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Developing an Extended Model of Theory of Planned Behavior to Explore Green Purchase Behavior of Pakistani Consumers

Nazish Muzaffar

Department of Business Administration, Fatima Jinnah Women University, Rawalpindi, Pakistan

The study proposes and tests an extended model of theory of planned behavior. Cross sectional data was collected from 7 major cities of Pakistan, through a self-administered survey of 679 respondents. The appropriateness of theory and conceptual framework were tested using structural equation modeling (SEM). The extended model accounted for the substantial amount of variance in environmentally conscious purchase behavior of Pakistani consumers (R^2 = 0.934). Specific findings revealed that 1) all predictors except environmental knowledge were significantly co related with ECPB 2) subjective norms and perceived product availability emerged as strongest predictors of environmentally conscious purchase behavior. Model yielded an R^2 of 2.019 a CFI 0.985, GFI0.945, AGFI 0.947 and a RMSEA of 0.03. The value of study is; it considers the proper role of Subjective norm, which is often neglected or its exploratory powers are often being under estimated in past studies conducted in Asian region. Moreover study generates many important implications for marketers and policy makers.

Key Words: Environmentally conscious purchase behavior, theory of planned behavior, Pakistani Consumers

Background of Study

Green purchase or environmentally preferable products purchase means purchase of those products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose," (U.S Environmental Protection Agency, 1993).

Green marketing concept is not something new; it dates back to World War II or even before (Ajay, 2009). However from the past few decades this has gone through pronounced transformations. The issue has been much escalated from a decade or so,it has been driven by the number of factors including enhanced coverage, advanced environmental knowledge, increased green product awareness, rise of pressure groups and governmental legislations not to mention (Kalafatiset al., 1999; McIntosh, 1991; Butler, 1990; Tapon & Leighton, 1991; Charter, 1992; Wagner, 1997). Consequently consumers became more conscious of about the outcomes of their act on environment.

Research on the subject matter continued and various interest groups realized that diagnosing environmental problems merely would not render the purpose rather they need to extend their efforts way beyond. This thing triggered the debate on sustainable environment (Lubchenco et al., 1991; Rosen& Dinser, 2001). Business units in western countries have realized the trend and perceived this as potential opportunity (Steg & Vlek, 2009; Roberts, 1996). History has witnessed that voice of these environmental concerns was heard loud and clear in urbanized and developed nations. (Gurao &Ranchhoh, 2005; Kalafatis et al., 1999; Muderrisoglu& Altanlar, 2011). In under developed countries like Pakistan it is considered as western luxury. While rest of the world was busy in creating environment related awareness and finding ways to rescue environment from human interventions there was a part of world busy in bugging off political unrest and trying to get out of the vicious circle of poverty.

However, past couple of years has witnessed a progress in this regard. There are few companies who have stepped into this green arena and are taking extra strides to protect environment by formulating and marketing environmental friendly products. Quite recently Pakistan State Oil (PSO) has rolled out an environment friendly Diesel variant termed as “Bio Diesel”. Sources have claimed that PSO is using Jatr-

Corresponding author: Nazish Muzaffar
Department of Business Administration, Fatima Jinnah Women University, Rawalpindi, Pakistan, Email: neesh25@hotmail.com

opha Curcus; an environmental friendly shrub to minimize the impact of diesel on environment (PSO official report Sep 2010). But this initiative from PSO has just barely scratched the surface. Moreover people are having a very little knowledge and awareness about this green initiative. In order to make these kinds of initiatives really work green industry needs to market and support its products through marketing communication (Hartmann, Ibanez & Sainz, 2005). Race has just started yet; there is a lot more room for improvement.

Explanatory theories and their applicability

Research used theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) and sought its applicability on the green purchase behavior. Theory is a widely accepted frame work, tapping behavioral intentions. It has previously been applied to a wide array of disciplines, be it determinants effecting choice of green hotel (Han, Hasu & Sheu, 2010; Han & Kim, 2010; Lam & Hsu, 2004; Quintal, Lee & Souter, 2010), TPB and social networking (Chaubey &Subramanian, 2010; Mathieson, 1991; Pelling & White, 2009), TPB on health behavior and health education (Glanz, Rimer, &Viswanath, 2008) or else (Stead & Eadie, 2005; Elliot et al., 2005; Godin & Kok, 1995; Conner & Armitage, 1998; Chen and Tung 2014; Mohammad et al., 2014).

Moreover applicability of this theory on determining green purchase behavior, intentions and patterns also warrants the further investigation and research (Kalafatis, Pollard, & Eas, 1999; Vermeir &Verbeke, 2006; Tarkiainen &Sundqvist, 2005 & Bipu;, 2102).

Research Objectives

The research is erected around the following objectives

a) To seek the applicability of theory of planned behavior upon green purchase behavior.
b) To study and analyze the understating and viewpoints of Pakistani consumers about environmental problems and how these problems will affect their behavior to buy green products i.e. determinants of green purchase behavior.
c) To identify the antecedents of Environmentally Conscious Purchase Behavior (ECPB).
d) To analyze the three subcomponents within the TPB concept of PBC in an omnibus model.

Literature Review

Environmental Attitude and behavioral intention

Attitude has been defined as the mental state of readiness. Attitude in its simplest sense is the way how a person reacts or behaves towards a particular object or else (Allport, 1935). On the other hand a favorable attitude towards a product which is environmentally sustainable is environmental attitude (Chan, 2001; Verbeke & Viaene, 1999; Tanner & Kast, 2003; Vermeir & Verbeke, 2004).

Attitude Impacts intentions to perform or not to perform a particular behavior, the more favorable the attitude, stronger will be intention to perform that very behavior. (Smith & Paladino, 2010; Hill &Lynchehaun, 2002).

Various researches has established that attitude acts as an important (and major contributing perhaps) antecedent towards behavioral intention (Ajzen, 1991; Mannell &Kleiber, 1997; Kaiser, Wolfing & Fuhrer, 1991; Kaiser, Wlofing and Fuhrer, 1999; Taylor &Todd, 1995; Kelly et al., 2006; Manaktola & Jauhari, 2007;Rhodes, Macdonald & McKay, 2006; Everson, Daley & Ussher, 2007). Leonidou, Leonidou and Kvasova, 2010 in their study established that consumers showing ecological attitude are more likely to engage in purchase of recyclable and biodegradable products (Laroche et al., 2001; Shabecoff, 1993; Festinger, 1957;Kilbourne &Pickett, 2008; Mostafa, 2007; Roberts &Bacon, 1997; Squires et al., 2001; Kilbourne & Pickett, 2008; Steg, Dreijerink, & Abrahamse, 2005; Downs & Hausenblas, 2003; Fen & Sabaruddin, 2008; Roddy et al., 1996; Tarkiainen, Sundqvist & Sanna,2005; Brucks, 1985; Park, Mothersbaugh &Feick, 1994). On the basis of above literature it can be hypothesized as:

HI*:* Environmental Attitude positively impacts the behavioral intentions towards purchasing green products.

Environmental knowledge and Behavioral intention

It is the level of awareness amongst the individuals, active linkages between the environment and sense of awareness to keep the environment intact of human interaction and to preserve it for future generations (Kumar, 2012). Chan (2001) explained it as one's ability to understand and evaluate the impact of ecosystem on society together with the amount of knowledge that he/she is having regarding environment.

There are plenty of researches which have tested environment knowledge and behavior relationship, it is widely held that environmental knowledge will trigger environmental concern, which in turn stimulates green purchase behavior and green consumption (Tan, 2011; Oskamp, Harrington, Edwards, Sherwood, Okuda and Swanson, 1991;Vining & Ebreo,

1990; Hines et al., 1986-1987; Schmidt, 2007; Mittal, 1989; Laroche et al.,2000). In another study conducted by Kaiser (1999) environmental knowledge together with environmental values explained 40% variance in ecological behavior.

Lee (2010) in his study declared environmental knowledge to be the third most (peer influence and local environmental involvement being the first and second) powerful predictor of environmental behavior of Hong Kong adolescents.) established knowledge as a key part in the process of making decision to buy green products.

H2: Environmental knowledge positively impacts the behavioral intention towards purchasing green products.

Subjective norms and behavioral intention

Ajzen (1991) defines subjective norm as a perceived societal force to carry a particular behavior. Tarkiainen and Sundqvist (2005) established that subjective norm affect behavioral intentions indirectly through attitude formation, whereas Robinson and Smith (2002) established subjective norms affect intentions independently. Many other studies conducted on organic buying intention found subjective norm and purchase intention relationship significant (Tamashiro,Silveira, Merlo & Ghisi, 2013; Nejati, Salamzadeh &Salamzadeh, 2011; Werner &Alvensleben, 2011; Dean et al., 2008;Hines et al., 1986/87; Kim and Choi, 2005; Siddique et al., 2010 & Shaw, 2008).

Vermier and Verbeke (2006) in their study conducted on purchase of dairy products identified that willingness to comply with others might define powerful intention to buy sustainable dairy goods regardless of having low attitude (Gotschi et al., 2007).

Subjective norm is of particular importance in collectivistic societies where individuals are in a better position to exert societal pressure on others (Kumar, 2012; Shabnum, 2013; Arvola, Vassallo, and Dean et al., 2008; Sinha et al., 2001; McCarty & Shrum, 1994; Triandis et al., 1988; Kalafatis et al., 2009). Hence on the basis of this it can be hypothesized that

H3: Subjective norms positively impact on behavioral intentions towards purchasing green products.

Self-Concept and behavioral intention

Self-concept (also called self-image) is what people want to portray of themselves and how they want others to see them (Faurst& Smardon, 2001).It can actually be tied with personal norm, experienced as a feeling of moral obligation (Schwartz, 1973, 1977);it refers to "what I am morally obliged to do" and motivates the behavior to act in a particular way (Minton & Rose, 1997). Rehman and Dost (2013) established in their study (held in Pakistan) that behavioral intentions are positively impacted by the self-concept. People buy green products to portray a positive image of them (Christensen, Rothberger, Wood, & Matz, 2004; Schiffman &Kanuk, 1997; Lee, 2008; Dittmer, 2009; Terry, Hogg, & White, 1999; Cook et al., 2002; Grewal, Mehta, & Kardes, 2000;Sparks & Shepherd, 1992; Shaw and Shiu, 2002a, b, 2003; Armitage & Conner, 2001; Terry et al., 1999 & Sparks & Guthrie, 1998; Biddle, Bank, & Slavings, 1987)

Charng et al. (1998) established that repeated behaviors influence a person self-concept which then becomes important to that person. (Granberg and Holmberg, 1990; Fliegenschnee and Schelakovsky, 1998).Armed with the literature findings discussed, it can better be hypothesized as

H3: Self image positively impacts behavioral intentions towards purchasing green products.

Perceived behavioral control and behavioral intention towards the green purchase behavior

Perceived behavioral control is the individual perception of possible difficulties that they can encountered with while performing a specific behavior (Ajzen, 1991). The external and irrational factors such as money (in terms of price), access (in terms of availability) and efficacy (in terms of individual confidence that he/she can perform that particular behavior) may not be under the control of individuals. Therefore, the more individuals are able to have control over these the more likely they will try to engage in the performance of that behavior (Chen &Tung, 2014).

In context of present theory three determinants of perceived behavioral control are incorporated i.e. price of the green products, their availability and consumer efficacy to use them.

A number of studies have operationalized affordability (in terms of price) as a subset of behavioral control in influencing behavioral intention (Thompson & Thompson, 1996; Notani, 1997; AC-Nielsen, 2005; Voon, et al., 2011; Tregear et al., 1994; Magnusson et al., 2001; Vermeir & Verbeke, 2006). Many researchers have indicated that green products are mostly purchased by high income households and individuals (Dettmann &Dimitri, 2009; Zhang et al., 2008).On the basis of above discussion it can be hypothesized that:

H5: Price negatively impacts the behavioral intention towards purchasing green products.

Availability is the convenience with which individuals can access green products. Several researches

have established that the easier it is for individuals to access a green product more likely are they to engage in their purchase (Voon et al., 2011; Kumar, 2012; Harris et al., 2000). Many studies pointed out low availability as a significant reason for not engaging into green purchase behavior (Vermier & Verbeke, 2008;Sparks & Shepherd 1992;Fotopoulos & Krystallis, 2002). Delafrooz et al., (2014) established advertisement to be the most powerful predictor of consumer green purchase behavior. He argues greater will be product visibility more likely are the individuals to exhibit the desired purchase behavior (Juwaheer, Pudaruth &Emmanuelle, 2012). On the basis of this following hypothesis can be chalked out.

H5a: Control on availability of green products positively impacts behavioral intention towards purchasing green products.

Behavioral intention and Environmentally Conscious purchase behavior (ECPB)

Environmental consciousness is the propensity to the engage in pro environmental purchase behavior (Zelezny & Schultz, 2000). Kaiser, Wolfing and Fuhrer (1999) established in their research that behavioral intentions caused 75 percent of variance in environmentally conscious purchase behavior. Mostafa (2007) indicated a relationship, in his research conducted on Egyptian consumers (Richard, Lucie & Renee et al., 2006) .On the basis of above literature following hypothesis can be formulated

H6: Behavioral intentions positively impact the Environmentally Conscious Purchase Behavior.

On the basis of above literature following model can be proposed

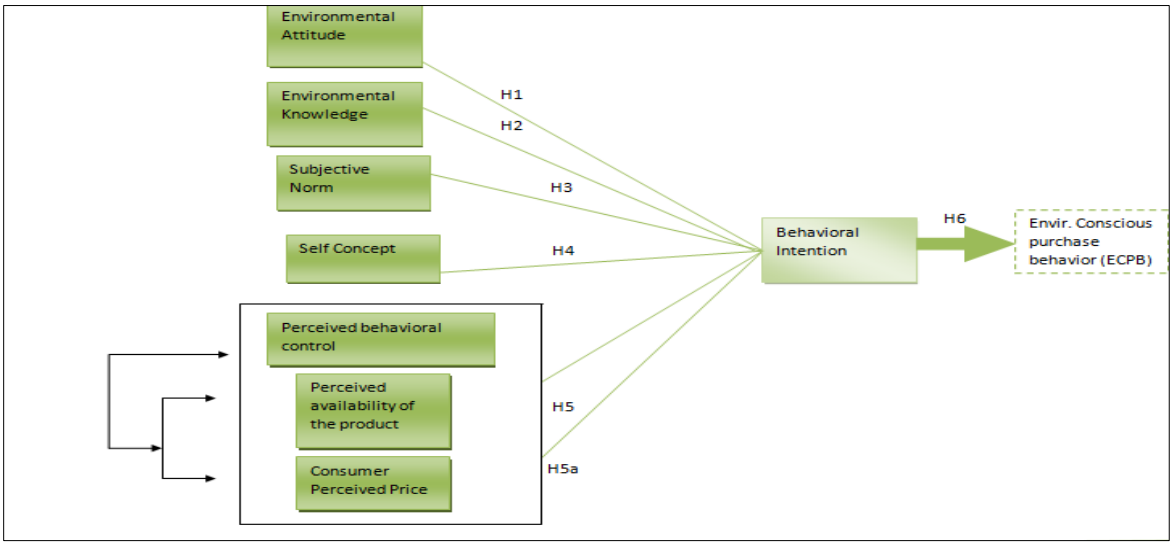

Figure 1, Theoretical frame work, showing exogenous variables on left and endogenous on far right.

Model intends to check the impact of all of these variables on behavioral intention and then the impact of behavioral intention on environmentally conscious purchase behavior.

Methodology

Samples and procedures

The consumer is the unit of analysis in this research. Most of the researches on environment have mostly taken students as sample size (Mostafa, 2007; Kumar, 2012; Rehman & Dost, 2013; Shabnam, 2013), unlike these researches present study has taken those individuals who have real income and are consumers in true sense, so students are excluded from the sample. Questionnaire survey was used to collect data. In order to make research truly Pakistan focused, data was collected from the 7 major cities (Islamabad, Rawalpindi, Karachi, Lahore, KPK, Quetta and Gujranwala) of Pakistan. The questionnaire was self-administered to a convenience sample consisting of 700 respondents. Out of these, 21 respondents were not considered on the account of incomplete responses. Finally 679respondents qualified for final sample size. This much sample size permeates the rule of 10, quite generously. Rule of 10 suggests that there should be at least 10 cases for each item in the instrument being used (Garson, 2008; Everitt, 1975; Kunce, Cook, & Miller, 1975, Marascuilor & Levin, 1983).

Instrumentation

The survey questionnaire was divided into the two sections; first section catered the variables used in study whereas the second section captured the demographic profile of respondents. The established validated scales were used for measuring all latent variables. Each variable was measured on a 5 point Likert scale where 1 denotes "strongly disagree" and 5 denotes "strongly agree". No item was reverse coded.

Data Collection Plan

Responses were collected deploying Non probability convenience sampling; where sample is drawn to the population that is close to hand, easily reachable and readily accessible (Saunders et al., 2009). Prior to presenting the questionnaire to actual respondents, the items of the questionnaire were discussed with 10 consumers. Target respondents from each city were identified using following criteria: a) they are at least 25 years of age 2)are engaged in full time or part time employment c)are able to respond comprehensively to an English- language survey questionnaire.

Data Analysis procedure

Data analysis was done using SEM, Amos. SEM is preferred over OLS (ordinary least square) for multiple reasons i.e. it allows both confirmatory and exploratory modeling. It can be used for both theory testing and theory development (Alavifar, Karimimalayer & Anuar, 2012; Muthen & Satorra, 1995).

Data Analysis

Demographics profile and sample descriptive statistics

Table 1. Demographics of Respondents

	N	Percentage
Male	384	56.6%
Female	295	43.4%
Age		
25-34	361	53.2%
35-44	180	26.5%
45-54	88	13.0%
55 and above	50	7.4%
25-34	361	53.2%
Education		
High School	20	2.9%
2 years collage degree	70	10.3%
4 years collage degree	212	31.2%
Master's degree	206	30.3%
Doctoral degree	85	12.5%
Professional degree	86	12.7%
Occupation		
Unemployed and searching	30	4.4%
Entry level	136	20.0%
Managers/Professionals	217	32.0%
Self employed	151	22.2%
Others	145	21.4%
Income		
<10,000	21	3.1%
10,000-19,000	67	9.9%
20,000-29,000	82	12.1%
30,000-39,000	88	13.0%
40,000-49,000	138	20.3%
50,000-59,000	77	11.3%
60,000-69,000	65	9.6%
70,000-79,000	63	9.3%
80,000-89,000	40	5.9%
90,000-99,000	13	1.9%
100,000 and above	25	3.7%
City		
Karachi	121	19.2%
Peshawar	75	11.9%
Islamabad	77	12.2%
Rawalpindi	98	15.5%
Quetta	107	17.0%
Lahore	75	11.9%
Gujranwala	78	12.4%
Total	631	100.0%

Since the environmental debate is on its nascent stage and it is somehow considered to be a luxury of educated class so in order to ensure this almost entire responses were drawn from the educated and well-heeled people. In order to bid the testimony of previous statement highest amount of responses (63%) were pooled from those having four years collage degree and master's degree, serving on managerial and executive posts. Reliability values of all the latent variables extracted ranges from 0.7 to 0.9.

Table 2. Cronbach's Alpha Coefficients

Latent Variables	No of items	Cronbach's Alpha Coefficient	Items Removed	Revised Cronbach's Alpha Coefficient	Revised Guttman Lambda 6
EA	3	0.983	0	0.983	0.976
EK	3	0.861	0	0.861	0.809
SN	4	0.943	0	0.943	0.927
SC	4	0.760	2	0.922	0.856
PPA	3	0.901	0	0.901	0.861
PCP	6	0.902	2	0.841	0.849
BI	4	0.695	2	0.853	0.745
ECPB	6	0.895	2	0.908	0.883

*Items are deleted on the basis of factor loadings and values of squared multiple co relation (SMC)

Table 3. Composite Reliability

Latent Variab Les	No of Indicators	Sum of St loading square	Sum of indicator measurement error	Composite Reliability (CR)
EA	3	8.56	0.07	0.99
EK	3	6.08	0.53	0.91
SN	4	12.88	0.41	0.97
SC	2	3.43	0.15	0.96
PPA	3	6.79	0.39	0.94
PCP	3	6.62	0.43	0.94
BI	2	2.98	0.27	0.92
ECPB	4	11.42	0.62	0.95

*CR=Cloumn3/Cloumn3 +Column4

These figures represent the overall reliability of a multi-dimensional construct. Reliability statistics ranges from 0.91 to 0.99, which is particularly significant. Data is normal and negatively skewed with relatively flat peak.

Average Variance Extracted (AVE). According to Fornell and Lacker (1981) Average Variance Extracted is the estimate which measures the amount of variance captured by a construct in relation to the variance due to random measurement error. AVE varies from 0 to 1, and it represents the ratio of the total variance that is due to the latent variable. Following formula is used to calculate the AVE

AVE = (sum of squared standardized loading) / (sum of squared standardized loading + sum of indicator measurement error). Whereas sum of indicator measurement error = 1 minus the square of each loading)

Table 4. Average variance extracted

Latent Variables	No of Indicators	Sum of squared St loading	Sum of indicator measurement error	Average Variance Extracted (AVE)
EA	3	2.86	0.07	0.98
EK	3	2.03	0.53	0.79
SN	4	3.22	0.41	0.89
SC	2	1.71	0.15	0.92
PPA	3	2.39	0.39	0.86
PCP	3	2.21	0.43	0.84
BI	2	1.49	0.27	0.85
ECPB	4	2.86	0.62	0.82

*AVE = Column3/Column3 + Column4

The significant value of AVE is 0.5 and above (Dillon &Goldstein, 1984; Bagozzi, 1994) As per above table AVE values varies from 0.7to 0.9. As per above statistics latent variables are bringing significant variation in the face of random measurement error.

Convergent Validity. Convergent validity is the subtype of construct validity and it can be defined as; measures of construct that theoretically should be related to each other, are in fact observed to be related to each other i.e. you should be able to show correspondence or convergence between the similar constructs (Trochim, 2008).

Convergent validity requires squared multiple correlations (SMC) to be equal to or greater than 0.5 with pattern coefficients equal to or greater than 0.7.

Table 5. Convergent Validity

Observed Variable	Factor Loadings	Squared Multiple Correlation (SMC)
EA1	0.975	0.950
EA2	0.989	0.977
EA3	0.963	0.927
EK1	0.792	0.628
EK2	0.892	0.796
EK3	0.875	0.611
SN1	0.902	0.813
SN2	0.904	0.817
SN3		0.829
SN4	0.910	0.765
	0.875	
SC2	0.916	0.839
SC3	0.935	0.874
PPA1	0.842	0.709
PPA2	0.874	0.764
PPA3	0.889	0.791
PCP3	0.855	0.731
PCP4	0.871	0.759
PCP5	0.847	0.717
BI3	0.888	0.789
BI4	0.839	0.705
ECPB3	0.813	0.660
ECPB4	0.867	0.751
ECPB5	0.877	0.770
ECPB6	0.823	0.677

All of the three conditions of convergent validity are satisfactorily met i.e. regression weights/ factor loadings are equal to and greater than 0.5 whereas SMC's are equal to and greater than 0.7 and AVE values are equal to and greater than 0.5. All of the aforementioned conditions confirm convergent validity of construct.

Discriminant validity. Discriminant validity is another type of construct validity, for construct to be valid both of the conditions should be checked. Discriminant validity analysis refers to testing statistically whether two constructs differ from each other or not. It holds that indicators for different constructs should not be so highly correlated as to lead one to conclude that they measure the same thing. This would happen if there is cross loading or definitional overlap between constructs.

Fornell and Larker's (1981) suggested average variance extracted (AVE) method to conclude discriminant validity. According to them AVE for each variable should be greater than the squared correlation of each variable (Netemeyer, Johnston and Burton, 1990)

Table 6. Discriminant Validity

Variable	No of Items	Mean	SD	EA 1	EK 2	SN 3	SC 4	PPA 5	PCP 6	BI 8	ECPB 9
EA	3	3.67	0.81	0.98							
EK	3	3.70	0.82	0.65 (0.42)	0.79						
SN	4	3.40	0.92	0.16 (0.02)	0.78 (0.60)	0.89					
SC	2	3.32	0.92	0.14 (0.02)	0.11 (0.01)	0.73 (0.53)	0.92				
PPA	3	3.44	0.89	0.14 (0.02)	0.10 (0.01)	0.75 (0.56)	0.80 (0.64)	0.86			
PCP	3	3.34	0.90	0.13 (0.20)	0.49 (0.24)	0.76 (0.57)	0.62 (0.38)	0.80 (0.64)	0.84		
BI	4	3.55	0.79	0.18 (0.03)	0.38 (0.14)	0.72 (0.52)	0.52 (0.27)	0.80 (0.64)	0.77 (0.59)	0.85	
ECPB	4	3.45	0.87	0.20 (0.04)	0.78 (0.60)	0.68 (0.46)	0.44 (0.19)	0.72 (0.51)	0.76 (0.57)	0.78 (.60	0.82

*Shared correlations are in parenthesis
**AVE is on diagonal

By comparing variance of constructs with parameter of constructs it can easily be find out that correlation squares are less than that of AVE, hence confirms the discriminant validity of construct.

Confirmatory Factor Analysis and Structural Equation Modeling (SEM)

In structural equation modeling, confirmatory factor analysis (CFA) is used to calculate fit indices. These indices then establish whether, overall model is acceptable or not. If model is acceptable, researchers than establish whether specific paths are significant or not.

The Structural Equation Modeling (SEM) was employed to test the test the five hypotheses, proposed earlier. This analytical technique allows the evaluation of the overall fit of the proposed model and the estimation of all the corresponding path coefficients simultaneously (Hair et al., 1995; Chan & Lau, 2014).

Table 7. Structural path coefficients

Causal Path	Standardized Regression Weights	Un-Standardized Coefficient	t –value	Hypothesis Supported
BI<--- EA	0.054	0.08**	1.99	Yes
BI<---EK	0.012	0.10*	0.37	Yes
BI<---SN	0.174	0.13***	3.63	Yes
BI<---SC	0.126	0.09*	1.73	Yes
BI<---PPA	0.328	0.24**	2.90	Yes
BI<---PCP	0.260	0.20**	2.24	Yes
ECPB<---BI	0.352	0.44***	5.62	Yes
ECPB<---EA	0.056	0.10**	2.15	Yes
ECPB<---EK	-0.019	-0.03	-0.64	No
ECPB<---SN	0.078	0.07*	1.68	Yes
ECPB<---SC	-0.014	-0.01	-0.20	No
ECPB<---PPA	0.471	0.43***	4.19	Yes
ECPB<---PCP	-0.007	-0.007	-0.06	No

$R^{2=}$ 2.019, CFI = 0.985, GFI= 0.945, AGFI = 0.927, RMESA = 0.03, RMR = 0.02, TLI = 0.982.
**significant at 0.05*significant at 0.10

Eleven hypotheses were proposed out of which ten turned out to be significant. Hypothesis between SC and ECPB was not supported. Relative Chi square is 1.606 (ranging between1 to 3), which is best fit (Schumacker & Lomax, 2004). Comparative fit indices (CFI) is 0.983, indicating a best fit. It is a very important measure as it compares the fit of a target model to the fit of an independent model (a model in which variables are to be uncorrelated). Precisely it represents the extent to which the model of interest is better than that of the independent model. Whereas Root mean Square error of approximation (RAM-

SEA) is 0.03, which is best fit since it is less than 0.05.AGFI is 0.927whereas GFI is 0.945, both of them are greater than reasonable fit of 0.90(Byrne, 1994)

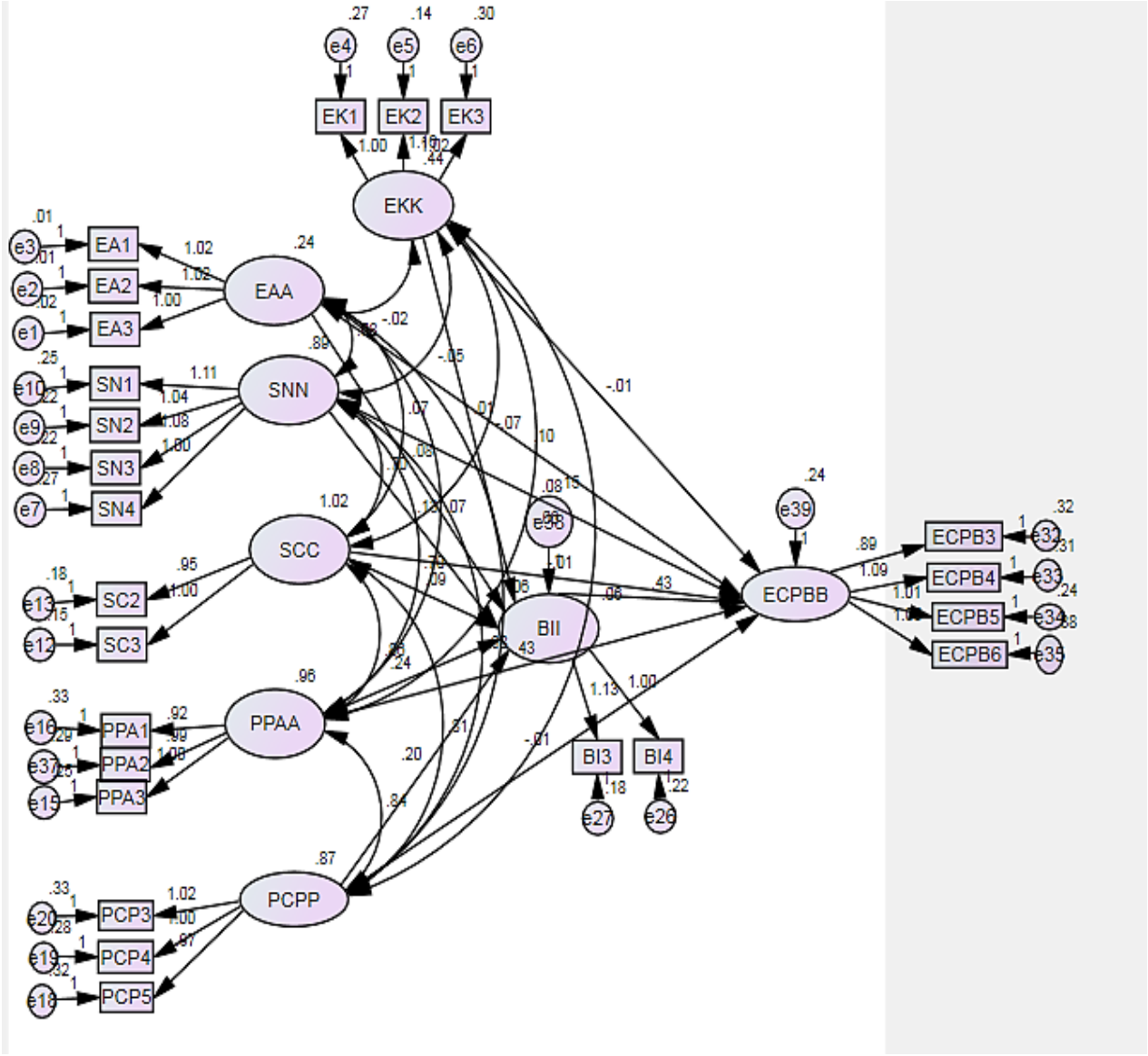

Figure 2, structural equation modeling $R^{2=}$ 2.019, CFI = 0.985, GFI= 0.945, AGFI = 0.927, RMESA = 0.03, RMR = 0.02, TLI = 0.982.

Mediating role of Behavioral intention

After running SEM, conceptual model was then analyzed to determine whether or not behavioral intentions mediate between the proposed relationships. A mediator is a variable, which is in a causal sequence between two variables (Kraemer et al. 2001). It explains relationship between them by enhancing understanding of the relation (Dodge et al. 1990; Baron and Kenny ,1986; Holmbeck 1997; Michaelidou & Hassan 2008).

Bootstrapping method was used to test the mediation effect. Bootstrapping is a non- parametric method based on re sampling done many times usual-

ECPB Antecedents		Direct Effects on environmentally conscious purchase behavior		Indirect Effects through behavioral intention on environmentally conscious purchase behavior		
		BCCI			BCCI	
	Estimate	Lower	Upper	Estimate	Lower	Upper
Environmental Attitude	0.0263*	0.0023	0.1071	0.0458**	0.0812	0.2612
Environmental Knowledge	0.0218	-0.0339	0.0513	0.0377**	0.1702	0.3214
Subjective Norm	0.219	0.500	0.1347	0.170**	0.0435	0.1109
Self Concept	0.0280	-0.0433	0.1540	0.0238**	0.0394	0.1356
Perceived Product Price	0.0263	0.0721	0.1755	0.0181*	0.0527	0.1237
Perceived Product Availability	0.0243*	0.357	0.1304	0.157**	0.0248	0.0882

ly 2000 times (Bolen & Stine, 1990; Shrout & Bolger, 2002; Kenny, 2014; Preacher & Hayes, 2008).

Table 8 Mediation Analysis of Behavioral Intention
Bootstrap 2000 Resample Results Specific direct and indirect effects
BCCI: Bias-corrected Confidence Intervals
*significant at 0.10
**significant at 0.05

Table 9. Impact Of Exogenous Variables On Dependent Variables

	B	t- value	p value
Behavioral Intention			
EA	0.08	1.99	0.04
EK	0.10	0.37	0.03
SN	0.13	3.63	***
SC	0.09	1.73	0.08
PPA	0.24	2.90	0.04
PCP	-0.20	2.24	0.02
Environmentally conscious purchase behavior			
BI	0.44	5.62	***
EA	0.10	2.15	0.03
EK	-0.03	-0.64	0.52
SN	0.07	1.68	0.09
SC	-0.01	-0.20	0.87
PPA	0.43	4.19	***
PCP	-0.007	-0.06	0.95

Discussion

In this chapter the major findings related to exogenous variables are concluded first, then the result related to the model of study are presented and are justified in the light of extant literature.

The present study provides evidence supporting the use of TPB for predicting intentions and behavior. The presence of three subcomponents within the TPB concept of PBC has been repeatedly demonstrated in research; however this is almost the first paper to examine these components in an omnibus model (Armitage & Conner, 2011; Rhodes, Ryan & Courneya, 2003).

As displayed in table, the environmental attitude was positively and significantly related to the behavioral intention and environmentally conscious purchase behavior (Jang et al., 2014). Previous research in environmental consumerism has also produced conclusive evidence between attitude towards environment and behavioral intentions (Wicker, 1969; Webster, 1975; Mainieri et al., 1997; Kumar, 2012; Pudaruth & Juwaheer, 2012). The BI and ECPB path is significant (β=0.44, $p<0.0001$). Arslan et al. (2012), Henson (1996), Fu et al. (1999) validated this relationships in environmental perspective. Environmental knowledge significantly affects behavioral intentions (Ramyah et al., 2012; Stone et al., 1995; Hines et al.,1987 & Kumar, 2012), but not purchase behavior. There are several studies which show only a limited influence of these cognitive factors when it comes to environmentally conscious purchase behav-

ior (Smith et al., 1994; Finger, 1994; Hartmann, 2012).In a developing country like Pakistan where the concept of environmental consumerism is on its nascent stage, people are having little or almost no knowledge regarding environment(Gurao & Ranchhoh, 2005). This weak knowledge affects intention formulation but not actual behavior. Mainieri and Barnett (1997) and Hartmann (2005) also showed a limited influence of environmental knowledge on behavioral intention. Ahmad, Shah and Ahmad (2010) attributed this to the insignificant and low level of environmental advertisement and hence awareness.

Behavioral intentions and subjective norms are also found to be positively related ($\beta= 0.13$, $p< 0.00$) (Tarkiainen & Sundqvist, 2005; Chang, 1998 & Kalafatis et al., 2009). Behavioral intention and self concept is also found to be significant (Whitmarsh &Neil, 2010; Chan, 2000), but there relationship with ECPB is insignificant Whitmarsh & Neil (2010) in their study established that self concept can be a significant predictor of purchase behavior if it is combined with the past behavior. Relationship between behavioral intentions and perceived product availability and ECPB is found to be positive and highly significant (Fekadu & Kraft ,2001; Fielding et al., 2008; Nigbur et al., 2010; Stefano, 2001; Panni ,2008; Ismail, Panni &Talukder, 2006 and Kaufmann, Panni & Orphanidou, 2012).

Table shows perceived consumer price as a highly significant predictor of perceived behavioral control ($\beta=0.20$, $p <0.02$).Yoeh et al. (2007), Roarty (1997) and Shabnum (2013) also validated this relationship in their respective studies.

Model fit is quite good overall. Moreover the adequacy of theory of planned behavior was consistent with findings by researchers like Birelen et al. (2009) and Kumar (2012) etc.

Conclusion

One of the important conclusions is that, TPB has repeatedly been proven to successfully represent a reliable & predictive model of intention. Another interesting finding is the ability of model to identify the cross market differences, which is quite clear by a finding related to significance of SN and intention path. Two important studies conducted in Asian region have reported SN and intention paths insignificant (Kumar, 2012; Shabnum, 2013). Present research with its focus on Pakistani market however, reports that subjective norm has a highly significant impact on intention. Relative societal characteristics can be used as an explanation here. We therefore argue that in Pakistan societal pressure plays significant role in forming intentions to purchase environmentally sustainable products. Hence the proposed model posits the extended TPB model to be executed on country specific basis.

Moreover, while it is believed that the present study through its extended model of TPB has contributed to a detailed and more in-depth understanding of the underlying factors accounting for the performance of environmentally conscious purchasing acts, the results of the study should however be interpreted with caution and viewed for more thorough follow up research. And lastly, though not yet tested, it is envisaged that the proposed model will provide the robust, detailed, constructive and executable insight about the pro- environmental consumer segment.

Recommendations

This paper not only provides recommendation to the marketers but to the policy makers and key decision holders.

Recommendations for marketers

The landscape of the marketing is changing rapidly due to ever increasing attention being paid to the environmental issues. According to 6th Edition of Natural Market Institute (2008) market for green product is supposed to increase double folds by 2015. At this juncture it is of the immense importance for marketers to include the element of environmental sustainability in their marketing strategy. The current study would help them in understanding the possible determinants of green purchase behavior.

The findings related to significant impact of subjective norm on intention formation provides marketers with a useful insight into how to improve the communication effectiveness of their green message. For instance, to take advantage of the persuasive influence of such important referents as family members, spouse and friends green marketers in Pakistan should feature relevant reference group appeals in their marketing campaign. Although self concept is found to be significant, the actual increase in the behavior is quite low. It follows that marketers should not put many efforts on this particular antecedent if the aim is to maximize results.

Moreover while designing environmental strategies role of environmental knowledge and awareness about the availability of green products should not be overlooked. Many companies has rolled out their green initiatives recently i.e. green diesel by PSO and green energy by Fauji fertilizers, but unfortunately consumers do not have any knowledge about them. Exclusive communication content meant to enhance

the knowledge of target audience is strongly recommended for marketers.

Recommendations for policy makers

Given that Pakistan is still a developing country with its green movement in embryonic stage, it seems very difficult to resolve resources and opportunity issues overnight. Nonetheless these issues should call for the continuous improvement by the policy makers. Moreover it is important to note that perception of reward or punishment plays a very important role in invoking the green purchase behavior, hence proper legislations should be chalked out by policy makers to deal with environmental issues(Poortinga, Steg, Vlek, & Wiersma, 2003; Kumar, 2012). These strategic efforts, among others, should include further strengthening of Pakistani consumer's environmental education and improving the distribution of green products. To make consumers more willing to pay and search for green products, more comprehensive legislation to closely monitor the gentility of environmental claims is also essential.

The above recommendations aside, the probable result of simulated model offers a framework for theorists of environmental marketing body of knowledge. In addition, its practice based approach has the potential to be used by visionary marketing strategists and descion makers in guiding to have more sustainable marketing orientation.

Limitations

The empirical results obtained in this study are consistent with the theoretical background and also with the general belief on the subject matter. Despite this, the present research has few limitations. An aspect to consider in this field of study is that not all the variables can be included in the singular model of environmental behavior; the complexity of links between behavioral antecedents and behavior itself is so evident that it is challenging to include all the variables in a single model. In future this model can be improved by incorporating several other variables trust, activism, environmental knowledge and the like.

Another real concern while answering the questions was that there may be an issue of self-reported behavioral measures, which are expected to be guided by the beliefs and intentions of the respondents. Moreover research is country specific which may hinder the generalizability of findings. Among all the cross cultural differences identified, the asymmetric influence of green purchasing intention on green purchasing behavior warrants the further investigation.

Lastly the inconsistency between the attitude initially shown by the consumers and translation of it into actual purchase decision is posing serious question. This has always been a debatable topic; certainly the use of actual behavioral measures in future related studies would further increase the research rigor.

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