
Green Products: Factors Exploring the Green Purchasing Behavior of South Indian Shoppers

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Abstract: On the basis of the theory of planned behavior (TPB) approach, this exploratory study aims to examine factors exploring the green purchasing behavior of south Indian shoppers. The research study seeks to expand the planned behavior to include three additional variables, namely, environmental concern, knowledge, and media exposure. Data were collected from 429 respondents from three southern Indian states. Purposive and snowball samplings were adopted in the selection of respondents. The data were analyzed using factor analysis, Pearson's correlation, and multiple regression. The findings concluded that subjective norms have no significant association with the green purchase intention. Variables such as media exposure, environmental concern, environmental knowledge, and perceived behavioral control had a significant impact on the green purchase intention, which, in turn, had a substantial effect on the green purchasing behavior. These results support the TPB model. This research will help green marketers to develop new green strategies and plans to increase sales volumes and build good relationships with targeted green customers.

Keywords: environmental concern, environmental knowledge, green purchasing, perceived behavior, subjective norms.

Article info: Received 3 June 2020 | revised 2 July 2020 | accepted 28 July 2020

Recommended citation: Lavuri, R. & Susandy, G. (2020). Green Products: Factors Exploring the Green Purchasing Behavior of South Indian Shoppers. *Indonesian Journal of Sustainability Accounting and Management*, 4(2), 174–191. <https://doi.org/10.28992/ijSAM.v4i2.229>.

INTRODUCTION

Over the last few decades, society is facing ecological situations and environmental security as tough challenges. The ecological issues such as global warming, exhaustion of natural resources are affecting the decisions of consumers in purchasing a product directly or indirectly. The enthusiasm in humans and the desire to get the maximum with least effort resulted in destroying the fundamental supporting frameworks of life; i.e., air, water, and land (Smith, 2009). Businesses and human life have had a great deal of impact on environmental issues. Green promoting paved the way for finding the reasoning behind ecological problems such as global warming, biodiversity depletion, ozone degradation, pollution and deforestation. Awareness among the consumers toward the ecological issues and green items is improving at a greater rate (Mahesh & Gomathi, 2016).



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Green promoting is the marketing of the items that are assumed to combine greater extent of environmental activities such as modification to the manufacturing process, items and packaging to make them sustainable, as well as creating a new way of publicizing (Sheikh, 2014). The report of World Health Organization stated that, every year in India 5,27,700 deaths are due to contamination of air and 21% of the transmittable diseases are spreading because of water pollution (Mannarswamy, 2011); 69% of the public accepts that their daily life is affected because of contamination and environmental issues (Schlegelmilch *et al.*, 1996), which confirms the proposal that buyers are progressively picking items depending on their environment effect (Grove *et al.*, 1996). The company's environmental programs and eco-marketing strategy are mainly driven by customers. In order to meet market demand, businesses are currently adopting an eco-marketing strategy that blends corporate and promotional objectives with environmental conservation (Smith & Brower, 2012).

The theory of planned behavior (TPB) is the cornerstone of the theoretical approach for green product usage. In many research studies on green consumption of goods, TPB has been used to estimate different behaviors of humans, specifically in the context of green consumption (Kumar *et al.*, 2017; Liobikienė *et al.*, 2016; Paul *et al.*, 2016; Shin *et al.*, 2018). This is the most popular theoretical paradigm explaining intentions and behavior of purchasing factors. This model provides a good conceptual framework for improving intentions of consumers for buying green products, and to understand the various reasons for the behavior of individuals. The extended model includes media exposure, environmental knowledge and environmental concerns as variables.

Public consciousness/awareness and environmental issues are on the increase in India. Various studies have shown the willingness of Indian consumers to purchase green goods. Such developments contribute to increasing research interest in green marketing, green goods, green advertising and green consumer behavior. Currently, there is limited research on green consumers in India and green marketing. The centrality of the study focused on factors that explore the green purchasing behavior of south Indian shoppers. The research study was conducted in five major cities (Secunderabad, Vijayawada, Amravati, and Chennai) of three states (Telanagna, Andhra Pradesh, and Tami Nadu) in India.

This paper explores the significant gap in current literature by analyzing the factors exploring green purchase intention (media exposure, environmental knowledge, environmental concern, environmental attitude, subjective norms, perceived behavioral control, green purchase intention, green purchase behavior). On the basis of the TPB approach, this research study seeks to expand the TPB to include three additional variables, i.e., environment concern, knowledge, and media exposure. Specifically, this paper explores this significant gap in current literature by analyzing the effect of eight factors that explore the green purchasing behavior. The magnitude of the interaction between chosen green goods variables is also explored in this study. The marketer should be conscious of the buying behavior of shoppers. This is intended to help marketers establish a new approach for more effective sales of their goods and services.

Several research studies agreed that, media exposure played a pivotal role in the dissemination of information on ecological concerns; and the whole and sort of media exposure on the ecological issues regularly. It has been turned into a major public issue in the society (Lowe & Rudig, 1987). Schultz and Lauterborul (1993) explained that media exposure is a combination of various media vehicles which allows viewers and readers to listen and read the message; and it is a key driver for the communication of information and has a significant impact on the purchase intention of shoppers (Bass, 1969). The most important influence of media exposure on distribution is that it spreads awareness of technologies rapidly to wider audiences (Rogers, 2003). There is no question as to whether such media can contribute to a change in drive and feeling (DeFleur & Dennis 2002).

Khalid and Zainuddin (2011) found that access to media publicity has a significant impact effect on the customers buying intention. It will raise public awareness regarding environmental concerns by growing the media's share; and changing the attitudes of shoppers toward sustainability and eco green products, and to highlight the effect of green packaging studies on the ecological obligations of young consumers (Kardos *et al.*, 2019; Yilmaz & Ilter, 2017). Therefore, ME has a strong factor to construct EK, EA toward GPI.

Many consumers have inadequate environmental knowledge to act appropriately toward the environment (Kempton *et al.*, 1995). EK refers to the knowledge of shoppers about the effect of product use on the environment (D'Souza *et al.*, 2007); which reveals how the product is manufactured in an ecological sustainable way (Lim *et al.*, 2014). This includes the reality, values and relationships with key ecosystems, such as environmental knowledge; and the ecological obligation of individuals, which contributes to sustainable growth (Taufique *et al.*, 2016). Individual EK has significant impact on environmental problems and is linked to EA and PBC. Constructive action is a strong view of environmental problems (Laroche *et al.*, 2001). Exact data on environmental problems should make individuals more informed (Schahn & Holzer, 1990). Osmana *et al.* (2016) explained that consumers have positive knowledge toward green marketing and green products due to high level knowledge of eco-friendly products.

Bradley *et al.* (2010) explain that students with good environmental attitudes have a higher degree of awareness despite low information levels. EK is a significant contributor to consumers' buying intent (Laroche *et al.*, 2009). Previous studies have shown that EK has great and positive association with EA (Granzin & Olsen 2014) and GPI and GPB (Kaiser & Gutscher, 2003). EK is also increasing in India (Chaudhuri, 2014) and achieving higher degree of EK leads to much better environmental performance (Rokicka, 2012) and has good effect on GPI (Wang *et al.*, 2014).

However, some research studies have described the impact of EK on attitudes as inaccurate (Bogner, 1998). SNs affect the decision of the user, because it is motivated to act on the knowledge they have (Bradley *et al.*, 2010). Yang and Kahlor (2013) suggested that people who behave as per social norms should have paid close attention to information about the environment and therefore built a stronger knowledge. With adequate knowledge of environment, the ability to monitor people's PBC has improved (Asif *et al.*, 2018; Kumar *et al.*, 2017).

EC refers to peoples' knowledge about ecological issues, ability and interest in resolving environmental problems (Hu *et al.*, 2010). A green buyer is an individual who maintains strategic distance from any item that could harm any aspect of ecological existence (Elkington, 1994). EC is a major element in the decision-making process for customers (Diamantopoulos *et al.*, 2003). Growing number of customers with EC would increase both the GPI (Aman *et al.*, 2012) and the GPB (Hutchins & Greenhalgh, 1997) and thus the individual EC was a great incentive to buy.

Likewise, the studies by Prakash and Pathak (2017) and Paul *et al.* (2016) have shown that EC has a strong impact on the design of green packaged items, and individual EC have an effect on the other GPI through the exercise of SNs, such as friends, peer groups, and families; and they concluded that there was strong correlation between EC and GPI. Khan and Mohsin (2017) study shows that interest, social values and environmental values have positive effect on consumer preference for green products. Most of the researchers have been mentioned that EC has positive and significant impact on the EA and GPI (Albayrak *et al.*, 2013; Yadav & Pathak, 2016).

In Canada, EC has strong impact on EA toward GPB (Hanson 2013); and EA of customers have direct and indirect effect on the EC, and thus EC has an influence on EA and GPI on the GPB (Hartmann & Apaolaza-Ibáñez, 2012). SN is affected by an EC increase which reduces the sense of trouble. Consequently, EC affects behavior of

friends, peer groups and family who support or oppose GPB (Paul *et al.*, 2016). EC has positive effects on SNs and PBC for decision-making, which have been highly experienced by EC students, rather than by low-level students (Bamberg, 2003). Many customers are re-visiting green hotels because EC, SN and PBC have indirectly influenced their intentions (Chen & Tung, 2014).

Attitude refers to the psychological pattern reflected by determining some degree of favor or disfavor for a specific person (Bonne *et al.*, 2007). EA is a pro-environmental deciding factor (Nagar, 2015; Wesley *et al.*, 2012). Shoppers who have EA, feel like they are part of the world (Zelezny *et al.*, 2000) and previous studies have shown that positive EA is one of the key factors (Uddin & Khan, 2016), which directly affects the GPI and GPB (Nguyen *et al.*, 2017).

The EA of shoppers have a huge effect on GPI and GPB (Zhao *et al.*, 2014) with strong degree of correlation (Uddin & Khan, 2016). Particularly, shoppers EA has good relationship with ecological concern (Lopez & Cuergo-Arango, 2008; Straughan and Roberts, 1999), apparel buying behavior (Butler & Francis, 1997) and GPB (Tilikidou, 2007). EA is a major variable that affects GPB on the basis of literary reviews.

A subjective norm refers to the perceived social pressure to perform or not to perform a specific behavior (Ajzen, 1991; Han *et al.*, 2010). It is an individual opinion that has a strong effect on buying decision and behavior of that individual (Hee, 2000). Earlier studies show that SNs are set by family members, peer groups, friends and colleagues; and their optimistic perception has major impact on the decision and attitudes of individuals/consumers to purchase green (Du *et al.*, 2017; Hansen *et al.*, 2018; Paul *et al.*, 2016; Singh & Verma, 2017; Yilmaz & Ilter, 2017), organic products (Dean *et al.*, 2012), and most of the clients are revisiting green hotels (Chen & Tung, 2014; Teng *et al.*, 2014;).

Many studies have shown that subjective norms affect green consumption immensely (Zukin & Maguire, 2004) and the values and norms of the family members are closely correlated with the green purchasing intention in Thailand (Wiriapinit, 2007). In the Indian scenario, subjective norms have significant effect on consumers' buying intentions for green goods (Yadav & Pathak, 2017). However, Khare (2015) found that there is no association between SNs and GPB; and also Paul *et al.* (2016) concluded that there is no substantial association between subjective norms and intention of GPI. Thus, subjective norms are a significant factor in promoting green purchasing intentions.

PBC refers to the perception of performing a particular conduct is easy or difficult (Ajzen, 1991). A specific behavior takes place, if a person is motivated and capable of performing instead of simply having one or no reasons (Zhou *et al.*, 2013). According to the TPB model, the formation of prior intention is critical for the creation of perceived behavioral control. The perceived allowances are perceptive evidences that customers have or using while purchasing goods. Olsen (2004) noted that significant PBC variables, such as convenience and efficiency, affect the purchasing of food by consumers.

Many studies show that PBC has the best human predictor and a positive connection to buy an intent (Baker *et al.*, 2007) such as organic products/foods (Moser, 2015) and green hotels (Asif *et al.*, 2018; Bryła, 2016; Kapuge, 2016; Maichum *et al.*, 2017; Oroian *et al.*, 2017). The role of PBC is assessing purchasing intention and behavior of customers toward green purchases (Paul *et al.*, 2016; Yadav & Pathak, 2017).

An intention refers to the willingness of a person, to execute a specified behavior (Yadav & Pathak., 2017); and a motive, like readiness to act. According to TPB, the performance is a result of intentions when the behavior is voluntary. The action of SNs and EA has a positive impact on the PI to PB (Shashi *et al.*, 2015; Singh & Verma, 2017). PB had a strong impact on the green purchasing behavior (Khoiruman & Haryanto (2017). Yadav and Pathak (2017) studied that the relationship between intentions and green purchasing behavior is positive and strong.

In the recent years, it has raised the number of shoppers' willingness to purchase green items. GPB has been measured by the some of the ecological concern factors (Akehurst *et al.*, 2012; Lee, 2008), such as, ecological attitude (Joshi & Rahman, 2015; Uddin & Khan, 2016), shoppers personality characteristics (Gayathree, 2017), ecological knowledge (Lee, 2008), green marketing approaches, product quality and ecological issues (Joshi & Rahman, 2015; Manongko *et al.*, 2018).

These were investigated as factors affecting shoppers' GPB (Adnan *et al.*, 2017; Khan & Kirmani, 2015; Kirmani & Khan, 2016). Along with motivating factors, such as social obligation, awareness, ecological concern, social influence and consumer interests are the driving factors for green buying behavior (Arli *et al.*, 2018).

The two major theoretical constructs which may contribute to the understanding of this analysis are the theory of reasoned action (TRA) (Fishbein & Azjen, 1975) and the theory of planned behavior (TPB). TRA is the predecessor to TPB. TRA reveals that the intention to execute the behavior determines the specific behavior to be taken. It implies a behavioral intention that arises from two factors, the behavioral attitude and the subjective norms (SNs). The TPB model is an extension of the TRA (Ajzen & Madden 1986), proposed by Ajzen (1985) as an enhancement to the rational idea of action. It integrates perceived behavioral control (PBC) so that behavioral actions derive from behavioral attitudes, SNs, and BC. TPB was ranked as the best model for predicting intentions (Yadav & Pathak, 2016) and thus, for predicting behavioral intentions.

This model is widely used by social psychologists (Fielding *et al.*, 2008). Intention is a deliberate action plan that specifically includes behavior and an intention to act (Patch *et al.*, 2005). Previous studies concluded that intent and general opinion are the strongest predictors of behavior and completely mediate the effects of attitude, SNs and PBC (Gracia & de Magistris, 2013; Liobikienė *et al.*, 2016). Some research studies have endorsed the TPB model, Purchase intention (PI) and purchase behavior (PB) as the main predictors in the TPB model (Liobikienė *et al.*, 2016; Yadav & Pathak, 2017). PI is also a key factor in the adoption of green goods (Rezai *et al.*, 2012), and Paul *et al.* (2016) have shown how this can contribute to environmental sustainability.

Environmental sustainability refers to the ability to preserve qualities of significant value in the physical environment (Jones *et al.*, 2011), but studies by Chou *et al.* (2012) and Kim *et al.* (2013) were partly supported by the TPB model. The extended model includes media exposure, environmental knowledge and environmental concerns as variables. Figure 1 shows research hypothesis framed. It shows the association of the selected variables.

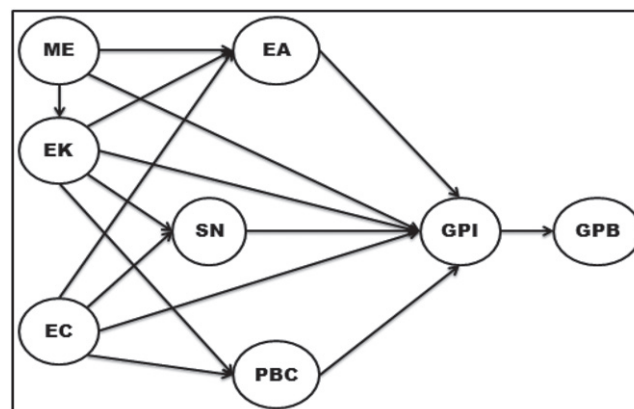


Figure 1 Conceptual Framework of Research Study

METHODS

This research study was conducted to understand the factors that explore the green purchasing behavior of shoppers in the three states of India. A standardized questionnaire was created and circulated among green respondents. Researchers used offline, online surveys, and interview methods to test and evaluate the hypothesized relationship in this analysis. Snowball and purposive sampling methods were used to collect data from the specified sample areas, i.e. the three states of India. After the pre-test, the questionnaire was finalized.

The questionnaire consists of two sections. The first section has five questions relating to demographic status of shoppers; and the second section has 29 questions, these were divided into eight variables, such as ME, EA, EK, EC, SNs, PBC, GPI and GPB. The ME scale was measured in five items (Khalid & Zainuddin, 2011), to grasp the exposure impact on the green respondents. EA of consumers toward green products were assessed by four items (Kumar *et al.*, 2012; Anbukarasi & Dheivanai, 2017); four items were used to measure the respondent's EK, regarding green products and the scale was taken from Kumar *et al.* (2012), Anbukarasi and Dheivanai (2017), and Asha and Rathiha (2017); four items of EC and scale factors were borrowed from Asha and Rathiha (2017); SNs, PBC, GPI, and GPB variables have three items for each and the scale was taken from Chaudhary and Bisai (2018), and Demirtas, (2018) (see Appendix 1).

The Likert five-point scale was used to measure green purchasing behavior of south Indian shoppers in the eight research variables with the scale of 5 = strongly disagree to 1 = strongly agree on each factor to assess the perceptions of respondents. Overall, 517 questionnaires distributed under non-probability sampling in five cities of the three states of South India; and 82% (429) of the respondents were able to provide feedback (see Table 1).

Table 1 Research Sample Size and Rate of Response

No	Cities	State	Sample	Usable Returns	Percentage Rate
1	Secunderabad	Telanagna	127	114	89
2	Hyderabad	Telanagna	141	129	91
3	Vijayawada	Andhra Pradesh	97	81	83
4	Amravati	Andhra Pradesh	80	62	77
5	Chennai	Tamil Nadu	72	43	59
Total			517	429	82

The following techniques, such as descriptive statistics, factor analysis, Pearson's correlation and multiple regressions were used to evaluate the research sample. The researcher used version 23.0 of the SPSS software to analyze the results; MS word and Excel for tables and the editing of extracting data from SPSS production.

This section presents the demographic statistics of shoppers, including age, gender, occupation, education and income status, as shown in Table 2.

RESULTS AND DISCUSSION

The Cronbach alpha test was conducted to track the internal consistency of the component in the sample to award the amount of reliability. Alpha Cronbach would be higher than 0.7; when alpha levels are more

Table 2 Respondents Demographic Statistics

Respondents Demographics		(N=429)	
		Frequency	%
Age	Below 25 years	89	20.7
	26–35 years	218	50.8
	36–45 years	74	17.2
	46 and above	48	11.2
Gender	Male	284	66.2
	Female	145	33.8
Education	Below degree	98	22.8
	Degree	120	28.0
	PG	139	32.4
Occupation	Above PG	72	16.8
	Govt employee	131	30.5
	Private employee	153	35.7
	Business	51	11.9
Monthly income (in rupees)	Other	94	21.9
	Below 25,000	72	16.8
	25,001–35,000	187	43.6
	35,001–45,000	85	19.8
	45,001 and above	85	19.8

than 0.7 - appropriate and 0.8 and above are favored. The outcomes of the reliability, mean and standard deviation of the investigations were: reliability of MS, EA, EK, EC, SNs, PBC, GPI and GPB were 0.788, 0.739, 0.712, 0.810, 0.799, 0.846, 0.831 and 0.768. The mean values of the scale are 3.9557, 3.9406, 3.7686, 3.8345, 3.5113, 3.5711, 4.2502 and 3.4810 for MS, EA, EK, EC, SNs, PBC, GPI and GPB. Similarly, scale standard deviation values for respected variables are 0.75095, 0.71181, 0.79551, 0.77282, 0.89547, 0.96104, 0.79952, and 0.93754 (see Table 3).

Table 3 Scale Construction

Variables	Items	DC	Mean	Std. Deviation	CA (> 0.7)
ME	5	5-point LK	3.9557	0.75095	0.788
EA	4	5-point LK	3.9406	0.71181	0.739
EK	4	5-point LK	3.7686	0.79551	0.712
EC	4	5-point LK	3.8345	0.77282	0.810
SNs	3	5-point LK	3.5113	0.89547	0.799
PBC	3	5-point LK	3.5711	0.96104	0.846
GPI	3	5-point LK	4.2502	0.79952	0.831
GPB	3	5-point LK	3.4810	0.93754	0.768

DC, Descriptive of scale; LK, Likert scale; CA, Cronbach alpha; ME, media exposure; EK, environmental knowledge; EC, environmental concern; EA, environmental attitude; SNs, subjective norms; PBC, perceived behavioral control; GPI, green purchase intention; GPB, green purchase behavior.

Factor analysis was used for the detection of factors influencing the actions of consumers buying green goods. The statistical approach consists of finding a way to condense information contained in a variety of initial variables into smaller variables that have zero information loss.

The estimation of the KMO sample is an indicator of the adequacy of the factor analysis to be tested. The broad (0.5–1.0) significance makes the study of the factor acceptable, as the data are internally consistent with

important variables (ME: KMO = 0.777; $X^2 = 621.704$; DF = 5 and $P < 0.001$; EA: KMO = 0.730; $X^2 = 315.032$; DF = 6 and $P < 0.001$; EK: KMO = 0.782; $X^2 = 567.184$; DF = 6 and $P < 0.001$; EC: KMO = 0.758; $X^2 = 429.934$; DF = 6 and $P < 0.001$; SNs: KMO = 0.738; $X^2 = 399.537$; DF = 3 and $P < 0.001$; PBC: KMO = 0.725; $X^2 = 548.291$; DF = 3 and $P < 0.001$; GPI: KMO = 0.712; $X^2 = 510.082$; DF = 3 and $P < 0.001$; GPB: KMO = 0.794; $X^2 = 331.652$; DF = 3 and $P < 0.001$), have been noted as good. The sphericity check by Bartlett shows the strength of the interaction between variables. The degree of significance measured is 0.000. The strength of the relation between the variables is therefore high. Therefore, data are a reasonable way to analyze the element.

The pivot of varimax has been monitored through 29 dimensions relating to eight unique factors, which were ME (5 dimensions), EA (4 dimensions), EK (4 dimensions), EC (4 dimensions), SNs (3 dimensions), PBC (3 dimensions), GPI (3 dimensions), and GPB (3 dimensions) (see Table 4).

Table 4 Exploratory Factor Analysis (EFA)

Variables	KMO (NI)	X^2 ; DF	EV	%Var	FL
Media Exposure (ME)					
ME1	0.777 (5)	621.704; 5 ($P < 0.001$)	2.736	54.712	0.789
ME2					0.814
ME3					0.745
ME4					0.608
ME5					0.725
Environmental Attitude (EA)					
EA1	0.730 (4)	315.032; 6 ($P < 0.001$)	2.159	53.976	0.711
EA2					0.778
EA3					0.771
EA4					0.674
Environmental Knowledge (EK)					
EK1	0.782 (4)	567.184; 6 ($P < 0.001$)	2.553	63.826	0.821
EK2					0.830
EK3					0.827
EK4					0.711
Environmental Concern (EC)					
EC1	0.758 (4)	429.934; 6 ($P < 0.001$)	2.251	56.264	0.782
EC2					0.681
EC3					0.827
EC4					0.702
Subjective Norms (SNs)					
SNs1	0.738 (3)	399.537; 3 ($P < 0.001$)	2.142	71.403	0.847
SNs2					0.859
SNs3					0.829
Perceived Behavioral Control (PBC)					
PBC1	0.725 (3)	548.291; 3 ($P < 0.001$)	2.293	76.420	0.847
PBC2					0.900
PBC3					0.874
Green Purchase Intentions (GPI)					
GPI1	0.712 (3)	510.082; 3 ($P < 0.001$)	2.254	75.131	0.832
GPI2					0.883
GPI3					0.885
Green Purchase Behavior (GPB)					
GPB1	0.794 (3)	331.652; 3 ($P < 0.001$)	2.050	68.324	0.812
GPB2					0.821
GPB3					0.847

Note: X^2 : chi-square; DF: degree of freedom; EV: eigenvalues; %Var: percent of variance; FL: factors loading; NI: no. of items.

The exploratory factor analysis (EFA) consists of eight variables and the 1st variable (ME), in EFA with its eigenvalue of 2.736%, with a total variance of 54.712%. The following variables followed: 2nd, 3rd, 4th, 5th, 6th, 7th and 8th with eigenvalues of 2.159, 2.553, 2.251, 2.142, 2.293, 2.254 and 2.050. Likewise, these eight variables have an explanatory variance of 53.976%, 63.826%, 56.264%, 71.403%, 76.420%, 75.131%, and 68.324%. These factors have a strong effect on green purchase intention (see Table 4).

The correlation test is to determine the linear association among the chosen variables, providing significance from +1 to -1; +1 implies perfect correlation, -1 shows negative correlation and 0 does not imply any relationship in this situation. The numerical coefficient values represent the extent of the interaction between variables.

The use of a person analysis to measure the quality of a direct relationship between selected variables such as ME, EA, EK, EC, SNs, PBC, GPI, and GPB; the analyses were accurate with a coefficient ranging from 0.071 to 0.746 for variables. The results of the Pearson correlation ($n = 429$), between the eight selected variables are shown. The correlation coefficient statistics reflect the degree of association between each construct which fosters green purchasing intention and purchasing. The results show that ME had a positive relationship with EK ($r = 0.509^{**}$; $p < 0.01$), and had a strong relationship with GPI ($r = 0.514^{**}$; $p < 0.01$), at 1% significance level, these results were supported by the study of Lauterborul. EA is a key factor (Uddin & Khan, 2016), and had a significant impact on the GPI ($r = 0.480^{**}$; $p < 0.01$), at a 1% significance point, which had been confirmed by these findings (Nguyen *et al.*, 2017). EK has a significant effect on EC ($r = 0.577^{**}$; $p < 0.01$); GPI ($r = 0.486^{**}$; $p < 0.01$), and GPB ($r = 0.496^{**}$; $p < 0.01$), at a 1% significance point, and these findings were confirmed by Mostafa (2007), and Van Birgelen *et al.* (2009). Likewise, EC had measurable impact on the SNs ($r = 0.525^{**}$; $p < 0.01$), and PBC ($r = 0.512^{**}$; $p < 0.01$), at 1% of significance level and these results supported the study by Chen and Tung (2014). SNs had no association with GPI ($r = 0.071$; $p > 0.01$), and GPB ($r = 0.084$; $p > 0.01$), and this result supported the study by Khare (2015) and Chaudhary and Bisai (2018). PBC had a good relationship with GPI ($r = 0.489^{**}$; $p < 0.01$), and GPB ($r = 0.388^{**}$; $p < 0.01$), confirmed by Yadav and Pathak (2017) and Paul *et al.* (2016). GPI had a strong impact on the GPB ($r = 0.519^{**}$; $p < 0.01$), at 1% of the significance level, as confirmed by Yadav and Pathak (2017) (see Table 5).

Table 5 Pearson's Correlation

	ME	EA	EK	EC	SNs	PBC	GPI	GPB
ME	1	0.541 ^{**} s	0.509 ^{**} s	0.459 ^{**} s	0.256 ^{**} s	0.239 ^{**} s	0.514 ^{**} s	0.461 ^{**} s
EA		1	0.476 ^{**} s	0.468 ^{**} s	0.315 ^{**} s	0.228 ^{**} s	0.480 ^{**} s	0.430 ^{**} s
EK			1	0.577 ^{**} s	0.432 ^{**} s	0.408 ^{**} s	0.486 ^{**} s	0.496 ^{**} s
EC				1	0.525 ^{**} s	0.512 ^{**} s	0.360 ^{**} s	0.428 ^{**} s
SNs					1	0.746 ^{**} s	0.071 ns	0.084 ns
PBC						1	0.489 ^{**} s	0.388 ^{**} s
GPI							1	0.519 ^{**} s
GPB								1

Note: **: $p < 0.01$ (two-tailed); s: significant; ns: not significant.

This clarifies the relationship and assistance of predictors and dependent factors to understand the consistency effect of the predictors and the dependent factor.

This section summarizes results of multiple regressions. Five models were designed to explore the relationship between study variables in this research, such as ME, EK, EC, EA, SNs, PBC, GPI, and GPB. The results showed that the F -values of five models were statistically significant at 127.226 (M-1), 70.705 (M-2), 98.842 (M-3), 42.372 (M-4), and 21.443 (M-5). Model 1 indicates that ME had a significant effect on EA ($\beta = 0.407$, $p \leq 0.001$),

and EK ($\beta = 0.307, p \leq 0.001$), and causes 37.4% variance in dependent variables. Likewise, model 2 reveals that EK had a strong effect on the EA ($\beta = 0.424, p \leq 0.001$), and PBC ($\beta = 0.164, p \leq 0.001$), of 33.3% of the variance induced by independent variables. Model 3 reveals that the EC had a major influence on the EA ($\beta = 0.367, p \leq 0.001$), and PBC ($\beta = 0.222, p \leq 0.001$), 41.1% of variance is explained by the independent variable. For the estimated regression model 4, the overall R^2 was 0.376. This means that 37.6% of dependent variables variance was explained by a predictor. It is evident that EC emerged as the most important variable, and had a significant impact on the GPI ($\beta = 0.222, p \leq 0.001$). Likewise, ME had statistical significance on the GPI ($\beta = 0.202, p \leq 0.001$), and EK ($\beta = 0.192, p \leq 0.001$), but SNs was not statistically significant and had no impact on the GPI ($\beta = -0.062, p \geq 0.001$), its significance value is more than p -value. As a result, it can be inferred that EC had a significant impact on the GPI toward green products, that the amount of consumer EA and EK had a significant impact on the GPI toward green products. Model 5 shows that the overall R^2 was 0.348. This means that 34.8% of variance explained by a predictor and GPI had a positive impact on the GPB, and it is statistically significant ($\beta = 0.256, p \leq 0.001$), (see Table 6).

Table 6 Multiple Regression Results

Model	IV	DP	R^2	F	B	t	Sig.	Relationship
1	EA	ME	0.374	127.226	0.407	8.854	0.000	Supported
	EK				0.307	7.447	0.000	Supported
2	EA	EK	0.333	70.705	0.424	9.088	0.000	Supported
	SNs				0.147	2.706	0.007	Supported
	PBC				0.164	3.328	0.001	Supported
3	EA	EC	0.411	98.842	0.367	8.629	0.000	Supported
	SNs				0.183	3.692	0.000	Supported
	PBC				0.222	4.943	0.000	Supported
4	ME	GPI	0.376	42.372	0.202	3.287	0.001	Supported
	EK				0.192	3.396	0.001	Supported
	EC				0.222	2.582	0.010	Supported
	EA				0.174	2.853	0.005	Supported
	SNs				-0.062	-1.060	0.290	Not Supported
	PBC				0.036	0.465	0.012	Supported
5	GPI	GPB	0.348	21.443	0.256	4.631	0.000	Supported

Note: IV, independent variable; DP, dependent variable.

Environmental issues are increasing rapidly in India. Eco-consciousness has become a new mantra of victory, and people from every walk of life are involved. This study examines the factors that influence green buying behavior of south Indian shoppers. Researchers used eight key variables such as ME, EK, EC, EA, SNs, PBC, GPI, and GPB, with 29 dimensions affecting mainly shopper's behavior in five cities of three states in India. Based on TPB approach, the research study seeks to expand the TPB to include three additional variables: environment concern, knowledge and media exposure. The findings of the study have shown that consumers are ecologically conscious and concerned about environmental sustainability. Consumers were exposed to some form of media exposure, such as television, newspapers and magazines, the outdoors, the internet. It plays a critical role in communicating about environmental issues and green goods.

Accordingly, the findings show that media exposure has had a major impact on EA and EK, it directly or indirectly impact on the GPI and GPB. In the same way, a high degree of EK leads to a much better environmental performance. Individual EK has a significant impact on environmental problems and is linked to

EA and PBC. The findings show that it had a strong impact on the EA (Granzin & Olsen 2014; Polonsky *et al.*, 2012), and PBC (Van Birgelen *et al.*, 2009). This result shows that there is a positive relationship between EK, PBC and EA. The results found that EC had a good relationship with EA and PBC and has a good strong impact on the EA (Granzin & Olsen 2014), and PBC (Kim *et al.*, 2014). This means that having a strong EA helps to boost EA for green procurement.

Factors such as ME, EC, EA, EK, and PBC have a major effect on GPI customers, and these findings suggest that these factors had a strong incentive to GPI toward GPB. These findings were supported by the studies of Paul *et al.* (2016), Nguyen *et al.* (2017), and Yadav and Pathak (2017). Whereas SNs were not statistically significant and had no effect on the GPI and this finding was supported with the study by Chaudhary and Bisai (2018). Finally, these findings reveal that these variables had strong fostering for GPI users toward GPB. GPI had significant and strong impact on the GPB and had been supported by Yadav and Pathak (2017).

CONCLUSION

This research study focused on factors that explore green purchasing behavior. In this context, it will help policy makers and managers to develop and implement strategies to promote green awareness and stimulate customer purchase behavior; this study encourages academics to understand the nature and the purpose of the research study and the factors that have an impact on green purchasing behavior on shoppers. This study enables them to develop a new, innovative model for consumer buying actions.


This study had major implications for the corporate administrators in charge of promoting green products in south India. The research findings will increase understanding south Indian shopper's behavioral intentions to buy sustainable goods. Because PBC is closely connected with the GPI, marketers must make attempts to enhance their understanding of all the variables selected in the model proposed. Market segmentation based on the EC found to have a major impact on the EA, SNs and PBC in the expected behavior model may help marketers to target marketers with a strong GPI and GPB response. The GPI was significantly influenced by MS, EK, EC, EA, and PBC among six TPB predictors. This influence can also be made to improve the attitudes of consumer toward GPB.

The geographical area of study is limited to only five selected cities from three south Indian states. Consequently, the findings and conclusions of the study have their limits. The information continuum was used with a purposive and snowball approach that does not necessarily generalize the findings of the analysis. The rural sector has not been recognized in these research studies and the role of green marketing in rural areas can be addressed.

The researchers carefully chose the sample, but the scope for further research exists. This study focused on the factor that influences the green buying behavior of consumers in south Indian. Future research may be carried out on the various cultural and social contexts, and it will be possible to investigate the influence of consumer demographic situations such as altruism, psychological factors, and eco-knowledge on eco-green products. Cross-cultural studies and demographic measures could be useful for deeper insights across different generations.

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APPENDIX 1

The Scale of Perception: Tick the One Answer for Every Question that Comes Closest to Your View: (Strongly Disagree: 1, Disagree: 2, Neutral: 3, Agree: 4, Strongly Agree 5)

Variables	Dimensions	Sources
Media Exposure (MS)	TV FM radio Newspaper & magazine Outdoor Internet	Khalid and Zainuddin 2011
Environmental Attitude (EA)	Green goods use less agro-chemical Green items with eco-packaging Eco-branding and labelling are green items Green items are safer and healthier	Kumar et al. (2012), Anbukarasi and Dheivanai (2017).
Environmental Knowledge (EK)	Sustainability of the ecosystem Bio-degradable Recyclable Eco friendly	Kumar et al. (2012). Anbukarasi and Dheivanai (2017), and Asha and Rathiha (2017.)
Environmental Concern (EC)	Green goods help build a sustainable environment Earth Friendly procurement of environmentally friendly goods Reduce waste and recycle	Asha and Rathiha (2017); Chaudhary and Bisai (2018);
Subjective norms (SNs)	The use of green goods makes you feel happy My family thinks it's a good idea to buy Green items. Good opinion of my friend encourages me in buying green items. I would rather buy green goods from people whose views I respect.	Chaudhary and Bisai (2018); Demirtas (2018).
Perceived behavioral Control (PBC)	I believe that I have the capacity to buy ecological products. I have the time, the resources and the willingness to buy green goods. I assume that in the future I will be capable to buy green goods.	Chaudhary and Bisai (2018); Demirtas (2018).
Green Purchase Intention (GPI)	I shall consider purchasing green goods because in the coming days they are less polluting. I shall consider changing to eco-friendly brands with respect to ecological issues, I prefer to spend more than average on ecologically friendly goods.	Chaudhary and Bisai (2018); Demirtas (2018).
Green Purchase behavior (GPB)	I've frequently purchased green goods I have a green habit purchasing products for my daily needs. I've had a green buying conduct for the previous six months.	Chaudhary and Bisai (2018); Demirtas (2018);