

Influence of Demographic Characteristics of Consumers on Various Factors of Packaging for Biscuit

Aditya Vij¹, Dr. RK Sharma² Dr. AS Rao³

Abstract

Packaging is an important and influencing factor governing the buying decisions of various fast moving consumer goods like biscuits. Vidales Giovannetti (1995) states that packaging is the hall mark of various attributes of product which acts as secret sales person (Ampuero et al. 2006). This paper examined validity of various Factors of Packaging, the influence of demographic characteristics of consumers and customer satisfaction and brand value for Biscuits in Indian context. The data gathered from 423 respondents was analyzed using various statistical tools, one way ANOVA, t- test, CFA and tested for reliability and validity,

The model so developed for buyer behaviour was confirmed with the help of CFA, leading to a conclusion that eight factors of packaging namely, innovation, price, technical quality, functional quality, customer loyalty, customer satisfaction, brand value and information quality govern the buyer behaviour of biscuits with resgard to packing while making choices. Brand loyalty, price and customer satisfaction have a significant difference for different age groups.

This study provides implications to marketers of biscuits which can be replicated across various othr categories of alike fast moving consumer goods that customers needto be provided with sophisticated, unique and different packages for their products to increase the customer satisfaction and enable brand loyalty. Packages should be available in various sizes to cater to customer requirements. Bright coloured and graphically appealing graphic packages attract consumers while varied sizes lead to customer satisfaction of achieving value for money even if they are making a trial purchase. Marketers need to be cautious of the pricing strategy of the product to cater to various age groups and build brand preference.

Key Words: customer satisfaction, brand loyalty, brand value, Packaging

1Research scholar, Bharati Vidyapeeth Deemed University, Delhi campus

2 Professor, Bharati Vidyapeeth Institute of Management & Research New Delhi

3 Professor Bharati Vidyapeeth Institute of Management & Research New Delhi

Introduction:

Due to busy in day today life options are sacrificed. In metro cities people are overcrowded and live in stress. This leads to make them earn all time but very less time for purchasing. Packaging is crucial in taking buying decisions. Packaging is primary aspect in buying

decisions on the spot. Vidales Giovannetti (1995) states that packaging is the hall mark of

various attributes of product which acts as secret sales person (Ampuero et al. 2006). Out of the box packaging attracts the customers outrightly in order to convert all visitors into purchase. The products which exhibits concerns about green packaging and moral values along with specific identity are always drive the demand and repeat of customers.

Numerous elements of packaging including colors, images and pictures, signs and symbols, designs, shapes, information and messages are used in food products. These attributes are helpful in attracting as well as gaining the attention of consumers. A key factor in successful marketing strategies for packaged food products is how a subjective entity of products influences the choice of purchasing as presented through packaging and design attributes (Silayoi et al. 2007). As per Rettie and Brewer (2000) definition an asymmetry results in the perception of elements in package designs through brain laterality. Memorable elements can include package elements, font style, size, and color. Further consumer recall is better when the verbal stimulus is placed on the right-hand side of the package and non-verbal stimuli on the left-hand side. (Silayoi et al. 2007).

There are numerous ways in which the design can be interpreted and perceived, therefore, before introducing the product in the market, it is crucial to build packages and test designs. How the product is perceived, is directly proportional to purchase decision and sales, which means if the product perceived in a good way, then purchase decisions as well as sales will be higher in number.

LITERATURE REVIEW

Adam, M. A., & Ali, K., (2014) in their paper titled “Impact of Packaging Elements of Packaged Milk on Consumer Buying Behavior” examined the packaging elements impact on purchasing activities of consumers and findings revealed that packaged milk which gives information to consumers about impact of particular nutrients on the bodies were preferred more by the target audience.

Ahmed, R. R., Nawaz, A., Vishnu, P., & Khoso, I. (2014) in their paper titled “Role of Packaging and Labelling on Pakistani Consumers Purchase Decision” examined the important success factors which drive the brand as well as to what extent consumers were motivated with these factors to buy the product of the brand with special reference to fast moving and consumer goods. The finding of the research observed that the label and packaging of the product were the most significant factors. It has also been concluded that buying decision of the consumers is most strongly influenced through packaging. In other words, Packaging is found as the most powerful factor.

ARORA, R. (2014) in their paper titled “Flexible Packaging Process-Its Impact On Consumers’ perception & Their Buying Decisions” examined how packaging influenced the buying perception of consumers. The study also investigated the strategies of positioning related to packaging attributes influenced the perception of consumers as well as relationship among packaging variables with special reference to fast moving and consumer goods in the Indian market. The findings of the study revealed that flexible packaging like plastic laminates, printability, low odor and taste, etc. Positively influenced the buying intention of consumers related to FMCG products.

Borishade, T. T., Ogunnaike, O., Dirisu, J. F., & Onochie, P. (2015) in their paper titled “Empirical study of Packaging and its Effect on Consumer Purchase Decision in a Food and Beverages Firm” investigated how attractiveness of a product encouraged consumer to buy a product, examined whether differentiation of a product influenced consumer while evaluating the product, determined the effect of a label on a product in creating product awareness as well as investigated how the design of a product stimulated consumers for trial purchase. The study concluded that there is a positive association between the packaging and purchase decision of consumers.

Javed, S. A., & Javed, S. (2015) in their paper titled “The impact of product’s packaging color on customers’ buying preferences under time pressure” examined whether consumer preferences were influenced with packaging color of product as well as time constraint as a moderator was tested in the study. The findings of the study determined that consumer’s behavior of buying was more dependent on packaging color as compared to time pressure. Moreover, the study found time constraint influenced the packaging color’s effect on the buying action of the respondents, therefore, it was proved as a significant moderating factor.

Kong, W., Harun, A., Sulong, R. S., & Lily, J. (2014) in their paper titled “The influence of consumers’ perception of green products on green purchase intention” examined the perception of consumers towards the environment friendly products and their intention to buy these green products. The findings of the study identified that eco-label, environment friendly product as well as green corporate perception had positive correlation with intention to buy green products.

Mamo, Y. (2014) in his paper titled “Influence of bottled water packaging attributes on consumers’ purchase decision: case study in Addis Ababa” examined how buying action of consumers were impacted with the elements of water bottled packaging specifically in Ethiopia. The study also examined the relationship between independent attributes and dependent attributes where packaging color, packaging size, printed information and graphic design were taken as regressor variables and buying action of consumers as regressed variable. The findings of the study revealed that the product elements for instance, color, size, shape as well as graphics of packaging were significantly linked with buying action of consumers for bottled water. Also, the study identified that there was no correlation between information printed on packaging and buying action of consumers.

Ogba, Ike and Johnson, Rebecca (2010) in their paper titled “How packaging affects the product preferences of children and the buyer behavior of their parents in the food industry” investigated to what extent packaging influence children’s preference to buy the product as well as purchasing decision of their parents. The findings of the study showed that children’s product preference was influenced through the packaging of the product.

Raheem, A. R., Vishnu, P., & Ahmed, A. M. (2014) in their paper titled “Impact of product packaging on consumer’s buying behavior” examined the packaging effect, its elements and impact of each element on consumer buying behavior. The findings of the study revealed that packaging as an important factor which had a great impact on consumer preference.

Saeed, R., Lodhi, R. N., Rauf, A., Rana, M. I., Mahmood, Z., & Ahmed, N. (2013) in their paper titled “Impact of Labelling on Customer Buying Behavior in Sahiwal, Pakistan” determined the impact of labelling elements on the buying behavior of consumers. The findings of the study suggested that advertisements were positively correlated with buying action of respondents. Moreover, there was positive association between labelling and consumer’s preference to buy the products. Furthermore, the study also revealed that there was increase in number of quantities purchased by looking at the well labelled product. To conclude, labelling influence the buying action of the people.

Sehrawet, M., & Kundu, S. C. (2007) in their paper titled “Buying behavior of rural and urban consumers in India: the impact of packaging” examined whether the consumer’s decision of purchasing was influenced from their residential background or not. The findings of the study revealed that rural people believed that better products were packaged in better packaged items as well as ease of storing items also influenced their buying decisions. Therefore, packaging influenced the buying decision of rural residents more as compared to residents of urban areas. Moreover, the attributes like carriage ease, transparency, simplicity, packaging similarity and weight of package impacted the purchasing decisions of urban people more as compared to rural people. The study found that packaging plays a very important role for rural consumers. To conclude, rural people buying decisions are influenced more through packaging as they believe better products are presented in better package as compared to urban area.

Sial, M. F., Gulzar, A., & Nawaz, B. (2011) work titled “Impact of Labelling and Packaging on Buying Behavior of Young Consumers with Mediating Role of Brand Image” explored the packaging and labelling relationship of purchasing behavior of consumers. The research

also studied brand image as a mediator in packaging and labelling relationship as well impact of each one on purchasing behavior of consumers. The findings of the study suggested that there is positive relationship between young consumer purchasing behavior and brand image.

White, S. (2015) in her paper titled “Influence of Packaging on Consumer Buying Behavior” examined the most important variables of packaging as well as the influence of packaging on purchasing behaviors of the target audience. The findings of the study revealed that in addition to preference of target audience, packaging capacity, look of the packaging as well as its appearance were strongly influenced the buying decisions of consumers.

Objectives of the paper

The objectives of the study are as follows

- a) To study the validity of Factors of Packaging – Functional quality, Information quality, Innovation, price, technical quality, customer loyalty, customer satisfaction and brand value for Biscuits in Indian context.
- b) To analyze the influence of demographic characteristics of consumers on their various factors of packaging which influence consumer buying behavior with special reference to selected FMCG good – Biscuit.

Hypothesis

Within the framework of the above objectives, the following hypotheses are expected to be verified during the course of analysis:

H01: It is no significant difference among the average scores of various Factors of packaging for different age groups with reference to Biscuits.

H02: It is no significant difference among the average scores of various Factors of packaging for different genders with reference to Biscuits.

H03: It is no significant difference among the average scores of various Factors of packaging for different marital status with reference to Biscuits.

H04: It is no significant difference among the average scores of various Factors of packaging for different educational qualification with reference to Biscuits.

H05: It is no significant difference among the average scores of various Factors of packaging for different income groups with reference to Biscuits.

H06: It is no significant difference among the average scores of various Factors of packaging for different family size with reference to Biscuits.

Research Design

The research design in the present study is exploratory.

SAMPLE DESIGN AND SIZE

In the present study, the population is the respondents who are generally highly involved in decision making in the family. The same was ensured by verbally confirming from the subjects that they actively participate in decision making. The Population for the present study comprised of people living in Delhi.

The formula given by Krejcie, R. V., & Morgan, D. W. (1970) for calculating the sample size is followed for this study: $s = \frac{X^2 N P (1-P)}{d^2 (N-1) + X^2 P (1-P)}$

$$n = \frac{3.841 * 16753235 * .5 * (1-.5)}{.0025 * 16753234 + 3.841 * .58(1-.5)} = 384$$

A sample of 500 respondents which is more than the derived sample size was selected from the population of Delhi. Data will be collected from the urban population of New Delhi, who will be highly involved in making purchase decisions for biscuit. The same was ensured through verbal communication with the respondent before handing over the questionnaire. Data was collected through self administered questionnaire.

QUESTIONNAIRE DESIGN

A questionnaire was developed specially for the present study through the help of standardized scales. A pilot study was undertaken with 70 respondents of the study area so as to test the reliability and validity of the questionnaire.

The questionnaire has two parts:

1. Demographics
2. Factors influencing packaging

The scale was adapted from Leofgren et al. (2008) study. The most commonly measures used for the conceptualization of satisfaction and loyalty were considered in this study (Oliver, 1999; Johnson et al., 2001).

The first part of the questionnaire contained forced choice questions on demographics of the respondents. For collecting the data on demographics (age, gender, marital status, educational qualification, Income, Family size) multiple choice questions were used and dichotomous questions were used for measuring gender and marital status. The respondents were requested to choose only one option out of the alternatives available. The second part of the questionnaire measured Factors influencing packaging. The scale was adapted from Leofgren et al. (2008) study. The original scale was modified in content and the number of statements used to serve the emerging consumer markets. The original scale talks about factors of packaging in general but this research assesses the factors influencing packaging with respect to biscuits. Changes in the questionnaire were made under the guidance of experts. The arrangement of the statements was subject to rigorous editing and scrutiny of experts. After giving due consideration to the comments and suggestions of the experts 5 statements were rejected. Finally 39 statements were included in the questionnaire. The preliminary draft of 39 statements was finalized and subjected to pre-tryout. The modified scale consisted of 39 statements. Five point Likert scale- most common scale to assess psychographic variables by marketing researchers (5= 'strongly agree', 4= 'agree', 3= 'neutral', 2='disagree' and 1= 'strongly disagree'), was used for the study.

RELIABILITY AND VALIDITY OF THE SCALES

Before starting the data collection for the study, the statements of the questionnaire were discussed with the experts of marketing research and the suggestions given by them were incorporated to rule out possibilities of weakness. On final approval from experts, the questionnaire was revised. A pilot study was conducted on 70 respondents to check the validity and reliability of the questionnaire. Prior to analysis, the research instrument was

tested for the reliability through the method of Cronbach's Alpha as depicted in the TABLE 1 below.

Table1: Reliability Analysis

Product	Cronbach's Alfa
Biscuits	0.909

It is one of the best methods of estimating reliability, and explains the levels of co-variation, that represents the scaled variables (Churchill, Gilbert, 1976). Nunnally (1978) concur that outcomes of Cronbach Alpha at 50% to 60% is acceptable for mostly researches. The Cronbach's Alpha founded was more than 70%. It was concluded and accepted with more authenticity.

STATISTICAL TOOLS AND TECHNIQUES

The collected data were analyzed using various statistical tools. Firstly, scale reliability was checked with appropriate statistical tool of reliability. After that scale was tested for validity check and model fitness by way of Confirmatory Factor analysis. Thirdly, to describe the vital features of the data used in the study, descriptive statistics was used that also summarizes it. Finally, inferential statistics was carried out on the data for analysis. The hypotheses were studied using Independent Sample T-Test and One-Way ANOVA. The statistical tests were carried out using SPSS (now PASW) version 19.0 and AMOS version 19.0. The study was accepted at 0.05 significance value along with 95% confidence level which is common level of confidence in social sciences research.

The model was constructed with the help of CFA technique, where in constructs are explained already. CFA technique measures the association between the defined variables and latent variables.

Analysis work of data was done with help of statistical tool of Confirmatory factor analysis and AMOS 18 software. In order to construct a final model, the different runs of the

zero - order, first - order and second - order CFA's were run, to formulate the measurement model and single parameters got verified with the help of reliability and validity tests. Tables given below provide various parameters of model fitness.

The 39 item modified scale has tested for convergent and discriminant validity and model fit by Confirmatory Factor analysis. The hypotheses to assess the impact of demographic characteristics of consumers on factors of packaging have been tested using Independent Sample T-Test and One-Way ANOVA.

CONFIRMATORY FACTOR ANALYSIS TO EXAMINE VALIDITY OF SCALE

This step involves defining the measured variables for the latent variables based on the theory or literature review, i.e. operationalization of the construct or latent variables. As per the nature of the constructs, on the basis of theory, the constructs are operationalized as per the below TABLE 2.

Table 2: Constructs of packaging extracted after review of literature

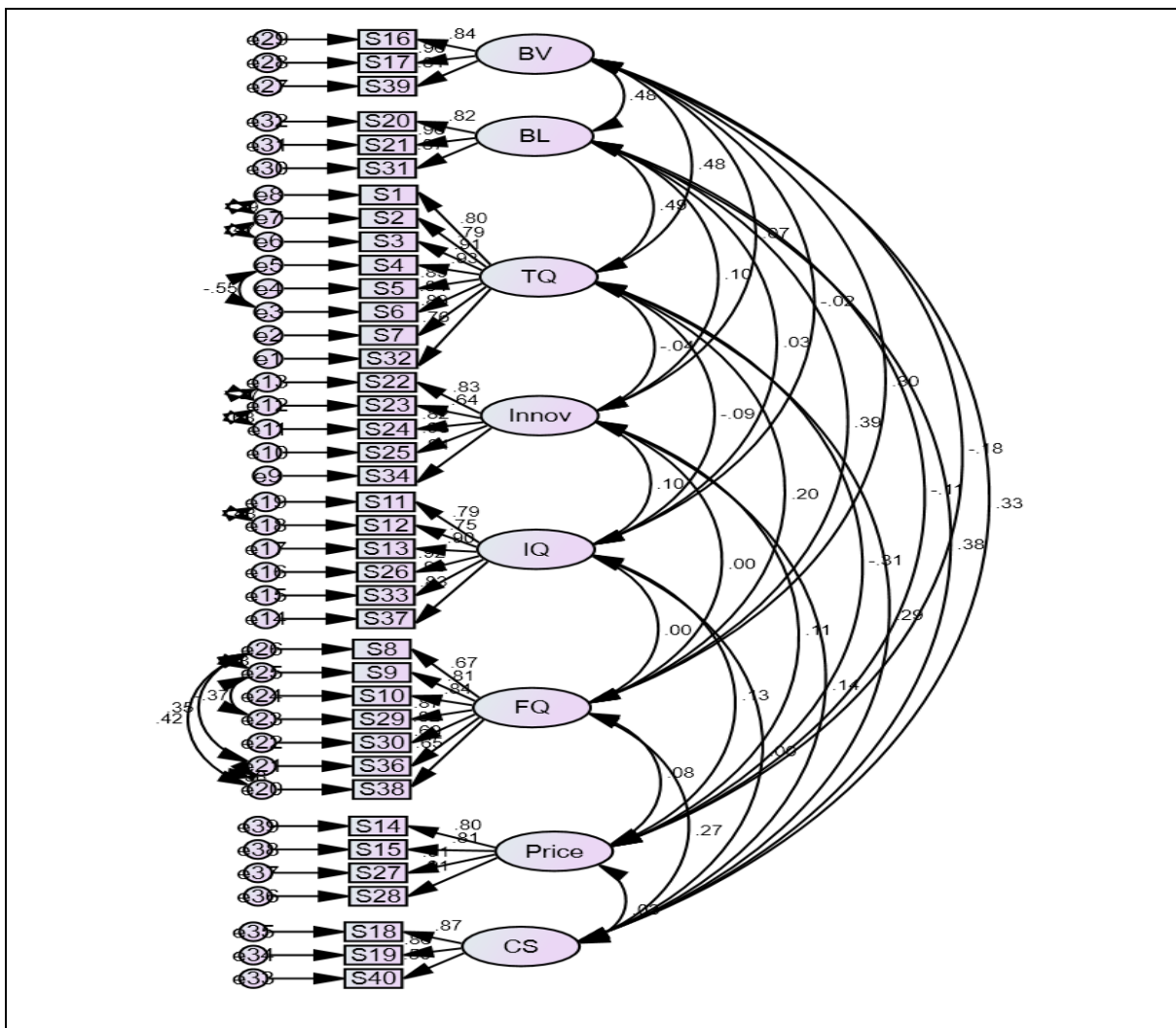
Constituents of packaging after Review of Literature	Functional quality
	Information Quality
	Innovation
	Price
	Technical Quality
	Brand value
	Customer Satisfaction
	Customer Loyalty

The following constructs were formulated on the basis of operationalization to test the relationship between the construct and its apparent variables:

FIRST – ORDER CONSTRUCTS

The First-Order CFA describes the correlation between the individual latent variables connected through double-headed arrows. The measurement model for the First-Order construct includes the individual First-Order CFA diagrams and the corresponding factor loadings.

Figure 1 First – Order CFA with their Manifest Variables



The figure 1 demonstrates the First-Order CFA and the individual Zero-Order constructs.

Table 3: Regression Weights of First Order

	Estimate	S.E.	C.R.	P	Label
S7 <--- TQ	.995	.053	18.797	***	
S6 <--- TQ	.880	.046	18.947	***	
S5 <--- TQ	1.094	.053	20.603	***	
S4 <--- TQ	1.430	.066	21.818	***	
S3 <--- TQ	1.318	.062	21.377	***	
S2 <--- TQ	1.077	.061	17.727	***	
S25 <--- Innov	1.120	.035	31.674	***	
S24 <--- Innov	1.080	.045	23.877	***	
S23 <--- Innov	.874	.056	15.639	***	
S22 <--- Innov	1.436	.060	24.128	***	
S33 <--- IQ	1.221	.047	25.800	***	
S26 <--- IQ	1.051	.041	25.390	***	
S13 <--- IQ	1.143	.047	24.554	***	
S12 <--- IQ	.943	.052	18.151	***	
S11 <--- IQ	.942	.047	19.869	***	
S36 <--- FQ	1.019	.072	14.190	***	
S30 <--- FQ	1.274	.087	14.691	***	
S29 <--- FQ	1.275	.085	15.034	***	
S10 <--- FQ	1.164	.078	14.875	***	
S9 <--- FQ	1.266	.090	14.135	***	
S8 <--- FQ	1.082	.067	16.094	***	
S17 <--- BV	1.106	.047	23.513	***	
S16 <--- BV	.921	.044	20.709	***	
S39 <--- BV	1.000				

	Estimate	S.E.	C.R.	P	Label
S21 <--- BL	1.021	.037	27.919	***	
S20 <--- BL	.817	.037	22.184	***	
S31 <--- BL	1.000				
S19 <--- CS	1.887	.186	10.147	***	
S18 <--- CS	2.043	.202	10.139	***	
S40 <--- CS	1.000				
S28 <--- Price	1.000				
S27 <--- Price	.823	.029	28.423	***	
S15 <--- Price	.694	.031	22.708	***	
S14 <--- Price	.725	.033	22.265	***	
S1 <--- TQ	1.085	.060	18.086	***	
S34 <--- Innov	1.000				
S32 <--- TQ	1.000				
S38 <--- FQ	1.000				
S37 <--- IQ	1.000				

Table 3 shows the regression weights for various manifest variables under the eight packaging contents. It is seen from the results that the statements (manifest variables) significantly explained the packaging content.

After the relevant latent variables and their manifest variables were specified into a measurement model, the next step was to ascertain the fitness of the measurement model.

Below are listed the standard fit indices used for interpreting the model.

- GFI (Goodness of Fit Index)
- CFI (Comparative fit index)
- RMSEA (Root mean square error of approximation)
- RMR (Root mean square residual)
- Ratio of X^2/df

- AGFI (Adjusted Goodness of Fit Index)
- NFI (Normed Fit Index)

Table 4: First– Order Model Fit Indices

Indices	Recommended Cut- Off Values	Positioning Content
<i>GFI</i>	> 0.09	0.818
<i>CFI</i>	> 0.09	0.921
<i>RMSEA</i>	<0.08	0.064
<i>RMR</i>	<0.05	0.036
Ratio of X ² /df	<3	2.762
TLI	>0.09	0.912
IFI	>0.09	0.922

* The values in Bold satisfy the cut-off criteria

(Any four fit-indices which satisfy the cut-off, confirms the goodness of fit of the proposed model)

Table 4 elaborates the fit-indices for the First-Order CFA. The reported GFI, CFI, TLI, IFI, RMSEA, RMR, Ratio of X²/df and NFI values satisfy the conditional cut-off values. Confirming the fact that the model is a good fit.

After the model fit indices are assessed, the next step involves checking the reliability and validity. The measures used for determining validity and reliability are: *Composite Reliability (CR)*, *Average Variance Extracted (AVE)*, *Maximum Shared Variance (MSV)*, and *Average Shared Variance (ASV)*.

Table 5 exhibits the values of reliability and convergent validity of the First-Order construct. The results from the table confirm that the constructs are reliable (i.e. alpha value is above the

threshold value 0.7). Further, the AVE value is greater than 0.5 for all the constructs. This satisfies the convergent validity criteria amongst the four latent variables. The reported values of MSV and ASV also satisfy the discriminant validity criteria of the constructs.

Table 5: Convergent and Discriminant Validity

	CR	AVE	MSV	ASV	CS	BV	BL	Price	Innov	IQ	FQ	TQ
CS	0.799	0.583	0.146	0.062	0.764							
BV	0.906	0.763	0.234	0.100	0.333	0.873						
BL	0.915	0.783	0.241	0.114	0.382	0.484	0.885					
Price	0.918	0.738	0.099	0.026	0.030	-0.179	-0.115	0.859				
Innov	0.918	0.695	0.020	0.009	0.143	0.072	0.104	0.111	0.834			
IQ	0.942	0.732	0.017	0.005	-0.003	-0.018	0.028	0.132	0.098	0.856		
FQ	0.903	0.574	0.152	0.051	0.269	0.296	0.390	0.085	-0.003	-0.004	0.757	
TQ	0.952	0.715	0.241	0.101	0.291	0.482	0.491	-0.315	-0.043	-0.088	0.200	0.846

After conducting CFA it was found that model fitted successfully for biscuits in Indian scenario. After confirming the model with the help of CFA, it can be concluded that various factors of packaging can be measured by eight factors i.e. innovation, price, technical quality, functional quality, brand value, customer Satisfaction, customer loyalty and information quality with 39 statements for biscuits.

After reaching the factors hypothesis testing has been conducted for the second objective

Objective 2: To analyze the influence of demographic characteristics of consumers on the various factors of packaging which influence consumer buying behavior with special reference to selected FMCG goods – Biscuits.

Impact of demographic characteristics (age, gender, income, marital status, educational qualification and family size) of consumers on the various factors of packaging which

influence consumer buying behaviour with special reference to biscuit in National Capital of India - Delhi are tested in this chapter.

In this study there are two demographics where we have two independent groups' i.e gender and marital status. Independent sample t-test is used for comparing the difference between these groups. For, demographics's having more than two categories or groups like age, income, educational qualification and family size, one way ANOVA is applied to test whether there is a significant difference between the mean scores of various categories. Post Hoc analysis is used for further ascertaining which groups differ among their mean score. When assumption of Homogeneity of Variance sustains, Tucky's method is used else Games-Howell method is used.

IMPACT OF DEMOGRAPHIC CHARACTERISTICS OF CONSUMERS ON VARIOUS FACTORS OF PACKAGING TOWARDS BISCUITS

A total of 500 questionnaires were distributed to respondents of different colonies for data collection out of which 455 filled questionnaires were returned. 23 questionnaires were found to be incomplete from the filled questionnaires and were not considered fit for the analysis and hence were rejected. Finally, 432 questionnaires complete in all respects were considered for further analysis.

Out of 432 questionnaires collected there were a total of 50.9% Males and 49.1% females. 42.1% of the sample was from the age group of 21-30 years and 24.3% were from the age group of 31-40 years. Majority of the respondents were married (62.7%). With respect to educational qualification, most of the respondents were graduates (44.9%) followed by post graduates (31.5%). 38% of the respondents were from the income group of less than 3 lakhs and least number of respondents from the income group of above 14 lakhs (6.9%).

EFFECT OF AGE ON VARIOUS FACTORS OF PACKAGING TOWARDS BISCUITS

H0₁: There is no significant difference between the mean scores of various factors of packaging for different age groups towards biscuits

Table 6: ANOVA between Age and various factors of packaging towards biscuits

	Levene Statistic	Sig.	F	Sig.	Statistica	Sig.
Technical_quality	.424	.736	2.499	.059	2.468	.064
Innovation	.262	.852	1.609	.187	1.647	.180
Information_quality	2.864	.036	1.959	.120	2.058	.107
Functional_quality	1.163	.323	1.101	.348	1.019	.385
Brand_Value	3.704	.012	1.244	.293	1.050	.372
Brand_loyalty	2.462	.062	3.014	.030	2.863	.038
Price	1.711	.164	4.006	.008	4.082	.008
customer_satisfaction	.601	.615	4.058	.007	3.557	.015

ANOVA TABLE 6 reflects that brand loyalty, price and customer satisfaction has a significant difference for different age groups. So our NULL hypothesis stands rejected for brand loyalty, price and customer satisfaction. There is no significant difference between the mean scores of technical quality, innovation, information quality, functional quality and brand value. We will do post hoc for brand loyalty, price and customer satisfaction.

Table 7: Descriptive of age for brand loyalty towards biscuits

		N	Mean
Brand_loyalty	21-30 Years	182	3.2729
	31-40 Years	105	3.1841
	41-50 Years	78	2.8761
	51-60 Years	67	3.0746
	Total	432	3.1489

By analyzing post hoc we can say that there is a significant difference between the age groups 21-30 years and 41-50 years with respect to brand loyalty. The mean score of the respondents

of age group 21-30 years is the higher (M=3.2729) as compared to the age group 41-50 years (M=2.8761) as per the descriptive TABLE 7.

Table 8: Descriptive of age for price towards biscuits

		N	Mean
Price	21-30 Years	182	3.0014
	31-40 Years	105	2.9548
	41-50 Years	78	3.3814
	51-60 Years	67	3.3209
	Total	432	3.1082

By analyzing post hoc we can say that there is a significant difference between the age groups 21-30 years and 41-50 years and between 31-40 years and 41-50 years with respect to price. The mean score of the respondents of age group 21-30 years is the less (M=3.0014) as compared to the age group 41-50 years (M=3.3814) and 41-50 years (M=3.3814) is higher as compared to 31-40 years (M=2.9548) as per the descriptive TABLE 8.

Table 9: Descriptive of age for customer satisfaction towards biscuits

		N	Mean
customer_satisfaction	21-30 Years	182	3.3535
	31-40 Years	105	3.3556
	41-50 Years	78	3.0128
	51-60 Years	67	3.3184
	Total	432	3.2870

By analyzing post hoc we can say that there is a significant difference between the age groups 21-30 years and 41-50 years and between 31-40 years and 41-50 years with respect to customer satisfaction. The mean score of the respondents of age group 21-30 years is the less (M=3.3535) as compared to the age group 41-50 years (M=3.0128) and 41-50 years (M=3.0128) is lower as compared to 31-40 years (M=3.3556) as per the descriptive TABLE 9.

EFFECT OF GENDER ON VARIOUS VARIABLES OF FACTORS OF PACKAGING TOWARDS BISCUIT

H₀₂: There is no significant difference between the mean scores of various factors of packaging for different genders towards biscuit.

Table 10: T-Table of gender and various factors of packaging towards biscuit

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Technical quality	Equal variances assumed	.119	.731	-.082	430	.934	-.00795	.09643	-.19747	.18158
	Equal variances not assumed			-.082	429.864	.934	-.00795	.09639	-.19740	.18151
Innovation	Equal variances assumed	.492	.483	.354	430	.724	.03048	.08617	-.13889	.19985
	Equal variances not assumed			.354	429.997	.724	.03048	.08612	-.13878	.19975

	assumed									
Information _quality	Equal variances assumed	1.4 68	.22 6	1.010	430	.313	.09949	.09847	- .0940 6	.2930 3
	Equal variances not assumed			1.011	429 .93 7	.312	.09949	.09838	- .0938 9	.2928 6
Functional_ quality	Equal variances assumed	.14 6	.70 3	- 1.019	430	.309	- .07336	.07197	- .2148 2	.0681 0
	Equal variances not assumed			- 1.019	429 .30 2	.309	- .07336	.07198	- .2148 3	.0681 0
Brand_Val ue	Equal variances assumed	3.9 41	.04 8	- 1.354	430	.176	- .12507	.09234	- .3065 7	.0564 3
	Equal variances not assumed			- 1.357	427 .58 4	.175	- .12507	.09215	- .3062 0	.0560 5
Brand_loya lty	Equal variances assumed	.30 1	.58 4	-.517	430	.606	- .05029	.09733	- .2415 9	.1410 2
	Equal variances not assumed			-.517	429 .55 0	.606	- .05029	.09732	- .2415 8	.1410 1
Price	Equal variances	.39 4	.53 0	.784	430	.434	.08051	.10274	- .1214	.2824 5

	assumed								3	
	Equal variances not assumed			.784	429	.434	.08051	.10272	-	.2824
					.699				.12139	1
customer_s atisfaction	Equal variances assumed	.010	.921	-	430	.314	-	.07493	-	.0718
				1.007			.07547		.22276	1
	Equal variances not assumed			-	429	.314	-	.07495	-	.0718
				1.007	.118		.07547		.22278	4

Independent sample T-test TABLE 10 reveals that there is no significant difference in the mean scores of various factors of packaging for both males and females. Hence we accept our NULL hypothesis and can say that there is no difference in the various factors of packaging for males and females or we can say that various factors of packaging for males and females with respect to biscuits are similar.

EFFECT OF MARITAL STATUS ON VARIOUS FACTORS OF PACKAGING TOWARDS BISCUITS

H0₃: There is no significant difference between the mean scores of various factors of packaging for different marital status towards biscuits.

Table 11: Group Statistics of marital status for biscuits

	Marital_status	N	Mean	Std. Deviation	Std. Error Mean
Technical_quality	Married	271	2.8840	.99903	.06069
	Unmarried	161	3.0255	1.00048	.07885

Innovation	Married	271	2.6443	.91932	.05584
	Unmarried	161	2.5317	.84915	.06692
Information_quality	Married	271	3.0800	1.04348	.06339
	Unmarried	161	3.0393	.99085	.07809
Functional_quality	Married	271	2.9067	.75939	.04613
	Unmarried	161	3.1038	.71339	.05622
Brand_Value	Married	271	3.1267	.98838	.06004
	Unmarried	161	3.2360	.91031	.07174
Brand_loyalty	Married	271	3.0554	1.03429	.06283
	Unmarried	161	3.3064	.95159	.07500
Price	Married	271	3.1919	1.07350	.06521
	Unmarried	161	2.9674	1.04438	.08231
customer_satisfaction	Married	271	3.2312	.80676	.04901
	Unmarried	161	3.3810	.72155	.05687

Table 12: T-Table of Marital Status and various factors of packaging towards biscuit

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	Equal								Lower	Upper
Technical_qual	Equal	.07	.77	-	430	.155	-.14157	.09946	-	.053

ity	variances assumed	9	9	1.423					.33706	93
	Equal variances not assumed			-1.423	335.863	.156	-.14157	.09950	-.33729	.05415
Innovation	Equal variances assumed	1.198	.274	1.266	430	.206	.11260	.08894	-.06221	.28742
	Equal variances not assumed			1.292	357.644	.197	.11260	.08716	-.05881	.28402
Information_quality	Equal variances assumed	2.122	.146	.399	430	.690	.04061	.10191	-.15970	.24092
	Equal variances not assumed			.404	350.210	.687	.04061	.10058	-.15720	.23843

	ed									
Functional_loyalty	Equal variances assumed	1.303	.254	-2.668	430	.008	-.19712	.07389	-.34236	-.05188
	Equal variances not assumed			-2.710	353.102	.007	-.19712	.07273	-.34015	-.05409
Brand_Value	Equal variances assumed	1.617	.204	-1.144	430	.253	-.10933	.09553	-.29710	.07843
	Equal variances not assumed			-1.169	358.416	.243	-.10933	.09355	-.29331	.07464
Brand_loyalty	Equal variances assumed	5.176	.023	-2.512	430	.012	-.25107	.09993	-.44749	-.05465
	Equal variances			-2.566	358.700	.011	-.25107	.09784	-.44347	-.05866

	not assumed									
Price	Equal variances assumed	1.637	.201	2.123	430	.034	.22449	.10575	.01664	.43234
	Equal variances not assumed			2.138	343.661	.033	.22449	.10501	.01795	.43103
customer_satisfaction	Equal variances assumed	3.582	.059	-1.938	430	.053	-.14971	.07723	-.30151	.00209
	Equal variances not assumed			-1.994	366.212	.047	-.14971	.07507	-.29733	-.00209

Analysis of Independent sample t-test TABLE 12 showed that, there is a significant difference in brand loyalty, price and functional quality. No significant difference in the mean scores of other factors for marital status. So, null hypothesis stands rejected for brand loyalty, price and functional quality and we can say that there is significant difference in the various factors of packaging for married and unmarried group with respect to biscuit.

Unmarried are higher on functional quality (3.1038) and brand loyalty (3.3064) whereas married are higher on price (3.1919) as compared to unmarried.

EFFECT OF EDUCATIONAL QUALIFICATION ON VARIOUS FACTORS OF PACKAGING TOWARDS BISCUITS

H0₄: There is no significant difference between the mean scores of various factors of packaging for different Levels of Education towards biscuits.

Table 13: ANOVA between educational qualification and various factors of packaging towards biscuits

	Levene Statistic	Sig.	F	Sig.	Statistica	Sig.
Technical_quality	6.441	.000	.322	.810	.382	.766
Innovation	.324	.808	.139	.937	.140	.936
Information_quality	1.706	.165	1.506	.212	1.920	.130
Functional_quality	2.699	.045	.972	.406	1.001	.395
Brand_Value	2.985	.031	4.259	.006	4.092	.009
Brand_loyalty	.876	.454	1.043	.373	1.081	.361
Price	2.820	.039	.600	.615	.676	.569
customer_satisfaction	1.419	.237	.962	.411	1.064	.367

Analysis of Variance in TABLE 13 showed that, except brand value all other variables of packaging do not differ significantly on the basis of education which means various factors of packaging like technical quality, innovation, information quality, functional quality, price and customer satisfaction are not affected by educational qualification. So, null hypothesis stands REJECTED for brand value.

Table 14: Descriptives of brand value for educational qualification towards biscuits

		N	Mean
Brand_Value	10+2	28	2.7381
	Graduation	194	3.0722

	Post Graduation	136	3.2917
	Professional Qualification	74	3.3514
	Total	432	3.1674

As per Post hoc there is a significant difference between the respondents who are 10+2 from professionally qualified. Professionals are highest on innovativeness (3.3514) as compared to 10+2 (2.7381) as per the descriptive TABLE 14.

EFFECT OF INCOME ON VARIOUS VARIABLES OF FACTORS OF PACKAGING TOWARDS BISCUIT

H0₅: There is no significant difference between the mean scores of various factors of packaging for different income groups towards biscuits.

Table 15: ANOVA between income and various factors of packaging towards biscuits

	Levene Statistic	Sig.	F	Sig.	Statistica	Sig.
Technical_quality	1.103	.355	1.213	.305	1.291	.277
Innovation	.459	.766	2.353	.053	2.199	.073
Information_quality	1.281	.277	1.370	.244	1.356	.253
Functional_quality	.575	.681	1.601	.173	1.535	.196
Brand_Value	1.450	.217	1.585	.177	1.626	.171
Brand_loyalty	1.027	.393	4.238	.002	4.060	.004
Price	1.133	.340	1.397	.234	1.326	.264
customer_satisfaction	.278	.892	2.467	.044	2.586	.040

Analysis of variance TABLE 15 showed that there is a significant difference in the mean scores of brand loyalty and customer satisfaction for different income groups. Hence null hypothesis stands rejected for brand loyalty and customer satisfaction. For rest of the variables of packaging NULL hypothesis is accepted.

Table 16: Descriptive of brand loyalty for income towards biscuits

	N	Mean

Brand_loyalty	Less than 3 Lakh	164	3.3374
	3-5 Lakhs	95	2.8842
	5-9 Lakhs	93	3.2115
	9-14 Lakh	50	2.8733
	14 Lakh and above	30	3.2222
	Total	432	3.1489

There is significant difference in the brand loyalty of the individuals in the income group less than 3 lakhs differ from 3-6 lakhs and 9-14 lakhs according to the Post Hoc. As per the descriptive TABLE 16 individuals with an income between less than 3 lakhs have more brand loyalty having a mean $M=3.3374$ followed by respondents having income between 3 -6 lakhs with $M=2.8842$. Individuals in the income group less than 3 lakhs(3.3374) have the highest brand loyalty as compared to 9-14 lakhs.

Table 17: Descriptive of customer satisfaction for income towards biscuits

		N	Mean
customer_satisfaction	Less than 3 Lakh	164	3.3252
	3-5 Lakhs	95	3.2807
	5-9 Lakhs	93	3.3441
	9-14 Lakh	50	2.9800
	14 Lakh and above	30	3.4333
	Total	432	3.2870

Post hoc reveals that there is a significant difference between the income group of Less than 3 Lakhs and respondents with income between 9- 14 lakhs. Respondents having the income below 3 lakhs ($M=3.3252$) and lowest being respondents with the income between 9-14 lakhs ($M=2.9800$).

EFFECT OF FAMILY SIZE ON VARIOUS FACTORS OF PACKAGING TOWARDS BISCUITS

H_{06} : There is no significant difference between the mean scores of various factors of packaging for different family size towards biscuits.

Table 18: ANOVA between family size and various factors of packaging towards biscuits

	Levene Statistic	Sig.	F	Sig.	Statistica	Sig.
Technical_quality	1.320	.267	.166	.919	.161	.923
Innovation	1.375	.250	1.037	.376	.847	.470
Information_quality	4.377	.005	.314	.815	.294	.830
Functional_quality	1.302	.273	.267	.849	.266	.850
Brand_Value	.128	.943	.881	.451	.884	.450
Brand_loyalty	.912	.435	.900	.441	.801	.495
Price	1.032	.378	.393	.758	.391	.759
customer_satisfaction	.966	.409	.923	.429	.805	.492

ANOVA TABLE 18 reflects that there is a no significant difference between the mean scores of various factors of packaging between different family size with respect to biscuits. Hence our NULL hypothesis stands ACCEPTED for all the variables of Packaging

Conclusion:

H01: There is no significant difference between the mean scores of various Factors of packaging for different age groups with special reference to biscuit: Rejected

H02: There is no significant difference between the mean scores of various Factors of packaging for different genders with special reference to biscuit: Accepted

H03: There is no significant difference between the mean scores of various Factors of packaging for different marital status with special reference to biscuit: Rejected

H04: There is no significant difference between the mean scores of various Factors of packaging for different educational qualification with special reference to biscuit: Rejected

H05: There is no significant difference between the mean scores of various Factors of packaging for different income groups with special reference to biscuit: Rejected

H06: There is no significant difference between the mean scores of various Factors of packaging for different family size with special reference to biscuit: Accepted

Discussion:

After conducting CFA it was found that model fitted successfully for biscuits in Indian scenario. After confirming the model with the help of CFA, it can be concluded that various factors of packaging can be measured by eight factors i.e. innovation, price, technical quality, functional quality, customer loyalty, customer satisfaction, brand value and information quality with 39 statements for biscuits. Brand loyalty, price and customer satisfaction has a significant difference for different age groups. The mean score of the respondents of age group 21-30 years is the higher (M=3.2729) as compared to the age group 41-50 years (M=2.8761) . The mean score of the respondents of age group 21-30 years is the less (M=3.0014) as compared to the age group 41-50 years (M=3.3814) and 41-50 years (M=3.3814) is higher as compared to 31-40 years (M=2.9548) with respect to price. The mean score of the respondents of age group 21-30 years is the less (M=3.3535) as compared to the age group 41-50 years (M=3.0128) and 41-50 years (M=3.0128) is lower as compared to 31-40 years (M=3.3556) with respect to customer satisfaction. No significant difference in the mean scores of various factors of packaging for both males and females, family size. There is a significant difference in brand loyalty, price and functional quality for marital status. Unmarried respondents are higher on functional quality (3.1038) and brand loyalty (3.3064) whereas married respondents are higher on price (3.1919) as compared to females. Brand value differ significantly on the basis of education there is a significant difference between the respondents who are 10+2 from professionally qualified. Professionals are highest on innovativeness (3.3514) as compared to 10+2 (2.7381). There is a significant difference in the mean scores of brand loyalty and customer satisfaction for different income groups. individuals with an income between less than 3 lakhs have more brand loyalty having a mean M=3.3374 followed by respondents having income between 3 -6 lakhs with M=2.8842. Individuals in the income group less than 3 lakhs(3.3374) have the highest brand loyalty as compared to 9-14 lakhs. Respondents having the income below 3 lakhs (M=3.3252) and lowest being respondents with the income between 9-14 lakhs (M=2.9800). Marketers should provide sophisticated, unique and different packages for their products to

increase the customer satisfaction through brand loyalty. Packages should be available in various sizes to cater to customer requirements. Bright colored and high graphic packages attract consumers while varied sizes lead to customer satisfaction. Marketers should take care of the pricing of the product to cater to various age groups and help build brand loyalty. Product should be made available in various sized packaging that fulfils the customers' requirements.

References:

Adam, M. A., & Ali, K. (2014). Impact of verbal elements of packaging of packaged milk on consumer buying behavior. *International Journal of Business and Social Science*, 5(5), 1.

Adam, M. A., & Ali, K. (2014). Impact of Packaging Elements of Packaged Milk on Consumer Buying Behaviour. *Cell*, 312, 2093312.

Adam, M. A., & Ali, K. (2015). Impact of Packaging Elements of Packaged Milk on Consumer Buying Behaviour. *Cell*, 312, 2093312.

Ahmed, R. R., Nawaz, A., Vishnu, P., & Khoso, I. (2014). Role of Packaging and Labeling on Pakistani Consumers Purchase Decision. *European Scientific Journal*, June.

Akabogu, O. C. (2014). Consumers' Satisfaction with 7up Packaging: an empirical Analysis. *IOSR Journal of Business and Management (IOSR-JBM)* e-ISSN, 28-36.

Ampuero, O., & Vila, N. (2006). Consumer perceptions of product packaging. *Journal of consumer marketing*, 23(2), 100-112.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science*, 16(1), 74-94.

DeBono, K. G., Leavitt, A., & Backus, J. (2003). Product Packaging and Product Evaluation: An Individual Difference Approach¹. *Journal of Applied Social Psychology*, 33(3), 513-521.

Deliya, M. (2012) in his paper “ Consumer Behavior towards the new packaging of FMCG Products.”

Deliya, M. M., & Parmar, M. B. J. (2012). Role of packaging on consumer buying behavior–patan district. *Global Journal of Management and Business Research*, 12(10).

Dhurup, M., Mafini, C., & Dumasi, T. (2014). The impact of packaging, price and brand awareness on brand loyalty: Evidence from the paint retailing industry. *Acta Commerci*, 14(1), 9-pages.

Dillon, T. F. (1980). Contract Packaging. One Answer to Many Needs. *Purchasing*, 89(11), 66-68.

Ekta, A. (2015). A comparative study of consumer behaviour with regard to fmcg products in rural and urban market.

Gilaninia, S., Ganjina, H., & Charmchi, K. (2013). Affecting Factors of Packaging Milk Production on Guilan Consumer Behavior. *Nigerian Chapter of Arabian Journal of Business and Management Review*, 1(3), 29-40.

Gómez, M., Martín-Consuegra, D., & Molina, A. (2015). The importance of packaging in purchase and usage behaviour. *International Journal of Consumer Studies*, 39(3), 203-211.

Gopal, R. K., & George, M. (2014). PACKAGING, A VISUAL ART: AN ANALYSIS ON PACKAGING FOR FMCG GOODS. *Asia Pacific Journal of Research Vol: I Issue XVI*.

Gray, V., & Guthrie, J. (1990). Ethical issues of environmentally friendly packaging. *International Journal of Physical Distribution & Logistics Management*, 20(8), 31-36.

Hair, J. F., Anderson, R. E., Tatham, R. L., & William, C. Black (2005). *Multivariate Data Analysis with Readings*.

Harnath, G., & Subrahmanyam, S. E. V. (2005). A Study of Preferences of Consumer packs for Toffees/Candies. *Indian Journal of Marketing*, 35(5).

Hasan, S. A., & Khan, M. Z. (2009). The Impact of Packaging Characteristics on Consumer Brand Preference. *South Asian Journal of Management Sciences*, 3(1), 1-10.

Kaya, I. H., Poyrazoglu, E. S., Artik, N., & Konar, N. (2013). Academicans' Perceptions and Attitudes toward GM-Organisms and–Foods. *International Journal of Biological, Ecological and Environmental Sciences*, 2(2), 2-6.

Kleinbaum, D. G., Kupper, L. L., & Muller, K. E. (1988). *Applied regression analysis and other multivariate analysis methods*. Boston: PWS-Kent Publishing Company.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educ psychol meas*.

Kumar, N. A., & Joseph, J. (2015). A Study on consumer behavior towards FMCG products among the rural-suburban Hhs of Ernakulam. *Journal of Global Economics*, 2014.

Mazhar, M., Daud, S., Bhutto, S. A., & Mubin, M.(2015). Impact of Product Packaging on Consumers Buying Behavior: Evidence from Karachi.

Mbuyazi, V. S. (2012). The use of new communication strategies to enhance marketing of Fast Moving Customer Goods (FMCG) (Doctoral dissertation, University of Zululand).

McDaniel, C., & Baker, R. C. (1977). Convenience food packaging and the perception of product quality. *Journal of Marketing*, 41(4), 57.

McNeal, J. U., & Ji, M. F. (2003). Children's visual memory of packaging. *Journal of Consumer Marketing*, 20(5), 400-427.

Mishra, H. G., & Jain, D. (2012). Impact of Packaging in Consumer Decision Making Process of Namkeen Products. *Journal of Marketing & Communication*, 7(3).

Morel, M., & Kwakye, F. (2012). Green marketing: Consumers' Attitude towards Eco-friendly Products and Purchase Intention in the Fast Moving Consumer Goods (FMCG) sector.

Nunnally, J. (1978). Psychometric methods.

Prendergast, G., & Pitt, L. (1996). Packaging, marketing, logistics and the environment: are there trade-offs?. *International Journal of Physical Distribution & Logistics Management*, 26(6), 60-72.

Sara, R. (1990). Packaging as a retail marketing tool. *International Journal of Physical Distribution & Logistics Management*, 20(8), 29-30.

Saeed, R., Lodhi, R. N., Rauf, A., Rana, M. I., Mahmood, Z., & Ahmed, N. (2013). Impact of Labelling on Customer Buying Behavior in Sahiwal, Pakistan. *World Applied Sciences Journal*, 24(9), 1250-1254.

Silayoi, P., & Speece, M. (2004). Packaging and purchase decisions: An exploratory study on the impact of involvement level and time pressure. *British food journal*, 106(8), 607-628.

Van den Berg-Weitzel, L., & Van de Laar, G. (2001). Relation between culture and communication in packaging design. *Journal of Brand Management*, 8(3), 171-184.

Venter, K., Van der Merwe, D., De Beer, H., Kempen, E., & Bosman, M. (2011). Consumers' perceptions of food packaging: an exploratory investigation in Potchefstroom, South Africa. *International Journal of Consumer Studies*, 35(3), 273-281.

Vyas, H. (2015). Packaging Design Elements and Users Perception: a context in fashion branding and communication. *Journal of Applied Packaging Research*, 7(2), 5.

Wanninayake, W. M. C. B., & Randiwela, P. (2008, June). Consumer attractiveness towards green products of FMCG sector: an empirical study. In Proceedings of the Oxford Business and Economics Conference.