

# **Environment Friendly Products: Factors that Influence the Green Purchase Intentions of Pakistani Consumers.**

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## **ABSTRACT**

This study examines the influence of various factors on the green purchase intentions of Pakistani consumers. To this end, a conceptual model has been proposed and subjected to empirical verification with the use of a survey. The survey results obtained in two major Pakistani cities provide reasonable support for the validity of the proposed model. Specifically, the findings from the correlation matrix, simple regression followed by multiple regression analysis confirm the influence of OGI, EK, EC and PPP&Q on consumers purchase intentions toward green products. The OGI, EK and EC, in turn, also seem to affect consumers green purchase intentions via the moderating role of PPP&Q of a green product. Although the present findings provide a better understanding of the process and significant antecedents of green purchasing intentions, this also highlights one area for more thorough investigation. This is the significant moderating role of PPP&Q variables in consumers' green purchasing process. As the findings suggest that respondents have a high positive attitude regarding green products and are ready to buy green products more often, but as for as the product price and quality are concerned, green products must perform competitively just like the traditional products. This study also discusses how the present findings may help the Pakistani government and green marketers to fine-tune their environmental programs.

**Key words-** Green Purchase Intention; Environmental Concern; Environmental knowledge; PPP&Q.

## 1. INTRODUCTION

During the past decade, a business phenomenon, i.e. the adaptation of environmental concerns into corporate practice has been gaining popularity. It is predictable that the pressure of this evolution on corporate sector will not decrease in force till the new millennium dawns (Sarkis, 2001). This concept that focused on environmental stewardship had emerged during the past decade, challenged our capacity to be self-aware, and established a mutual global imperative in order to respond to this critical issue that started from natural resource conservation and world-wide climate change (Olson, 2008).

Straughan and Roberts, (1999) argued that these environmental concerns have evolved through many different phases. It started in the 1960s with the greening concept, concentrating on pollution and energy conservation. Afterward, due to increased social and political pressure, organizations have moved beyond these concepts to recycling, alternative packaging, redesigning of product, and alternative products. Since 1990s, environmental concern has become one of the most important issues. Both in United States and Europe, businesses have discovered that in future customers purchase decision will be based upon environmental considerations. This phenomenon is called green marketing (Lampe and Gazdat, 1995). Green marketing, also known as sustainable marketing and environmental marketing involve designing, promoting, pricing and distributing products and services according to the customers' want and need, with minimal detrimental impact on the natural environment (Grant, 2008; Jain and Kaur, 2004; Kangis, 1992; Pride and Ferrell, 2008).

Over the last decade concern for the environment has been steadily increasing due to increased media coverage, greater awareness of environmental problems, the impact of major industry disasters and the rise of activist groups on the environment (Kalafatis et al. 1999). As a result,

various customers started considering nature protection as a central factor to incorporate in their buying decisions, increasing realization that environmental protection is not just a task to be performed by government institutions or organizations, but is each citizen's responsibility (Fraj and Martinez, 2006). The concern with environmental degradation has resulted in a new segment of consumers, i.e. the green consumers. These consumers have been identified as one who avoids products which are possible danger for health, damage the environment during production, use materials derived from threatened species or environment, and cause unnecessary waste. Moreover, due to the businesses' decision to respond to these consumers' environmental needs green marketing has started to become an important branch of learning (Finisterra do Paço, and Raposo, 2008).

In recent times, there are many encouraging indications which show that the demand for greener products is increasing rapidly. Like, according to Natural Marketing Institute reports, more than 200 billion \$ market of Lifestyles, Health and Sustainability (LOHAS) is expected to become double by 2010 and quadruple by the end of 2015 (Widger, 2007). Therefore, understanding consumers' green buying behavior is important not only for academics and practitioners but for marketers, and it is especially critical for environment friendly businesses. In this regard, Theory of Planned Behavior states that intention is seen as the proximal determinant of behavior: the more one intends to engage in a particular behavior, the more likely one is to actually engage in it (Ajzen, 1985; Kalafatis., Pollard., East., and Tsogas, 1999).

Several researches have been conducted on green purchasing intentions. Among these, many researchers have identified the determinants of consumers' green purchase behavior, majority of them have been conducted in industrialized countries (Bleda and Valente, 2008; Chatterjee, 2009; Chan, 2004; Davis, 1993), but the findings often contradict each other (Elham, R and

Nabsiah, A.Wahid, 2011). For that reason, the findings may only be relevant in certain cultural, demographical and geographical context, and time. Because of complexity in green purchasing behavior of consumers', generalization is often not meaningful under different cultural, social and demographical contexts. To strengthen this argument, Elham and Nabsiah (2011), Ottman (1992) and Peattie (1992) reported that demand and attitudes for environment friendly products is likely to be uneven across different market segments and cultures. As a result, research on the effects of various factors on consumers green purchase intentions in emerging Asian markets is considered to be opportune.

Besides, many previous studies have been based upon data collected in the 1970s and 1980s. This is perhaps a serious issue, as during the last three decades environmental knowledge, environmental concern, attitudes, and behaviors have undergone substantial changes (Diamantopoulos, et al., 2003; Kilbourne and Beckmann, 1998; Roberts, 1996). What are the main determinants of the demand for environment friendly products in developing societies? The answer to this question is particularly important since we want to change our modes of consumption and production to inflict less pressure on our natural environment.

We generally propose in this study that the perceived product price and quality of a green product does influence consumer's decisions and choices, but it acts indirectly through moderating constructs that are closely linked to the product being purchased. Understanding this moderation can help public policy makers or marketers to determine how to develop marketing communications about the environment related products and services in developing societies. Certainly, such an understanding can provide useful insights into further advancing the idea of green consumption in the country. Additionally, this kind of research can provide some insights

to green marketers regarding how they can start and expand their operation in South Asia particularly in Pakistan.

Therefore, the purpose of this study was to find the determinants of consumers green purchase intentions with particular focus on whether and how does perceived product price and quality of a green product influence consumer decisions and choices. In first chapter of the research paper, we have discussed the background, objectives and justification of the study. This chapter also reviews the literature on green purchasing intention, OGI, EK, EC and PPP&Q keeping in view the variables of study for the development of hypotheses in order to answer the research questions of current study.

## **2. LITERATURE REVIEW**

### **2.1. Green Purchase Intention (GPI)**

Green purchase intention is conceptualized as the probability and willingness of a person to give preference to products having eco-friendly features over other traditional products in their purchase considerations. According to Beckford et al., (2010) and Chan (2001) research studies, green purchase intention is a significant predictor of green purchase behavior, which means that purchase intention is positively affecting the probability of a customer decision that he will buy green products. Chan and Lau (2002) conducted a cross-cultural research study in China and America, wherein consumers in Shanghai and Los Angeles were surveyed, concluded that the asymmetric influence of green purchasing intention on green purchasing behavior warrants further attention.

### **2.2. Organization Green Image (OGI)**

A sustainable organization is an organization that takes part in green or environment friendly activities to make sure that all processes, manufacturing activities and products adequately

address current environmental concerns while maintaining a profit. In other words, it is a business that “meets the needs of the present world without compromising the ability of the future generations to meet their own needs” (Anderson, 2006, United Nations General Assembly, 1987). According to Rennie (2008), everyone affects the sustainability of the marketplace and the planet in one way or another. Sustainable development within an organization can create value for investors, customers and the environment. A sustainable business must meet customer needs while, at the same time, treating the environment well. Furthermore, the idea of green business helps organizations to increase their productivity while using the limited resources in a manner which is harmonious (compatible) with human health as well as for non-human species (Isaak, 2002).

### **2.3. Environmental Concern (EC)**

Dunlap and Jones (2002, p: 485) defined environmental concern as the degree to which people are aware of environmental problems and assist struggles to solve them or signify the readiness to contribute personally to their solution. In literature, it is almost commonplace that people are definitely concerned about environmental problems. As a result, it is not the weakness of environmental concern, but some other factors that hamper them in undertaking environment friendly behavior.

### **2.4. Environmental knowledge (EK)**

Fryxell and Lo, (2003, p. 45) defined environmental knowledge as “*a general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems*”. Hence, it involves public knowledge about the environment, key relationships concerning to environmental facets or impacts, an admiration of entire organism, and mutual conscientiousness for sustainable development. The customer’s level of environmental knowledge about

environmental issues, the available substitutes and solutions to these problems are another factor, which has at times proven to affect the consumer's behavior.

## **2.5. Relationship of Organization Green Image (OGI) with Consumer Green Purchase Intention (GPI).**

About two decades ago, the idea of a sustainable link between business and the environment initially suggested, revolves around the premise that the goals of business and the goals of environmental conservation need not be incongruent and contradictory (Hawken., Lovins, and Lovins, 1999; Holliday., Schmidheiny, and Watts, 2002). Advocates of environmental sustainability have now taken this theory one footstep advance with the argument that ecologically conscious and environment friendly strategies could in fact, lead to competitive advantages and superior financial performance (Engardio, 2007; Esty and Winston, 2006).

In the context of the current social movement, consumers are powerful actors for promoting socially responsible behaviors. They have the power to reconsider their spending patterns and to force companies all over the world to embrace the socially responsible paradigm, to make it more respectful of the environment, of animals and of other inhabitants of the earth. This is why, it is very important to find out the barriers that stop consumers from developing positive attitudes towards socially responsible consumers and becoming enthusiastic contributors in this social movement (Astous and Legendre, 2009).

It was argued that customer pressure would direct businesses to focus more on the environment since customers have the power to support (accept) or oppose (reject) businesses or disparage them for worsening the environment. Recent approaches advocate that increasing numbers of consumers not only seek environmentally friendly products but also favor environmentally conscious business behaviors. Therefore such customers cannot be ignored

(Sisodia et al. 2007). A recent research, at a world level showed that the positive reputation of an organization regarding its ecological responsibility is determined by the fifty three percent of customers (approximately 1 billion) as an important reason that makes them buy and use its products (Spanos, 2008). Thus, we propose that:

*H1: There is positive relationship between OGI and consumer GPI.*

## **2.6. Relationship of Environmental Concern (EC) with Consumer Green Purchase Intention (GPI).**

A study conducted by Fraj-Andrés, Martínez-Salinas and Matute-Vallejo (2009), emphasized that many customers are more worried about environmental problems, and those organizations that do not take actions to confront the environmental issue by offering green products, will possibly lose credibility in the eyes of their customers. As social concerns and environmental regulations are most influential pressure factors on management commitment. Thus, managers tend to have a deeper involvement in environmental protection that receive more pressure and experience more strict regulations from customers about environmental expectations.

According to Laskova (2007), people with high environmental concerns shows the more positive attitude towards the environment than people who think themselves powerless to help the environment are less likely to participate in pro-environmental activities. This argument is further substantiated by the study of Kim and Choi (2005), where environmental concerns have a direct and positive influence on the customer purchasing intention of green products. This suggested that customer with strong environmental concern may be interested in consumption of products which reflect that concern.

Besides Mostafa (2009) highlighted the importance of environmental concern along with other variables for the prediction of consumer green purchase behavior. He further added that based on

environmental concerns one can differentiate between green consumers and non-consumers. To end with, while consumers' ecological concerns have moved in to middle-of-the-road marketing, it is useful from a marketplace viewpoint to examine how consumers' make well-versed choices about environment friendly products. Thus, we propose that:

*H2: There is positive relationship between EC and consumer GPI.*

## **2.7. Relationship of Environmental Knowledge (EK) with Consumer Green Purchase Intention (GPI)**

In one of their research study Pickett-Baker and Ozaki (2008) found that respondents considered it good to buy brands that were less damaging to the environment. Though, they revealed that sometimes it is not easy to identify green products. Moreover, respondents indicated that they do not notice much relevant or engaging marketing about these products. Therefore, in order to get effective results from the marketing campaign, marketers must put emphasis on the benefits of the product to the consumer and product improvements, such as a new improved formula or design. Thus, the better use of marketing and portraying a good brand image is crucial to sell green products.

Similarly, a study made by Paco and Raposo (2009) in Portugal exposed that consumers understand the environmental challenges, support policies to improve the environment, even though their concerns do not transform into action. The reason for non-reflection of environmental concerns into purchasing behavior is the lack of awareness about the greening concept in newly industrialized countries as those in developed countries (Yam-Tang and Chan, 1998). Therefore, still there is a need that business personnel and government together take initiatives to educate and persuade people for green purchase decision. Moreover, it is found that there is a positive relationship between environmental awareness and people's attitude, decisions

and finally participation. So, if people's awareness is increased, ultimately their sustainable consumption behavior will be improved (Fraj and Martinez, 2006; Haron et al. 2005; Yam-Tang and Chan, 1998).

In addition, Manrai et al., (1997) argued that environmental knowledge of a customer has a direct proportional relation with the intention to purchase the products, having green claim. Therefore, managers may find the way to translate environmental issues into higher sales of green products. Perhaps, the initial perception that one forms about a product environmental benefits is, in some way, by exposure to information/knowledge commenced by the marketer together with the information provided on product labels and Media advertising. Thus, we propose that:

*H3: There is positive relationship between consumer EK and consumer GPI.*

## **2.8. Moderating effect of Perceived Product Price & Quality (PPP&Q)**

From the above debate, it becomes visible that green products have a great perspective worth for the corporate concerns in terms of improved profits and positive business image on one hand and guarantee safety of environment alternatively. A study conducted by Polonsky (1994), concluded that consumer put too much responsibility on businesses and government agencies to make the environment safe, and they do not consider themselves as a part of this process, and are not much serious in this regard. Therefore, green marketing does not strongly influence all consumers (Lampe and Gazdat, 1995).

Likewise, Wong et al., (1996) reported that contrary to the enthusiastic opinion poll evidence concerning public attitudes towards environment friendly consumption, the degree of consumer adoption of green products is much less. Therefore, it is very important to find out the barriers

that stop consumers from developing positive attitudes towards green consumption and becoming green consumer (Astous and Legendre, 2009).

Fraj and Martinez (2006) argued that although people have enough knowledge and are very much concerned about environmental problems, but still less involved in terms of their shopping habits and daily customs. Besides, Gan et al., (2008) argued that environmental concerns are not the only reasons for the customers to purchase environment friendly products, and also they do not agree to trade off other product attributes for a better environment. This reveals that the characteristics of traditional products such as the brand name, its price and quality are still the most important ones that are considered by consumers while making purchasing decision.

No doubt, now firms recognized that the future prospects for green goods remain bleak, until and unless they can balance environmental compatibility with customers' primary desire for high quality products that perform well. Because, it is not logical for customers to pay more for a product that does not offer basic benefits, whatever the environmental benefits (Wong et al. 1996). In this regard, Schlegelmilch., Bohlen and Diamantopoulos (1996) recommended that those organizations aim to enhance market penetration of the existing green products' offerings must launch an advertising campaign directed at increasing concern about the environmental quality in the consumer base. Second, organizations must make it possible that their products perform competitively in other dimensions. If these two things are achieved, then environmental considerations will no longer take back seat in purchasing decision.

Because, usually the perception of environmentally friendly products is negatively linked with consumers' intention to buy them if in comparison to traditional products they are of higher prices and low quality. As a result, it may be said that there is an expectation on the part of

consumers whom offered green products should be environmentally safe and sound without a need to sacrifice on price and quality (D'Souza, Taghian, Lamb, and Peretiatkos, 2006).

Besides, Ali et al., (2010) argued that customers are ready to buy environment friendly products more often, but as for as the products price and quality are concerned, environment friendly products must perform competitively just like the traditional products. Similarly, another study revealed that many consumers are unwilling to forgo essential product benefits during their purchase decision. So, green products must also perform competitively not only according to environmental aspects, but also based on others important product characteristics, for instance, price, quality, convenience and durability (Diamantopoulos et al. 2003).

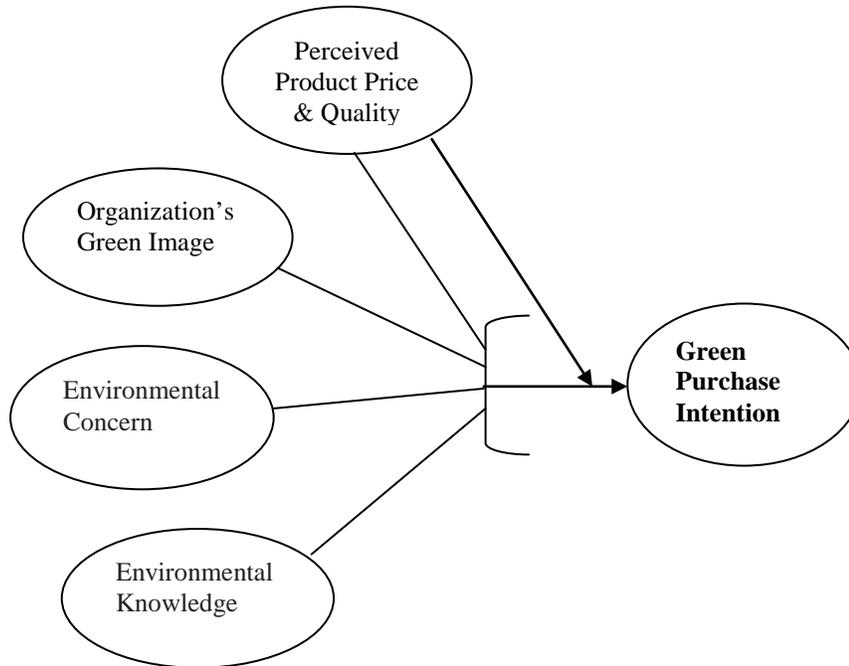
All together, Schuhwerk and Lefkokk-Hagius (1995) suggested that the more involved the consumers become with the environment, the more likely they would purchase environment friendly products. Derived from this suggestion, it can be anticipated that green consumers will be inclined to buy green products if compete in price and quality. Thus, we propose that:

***H4: The PPP&Q of the green product moderates the influence of OGI towards the environment on consumer GPI.***

***H5: The PPP&Q of the green product moderates the influence of consumer EC towards the environment on consumer GPI.***

***H6: The PPP&Q of the green product moderates the influence of consumer EK towards the environment on consumer GPI.***

***H7: There is positive relationship between PPP&Q and consumer GPI.***



### 3. METHODOLOGY

#### Sample and data collection

The current research is an attempt to investigate the key determinants of consumers green purchase intentions. In this study, we also tried to explore the moderating role of PPP&Q, which was highlighted by different authors in their researches. All these efforts are made to present a consumer's point of view for marketers regarding green marketing strategies. After all, this research will enable marketers to get a strategic control over the execution of these strategies in order to achieve the organizational objectives.

In order to collect the required information to address the overall research questions and hypotheses, self administered questionnaire was preferred as a survey instrument. The reason is that in most of the previous studies, which were carried out in green marketing context, the researchers have used this technique for data collection. The other benefits of this technique are

less cost and minimal interference of researchers. The researchers' minimal interference reduces the response bias by the respondent. This technique allows the respondents to take their time to complete the questionnaire which reduces the interference of researchers.

Keeping in view the subject of this research, data was collected from four universities situated in Rawalpindi and Islamabad by using the convenience sampling technique. These universities were International Islamic University Islamabad, Muhammad Ali Jinnah University, Fast National University and Quaid-e-Azam University Islamabad. The sample frame for this study comprised of four hundred students, hundred from each university. Twenty three respondents did not complete their question papers. Therefore, these uncompleted question papers were dropped.

The convenience sampling technique was used because of time and cost constraints. Furthermore, due to many reasons sample frames consisted of undergraduate, graduate and postgraduate level students of business education. Firstly, there is a common perception among people that business students are more familiar, knowledgeable and concerned about the environment than students of other disciplines. Secondly, the major part of the data was collected from the students due to common characteristics shared by the target population. Another ultimate reason was that youngsters are a major part of the population in many developing countries, including Pakistan. The educated youngsters are considered to be the future of any country.

To address the research question stated in the study, all measures for the constructs were taken from previous studies, which were carried out from marketing perspective due to their proved reliability and validity. The questionnaire comprised of 47 items.

### **Measures of Constructs.**

Three questions measuring the degree of GPI of the survey respondents' were used (cf. Li, 1997; Taylor and Todd, 1995). The mean and S.D of the scale was found (mean= 4.011, S.D= 0.406). Similarly, for measuring the variable of OGI, researchers used questions of (Manget et al., 2009). The mean and S.D of the scale was found (mean= 4.261, S.D= 0.363). Likewise to measure the EC, twelve questions were adapted from the study of (Abdul-Muhmin, 2007). Little modification was made to collect the data in green marketing context. The mean and S.D of the scale was found (mean= 4.252, S.D= 0.460).

The five questions measuring the effect of EK on GPI of the survey respondents were adapted from earlier work by Mostafa (2007). The mean and S.D of the scale was found (mean= 3.799, S.D= 0.655). Similarly to measure the consumers' perception towards PPP&Q, two questions were adapted from the study of (D'Souza et al. 2007). Again little modification in scales was made in order to make them simple and easy to understand for the respondents of the study. The mean and S.D of the scale was found (mean= 4.153, S.D= 0.578). Each question of all scales was measured on five-point Likert scale with response options ranging from *Strongly Disagree* to *Strongly Agree*.

### Sample characteristics.

Source: Field data.	Frequency	Percentage
<b>Gender</b>		
Male	210	56
Female	167	44
<b>Age</b>		
Between 20 to 24	277	73
Between 25 to 30	100	27
<b>Education</b>		
Bachelor	182	48
Masters	136	36
Post Graduates	59	16

**Table I.**  
Demographical  
characteristics  
of respondents

Table # I shows the demographic profile of the respondents. According to this table, males comprised about 56, while female constituted 44 per cent of the sample. The profile of the respondent discloses that out of 377 respondents, 277 respondents were between 20 to 24 years of age, whereas 100 were between 25 to 30 years of age. Then researchers divided educational level of the respondents into three categories, i.e. Bachelor, Master and MS/PhD. One hundred and eighty two students were those who were doing bachelors, similarly one hundred and thirty six were doing Masters, and finally MS/PhD category comprised of fifty nine students.

### Reliability analysis

Prior to further data collection, researchers conducted a pilot study to test the suitability of the instruments used in this study. A total of 30 questionnaires, apart from sample size were circulated among university students', collected, and analyzed, so that the reliability of the instrument can be checked. The results of the pilot study confirmed the suitability of the used instruments. Table# II reveals the results of Cronbach's alphas along with their means and standard deviations.

	<b>Construct</b>	<b>Items</b>	<b>Mean (S.D.)</b>	<b>Cronbach Alpha</b>	
1	GPI	3	4.011 (0.406)	0.779	
2	OGI	8	4.261 (0.363)	0.757	
3	PPP&Q	2	4.153 (0.578)	0.686	
4	EK	5	3.799 (0.655)	0.810	
5	EC	12	4.252 (0.460)	0.743	

**Table II.**  
Mean, Std. Dev and  
Cronbach Alphas

The mean value of all the variables is greater than 4.0 except for environmental knowledge, which has the lowest mean of 3.799. The higher mean value of OGI, PPP&Q and EC indicates that these three variables are better and strong predictors of GPI. The lower value of EK signifies the lower level of environmental knowledge among the respondents, although EK is also a good predictor of GPI.

#### **4. CORRELATIONS, REGRESSION AND DESCRIPTIVE**

##### **ANALYSIS**

Keeping in view the nature of relationship among the variables, correlation matrix, simple regression, multiple regression and mean analysis was used to interpret the results of study.

On the basis of the literature review and research hypotheses H1, H2 H3, and H7, researchers used correlation matrix and regression for the interpretation of data. Table# III shows the correlation results for OGI, EK, EC and PPP&Q with GPI.

<b>H1</b>	<b>OGI</b>	Pearson Correlation	0.202**
		Sig. (2-tailed)	.000
<b>H2</b>	<b>EC</b>	Pearson Correlation	0.429**
		Sig. (2-tailed)	.000
<b>H3</b>	<b>EK</b>	Pearson Correlation	0.256**
		Sig. (2-tailed)	.011
<b>H7</b>	<b>PPP&amp;Q</b>	Pearson Correlation	0.276**
		Sig. (2-tailed)	.000

**Note:** \*\*Correlation is significant at the 0.01 level (2-tailed)  
\*Correlation is significant at the 0.05 level (2-tailed).

**Table III.**  
Correlation analysis  
(Relationship of OGI, EC, EK and  
PPP&Q) on GPI

The overall correlation results in Table# III indicate that all four independent variables are significantly and positively correlated with dependent variable. The results reveal that OGI is positively and significantly correlated with GPI of consumers in Pakistan (.202\*\*,  $p < 0.01$ , H1 is supported). This significant positive relationship was also predicted in the literature review. The correlation matrix established the positive relationship of EC with GPI of consumers (.429\*\*,  $p < 0.01$ , H2 supported). For the third hypothesis, again significant and positive relationship found between EK and GPI of consumers (0.256\*\*,  $p < 0.05$ , H3 supported). The results also reveal that PPP&Q is positively and significantly correlated with GPI of consumers in Pakistan (0.276\*\*,  $p < 0.01$ , H7 is supported).

<b>Hypotheses</b>	<b>Description</b>	<b>(<math>\beta</math>)</b>	<b>t- value</b>	<b>p- value</b>
H: 1	OGI → GPI	0.202	4.003	.000
H: 2	EC → GPI	0.429	9.191	.000
H: 3	EK → GPI	0.256	5.316	.000
H: 7	PPP&Q → GPI	0.104	5.377	.000

Note: R Square = .248; Adjusted R Square = 0.242; F = 40.977; Significance F = 0.00

**Table IV.**  
Regression analysis  
(Effect of OGI, EC, EK  
and PPP&Q on GPI)

Results of regression analysis in Table # IV show that overall the full model, with four independent and one dependent variable is significant with an overall F value of 40.977 ( $p < 0.01$ ). Moreover, this explained 24.2% of the variation in the dependent variable as indicated by the adjusted  $R^2$  value. According to the results of regression analysis, all of the four hypotheses were accepted.

The results in Table # IV indicate that 20.2% variation in a dependent variable (GPI) is caused by an independent variable, i.e. OGI. P value (i.e.  $p < .05$ ,  $t = 4.003$ ) indicates that results are significant and hence H1 is accepted. The results in Table # IV indicate that 42.9% variation in a dependent variable (GPI) is caused by an independent variable, i.e. EC. P value (i.e.  $p < .05$ ,  $t = 9.191$ ) indicates that results are significant and hence H2 is accepted. The results in Table# IV indicate that 25.6% variation in a dependent variable (GPI) is caused by an independent variable, i.e. perceived EK. P value (i.e.  $p < .05$ ,  $t = 5.316$ ) indicates that results are significant and hence H3 is accepted. The results in Table # IV indicate that 10.4% variation in a dependent variable (GPI) is caused by an independent variable, i.e. PPP&Q. P value (i.e.  $p < .05$ ,  $t = 5.377$ ) indicates that results are significant and hence H7 is accepted.

Dependent Variable	Demographics	Mean	F	Sig.
GPI	Bachelor	4.119	9.65	.000
	Master	4.000		
	MS/Ph.D	3.994		

**Table V**  
One way ANOVA used for consumer GPI and education level

Respondents' educational level have significant impact on consumers GPI ( $F = 9.645$ ,  $p < 0.05$ ). The difference in consumers GPI is between those in the *bachelor* group and those with **MS/Ph.D.** education. The results (Table # V) indicate that the consumers GPI is getting lower

with education level, that is, *bachelor* respondents have more favorable attitude towards GPI (mean = 4.119) as compared to those respondents with higher level of education.

Age of the respondent	N	Mean(S.D.)	Gender of respondent	N	Mean(S.D.)
Between 20 to 24	227	4.07(.377)	Male	210	4.17(.308)
Between 25 to 30	100	4.35(.158)	Female	167	3.77(.322)

**Table VI**  
Mean analysis, age and gender of the respondent

The results (Table # VI) indicate that gender of respondent groups influences their responses', male group is much more inclined to purchase environment friendly products (mean = 4.17) as compared to female group (mean= 3.77). The results (Table # VI) also indicate that age of respondent groups also influences their response , the respondents with age group “*between 25 to 30*” have more favorable attitude to purchase green products (mean = 4.35) as compared to those respondents with age group “*between 20 to 24*” (mean= 4.07).

#### 4.1. Moderating effect of PPP&Q.

Model 1	Beta	T	Sig	Adjusted R-square	Change R-square
Step#1 OGI	0.202	4.00	.000	.038	.041
Step#2 PPP&Q	0.240	4.71	.000	.083	.095
Step#3 PPP&Q* OGI	1.681	4.91	.000	.143	.150
<b>Model 2</b>					
Step#1 EC	.429	9.19	.000	.182	.184
Step#2 PPP&Q	.258	5.75	.000	.246	.250
Step#3 PPP&Q* EC	1.427	3.24	.001	.265	.271
<b>Model 3</b>					
Step#1 EK	.256	5.14	.000	.063	.066
Step#2 PPP&Q	.253	5.23	.000	.125	.129
Step#3 PPP&Q* EK	1.184	2.65	.008	.139	.145

**Table VII.**  
Moderating role of PPP&Q  
(Note: Dependant Variable: GPI)

#### **4.1. 1. H4: PPP&Q moderates the relationship between GPI and OGI.**

To test the moderating effect of PPP&Q between OGI and GPI, hierarchical regression analysis was used. Ali, et al. (2011) and Sharma et al. (1981) suggested a three-step hierarchical regression analysis to test for a moderating effect. The results in Table # VII indicate that 4.1% variance in GPI is explained by the OGI ( $p < .05$ ). Similarly at step 2, 9.7% variance was explained by the PPP&Q ( $p < .05$ ). The additional 15% variance in dependent variable (GPI) was explained by the interaction term ( $p < .05$ ) which proves the moderating role of PPP&Q.

The results (Table # VII) indicate that the relationship between OGI and consumers GPI is decisively moderated by PPP&Q of the chosen product used in this study. The effect of competitive product price & quality in influencing the purchase of a green product is very strong for respondents from environment friendly businesses having a positive image toward the protection of the environment.

The results further indicated that the effect of OGI toward environmental protection on consumers' purchase intention is a crucial prerequisite, and can be further enhanced with the existence of PPP&Q. Thus, we could now conclusively state that the higher the offerings of the green products with competitive price and quality as compared to traditional products, the stronger the relationship between an OGI and respondent purchase intention. This reveals that if businesses offer environment friendly products to respondents with identical price and quality as compared to traditional products, along this an organization has a positive image in the eyes of a respondent, GPI will be high. In another word, consumers will purchase green products more often, if businesses offer competitive green products in terms of price and quality as compared to traditional products to those customers who are willing to give preference to environment friendly businesses.

#### **4.1.2. H5: PPP&Q moderates the relationship between GPI and EC.**

The results in (Table # VII) indicates that 18.4% variance in GPI is explained by the EC ( $p < .05$ ). Similarly at step 2, 25% variance was explained by the PPP&Q ( $p < .05$ ). The additional 27.1% variance in dependent variable (GPI) was explained by the interaction term ( $p < .05$ ) which proves the moderating role of PPP&Q.

The results concluded that the relationship between EC and consumers GPI is positively moderated by PPP&Q. The effect of competitive product price & quality in influencing the purchase of a green product is strong for respondents having high and positive concerns toward the protection of the environment. This reveals that if businesses offer environment friendly products to respondents with identical price and quality as compared to traditional products, along these respondents have high and positive concerns toward the protection of the environment, GPI will be high.

#### **4.1.3. H6: PPP&Q moderates the relationship between GPI and EK.**

The results in (Table # VII) indicates that 6.6% variance in GPI is explained by the EK ( $p < .05$ ). Similarly at step 2, 12.9% variance was explained by the PPP&Q ( $p < .05$ ). The additional 14.5% variance in dependent variable (GPI) was explained by the interaction term ( $p < .05$ ) which proves the moderating role of PPP&Q.

The results conclusively state that the higher the offerings of green products with competitive price and quality as compared to traditional products, the stronger the relationship between a respondent EK and GPI. This shows that competitive price and quality of a green product have a positive impact on customers GPI, if they have a higher level of EK. In other words, consumers will purchase environment friendly products more often, if businesses offer competitive green

products in terms of price and quality as compared to traditional products to those customers who are more knowledgeable about environmental issues.

## **5. DISCUSSION AND MANAGERIAL IMPLICATIONS**

It has been emphatically recognized that poverty alleviation and environmental degradation are critical global issues (Talpur, May 20-2010), and these deteriorating global environmental issues have attracted considerable attention around the globe (Mainieri et al., 1997), consequently, finding schemes and methods to improve the moribund trend. All the established research hypothesized relationships were confirmed, and that consumers green purchase intentions are influenced by OGI (Manaktola and Jauhari, 2007; Ottman, 1993), EK (Manrai et al., 1997), EC (Laskova, 2007) and PPP&Q (D'Souza et al., 2006). The last three hypotheses confirmed the moderating effect of PPP&Q variable to enhance the green purchase intentions of Pakistani consumers.

Furthermore, regression analysis revealed that PPP&Q is a strong moderator of OGI, EC, EK and GPI relationship. Overall, the findings highlight the importance of PPP&Q in explaining the relationship between predictors and criterion variables, and should be treated as an important variable.

In Pakistan green purchasing is yet a very new concept and so far, literature on promotion of green purchasing for individual consumers is still lacking. Even so, now due to international regulations and requirements, consumers and corporations are becoming conscious about the less environment friendly products due to their own welfare and interests; that is why this issue is a very modern topic in Pakistan. Therefore, at this stage businesses may offer green products to Pakistani consumers but with competitive prices and quality as compare to traditional products.

Furthermore, these research findings may also benefit businesses which want to offer environment friendly products to educate consumers.

The results from this study also show that these educated respondents have a high positive attitude regarding green products and are ready to buy green products more often (Fraj and Martinez, 2006; Haron et al., 2005; Manrai et al., 1997; Yam-Tang and Chan, 1998) but as for as the product price and quality are concerned, green products must perform competitively just like the traditional products (Ali et al., 2010; D'Souza, Taghian, Lamb, and Peretiatkos, 2006; Gan, Wee, Ozanne and Kao, 2008). According to study findings that there are many customers who have positive and high intentions to purchase green products but due to higher prices and poorer quality as compare to non-green products, they do not buy them. Hence, along with environmental aspects manufacturers should consider the prices and quality of green products to attract these consumers.

Overall, there are many advantages linked with conducting the study; at first, the study helped to determine the determinants of developing countries consumers' green purchasing intentions. Secondly, it introduced perceived products price and quality as an important moderating variable to enhance the relationship between predictors and criterion variable. Further, it will assist managers to gain a better and an enhanced understanding of the green consumers' market as well as of developing countries consumers' green purchasing behaviors.

### **5.1. Policy implications**

In most studies, consumers have expressed strong concerns regarding the environment, besides with eagerness to buy products and services that they consider will add to a better planet. With the passage of time, green consumerism is already a significant movement, and it assures to become even more significant. Hence, what is better for the environment is better for the

organization also? Therefore, environmental marketing, and green marketing can be done by businesses or enterprises to increase green purchasing intention of consumers.

One of the practices of green marketing is environmental education. Businesses may emphasize the importance of environmental protection, ways to protect the real natural environment, advantages of environmental protection and hazards of anti-environmental practices in their businesses' advertising, newsletters in order to sensitize the people regarding the masses of the looming threats to environment in Pakistan.

Secondly, it is very obvious that social influence has a deep impact to young adults' decision making. Hence, referral marketing or word-of-mouth marketing can be an effective way in promoting environment friendly behaviors to this particular consumer group. Online social networks, for example, Twitter and Facebook have become popular and even a 'must have' account for young adults to get connected with friends. If possible, these online social networks have been used by marketers of green companies for advertising and promotional purposes. To create green purchasing intention and finally green purchasing behavior, testimonials and user reviews on green products and ecological matters may be post in the social network to gain publicity.

Green related steps, policies and campaigns should be taken in consideration by government in the context of purchase intentions. For example, government may announce import export duty exemption for importers and exporters, tax exemptions and subsidies to green businesses. The announcement might encourage businesses to produce products and services by keeping in view environmental considerations, besides these efforts would be able to encourage and stimulate the consumers' intention of purchase green products and services.

## **5.2. Limitations**

It should be emphasized that only green purchase intentions are measured and explained in this research study. For that reason, the measurement of (future) actual green purchase behavior might lead to different results. Future researchers can find the green purchase behavior of the respondents by considering all those respondents who might buy at least one green product. So that intention–behavior discrepancies may occur because of developments and changes in model, consumers' characteristics and product selection.

Secondly, due to time constraints and limited resources, the sampling frame for this study was only limited to four universities undergraduate, graduate and post graduate students as subject. Therefore, results must be used with caution. Consequently, the results of this study are not capable of generalization to all populations of consumers in Pakistan. By considering this very limitation, it is recommended that future research shall utilize broader demographic profile to analyze respondents. As young adults are not the only green consumers. There may be other age groups like middle agers and elderly people are also potential green consumers.

In addition, research issues in broader geographical location all over Pakistan should also be conducted. Furthermore, this research study examined four variables influencing GPI of Pakistani consumers. There are yet many purchase considerations for customers to decide whether or not to buy environment friendly products. Future research, therefore can consider other purchasing considerations and demographic factors as determinants of GPIs.

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