ASSESSING THE IMPACT OF PSYCHOGRAPHICS ON CONSUMERS' GREEN COGNITION AND PURCHASE BEHAVIOUR IN URBAN PUNJAB

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ABSTRACT

This research has been undertaken to assess the impact of psychographics on consumers' green cognition and purchase behaviour in urban Punjab. The psychographics variables extracted as factors from factor analysis are Perceived Environmental Responsibility (PER), Perceived Consumer Effectiveness (PCE), Self Identity & Image (SII) and Perceived Effectiveness of Environmental Behaviour (PEEB). These variables have been decisively used to seek meaningful information linked to green awareness, environmental consciousness and pro-environmental purchase behaviour with the help of a structured questionnaire from consumers from six identified cities of the state of Punjab. Subsequently, the primary data ascertained from 538 respondents has been analyzed statistical measure of regression using SPSS 21.0 for adequate conclusion. The findings of this research confirm that psychographics exhibit a direct significant impact on consumers' green cognition and green purchase behaviour, respectively. The newness of this research the analysis of the mediation role, which elaborates that Green Cognition fully mediates the relationship of the two predictors (i.e. Perceived Consumer Effectiveness and Perceived Effectiveness of Environmental Behaviour); and partially mediates the relationship for the other two predictors (Perceived Environmental Responsibility and Self Identity & Image) which was not broadly investigated in the previous research studies.

Keywords: Psychographics, Green Cognition, Green Purchase Behaviour, Mediation, ANOVA, Regression, PER, PCE, SII, PEEB

1. INTRODUCTION

Psychographics which generally includes perceived consumer effectiveness, perceived environmental responsibility, environmental attitude, altruism, etc. which refers to consumers' psychological variables which perform important role in understanding their behaviour outlook and related attributes. Empirical literature substantiates that these psychological variables are potentially used as segmentation variables and are significant in predicting the environmental conscious purchase behaviour.

Environmental attitude indicates the consumers' perceived sensitiveness towards environmental disturbance. **Balderjahn**, **I.** (1988) [1] established that consumer's positive attitude towards ecologically conscious living resulted in ecologically responsible purchase and use of products. Likewise, empirical evidences indicate that relationship exists between cognitive factors & environmental behaviour (Dietz T. et. al., 1998) [2] and environmental attitude predicts consumers' ecological behaviour (Budak, D. B. et. al., 2005; Singh & Gupta, 2013) [3]. Altruism describes the concern about societal well being. Straughan & Robert (1999) [4] inferred positive relationship of altruism with green consumer behaviour.

Perceived consumer effectiveness is the degree to which individuals think that their actions contribute to solution of a problem (Ellen, P. S. et. al., 1991) [5]. Collectivism yields impact on consumers' green buying behaviour and the consumers with firm faith towards pro-green conscious behaviour have additional tendency to connect themselves with pro-green events / activities to support their beliefs for preserving / conserving the environment (Kim & Choi, 2005) [6].

2. REVIEW OF LITERATURE

Straughan & Roberts (1999) in their study concluded psychographics as a better consumer profiling method as compared to demographics, because psychographic variables were more efficient in explaining the variation in respondents' ecologically conscious consumer behavior (ECCB) [4].

Kim & Choi (2005) in their research applied the conceptual construction of value-attitude-behavior relationship to explain their influence on ecological consumption. The research analysis yielded that impact of collectivism move through perceived consumer effectiveness (PCE). The collectivistic value orientations control beliefs regarding consumer's effectives, subsequently influences green buying behaviour [6].

Fraj & Martinez (2006) in their research characterized the ecological market based on environmental patterns and self-fulfillment values. The self-fulfillment values included the persons endeavor to continuously improve themselves and whereas ecological lifestyle enhanced environmental consciousness and increased the consumer's participation in environmental protection activities [7].

Paço et. al. (2009) focused on identification of distinct market segments conducive for green marketing efforts. The research concluded that environmental and demographic variables helped in creation of differentiation between the 'greener segment' and the other segments. Three segments were identified by the researcher, as 'The uncommitted', 'The green activists' and 'The undefined' [8].

Banyte et. al. (2010) identified a generalized profile of a Lithuanian consumer based upon demographic and psychographic-behavioural descriptions for purchase of eco-friendly food products [9].

Lee, K. (2010) concluded that six factors in this decreasing order: peer influence, local environmental involvement, environmental knowledge, parental influence, environmental awareness, and media exposure to environmental messages predicted the green purchase behavior of Hong Kong young consumers [10].

Albayrak, T. et. al. (2011) in their research found the green purchase behaviour to be most significantly and positively influenced by perceived consumer effectiveness, whereas skepticism yielded negative results. Further, the research concluded that higher order skepticism enormously decreased the consumers' perceived effectiveness and related green cognition towards related green purchase behaviour [11].

Cheah & Pau (2011) found strong correlation of antecedent factors such as ecoliteracy, interpersonal influence and value orientation with attitudes towards environmentally friendly products. Perceived product necessity moderated the relationship between attitudes and its willingness to purchase the environmentally friendly products [12].

Promotosh & Sajedul (2011) in their study concluded that factors such as environmental knowledge, peers and parents enormously affect the young consumers' mindset for adoption of green products [13].

Akehurst G., et. al. (2012) in their study inferred that the effectiveness & relevance of psychographic variables with the prominence of perceived consumer effectiveness (PCE) and altruism (i.e. humane approach towards societal welfare) than socio-demographic variables in describing the ecologically conscious consumer behaviour (ECCB) [14].

Park & Ha (2012) in their research concluded that purchasers of green products showed higher levels of cognitive attitude, affective attitude, social norm, personal norm and recycling intention as compared to purchasers of non-green products. Further, the research revealed that cognitive attitude, social norm, and personal norm were able to predict the consumer's recycling intention [15].

Mehta, P. (2013) inferred that consumers' behaviour towards green products was influenced by factors such as social influence, quality consciousness, health benefits, ecological concern, resource conservation consciousness, availability of green product, price consciousness, synthesized green product information and style orientation [16].

Kianpour, K. et. al. (2014) in their research deduced that environmental concern, perceived consumer effectiveness, consumer knowledge, laws & regulations and promotion tools' were the most significant motivators towards consumers' green purchase behaviour [17].

Mark & Law (2015) explained that the relationship between consumers' environmental concern and environmental products purchase intentions was fully mediated by perceived environmental responsibility (PER). Further, the research elaborated that Generation X consumers strongly supported their actions for sustainable green consumption [18].

Mobrezi & Khoshtinat (2016) found that the positive green attitude significantly affects the individual self-image, social influence and related willingness to purchase green products. However, the research revealed that environmental concerns, subjective norms, social influence and individual self-image did not get influenced by the readiness to purchase green products [19].

Lee, K. Y. (2017) found that environmental knowledge, collective environmental efficacy and collectivism were everlasting antecedents of Chinese green purchase intentions which propel like-wise inculcation of green purchase behaviour [20].

3. RESEARCH METHODOLOGY

This section delineates the research objective of the study, the drafted research hypotheses and other methodology components:

3.1 Research Objective

To assess the impact of psychographics on consumers' green cognition and purchase behaviour.

3.2 Research Hypotheses

Based upon the review of literature and to fully accomplish the scope of the aforesaid narrated objective, the following hypotheses have been formulated:

Hypothesis1: H1: Psychographics exhibit a direct significant impact on the consumers' Green Cognition.

Hypothesis2: H2: Psychographics exhibit a direct significant impact on the consumers' Green Purchase Behaviour.

Hypothesis3: H3: Green Cognition mediates the relationship between Psychographics and consumers' Green Purchase Behaviour.

3.3 Geographical Extent of Survey

This present research study has been carried out in the selected cities i.e. Jalandhar & Hoshiarpur (from Doaba Region), Amritsar & Gurdaspur (from Majha region) and Ludhiana & Patiala (from Malwa region) having average literacy rate greater (Census, 2011 – Web Reference, 2014) [21] which have been ascertained on random basis through draw of lots method to represent three regions equally from the state of Punjab.

3.4 Sampling Unit & Accessible Universe

This current study aims at assessing the impact of psychographics on consumers' green cognition and purchase behaviour. Thus, in view of that, the sampling unit has been defined as an urban consumer who is more than 18 (eighteen) years of age. Similarly, the reachable universe for this study entails all the urban consumers (from the identified six cities, two from every region in the state of Punjab, i.e. Doaba, Majha and Malwa) who are of more than 18 (eighteen) years of age.

3.5 Questionnaire Preparation and Data Collection

This current research predominantly uses the primary data assimilated through respondents' views to a structured questionnaire. The scale items to measure the impact of psychographics on consumers' green cognition and purchase behaviour are appropriate review of the literature referred for questionnaire scale construction, which has been detailed as under:

Construct	Number of Statements	Source (Author and Year)
Psychographics	11	Straughan & Roberts (1999) [4] Kim & Choi (2005) [6] Lee, K. (2008) [22] Lee, K. (2009) [23] Banytė et. al. (2010) [9] Akehurst G., et. al. (2012) [14] Veluri, K. K. (2012) [24]

Table - 1: Published review sources referred for questionnaire scale construction

Source: Prepared by author

For the task of primary data collection, 600 questionnaires were distributed in the accessible universe, out of which only 538 utilizable questionnaires which were complete in terms of responses have been used for data analysis.

3.6 Data Analysis

The SPSS version 21 has been used for relevant analysis using the statistical measure of regression.

4. RESEARCH METHODOLOGY

The below mentioned sub-sections details the hypothesis-wise research results:

4.1 Role of psychographics in elucidating the consumers' green cognition and green purchase behaviour:

The role of psychographics is determined using the following steps:

4.1.1 Reliability of Data

The Cronbach's alpha method is used to calculate the reliability of the scale. The calculated value of Cronbach's alpha is 0.807, which is greater than the acceptable limit (**Hair et. al., 2010**) [25]. Hence, the achieved value of alpha established the reliability of the scale.

4.1.2 Factor Analysis:

The factor analysis reported the KMO value as 0.816, which is considered as good and considerable. Further, the Bartlett's test of sphericity reported chi-square value of 1644.784 at 78 degrees of freedom for a significance value of .000 (p<0.05), which is considered as significant and considerable. Hence, both the measures confirmed the suitability and adequacy of data.

Fable 2:	KMO	and	Bartlett's	Test
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Kaiser-Meyer-Olkin Measure of	0.816	
	Approx. Chi-Square	1644.784
Bartlett's Test of Sphericity	df	78
	Sig.	.000

Source: Prepared by author (SPSS 21.0 Output)

Principal component analysis enabled factor analysis method has been used. This method recognizes the smallest or lowest number of factors which present maximum variance in the data (**Malhotra & Dash, 2010**) [26]. The corresponding table reports communalities and initial eigen values of the variables.

(Communa	alities	Common ant	Initial Eigen Values		
	Initial	Extraction	Component	Total	% of Variance	Cumulative %
PSY1	1.000	.709	1	4.653	35.790	35.790
PSY 2	1.000	.735	2	1.742	13.396	49.186
PSY3	1.000	.710	3	1.556	11.970	61.156
PSY4	1.000	.582	4	1.241	9.545	70.701
PSY5	1.000	.719	5	.744	5.723	76.424
PSY6	1.000	.743	6	.644	4.951	81.375
PSY7	1.000	.668	7	.479	3.686	85.061
PSY8	1.000	.722	8	.429	3.298	88.358
PSY9	1.000	.597	9	.388	2.984	91.342
PSY10	1.000	.749	10	.341	2.622	93.965
PSY11	1.000	.732	11	.300	2.305	96.269
PSY12	1.000	.801	12	.260	1.999	98.268
PSY13	1.000	.724	13	.225	1.732	100.000
Extraction Mothod: Principal Component Analysis						

Table 3: Communalities and Initial Eigen Values of Variables

Extraction Method: Principal Component Analysis.

Source: Prepared by author (SPSS 21.0 Output)

Only factors with eigen value more than 1 have been maintained and others have been ignored for subsequent analysis. Four factors collectively contributed for a total variance of 70.701 percent.

Commonant	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total % of		Cumulative	Total	% of	Cumulative
		Variance	%		Variance	%
1	4.653	35.790	35.790	3.410	26.233	26.233

 Table 4: Variance Explained

2	1.742	13.396	49.186	2.613	20.097	46.330
3	1.556	11.970	61.156	1.585	12.191	58.521
4	1.241	9.545	70.701	1.583	12.179	70.701
Extraction Method: Principal Component Analysis.						

The rotated component matrix using Varimax Rotation method with Kaiser Normalization, which converged in 6 iterations, only characterized those statements which contain factor loading greater than 0.50 to generate latent variables (Malhotra & Dash, 2010) [26].

Statement	Component					
Label	1	2	3	4		
PSY1	.835					
PSY5	.820					
PSY8	.805					
PSY9	.772					
PSY6		.841				
PSY2		.824				
PSY7		.686				
PSY11		.641				
PSY3			.774			
PSY4			.754			
PSY12			.616			
PSY10				.888		
PSY13				.832		
a. Rotation converged in 6 iterations.						

 Table 5: Rotated Component Matrix^a

Source: Prepared by author (SPSS 21.0 Output)

4.1.3 Naming of the factors

The following is the narration of the four factors emerged through factor analysis:

Factor 1: Perceived Environmental Responsibility: This factor highlights the importance that an individual endow upon it for supporting the environment protection perspective, thereon owing the responsibility for the same. The factor generates a reliability value of 0.885.

Factor 2: Perceived Consumer Effectiveness: This factor describes the effectiveness of efforts that an individual portray or do for preserving the environment and its natural resources. The realism of individual's efforts defines their efforts' worth and significance. This factor reports a reliability value of 0.839.

Factor 3: Self Identity & Image (in social context): This factor enumerates an individual's self image in the social context which provides him/her the recognition for his/her efforts toward pro-environmental or green campaigns. Further, gives an individual the privilege to guide his/her friends, relatives and peer group for pertinent green purchase behaviour. This factor scores a reliability value of 0.781.

Factor 4: Perceived Effectiveness of Environmental Behaviour: This factor signifies that an individual's active participation in pro-green campaigns and initiatives will certainly help their family, friends and peer to participate to; moreover their significant pro-green efforts will positively contribute towards environmental protection. This factor records a reliability value of 0.804.

Table 6: Naming of the Factors

Factor	Statement Label: Statement Description	Factor	Reliability
(variance Explained)		Loadings	factor
Easter 1.	PSY1: Participating in activities related to environmental makes me feel that I am an environmental responsible citizen.	0.835	
Perceived Environmental	PSY5: Environment protection is only government's responsibility.	0.820	0.885
Responsibility (PER)	PSY8: Environment protection is organization's responsibility and not mine.	0.805	0.005
(26.233%)	PSY9: Environment protection is a collective effort, thus one should not feel individually responsible for it.	0.772	
	PSY6: Individual reduction of use of water, fuel and energy will surely not help conservation of natural resources.	0.841	
Factor 2: Perceived	PSY2: I feel people don't care about extinction of natural resources.	0.824	
Consumer Effectives (PCE) (20.097%)	PSY7: My participation in environmental activities / campaigns will not help in solving environmental problems that exists at the societal level.	0.686	0.839
	PSY11: Signing a petition supporting an environmental concern is only a social show-off with no honest individual commitment.	0.641	
Factor 3:	PSY3: Supporting pro-environmental or green campaigns increases my individual recognition and social reputation.	0.774	
Self Identity & Image (SII) (in social	PSY4: I educate my friends and relatives about environmental issues and green product purchases.	0.754	0.781
context) (12.191%)	PSY12: Recognition from my friends and relatives does play a dominant role in my green purchase behaviour.	0.616	
Factor 4: Perceived Effectiveness of Environmental	PSY10: I think my active participation in pro-green campaigns and initiatives will certainly influence my family, friends and peer to participate to	0.888	0.804
Behaviour (PEEB) (12.179%)	PSY13: I think my pro-green behaviours in my daily routine will significantly add to environment protection.	0.832	0.001

4.1.4 Validation of Psychographics Scale using Confirmatory Factor Analysis

The following figure elaborates psychographics as a higher order construct (i.e. as a latent variable) with Perceived Environmental Responsibility (PER), Perceived Consumer Effectives (PCE), Self Identity & Image (SII) (in social context) and Perceived Effectiveness of Environmental Behaviour (PEEB) as its dimensions. Confirmatory Factor Analysis (CFA) has been used to assess the multidimensionality of Psychographics.

Figure - 1: Construct for validation of Psychographics scale using CFA



Source: Prepared by Author (AMOS Output)

Kim & Mueller (1978) [27] recommended the utilization of factor scores for imputation of variables in Structural Equation Modelling (SEM). The results of the CFA as detailed below (along with its psychometric properties) explains a good model fit as all the goodness of fit indices attained values higher than the minimum acceptable limits and badness of fit indices reported values lower than their permissible limits. (Table 7 and Table 8)

Index Particular	Recommended Values	Derived Values
Chi Square / Degree of freedom	≤3 , Bagozzi & Yi (1988) [28]	0.681
GFI	\geq 0.85, Hu & Bentler (1999) [29]	0.991
AGFI	\geq 0.80, Hu & Bentler (1999) [29]	0.970
NFI	\geq 0.90, Anderson & Gerbing (1988) [30]	0.989
IFI	\geq 0.90, Anderson & Gerbing (1988) [30]	0.992
CFI	\geq 0.90, Anderson & Gerbing (1988) [30]	0.992
RMR	\leq 0.08, Browne and Cudeck (1993) [31]	0.012
RMSEA	\leq 0.05, Browne and Cudeck (1993) [31]	0.006

Source: Prepared by Author (AMOS Output)

 Table - 8: Psychometric properties of Psychographics Scale

Factor based dimension	Std.	AVE	CR		
Description	Abbrv.	Factor			
		Loadings			
Perceived Environmental Responsibility	PER	0.960	0.847		
Perceived Consumer Effectives	PCE	0.914		0.911	
Self Identity & Image (in social context)	SII	0.752			
Perceived Effectiveness of Environmental	PEEB	0.891	1		
Behaviour					

Source: Prepared by Author (AMOS / SPSS 21.0 Output)

4.2 Investigation of the direct impact of Psychographics on Consumers' Green Cognition

To determine the impact of Psychographics on Consumers' Green Cognition, the following hypothesis has been formulated which is as under:

H1: Psychographics exhibit a direct significant impact on consumers' Green Cognition.

The response related to Green Cognition has been measured on an 13-item / statement construct, considered on a five pointer scale with the responses ranging

from 1 to 5. The reliability of the construct of consumer's Green Cognition reports a reliability value of 0.872, which is considered meaningfully adequate for further analysis.

The following pictorial description elucidates the relationship of the four deduced factors of Psychographics with consumers' Green Cognition, which is being assessed. Thus, the likewise relationship between Psychographics and consumers' Green Purchase Intentions has been hypothesized.

Figure - 2: Hypothesizing the relationship between Psychographics and Green Purchase Intentions



Source: Prepared by Author

4.2.1 Investigation of the relationship between Psychographics and Consumers' Green Cognition:

To assess the relationship between four derived factors of Psychographics and consumers' Green Cognition, the pair wise correlations is ascertained using the measure of bivaraite correlations. All the pair wise correlation score reveals significance value which have p < .01. It is apparent from the analysis that all the deduced factors of Psychographics illustrates positive correlations with Green Cognition which explains a significant model fit for all the significance value < .05.

Table 9: Pair-wise (zero-order) correlations of derived factors of Psychographics
with Green Cognition

↓ Pair-wi	ise correlations	Green Cognition	PER	РСЕ	SII	PEEB
Green	Pearson Correlation	1				
Cognition	Sig. (2-tailed)					
DED	Pearson Correlation	.475**	1			
PEK	Sig. (2-tailed)	.000				
DCE	Pearson Correlation	.392**	.844**	1		
PCE	Sig. (2-tailed)	.000	.000			
112	Pearson Correlation	.527**	.467**	.317**	1	
511	Sig. (2-tailed)	.000	.000	.000		
DEED	Pearson Correlation	.242**	.255**	.155**	.131**	1
I LEB	Sig. (2-tailed)	.000	.000	.000	.001	
** Correlati	on is significant at the	0.01 level (2-	-tailed).			

Source: Prepared by author (SPSS 21.0 Output)

The result of regression analysis identifies unadjusted R^2 equivalent to 0.368 while the adjusted R^2 is equivalent to 0.364. The adjusted R^2 explains that the model contribute for 36.4 percent of variation in the dependent variable 'Green Cognition' which even being numerically on a lower side implies significant model fit.

 Table 10: Model Summary^b (Enter Method) for regression analysis between

 Psychographics and Green Cognition:

5			Adjusted	Std.		Change	Statis	tics	
Mode	R	R Square	R R Square	Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change

Perceived								
Consumer Effectiveness, Self Identity & Image (in social context), Perceived								
Effectiveness of Environmental Behaviour								
b. Dependent Variable: Green Cognition								
I I								

The analysis of ANOVA achieves the overall significance of the model with F-ratio equivalent to 77.735 at significance level of .000 (p < 0.05).

Table 11: ANOVA^a (Enter Method) for regression analysis between Psychographics and Green Cognition:

Model		Sum of Squares	Df	Mean Square	F	Sig.		
	Regression	22.682	4	5.671	77.735	.000 ^b		
1 Residual		38.881	533	.073				
Total		61.563	537					
a. Depe	endent Variab	le: Green Cognit	ion					
b. Pre	edictors: (Co	nstant), Perceiv	ved Enviro	onmental Resp	onsibility,	Perceived		
Consumer Effectiveness, Self Identity & Image (in social context), Perceive								
Effectiv	Effectiveness of Environmental Behaviour							

Source: Prepared by author (SPSS 21.0 Output)

The following result depicts the Beta Coefficients with their contribution to the model. The 't' and significance value (p-value) reveals the impact of predictor variables (i.e. the extracted four factors of Psychographics) on the criterion variable (Green Cognition). The result summary explains that all the predictor variables posses a significant impact on the criterion variable.

 Table 12: Coefficients^a (Enter Method) for regression analysis between

 Psychographics and Green Cognition:

	Model		ndardized fficients	Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
	(Constant)	1.346	.110		12.229	.000
	Perceived Environmental	.286	.030	.371	9.390	.000
	Responsibility					
1	Perceived Consumer	.352	.059	.430	6.007	.000
1	Effectiveness					
	Self Identity & Image (in	.124	.044	.186	3.936	.003
	social context)					
	Perceived Effectiveness of	.070	.022	.112	3.022	.012
	Environmental Behaviour					
a. I	Dependent Variable: Green C	ognition				

Source: Prepared by author (SPSS 21.0 Output)

Hence, it becomes apparent that the drafted hypothesis totally gets fulfilled i.e. the Psychographics demonstrates a direct significant impact on consumers' Green Cognition. Further, the coefficients in the form of a regression equation are expressed as under:

Y (Green Cognition) = 1.346 + 0.286 (Perceived Environmental Responsibility) + 0.352 (Perceived Consumer Effectiveness) + 0.124 (Self Identity & Image, in social context) + 0.070 (Perceived Effectiveness of Environmental Behaviour)

4.3 Investigation of the direct impact of Psychographics on consumers' Green Purchase Behaviour

To ascertain the impact of Psychographics on consumers' Green Purchase Behaviour, congruent hypothesis has been prepared which is elaborated as under:

H2: Psychographics exhibit a direct significant impact on the consumers' Green Purchase Behaviour.

The response has been measured on a 13-item / statement construct, measured on a five pointer scale with the responses ranging from 1 to 5. The reliability of the construct of consumer's Green Purchase Behaviour signifies a reliability value of 0.856, which is taken as appropriate for further analysis.

The following diagram explains the relationship of the four deduced factors of Psychographics with Green Purchase Behaviour of the consumers' which is being analyzed. Thus, the relationship between Psychographics and consumers' Green Purchase Behaviour has been hypothesized.

Figure - 3: Hypothesizing the relationship between Psychographics and Green Purchase Behaviour



Source: Prepared by Author

4.3.1 Investigation of the relationship between Psychographics and Consumers' Green Purchase Behaviour

To determine the relationship between four derived factors of Psychographics and consumers' Green Purchase Behaviour, the pair wise correlations is inferred using the measure of bivaraite correlations. All the pair wise correlation achieves pertinent values for the corresponding significance level i.e. p < .01. Thus, it is noticeable from the analysis that all the identified factors of Psychographics results in positive correlations with Green Purchase Behaviour which confirms a significant model fit for all the significance value < .05

Pair-wi	ise correlations	Green Cognition	PER	РСЕ	SII	PEEB
Green	Pearson Correlation	1				
Cognition	Sig. (2-tailed)					
DED	Pearson Correlation	.566**	1			
PEK	Sig. (2-tailed)	.000				
DCE	Pearson Correlation	.482**	.844**	1		
PCE	Sig. (2-tailed)	.000	.000			
CII	Pearson Correlation	.502**	.467**	.317**	1	
511	Sig. (2-tailed)	.000	.000	.000		
DEED	Pearson Correlation	.239**	.255**	.155**	.131**	1
PEEB	Sig. (2-tailed)	.000	.000	.000	.001	
** Correlati	on is significant at the	0.01 level (2-	-tailed).			

Table 13: Pair-wise (zero-order) correlations of derived factors of Psychographics
with Green Purchase Behaviour

Source: Prepared by author (SPSS 21.0 Output)

The output of regression analysis illustrates unadjusted R^2 equivalent to 0.406 while the adjusted R^2 reports equivalent to 0.401. The adjusted R^2 elaborates that the model accounted for 40.1 percent of variation in the dependent variable 'Green Purchase Behaviour' which being numerically considerable symbolizes a significant model fit.

Table 14: Model Summary ^b (H	Inter Method) for regression analysis between
Psychographics	and Green Purchase Behaviour:

-			Adjusted	Std.		Change	Statis	tics		
ode	R	R	R	Error of	R	F			Sig.	
N	R	Square	Square	the	Square	Change	Change	df1 d	df2	F
			~ quare	Estimate	Change	Change			Change	
1	.638ª	.406	.401	.30258	.406	90.917	4	533	.000	
a.	Predic	ctors: (C	Constant),	Perceived	Environm	ental Res	ponsib	oility,	Perceived	
Co	nsumer	Effectiv	eness, Sel	f Identity	& Image	(in socia	al con	text),	Perceived	
Ef	fectiven	ess of Env	vironmental	Behaviour	_					
b.	Depend	ent Varia	able: Green	Purchase E	Behaviour					

Source: Prepared by author (SPSS 21.0 Output)

The analysis of ANOVA informs the overall significance of the model with F-ratio equivalent to 90.917 at significance level of .000 (p < 0.05).

Table 15: ANOVA^a (Enter Method) for regression analysis between Psychographics and Green Purchase Behaviour:

Model		Sum of Squares	Df	Mean Square	F	Sig.		
	Regression	33.297	4	8.324	90.917	.000 ^b		
1 Residual		48.800	533	.092				
Total		82.097	537					
a. Dep	endent Variab	le: Green Purcha	se Behavio	ur				
b. Pr	b. Predictors: (Constant), Perceived Environmental Responsibility, Perceived							
Consur	Consumer Effectiveness, Self Identity & Image (in social context), H							
Effecti	veness of Envir	ronmental Rehav	iour					

Source: Prepared by author (SPSS 21.0 Output)

The output discusses the Beta Coefficients with their contribution to the model. The 't' and significance value (p-value) explains the impact of predictor variables (i.e. the deduced four factors of Psychographics) on the criterion variable (Green Purchase Behaviour). The table narrates that all the predictor variables elucidates a significant impact on the criterion variable.

 Table 16: Coefficients^a (Enter Method) for regression analysis between

 Psychographics and Green Purchase Behaviour:

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			Std. Error	Beta		
	(Constant)	.857	.123		6.946	.000
	Perceived Environmental	.280	.034	.315	8.220	.000
	Responsibility					
1	Perceived Consumer	.275	.066	.291	4.188	.000
1	Effectiveness					
	Self Identity & Image (in	.092	.049	.120	1.968	.021
	social context)					
	Perceived Effectiveness of	.076	.025	.105	3.020	.003
	Environmental Behaviour					
a. I	Dependent Variable: Green P	urchase E	Behaviour			

Thus, it is evident that the hypothesis fully embraces the assumed preposition, that the Psychographics depicts a direct significant impact on consumers' Green Purchase Behaviour. Further, the coefficients as written in the form of a regression equation are as under:

Y (Green Purchase Behaviour) = 0.857 + 0.280 (Perceived Environmental Responsibility) + 0.275 (Perceived Consumer Effectiveness) + 0.092 (Self Identity & Image, in social context) + 0.076 (Perceived Effectiveness of Environmental Behaviour)

4.4 Investigation of the mediation role of Green Cognition on the impact of Psychographics on consumers' Green Purchase Behaviour

The recognized premise of **Baron & Kenny (1986)** [32] has been used to establish the mediation role of Green Cognition on the impact of Psychographics on consumers' Green Purchase Behaviour. To accomplish this, the following hypothesis has been written as:

H3: Green Cognition mediates the relationship between Psychographics and consumers' Green Purchase Behaviour.

The following diagrammatic illustration elucidates the relationship of the four deduced factors of Psychographics with Green Purchase Behaviour with Green Cognition as a mediator. Thus, the similar relationship between Psychographics and consumers' Green Purchase Behaviour with Green Cognition as mediator has been hypothesized.

Figure - 4: Hypothesizing the relationship between Psychographics and Green Purchase Behaviour with Green Purchase Intentions as Mediator



Source: Prepared by Author

4.4.1 Investigation of the relationship between Psychographics and consumers' Green Purchase Behaviour with Green Cognition as Mediator:

The below-mentioned steps were executed in chronological manner to determine and validate the existence of a mediated relationship between Psychographics and consumers' Green Purchase Behaviour with Green Cognition as mediator:

Step 1: The predictor variables should be significantly correlated with the criterion variable. Thus, measure of correlation is used to deduce the significant correlation of 'Psychographics with 'Green Purchase Behaviour'.

Step 2: The predictor variables should significantly correlate with the mediator variable. Thus, measure of correlation is employed to ascertain the significant correlation of 'Psychographics with 'Green Cognition'.

Step 3: The mediator variable should significantly correlate with the criterion variable. Thus, measure of correlation is used to decide the significant correlation of 'Green Cognition' with 'Green Purchase Behaviour'.

Step 4: The relationship between predictor variables and criterion variable should either become insignificant or reduced when mediator has been controlled. Thus, measure of regression is used to decide the relationship between 'Psychographics and 'Green Purchase Behaviour' when 'Green Cognition' has been controlled.

The end result of regression analysis, illustrates unadjusted R^2 equal to 0.427 while the adjusted R^2 comes out to be 0.426 The adjusted R^2 reveals that the model represents 42.6 percent of variation in the dependent variable 'Green Purchase Behaviour' which being numerically realistic implies a significant model fit.

Table 17: Model Summary^b (Enter Method) for regression analysis between GreenCognition and Green Purchase Behaviour:

			Adjusted	Std.		Change	tics		
Mode	R	R Square	R R Square	Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.653ª	.427	.426	.25659	.427	399.034	1	536	.000
a.	a. Predictors: (Constant), Green Cognition								
b.	b. Dependent Variable: Green Purchase Behaviour								

Source: Prepared by author (SPSS 21.0 Output)

The analysis of ANOVA, concludes the overall significance of the model with F-ratio equivalent to 399.034 at significance level of .000 (p < 0.05).

 Table 18: ANOVA^a (Enter Method) for regression analysis between Green

 Cognition and Green Purchase Beahviour:

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	26.273	1	26.273	399.034	$.000^{b}$
1	Residual	35.291	536	.066		
	Total	61.563	537			
a. Dep	endent Variab	le: Green Purcha	se Behavio	ur		
b. Predictors: (Constant), Green Cognition						

Source: Prepared by author (SPSS 21.0 Output)

The end results details the Beta Coefficient with its contribution to the model. The 't' and significance value (p-value) affirms the influence of predictor variable (i.e. Green Cognition) on the criterion variable (Green Purchase Behaviour). The data explains that the predictor variable possess a significant influence on the criterion variable.

Table 19: Coefficients^a (Enter Method) for regression analysis between Green Cognition and Green Purchase Behaviour:

Model		Unstar Coe	ndardized fficients	Standardized Coefficients	t	Sig.	
		В	Std. Error	Beta			
1	(Constant)	1.349	.087		15.446	.000	
1	Green Cognition	.566	.028	.653	19.976	.000	
a. I	Dependent Variable: Green P	urchase F	Behaviour				

Source: Prepared by author (SPSS 21.0 Output)

Further, the coefficient is narrated in the form of a regression equation as:

Y (Green Purchase Behaviour) = 1.349 + 0.566 (Green Cognition)

The outcome of mediation effect of Green Cognition between the predictors (i.e. deduced four factors of Psychographics) and the criterion variable (i.e. Green Purchase Behaviour (Green Purchase Behaviour), delineates their partial correlations illustrated among them in congruence with the steps suggested by **Baron and Kenny (1986)** [32] as detailed aforesaid. The analysis enumerates that Green Cognition is significantly correlated with Green Purchase Behaviour with a correlation value of 0.653 at p-value of 0.000 (at p < 0.05).

	Step 1		Step 2		Step 3 Green Purchase Behaviour		Step 4 Green Purchase Behaviour	
Variables	Gre	en Green						
variables	Purchase Behaviour		Cognition					
Predictors	Beta	р	Beta	р	Beta	р	Beta	р
Perceived Environmental	.566**	.000	.475**	.000	-	-	.147**	.000
Responsibility (PER)								
Perceived Consumer	.482**	.000	.392**	.000	-	-	.096**	.132
Effectiveness (PCE)								
Self Identity & Image	.502**	.000	.527**	.000	-	-	.204**	.000
(in social context) (SII)								
Perceived Effectiveness of	.239**	.000	.242**	.000	-	-	.054**	.081
Environmental Behaviour (PEEB)								
Mediator	Beta	p	Beta	р	Beta	р	Beta	р
Green Cognition	-	-	-	-	.653**	.000	-	-

Table 20: Mediation effect of Green Cognition between the predictors and the
criterion variable:

Further, from the aforesaid analysis, it is evident that Green Cognition fully mediates the relationship of the two predictors (i.e. Perceived Consumer Effectiveness and Perceived Effectiveness of Environmental Behaviour) with Green Purchase Behaviour. Further, partially mediates the relationship for the other two predictors (i.e. Perceived Environmental Responsibility and Self Identity & Image). Hence, it is summarized that the drafted hypothesis is justified.

5. CONCLUSION & MANAGERIAL IMPLICATIONS

The outcome of this research authenticates that the Psychographics (which includes Perceived Environmental Responsibility, Perceived Consumer Effectiveness, Self Identity & Image (in social context) and Perceived Effectiveness of Environmental Behaviour) displays a direct significant impact on consumers' Green Cognition and Green Purchase Behaviour, respectively. This current study findings are also in congruence with the results accomplished by researchers like Straughan & Roberts (1999) [4], Kim & Choi (2005) [6], Fraj & Martinez (2006) [7], Albayrak, T. et. al. (2011) [11], Promotosh & Sajedul (2011) [13], Akehurst G., et. al. (2012) [14], Park & Ha (2012) [15], Kianpour, K. et. al. (2014) [17], Mobrezi & Khoshtinat (2016) [19] and Lee, K. Y. (2017) [20] who examined the similar relationship(s) with one or more psychographic variable(s) in their research.

Additionally, this current study also summarizes that the Green Cognition fully mediates the relationship of the two predictors (i.e. Perceived Consumer Effectiveness and Perceived Effectiveness of Environmental Behaviour); and partially mediates the relationship for the other two predictors (Perceived Environmental Responsibility and Self Identity & Image) which was not broadly investigated in the previous research studies. The results of this research study have presented important psychological based knowledge of the consumers' regarding environmental aptitude to the marketers & business organizations, which can be used by them to comprehend the consumers' green purchase behaviour more comprehensively. The in-depth understanding of the psychographics variables like Perceived Environmental Responsibility, Perceived Consumer Effectiveness, Self Identity & Image (in social context) and Perceived Effectiveness of Environmental Behaviour can be used by the business professionals to frame pertinent marketing strategies aimed at nurturing consumers' belief and trust towards inculcation of constructive green purchase behaviour.

6. SCOPE FOR FUTURE RESEARCH

The present study was accomplished in the state of Punjab (India) which may not have covered all the consumers' psychological views towards environmental prepositions across different geographical boundaries of the nation. In future, a more comprehensive comparative assessment & appraisal of the consumers' psychological mindset towards environmental or green perspective can be researched.

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