



DO PACKAGING CUES AND QUALITY PERCEPTION INFLUENCE THE PURCHASE INTENTION OF CONSUMERS?

(With special reference to JOOT Food Products)

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Abstract: Packaging of products is an eminent feature of marketing communication, especially in this fast-paced and dynamic day and age. Packaging cues create interest in the minds of consumers, which ultimately may result in a purchase decision. Consumers' perceived quality of a product is important in determining the brand's longevity. Positive perceived quality and packaging cues of products are important antecedents to the purchase decision of an aware consumer. The aim of this article is to study the importance of quality perception and packaging cues in the purchase intention of consumers. This research paper examines the consumers' purchase intention with regard to the products of 'JOOT Foods' which are natural, have no added preservatives and do not contain artificial substances. A quantitative research was conducted by distributing one hundred and fifty sets of questionnaires to consumers in Chennai through Google Forms. Results show that packaging cues and quality perception have a direct and positive relationship with the purchase intention of consumers. This research with its analysis can be beneficial to JOOT Foods by aiding them in maintaining and enhancing their existing product packaging and quality to further stimulate consumers' interest and create a niche for the products in the market.

Index Terms - Food Products, Packaging Cues, Quality Perception, Purchase Intention

I INTRODUCTION

Buying behavior of consumers is an interesting study in Marketing. It is especially fascinating because there are no set patterns or determinants. It is a function of their incomes, sensibilities, upbringing to name only a few variables. Generally, there are two major factors that influence almost every purchase decision - Packaging and Quality Perception. Steps in purchasing a product are long drawn-out or short & swift, depending on the customer but what catches their attention first is the physical appearance of the product. If their curiosity does get to the better of them, it results in a purchase decision. However, their initial appreciation may be short-lived. Ultimately, the survival of the product in the market depends on whether the consumer returns to buy the product again. Only consumers, whose quality standards are met by the products, will intend on purchasing them again.

Long gone are the days where the primary function of packaging was only to protect the product from external elements. Packaging or the 'Silent Salesman' has become an integral part of brand building and developing a brand perception among consumers. Its newer functions also include communication, promotion and transaction of products. Sometimes even touted as the face of brands, packaging and its cues in certain cases have become instrumental in the rise of their popularity – with consumers often attributing the utility of the products and brand experience to their first perception of the product.

Quality Perception is the extent to which consumers appreciate the utility of the brand. However, this does not imply 'Quality'. Perception of quality is subjective and not the same for all consumers. It may differ in its degree from time to time and may not be constant at all times. Hence, the knowledge of the quality perception of consumers is very useful to businesses as that is what determines the longevity and sustainability of the product and the brand in the long run.

Most studies reiterate the importance of quality perception and packaging but only a few have explored their implications on the purchase intention of consumers. The current study examines the scope of packaging cues and quality attributes of the products of a new quintessential South-Indian snack brand, 'JOOT Foods' (a unit of Sri Krishna Sweets Pvt. Ltd) that gives special importance to healthy and preservative-free snacks and beverages. Their new age matte-finish packaging and its versatility set the products apart from the rest of the brands. This brand was decided upon because of its seriousness to both packaging and consumers' quality perception. The study was executed by reviewing literature related to the concepts of 'Packaging' and 'Quality Perception' and by surveying consumers of JOOT Foods to determine their preferred packaging cues and quality attributes and their subsequent relationship with purchase intention.

II LITERATURE REVIEW

Robert L. Underwood & Noreen M. Klein (2002) examined whether product imagery on packaging has an impact on the brand perception of customers. Through an empirical study, the researchers found out that pictures are instrumental in changing the beliefs of the consumers about the brand and also in communicating important information about it at the same time. It was found that their brand beliefs positively affected their mental evaluation of the brand, if there was a product picture on the packaging. It can be inferred that packaging does play a role in subconsciously altering the brand perception of customers in a positive manner.

Hannele Kauppinen-Raisanen (2014) in their paper explained how extrinsic packaging cues like "colour" in particular are neglected in research. In reality, colour of the packaging is very important for a multitude of reasons – conveying meaning, attracting attention etc. It also subconsciously affects customers' perception of the brand as different colours can be said to signify different meanings. This paper suggests a framework where it combines the product packaging functions and their inter relationships. Developing brand identity is another important concept that is highlighted in this study.

Betina Piqueras-Fiszman & Charles Spence (2002) aimed to investigate whether the texture of the packaging had any correlation with people's perception of the food inside. 58 participants tasted yoghurt and digestive biscuits in containers that varied in terms of texture (smooth and rough respectively). The texture of the food items was also different – the biscuits and yoghurt were crunchy and thick respectively. In a 2 × 2 experimental design, the texture of the food and the participants' liking for it was examined and it was found out that there does exist a positive relationship between the texture of food and its related packaging texture.

Anna Fenko et al (2016) explored the relationship between sensory properties of beer bottles and values & flavours of the beer itself. 42 Dutch participants above the age of 18 were asked to evaluate five foreign beer products on the basis of flavour characteristics, package characteristics and brand values. These brands were relatively unknown to them. The results showed that there was a pattern in the association of auditory and tactile (multisensory) characteristics of the beer bottles with brand values and flavours.

Jasper van Houcke et al (2018) examined the significance of oyster quality parameters, factors of oyster consumption and the degree of acceptance of Dutch consumers to refined oysters after knowing the product and the process. It was found out that the Dutch preferred texture, odour and taste when it came to oyster quality characteristics. Their purchase intention is determined by the oysters' cultivation area, flavour profile and the country of origin. However, their refinement had nothing to do with their propensity to purchase them. In contrast, consumers appreciated refined oysters more, after having known their complex cultivation process.

Torben Hansen (2005) aimed at examining the perceived quality of consumers of cheese and shrimp in two different settings – two price levels, two levels of purchase involvement, and two types of physical surroundings (based on the levels of elegance). There were two different situations as well, where perceived price had a big impact - buying and stimulated usage situations. It was found that perceived price positively impacted quality for high involved participants in the buying situation whereas the attribute of naturalness was stronger with high-involved participants in the usage situation. The study showed that there existed a relationship between experienced eating quality on pleasure and display of elegant settings.

Giulia Mascarello et al (2015) analysed on the quality attributes that appeal most to Italian consumers who were in charge of household purchases. A sample of 1000 consumers was interviewed via telephones. The consumers were segregated into two categories – those who used sensory elements as their criteria and others who give more importance to place of origin and method. The results indicate that Italians on an average give more importance to the former. This study is especially important because Italians consider hedonic characteristics to be very important. On a larger scale, it is important to know these characteristics well because the food chain can be regulated and maintained keeping in view the consumers' preferred quality attributes.

III OBJECTIVES OF THE STUDY

1. To study the influence of the income of consumers on their preferred product quality attributes.
2. To examine whether consumers' satisfaction with packaging cues of products have an influence on their purchase intention.
3. To study whether perceived quality attributes have discriminating power on consumers' purchase intention.
4. To rank quality attributes based on the consumers' purchase intention.

IV RESEARCH METHODOLOGY

This research study is empirical in nature, as data has been collected from consumers to understand their degree of appreciation towards packaging cues and quality attributes. Sample size for the research study is 150 consumers. The data collected for the study was analysed using the SPSS Version 16 Programme. A well structured questionnaire was used to measure consumers' perception of quality attributes & packaging cues of the products as well as their purchase intention. This questionnaire used a 5 Point Likert scale with 1 being, 'Strongly Agree' and 5 being, 'Strongly Disagree'.

4.1 RESEARCH MODEL

The following research model was framed and named as the "Causal Model of Perceived Quality-Packaging Cues". The model has three constructs which were incorporated to measure the causal effect of perceived quality and packaging cues of JOOT products on the purchase intention of the consumers.

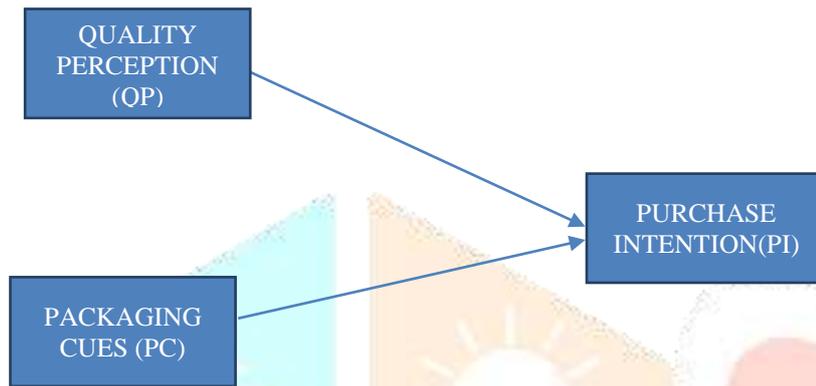


Figure 1: Causal Model of Perceived Quality-Packaging Cues

V DATA ANALYSIS

The research study was conducted during the year 2020 to identify the effect of perceived quality and packaging cues of JOOT products on the purchase intention of consumers. A well structured questionnaire with three parts measuring customers' perception on the quality of the products, packaging cues and their purchase intention was developed. One hundred and fifty customers across Chennai were surveyed and the data collected through the questionnaire was analysed by employing 'Artificial Neural Network' and the 'Discriminant Analysis'.

5.1 ANOVA

Analysis of Variance or ANOVA was used to determine if consumers' income played a role in determining their preferred quality attributes, which are the independent and dependent variables respectively.

Table 1 ANOVA FOR DIFFERENCES IN THE QUALITY ATTRIBUTES ON THE BASIS OF INCOME LEVEL OF CONSUMERS

		Sum of Squares	df	Mean Square	F	Sig.
Aroma	Between Groups	9.982	6	1.664	2.247	.042
	Within Groups	105.858	143	.740		
	Total	115.840	149			
Taste	Between Groups	8.608	6	1.435	2.213	.045
	Within Groups	92.725	143	.648		
	Total	101.333	149			
Flavour	Between Groups	9.748	6	1.625	2.165	.050
	Within Groups	107.292	143	.750		
	Total	117.040	149			
Mouth-feel	Between Groups	7.142	6	1.190	2.108	.056
	Within Groups	80.752	143	.565		
	Total	87.893	149			
Freshness	Between Groups	9.518	6	1.586	2.191	.047
	Within Groups	103.555	143	.724		
	Total	113.073	149			
Appearance	Between Groups	6.554	6	1.092	1.695	.126
	Within Groups	92.139	143	.644		
	Total	98.693	149			
Wholesomeness	Between Groups	9.649	6	1.608	2.068	.061
	Within Groups	111.185	143	.778		
	Total	120.833	149			
Natural Ingredients	Between Groups	10.693	6	1.782	2.097	.057
	Within Groups	121.501	143	.850		
	Total	132.193	149			
Ready-To-Use Concept	Between Groups	7.736	6	1.289	1.862	.091
	Within Groups	99.037	143	.693		
	Total	106.773	149			
Traditional Theme	Between Groups	5.850	6	.975	1.198	.311
	Within Groups	116.344	143	.814		
	Total	122.193	149			
Vegetarianism	Between Groups	2.564	6	.427	.481	.821
	Within Groups	126.936	143	.888		
	Total	129.500	149			

From the above table, it can be interpreted that the (p) values of the quality attributes, Aroma, Taste and Freshness which are 0.42, 0.45 and 0.47 respectively, are less than 0.05 and have 5% level of significance.

There is significant difference on the basis of income with regard to the following quality attributes – Flavour, Mouth-feel, Appearance, Wholesomeness, Natural Ingredients, Ready-to-Use concept, Traditional Theme and Vegetarianism.

However, this interpretation is only with respect to income levels of consumers.

5.2 NEURAL NETWORK ANALYSIS

A neural network is a series of algorithms that perform action to recognize underlying relationships in a set of data through a process that is similar to the way the human brain operates. The best possible result could be generated without redesigning the output criteria when the ANN adapts to changing the input. Neural network model – Multilayer Perceptron using Statistical Package for Social Studies has been used for the present study. The packaging cues that were evaluated in this study were ‘Product Description’, ‘Quality of Packaging’, ‘Vernacular Script’, ‘Aesthetic Design’, ‘Adequate Information on Nutritional Value’, ‘Colour and shape’, ‘Protective Packaging’, ‘Convenience’ and ‘Reflection of Tradition’, ‘Specific key words like Freshness Sealed & Taste of Tradition’ and the ‘Inclusion of the name of the parent brand on the packaging’.

Table 2 Model Summary

Training	Cross Entropy Error	48.686
	Percent Incorrect Predictions	20.6%
	Stopping Rule Used	1 consecutive step(s) with no decrease in error ²
	Training Time	0:00:00.10
Testing	Cross Entropy Error	21.024
	Percent Incorrect Predictions	22.5%

The above model summary infers the results of neural network training. Here the crossentropy error is displayed because the analysis is based on SoftMax activation function. During training process the neural network will minimize the error. In the current study the percentage of incorrect prediction is equal to 20.6% in the training sample. So, the percentage of correct prediction is 79.4% which is an excellent prediction in a qualitative study to understand the impact of specific packaging cues on the purchase intention of consumers.

The Figure 2 (Architecture of Applied Neural Network) which is given below represents artificial Perceptron neural model with 11 inputs $\{x_1, x_2, \dots, x_{11}\}$ in which each input x_i has an associated synapse w_i and an output y . The Neural network model which is displayed in Figure 4.6.1 below states the relationship between Packaging Cues and Purchase Intention. The strength of the relationship between variables is denoted by the synaptic weight. In the training process, a set of input data is repeatedly presented to the neural network and the output of the neural network is compared to the desired output and an error is also computed. The neural model gets closer and closer to the desired output when the error is back-propagated to the neural network in order to adjust the weight so that the error is decreased.

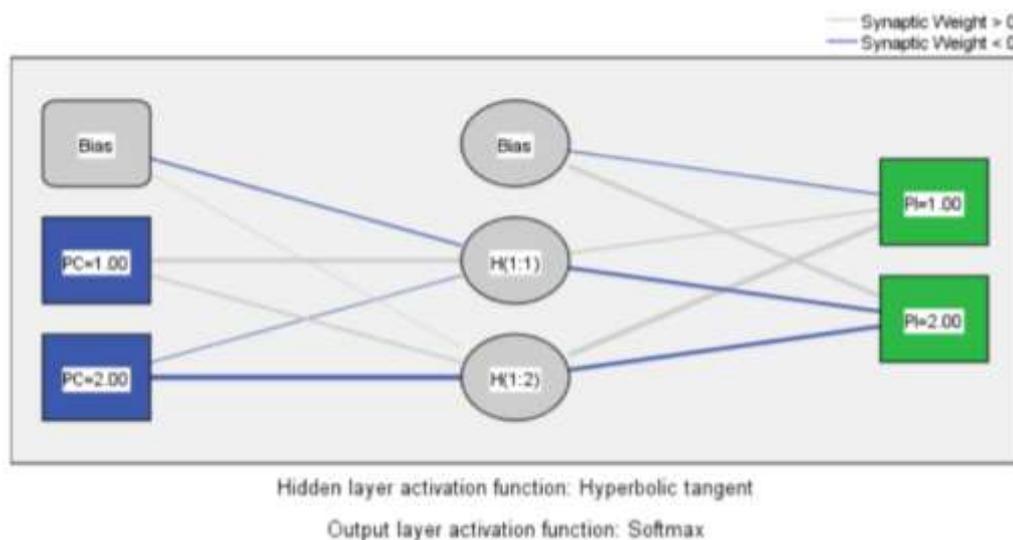


Figure 2: Architecture of Artificial Neural Network

As shown in the above figure, PC2 has more synaptic weight (coefficient estimate) and PC 1 has less synaptic weight. Thin connections indicate that the synaptic weight is greater than 0. Thick blue connections indicate positive impact of PC2 on the output layer PI2 (High intention to purchase). Low satisfaction towards packaging cues are represented as PC1 and high satisfaction towards packaging cues are represented as PC2. PI1 indicates Low purchase intention and PI2 indicates high purchase intention.

Here, the ANN figure exhibits that customers who are highly satisfied with the packaging cues have a high intention to purchase the products.

5.3 DISCRIMINANT ANALYSIS

Discriminant analysis is a statistical tool that is used for the study to analyse the research data when the criterion of the dependent variable is categorical (for the purpose of the study purchase intention construct is grouped as high and low purchase intention) and the predictor or the independent variable is interval in nature (here the predictor variable is quality perception).

Table 3 Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.698	51.326	11	.000

The Wilk's Lambda is one of the multivariate statistics calculated by SPSS. The lower, the value of Wilk's lambda, the better it is. In the present case, the value is 0.698. The Chi-Square is 51.326 with 11 degree of freedom, which is based on the groups present in the categorical variables. A small Wilk's Lambda occurs when the variability within groups is small compared to the total variability while a Wilk's Lambda of 1.00 indicates that the group means are equal. As a result, the group means appear to differ.

Table 4 Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.434 ^a	100.0	100.0	.550

a. First 1 canonical discriminant functions were used in the analysis.

The proportion of variance is explained by the Eigen value. A strong function is characterised by a large Eigen value. The correlation between the discriminant scores and the levels of these dependent variables is a canonical relationship. The higher the correlation value, the better the function is, that discriminates the value. 1 is considered as perfect. Here, we have a correlation of 0.434 which is moderate.

Table 5 Standardized Canonical Discriminant Function

Characteristics	Function	Rank
Aroma	.273	6
Taste	.132	9
Flavour	.803	1
Mouth-feel	.340	3
Freshness	.236	7
Appearance	.129	10
Wholesomeness	.606	2
Natural Ingredients	.149	8
Ready-to-use Concept	.069	11
Traditional Theme	.278	5
Vegetarianism	.318	4

Based on the beta values in Table , it can be inferred that 'Flavour' is the most preferred quality attribute among consumers, followed by 'Wholesomeness', 'Mouth-feel', 'Vegetarianism', 'Traditional theme', 'Aroma', 'Freshness', 'Natural Ingredients', 'Taste', 'Appearance' and 'Ready-to-Use Concept'.

Table 6 Classification Results^a

		PI	Predicted Group Membership		Total
			Low_Intention	High_Intention	
Original	Count	Low_Intention	62	12	74
		High_Intention	25	51	76
	%	Low_Intention	83.8	16.2	100.0
		High_Intention	32.9	67.1	100.0

a. 75.3% of original grouped cases correctly classified.

It has been observed that 75.3% of data was correctly classified as High Intention and Low Intention to Purchase by the Discriminant function. It has also been noticed that out of 76 responses, 51 have been correctly classified as having a High Intention to Purchase. Out of 74 Low Purchase Intention responses, 62 responses have been correctly classified as having low intention to purchase. Hence, the model is accurate.

VI DISCUSSION

This study provided empirical evidence on the causal effect of packaging cues and quality perception on consumers' purchase intention. The results of the ANOVA showed that consumers from high income groups prefer 'Aroma', 'Taste' and 'Freshness' over other attributes in the products. The company can capitalise on this by enhancing the above quality attributes in a few of their existing product lines with a marginal increase in the overall price. This is because individuals from high income groups are inelastic to changes in price. The Discriminant analysis ranked the quality attributes based on their mass-appeal and the results suggest that 'Flavour' of the products is the most preferred quality attribute by consumers as a whole. The analysis also states that Quality Perception is a powerful discriminant factor between groups of consumers with high and low intentions to purchase. The Neural Network Analysis revealed that consumers who are satisfied with the packaging of the products are more likely to make a purchase decision. The packaging of the products is definitely one of the brand's strong -points.

VII CONCLUSION

As discussed previously, a consumer's buying behaviour is the function of various different factors. Often, these factors differ in varying capacities from person to person. However, Packaging Cues and Quality Perception are two primary influencers in the final purchase decision, especially in the case of food products. These factors are of utmost importance to both consumers and marketers alike, who are on two ends of the spectrum. A good customer experience, centered around satisfaction with regard to both product packaging and perceived quality in turn, increases the propensity of the consumers to purchase the products again. JOOT Foods has tapped into these aspects very effectively, as seen from the study. 'Taste of Freshness' is their tagline and their USP is the emphasis that is given to quality, which in fact is substantiated by the study. The packaging of JOOT is vibrant, colorful and simplistic. Their new age matte-finish packaging and its versatility appeal to a range of customers who in turn make decisions to purchase based on that. In conclusion, it can be stated that packaging cues and quality perception of consumers have a direct and positive impact on their purchase intention. Future research can include other factors that influence purchase intention of consumers in the research model for testing.

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