

## THE IMPACT OF GREEN MARKETING MIX ON GREEN BUYING BEHAVIOR: (A CASE OF KHYBER PAKHTUNKHWA EVIDENCE FROM THE CUSTOMERS)

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### ABSTRACT

*The purpose of the study is to examine the factors affecting green buying behavior. The research study explored the subject of green consumerism in background of employees of public sector universities of Khyber Pakhtunkhwa, Pakistan. The researcher mainly focused on noticing the determinants effecting green buying behavior of consumers. The current research study was grounded on quantitative method to check the framed hypotheses. Purposive sampling technique is used to distribute adapted questionnaire amongst designated sample size. Principle component analysis (PCA) were used to assess the unifactoriality of the known variables. The results of the tests presented that all the items are correlated with one another, additionally it also give sufficient validation of the dimension validity. Structural Equation Modeling (SEM) Technique were applied to check the relational hypotheses. The domino effect of the study shows that green product, green price and green promotion have significant impact on green buying behavior, while there is no significant impact of green place on green buying behavior with insignificant P-value.*

**Keywords:** Green Marketing, Green Product, Green Price, Green Promotion, Green Place and Green Buying Behavior

### INTRODUCTION

From last two decades, the collective efforts and high concerns throughout the world to protect the earth becomes brasher. Ecological matters and its harmful impacts are the key subject for everyone around the world. Global warming, fall of natural resources, environmental pollution, deforestation, depletion of ozone layer, water and air pollution are still mysterious problems for every inhabitant of Pakistan and for the entire developing world today. In current situation, environmental and health degradation has emerged a very hot issue of concern for the society, regulatory authorities and in addition to the corporate sector and business organization. The harmful effects of corporate sector and manufacturing firms are mainly responsible for aforementioned problems (Chekima et al., 2017).

The business world has gained financial growth at the cost of ecological degradation, biodiversity and climate change. To work and resolve the conflict between economic development and environmental quality, the international society promote the policy of green and sustainable development, with aim of creating an environmentally and socially justifiable world that may not compromise the needs of upcoming generations (Moore, 2005; Adomssent, Godemann, & Michelsen, 2007; Hirokawa & Salkin, 2010).

The main purpose of sustainable development is to restitute the ecology and human–nature association through spreading responsibility to both natural and social worlds (Beringer & Adomßent, 2008). Many researches shows that awareness regarding ecological issues can play an essential role in indorsing the public's awareness for maintainable and sustainable growth (Fiksel, Livingston, Martin,

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& Rissing, 2013). In a conference the policy makers stressed the important role of education in accomplishment of the goals of giving respect and cultivating the natural resources (Wals & Corcoran, 2006).

Keeping in view all the consequences of environmental degradation the environmental instability and energy crises is at our door-step. For this a global movement to decrease the greenhouse gases and energy crises has gained a momentum. Internationally everybody is debating to have a strong command to control and reduce the emission of greenhouse gases and more specifically focusing on carbon dioxide (CO<sub>2</sub>) emissions from passenger and common vehicles, which is forecasted to touched 4.7 giga tons and also number of vehicles on the road is predicted to be very high worldwide by 2030 (McKinsey & Company, Mar 2009).

In general, concern for environmental issues has slowly improved from last three decades (Kim & Choi, 2005). It is evident by the previous literature that consumer in west are supporting environmental protection actions. More than 70% of users reported that they are ready to purchase green goods. 49% of the consumers suggest that they are avoiding to purchase such products which are not in favor of environment (Hueber, 1991). The government of Newzeland Norway, Sweden, Denmark and Austria etc are working to develop green codes for sustainable development like renewable energy sources on top priority. They produced 20% of a country electricity from wind. Sea snakes in these countries are producing electricity form sea waves. Now a days China, Germany, India, Spain are the biggest contributor in renewables. Five thousand houses are producing their own energy in Germany (Goh, & Wahid, 2017; Ali, Ali, Ahmad, 2011; Kohl, 1991; Reitman, 1992).

Large number of consumer's survey showed that their purchases were affected by environmental concerns (Chase & Smith, 1992). Keeping the issue in mind, this current research study suggest a refined cohesive framework concerning to consumer green purchasing behavior. The existing research study is mainly provide a direction for the marketer as well for the manufacturer to solve the serious issue of green consumerism. The future investigators in the area may reflect this framework in their further realistic studies to check its applicability in their research context.

In the recent years green marketing has shown a promising growth worldwide in general and specifically in Asian countries (Awan, & Wamiq, 2016). Most of the researchers on green marketing are focused on developed part of the world, very less attention has been paid to the developing countries like Pakistan. Keeping earlier literature in view it is imperative to conduct a research study to unearth by investigating green marketing practices and their effects on customers, organizations and government. Nevertheless, it is also needed to explore the determinants which affect green purchase intention in Pakistan, with an understanding to frame appropriate response that is socially determined and leading to the ultimate and eventual well-being of the society. For this it is needed to determine the factors affecting green purchase intention among Pakistani consumer.

## LITERATURE REVIEW

### *Green Marketing Mix*

Green product, green price, green place and green promotion are basically same as the traditional marketing mix. The major difference between these two concepts is that traditional marketing mix mainly focusing on profit while on the other hand green marketing mix focusing on planet which is necessary for all the human beings. The combination of 4 Green Ps is known as Green Marketing Mix namely Green product, Green promotion, Green Place and Green Price (Tan & Lau, 2014; Awan, &

Wamiq, 2016).

Green marketing refers to the ratification of consumer needs and desires in conjunction with the conservation of the natural environment. Green marketing manipulates the four elements of the marketing mix to sell products and services offering superior environmental benefits in the form of reduced waste, increased energy efficiency, and decrease the release of toxic emissions (Awad, 2011).

***The evolution of green marketing mix can be divided in three phases:***

- The first phase was termed “Ecological” green marketing. During this stage all marketing activities were concerned to solve environmental problems and provide remedies for such problems (Baker, & Ozaki, 2008).
- The second phase was “Environmental” green marketing. In this phase the focus were shifted to clean technology that involves designing of innovative new products which take care of pollution and waste issues.
- Third phase was “Sustainable” green marketing. It incorporates a broad range of activates including product modification, changes in the production process, packaging changes as well as modification of advertisement procedure.

***Green Product***

The product may possibly be called “green” if its fabrication and production procedure is ecological and less destructive and harmful to the environment. It is clear that every manufacturing and business firms are responsible for eliminating and reducing the environmental pollution during their production process. According to Kellerman (1987), “The environmental objects in planning products are to reduce the consumption of resources and to upsurge the conservation of scarce resources”. The product needs to be industrialized based on the demands from the buyer which can be broken down from recycled ingredients. Green Products are not only save water, energy, money and other resources but also lessen the harmful effect on environment. Nike, Samsung, Dowlance, Aays, Haier etc refrigerators and AC, Nerolac lead free paints, HP power saver laptops, Philips promotion of CFCs bulbs as “Earth Savers”, McDonald's, The Energy Saving LG consumer, Xerox photocopier papers, Coca-Cola, Pepsi, Walt Disney World (WDW), Body Shop etc and many other companies has marketed variety of products by highlighting that it has condensed wastage and used environment friendly raw materials (Wymer, & Polonsky, 2015).

1. Those products which are made from recycled materials, e.g., recycled paper.
2. Products that can be recycled
3. Those products which have less detrimental impact on environment
4. Products with ecological friendly packaging, e.g., McDonald’s packaging with degradable paper.

***Green Price***

Now a day's number of firms trying to take better pricing decisions (Maheshwari, Malhotra, 2011). Price is a critical component of the green marketing mix. Consumers are often ready to pay a premium prices if the perceive additional value in a product such as improved performance, function, taste, visual appeal etc (Kumar, 2013; Henion, 1976, Henion, 1976). If the worth of each product is based on its true full cost, which comprises its social and environmental costs, then there would be no need for

environmental marketing. It is evident from the previous literature that environmental marketing can transform non-environmentally worried consumers into ecologically concerned customers by way of effective training and merchandising.

Green Pricing can be define as the price which takes many things into attention like peoples, planet and profit in a way which ensure the efficiency in production and have less detrimental effects on environment. Nevertheless, ecological advantage may not be the only explanation or justification for premium prices. Early research studies findings have proposed that environmentally concerned users are not every time willing to pay a greater price for ecologically sympathetic products (Herberger & Buchanan, 1971). On the opposing, ecologically answerable products, are frequently less costly by keeping product life cycle cost in mind. Some examples of such products contain fuel-efficient vehicles or cars, energy-efficient lamps, and non-toxic products (Khwaja, 2012).

### ***Green Promotion***

Promotion can be refer to the company activity which communicates the merits and advantages of the product for the purpose to attract the customers. Green promotion constantly keeps Publics, Planet and profit in thoughts while determining the promotional activities such as advertising, website, signage etc. The purpose of green marketing is to facilitate consumers about the use and benefits of green goods and services. Promotion play a vital role the in the success of every organization (Hayat, Nadeem & Jan, 2018). For instance, Toyota is promoting gas / electric hybrid technology as a part of green promotion.

### ***Green Place***

Green place includes activities connected to managing firm's demand chain by checking and improving ecological performance. Corporations have started putting their exertion as well as working with their station partners or channel members to gain reusable or disposable raw material in order to practice Green Marketing Mix – Place. It is refers to the process of providing the product and services in a way that is less harmful for the environment. It refers to the activity of easing consumers in the product and services delivery process. Green place approaches covers transportation channels, product flow channels, locations and all such links which work for the tenacity to make sure the availability of the product from place of production to the place of consumption. It is the duty of marketers to place the company green products broadly because most of the customers are not aware (Queensland Government, 2006). The placement strategies need to be constant with the ecological image as a competitive advantage (Queensland Government, 2006; Bradley, 1989).

### ***Consumer Buying Behavior***

Studies conducted in Brazil, Canada, France, Germany, India, United Kingdom and in United States has shown that customers are worried about the environment and air pollution, reduction of natural resources and ozone layers (Maheshwari, Malhotra, 2011, Mida, 2009). More to this, the report has specified that, 87% of buyers are anxious about the ecological and social influences of the goods and services they buy. Many studies are in favor that low promotion and awareness of green products is the main reason for not having any intention to purchase green products. It may be possible that the population are not properly aware from the underlying benefits of green products and services or it may be possible that the firm have less resources to produce green goods. Consumer buying behavior

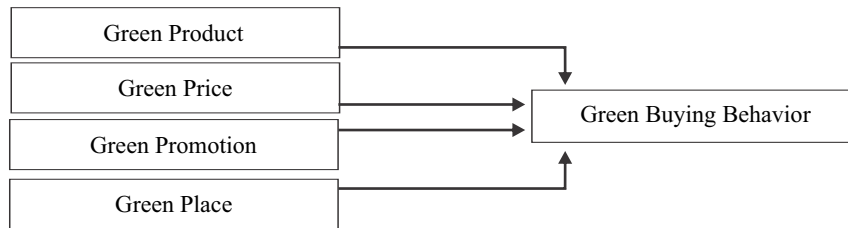
is an individual or group process in which the consumers search, select and finally makes a thoughtful purchase for the purpose to satisfy his/her need (Mida, 2009).

**Pakistani Perspective of Green Marketing**

Pakistani consumers are now a days seen anxious for environment which can be observed from the “Billion Tsunami”, ban on use of plastic bags, Implementation of plantation, various Government regulations and Supreme Court judgments related to the environment and its influence on earth. Pakistan has also taken a step and lead to control pollution by signing in the international competition of plantation which is recently achieved in shape of billion tree sonami. Pakistan mark first to achieve the land mark. Government has decided to take defensive measures like execution of emission standards.

At present several urban areas of Pakistan are pretentious by air pollution due to industrialization. According to World Health Organization 3 major cities of Pakistan are in top 20 list of polluted cities due to particulate matters in air. Global Warming, depletion of natural resources, environment pollution control, deforestation, hole in ozone layer and green-house gases are discussed in various forums in Pakistan It is also noticed that air pollution is mainly caused by industries (Awan & Muhammad, 2015). Though many procedures have been made to protect the environment, and the increasing level of pollution day by day.

**Theoretical Framework**



**Hypothesis of the Study**

- H1:** There is a significant impact of green product on green buying behavior.
- H2:** There significant impact of green price on green buying behavior.
- H3:** There is significant impact of green promotion on green buying behavior.
- H4:** There is a significant impact of green place on green buying behavior.

**METHODOLOGY FOR THE STUDY**

Population for the study in hand are public sector universities employs in Khyber Pakhtunkhwa. Total of 264 respondent were selected by using Krejcie and Morgan formula of determining the sample size (Krejcie, & Morgan, 1970). The data were collected and gathered from those consumers who have experience of purchasing any products by using adapted questionnaire. A five-point Likert scale was applied to measure the items for each dimension. In the existing study purposive sampling technique is used for the purpose of data assortment. Sample size for the existing study was 264. Structural equation modeling were further used for the purpose of data analysis and to check the relational hypothesis. SPSS were used for descriptive statistics, reliability statistics and EFA. Universities were selected as population due to knowledge about green marketing and green products.

**POPULATION SIZE UNKNOWN:**

$$\text{SAMPLE SIZE} = \frac{\left( \frac{\text{RANGE}}{2} \right)^2}{\left( \frac{\text{ACCURACY LEVEL}}{\text{CONFIDENCE LEVEL}} \right)^2}$$

**Confidence Levels:**

	$\alpha$	$\alpha/2$
.10 level =	1.28	1.64
.05 level =	1.64	1.96
.01 level =	2.33	2.58
.001 level =	3.09	3.29

**Accuracy Levels:**

Range X	Desired Level of Accuracy (expressed as a proportion)

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**POPULATION SIZE KNOWN:**

$$\text{SIZE} = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

$X^2$  = table value of Chi-Square @  $d.f. = 1$  for desired confidence level  
 .10 = 2.71    .05 = 3.84    .01 = 6.64    .001 = 10.83  
 $N$  = population size  
 $P$  = population proportion (assumed to be .50)  
 $d$  = degree of accuracy (expressed as a proportion)

**ANALYSIS AND RESULTS**

**Table 1:** Reliability Statistics

Variables	Cronbach's Alpha
Green Buying Behavior	.822
Green Product	.783
Green Price	.873
Green Promotion	.910
Green Place	.812

Reliability assessment refers to produce consistent results, while in most of the cases it is known as a tool that provides consistency. In short way reliability concerned with the overall uniformity of findings of the research (Cooper & Schindler, 2003). The value of Cronbach's alpha used in the study were above the required mark. It is evident from the previous literature that value above .70 or greater is considered adequate value. The above table indicates the value of all individual variables which is well above from the desired range. The value of each variable in the current research study is more than .70.

**Table 2:** Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Green Buying Behavior	264	3.11	4.67	3.8519	.25605
Green Product	264	2.80	4.60	3.8167	.55649
Green Price	264	3.20	4.60	3.8788	.32885
Green Promotion	264	2.80	4.80	3.8174	.43093
Green Place	264	3.20	4.80	3.9379	.37336

The above table indicates the findings of the descriptive statistics includes number of respondents, minimum, maximum, mean values and standard deviation of the present research study used to pinpoint the features of the collected data from the selected sample respondents of green and conventional product users of Khyber Pakhtunkhwa. The results revealed that dependent variable green buying behavior (GBB) is having minimum value of 3.11 with maximum value of 4.67, mean of GBB is 3.85 and standard deviation is .25605. Green product (G Product) aspect of the study is having lowermost value of 2.80 with highest value of 4.60, the current mean of the construct (G product) is 3.84167 and finally standard deviation is .55649. Green price (G Price) facet having least value of 3.20 with maximum value of 4.60, mean of G Price is 3.8788 and standard deviation is .32885. Green promotion (G Promotion) independent variable have minimum value is 2.80 with maximum value of 4.80, mean of G Promotion is 3.8174 and standard deviation is .43093. Finally values of the last independent variable green place (G Place) is having minimum value of 3.20 with maximum value of 4.80. The mean value of green place is 3.9379 with standard deviation of .37336.

**Table 3:** Assumptions' Statistics for Factor Analysis

Constructs	DCM	KMO	BTS	Sig
Green Buying Behavior	.001	.798	1799.894	000*
Green Product	.138	.822	514.984	000*
Green Price	.076	.713	670.784	000*
Green Promotion	.058	.866	742.633	000*
Green Place	.004	.720	1455.701	000*

DCM: Determinant of Correlation Matrix

Kaiser-Meyer-Olkin Measure of Sampling Adequacy

Bartlette's Test of Sphericity

KMO and Bartlett's test indicate the suitability of your data for structure detection. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in your variables that might be caused by underlying factors. It is compulsory to check the adequacy of data set before going to factor analyzed the data. It is further discussed that the data is appropriate or not. It is validated by the previous studies that large enough sample size can provide better and great result. Before factorization the adequacy of sample size is compulsory. A number of opinions are available about the data set. It is recommended that there must be at least two hundreds (200) scores (Holden & Lynch, 2004). Field (2005) and Suplico, (2009) proposed 300 sample size. The current study in hand having 264 sample respondents which shows that the sample size is enough for further analysis. KMO is ranges from 0 to 1, above .60 is considered adequate for further analysis. If it is less than .50 it

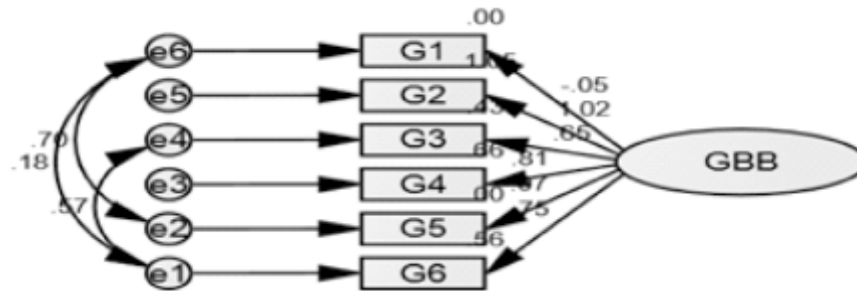
shows that there is the issue of sample size. It is also absorbed that value below .60 mean that data is not good. The value of DCM need to be greater than .00001 (Pallant, 2011).

**Structural Equation Modeling**

In this study the researcher used structural equation modeling (SEM). The study contain 4 independent variables linked to green buying behavior, which were tried to evaluate individually for the purpose to get a good model fit.

**Green Buying Behavior**

Measurement Model for Green Buying Behavior

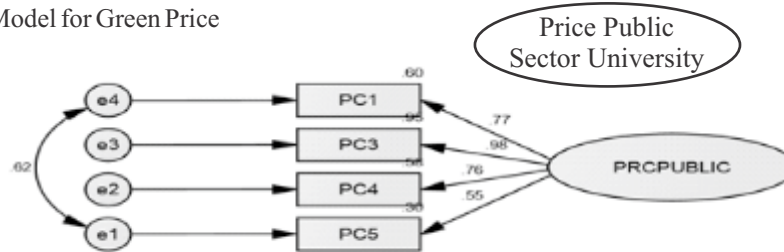


CMIN/DF	SRMR	GFI	CFI	TLI	RMSEA
2.518	.0203	.982	.991	.977	.060

Criterion variable GBB were initially comprised of 9 items, after EFA three items were detached. The loading for the remaining items were done; modification indices were exercised and needed covariance were pinched for the purpose to get good fit. Some items were eliminated, it was due to low loading and below the cutoff value. The overall result of model revealed a good fit for the above variable GBB.

**Green price**

Measurement Model for Green Price



CMIN/DF	SRMR	GFI	CFI	TLI	RMSEA
4.585	.01	.991	.995	.967	.117

At the beginning green price variable were consist of 5 items in which one were eliminated due to low loading on a single factor. Covariance were drawn where it is needed. At the end a good model fit were achieved. Which shown in the above figure.



**Green Product**

Measurement Model for Green Product

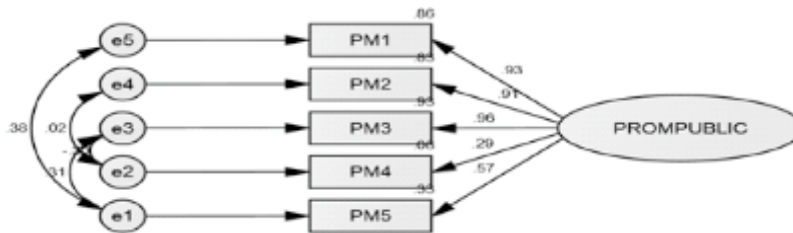


CMIN/DF	SRMR	GFI	CFI	TLI	RMSEA
4.099	.01	.992	.994	.964	.061

The above figure revealed that after EFA and reduction of a single item showed a good model fit and single loading. The above values of CMIN, SRMR, GFI, CFI, TLI and RMSEA are among the desired range. Needed covariance were drawn to get a good model fit.

**Green promotion**

Measurement Model for Green Promotion

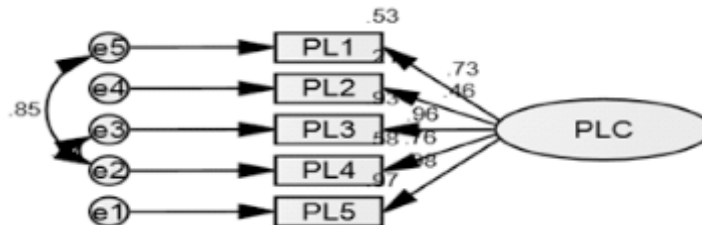


CMIN/DF	SRMR	GFI	CFI	TLI	RMSEA
2.533	.01	.996	.998	.985	.067

The items included in promotion variable were further subjected for confirmatory factor analysis. Items were loaded substantially on a single factor. Covariance were drawn for the purpose to get a good model fit. No item were eliminated because the results shows single loading.

**Green Place**

Measurement Model for Green Place



CMIN/DF	SRMR	GFI	CFI	TLI	RMSEA
2.210	.019	.990	.992	.998	.068

Green place as predictor variable were analyzed. EFA were done which shows single loading of all items. CFA were subjected which shows a good model fit. Not a single item were eliminated. Results revealed and shown in the above figure.

**List of Abbreviations used for Dependent and Independent Variables**

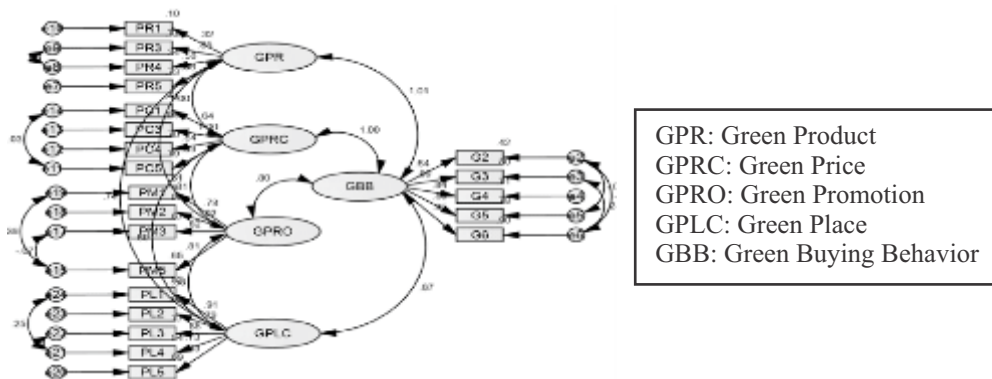
- GBB:** Green Buying Behavior
- PRDPUBLIC:** Product public sector universities
- PRCPUBLIC:** Price public sector universities
- PROMPUBLIC:** Promotion public sector universities
- PLC:** Place public sector universities

**Table 4:** Measurement Model Summary

Construct	Fit Indices					
	CMIN	SRMR	GFI	CFI	TLI	RMSEA
Green Buying Behavior	2.518	.02	.982	.991	.977	.060
Green Product	4.099	.01	.992	.994	.964	.061
Green Price	4.585	.01	.991	.995	.967	.117
Green Promotion	2.533	.01	.998	.996	.985	.067
Green Place	2.210	.01	.990	.992	.998	.068

**HYPOTHESES TESTING**

Structural equation modeling were used to test the framed hypotheses. Path analysis were done to check the association of independent variables with dependent variable green buying behavior. The results of the overall path analysis shown in the below figure and table.



**Model Fit Summary:**

<b>CMIN/DF</b>	<b>GFI</b>	<b>TLI</b>	<b>CFI</b>	<b>RMSEA</b>	<b>SRMR</b>
2.743	0.948	0.977	0.954	0.048	.020

**Results of Hypotheses:**

Hypothesis	Structural Paths	Estimates	Std. loading	C.R	P	Results
H1	GPR→GGB	-.157	.079	-1.994	.046	Accepted
H2	GPRC→GGB	2.106	.912	2.310	.021	Accepted
H3	GPRO→GGB	1.530	.674	2.269	.023	Accepted
H4	GPLC→GGB	-.011	.054	-.207	.836	Rejected

**HYPOTHESES TESTING**

The confirmatory factor analysis (CFA) was conducted on all the constructs and measurement models which turned out to have a goodness of fit with the data following the criteria assessment. The results shows a good fit with acceptable p value below .05 except green place. Four hypothesis were framed and were checked through structural equation model (SEM). Green product, Green price and Green promotion finds with a significant relationship with the dependent variable green buying behavior while green place finds with insignificant relationship with green buying behavior.

**H1:** There is a significant impact of green product on green buying behavior.

**H2:** There is a significant impact of green price on green buying behavior.

**H3:** There is a significant impact of green promotion on green buying behavior.

**H4:** There is no significant impact of green place on green buying behavior.

On the bases of results there is a significant impact of green product, green price and green promotion on green buying behavior while green place found with insignificant impact on green buying behavior. The results are consistent with other researcher done in another part of the world. It is concluded that respondents are found with fewer discussion about green place activities (Irawan & Darmayanti, 2012). Place is one of the most important activity in marketing and having influence on company performance but here no momentous relationship was establish between place and green buying behavior. Furthermore the current results also found consistent with Axelrod et al, 2015, Berger & Corbin., 2013, Lee, 2008).

**CONCLUSION**

SEM were used to check the hypotheses. The results of the study demonstrated that green product have significant impact on green buying behavior. Likewise, environmental concern from the point of (Ali & Ahmad, 2012; Ahmad & Juhdi, 2010; Kim & Han, 2010) could directly influence the intention to purchase green product. Many studies are found relevant with the results of the current study (Ahmad & Juhdi, 2010; Berger & Corbin., 2013). The studies reported that before product commercialization it is necessary to provide a platform to the customer to make them fully aware from green marketing and their societal benefits.

Green price is another positive predicate dimension of green buying behavior. The current results of the study find consistent with the previous studies (Ali & Ahmad, 2012; Ahmad & Juhdi, 2010). It is proved that green price have a positive relationship with green buying behavior. A positive relationship exist between green promotion and green buying behavior. Green promotion is a strong predictor for the acceptance of green products McKinsey & Company, (Mar 2009). Positive link between promotion and GBB were found. The hypothesis gained statistical support ( $p < 0.05$ ). A possible reason for the acceptance of hypothesis is that in all over the world through promotion you can get everything for organization. The result are found similar with Lee, (2008) where he stated that

promotion affect green purchase intention. Kim et al, (2005) quantified a resilient relationship between promotion and GBB. It is specified that promotion could possibly help in the acceptance of green goods (Kim et al, 2005). There is no significant impact of green place on green buying behavior. From the tested hypothesis it is concluded that three hypothesis were found significant in relation with green buying behavior while one is rejected due to insignificant p-value.

#### ***Limitation and Future Direction***

The present study is directed to explore the association of green product, green price, green promotion and green place with green buying behavior.

- Longitudinal data will provide more authentic results.
- Current study is limited only to Khyber Pakhtunkhwa due to some limitation, rest of the provinces were not take into account.
- It is recommended for the future research to widening the study setting across Pakistan for the purpose to get a complete picture and concrete results for justification of green purchase intention of working consumers.

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