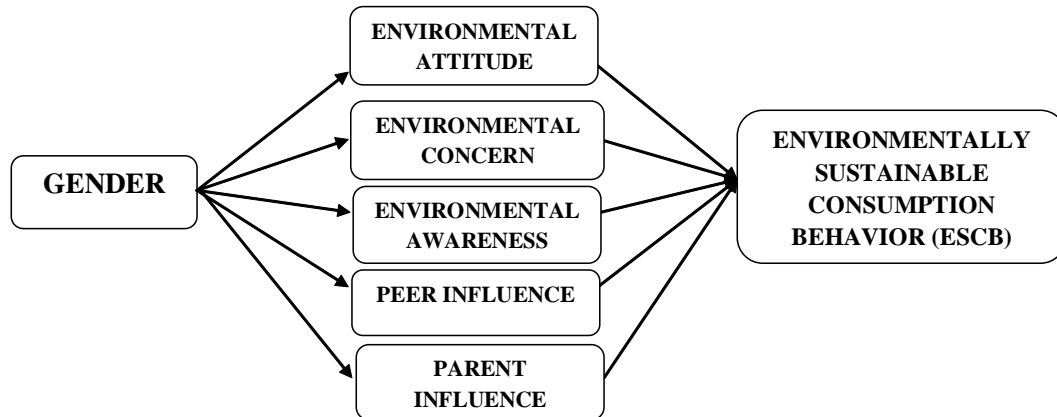
Children's are the future customers in the market as they like freedom of choice not only in making routine consumption decisions for the family but also in pestering their parents to buy products desired by them (Ali *et al.*, 2012; Kaur, 2006). A rarely-explored topic is primary school children's sustainable consumption behavior and factors that affect them.

Undisputedly, children constitute a large citizen group that has the potential of constructing a force for protection of environment. Studies have shown that children are more ready to accept changes and innovative ideas when compared to older people. Further, younger generations are more prone to support environmental protection (Martinsons, So, Tin, Wong, 1997).

This paper attempts to supplement existing research studies by examining the gender differences in sustainable consumption behavior among primary school children in India. Regarding the issues of gender differences in sustainable consumption perception and behavior, a question still need to be answered, such as: Can females and males be treated as same segments for sustainable consumption behavior?

Past studies in other countries have found gender differences in environmental perceptions (Lee, 2009; Tan and Lau, 2009). Such issues have however rarely been examined in the Asian context, especially the Indian one. The aim of this paper is to fill this gap by examining gender differences amongst Indian primary school children with respect to the following factor as mediating factors: environmental attitude, environmental concern, environmental awareness, peer and parental

influence and dependent factor as environmentally sustainable consumption behavior (ESCB) as represented in figure 1:



**Figure 1: Conceptual framework**

## **2. LITERATURE REVIEW**

Past research has contributed by explaining how sustainable consumption behavior is affected by various factors. Researchers' have focused how individual's demographic, psychographic factors are associated with sustainable consumption behavior (Said, 2007; Whaid, 2011; Sinnappan, 2011; Khare, 2015). In the current research study environmentally sustainable consumption behavior (ESCB) is conceptualized as a criterion that is facilitated by few psychographic factors i.e environmental attitude, environmental concern, environmental awareness, parental Influence and peer influence. The conceptual framework how demographic factor (gender) influence these mediating psychographic factors resulting in change in ESCB is depicted in figure 1. The following sections focus on the relevant literature.

### **2.1. Environmental attitude**

In existing literature, environmental attitude is commonly understood as the collection of beliefs, affect, and behavioral intentions a person holds regarding activities or issues related to the environment (Tan, 2011). Environmental attitude was found to be the top predictor of green purchasing behavior (Sinnappan and Rahman, 2011). Researchers have claimed both positive and negative relationships between environmental attitude and environmental behavior (Hessami and Yousefi, 2013; Wang, Liu, and Qi, 2014). The above mentioned studies are carried out in adults. Given this, studies need to be carried out to examine the relationship between environmental attitude and behavior among primary school children.

Chen *et al.* (2011) have evidence from their sample that female children, having environmentally oriented attitudes, increases the odds of their participation in pro-environmental behavior. Lee (2009) provides additional evidence that, among Hong Kong participants, female consumers scored significantly higher in environmental attitude than their male counterparts. He states that daughters in China are encouraged to help their mothers in indoor activities. This leads their orientation to the private sphere and more concern about environmental threat, health and safety. Similar culture can be seen in India too where daughters are encouraged to stay at home and help their mothers in household activities. Therefore referencing from existing literature, it is hypothesized that:

H1<sub>0</sub>: Male and female students in primary school will show no significant difference with respect to environmental attitude's co-relation with ESCB.

H1<sub>a</sub>: Male and female students in primary school will show a significant difference with respect to environmental attitude's co-relation with ESCB.

## 2.2. Environmental concern

Environmental concern is a broad concept that refers to a wide range of indicators such as the belief that the environment is under threat, or that there are adverse consequences to environmental degradation, and a general concern for human-caused environmental problems (Schultz, 2001). Literature explains a positive association between environmental concern and ecologically responsible behavior, such as recycling (Simmons and Widmar, 1990; Tamashiro, Silveira, and Merlo, 2014), interest in renewable energy sources (Joskow, 1996), or in buying organic food (Grunert, 1993), and the increased intention to purchase greener products (Straughan and Roberts, 1999). Lee (2008) explains that successful sustainable consumption behavior takes place because of an individual's emotional appeal that hits individuals' affective response towards environmental protection, and stated it as environmental concern. Subsequently, having also studied the effect of gender on environmental concerns, Lee (2009) finds that female adolescents express their thoughts on environmental concern more, as compared to their male counterparts.

Referencing from existing literature, it is hypothesized that:

H2<sub>0</sub>: Male and female students in primary school will show no significant differences with respect to environmental concern's co-relation with ESCB.

H2<sub>a</sub>: Male and female students in primary school will show significant differences with respect to environmental concern's co-relation with ESCB.

## 2.3. Environmental awareness

Environmental awareness levels of both male and female genders have also been investigated by Asmuni, Khalili, and Zain (2012), Budak, Budak, and Zaimoglu

(2005), Hassan, Noordin, and Sulaiman (2010), Mudderisoglu and Altanlar (2011), Said and Ahmadun (2003) and Tuncer *et al.* (2007). While Tuncer *et al.* (2007) and Budak *et al.* (2005) both find that there were significant differences between male and female students with respect to their environmental attitude scores, Budak *et al.* (2005) find the relationship between gender and pro-environment behavior to be statistically insignificant. Said and Ahmadun (2003) find no significant difference between gender and other variables, namely, environmental knowledge, environmental concern, and sustainable consumption practices. The results obtained by Hassan *et al.* (2010) contradict those of Said and Ahmadun (2003): the former showed that environmental awareness of female students was higher than that of male students. A study conducted in 2011 by Mudderisoglu and Altanlar indicates that gender has a high impact on environmental attitude and behavior of undergraduate students at a Turkish university. Converse findings were reported by Hasiloglu, Keles, and Aydin (2011) and Asmuni *et al.* (2012), that there were no significant differences between gender and conservation behavior.

Different studies have thrown up different and sometimes opposing results which therefore necessitate a fresh investigation into the relationship between gender and environmental awareness, especially while considering a school-going population which is, by nature, not as educated.

The hypothesis statements in this regard are given below:

H<sub>3<sub>0</sub></sub>: Male and female students in primary school will show no significant difference with respect to environmental awareness in co-relation with ESCB..

H<sub>3<sub>a</sub></sub>: Male and female students in primary school will show a significant difference with respect to environmental awareness in co-relation with ESCB..

### **3.4. Peer and parental influence**

Empirical findings suggest that children's affiliation with friends and parents who engage in environmental behavior is a strong predictor of the child's own behavior, or at least for some of it (Lee, 2011). This might be because parents and peers are regarded as primary socialization agents for the inculcation of values and behavior (Jodl *et al.*, 2001). Fletcher, Glen, and Mekos (2000) find that if parents are active in, or inspire contribution in community service, children are likely to be similarly active. Shaffer (1994) discusses that parents might influence their children as (a) reinforcing and punishing agents, (b) modeling agents, and (c) value-setters for environmental ideas or behavior. McNeal and Ji (1999) suggest that, through the process of consumer socialization, adolescents learn symbolic meaning of goods and the products/brands/stores preferred are a result of influence by their peers.

Lee (2008, 2009, 2011) has also studied peer and parental influence in the field of green purchase behavior.

Studies have shown influence of peer and parent among adults, which necessitate an investigation into the relationship between gender and peer and parental influence with respect to ESCB.

The hypothesis statements in this regard are given below:

H<sub>4</sub><sub>0</sub>: Gender of the child makes no significant difference to the extent of peer influence with respect to ESCB

H<sub>4</sub><sub>a</sub>: Gender of the child makes significant difference to the extent of peer influence with respect to ESCB.

H<sub>5</sub><sub>0</sub>: Gender of the child makes no significant difference to the extent of parental influence with respect to ESCB

H<sub>5</sub><sub>a</sub>: Gender of the child makes significant difference to the extent of parental influence with respect to ESCB.

### **3.5. Environmentally Sustainable consumption behavior**

Environmentally sustainable consumption behavior refers to “the use of services and related products that respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle so as not to jeopardize the needs of future generations” (Jones, Comfort, and Hillier, 2009). Stated simply, it means consuming more efficiently, consuming more responsibly, or quite simply consuming less. The importance of studying sustainable consumption in the household setup lies in the fact that a modern household enjoys greater availability of consumer goods (Sener and Hazer, 2008).

Consuming sustainably is closely aligned to quality of life and consumer well-being issues (Hume, 2010). Previous studies have focused on examining factors affecting sustainable consumption behavior (Lee, 2008, 2009, 2011; Wang *et al.* 2014). These studies recommend that environmental attitude, environmental concern, perceived seriousness of environmental problems, perceived environmental responsibility, peer influence, and self-identity could be important determinants of sustainable consumption behavior (Lee, 2009).

Comparatively, existing literature on sustainable consumption behavior has paid less attention to the ESCB of primary school children. Lee (2008, 2009, 2011) reports the effects of adolescents’ (7 to 13 years) environmental attitude, environmental concern, perceived seriousness of environmental problems, perceived environmental responsibility, and peer influence on green purchasing behavior. The complete sustainable consumption cycle (purchase-use-dispose) was

however not examined. To date, little is known about effect of gender on sustainable consumption behavior among Indian primary school children.

Referencing from existing literature, containing evidence that females reported greater participation in general environmental behavior than males (Fisher, Bashyal & Bachman, 2012; Kalantari and Asadi, 2010; Lee, 2012), it is posited that:

H<sub>6</sub><sub>0</sub>: Male and female students in primary school will show no significant difference in sustainable consumption behavior.

H<sub>6</sub><sub>a</sub>: Male and Female students in primary school will show a significant difference in sustainable consumption behavior.

### **3. METHODOLOGY**

This section presents the design of the methodological procedures adopted in the study.

#### **3.1. Population and statistical sample**

The universe of this study was composed of urban Bhiwadi, Alwar (India) primary schools; students of classes 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> were considered as potential study respondents. The choice of this age group is justified by the fact that no precise data with respect to the ESCB of primary school children is currently available. A list of all 84 schools (seventy-two private school and twelve government schools) primary schools in urban Bhiwadi (Alwar) was first obtained from the Block Education Office, Tijara. Urban area import vast quantities of food, water, and energy and export emissions and waste (Alberti, 1996). These have a large negative impact on the environment. There sustainable consumption continues to be a serious global concern in urban areas. A total of 649 students (363 private school student and 286 government schools) were randomly selected from this list of 5000 students distributed in classes 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup>. A letter stating the objectives of the intended study and the procedure for carrying out the same was sent to the principal of each of these schools. After collection of consent forms from these schools, the date and time for the survey were scheduled. On the scheduled date, the questionnaires were self administered to students selected by the respective schools as a group in one of their classes.

#### **3.2. Sample design and data collection techniques**

This study was based on random stratified sampling. In such a case, the recommendation of Richardson *et al.* (2008) is that the population be divided into mutually exclusive and exhaustive heterogeneous subsets, according to the variables that characterize the universe and have approximately the same number of elements. Therefore, school types (private and government) were used as subdivisions to have equal representation of population. A total of 650 questionnaires

were got filled by children of 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> class during their school hours i.e 8.00 A.M to 2.00 P.M. in their respective schools. A total of 649 questionnaires, with responses marked, corresponding to 99 percent of respondents, were included in the study. The process of data collection contemplated the personal application of self-administered questionnaires, as suggested by Cooper and Schindler (2003). In this mode, The questions were read by researcher and answers were recorded by the respondent. Distribution of sample is given in Table 1.

**Table 1**  
**Distribution of children by class**

Class	Private school		Government School		Total
	Male	Female	Male	Female	
<b>III</b>	76	54	47	42	219
<b>IV</b>	60	65	38	57	220
<b>V</b>	64	44	43	59	210
<b>Total</b>	200	163	128	158	<b>649</b>

**Mean Age** =10.31 years

The development of the data collection instrument is discussed below.

### 3.3. Data collection instrument

Scales based on previous research were used to measure independent variables (environmental attitude, environmental concern, environmental awareness, peer and parental influence, and sustainable consumption behavior) and the dependent variable (gender). They were however duly adapted to the object of this study. To this end, the research instrument was prepared from adapting the scales proposed by researchers i.e environmental attitude and environmental awareness scale from CHEAKS developed by Leeming (1995), environmental concern by Schultz, 2001, peer and parental influence from PPI scale given by Wilson, 2000. In order to measure the other independent variable (sustainable consumption behavior), the questions were based on the model proposed by Muderrisoglu (2011).

The three-point Likert scale was used for environmental attitude (1= 'True' to 3 = 'False'), environmental concern (1= 'Not Important' to 3= 'Important'), peer and parental influence (1= 'Disagree' to 3= 'Agree') and sustainable consumption behavior (1= 'Never' to 3= 'Always').

Environmental awareness was measured by multiple choice questions where each correct answer was awarded 1 and incorrect answers were given 0. The idea behind using these scales was to get the respondents to respond to each statement.

The operationalization of key constructs and measurement scales are detailed below Table 2. The questionnaire was originally in both Hindi and English. The



reliability of the questionnaire was 0.852 and it took around 20 minutes to complete. As Burns (2006) suggest a minimum value of reliability i.e  $\alpha = .65$  as an acceptable level of reliability value for newly developed measurement. Based on this, the scales used for this study can be acceptable in terms of reliability.

#### 4. RESULTS AND FINDINGS

##### 4.1. Factor Analysis

Principal Component Analysis (PCA) was first conducted to examine whether all the items in a specific scale are loading to the same factor or not. To check the sampling adequacy Kaiser -Meyer-Olkin was used. This yielded a value of .880, which indicates that sample is adequate for the current study. Varimax rotation with a significant factor loading accepted criterion .40 (Hair, 2006) was used for the current study. All 42 items for six variables were subjected to PCA. This resulted that six factors accounted for 63.411% of total variance.

Factor 1, Sustainable Consumption behavior among participants accounted for 24.12% of the variance. All the 12 items in Factor 1 yielded loading between 0.79 to 0.986. Factor 2, Environmental attitude, accounted for 10.3% of the variance. All the items have accounted loading more than .731. Factor 3, accounted for 9.5% of the total variance, reflected Peer Influence on the participants sustainable consumption behavior. All the items accounted loading between .778 to .884. Factor 4, reflected participants Awareness on sustainable consumption matters. It accounted 8.1% of total variance. Loading of all the items ranged in between .664 to .810.

Factor 5 resulted Concern towards environment accounting 6.93% of total variance with factor loading greater than .541. Lastly, factor 6 participant's parental influence on sustainable consumption matters accounted for 4.3 % of the total variance. All the items had factor loading greater than .693. Factor loadings are accounted in Table 2.

**Table 2**  
**Principal Component Analysis Result**

<i>Factors</i>	<i>Factor Loadings</i>					
	1	2	3	4	5	6
<b>Sustainable Consumption behavior</b>						
1) Bought writing paper and note books made from recycled paper	.928					
2) Bought used books	.986					
3) Bought reusable bottles and lunch box	.792					
4) Purchased refillable pens	.868					

*contd. table 2*

Factors	Factor Loadings					
	1	2	3	4	5	6
5) Packed breakfast or lunch in washable container instead of a use and throw container	.974					
6) Borrowed or hired stationary items that you only need occasionally	.900					
7) Shared toys that you only need occasionally	.971					
8) Used both side of paper to write	.970					
9) Repaired bags and shoes on time so that they last longer	.936					
10) Passed old textbooks and story books to others	.895					
11) Passed toys to others	.861					
12) Gave newspaper, glass tumblers/bottle cans and plastic bottles to kabadiwala* (Recycle).	.833					
<b>Cronbach's alpha</b>	.91					
*Kabadiwala refers to a person who deals with used household objects. They purchase used items from household in exchange of money.						
<b>Environmental attitude</b>						
1) I would be willing to separate trash for recycling	.844					
2) I have asked my parents to buy products made using extra packaging	.845					
3) I would be willing to save paper by using both sides of paper	.773					
4) I would be willing to stop buying some products that are not reusable	.950					
5) It upsets me when I see people use too many plastic items	.731					
6) It makes me happy when people recycle used bottle, cans and paper	.835					
<b>Cronbach's alpha</b>	.89					
<b>Peer Influence</b>						
1) My friends influence my beliefs about recycling	.884					
2) It is very important that my friends approve purchase of refillable pen	.816					
3) My friends and I do not agree about sharing of toys and books	.812					
4) My friends and I do not agree about purchasing products with less packaging	.776					
5) My friends I have the same basic beliefs regarding using both sides of paper	.782					
6) It is very important that my friends approve recycling of bottles and newspaper	.778					

contd. table 2

Factors	Factor Loadings					
	1	2	3	4	5	6
<b>Cronbach's alpha</b>			.89			
Environmental Awareness						
1) An item which cannot be recycled and used again is				.680		
2) _____ is an effective way of informing customers about the environmental impacts of the products & the choice they make while purchasing				.664		
3) What should you do with used glass bottles?				.790		
4) How can we reduce wastage while purchasing				.754		
5) Soil pollution is generally due to				.810		
6) One of the following does not decompose in ocean and cause harm to fish				.782		
<b>Cronbach's alpha</b>			.76			
Environmental Concern						
1) Me/Myself					.558	
2) My Health					.758	
3) My Life style					.779	
4) My Future					.799	
5) All People (in different countries)					.541	
6) People in my country					.600	
<b>Cronbach's alpha</b>					.761	
Parental Influence						
1) My parents do not influence my beliefs about separating glass bottles from trash						.869
2) My parents do not influence my beliefs about purchase of environmental friendly products						.693
3) My beliefs about using both sides of paper for writing are the same as my parents						.892
4) I do not care what my parents think about purchasing refillable pens						
5) My parents and I have the same value system regarding sharing of toys, books with others						.757
6) My beliefs about recycling newspaper, bottles are the same as my parents						.803
<b>Cronbach's alpha</b>						.69

#### 4.2. Significant predictors of sustainable consumption behavior among male children

In order to examine predictors of sustainable consumption behavior that are significant among male primary school children, Correlation coefficients were thereafter calculated through multiple regression. The model containing all five variables was significant:  $R = .76$ ,  $R^2 = .55$ ,  $F(5,322) = 3.376$ ,  $p < 0.05$ . The  $R$  value represents the simple correlation and is 0.76, which indicates a high degree of correlation. The  $R^2$  value indicates how much of the total variation in the dependent

variable can be explained by the independent variable. In this case, 55% can be explained. Among the five variables, Environmental Concern ( $\beta = .046$ ,  $p > 0.05$ ), Environmental Awareness ( $\hat{\alpha} = .016$ ,  $p > 0.05$ ), and Parental Influence ( $\beta = -.077$ ,  $p > 0.05$ ) were found to be non-significant predictors of sustainable consumption behavior among male primary school children. The predictability of the remaining two variables were thus: Environmental Attitude ( $\beta = .168$ ,  $p < .05$ ) and Peer Influence ( $\beta = .117$ ,  $p < .05$ ). Table 3 presents the results of the simultaneous multiple regression performed on predictors of behavior among male primary school children. The results listed in Table 3 suggest that the peer influence and environmental attitude accounts for nearly 28.5 percent ( $R^2 = .285$ ) of the variance of the overall sustainable consumption behavior at 5 percent level of significance. This indicates the importance of 'peer influence' among male primary school children, which toward their consumption act will strongly increase their readiness to participate in sustainable consumption behavior. Environmental attitude is significant to explain 16.8 percent of sustainable consumption behavior. The direct effect of certain variables on sustainable consumption behavior can be observed from the weights given to the coefficient, which indicates the relative change in the dependent variable for any change in the independent variable.

The regression equation can be stated as

$$Y = 1.63 + .168EA + .117PI - .077PAI + .046EC + .016EAW$$

Where Y = ESCB, EA = Environmental Attitude, PI = Peer Influence, PAI = Parental Influence, EC = Environmental Concern and EAW = Environmental Awareness.

**Table 3**  
**Multiple regression of 5 predictors of ESCB among Male primary school children**

<i>Variable</i>	$\beta$	<i>P(Sig.)</i>
Predictors		
Environmental Attitude	.168	.003
Peer Influence	.117	.033
Parental Influence	-.077	.170
Environmental Concern	.046	.406
Environmental Awareness	.016	.779
F	3.376	
R <sup>2</sup>	.550	
Adjusted R <sup>2</sup>	.511	
N	328	

### **4.3. Significant predictors of sustainable consumption behavior among female children**

Simultaneous regression was also performed to identify significant variables of sustainable consumption behavior among female primary school children. The

model containing all five variables was significant,  $R = .65$ ,  $R^2 = .622$ ,  $F(5, 315) = 8.776$ ,  $p < 0.05$ . The  $R$  value represents the simple correlation and is 0.65, which indicates a degree of correlation. The  $R^2$  value indicates how much of the total variation in the dependent variable can be explained by the independent variable. In this case, 62% can be explained. Among the five variables, Parental Influence, awareness and attitude was found to be a non-significant predictor ( $\beta = .103$ ,  $p > 0.05$ ;  $-.082$ ,  $p > 0.05$  and  $.062$ ,  $p > 0.05$  respectively). Table 4 presents results of the simultaneous multiple regression performed on predictors of behavior among female primary school children.

The predictability of two variables was in the following descending order: Environmental Concern ( $\beta = .232$ ,  $p < .05$ ) and Peer Influence ( $\beta = .109$ ,  $p < .05$ ).

The results listed in Table 4 suggest that explanatory variable accounts for nearly 34.1 percent ( $R^2 = .341$ ) of the variance of the overall sustainable consumption behavior at 5 percent level of significance. This indicates that improvement of 'environmental concern' among female primary school children will strongly increase their readiness to participate in the sustainable consumption behaviors. The effect of certain variables on sustainable consumption behavior can be observed from the weights given by the coefficient, which indicates the relative change in the dependent variable for any change in the independent variable.

The regression equation can be stated as

$$Y = 1.15 + .231EC + .109PI + .103PAI - .082EAW + .062EA$$

Where  $Y = ESCB$ ,  $EC = \text{Environmental Concern}$ ,  $PI = \text{Peer Influence}$ ,  $PAI = \text{Parental Influence}$ ,  $EAW = \text{Environmental Awareness}$  and  $EA = \text{Environmental Attitude}$

**Table 4**  
Multiple regression of 5 predictors of ESCB among Female primary school children

Variable	$\beta$	$P(\text{Sig.})$
Predictors		
Environmental Concern	.231	.000
Peer Influence	.109	.046
Parental Influence	.103	.060
Environmental Awareness	-.824	.132
Environmental Attitude	.062	.265
F	8.776	
$R^2$	.622	
Adjusted $R^2$	.600	
N	321	

### 4.3. Significant predictors of sustainable consumption behavior among primary school children

Multiple regression was performed to identify significant variables of sustainable consumption behavior among primary school children. The model containing all five variables was significant,  $R=.87$   $R^2=.76$ ,  $F(5, 643)= 8.582$ ,  $p< 0.05$ . The  $R$  value indicates a high degree of correlation. The  $R^2$  value indicates how much of the total variation in the dependent variable can be explained by the independent variable. In this case, 76% can be explained. Among the five variables, Parental Influence and awareness were found to be non-significant predictor ( $\beta = .022$ ,  $p> 0.05$ ;  $\beta= -.037$ ,  $p> 0.05$  respectively). Therefore  $H5_0$  and  $H3_0$  are accepted. Table 5 presents results of the simultaneous multiple regression performed on predictors of behavior among female primary school children.

The predictability of three variables was in the following descending order: Environmental Concern ( $\beta= .140$ ,  $p<.05$ ), Peer Influence ( $\beta=.121$ ,  $p<.05$ ) and Environmental Attitude ( $\beta=.111$ ,  $p<.05$ ). Therefore hypothesis  $H1_a$ ,  $H2_a$  and  $H4_a$  are accepted.

The results listed in Table 5 suggest that explanatory variable accounts for nearly 37.2 percent ( $R^2= .372$ ) of the variance of the overall sustainable consumption behavior at 5 percent level of significance. The effect of certain variables on sustainable consumption behavior can be observed from the weights given by the coefficient, which indicates the relative change in the dependent variable for any change in the independent variable.

The regression equation can be stated as

$$Y= 1.38+.140EC+.121PI+.111EA +.022PAI-.037EAW$$

Where  $Y=$  ESCB,  $EC=$ Environmental Concern,  $PI=$  Peer Influence,  $EA=$  Environmental Attitude,  $PAI=$  Parental Influence and  $EAW=$  Environmental Awareness and

**Table 5**  
Multiple regression of 5 predictors of ESCB among primary school children

Variable	$\beta$	$P(\text{Sig.})$
Predictors		
Environmental Concern	.140	.000
Peer Influence	.121	.002
Environmental Attitude	.111	.005
Parental Influence	.022	.572
Environmental Awareness	-.037	.342
F	8.582	
$R^2$	.76	
Adjusted $R^2$	.749	
N	648	

#### **4.4. Gender differences in environmental variables**

T-test was performed to examine whether there were gender differences in environmental variables. Results showed that male and female have significant difference with respect to environmental awareness  $t(649) = 64.94, p < .05$ , environmental attitude  $t(649) = 169.9, p < .05$ , and environmental concern  $t(649) = 195.7, p < .05$ . Also gender of the child makes significant difference to the extent of peer  $t(649) = 114.7, p < .05$  and parental  $t(649) = 117.6, p < .05$  influence with respect to ESCB. Male and Female students in primary school had also shown a significant difference in sustainable consumption behavior  $t(649) = 125.1, p < .05$ .

#### **5. DISCUSSION**

The current study was designed to provide marketers dealing in green products with information about Indian's primary school children's sustainable consumption behavior. The study shows that female primary school children displayed a significantly higher degree of environmental concern and sustainable consumption behavior than male primary school children. Descriptive analyses of a few previous studies also show that females express significantly greater environmental concern as compared to males (Arcury, 1990; Arcury and Christianson, 1990; Blaikie, 1992; Maineri *et al.*, 1997). Studies also find that women's participation in sustainable consumption behaviors is significantly greater than that of men (Baldassare and Katz, 1992; Maineri *et al.*, 1997; Lee, 2009).

The socialization theory posits that behavior is predicted by the process of socialization, whereby individuals are shaped by gender expectations within the context of cultural norms (Zelezny, Chau, and Aldrich, 2000). Males are socialized to be more independent and competitive (Gilligan, 1982). On the other hand, females in all cultures are socialized to be more expressive, more interdependent, compassionate, nurturing, cooperative, and helpful in care-giving roles (Gilligan, 1982; Eagly, 1987).

Orientation to the care-giving role may shape female children toward becoming more concerned about sustainable consumption issues such as threat to environment, health, etc. Sustainable consumption issues are more related to household activities. Most Indian girls and women are encouraged to stay indoors and help in household activities such as purchase, use, and disposal of goods. Therefore, ESCB seems more concerned to females than males.

The results of the present study show that male primary school children scored significantly higher in terms of environmental attitude, peer and parental influence. This orientation might be because, in a majority of Indian families, boys are encouraged to participate in outdoor household activities, and play outside with their peers (Bansal, 2011).

In general, males are characterized by fairness, individual rights, individual autonomy, and conflicts of rights, hierarchy, and logical and abstract thinking (Lee, 2009). The internalization of such values might explain why male school children have scored high on environmental attitude, peer and parental influence when compared to female students.

Multiple regression shows that the top two predictors of sustainable consumption behavior among Indian male primary school children are environmental attitude and peer influence while, for Indian female school children, the top two predictors are environmental concern.

Environmental concern was found to be the top predictor among female school children. It is a strong attitude toward protecting the environment and directly affects green purchasing behavior. Lee (2009) suggests that this is the case because of emotional involvement of female children, especially as environmental protection involves ideas of social responsibility, human nature, and harmony and love for the motherland. In addition, Indian females are found to be more nurturing, cooperative, and helpful in care-giving, thus resulting in their showing more concern for the environment.

Peer influence among male children is found to be the top predictor, unlike in the case of female children where it is the least. This observation suggests that recommendations of sustainable consumption from interpersonal interaction and communication among male members are most effective while among females, awareness through different mediums other than interpersonal interaction among peers is more effective. This may be the case because, as explained earlier, male children find greater support from their parents to interact with their peers while playing outdoors, while female children are more often than not encouraged to stay indoors, as a result of which they are exposed to other communication mediums rather than peer interaction.

## 6. CONCLUSION

In light of other studies on sustainable consumption behavior, this paper examines gender differences in sustainable consumption behavior among primary school children. Findings imply that in recent years, identification and prioritization of factors on sustainable consumption behavior are considered important. Therefore, through this study, it can be seen that gender has a significant impact on different factors of sustainable consumption behavior as well as behavior itself. In contrast to previous studies on environmental behavior, the findings of this study are similar to that suggested by Wang *et al.* (2014). For the predicting variables, gender is an important factor determining the formulation of environmental attitude, environmental concern, environmental awareness, peer and parental influence, and sustainable consumption behavior.



## 7. LIMITATION

The method used in this study imposes limits on ability to generalize results, which suggests an area of future inquiry. One should be cautious while attempting to generalize the findings to include other age groups and / or other cultural areas even though the likely cultural effect suggested in this paper was merely an assumption.

## 8. FUTURE RESEARCH

Although our introduction to the influencing factors into the study of urban primary school children's environmental sustainable consumption behavior gains meaningful information and results, there is room for improvement. It is necessary to conduct more detailed research on other demographic variables.

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