

# Buying Behavior of Environmentally Sustainable Cosmetics: Indian Context

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## ABSTRACT

The emergence of environmental concern and the awareness among stakeholders have facilitated new policies, new product proposition, marketing policies for the brands and demand for green products from the customers end. This tide has surged in the cosmetics industry as well worldwide. The developing countries like India and other Asian countries are also feeling the heat of demand for environmentally sustainable C&PC products. Many local brands are also coming up with product under the umbrella of green cosmetics, positioning as environmentally sustainable. In this study the theory of planned behavior has been extended while investigating the buying behavior of customers towards green and sustainable C&PC product with mediation and moderation effect which provides several important insights. Firstly, the attitude towards environment has little significance to drive the purchase intention. Secondly, the mediation effect of perceived price and moral norm is significant towards purchase intention. Last but not the least, perceived benefit has the highest influencing effect towards purchase intention. This study caters a notable guidance to the marketing policy makers on positioning the environmentally sustainable C&PC products to the customers

## Index Terms

buying behavior, C&PC, environmentally sustainable, green cosmetics

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## Introduction

The new product development and marketing strategy of many industries are changing at a faster pace due to growing attention towards pro-enviro-friendly and sustainable behavior (Kotler, 2011). This pro-environment and sustainable behavior of current generation has compelled the industries to choose a moderate course between growth and environmental responsibility. Many studies in the past had reported the paradigm shift in the marketing, commensurate with environmental concern (McDonagh, P. and Clark, 1995; Menon et al., 1999) after 1990, 'the decade of environment'. Prior studies have also shown that brand awareness with respect to environmental responsibility has changed the consumer behavior (Yang, 2017); however there is a chasm between consumers attitude and their real behavior (Martin & Simintiras, 1995) and Yang (2017) mentioned in the study that C&PC brands are bearing the brant of it. The raising sustainability concern has also captured growing interest of consumers and industries towards environmentally sustainable cosmetics (Ghazali et al., 2017; Hitce et al., 2018). It is worth mentioning that cosmetics industry encompasses skin care, personal care, makeup, hair care and fragrance products (*Bioactive Compound - an Overview | ScienceDirect Topics*, n.d.; Liobikienė & Bernatoniene, 2017). If we take a look at the growth of cosmetic industry, by 2022 it is expected to reach \$429.8 billion (*Cosmetics Market Size, Share, Industry Trends and Analysis*, n.d.), tallying a CAGR of 4.3%. Unfortunately, this huge demand for cosmetics comes with a cost; according to report 70% of the plastic throw-away caused by cosmetic industry remains unrecycled. (*New Ways The Beauty Industry Is Testing Sustainable Practices*, n.d.). It is also imperative to say that covid-19 has pushed the demand

for environmentally sustainable cosmetics at a higher slab (*COVID-19 Means Sustainable Beauty Even More Important Say Brands*, n.d.). According to the Organic Monitor (Kozelová et al., 2011), consumers from Asian countries are now also shifting towards natural and organic cosmetics and developing countries will see the maximum growth in environmentally sustainable products due to widening economic activities however Liobikienė & Bernatoniene (2017) has mentioned that there is limited research attention than the demand in the cosmetics industry which needs to be explored and research on consumers' buying behavior of developing countries focused to environmentally sustainable cosmetics is very limited (Ghazali et al., 2017; Kim & Chung, 2011; Pudaruth et al., 2015). Liobikienė & Bernatoniene (2017) have also mentioned that there is no uniform result of buying behavior when it comes to environmentally sustainable products in general and this is because environmentally sustainable products encompass a huge variety of products and each product section demands separate study to understand the buying behavior of the consumers for that particular section. Looking at the severity and growing demand, it is important that more research and studies should be done on cosmetics industry in developing Asian country like India to understand the buying behavior of the consumers because it is imperative that cosmetics brands should take care of environment and sustainability aspect at each stage of their product cycle but at the same time it should be in congruence with consumers purchase behavior. Consumers buying behavior towards environmentally sustainable cosmetics is not uniform according to past researches and hence difficult to anticipate (Finisterra Do Paço et al., 2009). Buying behavior is a complex term and a very well researched area; how a consumer chooses a particular product is very diverse and governed by demographical, psychological, political, cultural, behavioral and other

factors (do Paço et al., 2014a; Panda et al., 2020; Pilgrimienė et al., 2020; Pudaruth et al., 2015). So, it is important to understand consumers attitude, reference group, influencing factors, perception and intention in order to comprehend their buying behavior towards environmentally sustainable cosmetics. This study is an endeavor to find out major factors which drives the buying behavior of Indian consumers towards environmentally sustainable C&PC. An important contribution to this study is to include moral norm and perceived pricing as factors to understand purchase behavior of environmentally sustainable C&PC products. Thus, this work adds up value to the current knowledge base by analyzing the consumers' buying behavior of environmentally sustainable C&PC products considering Indian market and consumers by exploring influencing factors like attitude, moral norm, product knowledge, perceived price, perceived benefit and purchase intention. The study thrives a theoretical structure rooted in the theory of planned behavior (TPB) (Ajzen, 1991, 2002) that is well-establish in research area of consumer behavior. The objectives of this research are three-fold:

1. To analyse the effect of factors like attitude, product knowledge and perceived behaviour on purchase intention.
  2. To analyse mediation and moderation effect of moral norm and perceived pricing on purchase intention of environmentally sustainable cosmetics.
  3. To analyse the effect of purchase intention on buying behaviour of environmentally sustainable cosmetics.
- The basic course of this paper has a segment on literature review and hypothesis development which guides through theoretical framework followed by methodology and measurement. Empirical result section shows the findings of measurement and theoretical model. Next this paper talks about discussion and limitations and finally conclusion.

## Literature review and hypothesis

The fundamental structure of this research is inspecting the buying pattern for environmentally sustainable cosmetics accompanying pertinent mediating and moderating factors using TPB (Ajzen, 1991, 2002). Several researchers in the past have used the TPB for analyzing the buying behavior of consumers (Chang, 1998; Kumar et al., 2017).

Many researchers had taken up this theory of planned behavior to understand buying behavior with respect to different context of environmentally sustainable products (Chang, 1998).

There is good deal of constituents which influence the buying intention and buying decision of the consumers towards environmentally sustainable products (H. Chen et al., 2020; Kumar et al., 2017). Most of the previous literatures available on green products are organic foods (Canavari & Coderoni, 2020; H. Chen et al., 2020; Padel & Foster, 2005). There is limited research available on buying behavior with regards to environmentally sustainable personal care products, highlighted by Liobikienė & Bernatoniene (2017). Few articles reported a great deal of parallelism exist between consumer buying behavior of organic foods and organic or green cosmetics (Liobikienė & Bernatoniene, 2017) but there are also studies (Amberg &

Fogarassy, 2019) showing result other way around. However, some of the previous research findings related to environmentally sustainable products in general and organic food are employed as the base for this study.

## A. Demographics and purchase intention for environmentally sustainable C&PC

There are studies showing heterogeneous views and effects of demographics on buying intention and buying behavior of consumers. Author (Finisterra Do Paço et al., 2009) has reported various diversified view and results of different researchers in this context. There are articles (Kinnear et al., 1974) suggesting no notable relation between age and environmental attitudes or behavior whereas, there are articles which suggest negative or positive correlation for the same (Finisterra Do Paço et al., 2009; Roberts, 1996). There have been dispute among researchers over gender and education level as factors effecting the buying decision of environmentally sustainable products. Finisterra Do Paço et al. (2009) has also mentioned after analyzing different studies that due to plurality of views, education level and income level might not be reliable variables to understand buying behavior. In this study I have not considered demographics factors to analyze the purchase behavior.

## B. Attitude as a determinant factor of purchase intention

According to Ajzen (1991) one is more expediently indulge into a particular behavior when the persons' attitude is inclined towards that behavior. Sundry previous studies have reported positive attitude towards environment would lead to appreciative purchase intention (Kumar et al., 2017; Tarkiainen & Sundqvist, 2005). Attitude has been considered a major factor in the literature of behavior study. Thus, it is hypothesized that:

*H1: Consumer attitude towards environmentally sustainable cosmetics has a significant and positive effect on their purchase intention.*

## C. Mediating effect of Moral norms

Author Ghazali et al. (2017) in study of "Health and cosmetics: Investigating consumers' values for buying organic personal care products" reported that subjective norms revealed a dwindling influence on purchase intention of organic products. There are studies which have shown direct and positive influence of subjective norm towards purchase intention. Han & Chung (2014) has shown that purchase intention has a significant dependency on subject norm of organic cotton apparel. M. F. Chen (2007), Smith & Paladino (2010) have also shown the same for organic food. Author Ghazali et al. (2017) has also mentioned that subjective norm might not be an important factor for C&PC product as compared to other products like apparel because personal care is more private decision and motivated by personal choice and preference instead of interest of others like family peers or friends. So, in this study subjective norm is not considered as a factor; instead as mentioned by author (Kumar et al., 2017) in the limitation part, moral norm has been taken into account. I want argue that moral

norm has a mediating influence on relation linking attitude and purchase intention. Thus, the hypothesis:

*H2: Moral norm mediates the interconnection between attitude and purchase intention.*

#### D. Perceived benefits towards purchase intention of environmentally sustainable C&PC

Sweeney & Soutar (2001) advocates that consumers not only assess a product in terms of its quality and purpose served but also the whole experience of enjoyment and pleasure of using it (Emotional value) and what that product communicates about your personality (social value) play a huge role. Researchers have studied this factor to explain buying intention of consumers towards environment friendly organic foods (H. Chen et al., 2020; Sheppard et al., 1988) and found that buying intention is profoundly driven by perceived benefits of the product. This leads to the third hypothesis of this study:

*H3: Consumer perceived benefits towards environmentally sustainable cosmetics has straight and definite influence towards purchase intention.*

#### E. Moderating effect of Product knowledge towards purchase intention of environmentally sustainable C&PC

Park et al. (1992) tags product knowledge of consumer in the direction of 3 classes i.e., subjective knowledge, objective knowledge and experience-based knowledge. Subjective knowledge points out perception on product knowledge, objective knowledge mentions the product knowledge consumers have stored in their sub-conscious mind whereas experience-based knowledge refers to product knowledge consumers get after using the product. Many researches in the past in the context of organic foods have shown positive and direct effect of product knowledge on buying intention or buying behavior (De Magistris & Gracia, 2008; Padel & Foster, 2005). Research based on the environmentally sustainable cosmetics or personal care (Ghazali et al., 2017) has also shown that product knowledge is the major factor which drives consumers' buying intention. In this study subjective product knowledge has been used to understand the buying intention of consumers. Hence, the hypothesis is:

*H4: Product knowledge moderates positively the relation between attitude and moral norm.*

#### F. Perceived pricing of environmentally sustainable C&PC

Many researchers in the past had reported that perceived price has a vital role to play on consumers' post purchase behavior. In previous study on buying intention of organic food (H. Chen et al., 2020), it has been found that the pricing factor has been having a direct and significant positive outcome, but restricts consumers' willing to purchase. In many cases it has also been reported that higher price has a negative effect on consumers' buying behavior (Dodds & Monroe, 1985; Zeithaml, 1988) and this could be one of the major reasons one chooses other products over environmentally sustainable products. In this

study I want to argue that perceived pricing has a mediating effect rather than direct effect on purchase intention. Hence, the hypothesis:

*H5: Perceived pricing has a significant mediating influence on product knowledge and purchase intention.*

#### G. Purchase intention and purchase behavior for environmentally sustainable C&PC

Author Ajzen & Fishbein (1975) has reported that consumer behavior can be resulted from purchase intention with a certain degree of accuracy and many researchers have reported it right in their research (Sheppard et al., 1988). Previous study (Kumar et al., 2017) on buying behavior of environmentally sustainable products has shown strong relation between purchase intention and buying behavior. Researches on buying behavior of organic foods has shown positive relation between purchase intention and buying behavior (Biel & Thøgersen, 2007; Saba & Messina, 2003). Historically, in literature this factor has shown a strong effect on buying behavior. It has been found that an endeavor to comprehend the impact of purchase intention on buying behavior specially in the context of environmentally sustainable cosmetics. After going through all the discussions of available literature, the hypothesis is:

*H6: Purchase intention towards sustainable cosmetics has a significant and positive effect on purchase behavior.*

### Research framework and model

Fig 1 shows the research model of this study.

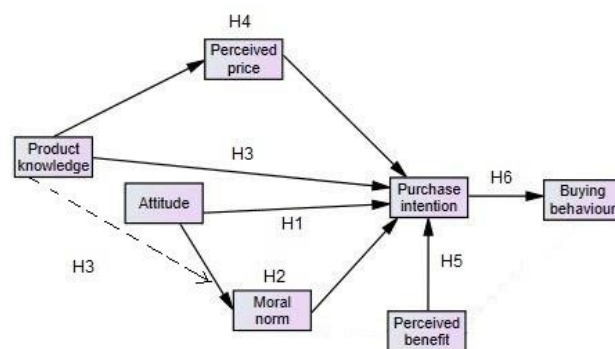


Fig1: Research model and hypothesis

### Methodology and measurement

#### A. Data collection and sample

In order to collect data, I have used questionnaire survey method. There were 8 sections in the questionnaire for eight factors: demographics, attitude, moral norm, product knowledge, perceived price, perceived benefit, purchase intention and buying behavior. There was total 39 questions in the survey; Table 1 shows all the questions excluding five demographics questions and the references of the questions have also mentioned. Questions were inspired from the reference articles and slight changes of words were made. The survey was conducted among Indian residents residing

across different cities of India. Firstly, the content validity of the questionnaire was examined by 10 respondents who have used environmentally sustainable C&PC before or have been using of-late. After discussing with them and removing few ambiguities, I floated the questionnaire among 200 respondents. I got 155 responses among which one did not have complete data so, I have taken 154 respondents into account to analyze the data. Table 2 shows the demographics of the respondents. 5-point Likert scale is used as scale, same as Amberg & Fogarassy (2019) used in the research wherein 1 is equivalent to strongly disagree and 5 stands for strongly agree.

**Table 1:** Measurement items

Construct	Items	Questions	Reference
Attitude	Att1	I bring my own shopping bag for shopping to avoid plastic usage.	Kumar et al. (2017)
	Att2	Usage of environment friendly sustainable cosmetics is an efficient way to protect environment.	
	Att3	Usage of environment friendly sustainable cosmetics can directly contribute towards betterment of society.	
	Att4	Usage of environment friendly sustainable cosmetics is a way to conserve natural resources.	
Moral norm	Moral1	I think it is important to have environment and sustainability impact in my mind in my everyday behaviours.	Self-prepared
	Moral2	I feel good when I act pro-environmental way.	
	Moral3	Not only government and industry are responsible for environmental issues, I am also responsible	
	Moral4	I have moral obligation to buy environmentally sustainable products.	
	Moral5	I feel bad when I don't act pro-environmentally sustainable way.	
Product knowledge	Product1	I have good understanding of sustainable cosmetics.	do Paço et al. (2014b) (BB9) and self-prepared
	Product2	I have considerable knowledge about sustainable cosmetics.	
	Product3	I have understanding of ingredient description	

		of cosmetics product.	
	Product4	I have knowledge of vegan/ cruelty free cosmetics product.	
	Product5	I have knowledge of natural/ organic ingredients used in cosmetics.	
	Product6	I have knowledge of zero wastage/ recycled packaging of cosmetics product.	
Perceived price	Price1	I am happy with the price of environmentally sustainable cosmetics.	Self-prepared
	Price2	Price is a rip-off	
	Price3	Price is justified	
	Price4	Price is reasonable	
Perceived benefit	Ben1	I think environment friendly sustainable cosmetics are of good quality.	H. Chen et al. (2020) and self-prepared
	Ben2	I think environment friendly sustainable cosmetics are rich with goodness of nature.	
	Ben3	I think environment friendly sustainable cosmetics brands are trust worthy.	
	Ben4	I think environment friendly sustainable cosmetics are value for money.	
	Ben5	I think usage of environment friendly sustainable cosmetics enhances my image amongst my social group/ friends/ peers.	
Purchase intention	Int1	I like to use environment friendly sustainable cosmetics.	Amberg & Fogarassy (2019); H. Chen et al. (2020); Kumar et al. (2017)
	Int2	I like to buy environment friendly sustainable cosmetics.	
	Int3	I actively seek out for environment friendly sustainable cosmetics.	
	Int4	I recommend others to use environment friendly sustainable cosmetics.	
	Int5	I am willing to pay extra for environment friendly sustainable cosmetics.	
Buying behavior	BB1	If two similar cosmetics available for same price, I would	Amberg & Fogarassy (2019);



our		choose the one which is environment friendly.	Kumar et al., (2017) (BB8)
	BB2	I don't buy cosmetics which cause potential damage to environment.	
	BB3	I buy cosmetics from brands which proactively claim to be environmentally responsible.	
	BB4	I try to buy environment friendly sustainable cosmetics which can be recycled.	
	BB5	I don't buy environment friendly sustainable cosmetics which are less effective than non-environment friendly and non-sustainable cosmetics.	

**Table 2:** Demographic details of respondents

Variable		Frequency	Percent
Gender	Female	90	58.4
	Male	64	41.6
	Total	154	100.0
Age	18-25	71	46.1
	26-35	68	44.2
	36-45	7	4.5
	46-55	4	2.6
	56-65	2	1.3
	above 65	2	1.3
	Total	154	100.0
Education	Doctorate and above	5	3.2
	Graduate	78	50.6
	High School	4	2.6
	Post Graduate	67	43.5
	Total	154	100.0
Occupation	Academician	1	.6
	Business	14	9.1
	Homemaker	15	9.7
	Service	35	22.7
	Student	89	57.8
	Total	154	100.0
Income	20000 – 30000	4	2.6
	30000-40000	14	9.1
	40000-50000	14	9.1
	Less than 20000	35	22.7
	more than 50000	37	24.0
	Not applicable	50	32.5
	Total	154	100.0

## Empirical result

To examine and verify the theoretical model and hypotheses, Structural equation modelling (SEM) was used with maximum likelihood estimation (K. G. Jöreskog,

1996). The two-stage process proposed by (Anderson, 1988) was used in this study. IBM SPSS Statistics Software 26 and AMOS are used for analyzing the data.

### A. The measurement model:

All the variables and latent variables of the data collected are invoked into the CFA (Confirmatory Factor Analysis) model. The result shows that the constructs have high affinity with indices like chi square,  $\chi^2 = 393.996$ , degrees of freedom (df)=166, Tucker-Lewis Index (TLI) =0.888, comparative fit index (CFI)=0.905, root mean square error of approximation (RMSEA)=0.086. The t-values corresponding to all the items were significant ( $p < 0.01$ ).

### B. Factor loading, average variance extracted (AVE), and composite reliability (CR)

Gearing towards examining reliability of the constructs reported in Table 4, first we need to check the factor loading value. The acceptable range of factor loading is  $>0.7$  for a good reliability (Hair et al., 2011). From Table 3 it is conspicuous that variable BB1 and Moral4 have factor loading value almost equal to 0.7 and rest of the variables has loading value above 0.7. I conducted the further simulation with BB1 and Moral4 as the loading factors were near to 0.7, model fitness was satisfactory and AMOS was not showing any error for data imputation. Few variables from factors attitude, moral norms, product knowledge, perceived price, perceived benefit, purchase intention and buying behavior has been deleted as there were showing poor factor loading and model fit. The value of CR of the constructs are shown in Table 4. Each value of CR spans 0.759 to 0.921 which is higher than the suggested value 0.7 (Gefen et al., 2000). Both factor loading value and composite reliability value are not acceptable for moral norms. It is also imperative to test convergent and discriminant validity to establish the reasonableness of the constructs. Fornell & Larcker (1981) reported square root of AVE ought to be more than the correlation between the constructs in the model. It can be found upon examining Table 3 and Table 4 that the condition of discriminant validity has been fulfilled by the constructs. To assess the convergent validity, according to Bagozzi & Yi, (1988) value of AVE needs to be greater than 0.5 which can be validated from Table 4. Hence, every factor confirms the reliability, convergent validity and discriminant validity.

**Table 3:** Correlation among construct

Construct	Attitude	Moral	Product Knowledge	Perceived Price	Perceived Benefit	Purchase Intention	Buying Behavior
Attitude	<b>0.798</b>						
Moral	0.677 <sup>**</sup>	<b>0.736</b>					
Product Knowledge	0.682 <sup>**</sup>	0.625 <sup>**</sup>	<b>0.844</b>				
Perceived Price	0.508 <sup>**</sup>	0.526 <sup>**</sup>	0.620 <sup>**</sup>	<b>0.845</b>			
Perceived Benefit	0.647 <sup>**</sup>	0.620 <sup>**</sup>	0.696 <sup>**</sup>	0.674 <sup>**</sup>	<b>0.814</b>		
Purchase Intention	0.672 <sup>**</sup>	0.660 <sup>**</sup>	0.760 <sup>**</sup>	0.700 <sup>**</sup>	0.790 <sup>**</sup>	<b>0.861</b>	
Buying Behavior	0.622 <sup>**</sup>	0.646 <sup>**</sup>	0.630 <sup>**</sup>	0.642 <sup>**</sup>	0.696 <sup>**</sup>	0.684 <sup>**</sup>	<b>0.716</b>

<sup>\*\*</sup> $p < 0.01$

**Note:** The diagonals numbers represented in bold are the square root of AVE.

**Table 4:** Reliability test- AVE, CR

Construct	Item	Estimate	AVE	sq. root of AVE	CR
Attitude	Att4	0.784	0.636	0.798	0.840
	Att3	0.793			
	Att2	0.816			
Moral norm	Moral4	0.690	0.542	0.736	0.780
	Moral2	0.760			
	Moral5	0.758			
Product knowledge	Product5	0.942	0.712	0.844	0.921
	Product6	0.732			
Perceived price	Price4	0.836	0.714	0.845	0.882
	Price3	0.870			
	Price1	0.829			
Perceived benefit	Ben4	0.731	0.662	0.814	0.824
	Ben3	0.808			
	Ben2	0.793			
	Ben1	0.913			
Purchase intention	Int5	0.795	0.741	0.861	0.896
	Int2	0.910			
	Int1	0.874			
Buying behavior	BB4	0.701	0.513	0.716	0.759
	BB3	0.764			
	BB1	0.681			

**Note:** Few items were deleted due to outer loading lower than 0.5

### C. The structural model

In this study, I have used and tested moderated mediation effect advocated by Preacher et al., (2007) to understand the effects of different factors on purchase behavior. In this model Product knowledge is moderating the relation between attitude and moral norm. Perceived price also mediates the relation between Product knowledge and Purchase intention. Using AMOS the estimation of structural model has been operationalized using maximum likelihood estimate (MLE). Overall fit of the model has been tested which produced a chi-square ( $\chi^2$ ) value of 941.56 with 220 degrees of freedom. The ratio of chi-square ( $\chi^2$ ) and degree of freedom was 4.279 which is within the acceptable range of 5. The value of indicators like Comparative Fit Index (CFI), Goodness-of-fit index and Root Mean Square Error of Approximation were 0.96, 0.93 and 0.076 respectively which are within the acceptable range and thus satisfactory.

### D. Mediating effect of Product knowledge and Perceived benefit towards environmentally sustainable cosmetics

From table 5 it can be interpreted that moral acts as a mediator between attitude and purchase intention; perceived price acts as a mediator between product knowledge and purchase intention and perceived benefit is a mediator between moral norm and purchase intention. The mediating effect was examined incorporating bootstrap technique in AMOS 26 with 2000 bootstrap sampling. The theoretical model shows direct effect on attitude and purchase intention

but it is not significant without mediation of moral norm which violates the hypothesis H2. The direct effect size improves a bit with introduction of moral as a mediator but still insignificant. The indirect effect reports an improved and significant size of effect, so, moral norm has a significant mediation effect on purchase intention which establishes the hypothesis H3 and it depicts only indirect mediation. Direct effect on relation between product knowledge and purchase intention is significant without mediation, also the direct effect size becomes significant with perceived price as a mediator. The indirect effect size of relation between product knowledge and purchase intention is high and significant at  $p < 0.01$ . So, perceived price acts as a partial mediator between perceived pricing and purchase intention which established the hypothesis H6. The structural model in Amos also allowed to check the mediation effect of perceived benefit in relation between moral norm and purchase intention and it is noticeable that perceived benefit has a significant mediation effect on relation between perceived price and purchase intention. The direct effect size of moral norm and purchase intention is insignificant in both the cases, with and without mediation of perceived benefit. So, it is a clear effect of indirect mediation.

**Table 5:** Mediating role of constructs

Relationship	Direct without mediator	Direct with mediator	Indirect effect	Total effect	Mediation Type
Attitude--Moral--Purchase intention	0.104	0.094	0.144*	0.238*	Indirect
Product knowledge--Perceived price--Purchase intention	0.273**	0.270**	0.285*	0.555*	Partial
Moral--Perceived benefit--Purchase intention	0.12	0.12	0.134*	0.254*	Indirect

\*\*  $p < 0.01$

### E. Path estimates

The attitude has a positively influence on the perceived benefit as table 6 exhibits but the effect is very small and insignificant so, attitude towards environment sustainability has insignificant effect on purchase intention and hence no influence on buying behavior. This violates the hypothesis H2 of this study. Product knowledge about environmentally sustainable cosmetics is positively related to purchase intention and significant at  $p < 0.01$  ( $\beta = 0.270$ ,  $p < 0.01$ ). Perceived pricing has positive relation with purchase intention with an effect size of 0.202 and significant at  $p < 0.01$ . Perceived benefit has a significant and positive effect on perceived price ( $\beta = 0.463$ ,  $p < 0.01$ ) and perceived benefit also drives the purchase intention in a positive way and significant at  $p < 0.01$  which established hypothesis H4. Purchase intention of environmentally sustainable cosmetics

highly drives the purchase behavior of the customers ( $\beta=1$ ,  $p < 0.01$ ) which established the hypothesis H7.

**Table 6:** Summery of the structural model

Path description	Direct effect	Moderating effect
Attitude → Purchase intention	0.094	-
Product knowledge → Purchase intention	0.270**	-
Perceived price → Purchase intention	0.202**	-
Perceived benefit → Purchase intention	0.340**	-
Perceived benefit → Perceived price	0.463**	-
Perceived benefit → Buying behavior	0.468**	-
Purchase intention → Buying behaviour	0.410**	
(Product knowledge) → (Attitude) Moral norm	-	-0.191**

#### F. Estimate of moderating effect

The moderating effect of product knowledge on the relation between attitude and moral norm has been tested according to the approach suggested by Preacher et al. (2007). The moderating effect outcome is presented in table 6. As hypothesized the product knowledge of environmentally sustainable cosmetics has a significant effect on relationship between attitude and moral norm. Attitude has a direct and positive effect on moral norm which further drives purchase intention in a positive way. It can be observed from table 6 that the moderating effect of product knowledge is negative in nature and significant at  $p < 0.01$  i.e., product knowledge moderate negatively the relation between attitude and moral norm. From the table it is evident that directionality of the moderating effect has a negative effect. This finding contradicts hypothesis H5.

### Discussion

This study on buying behavior of environmentally sustainable cosmetics can theoretically contribute to the knowledge base of buying behavior of different environmentally sustainable products by identifying influence of different factors of Indian customers on buying behavior of environmentally sustainable cosmetics.

In this study along with other factors I included moral norms of consumer as an influencing factor instead of subjective norm and it is found that moral norm influences the equation between attitude and purchase intention in a significant way. It has also been found that attitude drives the moral norm of the customers significantly. Surprisingly attitude has a negligible effect on purchase intention without moral norm as a mediator which contradicts the claim of other studies on environmentally sustainable products (Ghazali et al., 2017; Kumar et al., 2017). This result can be because of the fact that C&PC products are for individuals' personal and intimate use; it largely depends on the personal experience and suitability on body and skin other than pro-

environmental attitude. Again, the mediation effect of moral norm on attitude and purchase intention has shown that pro-environmentally sustainable attitude can drive the purchase intention if the customers' moral principle is strong towards environment. So, both positive attitude and strong moral norm towards environmentally sustainable cosmetics are required to drive the purchase intention. Also, it is pertinent to observe that perceived benefit plays the most strong and significant role to influence purchase intention and buying behavior as well. Considering environmentally sustainable cosmetics, perceived benefit can also be equated with health consciousness for the organic food (Liobikienė & Bernatoniene, 2017) and is the main driving point of purchase intention. The responses of perceived benefit were more intangible in nature so, it can be inferred that environmentally sustainable cosmetics signify safety, goodness of nature, purity, richness that have given to consumers to treat their body and skin. When consumers regard environmentally sustainable cosmetics in this way, it definitely influences the purchase intention and buying behavior. It has also been found that perceived benefit also influences the mindset of the consumers regarding the price they pay. If perceived benefit is luxurious, consumers tend to set a higher bar of price in their head and they think that the price is justified and hence considering to spend extra on environmentally sustainable cosmetics. Also, the noticeable fact is that product knowledge plays a significant role towards purchase intention of environmentally sustainable cosmetics. If there is more awareness about environmentally sustainable cosmetics, consumers become more educated about environment and products which are environmentally sustainable and that triggers the purchase intention in a positive way.

#### A. Managerial implication

This study provides some managerial implications that can be paid attention to while marketing the brands of environmentally sustainable cosmetics in India. First of all, the awareness about environment, environmentally sustainable products are very much needed in a market like India. This study has shown that more consumers acquire knowledge of environmentally sustainable cosmetics and brand which advocate environmentally sustainable activities, the more they are intrigued to purchase those. So, brands can invest on campaigns to educate consumers about the ingredients used in the cosmetics, recycling process of the packaging and how they are contributing towards the betterment of environment and hence society. This is also a way to influence consumers' attitude and moral belief by making them understand that they are also contributing to the society and for the betterment of the next generation when they purchase environmentally sustainable cosmetics. The brands should be very detailed and transparent about the ingredients list and their sustainability goals mentioned on their packaging to enhance product knowledge of the consumers. Secondly, cosmetics brands should elucidate the benefits of the environmentally sustainable C&PC. Consumer should be able to perceive goodness, richness of nature and pure, organic treatment to their skin and body while they see, read or think about environmentally sustainable C&PC products. So, the cosmetics product

should talk about intangible benefits thorough its ingredients or packaging or through resourcing and manufacturing details because perceived benefits drive the purchase intention. Lastly, pricing plays an important role in Indian market. Price of the environmentally sustainable C&PC should match the perceived price of consumers. Result shows that perceived benefit drives the perceived price of environmentally sustainable C&PC. So, price should be reasonable and justified with the benefits in order to create demand. Consumers are ready to pay extra to experience the benefit of environmentally sustainable C&PC but a highly priced cosmetics may backfire as Indian consumers are price sensitive.

## B. Limitations

The outcome of the theoretical relevance is invariable so is the generic belief of the subject matter. Despite that there are some limitations to this study. Firstly, the study has been done with the data collected from respondents from different cities of India mainly college going and working population. India being very diverse country, the sampling population could be more heterogeneous in nature. Secondly, the expression of attitude and behavior could be different for the actual behavior of the respondents. This is an issue also addressed by prior studies (Kumar et al., 2017); future studies can take this factor into account to scrutinize more. Third, there could be many other factors responsible to influence the buying behavior of environmentally sustainable C&PC. In future study factors like brand loyalty, trust, preferred channel and influence of micro influencers can be explored to understand the buying behavior of environmentally sustainable C&PC products.

## Conclusion

This study provides some important findings about buying behavior of Indian consumers with regard to environmentally sustainable C&PC products and suggestions for the marketing strategy of the brands related to environmentally sustainable C&PC products. Surprisingly, it showed no significant relevance of attitude towards environment in purchase intention. The plausible explanation could be that in case of environmentally sustainable C&PC products, attitude does not get translated into behavior because more than attitude, individuals' preference, skin and body suitability and perceived benefit are more strong factors. The result of this study also found product knowledge, perceived benefit has the highest and direct influence on purchase intention. Perceived pricing and moral norms are two factors which have significant mediating effect on purchase intention. Also, the study has approved a strong relation between purchase intention and buying behavior.

This study allows industry practitioners to have an enhanced idea about the buying behavior of Indian customers for environmentally sustainable C&PC products. This study can help deciding on marketing campaigns, promotional events and investment for environmentally sustainable C&PC brands. It is of paramount importance for the brands to communicate the benefits of the products clearly and genuinely. Another indispensable factor is to list the full

ingredients lists on the packaging and also to highlight the environmentally sustainable activities of the brand and the goal transparently to the customers. Lastly, the price should be kept reasonable for the products and the product knowledge of the customer and perceived benefits should match the price expectation of the customers.

## References

- [1] Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- [2] Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4), 665–683. <https://doi.org/10.1111/j.1559-1816.2002.tb00236.x>
- [3] Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, 82(2), 261–277. <https://doi.org/10.1037/h0076477>
- [4] Amberg, N., & Fogarassy, C. (2019). Green consumer behavior in the cosmetics market. *Resources*, 8(3). <https://doi.org/10.3390/resources8030137>
- [5] 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. <https://psycnet.apa.org/buy/1989-14190-001>
- [6] Bagozzi, R., & Yi, Y. (1988). On the Evaluation of Structure Equation Models. Article in *Journal of the Academy of Marketing Science*. <https://doi.org/10.1007/BF02723327>
- [7] Biel, A., & Thøgersen, J. (2007). Activation of social norms in social dilemmas: A review of the evidence and reflections on the implications for environmental behaviour. *Journal of Economic Psychology*, 28(1), 93–112. <https://doi.org/10.1016/j.joep.2006.03.003>
- [8] Bioactive Compound - an overview | ScienceDirect Topics. (n.d.). Retrieved



- July 19, 2020, from <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/bioactive-compound>
- [9] Canavari, M., & Coderoni, S. (2020). Consumer stated preferences for dairy products with carbon footprint labels in Italy. *Agricultural and Food Economics*, 8(1), 4. <https://doi.org/10.1186/s40100-019-0149-1>
- [10] Chang, M. K. (1998). Predicting Unethical Behavior: A Comparison of the Theory of Reasoned Action and the Theory of Planned Behavior. *Journal of Business Ethics*, 17, 1825–1834.
- [11] Chen, H., Tong, X., Tan, L., & Kong, L. (2020). Consumers' acceptability and perceptions toward the consumption of hydroponically and soil grown broccoli microgreens. *Journal of Agriculture and Food Research*, 2, 100051. <https://doi.org/10.1016/j.jafr.2020.100051>
- [12] Chen, M. F. (2007). Consumer attitudes and purchase intentions in relation to organic foods in Taiwan: Moderating effects of food-related personality traits. *Food Quality and Preference*, 18(7), 1008–1021. <https://doi.org/10.1016/j.foodqual.2007.04.004>
- [13] Cosmetics Market Size, Share, Industry Trends and Analysis. (n.d.). Retrieved July 19, 2020, from <https://www.alliedmarketresearch.com/cosmetics-market>
- [14] COVID-19 means sustainable beauty even more important say brands. (n.d.). Retrieved July 19, 2020, from <https://www.cosmeticsdesign-europe.com/Article/2020/06/22/COVID-19-means-sustainable-beauty-even-more-important-say-brands>
- [15] De Magistris, T., & Gracia, A. (2008). The decision to buy organic food products in Southern Italy. *British Food Journal*, 110(9), 929–947. <https://doi.org/10.1108/00070700810900620>
- [16] do Paço, A., Alves, H., Shiel, C., & Filho, W. L. (2014a). An analysis of the measurement of the construct “buying behaviour” in green marketing. *Journal of Integrative Environmental Sciences*, 11(1), 55–69. <https://doi.org/10.1080/1943815X.2014.894082>
- [17] do Paço, A., Alves, H., Shiel, C., & Filho, W. L. (2014b). An analysis of the measurement of the construct “buying behaviour” in green marketing. *Journal of Integrative Environmental Sciences*, 11(1), 55–69. <https://doi.org/10.1080/1943815X.2014.894082>
- [18] Dodds, W. B., & Monroe, K. B. (1985). The Effect of Brand and Price Information on Subjective Product Evaluations. *ACR North American Advances*, NA-12. <https://www.acrwebsite.org/volumes/6364/volumes/v12/NA-12/full>
- [19] Finisterra Do Paço, A. M., Barata Raposo, M. L., & Filho, W. L. (2009). Identifying the green consumer: A segmentation study. *Journal of Targeting, Measurement and Analysis for Marketing*, 17(1), 17–25. <https://doi.org/10.1057/jt.2008.28>
- [20] Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39. <https://doi.org/10.2307/3151312>
- [21] Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural Equation Modeling and Regression: Guidelines for Research Practice. *Communications of the Association for Information Systems*, 4. <https://doi.org/10.17705/1cais.00407>
- [22] Ghazali, E., Soon, P. C., Mutum, D. S., & Nguyen, B. (2017). Health and cosmetics: Investigating consumers' values for buying organic personal care products. *Journal of Retailing and Consumer Services*, 39(August), 154–163. <https://doi.org/10.1016/j.jretconser.2017.08.002>

- [23] Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- [24] Han, T. I., & Chung, J. E. (2014). Korean Consumers' Motivations and Perceived Risks Toward the Purchase of Organic Cotton Apparel. *Clothing and Textiles Research Journal*, 32(4), 235–250. <https://doi.org/10.1177/0887302X14538116>
- [25] Hitce, J., Xu, J., Brossat, M., Frantz, M. C., Dublanchet, A. C., Philippe, M., & Dalko-Csiba, M. (2018). UN sustainable development goals: How can sustainable/green chemistry contribute? Green chemistry as a source of sustainable innovations in the cosmetic industry. In *Current Opinion in Green and Sustainable Chemistry* (Vol. 13, pp. 164–169). Elsevier B.V. <https://doi.org/10.1016/j.cogsc.2018.06.019>
- [26] K. G. Jöreskog, D. S. (1996). LISREL 8: Structural Equation Modeling . In *Scientific Software International Co., Chicago. Scientific Software International Co.* Chicago. <https://books.google.co.in/books?id=f61i3quHcv4C&printsec=frontcover&dq=inauthor:%22K.+G.+Jöreskog%22&hl=en&sa=X&ved=2ahUKEwid7YT5g9zqAhUQgUsFHZ6yAqMQ6AEwAHoECAUQA#v=onepage&q&f=false>
- [27] Kim, H. Y., & Chung, J. E. (2011). Consumer purchase intention for organic personal care products. *Journal of Consumer Marketing*, 28(1), 40–47. <https://doi.org/10.1108/07363761111101930>
- [28] Kinnear, T. C., Taylor, J. R., & Ahmed, S. A. (1974). Ecologically Concerned Consumers: Who are They? *Journal of Marketing*, 38(2), 20–24. <https://doi.org/10.1177/002224297403800205>
- [29] Kotler, P. (2011). Reinventing marketing to manage the environmental imperative. In *Journal of Marketing* (Vol. 75, Issue 4, pp. 132–135). American Marketing Association. <https://doi.org/10.1509/jmkg.75.4.132>
- [30] Kozelová, D., Mura, L., Matejková, E., Lopašovský, Ľ., Vietoris, V., Mendelová, A., Bezáková, M., & Chrenková, M. (2011). ORGANIC PRODUCTS, CONSUMER BEHAVIOR ON MARKET AND EUROPEAN ORGANIC PRODUCT MARKET SITUATION. *Potravinárstvo*, 5(3), 20–26. <https://doi.org/10.5219/96>
- [31] Kumar, B., Manrai, A. K., & Manrai, L. A. (2017). Purchasing behaviour for environmentally sustainable products: A conceptual framework and empirical study. *Journal of Retailing and Consumer Services*, 34(September 2016), 1–9. <https://doi.org/10.1016/j.jretconser.2016.09.004>
- [32] Liobikienė, G., & Bernatoniienė, J. (2017). Why determinants of green purchase cannot be treated equally? The case of green cosmetics: Literature review. *Journal of Cleaner Production*, 162, 109–120. <https://doi.org/10.1016/j.jclepro.2017.05.204>
- [33] 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. <https://doi.org/10.1108/02634509510088991>
- [34] McDonagh, P. and Clark, A. (1995). Corporate communications about sustainability: Turning clever companies into enlightened companies. *Greener Management International*, 11, 49 – 62.
- [35] Menon, A., Menon, A., Chowdhury, J., & Jankovich, J. (1999). Evolving Paradigm for Environmental Sensitivity in Marketing Programs: A Synthesis of Theory and Practice. *Journal of Marketing Theory and Practice*, 7(2), 1–15.

- <https://doi.org/10.1080/10696679.1999.11501825>
- [36] New Ways The Beauty Industry Is Testing Sustainable Practices. (n.d.). Retrieved July 19, 2020, from <https://www.forbes.com/sites/kaleighmoore/2019/06/11/new-ways-the-beauty-industry-is-testing-sustainable-practices/#3ff6a948eb55>
- [37] Padel, S., & Foster, C. (2005). Exploring the gap between attitudes and behaviour: Understanding why consumers buy or do not buy organic food. *British Food Journal*, 107(8), 606–625. <https://doi.org/10.1108/00070700510611002>
- [38] Panda, T. K., Kumar, A., Jakhar, S., Luthra, S., Garza-Reyes, J. A., Kazancoglu, I., & Nayak, S. S. (2020). Social and environmental sustainability model on consumers' altruism, green purchase intention, green brand loyalty and evangelism. *Journal of Cleaner Production*, 243. <https://doi.org/10.1016/j.jclepro.2019.118575>
- [39] Piligrimienė, Ž., Žukauskaitė, A., Korzilius, H., Banytė, J., & Dovalienė, A. (2020). Internal and External Determinants of Consumer Engagement in Sustainable Consumption. *Sustainability*, 12(4), 1349. <https://doi.org/10.3390/su12041349>
- [40] Preacher, K. J., Rucker, D. D., Hayes, A. F., Preacher, K. J., Rucker, D. D., Hayes, A. F., Rucker, D. D., & Hayes, A. F. (2007). Addressing Moderated Mediation Hypotheses: Theory, Methods, and Prescriptions. *Multivariate Behavioral Research*, 42(1), 185–227. <https://doi.org/10.1080/00273170701341316>
- [41] Pudaruth, S., Juwaheer, T. D., & Seewoo, Y. D. (2015). Gender-based differences in understanding the purchasing patterns of eco-friendly cosmetics and beauty care products in Mauritius: A study of female customers. *Social Responsibility Journal*, 11(1), 179–198. <https://doi.org/10.1108/SRJ-04-2013-0049>
- [42] Roberts, J. A. (1996). Green consumers in the 1990s: Profile and implications for advertising. *Journal of Business Research*, 36(3), 217–231. [https://doi.org/10.1016/0148-2963\(95\)00150-6](https://doi.org/10.1016/0148-2963(95)00150-6)
- [43] Saba, A., & Messina, F. (2003). Attitudes towards organic foods and risk/benefit perception associated with pesticides. *Food Quality and Preference*, 14(8), 637–645. [https://doi.org/10.1016/S0950-3293\(02\)00188-X](https://doi.org/10.1016/S0950-3293(02)00188-X)
- [44] Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research. *Journal of Consumer Research*, 15(3), 325. <https://doi.org/10.1086/209170>
- [45] Smith, S., & Paladino, A. (2010). Eating clean and green? Investigating consumer motivations towards the purchase of organic food. *Australasian Marketing Journal*, 18(2), 93–104. <https://doi.org/10.1016/j.ausmj.2010.01.001>
- [46] Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, 77(2), 203–220. [https://doi.org/10.1016/S0022-4359\(01\)00041-0](https://doi.org/10.1016/S0022-4359(01)00041-0)
- [47] Tarkiainen, A., & Sundqvist, S. (2005). Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. *British Food Journal*, 107(11), 808–822. <https://doi.org/10.1108/00070700510629760>
- [48] Yang, Y. C. (2017). Consumer Behavior towards Green Products. *Journal of Economics, Business and Management*, 5(4). <https://doi.org/10.18178/joebm.2017.5.4.505>
- [49] Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of

Evidence. *Journal of Marketing*, 52(3), 2.  
<https://doi.org/10.2307/1251446>