Psychological Patterns regarding Environmental Conscious Behavior among Pakistani Customers

Nida Mumtaz*, Farida Saleem**, Muhammad Imran Malik***, Shabir Hyder****, Saddam Hussain*****

Abstract

Maintaining a clean and healthy environment is necessary for survival of humanity. Environmental responsive behavior refers to the individual's efforts to protect the environment The current study examines the effect of psychological factors affecting the adoption of green purchase behavior (GPB) by selecting a sample from Pakistani consumer. Data collection was made via adopted questionnaire. The data was analyzed through structural equation modeling. Results affirmed that five psychological dimensions significantly support customers to adopt green purchase behavior. The results also revealed that "attitude" has the strongest impact on green purchase behavior followed by "concern" whereas the factors having moderate relationship with the purchase behavior included perceived consumer effectiveness (PCE), motivation to adopt green behavior and intention to act.

Keywords: Perceived effectiveness, Concern for environment, Motivation, Intention to act, Green Behavior, Pakistan.

JEL Classification: Z000

1. Introduction

The past decades have highlighted the people's concern for protecting the environment (Kim & Choi, 2005). Stakeholders including consumers are increasingly demanding social and environmental friendly practices from producers of goods and services (Fischer et al., 2005). This concern is expressed by consumers through ethical buying and environmental conscious purchase

*Department of Management Sciences, COMSATS University Islamabad (Attock Campus), Attock, Pakistan. Email: nidamumtaz77@yahoo.com

**Associate Professor, Department of Management, College of Business Administration, Prince Sultan University, Riyadh, Saudi Arabia. Email: farida-saleem@hotmail.com

*** Department of Management Sciences, COMSATS University Islamabad (Attock Campus), Attock, Pakistan. Email: im4imranmalik@gmail.com

****Department of Management Sciences, COMSATS University Islamabad (Attock Campus), Attock, Pakistan. Email: hydershabir@ciit-attock.edu.pk

*****Department of Management Sciences, COMSATS University Islamabad (Attock Campus), Attock, Pakistan. Email: saddam81@yahoo.com

behavior (De Pelsmacker et al., 2005). As a result, marketers, identifying this growing segment, have developed different forms of labels e.g. organic products, green products, fair trade products, animal well-being or legally logged wood etc. and have started offering environmental friendly/ green products (Kohl & Fawcett, 1995). Despite the fact that majority of consumers in developing countries markets link their purchase decisions with their environmental concerns only few environmental friendly products are successful (Chase & Smith, 1992).

Environmental responsive behavior refers to the individual's efforts to protect the environment (Kollmuss & Agyeman, 2002). Green purchase behavior (GPB) is the one in which individuals purchase those products that are less harmful and have less negative impact on the environment (Minton & Rose, 1997; Rehman & Khyzer, 2013). There is difference in the green purchase behavior and general purchase related consumer behavior. The general purchase behavior is based on assessing the benefits and cost linked with only the individual consumer who is performing the behavior. However, the former, green purchase behavior, is linked with future-oriented outcomes and benefits to society as a whole (McCarty & Shrum, 2001). The protection of environment is equally the duty of citizens in comparison to the government institutions (Fraj & Martinez, 2006).

Prior research in green purchase behavior area has focus on either identifying factors for motivating customers towards adopting environmental friendly behavior (e.g., Bagozzi & Dabholkar 1994; Lee & Holden, 1999) or identifying difference in the impact of cognitive and motivational factors on pro-environmental behavior (e.g., Dietz, Stern, & Guagnano, 1998; Karp, 1996; McCarty & Shrum, 1994). Accordingly, academic research has identified several factors including environmental concern, perceive consumer effectiveness or consumer's belief to reduce the environmental issue (Elle, Weiner, & Cobb- Walgren,1991), and welfare of society (McCarty & Shrum ,2001) that help in the identification of environmentally conscious behavior.

As majority of the literature related to green purchase behavior is originated from developed countries, the purpose of this study is to develop a framework to test the influences of consumer psychological factors such as environmental concerns (EC), perceive consumer effectiveness (PCE), motivation (M) and action (A) on green buying behaviors in a developing country, Pakistan. Moreover, the study also tries to clarify how these factors are related to each other. This study will help in the generalization of the finding in a developing country and further extends the understanding of what drives green buying behavior. Moreover, the public policy makers and marketers will be benefited from the results of this study.

2. Literature Review

The effort of individuals to protect the environment from problems is known as environmental responsive behavior (Kollmuss & Agyeman, 2002). By adopting responsive behavior individuals purchase the products having rare negative environmental impacts (Minton & Rose, 1997) this

includes decisions such as purchasing and using appliances that consume less energy, emit less chlorofluorocarbon and carbon dioxide etc. (Rehman & Khyzer, 2013). This is also known as pro-environmental behavior (Han, 2015) or green purchase behavior (Saleem & Gopinath, 2013; Nemati & Sajadi, 2015).

Green purchase behavior indicates purchasing and using environment friendly products (Rehman & Khyzer, 2013). While showing green purchase behavior consumer give preference to purchase products that are eco-friendly, avoid such products that harm the health and damage the environment during use, production and disposal (Gandhi & Sen, 2013). This behavior is influenced by various factors including knowledge about environment, their environmental consciousness, awareness, altruism, collectivism and clear information about products (Kaufmann, Panni, & Orphanidou, 2012). High income and better educated consumers are more willing to buy eco-friendly product (Junaedi, 2012). Similarly, according to Gopalakrishnan and Muruganandam (2013) it is influenced by promotion, cost, attitude, product attributes, environmental impact, product benefits, and knowledge and product performance.

Kumar (2012) while applying theory of planned behavior (Ajzen, 1991) for the study of purchasing behavior for environmentally sustainable products indicates that the green purchase behavior is influenced by attitude, subjective norms and perceived behavioral control. However, A Swedish study on a sample of 200 consumers identified the factors determining the green purchase behavior, such as, green knowledge, eco literacy, attitude, green belief, environmental laws and guidelines and willingness to pay. Whereas subjective norms and social influenced found as weak link (Memar & Ahmed, 2012).

Tan and Lau (2010) study conducted in Malaysia on a sample of 220 undergraduate university students revealed the factors that determined the green purchase intentions included one's general attitude about the environment, strength of green purchase attitude and the perceived consumer effectiveness.

2.1 Developing Country Context

Pakistani society has been exposed to various changes due to technological advancements. These changes resulted in excessive use of electronic items such as computers, cell phones, scanners and printers consequently producing electronic waste as in the case of advanced countries. Developing countries are even more exposed to environmental pollution in terms of carbon dioxide emission that is on the rapid increase. Carbon dioxide emits from home appliances e.g. cooking range, gas heater, furnaces etc. Pakistan being a developing country is facing a problem of rise in carbon dioxide (Tahirkheli et al., 2012). The use of home appliances such as refrigerators and air conditioners emit chlorofluorocarbons that have two major negative environmental effects; they deplete the ozone layer and contribute to global warming.

2.2 Psychological Factors

Psychological factors refer to the individual perception, feelings, belief and thoughts that affect the individual behavior. Psychological factors of attitude are important for the people to take particular action (Ajzen, 1991). Psychological aspects of cognition, emotion and behavior play an important role in shaping individual`s attitudes that influences his or her behavior in response to certain marketing stimuli (Jakštienė, Susnienė, & Narbutas, 2008). The important psychological factors used in the current study are discussed below.

2.3 Environmental Concern and Green Purchase Behavior

Consumer concern for the environment is fundamental to green product purchase behavior research (Hines, Hungerford, & Tomera, 1987). It is an individual's general orientation toward environment and can range from recycling behavior to green buying behavior (Kim & Choi, 2005). Consumers with stronger concerns are more likely to engage in pro-environmental behaviour and are likely to purchase green products than those who are less concerned. Consumers engage in pro-environmental behaviour because of their concern for environment and society (Bamberg, 2003). Many studies have identified the impact of environmental concern on green purchase behaviour (Hartman & Apaolaza-Ibáñez, 2012). It has also been identified that green products consumer show higher environmental concern compared to general public (Clark, Kotchen & Moore, 2003; Hansla et al., 2008).

The environmental concern is the awareness of the environmental problems and effort to minimize those problems (Dunlap & Jones, 2002). Environmental concern defined as an individual aware of environmental issues and problems and the individuals willing and attempts to solve the environment problems (Bamberg, 2003). It is assumed that the environmental concern is similar to the environmental attitude (Chan & Lau, 2004).

While applying theory of reasoned action on green energy consumption, Bang et al. (2000) identified that attitude toward using the renewable energy mediates the relationship of PEC and purchase intentions, thus providing the grounds for testing other constructs in-between. Similarly, Hansla et al. (2008) found the positive effects of PEC on green products purchase willingness. Based on the arguments it is derived that the concern for protecting the natural environment is a diver to make decisions to purchase green products and hence the following hypothesis is proposed:

H1: Environmental concern has significant impact on green purchase behavior.

2.4 Perceived Consumer Effectiveness and Green Purchase Behavior (PCE – GPB)

It is one's perception of his / her ability to ensure cleaner environment (Berger & Corbin, 1992) for reducing the environmental problems (Ellen, Weiner, & Cobb-Walgren, 1991). PCE vary from individual to individual due to differences in their knowledge and experience (Kim & Choi, 2005). The consumers with stronger concern are inclined to adopt positive behaviors that protect the environment. The consumers with low environmental concern tend to make their buying decisions based on low price instead of environment protection, thus showing least concern for the environment and their society (Bamberg, 2003).

Perceived consumer effectiveness is the consumers believe that their action will impact the environment in a positive way (Webb, Mohr, & Harris, 2008; Kim & Choi, 2005). At the same time a study on undergraduate students by Tan and Lau (2010) validated the finding of Kim and Choi (2005) having positive relationship between PCE and GPB. It is different from environmental concern and attitudes however, help in the prediction of green purchase behavior (Ellen, Weiner, & Cobb-Walgren, 1991). PCE, belief in environmental friendly product buying, determinates how hard a consumer will look for green products during buying situations (Thøgersen, 2000). Therefore, the following hypothesis is placed:

H2: Perceived consumer effectiveness has significant impact on green purchase behavior.

2.5 Environmental Attitude and Green Purchase Behavior

The attitude towards actions or objects is formed by behavioral beliefs (Ajzen & Fishbein,1980; Iravani et al., 2012). The basic understanding developed in the mind of an individual regarding a certain behavior may lead to positive or negative results. If the result of that understanding is positive, it results in the adoption of a certain behavior.

Tan and Lau (2010) deteriorating environment has become a public concern in the developed as well as developing countries. Attitude can be defined as a mental and moral state of readiness to adopting certain response (Allport, 1935) whereas, the environmental concern is defined as one's concept of self and the extent to which he feels himself a part of the natural environment (Schultz, Zelezny & Dalrymple, 2000). The people feeling closer to the environment generally think positively about their surroundings and adopt activities based on environmental protection such as recycling and so forth (Abdul, 2007).

A general belief prevails among academicians and environmental scientists that purchasing and using environmental friendly products characterized with recyclable packaging or properly disposing help in improving the quality of the environment while Abdul (2007) and Beckford et al.

(2010) are of the views that green purchase intentions lead to green purchase. Based on the above findings the following hypotheses proposed:

H3: Environmental attitude has significant impact on green purchase behavior.

2.6 Motivation and Green Purchase Behavior

Motivation is as the process allocated energy to maximize the satisfaction of needs (Pritchard & Ashwood, 2008). It is as activation of internal needs and desires that energies the behavior (Pittman, 1998). Motivation acts as an internal stimuli and a reason for any behavior (Kollmuss & Agyeman, 2002). It is around which behavior is organized (Moisander, 1998) and is shaped by its intensity and selection from all possible options (Kollmuss & Agyeman, 2002). Environmental motives can be of two types, primary motives or larger motives e.g. environmental life styles or selective motives that have an influence on a specific action.

Motivated customers generally have three characteristics such as, they have higher intensity of green purchases, they keep on buying the green products thus showing persistence and finally they always choose to buy the environmental friendly products (Campbell & Pritchard, 1976; Weiner, 1980, Weitz, Sujan, & Sujan, 1986). Intensity shows the mental and physical effort used to purchase the product, persistence is consistency in making efforts to purchase the same or similar products and choice is about selection of a behavior. Motivation can be intrinsic, for the sole pleasure and satisfaction derive from its practice or can be extrinsic to avoid negative consequences or to bring positive outcomes.

Green-Demers, Pelletier, and Ménard (1997) after analyzing data collected from 444 respondents identified that environmental motivation significantly predicts the occurrence of environmental behaviours in individuals. Similarly, behaviors developed after self-determined environmental motivation could be maintained once they are developed (Green-Demers et al., 1997). Based on the above findings the following hypothesis is proposed:

H4: Motivation has significant impact on green purchase behavior.

2.7 Intentions to Act and Green Purchase Behavior

Action is based on the awareness about something that leads to change (Elliott, 2013). Schwartz' (1977) theory of altruism argues that environmental friendly behavior is likely when individuals feel threatened while living in a society and takes protective steps for changing the depleting conditions of the surroundings. The threatened individuals want to avoid health hazards and thus take steps to avoid unclean environment while living there.

There is a lack of clarity in the debate on the related aspects of environmental education concerning 'action' and 'behavior' (Jensen, 2002). According to Kollmuss and Agyeman (2002) Pro-environmental behavior consciously seeks to minimize the negative impact of one's actions on the surroundings. Pro-environmental behaviors are actions directed towards the environmental improvements (Jensen, 2002). Hines, Hungerford, and Tomera (1987) while discussing the predictors of pro-environmental behavior have identified that both action skills and intentions to act can have an impact on pro-environmental behavior of individuals. Hence, based on literature findings following hypothesis is proposed:

H5: Intentions to Act has significant impact on green purchase behavior.

3. Methodology

3.1 Sample

In this study the customers of electronic goods in the Punjab province were taken as a population of the study. The Punjab population was divided into two specific groups (strata) on the base of gender proportion: male and female. In order to gain diversity data were collected from four cities of the Punjab namely Attock, Rawalpindi, Lahore and Faisalabad. These cities have been selected on the basis of easy accessibility, time and cost constraints.

The easiest way to collect the data is through convenience sampling (Saunders, Lewis, & Thornhill, 2009) as it may provide a good overview of the characteristics of the population studied (Malhotra & Birks, 2007). The nonprobability convenience sampling method was used for data collection. Similar studies on green purchase behavior, conducted earlier, have also used the non - probability convenience sampling (Muruganandam & Gopalakrishnan, 2013; Irawan & Darmayanti, 2012; Tan & Lau, 2010).

The Population of the Punjab, 96,676,000 million (Bureau of Statistics-Punjab, 2012) was considered for the computation of the sample size. 95% confidence level was used with corresponding confidence interval of 0.5. Using these given values, the sample size is calculated that was equal to 384 respondents (See for sample size; Hucl et al., 2013). This sample included male (52 %) and female (48 %). A total of 384 questionnaires were distributed, 312 complete responses were received. The response rate was 81%.

3.2 Measures

PCE and Environmental Concern were measured with the help of five items each adopted from Kim and Choi (2005), Environmental Attitude and Intentions to act were measured with the help of four items each the sample item for environmental attitude is "More environmental protection

activities are needed in Pakistan." and for intention to act is "I encourage others to purchase environmental-friendly appliances". Motivation was measured with the help of seven questions and Green Purchase behavior was measured with the help of four items adopted from Kim and Choi (2005).

All the constructs except the demographic variables were measured using 5-point Likert scales, ranging from "1" (strongly disagreed) to "5" (strongly agreed), see table 1. The reliability of the constructs is also mentioned in table 1. The questionnaire used was in English language as the respondents were university students who could easily provide answers to the statements written in the questionnaire.

Table 1
Latent and Observed Variables and Cronbatch's Alpha Values of Constructs

Variables	**Observed Variables**	**Adopted from**
Perceive Consumer Effectiveness	PCE1: Each person's behavior can have a positive effect on society by signing a petition in support of promoting the environment. PCE2: I feel I can help solve natural resource problem by conserving water and energy. PCE3: I can protect the environment by buying products that are friendly to the environment. PCE4: There is not much that I can do about the environment (R). PCE5: I feel capable of helping solve the environment problems.	Kim and Choi (2005)
Environmental Concern	EC1: I am extremely worried about the state of the world's environment and Concerns what it will mean for my future. EC2: Mankind is severely abusing the environment. When humans interfere with nature it often produces disastrous consequences. EC3: The balance of nature is very delicate and easily upset. EC4: Humans must live in harmony with nature in order to survive.	Kim and Choi (2005)
Intentions to Act	A1: I warn others to protect the environment. A2: I encourage others to purchase environmental-friendly appliances. A3: I behave in an environmental conscious way. A4: I generally save energy by using environmental-friendly appliances.	

(Table Continued...)

Motivation	M1: I purchase environmental-friendly appliances because environment is very important for me. M2: I purchase environmental-friendly products because I want to preserve the earth. M3: I purchase environmental-friendly appliances because I am concerned about climate warming. M4: I purchase environmental-friendly appliances because green appliances use less energy. M5: To protect the environment of the place I live in is very important for me. M6: I do not harm the environment by purchasing environmental-friendly appliances. M7: It is important for me to live a healthy life.	
Environmental Attitudes	EA1: It is essential to promote green living in Pakistan. EA2: More environmental protection activities are needed in Pakistan. EA3: It is very important to raise environmental awareness among Pakistani people. EA4: I appreciate the appliances that are environmental friendly.	Iravani et al.(2012)
Green Purchase Behavior	GPB1: I make a special effort to buy paper and plastic products that are made from recycled materials. GPB2: I have switched products for ecological reasons. When I have a choice between two equal products, I purchase the one less harmful to other people and the environment. GPB3: I make a special effort to buy household chemicals such as detergents and cleansing solutions that are environmentally friendly. GPB4: I have avoided buying a product because it had potentially harmful environmental effects.	Kim and Choi (2005)

3.3 Common Method Variance (CMV)

The CMV is related to the self-reported data (Podsakoff et al., 2003). Harman's one factor test was used before hypothesis testing to avoid possible threats of CMV. This resulted in 39% variance thus showing that the data is free from CMV.

3.4 Reliability

The reliability was checked using Cronbatch's Alpha. The alpha values for each latent construct were between 0.897 and 0.933 thus showing adequate reliability of the constructs. Further the composite reliability was computed using the measurement model out puts. The composite reliability value is between 0.60-0.88, see table 2.

3.5 Validity

The convergent validity was assessed by loading indicators on their respective constructs that showed significant results ($p<0.001$) with regression weights greater than 0.65. At the same time for each variable the value of the squared multiple correlation was greater than 0.45 showing adequate validity.

Moreover, the Fornell and Larcker (1981) method was used for examining the discriminant validity. According to this model the AVE (Average Variance Extracted) for a separate variable must be above the shared variance of the other variables. No issue of discriminant validity was found in the model.

Table 2
Alpha, Composite Reliability, Correlations and Shared Variance for Constructs

	Variable	No of items	Alpha	CR	1	2	3	4	5	6
1	EC	4	.82	.82	.54					
2	PCE	4	.86	.85	.61* (.37)	.60				
3	EA	3	.90	.89	.28* (.07)	.32* (.10)	.74			
4	M	6	.89	.87	.74* (.54)	.49* (.24)	.40* (.16)	.61		
5	IA	4	.87	.88	.66* (.43)	.74* (.54)	.24* (.05)	.55* (.30)	.64	
6	EB	4	.81	.81	.51*	.45*	.69*	.41*	.29*	.53
					(.26)	(25)	(.47)	(.16)	(.08)	

Shared variance in parenthesis; AVE in diagonal; *P <0.01; CR: Composite Reliability

4. Results

4.1 Model Estimation and Analysis

The SEM was used for data analysis and as a first step is the fitting of the measurement model or Confirmatory Factor Analysis was conducted through Maximum Likelihood Estimation (MLE) method that resulted in the acceptable results.

4.2 Confirmatory Factor Analysis / Measurement Model

The tested model resulted in the t-values greater than 2.50 for each construct, along with the factor loadings greater than 0.5 except for PCE1 and M7 that were removed as per the directions of

the experts (Jöreskog & Sörbom, 1996). Similarly, EC3 and EA4 were also removed.

4.3 Structural Model and Hypothesis Testing

The results of structural model were assessed through the beta weights, see table 3 for the impact of factors effecting environmental behavior of individuals. The weights fluctuate between 0 and 1 and the weights closer to 0.5 are considered as moderate weights (Kline, 2005). Effect of EA and PEC on environmental behavior was found to be strong with weights of 0.62 and .50, while effect of PCE, IA and Motivation on EB was moderate.

Table 3
Structural Model

Causal Path	Un-standardized coefficient	Standardized Regression Weights	t-value	Hypotheses Supported
EC => EB	0.409*	0.505	4.370	Yes
PCE => EB	0.214**	0.202	2.349	Yes
EA => EB	0.509*	0.621	8.972	Yes
M => EB	0.162**	0.185	1.987	Yes
IA => EB	0.206*	0.252	2.571	Yes

Goodness of fit Indices
$\chi 2 = 631$; d.f. = 260; $\chi 2$/d.f. = 2.42; p< 0.00; Comparative Fit Index (CFI) = 0.92; Incremental Fit Index (IFI) = 0.92 ;Goodness of Fit Index (GFI) = 0.86; Adjusted Goodness of Fit Index (AGFI) = 0.83; Root-mean-square residual (RMR) = 0.05; Root-mean-square error of approximation RMSEA = 0.07

*significant at 0.01 **significant at 0.05

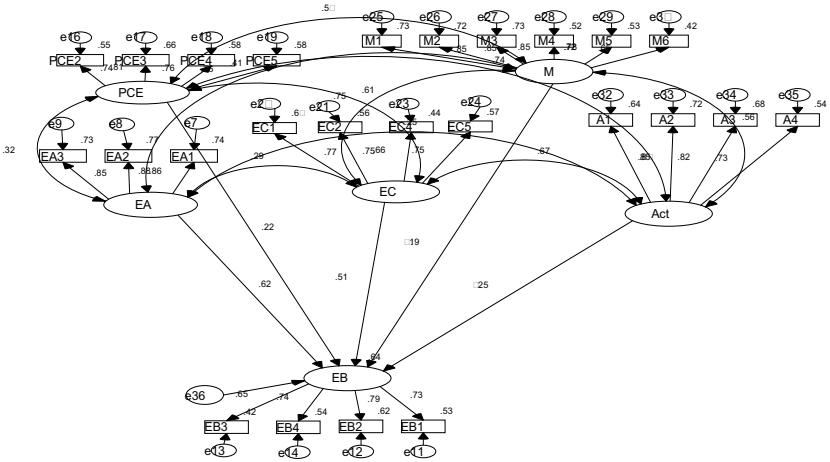

Figure 1: Structural Model

5. Conclusion

The major objective of this study was to examine the impact of psychological factors affecting the green purchase behavior of Pakistani customers. For this purpose, five dimensions of psychological factors were considered including perceived consumer effectiveness, environmental concern, environmental attitude, motivation and action (Kotler, Kevin, & Walter, 2007; Masouleh et al., 2013).

Psychological aspects play an important role to shape the individual`s behavior i.e. customer behavior to purchase (Jakštienė, Susnienė, & Narbutas, 2008). It depicts that psychological factors play an important role to shape respondents' behavior to purchase. These findings are consistent with other studies that psychological factors have significant influence on green purchase behavior (Schlegelmilch, Bohlen, & Diamantopoulos, 1996; Laroche, Bergeron, & Forleo, 2001; Iravani et al ., 2012; Heckler, 1994). This study found that all five dimensions of psychological factors; Perceived consumer effectiveness, environmental concern, environmental attitude, motivation and intentions to act significantly influenced the green purchase behavior of Pakistani customers.

Perceived consumer effectiveness is the individual belief that their actions of purchasing environmental friendly products will help to solve the environmental problems (Ellen, Wiener, & Cobb-Walgren, 1991). It seems that respondents' belief that their actions of purchasing environmental friendly products will help to solve the problems of environment. This finding is consistent with the findings of Tan and Lau (2010) that show perceived consumer effectiveness has an impact on green purchase behavior. Findings also supported the theory of planned behavior and theory of reasoned action that attitude influenced the behavior and attitude refers to the beliefs about the consequences of the behavior to take action (Ajzen, 1991; Ajzen & Fishbein,1980).

Environmental concern relates to the awareness of environmental problems and their action to solve it (Dunlap & Jones, 2002). On the base of empirical findings environmental concern has significant impact on green purchase behavior of Pakistani customers. It seems that respondents have no awareness of environmental problems to take action to solve them. This finding was consistent with the study of Irawan and Darmayanti (2012) that found environmental concern as significant predicator of green purchase behavior. Another study also validated these findings that environmental concern directly influences the green purchase behavior (Kim & Choi, 2005). However, this finding is contradicted by the findings of Rehman, Khyzer and Dost (2013) that environmental concern has no affect on the green purchase behavior of individuals.

Motivation refers to the internal desires that energies the behavior to take action (Pittman, 1998). Base on the empirical findings, motivation has an impact on green purchase behavior of Pakistani customers. It depicts that respondents have internal desires to energies their behavior to

take action in response to environmental protection. This finding was consistent with other studies that motivation plays an important role in influencing green purchase behavior (Tan, 2011; Thidell & Leire, 2004). The findings are consistent with the theory of altruistic behavior that altruistic motive play an important role to drive the behavior to respond to the environment in a better way (Heberlein, 1972). It depicts that motivation plays an important role to derive the green purchase behavior.

Action refers to the response of consumers (Hallahan, 2000). On the base of empirical findings, the intentions to act has significant influence on green purchase behavior. It seems that respondents show response to solve environmental problems. The findings by supported the theory of reasoned action that action leads the behavior (Ajzen & Fishbein,1980). It depicts that action leads to the green purchase behavior.

Five out of the five hypotheses proposed are upheld. The world is currently facing different environmental problems and issues that are seriously influencing human life. In this case a better living can be ensured through environmental protection. It can be made possible by considering the psychological factors influencing green purchase behavior of Pakistani customers. The findings reveal that psychological factors such as perceived consumer effectiveness - PCE, environmental concern, environmental attitude, motivation and intentions to act have a strong impact on green purchase behavior. It is concluded that psychological factors have strong impact on green purchase behavior. The green purchase behavior among Pakistani customers may be enhanced by the use of psychological factors of perception, concern, attitude motivation, and intentions to act.

5.1 Implications

Like any other study related to learning and adopting preferred behavior the current study has highlighted the factors enabling consumers to adopt pro-environmental behavior. The study found that Psychological factors as a whole do have significant impact on the adoption of green purchase behavior, whereas while looking at the psychological factors considered for the study the results revealed that perceived consumer effectiveness (PCE), environmental attitude and concern, motivation to adopt green purchase behavior and intention to act have significant effect on the adoption of green purchase behavior. It is important to note that due to the ever increasing awareness about environmental protection globally the people living in Pakistan have also became conscious about the environment in which they live. They have been motivated to adopt such behavior and are willing to take such actions that are in line with pro-environmentalism. This puts demand on the companies and marketer to introduce products that have less negative impact on the environment and create environmental awareness through advertising and promotional campaigns that encourage and enhance green purchase behavior in Pakistan.

It also enables the policy makers to use social-psychological approaches of social marketing techniques to encourage the environmental responsive behavior in Pakistan. The environmental policy

of Pakistan is based on participatory approach to achieve the sustainable development objective through administratively, legally and technically sound institutions. The economic policy of Pakistan needs to manage the environmental resources of Pakistan efficiently.

Government need to play an important role in environmental protection through encouraging the developments of green products. The government need to encourage the production and development of environmental friendly products that reduces the emission of carbon dioxide and consumption of chlorofluorocarbons. It should also encourage the imports of environmental friendly products by decreasing the taxes and duties so that each person in Pakistan prefers to purchase environmental friendly products.

5.2 Limitations & Future Research

Like other research studies conducted in the fields of social and management sciences the current study also possesses few limitations. One province was selected due to limited time framework of study. This study is confined to non- probability convenience sampling technique because the aim of the study was to determine the actual green purchase behavior of general customers and in case of general customer's random selection is not possible due to lack of resources. The sampling framework was limited to Attock, Rawalpindi, Lahore and Faisalabad due to easy accessibility and cost constraint. It is difficult to consider all factors due to limited available resources so only five dimensions of psychological factors were considered for the prediction of green consumer behavior. So there is a need to determine other dimensions also for future study. The respondents of only home appliances customers were taken due to time and cost constraints.

It is recommended that future research consider other provinces of Pakistan to get responses from the broader geographical area for better results. The comparative study may be carried out in future by comparing the occupational and cultural differences on green purchase behavior of Pakistani customers. The study may be carried out in future by considering probability sampling methods to generalize the results of the study. In future the study may be done by considering some other sectors like FMCG (fast-moving consumer goods) etc. Future research studies may also consider the other dimensions of social, psychological and demographic factors on green purchase behavior.

References

Abdul-Muhmin, A. G. (2007). Explaining consumers' willingness to be environmentally friendly. *International Journal of Consumer Studies*, *31*(3), 237-247.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211.

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood CliVs, NJ: Prentice-Hall.

Allport, G. W. (1935). Attitudes. In C. M. Murchison (Ed.), Handbook of Social Psychology (798-844). Worcester, MA: Clark University Press.

Bagozzi, R. P., & Dabholkar, P. A. (1994). Consumer recycling goals and their effect on decisions to recycle: A means-end chain analysis. *Psychology & Marketing*, *11*(4), 313-340.

Bamberg, S. (2003). How does environmental concern influence specific environmentally related behaviors? A new answer to an old question. *Journal of Environmental Psychology*, *23*(1), 21-32.

Bang, H. K., Ellinger, A. E., Hadjimarcou, J., & Traichal, P. A. (2000). Consumer concern, knowledge, belief, and attitude toward renewable energy: An application of the reasoned action theory. *Psychology & Marketing*, *17*(6), 449-468.

Beckford, C. L., Jacobs, C., Williams, N., & Nahdee, R. (2010). Aboriginal environmental wisdom, stewardship, and sustainability: lessons from the Walpole Island First Nations, Ontario, Canada. *The Journal of Environmental Education*, *41*(4), 239-248.

Berger, I. E., & Corbin, R. M. (1992). Perceived consumer effectiveness and faith in others as moderators of environmentally responsible behaviors. *Journal of Public Policy & Marketing*, *11*(2), 79-89.

Campbell, J. P., & Pritchard, R. D. (1976). Motivation theory in industrial and organizational psychology. In M. D. Dunnette (Ed.), Handbook of industrial and organizational psychology (63–130). Chicago: Rand-McNally.

Chan, R. Y., & Lau, L. B. (2004). The effectiveness of environmental claims among Chinese consumers: Influences of claim type, country disposition and ecocentric orientation. *Journal of Marketing Management*, *20*(3-4), 273-319.

Chase, D., & Smith, T. K. (1992). Consumers keen on green but marketers don't deliver. *Advertising Age*, *63*(26), 2-14.

Clark, C. F., Kotchen, M. J., & Moore, M. R. (2003). Internal and external influences on pro-environmental behavior: Participation in a green electricity program. *Journal of Environmental Psychology*, *23*(3), 237-246.

De Pelsmacker, P., Janssens, W., Sterckx, E., & Mielants, C. (2005). Consumer Preferences for the Marketing of Ethically Labelled Coffee. *International Marketing Review, 22*(5), 512-530.

Dietz, T., Stern, P. C., & Guagnano, G. A. (1998). Social structural and social psychological bases of environmental concern. *Environment and Behavior*, *30*(4), 450-471.

Dunlap, R. E., & Jones, R. E. (2002). Environmental concern: Conceptual and measurement issues. *Handbook of Environmental Sociology*, *3*(6), 482-524.

Ellen, P. S., Wiener, J. L., & Cobb-Walgren, C. (1991). The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. *Journal of Public Policy & Marketing*, *10*(2), 102-117.

Elliott, R. (2013). The taste for green: The possibilities and dynamics of status differentiation through "green" consumption. *Poetics*, *41*(3), 294-322.

Fischer, G., Shah, M., N. Tubiello, F., & Van Velhuizen, H. (2005). Socio-economic and climate change impacts on agriculture: an integrated assessment, 1990–2080. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *360*(1463), 2067-2083.

Fishbein, M., Jaccard, J., Davidson, A. R., Ajzen, I., & Loken, B. (1980). Predicting and understanding family planning behaviors. In Understanding attitudes and predicting social behavior (130-147). Prentice Hall.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50.

Fraj, E., & Martinez, E. (2006). Environmental values and lifestyles as determining factors of ecological consumer behaviour: an empirical analysis. *Journal of Consumer Marketing*,*23*(1),133-144.

Gandhi, M., & Sen, K. (2013). Environmentally responsive consumption: A study of young consumers in India. *International Journal of Multidisciplinary Thought*, *3*(2), 439-447.

Gopalakrishnan, M. S., & Muruganandam, D. (2013). A micro analysis on dissect of consumer's to procure green products. *Life Science Journal*, *10*(2), 123-145.

Green-Demers, I., Pelletier, L. G., & Menard, S. (1997). The impact of behavioural difficulty on the saliency of the association between self-determined motivation and environmental behaviours. *Canadian Journal of Behavioural Science, 29*(3), 157-166.

Hallahan, K. (2000). Inactive publics: the forgotten publics in public relations. *Public Relations Review*, *26*(4), 499-515.

Han, H. (2015). Travelers' pro-environmental behavior in a green lodging context: Converging value-belief-norm theory and the theory of planned behavior. *Tourism Management*, *47*(1), 164-177.

Hansla, A., Gamble, A., Juliusson, A., & Gärling, T. (2008). Psychological determinants of attitude towards and willingness to pay for green electricity. *Energy Policy*, *36*(2), 768-774.

Hartmann, P., & Apaolaza-Ibáñez, V. (2012). Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern. *Journal of Business Research*, *65*(9), 1254-1263.

Heberlein, T. A. (1972). The land ethic realized: Some social psychological explanations for changing environmental attitudes. *Journal of Social Issues, 28*(4), 79–87.

Heckler, S. E. (1994). The role of memory in understanding and encouraging recycling behavior. *Psychology & Marketing*, *11*(4), 375-392.

Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *The Journal of Environmental Education*, *18*(2), 1-8.

Horton, M., Kohl, J., & Kohl, H. (1990). The long haul (Vol. 80). New York: Doubleday.

Hucl, T., Wee, E., Anuradha, S., Gupta, R., Ramchandani, M., Rakesh, K., & Lakhtakia, S. (2013). Feasibility and efficiency of a new 22G core needle: a prospective comparison study. *Endoscopy*, *45*(10), 792-798.

Iravani, M. R., Zadeh, M. S., Forozia, A., Shafaruddin, N., & Mahroeian, H. (2012). Study of factors affecting young consumers to choose green products. *Journal of Basic and Applied Scientific Research*, *2*(6), 5534-5544.

Irawan, R., & Darmayanti, D. (2012). The influence factors of green purchasing behavior: A study of university students in Jakarta. Retrieved from http://www. wbiconpro.com/517%20-%20 Dahlia.pdf

Jakstiene, S., Susniene, D., & Narbutas, V. (2008). The psychological impact of advertising on the customer behavior. *Communications of the IBIMA*, *3*(1), 50-55.

Jensen, B. B. (2002). Knowledge, action and pro-environmental behaviour. *Environmental Education Research*, *8*(3), 325-334.

Jöreskog, K. G., & Sörbom, D. (1996). *LISREL 8 User's Reference Guide*. Mooresville, IN: Scientific Software.

Junaedi, S. (2012, September). The role of income level in green consumer behavior: Multigroup structural equation model analysis. *The 2012 International Conference on Business and Management,* (6–7), Phuket, Thailand.

Karp, D. G. (1996). Values and their effect on pro-environmental behavior. *Environment and Behavior*, *28*(1), 111-133.

Kaufmann, H. R., Panni, M. F. A. K., & Orphanidou, Y. (2012). Factors affecting consumers' green purchasing behavior: An integrated conceptual framework. *Amfiteatru Economic Journal*, *14*(31), 50-69.

Kim, Y., & Choi, S.M. (2005). Antecedents of green purchase behavior: An examination of collectivism, environmental concern, and PCE. *Advances in Consumer Research, 32*(1), 592–599.

Kline, R. B. (2005). Principles and practice of structural equation modeling 2nd ed. New York: Guilford.

Kohl, P. L., & Fawcett, C. (Eds.). (1995). Nationalism, politics and the practice of archaeology. Cambridge University Press.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?. *Environmental Education Research*, *8*(3), 239-260.

Kotler, P, Kevin, L.K., & Walter, G.S. (2007). Marketing Management. New Jersey: Prentice-Hall International Edition.

Kumar, B. (2012). Theory of planned behaviour approach to understand the purchasing behaviour for environmentally sustainable products. Res. Pub, 2-43.

Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, *18*(6), 503-520.

Lee, J. A., & Holden, S. J. (1999). Understanding the determinants of environmentally conscious behavior. *Psychology & Marketing*, *16*(5), 373-392.

Malhotra, J. and Birks, D. (2007), Marketing Research: An Applied Approach, European ed., Prentice Hall/Pearson Education, London.

Masouleh, S. A., Koochaksaraei, H. M., Saeedi, N., & Mousavian, S. I. (2013). Investigation on selected factors (demographic and psychological) on ecological conscious consumer behavior. *Journal of Basic and Applied Scientific Research*, *3*(5), 622-630.

McCarty, J. A., & Shrum, L. J. (2001). The influence of individualism, collectivism, and locus of control on environmental beliefs and behavior. *Journal of Public Policy & Marketing*, *20*(1), 93-104.

Memar, N., & Ahmed, S. A. (2012). Determinants which Influence the Consumers' Green Purchasing Intention: An Empirical Study of Consumers' buying Intention Toward Eco Friendly Printers in the Swedish Market. Malardalen University, Sweden.

Minton, A. P., & Rose, R. L. (1997). The effects of environmental concern on environmentally friendly consumer behavior: An exploratory study. *Journal of Business Research*, *40*(1), 37-48.

Moisander, J. (1998, March). Motivation for ecologically oriented consumer behaviour. In Workshop Proceedings, The European Science Foundation (ESF) TERM (Tackling Environmental Resource Management Phase II 1998–2000). Retrieved from http://www. lancs. ac. uk/users/ scistud/esf/lind2. htm.

Nemati, C. K. S., & Nasrollah, S. (2015). Green Marketing Mix Impact on the Sporting Goods' Consumers' Purchase Behaviour (Case Study: Adidas Consumers). *Journal of Social Issues & Humanities*, *3*(8), 140-144.

Pittman, T. S. (1998). Intrapsychic and interpersonal processes: Cognition, emotion and self as adaptations to other people or to reality. Attribution and social interaction: The legacy of Edward E. Jones, 235-242.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903.

Pritchard, R., & Ashwood, E. (2008). Managing motivation: A manager's guide to diagnosing and improving motivation. Psychology press.

Rehman, Z., and M. K. Bin Dost. 2013. Conceptualizing green purchase intention in emerging markets: An empirical analysis on Pakistan. Paper presented at *WEI International Academic Conference Proceedings* Istanbul, Turkey, June 2013.

Saleem, F., & Gopinath, C. (2013). Antecedents of environmental conscious purchase behaviors. *Middle East Journal of Scientific Research*, *14(2)*, 979-986.

Saunders, M., Lewis, P., & Thornhill, A. (2009). Research Methods for Business Students, *Essex,* Pearson education.

Schlegelmilch, B. B., Bohlen, G. M., & Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European Journal of Marketing*,*30*(5),35-55.

Schultz, P. W., Zelezny, L., & Dalrymple, N. J. (2000). A multinational perspective on the relation

between Judeo-Christian religious beliefs and attitudes of environmental concern. *Environment and Behavior*, *32*(4), 576-591.

Schwartz, S. H. (1977). Normative influences on altruism. *Advances in Experimental Social Psychology*, *10*(1), 221-279.

Tahirkheli, T., Bilqess, R., Abbas, S. M., & Zakir, S. (2012). CO2 mineral sequestration studies in the ultramafic rocks of northern Pakistan. *Journal of Himalayan Earth Science*, *45*(1), 83-90.

Tan, B. C. (2011). The roles of knowledge, threat, and PCE on green purchase behaviour. *International Journal of Business and Management*, *6*(12), 14-28.

Tan, B. C., & Lau, T. C. (2010, June). The influencing factors of green purchase behaviour: an exploratory study. International Conference on Marketing (ICMAR2010); Kuala Lumpur.

Thidell, Å. & Leire, C. (2004). *Consumer perceptions, understanding and use of product related environmental information-a literature review of the Nordic knowledge base*. Nordic Council of Ministers Copenhagen.

Thøgersen, J. (2000). Psychological determinants of paying attention to eco-labels in purchase decisions: Model development and multinational validation. *Journal of Consumer Policy*, *23*(3), 285-313.

Webb, D. J., Mohr, L. A., & Harris, K. E. (2008). A re-examination of socially responsible consumption and its measurement. *Journal of Business Research*, *61*(2), 91-98.

Weiner, B. (1980). A cognitive (attribution)-emotion-action model of motivated behavior: An analysis of judgments of help-giving. *Journal of Personality and Social Psychology*, *39*(2), 186-205.

Weitz, B. A., Sujan, H., & Sujan, M. (1986). Knowledge, motivation, and adaptive behavior: A framework for improving selling effectiveness. *Journal of Marketing*, *50*(4), 174-191.