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The antecedents of green purchase behavior of Indian households

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Abstract

Environmentally friendly products and packaging are necessary for survival and competing in the current markets. This article examines the effect of green skepticism on green purchase intentions in the context of Indian households. The study proposed a model with relationships between the antecedents of green purchase intentions. The primary data (n=345) is collected through a structured self-administered questionnaire, establishing validity and reliability through confirmatory factor analysis (CFA). The results of structural equation modeling (SEM) support that green skepticism does not affect green purchase intentions directly but through environmental knowledge and concern. Environmental knowledge and concern have a robust direct positive effect on green purchase intentions. The study summarizes consumer skepticism as an essential indirect input to green purchase behavior. The research contributes to the marketing literature by supporting the contention that consumer skepticism plays a vital role in green purchase behavior and added further evidence.

Introduction

Green marketing is a social process that satisfies customers' needs and wants through a proper method that minimizes the negative impacts on the environment (Abzari et al., 2013). Companies adopt green marketing concepts like waste management, energy-saving, environment-friendly across the production to consumption to save the world components. However, most companies negate the green marketing concept on a factual basis; they just apply it for profit-making or use it for the green tag (Chan, 2013). Most companies' exaggeration and application of green marketing practices make consumers skeptical of green products and green claims (Junior et al., 2019). Customers also create negative perceptions of green products and companies (Goh and Balaji, 2016). Hence, industries face a difficult time showing methods in terms of

green, eco-friendly, or environment friendly.

Previously, studies on consumer behavioral intentions were generally limited to developed nations like the European Union, America, Australia (e.g. Lasarov et al., 2019; Cheah and Phau, 2011; Straughan and Roberts, 1999). Later these studies also extended to developing countries, including India (e.g. Bhatia and Jain, 2013; Goh and Balaji, 2016; Jaiswal and Kant, 2018; Said et al., 2003). Further, these studies in both developed and developing nations had found a significant gap between customer behavioral intention and actual green purchase behavior (Junior et al., 2015)

Over the last four decades, researchers have attempted to identify the determinants of customers' environmentally sensitive behavior. Studies have focused on various psychographic variables to identify the determinants of green purchase behavioral intentions. Among these variables, environmental concern (Lee, 2009) ecological knowledge (Mostafa, 2006) verified the most popular. In the present scenario, the critical factor influencing consumer green purchase intentions is consumer skepticism. Though studies have evidenced consumer skepticism as an essential factor that impacts customer buying behavior, more evidence is needed to support this argument.

The three popular determinants of green purchase behavioral intentions are consumers' green skepticism, environmental knowledge, and concern. This article begins with an extensive literature review on constructs and their relationships based on which hypotheses were proposed. Later sections present an empirical analysis of the interrelationships between these five variables using structural equation modeling (SEM). Finally, the authors cover the discussion and implications of the findings.

Theoretical background: green skepticism, environmental knowledge, and concern

Companies hide information and exaggerate specific green features of offerings; this practice is called greenwashing. Greenwashing practices highlight only green features and do not show other elements that may disturb the environment (Delmas and Burbano, 2011). In recent days, this practice is spreading at rocket speed to take advantage of the business world (Junior et al., 2019). Studies found that greenwashing spoils consumer confidence in green products and creates confusion in the customer's mind (Goh and Balaji, 2016; Obermiller and Spangenberg, 1998; Leonidou and Skarmeas, 2017). Ultimately it will hamper companies that are practicing proper green marketing strategies (Rejikumar, 2016).

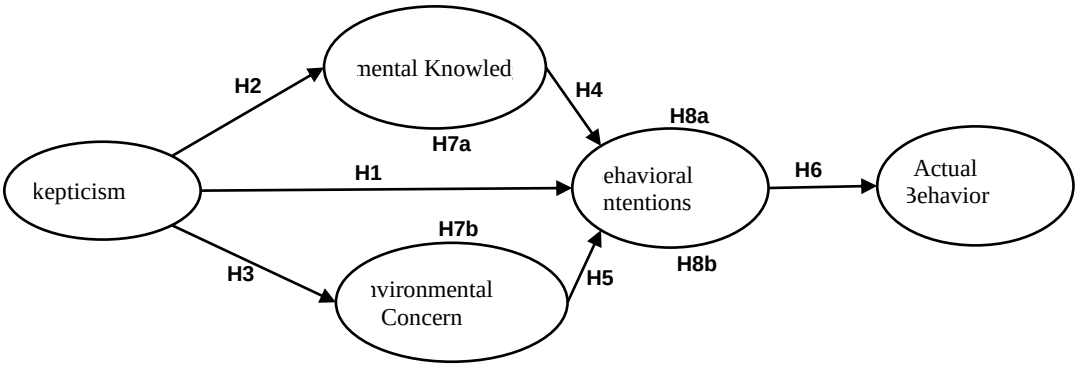

Figure 1 The Research Model. Source: Authors

Studies have confirmed the demand for green products worldwide, and accordingly, marketers are shifting to environmentally friendly products (Rejikumar, 2016; Aji and Sutikno, 2015). Companies adopt green marketing concepts across the value chain, including educating customers to lead a green lifestyle. However, many green offerings are ambiguous and deceiving the customers in the name of green (Chen and Chang, 2012).

Skepticism is a tendency of individuals to doubt or distrust others. Scholars have been studying the concept of skepticism in various disciplines, including psychological, philosophical, political, and social contexts (Feick and Gierl, 1996). This concept is also successfully extended to the business field, especially in advertising, marketing communication, corporate social responsibility, environmental claims, and cause-related marketing (Lasarov et al., 2019). From a marketing perspective, skepticism is a general tendency towards products based on the available information (Goh and Balaji, 2016). Skepticism is not a permanent belief towards green products; it can be changed or modified by providing information and evidence (Obermiller and Spangenberg, 1998). However, green skepticism's role in consumer knowledge was not well discussed in the green marketing literature.

Companies are now claiming more sustainable and environmentally beneficial products to attract target customers (Zarei and Maleki, 2018). Consumers' green skepticism plays a crucial role in consumer buying intentions, and it may but not necessarily develop negative perceptions (Junior et al., 2019). Though the direct relationship of skepticism with green purchase behavior is not clear, few studies have supported the immediate effect (Goh and Balaji, 2016). From the limited evidence available in the literature, the present study intends to test the hypothesis that green skepticism impacts consumer behavioral intentions.

H1: Green skepticism has a significant negative effect on green purchase behavioral intentions

Being skeptical, customers develop a curiosity to learn more about the products, which ultimately helps them identify and evaluate the actual green and non-green products (Leonidou and Skarmeas, 2017). Green skepticism further increases concern towards the environment and motivation to search and acquire knowledge about green practices of companies (Zarei and Maleki, 2018; Nguyen et al., 2019).

Environmental knowledge refers to consumers' overall experience and awareness about the environment and the impact of human activity on the environment, ecosystem, and sustainability (Mostafa, 2006; Squires, 2019). Green knowledge is also referred to as green symbols, labels, packaging (Sharma and Kushwaha, 2019). In addition, the concept of environmental knowledge covers the understanding of environmental problems, causes, and remedies of different environmental issues (Jaiswal and Kant 2018). The environmental knowledge would influence green purchase intentions and behavior (Li et al., 2019). Environmental concern refers to a person's like, dislike, feeling, and emotions towards the environment (Lee 2009; Minton and Rose, 1997). It can also be explained in a general concept or an idea about everyone's feelings or anxieties towards the green issues (Do Paco and Raposo, 2009; Zimmer et al., 1996).

Though the above discussion substantiates skepticism as an antecedent to environmental knowledge and concern, the direction of the relationship between constructs is not apparent (Do Paço and Reis, 2012). Few studies have proved the negative effect of consumer skepticism on environmental knowledge and concern (Goh and Balaji, 2016; Leonidou and Skarmeas, 2017; Nguyen et al., 2019). Hence, based on the theoretical verification from the literature, the study intends to test the effect of consumer skepticism on environmental knowledge and concern.

H2: Green skepticism has a significant negative effect on environmental knowledge.

H3: Green skepticism has a significant negative effect on environmental concern.

Environmental knowledge and concern as determinants of green purchase behavioral intentions

Scholars focused on consumer knowledge and its influence on consumer behavior (Goh and Balaji, 2016; Mostafa, 2006; Ural et al., 2015). Studies found that environmental knowledge positively affects consumer attitude and consumer intention towards green products (e.g. Chan and Lau, 2000; Mostafa 2006 & 2007; Pagiaslis and Krontalis, 2014). Environmental knowledge helps people differentiate general products from green products based on the attributes, and ultimately the positive attributes lead to behavior towards environmentally friendly products (Kanchanapibul et al., 2014). Environmental knowledge also plays a vital role in organic product purchase decisions. It enhances the attitude and intention of purchasing an organic product and leads to people's pro-environmental behavior (Smith and Paladino, 2010). From the above discussion, environmental knowledge and concern are the critical factors that influence consumers' green purchase behavior.

H4: Environmental knowledge has a significant positive effect on green purchase behavioral intentions.

Some studies support the relationship between environmental concern and green product purchasing behavior (Pagiaslis and Krontalis, 2014; Li et al., 2019). Studies have also found that high consumer concern towards the environment is willing to pay a

higher price (Mostofa, 2007). Studies concluded that young consumers, educated, urban, female, high-income class people are more environmentally conscious than other consumers (Lee 2009; Mostafa 2007; Zimmer et al., 1994). Specifically, when customers have significant environmental concerns, it builds concrete beliefs towards ecological issues (Wang et al., 2014). Studies have also supported that consumers who have higher levels of environmental concern exhibit higher green purchase behavior (e.g., Li et al., 2019; Pagiaslis and Krontalis, 2014).

H5: Environmental concern has a significant positive effect on green purchase behavioral intentions.

Green purchase behavioral intentions and actual purchase behavior

Green purchase intention refers to the consumer's possibility of purchasing green products (Kang et al., 2012). "Green purchase behavioral intention" is defined as a customer's readiness stage of buying green products (Yadav and Pathak, 2017). Customers change their buying criteria and behavioral patterns to adopt sustainability. They see themselves as a part of society and choosing products will directly or indirectly affect the environment and society (Zarei and Maleki, 2018; Thøgersen, 1994). Authors have adopted social psychological theories like the Theory of Planned Behavior and Attitude-Intention-Behavioral models to test the effect of green purchase behavioral intentions on actual purchase behavior (e.g., Goh and Balaji, 2016; Kim et al., 2013; Malizia, 2012). Consumer intention is the most effective and immediate antecedent that predicts environmental purchasing behavior (Lai and Cheng, 2016; Jaiswal and Kant, 2018). It has become much more robust when consumer attitude towards green products is positive (Ural et al., 2015). From the existing literature, it is clear to propose a hypothesis to test the direct effect of customer green behavior intentions on actual green purchase behavior.

H6: Green purchase behavioral intentions has a significant positive effect on actual green purchase behavior.

From the above discussions, it is clear that consumer skepticism, environmental knowledge, and concern directly affect green purchase behavioral intentions; and green purchase behavioral intentions directly impact actual green purchase behavior. In addition, from the above hypotheses, the study also tested the indirect and total effects of skepticism, environmental knowledge, and concern on behavioral intentions and actual purchase behavior. The below hypotheses were proposed to test the indirect effect. The proposed research model is presenting the hypotheses. (Figure 1).

H7: Skepticism has an indirect effect on green purchase behavioral intentions through environmental knowledge and concern

H7a: Skepticism has an indirect effect on green purchase behavioral intentions through environmental knowledge.

H7b: Skepticism has an indirect effect on green purchase behavioral intentions through environmental concern.

H8: Environmental knowledge and concern have an indirect effect on actual green purchase behavior through green purchase behavioral intentions.

H8a: Environmental knowledge has an indirect effect on actual green purchase behavior through green purchase behavioral intentions.

H8b: Environmental concern has an indirect effect on actual green purchase behavior through green purchase behavioral intentions.

Measures of concepts

The study adopted the survey method to collect perceptions and behavioral intentions towards green purchase behavior and its antecedents. The existing scales of green skepticism (Mohr et al., 1998), environmental knowledge (Lee, 2009; Junior et al., 2015), environmental concern (Mostafa, 2006), green purchase behavioral intentions (Chen and Chang, 2012) and actual green purchase behavior (Wan et al., 2012) used to measure the constructs. The constructs were measured using the seven-point Likert scale (1 = strongly disagree, 5= strongly agree).

Data and methods

The sample and data

The data was collected from the respondents living in Andhra Pradesh, India. The purposive sampling technique was used to collect the responses. The self-administered questionnaires were distributed to the respondents at public places, houses, and parks, and sufficient care was taken to minimize the common method bias (CMB). The ex-ante and ex-post approaches were followed to minimize the CMB (Podsakoff et al., 2003). As a part of the ex-ante approach, the items of constructs were identified from different sources and administered the questionnaire with proper care. In the second level, ex-post approaches, Harman's one-factor test of common method variance is used to test the data.

About 85% of the questionnaires (n345) were found valid for the analysis. Respondents were split between males (57%) and females; 56% of respondents were aged between 16-25 years; 30% of respondents were between 26-35 years. In terms of education, most respondents (49%) have bachelor's degrees/diplomas, followed by 42% of respondents, who were master's degree holders. The majority of respondents (31%) have below Rs.50,000 family income per month, followed by 29% of respondents having between Rs.50,000 to Rs.100,000. Regarding occupation, 23.5% of respondents were government employees, 26.4% were private employees, and 11.6% were housewives.

Method of analysis

Structural equation modeling (SEM) with the maximum likelihood estimation method was followed to test the research model. The analysis was performed in a two-step approach suggested by Hair et al., 2008 and Anderson and Gerbing, 1988. In the first

step, the measurement model was tested separately for all the constructs to assess better construct validity. In the second step, the structural model was developed to test the proposed hypotheses by assessing the direct and indirect relationships amongst the constructs.

Table 1 Demographic distribution of the respondents

Demographic	*F*	*%*	Demographic	*F*	*%*
Gender			**Occupation**		
Male	196	56.8	*Govt. Employee*	81	23.5
Female	149	43.2	*Private Employee*	91	26.4
Age (years)			*Self-employed*	37	10.7
Below 16	7	2.0	*Business*	38	11.0
16-25	192	55.7	*Retired*	3	.9
26-35	103	29.9	*Housewife*	40	11.6
36-45	23	6.7	*Unemployed*	14	4.1
46-55	13	3.8	*Student*	41	11.9
above 55	7	2.0	**Family Income Monthly (Rs.)**		
Education			*Below 50,000*	106	30.7
High School	10	2.9	*50,000 - 1,00,000*	101	29.3
Bachelor's Degree/diploma	170	49.3	*1,00,000 - 1,50,000*	36	10.4
Master's Degree	144	41.7	*1,50,000 - 2,00,000*	31	9
Other higher education	21	6.1	*above 2,00,000*	71	20.6

Source: Authors

Results

The data's normality, linearity, and outliers were analyzed using the Kolmogorov and Shapiro (K-S) method, correlational measures of association, and the Mahalanobis D2 measure, respectively (Hair et al., 2008; Tabachnick et al., 2007). However, the results indicate that there are no issues with the data.

Measurement model

The validity of the constructs was assessed from the results of confirmatory factor analysis (Table 2). The three validity measures of all five constructs are within the recommended level (Byrne, 2010 and Hair et al., 2008). The factor loadings of all the constructs were above 0.5 at the significance level of 0.001, ranging from 0.62 to 0.86. The average variance extracted (AVE) and construct reliability (CR) are above 0.50 and 0.70, respectively, indicating that the scale constructs have validity and reliability.

Next, AVE and mean squared variance (MSV) associated with the construct was compared to assess the discriminant validity (Fornell and Larcker, 1981). The MSV value against each construct shows the square of the highest correlation coefficient between the latent constructs. As seen in Table 2, the AVE is higher than the MSV,

indicating that all the constructs have discriminant validity. Hence, we can conclude that each construct is distinct from other constructs (i.e., unidimensional).

Table 2 Results of confirmatory factor analysis

Regression paths	Standard Loadings	*CR*#	AVE	CR	MSV
Skepticism (Sk)			**0.57**	**0.84**	**0.20**
Most environmental claims made on package labels or in advertising are true	0.79	**			
Because environmental claims are exaggerated, consumers would be better off if such claims on package labels of in advertising were eliminated	0.83	15.12			
Most environmental claims on package labels or in advertising are intended to mislead rather than to inform consumers	0.71	12.97			
I do not believe in most of the environmental claims made on the package labels or in advertising	0.68	12.50			
Environmental Knowledge (EK)			**0.51**	**0.80**	**0.29**
I know that I buy products and packages that are environmentally safe	0.74	**			
I know how to select products and packages that reduce the amount of waste ending up in landfills	0.76	12.48			
I understand the environmental phrases and symbols on product packages.	0.66	11.08			
I am very knowledgeable about environmental issues.	0.67	11.28			
Environmental Concern (EC)			**0.62**	**0.87**	**0.33**
I am concerned about the environment.	0.73	14.81			
I would say I am emotionally involved in environmental protection issues.	0.77	15.16			
I am worried about the worsening of the quality of the environment.	0.83	16.50			
I think about how environmental quality can be improved.	0.82	**			
Green Purchase Intentions (GPI)			**0.66**	**0.86**	**0.33**
You intend to purchase this product because of its environmental concern	0.81	**			
You expect to purchase this product in the future because of its environmental performance.	0.88	16.64			
Overall, you are glad to purchase this product because it is environmentally friendly	0.75	14.64			
Actual Behavior (AB)			**0.50**	**0.75**	**0.24**
I have been purchasing green products on a regular basis.	0.64	**			

I have green purchasing behavior for my daily need's products.	0.72	9.56
I have had green purchasing behavior over the past six months.	0.76	9.68

***Note**: *Probability level of 0.001; **the critical ratio is not available, because the regression weights are fixed at 1; $CR_{\#}$ = Critical Ratio; AVE= Average variance Extracted; CR=Construct Reliability; MSV=mean squared variance*

Source: Authors

Further, nomological validity was judged based on significant correlations between the constructs. Model fits of the constructs were also assessed using standard model fit indices, such as χ2/df = 1.859; goodness fit index (0.929); adjusted goodness fit index (0.903); comparative fit index (0.959); normed fit index (0.918); incremental fit index (0.960). All the fit indices are above 0.90, and the root mean square error of approximation is 0.051, which denotes the measurement model is fit (Byrne, 2010; Hair et al., 2008).

Structural model

The structural model consists of direct and indirect relationships between constructs (figure 2). The model covers all possible relationships between skepticism, environmental concern, environmental knowledge, green purchase intentions, and actual behavior. All the fit indices of the model were above accepted level: goodness of fit indices χ2 = 323.681, df= 129, χ2/df = 2.509; goodness fit index (0.905), comparative fit index (0.928), incremental fit index (0.929), Tucker-Lewis coefficient (0.915) and the root mean square error of approximation value (0.049) is between 0.03 and 0.08 (Byrne, 2010; Hair *et al.*, 2008). The results of SEM indicate that the proposed model has a good fit.

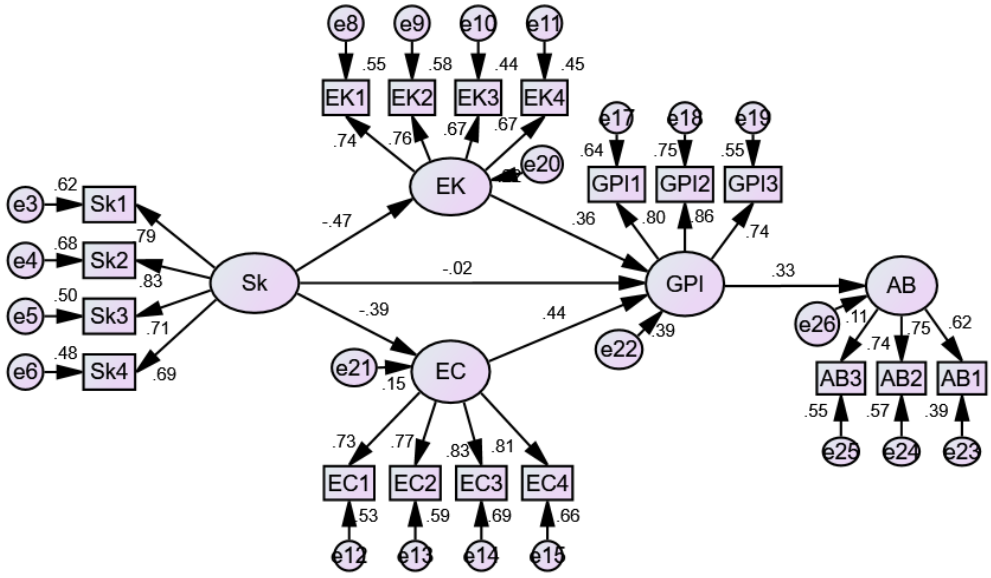

Figure 2 Structural Model

Table 3 presents the Coefficient (β) values and decision on proposed hypotheses. The results support the H2 and H3 that skepticism has a significant negative effect on environmental knowledge (β **=** - 0.471, t = - 6.988, p = 0.000) and environmental concern (β **=** - 0.385, t = - 6.119, p = 0.000). However, H1, which states that skepticism has a significant negative effect on green purchase behavioral intentions, is not supported (β **=** - 0.016, t = - 0.228, p = 0.820). Further results support the proposed hypotheses H4, H5 and H6; i.e., the positive significant effect of environmental knowledge (β **=** 0.358, t = 5.175, p = 0.000) and environmental concern (β **=** 0.442, t = 6.974, p = 0.000) on green purchase behavioral intentions; and the positive significant effect of green purchase behavioral intentions on actual green purchase behavior (β **=** 0.332, t = 4.722, p = 0.000).

Table 3 ML Estimates for structural model parameters.

	Parameter	Coefficie-nt (β)	t-value	Decision
H1	Skepticism□ Green Purchase Intentions	- 0.016	-0.228	Not supported
H2	Skepticism□ Environmental knowledge	- 0.471	-6.988***	Supported
H3	Skepticism□ Environmental Concern	- 0.385	-6.119***	Supported
H4	Environmental knowledge □ Green Purchase Intentions	0.358	5.175 ***	Supported
H5	Environmental Concern □ Green Purchase Intentions	0.442	6.974***	Supported
H6	Green Purchase Intentions □ Actual Behavior	0.332	4.722***	Supported

Note: *** = *p<0.000* Source: Authors

Indirect and Total Effects on behavioral intention and actual behavior

The model supports the indirect effect of skepticism on green purchase intentions mediated by environmental knowledge and concern, and the total effect of skepticism on green purchase intention is -0.338. Similarly, environmental knowledge indirectly impacts actual behavior through green purchase intentions (0.12), and environmental concern has an indirect effect on actual behavior through green purchase intentions (0.15). The total effect of skepticism on actual behavior is -0.12. The indirect effect was calculated by the product of direct effects (Table 4). The constructs were tested against the demographics of the respondents using ANOVA and t-test. No significant differences in the perception of the respondents were found.

Table 4 Results of indirect effects.

	Indirect effect	Decision
H7a	Skepticism□ Environmental knowledge □ green purchase Intentions	Supported
H7b	Skepticism□ Environmental Concern □ green purchase Intentions	Supported

H8a	Environmental knowledge □ green purchase Intentions □ Actual Behavior	Supported
H8b	Environmental concern □ green purchase Intentions □ Actual Behavior	Supported

Source: Authors

Discussion and conclusion

Green marketing is a management process responsible for determining, predicting, and satisfying the customers and society at large. Consumer marketing and behavioral science researchers have focused on various determinants of green purchase behavior, as consumer perception and attitudes significantly impact buying behavioral intentions. Studies have identified skepticism, environmental knowledge, and environmental concern are more popular determinants of green purchase behavior (Goh and Balaji, 2016, Obermiller & Spangenberg, 1998; Lee, 2009; Mostafa, 2006; Doszhanov and Ahmad 2015). Greenwashing practices followed by the companies are making customers skeptical towards green products and their benefits to the environment (Zarei and Maleki, 2018; Durif et al., 2012).

The originality of this study is based on testing the effect of skepticism on environmental knowledge, concern, and behavioral intentions in the Indian context. Limited studies have been conducted to identify the determinants of green behavioral intentions and green purchase behavior. Further, the effect of skepticism is widely ignored. Based on attitude-intention-behavior models, the study supported that green skepticism indirectly affects green purchase behavior through environmental knowledge and concern (Zarei and Maleki, 2018; Nguyen et al., 2019).

The direct effect of behavioral intentions on actual behavior and the indirect effect of environmental knowledge and concern on actual behavior through behavioral intentions are proved in this research (Kim et al., 2013; Goh and Balaji, 2016; Jaiswal and Kant, 2018). The above findings of indirect effects add evidence in the green marketing literature and support the argument based on attitude formation theories like the theory of planned behavior (Ajzen, 1991), the theory of reasoned action (Fishbein and Ajzen, 1977) and attitude-intention-behavior models.

The study contributes methodologically to the green marketing area by testing existing theory in the Indian context. The study adds evidence to the current literature on relationships among the constructs. Skepticism is a valuable input to test the authentic connections between environmental concern, knowledge, and green purchase

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