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## PACKAGING FEATURES AND CONSUMER BUYING BEHAVIOR TOWARDS PACKAGED FOOD ITEMS

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### ABSTRACT

*This study aimed to determine the effects of packaging attributes on consumers' buying behavior. Specifically, to investigate the effect of packaged food's graphics, color, size, shape, product information and/or packaging material on consumers' buying behavior in Pakistan. Data was collected through the use of questionnaire from 300 individuals and was analyzed through Confirmatory Factor Analysis and Structural Equation Modeling. The study found a significant relationship between graphics colors, packaging size, shape, product information of packaging material with consumers' buying behavior. The study concluded that the packaging attributes are examined, are contributed in communicating product quality that affects purchase behavior. The study recommends that food manufacturers must understand the consumer response towards their packaging and integrate their input into designing a better packaging by innovations. This can be achieved by involving consumer directly in designing the final packaging of product through their response.*

**Keywords:** Product packaging, Buying behavior, Consumer' behavior, SEM, CFA, Pakistan

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# 1. INTRODUCTION

## 1.1 Background

Product is a combination of tangible and intangible goods and services offers to a customer for sale. It is the idea, method, information, service or object created as a result of a process and serves a need or satisfies a wish. Consumers are very good at finding new products that fulfill their needs and demands. The buying behavior is easily identified through consumer's attraction towards product, perception of consumer, preference of consumer.

Product is made up of different elements: quality, protect ability, fulfilling the consumer's need and packaging. Packaging plays the main role for catching the consumer's attraction. 'Packaging is the container for a product – encompassing in physical appearance of the container and including the design, color, shape labeling and material used.'

Packaging has a huge role to play in the positioning of products. Packaging design shapes consumer perception and can be the determining factor in point-of-purchase decisions which characterize the majority of shopping occasions.

In recent years, the business environment is growing highly competitive and rapidly changing in today's world. The marketing environment has become interestingly complex and competitive. A product's packaging is something which all buyers experience and which has strong potential to engage the majority of the target market. Thus, packaging is sometimes used as the promotional tool by the companies. It stimulates impulse buying behavior and reduces marketing and advertisement cost of the product in modern marketing environment. In addition to its benefits in terms of reach, some marketers believe that packaging is actually more influential than advertising in influencing consumers, as it has a more direct impact on how they perceive and experience the product.

"In most cases, the experience has been that pack design are more likely to influence the consumer perception of the brand."

Packaging features attract consumer's attention to specific product, sharpens its image and influences consumers perception about the product (Rundh 2005). The packaging features of a product gives a unique value to the products and works as a tool of differentiation and hence stimulates consumer buying behavior (Underwood, Klein & Burke,2001). For products with low advertising support, packaging takes on an even more significant role as the key vehicle for communicating the brand positioning.

## 1.2 Problem statement:

In the previous decades, packaging of food products has become an important marketing tool. Packaging also shapes the expectations and perception of the consumer in regards to product and gives manufacturers the opportunity to persuade the consumers to make purchasing decision. Considering packaging features have a vast impact up on consumers buying behavior. This will present challenges to local marketers. Packaging designs which are not specifically optimized for the specific consumers will result in lower sales as well as influence the buying behavior of

consumers. Understanding of the consumer behavior which is affected by innovative packaging and product design is necessary for local marketers to have competitive advantage over their international competitors in the business world.

In order to reach this understanding that packaging attributes put drastic impact on the buying behavior of consumers for packaged food, these issues must be considered.

### 1.3 GAP ANALYSIS

Various researches have been conducted to know the impact of packaging on consumers buying behavior. Every research has a focus on particular aspect supporting similar conclusions. However, there are some gaps are being identified. These gaps vary in terms of targeted population, region, attributes and product. This research emphasized to full these gaps through unmentioned product and packaging.

**Table 1.1 Gap analysis**

<b>Researcher</b>	<b>Focus of the study</b>	<b>Results</b>	<b>Gaps</b>	<b>Focus of the current study</b>
Ares, Deliza, Besio & Gimenez (2010).	Influence of consumers attitude towards packaging features of milk deserts.	Consumer reactions on packaging features.	Only focused on consumer's involvement more than packaging features.	Focused on packaging features and discussed individually.
Hollywood (2013).	Attitude towards milk packaging material.	Preference to plastic containers in composition to glass and cardboard.	Only focused on packaging material used for packaging milk.	Other than packaging material, this study emphasize on other packaging features like color , graphics, shape, size and product information
Kuvykaite, Dovaliene, Navickiene (2009).	Impact of packaging features on consumer purchasing decision of milk and washing powder.	Consumer's purchasing decision is dependent on consumer's involvement, time pressure and the analyzed	Focused a packaging features correlation to time pressure, involvement and characteristics of consumer.	Focused on each packaging features correlated with buyin behavior for packaged food products.

		individual characteristics		
Behzad (2011)	Impact of color and graphics for promotion of products.	Color is an excellent source of information for communication with consumers in positive or negative manner.	Only focused product preference using colors and graphics of the packaging.	Focused on every packaging feature related to consumer's behavior.
Adam & Ali (2014)	Expiry date of packaged milk.	Expiry date is positively correlated with purchasing decision of consumers.	Only focused on expiry date that is written on packaging of milk.	includes all the product information and other packaging features not only the expiry date.

#### 1.4 Objectives of the study:

Packaging of the products has the positive impact upon the consumers buying behavior. In this study, we emphasized upon the presentation of product is related towards selling of product and how the companies make new ways to get the attraction of consumers. We specifically targeted the adult population of Karachi.

The study was conducted through some specific objectives as follows:

- To determine the effect of packaging graphics and color on consumers buying behavior in Karachi.
- To determine the effect of packaging size and shape on consumers buying behavior in Karachi.
- To determine the effect of product information written on packaging on consumers buying behavior in Karachi.
- To determine the effect of packaging material on consumers buying behavior in Karachi.

#### 1.4 Significance

The study would help food manufacturers in designing their product packaging strategies as it seems to have a strong relationship of product information with purchasing behavior. Different packaging features like colors & graphic, shape & size, packaging material and product information affects the consumer buying behavior.

Furthermore, future researchers can formulate this study for further examination of every feature and its effect on product packaging, explanation of impact of packaging features in relation with other categories of product or conduction of any comparative study to possibly identifying different effects of packaging features on a variety of similar or different products.

## 1.6 Research questions:

The research was conducted through following research questions:

- What is the effect of packaging graphics and color on consumers buying behavior in Karachi?
- What is the effect of packaging size and shape on consumers buying behavior in Karachi?
- What is the effect of product information written on packaging on consumers buying behavior in Karachi?
- What is the effect of packaging material on consumers buying behavior in Karachi?

## 2. LITERATURE REVIEW

Rita Kuvykaite (2009) found packaging attracts consumer's attention to particular brand, enhances its image, and influences consumer's perception about the product. Also, packaging imparts unique value to products. (Underwood, Klein & Burke, 2001; Silayoi & Speece, 2004) found packaging works as a tool of differentiation, i.e. helps consumers to choose the product from wide range of similar products, stimulates consumer's buying behavior. Thus package performs an important role in marketing communication and could be treated as one of the most important factors influencing consumer's purchase of product, its elements and their impact on consumer's buying behavior became a relevant issue.

Rita Kuykaite (2009) also concluded that packaging could be treated as one of the most valuable tool in today's marketing communication, necessitating more detail analysis of its elements and impact on consumer's purchase decision can be revealed by analyzing an importance of its separate elements for consumer's choice. Alice Louw (2006) studied The Power of Packaging concluded that right packaging can help a brand carve a unique position in the marketplace and in the minds of consumers. L Renaud (2007) worked on the influence of Eco-Labeling on consumer's behavior. The main objective of this study was to assess the relative importance of labeling in packaging compared to other product attributes (like brand, price etc.) for consumer's buying decisions. The most important result of this analysis is the significant willingness to pay for packaging energy efficient products. Bytyqi Hysen, Vegara Mensur (2008) analyzed consumer's buying behavior in regard to dairy products in Kosovo. It was concluded that the packaging has great effect on purchase of dairy products.

Packages are found to attract attention (Underwood et al., 2001; Garber et al., 2000; Goldberg et al., 1999; Schoormans & Robben 1997). In fact, Goldberg et al. (1999) found that by dismissing such non verbal signs as colors, the attention to verbal signs can be increased. Pictures on packaging are emphasized to attract attention, particularly when consumers are not very familiar with the brands (Underwood et al., 2001).

Furthermore, packaging are claimed to attract attention when their appearances are not typical within a product class (Garber et al., 2000; Schoormans & Robben 1997). In other words, past

research has discovered that deviating packaging attract attention. Other studies show that devoting packaging colors and shapes attract attention (Garber et al.,2000; Schoormans & Robben,1997. Underwood et al. (2001) on the other hand, found that pictures on packages attract attention particularly in cases when consumers are less familiar with the brand. Studies that have focused on other single signs that pictures on packaging have found that single packaging sign as colors (Gordon et al., 1994), brand names (Rigaux-Bricmont, 1981), and materials (McDaniel & Baker, 1997) convey brand meaning. Pires Gon , Claves ,Ricardo (2008) worked on product characteristics and quality perception. According to him, when they choose among competing products consumers are faced with quality and product performance uncertainly. Hence, they rely on cues as extrinsic attributes, for instance brand. Price packaging and warranty, as signals of perceived quality. Liang Lu (2008), elaborated that packaging is an important part of the product that not only serves a functional purpose, but also acts as mean of communicative information of the products and brand characters. Packaging must be functional; it must meant to protect the products in good storage, in shipment and often in use. Besides, it has also the function that can give consumers the ease of access and use on the purpose of convenience.

Another research conducted by (Rundh,2005) explaining the multifaceted dimensions and try to supply or provide smart tips for establishing a range between promoting tools & promoting supply.

Graphics and colors play an important role in marketing of a product. Ares, Deliza & Gimenez (2010), conducted a research on 60 participants in Uruguay in buying of chocolates deserts in which, packaging graphics & colors were found to be the highest significant regardless of consumer involvement with the product. Chocolates with brown color rather than the black and those with pictures of milk deserts were associated with positive impact in buying of product.

In another Marshall, Staurt & Bell (2006) found that the younger children were likely to choose products with then color preferences. This conclusion is also supported by Nawaz & Asad (2012) A study conducted on size of packaging in Sweden by Rundh (2013) showed that changes in household sizes lead the changes in the product size purchased. Another research by Silayor (2004) conducted in Thailand showed that small packaging size is perceived by buyers as for small family while larger packaging are seen as waste of product for small families.

Agariya (2012) conducted a quantitative investigation in India on packaging shape and consumer's behavior. This showed that an innovative packaging may help the consumer selection and identification of any product. A research by Silayor & Speece (2004) in Thailand conducted that product with a shape that was straight had a positive utility in comparison to curved shaped product and the same result was observed for classic designed packaging in contrast to colorful design.

Some study focused on packaging material. For instant, Hollywood (2013) did an analysis in UK on the perception of milk based on the packaging material. According to the investigation glass as packaging material is preferred more than card boards and plastic. Kuykaite, Dovaliene and Navickiene (2009) investigated on the impact of packaging elements on consumer purchasing

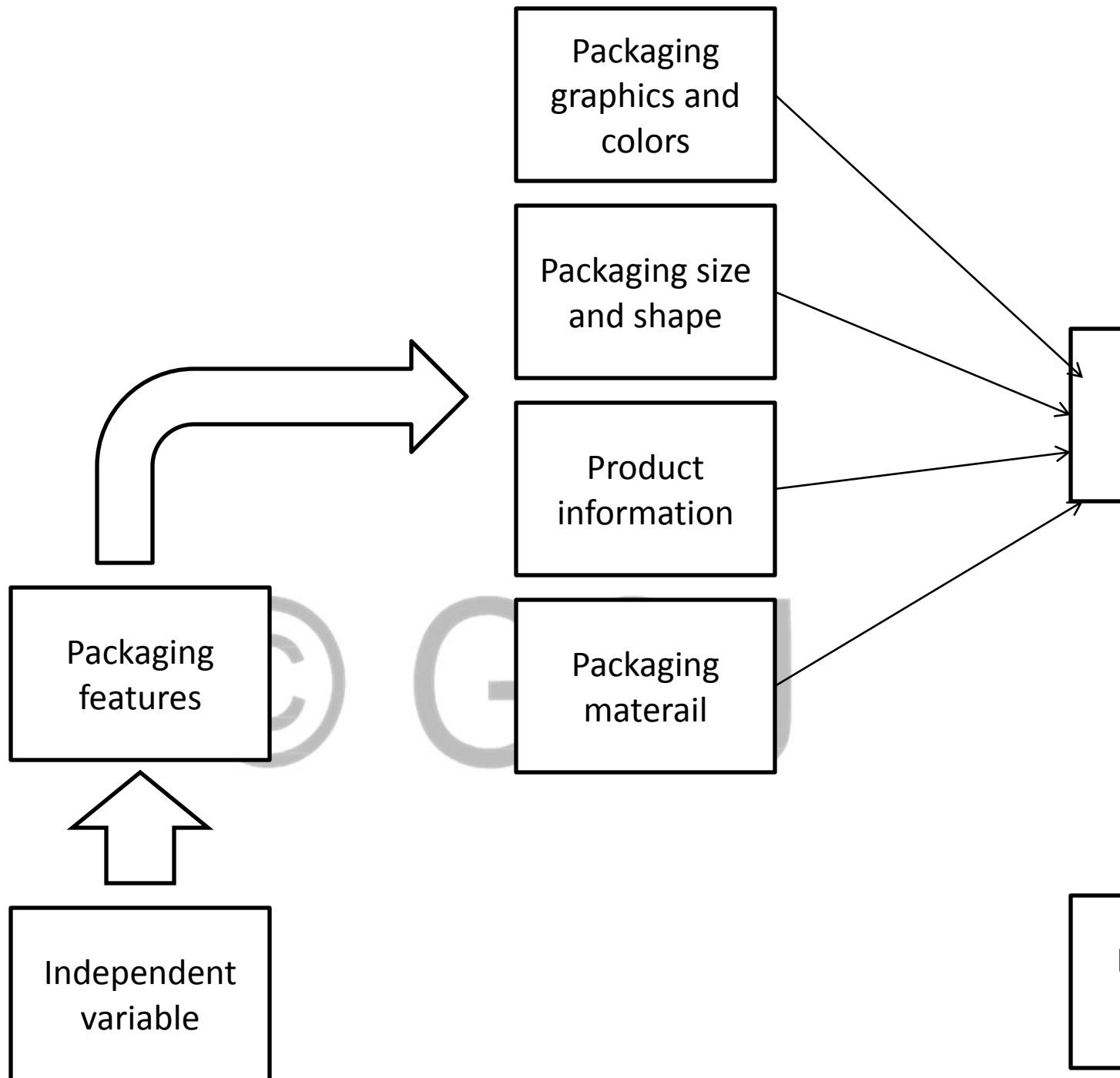
decision in Lithuania. The findings of the study showed that material of the product was the most influential visual elements that affected the purchasing of washing powder and milk.

A study did by Ahmed, Parmar and Amin (2014) revealed that consumers can easily change their purchasing decisions regarding packaging material dependent upon different situations. Packaging is the jar or a container or a protection for a product.

Product information written on packaging can also affect buyers' behavior. Spink, Singh and Singh (2011) conducted a research in which they investigated if consumers could assimilate and understand the information written on the container of the product in UK with 233 participants. They found that packaging information did affect the consumer purchasing behavior and sometimes wrong interpretation of information on the package can affect the selling of any product. Similarly, Parathiraja and Ariyawardana (2003) looked at how nutritional information on packaging affected the purchasing behavior of consumers India. According to the study consumers referred to the nutritional information so as to make a buying decision this is because of health consciousness. Most of the respondents gave the positive response for paying more to access the nutritional information on the food products. Adam and Ali (2014) in their research conducted that expiry date of packaged milk is positively correlated with the consumer buying behavior in Pakistan. This is shown that consumer look at expiry dates of packaged milk before purchasing. Thus, products with prolong duration of expiry has the influence upon purchasing.

## 2.1 Conceptual Framework

According to Kuvykaite, Dovaliene and Navickiene (2009) packaging features indicates a set of various elements communicating to a consumer. In this study, the independent variable is packaging features which comprised of four variables: graphics and colors, size and shape, product information and packaging material. The dependent variable is consumer buying behavior. Following figure shows the relationship between the packaging features and consumer buying behavior.



**Figure 2.1 Conceptual Framework**

### **2.1.1 Consumer buying behavior:**

The buying behavior of consumer is a complicated and rapidly changing affair which is very difficult to define. Engel, Blackwell and Miniard (1986) gave a definition of consumer buying behavior as some actions performed by an individual for obtaining, using and disposing economical goods and services including processes of decision making that comes before buying



behavior. Consumer behavior can also be defined as the selection and buying of the products and services by the use of available sources to fulfill the needs and wishes. (Schiffman and Kanuk 2000).

Egan (2007) presented the study that understands the behavior of consumers. According to his study, the knowledge of the consumer behavior can tributes to the economy in a positive manners. Consumer behaviors however considered as non-static, it is constantly changing as the purchasing features of consumer change with respect to time according to consumer's needs. It is difficult to pick up the reasons to show the preference of any product given by the consumers. Although great effort have been done to understand the buying behavior (kotler, Wong, Saunders and Armstrong 2005). Jobber (1995) classified that factors influencing consumer buying behavior as economic, social, personal and technical. Where economical are concerned with cost, social with effect of purchasing on the consumers in relation with others. Personal factor is concerned with services and products are related with comfort, reliability convenience and durability.

Packaging influences the consumer buying behavior by its different features and every feature influences the buying behavior in its own way. This study therefore seeks to determine the impact on buying behavior of packaged food productions in Karachi.

### 2.1.2 Packaging

The consumer buying behavior is dependent on the packaging and its features. Packaging elements like packaging color, background image, font style, design of wrapper, printed information and innovation is taken as predictors. Due to increase of self-service and changing consumer's lifestyle the interest in package as a tool of sale promotion and stimulator of impulsive buying behavior is growing increasingly. So, packaging performs an important role in marketing communications, especially in the point of sale and could be treated as one of the most important factors influencing consumer's purchase decision.

Predergast and Pitt (1996) review the basic functions of packaging and define them by their role in logistics or marketing. The logistical function of packaging is mainly to protect the product during movement through distribution channels. In marketing function, packaging provides an attractive method to convey messages about product attributes to consumers at the point of sale. It may be difficult to separate these two packaging functions, as they are usually needed. The packaging sells the product by attracting attention and communicating, and also allows the product to be contained, apportioned, unitized and protected.

**Packaging graphics & color:** As the consumer first attracted visibly so the graphics & color of a product plays an important role in attracting consumers. Graphics and color makes the differentiation between similar competitor products. So, they make the consumer to take purchasing decision quickly.

**Packaging size & shape:** The size and shape of a product also play an important role in the consumer's decision making. The large size and beautiful design packaging can effect impulse

buying. The large size of packaging gets the consumers attraction quickly while smaller packaging does not because of visually prominent elements.

**Product information:** The information about the product on packaging plays vital role. The nutritional labeling can make a buying decision. The expiry date mention on packaging also produces positive impact on consumer buying behavior. The information of raw materials and mode of manufacturing and preservation makes consumer satisfied and unsatisfied towards the product.

**Packaging material:** The material used for packaging also plays vital role in attracting consumers. High quality packaging can influence the consumer's buying behavior. It not only enhances the shelf life of products. It protects the product from external environment and it makes product easily capable of shipment.

### 2.1.3 Hypothesis .

H1 there is an impact of graphics and colors of packaging on consumer buying behavior.

H2 there is an impact of size and shape of the packaging on consumer buying behavior

H3 there is an impact of product information written on packaging on consumer buying behavior

H4 there is an impact of packaging material of food items on consumer buying behavior

## 3. RESEARCH METHODOLOGY

### 3.1 Research design

We conducted this research with the help of questionnaire and from the initial stages, to the final designing of questionnaire; we conducted our research through exploratory research as well as descriptive research. The questionnaire of the study was adapted from a previous research conducted by Betty Jepchirchir Kosgei in Kenya (2018). The data was collected through questionnaire given manually and sending by e-mail.

### 3.2 Sample:

The primary interest of the sample was the adult population of Pakistan, people living in different cities and regional areas were inquired. The study involved 300 participants, mainly from different localities of Karachi.

**Table 3.1 Socio and demographic information of respondents**

Variable	Frequency	Population (%)
<b>Gender</b>		
Male	141	47.0
Female	159	53.0
<b>Education</b>		

Primary	6	2.0
Secondary	22	7.3
Collage	38	12.7
University	234	78.0
<b>Job status</b>		
Student	56	2.0
Employed	201	7.3
Unemployed	39	12.7
Retired	4	78.0
<b>Age</b>		
18 – 29	140	46.7
30 – 49	111	37.0
50 – 55	37	12.3
Above 55	12	4.0
<b>Income</b>		
18,000 – 25,000	66	22.0
30,000 – 45,000	78	26.0
50,000 – 75,000	73	24.3
N/A	83	27.7
<b>Marital Status</b>		
Single	148	49.3
married	142	47.3
others	6	2.0
specify	4	1.3

As shown in table 3.1 the participants of this sample are mostly females 159 in numbers i-e 53% and males are 141 i-e 47%. 78% of the respondent education level is university, 12.7% of the respondent education level is collage, 7.3% are from secondary level of education and 2% are from primary level of education. The respondents are mostly employed with 67%, 18.7% of the participants are students, 13% of the respondents are unemployed and 1.3% are retired. The major age group was 18-29 years old with 46.7%, 37% of respondents are 30-49 years old, while age group 50-55 years and above 55 years are 12.3% and 4% respectively. The income level of 26% the participants are in 30000 to 45000, 24.3% of the participants are in 50000 to 75000, 22% are in 18000 to 25000 and 7% of the participants N/A. The marital status consist of 49.3% are singles, 47.3% are married while others and specify are 2% and 1.3% respectively.

### 3.3 Descriptive Statistic

**Table 3.2 descriptive statistics**

	Mean		Std. Deviation
	Statistic	Std. Error	Statistic
How often do you buy packaged foods	3.3500	.07789	1.34916
The color of food packaging influences my purchase decision.	3.5533	.07068	1.22426
The color combination that can easily be remembered influences my purchase decision.	3.3000	.07880	1.36487

Attractive packaging influences my purchase decision.	3.3267	.07901	1.36853
The picture quality of the product packaging influences my purchase decision.	3.4833	.08636	1.49572
The picture of the product packaging that reflects the fact that it is high quality influences my purchase decision.	3.5633	.08498	1.47192
Shape of food packaging influences my purchase decision	3.5033	.08020	1.38916
Type of opening of food packaging influences my purchase decision.	3.6800	.06853	1.18700
The packaging of the product in a refill format in conjunction with different affordable sizes influences my purchase decision.	3.6400	.07384	1.27900
Size of food packaging (i.e. individual packages vs family size) influences my purchase decision.	3.5867	.06783	1.17491
Food Packaging of various sizes influences my purchase decision.	3.6600	.06982	1.20938
Food packaging that shows that the products are enriched with quality influences my purchase decision.	3.6267	.07255	1.25667
Food packaging modification influences my purchase decision.	3.7300	.07339	1.27115
Food product packaging labels influence my purchase decision.	2.3967	.05402	.93572
Too small to read food products labels influence my purchase decision.	2.4333	.05876	1.01768
The font used in writing ingredient composition of food products that is legible and could be easily interpreted by customers influences my purchase decision.	2.3467	.05425	.93956
Material quality of food product packaging influences my purchase decision.	1.9600	.05080	.87995
Versatility of food product packaging (i.e. can reuse the package) influences my purchase decision.	2.2600	.05722	.99113
Safety of food product packaging influences my purchase decision.	2.0333	.05360	.92831
Food product packaging material influences my purchase decision.	1.9000	.04896	.84798

As from the table 3.2 the mean value 3 denoted as neutral, above 3 indicates as agree and below 3 value indicates that respondents are disagreeing the questions, in above table it is clear that the respondents are agreeing to the questions regarding consumer buying behavior, graphics and colors of packaging and size and shape of the packaging as the value of mean is above 3. While respondents are disagreeing to the questions regarding product information and packaging material as the mean value is below 3

### 3.4 Statistical tools:

The research involved statistical technique of structural equation modeling. The SEM analysis tells the nature and extent of the independent variables with dependent the dependent variables. Moreover, it helps in decision making and makes predictions of future.

The correlation analysis used in this study tells the association among the variables whether they are weak, moderate and strongly associated to each other. This ensures the environment for further interpretation and exploring new dimensions within the context of research.

### 3.5 Inferential statistics

To measure the packaging features and consumer buying behavior towards packaged food items, Several test were applied to check the reliability effects. 32 items were used through which an exploratory analysis was conducted. Inferential statistics helps to make inferences and conclusive evidence from the sample data drawn from a population. Exploratory Factor analysis with the help of SPSS is used to reduce large number of variables to the most important ones (Büyüköztürk, 2007; Tavşancıl, 2002). Results from the remaining items produced a reliable model and considered for reliability and validity test and path analysis.

### 3.6 Reliability statistics

**Table 3.3 Reliability statistics**

Cronbach's Alpha	N of Items
0.889	32

**Table 3.4: Reliability Scores (N=300)**

Variables	No. of Items	Number of respondents	Cronbach's Alpha
Consumer buying behavior	7	300	0.853
Graphics and colors	7	300	0.840
Size and shape	8	300	0.867
Product information	5	300	0.701
Packaging material	5	300	0.724

Cronbach's alpha is a measure used to assess the reliability, or internal consistency, of a set of scale or test items. In other words, the reliability of any given measurement refers to the extent to which it is a consistent measure of a concept, and Cronbach's alpha is one way of measuring the strength of that consistency.

In above, table 3.4 the values of reliability test show acceptable results with all items included. The reliability of all the variables including dependent and independent variables is greater than the cut off value that is 0.70 which was good (Santos, 1999). In above table overall Cronbach's Alpha of the questionnaire was 0.889. Which is significant as it is greater than the cut off value which is 0.7 so all values are acceptable.

### 3.7 Confirmatory factor analysis

Confirmatory factor analysis was performed using AMOS. Factor analysis was employed to reduce large number of variables to extract most underlying variables called factor. Confirmatory factor analysis is a useful method to examine the variability among observed variables and excerpt variability from items and load them into a common factor. The researcher uses knowledge of the theory, empirical research, or both, postulates the relationship pattern a priori and then tests the hypothesis statistically. Diana D (2001).

Table 3.5 Standardized regression weights

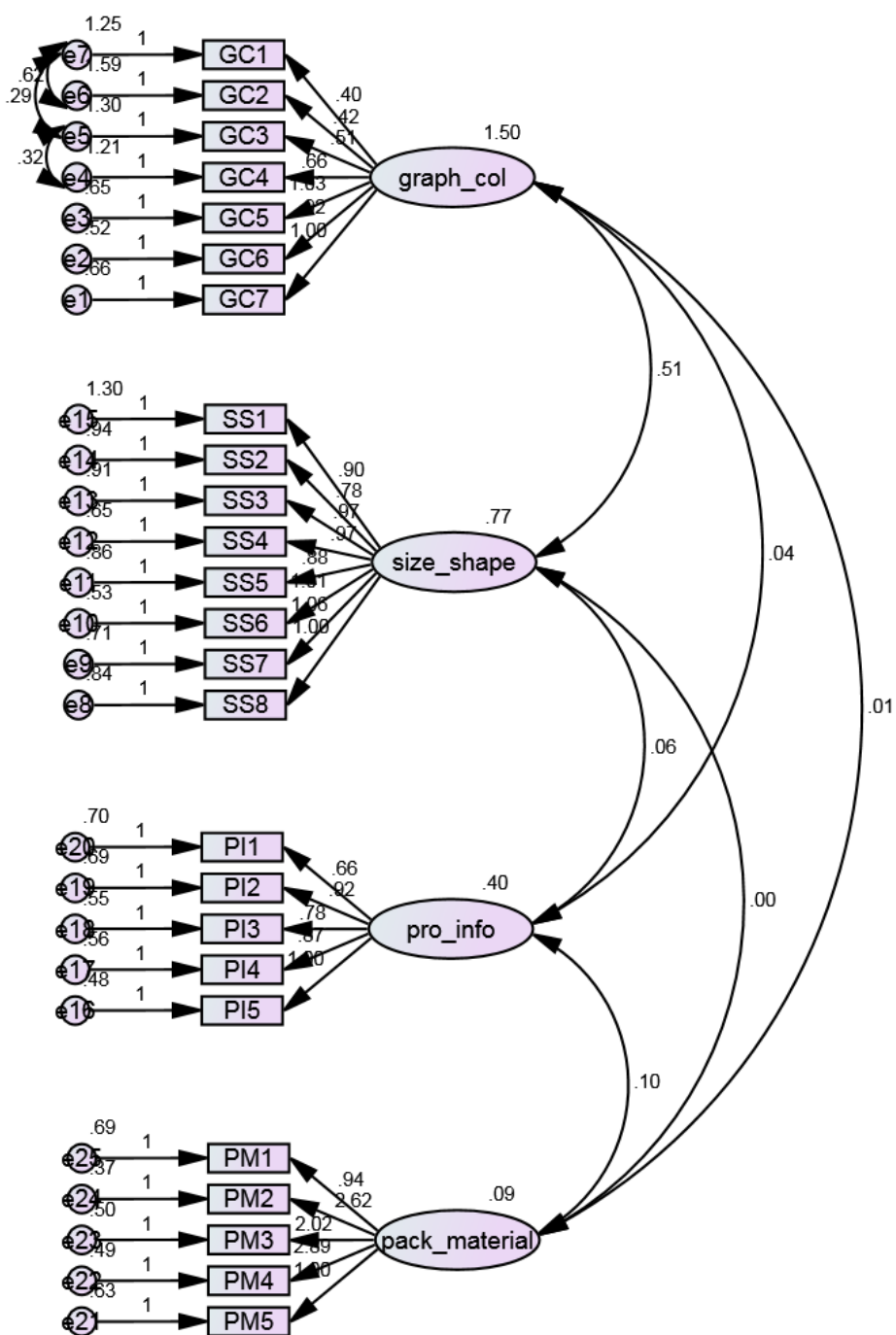
Latent variable	Item label	Item description	Standardized regression weights
<b>Graphics and colors of packaging</b>	GC1	The color of food packaging influences my purchase decision.	0.398
	GC2	The color combination that can easily be remembered influences my purchase decision.	0.378
	GC3	The color combination that makes the product stand out among other competitive products influences my purchase decision.	0.479
	GC4	Attractive packaging influences my purchase decision.	0.592
	GC5	The picture quality of the product packaging influences my purchase decision.	0.842
	GC6	The appetizing standard of the picture quality of the product influences my purchase decision.	0.843
	GC7	The picture of the product packaging that reflects the fact that it is high quality influences my purchase decision.	0.833
<b>Size and shape of the packaging</b>	SS1	Shape of food packaging influences my purchase decision	0.571
	SS2	Type of opening of food packaging influences my purchase decision.	0.578
	SS3	The packaging of the product in a refill format in conjunction with different affordable sizes influences my purchase decision.	0.666
	SS4	Size of food packaging (i.e. individual packages vs family size) influences my purchase decision.	0.726
	SS5	Food Packaging of various sizes influences my purchase decision.	0.641
	SS6	Food products that are packaged in a unique manner that could aid storage and preservation influences my purchase decision.	0.774
	SS7	Food packaging that shows that the products are enriched with quality influences my purchase decision.	0.742
	SS8	Food packaging modification influences my purchase decision.	0.693
<b>Product information</b>	PI1	Food product packaging labels influence my purchase decision.	0.449
	PI2	Too small to read food products labels influence my purchase decision.	0.573
	PI3	The font used on the food product packaging is legible and can be understood by customers influences purchase decision.	0.554
	PI4	The font used on food products that attract my attention from distance influences my purchase decision.	0.591
	PI5	The font used in writing ingredient composition of food products that is legible and could be easily interpreted by customers influences my purchase decision.	0.675
	PM1	Material quality of food product packaging influences my purchase decision.	0.317
	PM2	Versatility of food product packaging (i.e. can reuse the package)	0.786

<b>Packaging material</b>		influences my purchase decision.	
	PM3	Safety of food product packaging influences my purchase decision.	0.645
	PM4	Ability to recycle food products packaging influences my purchase decision.	0.776
	PM5	Food product packaging material influences my purchase decision.	0.350

The above table 3.5 shows standardized factor loading for each item and shows the association between individual items with the extract construct. Factor loading for each item depicts reasonable relationship with the underlying construct.

**Figure 3.1 Confirmatory Factor Analysis using AMOS software**

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### 3.8 Evaluating measurement model fitness

To evaluate the fitness of the proposed model, Amos delivers a set of useful indices that are used to determine the fitness and validity of the hypothesized model. Out of different significant indices, root mean square error of approximation (RMSEA), goodness of fit index (GFI), Chi-Square, CMIN/DF, adjusted goodness of fit index (AGFI), and comparative fit indices were observed to determine the authenticity of the research model. The discussed indices shows the



degree to which constructs are related to one another. Table no 7 and figure 1 demonstrate the resultant values.

Model Fit	Resultant Value	Threshold
CMIN/DF	2.021	< 3 good ;< 5 Acceptable
CFI	0.896	Closer to 1 ; good
GFI	0.877	>0.90
AGFI	0.850	> 0.80
RMR	0.095	< 0.06
RMSEA	0.058	< 0.08
PCLOSE	0.027	> 0.05

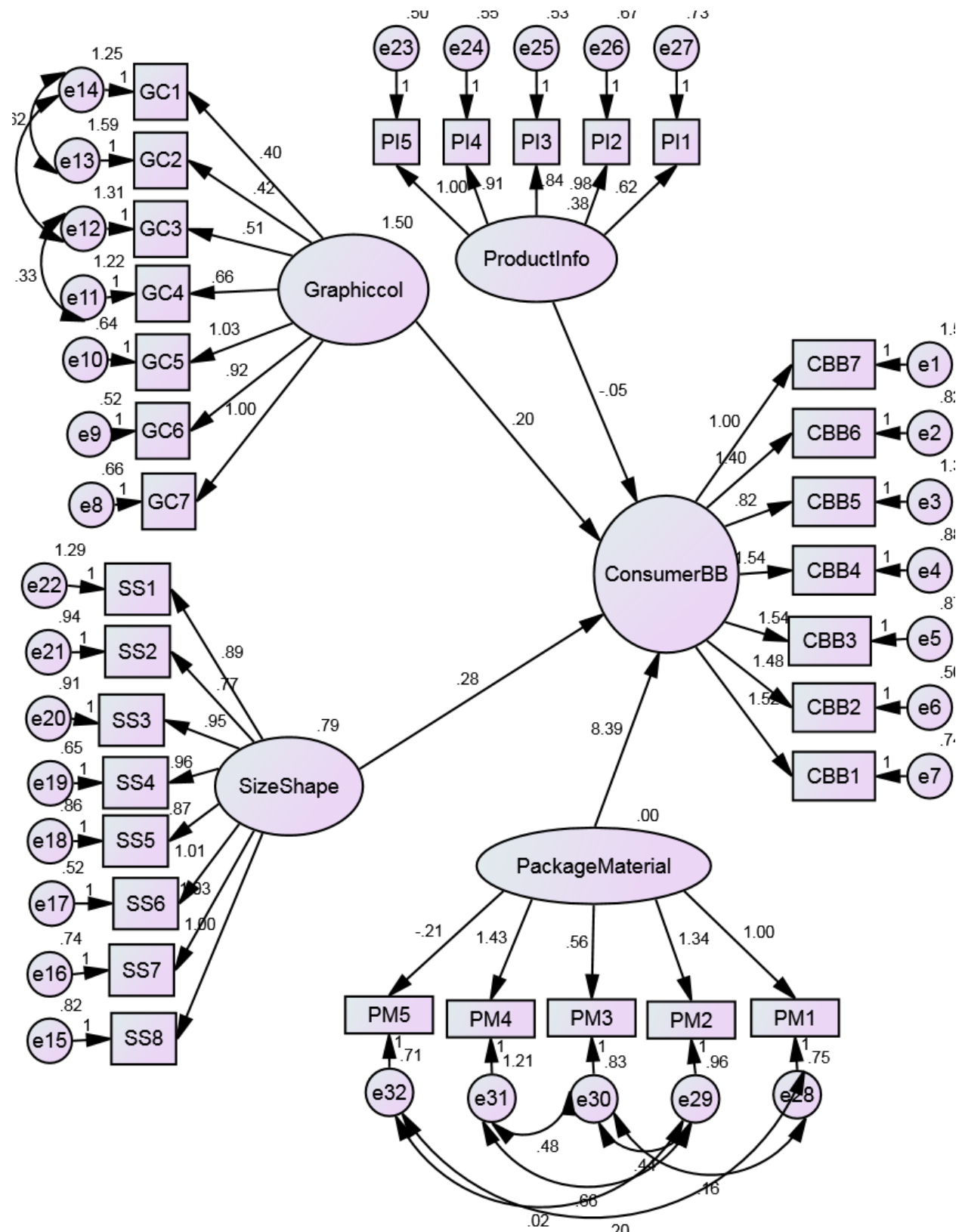
**Table 3.6 Model Fitness Test**

The measured values of CMIN/DF, AGFI and RMSEA are lying in threshold level, but PCLOSE is 0.027 while CFI, GFI, are below threshold level and RMR is above the threshold level but it is still acceptable.

### 3.9 Structural Equation Modeling

To test the study hypothesis we have used the structural equation model (SEM). Moreover, to evaluate the indirect and direct effects of all the constructs the testing was done. SEM combines both regression analysis and factor analysis. SEM consists of seven major stages, from developing the model, constructing path diagram causal relationship, building and modifying measurement model and finally model fit (Hair et al., 2006). A structural equation model consist of an observed variable (OV) and latent variable (LV). The relationships of observes and latent variables in SEM are shown using path diagram (Gefen 2003 , Tong 2007). SEM integrates both path and factor analyses including multiple observed variables or indicators for every unobserved variable as in factor analysis and specific paths connecting the unobserved variables in path analysis (Tong 2007). In order to check the all direct and indirect effects, a technique has been implemented which is known as bootstrapping (Shrout & Bolger, 2002). Additionally, the p values in the table depicts about the acceptance and rejection level by seeing the null hypothesis that depends on the upper and lower bounds of the confidence intervals.

**Figure 3.2 Path model designed in the AMOS software**



### 3.10 Evaluating Measurement Model Fitness

Goodness of fit is employed to determine the model rejection or acceptance for further analysis. Kline (2005) recommended the four most commonly reported goodness of fit tests are chi square; Goodness of Fit Index (GFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). Out of different significant indices, root mean square error of approximation (RMSEA), goodness of fit index (GFI), Chi-Square, CMIN/DF, adjusted goodness of fit index (AGFI), and comparative fit indices were observed to determine the authenticity of the research model. The discussed indices shows the degree to which constructs are related to one another. Table no 8 and figure 2 demonstrate the resultant values

Model Fit	Resultant Value	Threshold
CMIN/DF	2.389	< 3 good ;< 5 Acceptable
CFI	0.833	Closer to 1 ; good
GFI	0.821	>0.90
AGFI	0.791	> 0.90
RMSEA	0.068	< 0.08
RMR	0.201	< 0.08
P-Value	0.000	<0.05
PCLOSE	0.000	> 0.05

**Table 3.7 Model Fitness Test**

There are different parameters to evaluate the goodness of a fit model. The study has adopted seven model fit indices to predict model fitness. Graphics and colors, size and shape of the packaging, product information and packaging material towards consumer buying behavior. As the p value is 0.000 which is less than 0.05, thus model is fit for estimation. CMIN/Df value is below 5 which is also acceptable. RMSEA would have the value that falls within the range of 0.05 to 0.08, which is laying in the between the range. However, for absolute fit, GFI should be greater than 0.9. As, in this model, this requirements is not fulfilled; thus, this model is not absolute fit. For CFI, it is not acceptable as well. But GFI and AGFI lies above 0.7 level it's also acceptable in some cases of model fit.

	Estimate	S.E	C.R	P	Nature	Response
ConsumerBB<---Graphiccol	.199	.039	5.122	***	Positive	Accepted
ConsumerBB<---ProductInfo	-.045	.068	-.664	.507	Negative	Rejected
ConsumerBB<---PackageMaterial	8.389	7.239	1.159	.246	Positive	Rejected
ConsumerBB<---SizeShape	.276	.055	4.987	***	Positive	Accepted

**Table 3.8. Regression Weights (Hypothesis Testing)**

First, there is an impact of graphics and colors of the packaging on consumer buying behavior. ( $\beta = 0.37$ ,  $p < .001$ ), therefore H1 is accepted.

Second, there is an impact of size and shape of the packaging on consumer buying behavior ( $\beta = 0.38$ ,  $p < .001$ ), therefore H2 is accepted.

Third, there is an impact of product information written on packaging a product on consumer buying behavior ( $\beta = -0.04$ ,  $p < .001$ ), therefore H3 is rejected.

Fourth, there is an impact of packaging material of food items on consumer buying behavior ( $\beta = 0.85$ ,  $p < .001$ ), therefore H4 is rejected.

## 4. Discussions

Common purpose of this study was to find out the effect of packaging features on consumer's buying behavior of packaged food items in Karachi. The results obtained from this study observed that highest critical ratio value is achieved by packaging graphics and colors i.e. 5.122 and after that packaging size and shape stands out at second then packaging material and then comes product information with critical ratio values 4.987, 1.159 and -0.664 respectively. The probability of getting a critical ratio as large as 5.122 in absolute value is less than 0.001. In other words, the regression weight for packaging size and shape in the prediction of buying behavior is significantly different from zero at the 0.001 level. The probability of getting a critical ratio for packaging size and shape as large as 4.987 in absolute value is less than 0.001. The probability of getting a critical ratio for packaging material as low as 1.159 in absolute value is greater than 0.001. The probability of getting a critical ratio for product information as low and in negative as -0.664 in absolute value is greater than 0.001 so it may state as the hypothesis for packaging graphics & colors & packaging size and shape are accepted while hypothesis for packaging material and product information are rejected.

Silayoi and Speece (2002) concluded that packaging attracts consumers and influences consumer's first buying purchase. As we have noticed that packaging graphics and colors & packaging size and influence the purchase decision of consumers. Consumer first attracted by colors and graphics then by size and shape of the packaging. Since the literacy level increasing in Karachi and people are getting more and more aware about the products and packaging features. People in Karachi are becoming more and more health conscious and are worrying about what package foods they are taken and does this packaging of food meet the standard of packaging. The finding showed that graphics and colors of the packaging has an impact on consumer buying behavior of packaged foods. The right choice of colors and distinct graphics of packaging can hold consumer attention and influencing their purchase decision. The results further supported Clenment (2007) and Gofman (2010) that distinct graphics and contrast of packaging can influence consumers' visual attention. The key factor is the right choice of color in creating an impression needed to impact brand and reaction of a product. Both studies support the result of packaging graphics and colors. As graphics and colors are variables in a consumer's decision process.

The result also showed that packaging size and shape also play a vital role in influencing the consumer purchase decision. Consumer's attracted by size and shape of the packaged food product. Sohler's (2009), Schoormans and Robben (1997), and Siyalo and Speece's (2004) concluded that package shape increases the emotions, attitude and buying behavior bringing an advantage with competitors. More the shape of product innovative and different from others, more attention towards product created. The package shapes can make product more attractive to consumer. This showed that manufacturers should consider packaging size and shape an important element while designing packaging of food products.

The result also showed that the consumers has no effect or has very low involvement towards packaging material and product information these result are supported by Kotler (1996) emphasizing consumer do not find so much information about low involvement products, they

just evaluate the characteristics of product and make a decision to buy. Furthermore, (Speece and Nair, 2000) argued that consumers consider only two or three product features when making a decision to buy a low involvement product

Overall results showed that consumer buying behavior can be influence by packaging features. Most consumers make their purchase decision on floor of the store hence as in study it is proved that consumers do not look for the packaging material and product information, they are attracted by packaging graphics and colors and packaging size and shape of the product so the manufacturers must ensure that their products must be unique and attractive and sensitive to the consumers in order to get competitive advantage over their competitors..

Results from this research can be useful for branded segments that are out there in the market, it can be vital from one of the perspective of 7P's of marketing which is packaging. If they consider packaging graphics and colors and packaging size and shape an important factor when designing and formulation of packaging that may induce a stimuli in consumer's minds that could possibly result in making purchase at point of sale. Since it is consider as a loss if consumer failed to put your product in the basket due to lack of communication from a producer, communication is very essential tool in the marketing, because if product itself fails to communicate with the shopper at shelf than there are few matters to look into, and packaging is one of them.

## 5. Conclusion

Packaging features like packaging graphics and colors, packaging size and shape, product information and packaging material impacts the consumer buying behavior. From the results of this study, packaging features have shown their importance in product features and quality in a manner that is competitive. Hence manufacturing companies cannot rule out the importance of packaging as marketing tool. It enhances product awareness visibility and attractiveness. The study also concluded that mostly consumer make their buying decisions quickly when they find the product attractive and unique.

So that the Packaging decisions should be made without assumption by considering the consumers choice first. This study is beneficial for the manufacturers for making new strategies and in development of product packaging. Packaging works as a vehicle for communication and branding between manufacturers and consumers.

The gaps that were identified, from the previous researches were covered in terms of features and consumer buying behavior and specially kinking all the variables to marketing and advertisements and packaging. This paper tends to bring all the factors relating to packaging features in one place and trying to give weightage to each factor of its own. The product packaging form the end of the 'the promotion chain' and is close in time to the actual purchase and therefore, plays an important role in predicting consumer outcomes. Packaging also delivers brand identification and label information like usage instructions, contents and list of ingredients or raw materials, warnings for usage and directives for care of product. Finally, it has also been concluded that the packaging is one of the most important and powerful factor, which influences consumers' impulse buying.

This research has many of the limitations which includes limited time to complete the study, limited targeted audience, limited areas of Karachi and etc. Therefore, future research can be conducted on the relevant topic by opting other areas of Pakistan, choosing packaging other than food items. This could also be tested in some other settings as the survey was limited to packaged food products of manufacturing companies of Pakistan especially consumers of Karachi as conducted through population of Karachi.

This research provides the central core of packaging features influencing consumer's purchasing decision so, further studies should be conducted on each feature independently. These results are highly be applied a packaged products. Further studies can make the path of extension towards types of products identifying different features and their impact of consumer buying behavior.



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