
WRAPPED UP IN QUALITY: AN EMPIRICAL STUDY ON PACKAGING'S IMPACT ON FOODPROCESSING INDUSTRIES

* Dr. Dalbir Singh

Introduction

The food processing industry is a significant sector globally, with packaging playing a crucial role in ensuring product safety, quality, and consumer satisfaction. This empirical study investigates the impact of packaging on food processing industries, exploring the relationship between packaging attributes and consumer behavior, product quality, and market performance. With increasing consumer demand for convenient, sustainable, and safe food products, understanding the role of packaging is essential for food manufacturers to stay competitive. "India can emerge as a leader in the global food processing industry. The country's US\$100bn food processing sector grew by 14.7 per cent in 2009. With a 1.14bn population, 7.1 per cent GDP growth in 2009, 4.1 per cent food consumption growth (2009), expanding affluent classes and diverse agro- climatic conditions (Ministry of food processing industry, Annual Report 2010) Supporting production of a wide variety of crops year-round, the country continues to offer a growing opportunity for international food processing companies. A central government plan, called Vision 2015, prepared by India's Ministry of Food Processing Industries, envisages tripling the size of the country's processed food sector by 2015, by increasing perishables' processing levels from 6per cent to 20per cent, adding 20per cent to 30 per cent to the industry's value, and growing. India's share of the global food trade grew from 1.5 per cent to 3 per cent. This vision entails a targeted investment of US\$21.7bn, most of which is expected to come from the private sector. The FICCI report also said that by 2015 the Indian processed food industry will be worth US\$150bn - with the major growth contribution coming from the organized branded food sector. Presently, 75per cent of the food processing units are in the unorganized non-branded sector and the industry is highly fragmented. However, with more integrated development of the entire food value chain, the situation is likely to improve, with demand already fuelled by macroeconomic and socioeconomic factors Indian cities have many more young nuclear families with double incomes, for whom precious family time and modern amenities weigh much more than the price tag of a product. Although their higher income levels mean that these middle-class families would not spend the national average 30per cent proportion of income on food (according to FICCI), the amount of additional money likely to be spent on the processed food sector is substantial. Furthermore, eating out at restaurants remains an important part of Indian families' entertainment. According to Images F&R Research's India Retail Report 2009, 60per cent of those who shop in stores with branded goods also eat at restaurants regularly, and around 80per cent Indians eat out at least once a month, while almost 28per cent do so four to six times in a month. Positive signs can also be noticed inside the home, where the growing sales of large-size (500 litre) refrigerators and microwave ovens are a direct indicator of the popularity of frozen and other processed foods, including exotic ones such as battered shrimps, fish fingers and stuffed squids from abroad.

SWOT Analysis of Food industry

Strengths

- Foreign food companies continue to target the Indian market, with sub-sectors such as edible oils benefiting from significant investment.
- India is the world's second largest milk producer, enabling the establishment of a developed and high-value dairy sector.
- India's abundance of natural agricultural resources makes the market attractive to investors from all food sub-sectors.
- India has the second largest population in the world, and rising domestic demand is a major growth driver.

Weaknesses

The processed food industry is less developed than other comparable countries as a result of logistical -----

* Associate Professor, Deptt. of Commerce, Gaur Brahma Degree College, Rohtak (Haryana)

- and distribution problems.

- The country's agricultural industry, despite having huge potential, suffers from a lack of investment and dependency on erratic climatic conditions.
- Specific state-by-state legislation governing aspects of high-value business, such as retail store opening hours, hinders nationwide business strategies and can be time-consuming and cumbersome.
- Agriculture remains inefficient and is vulnerable to climatic changes. Two-thirds of the population depends on farming for its livelihood.

Despite rapid economic growth, India remains a very poor country. According to BMI estimates, India's GDP per capita was estimated at US\$1,504 in 2011.

Opportunities

The government is actively seeking investment in the food processing and agribusiness industries, suggesting that companies expressing an interest would be granted a very liberal investment climate.

Rising disposable incomes and increasing urbanization mean higher-value processed foods are likely to experience strong growth rates, especially with the levels of investment being committed by many multinational companies.

The immense size of India's population and landmass ensure that market maturity is a distant prospect.

Although non-essential consumer goods are barely established at the mass-market level, premiumisation is already becoming a viable growth option, particularly among younger consumers in major urban centers.

Threats

Logistical problems, underdeveloped service networks and poor infrastructure hinder development in fresh food industries, such as dairy.

. The division between the urban rich and the rural poor is as great as ever, meaning food manufacturers do not have access to the entire population, or even the majority of it.

Review Of Literature

In the opinion of Rundh (2005) package attracts consumer's attention to specific complete, enhances its Image, and influences consumer's perceptions concerning product. conjointly package imparts distinctive price to product (Underwood, Klein & Burke, 2001; Silayoi & Speece, 2004), works as a tool for differentiation, i.e. helps shoppers to settle on the merchandise from big selection of comparable product, stimulates customers shopping for behaviour (Wells, Farley & Armstrong, 2007). Therefore package performs a crucial role in selling communications and will be treated joined of the foremost important factors influencing consumer's purchase call. Packaging plays a critical role in the purchasing decision. Silayoi and Speece (2007) deem that in cases when the consumer is undecided, the package becomes a significant consideration in selection as a result of what it communicates to the buyer through-out the choice creating time. The approach however the client perceives the subjective entity of a product through communication components sent by the package conjointly influences the selection and is the key issue for in selling ways (Silayoi et al. 2007; Gofman & Moskowitz & Mets 2010, p. 157). Packaging could be a quality mensuration for the product. Per Grunert & Beck-Larson & Bredahl (2000), once the shoppers read the new package on the shelf, they're usually forced to form a top quality evaluation of the merchandise through experience with the package (Holmes et al. 2012, p. 110). Quality judgments square measure influenced by product and package characteristics. Once the package communicates top quality, more often the buyer assumes the merchandise itself as a top quality item. If the package offers the impression of low quality, the buyer perceives the particular product as an occasional quality item. Underwood, Klein and Burke (2001) counsel that buyers instinctively will imagine however the merchandise appearance, tastes, feels, smells, and sounds whereas viewing photos and pictures on the package. (Silayoi et al. 2004; Silayoi et al. 2007, p. 1497.)

Imram (1999) believes that a positive result is gained by combination of packaging elements: colour, clear packages and incident light-weight. In food service, the food product chosen for show square measure hand-picked for his or her colour and look attributes (Silayoi et al. 2007, p. 1497). To judge the buyer behaviour about the varied food island Bardhan Gupta (2009) had studied on client Behaviour for nutrient in land. Primary information was collected from 326 respondents in province and concrete center Region. The relative importance of various food shopping for criteria was calculated for four utterly completely different food categories, food and vegetables; milk and milk products; food grains and pulses; and processed foods on 1-scale, this study explored the customer behaviour for nutrient in land from utterly completely different views. People accepted the actual fact that their food habits get affected with the

shifting to a replacement region but many basic buying and consumption behaviour does not change. Variety of the changes in buying and consumption behaviour, of relocated people, that were discovered once their settlement to a replacement region weren't significantly utterly completely different from the extent of changes in behaviour of non-moving people. However, compared to the last 10 years, people have started preferring plenty of healthy foods and area unit willing to undertake out new dishes. They need a bent to seek out amendment of state and consumption newfood things once relocation whereas not discontinuing their ancient food things. There's togetherinfluence of kids on the type of food things that they eat. Silayoi and Speece (2007) studied on understanding client behavior for buying selections supported packaging specifications. They rumored that visual package components play a serious role, representing the merchandise for several shoppers, particularly after they don't need to pay abundant time.

Objectives

This study aims to provide insights into the impact of packaging on food processing industries. The objectives of the study are:

- To study the customers perspective on role of packaging in food industry
- To study the positive and adverse effects of packaging from both customers' and retailers' view To study the views on different aspects of packaging with respect to demographic variables of age gender and occupation.

Statistical Techniques

- For the purpose of analysis, the data was analyzed by using t-test and frequency analysis to compare and interpret the results. The analysis part was carried out on SPSS 17.0 version. Sample Area: Haryana and Delhi NCR

Result analysis and Data interpretation

Innovative Packaging's Roles

Packaging innovation has become the major issue for the merchandise development in the current days, packaging innovation is required to increase the merchandise life and meet the business result. We have a tendency to see packaging role with totally different perspective, packaging role for the client, retailers and manufacture and to the society in addition. It is shown that currently packaging play a key role on client purchase call, totally different parts of packaging like style feature description whole result the buyer call lots. Additionally unconcealed that verbal parts of package are the foremost vital for consumer's purchase call. For a serious a part of consumers' a size and material are the most visual parts, whereas product info and country-of-origin are the most verbal parts

Role of Innovative Packaging in Food Process Business

In addition, the food process business through its backward and forward linkages has tremendous potential to influence alternative elements of the food price chain. This will cause reduction in wastage and up farm productivity through investments within the provide chain and farm extension services for agriculture.

Role of Packaging

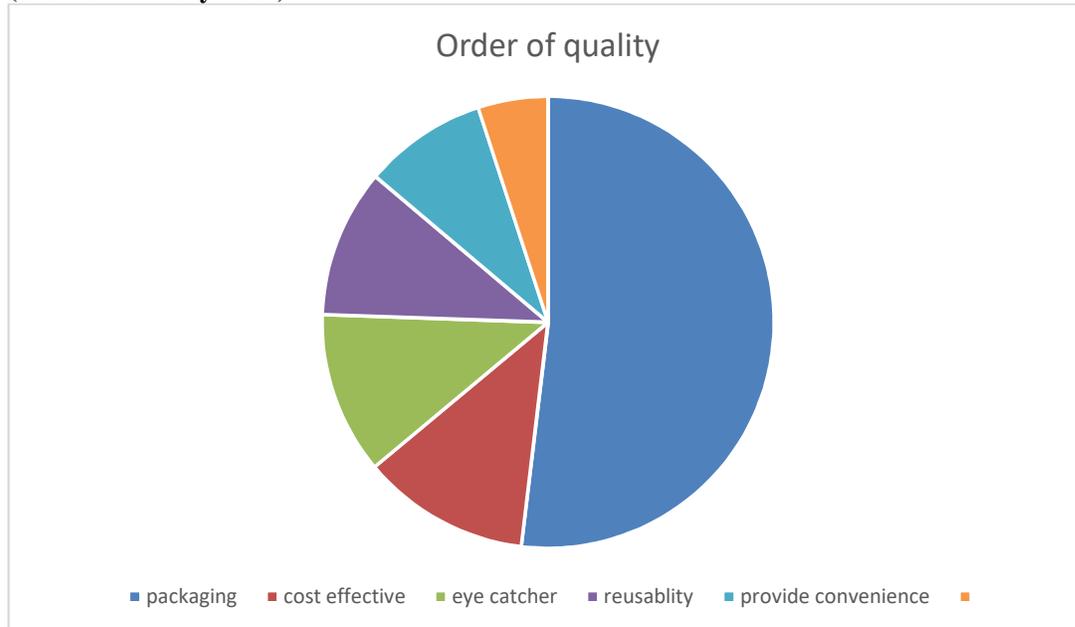
Under this section survey was undertaken. The objective of which was to collect the feedback from 500 customers and 250 retailer (Haryana & Delhi NCR) to judge the role of packaging in today world. Majority of respondent belong to the age group of 30-40 that is 79.2 per cent and remaining to the 20- 30 which is 20.8 per cent. The ratio on the basis of gender ratio are male (53 per cent) and female (47 per cent). from the occupation point of view majority of respondent are working professional that is 77.8 per cent and remaining are house wife 22.2 per cent. Income group depicts that majority of respondent belong to 3-6 lakh income group and remaining above 6 is 21.6 and 1-3lk 19.2 per cent. Survey shows according to the education maximum of respondent are master (59.4 per cent), bachelor (36.0 per cent) and remaining doctorate (3.8 per cent), senior secondary (.8 per cent). The role of packaging was estimated from the customers view point and as can be seen from the table below most of the customers' want the package to provide absolute protection of the content which is one of the vital functions of packaging.

Table 1: Role of packaging

Role of package	Frequency	Percent	Cumulative Percent
Protect content	259	51.8	51.8
Provide convenience	44	8.8	60.6

Eye catching	58	11.6	72.2
Cost effective	60	12.0	84.2
Informative	25	5.0	89.2
Reusability	54	10.8	100.0
Total	500	100.0	

(Source: Primary Data)



The graph displays the result of preference order of different qualities of package according to customers. Result shows that majority of customers (51.8per cent) prefer packaging most because it helps to protect the content. As well as packaging helps to maintain the quality of the food product.12per cent consumer believe that packaging is cost effective factor because they save the product from spoilage.11.6per cent respondent believe that packaging work as an eye catcher.10.6per cent respondent's gave importance to the reusability factor because they use the package of product for other purpose later on. Along with 8.8 per cent customer gives preference to the convenience of the product and information (5 per cent).To study the positive and adverse effects of packaging the retailers and the customer's viewpoints were assessed and the results are hereby summarized.

Table 2: Customer opinion towards adverse effect of packaging

Valid	Frequency	Percent	Cumulative percent
Misguide consumer	10	2.0	2.0
Increase cost	190	38.0	40.0
Unwanted purchase	3	.6	40.6
Pollution	277	55.4	96.0
Health hazardous	20	4.0	100.0
Total	500	100.0	

(Source: Primary Data)

Table 3:Opinion of retailer regarding the adverse effect of packaging.

Valid	Frequency	Percent		Cumulative percent
misguide customer	14	5.6		5.6
increase cost	130	52.0		57.6
unwanted purchase	5	2.0		59.6
increase pollution	96	38.4		98.0
health hazardous	5	2.0		100.0
Total	250	100.0		

(Source: Primary Data)

Table 2 and 3 shows the respondent perception regarding the adverse effect of packaging to the society. Results show that customers (55.4per cent), retailers (38.4per cent) believe that because of packaging the pollution increase so much. The uses of plastics and steel etc. and dumping it without recycling package materials boosting the environment pollution. Both retailer (52per cent) and customer (38 per cent) are agree on the aspects that packaging is putting extra burden on the customer pocket because it increasing the cost of the products. Furthermore some respondents (customer-2.0per cent, retailer-5.6) believe that packaging misguide the customers as well as packaging effects the health of customer ((customer-4 per cent, retailer-2 per cent).and packaging also boost customer for unwanted purchase(retailer-2 per cent, customer-.6 per cent).Majority(60 per cent) companies say due to packaging pollution is also on the rise.

Table 4: Customer views regarding Positive effect of packaging

Valid	Frequency	Percent		Cumulative percent
Provide convenience	50	10.0		10.0
Reduce spoilage	55	11.0		21.0
Product indentification	170	34.0		55.0
Reusability	6	1.2		56.2
Price saving	6	1.2		57.4
Quick decision making	213	42.6		100.0
total	500	100.		

(Source: Primary Data)**Table 5:Retailer views regarding Positive effect of packaging**

Valid	Frequency	Percent		Cumulative percent
Provide convenience	5	2.0		2.0
Reduce spoilage	85	34.0		36.0
Product indentification	115	46.0		82.0
Quick decision making	45	18.0		100.0
Total	250	100.0		

(Source: Primary Data)

Table 4.8 and 4.9 Represents the positive effects of packaging to the society.it had observed that both retailer (46per cent) and customer (34per cent) are agree on the fact that packaging help customer in the identification of the product. Mostly customers (42.65) believe that packaging help those for quick decision making at the point of purchase. And some retailer (18 per cent) also support this aspects .furthermore customers (11per cent) and retailers (34 per cent)agree on the fact that to save the spoilage packaging become a significant factor, also packaging provides convenience (customer-10per cent,retailer-2per cent). Some customers give consideration to the other aspects of packaging too. They believe packaging help society to save cost because of it reusability factor.

Table 6: Results of t-test analysis

Variables	Age		Gender		Occupation	
	t	Sig.	t	Sig.	t	Sig.
Type	1.151	0.25	0.021	0.983	0.643	0.521
Information	1.178	0.076	0.753	0.452	0.402	0.688
Size	1.93	0.05*	1.337	0.182	1.653	0.099
Shape	3.033	0.00**	0.149	0.882	1.543	0.123
Safety	2.839	0.00**	0.523	0.601	0.718	0.473
Convenience	1.353	0.177	0.556	0.578	0.338	0.736
Reusability	0.059	0.953	1.853	0.064	0.215	0.83
Quality	1.819	0.07	1.94	0.05*	0.637	0.524
Certification	0.316	0.752	0.815	0.416	2.48	0.01*
Usability	1.506	0.133	0.671	0.503	2.83	0.00**
Ingredients	1.394	0.164	0.943	0.346	1.7	0.089

* = Significant at 0.05 level

**= Significant at 0.01 level

Table 6 depicts the t value and level of significance regarding the various feature of packaging on the basis of age, gender and occupation. Out of the 11 significant factors of packaging the responses of consumers on the basis of age differed significantly at 0.05 level on aspect namely size with t value-1.93 and at the 0.00 level at shape and safety with t-values of -3.033 and -2.839 respectively. That's means the people who belong to the age group of 20-30 and 30-40 had differences in their opinion. Group 20-30 gives more importance to the shape size and safety. On the basis of gender quality factor too show inconsistency with .05 significance and -1.94 t value. Males are giving more importance to the quality. From the point of view of occupation there is a significant difference between the opinion of house wife and working professionals regarding certification (0.01) with t value 2.48 and usability (0.00) with t value 2.83.Housewife are more concerned about the certification of product quality.

Findings

- Packaging goes a long way in influencing the marketability of the customer products. Therefore both customers and retailers are agree on the fact that packaging is considered to be a strong marketing tool to enhance the brand image of the products.
- Respondent have preference for such types of packaging, which ensure the full safety of the contents against any type of spoilage, fungus decay or contaminations as well as size and safety is of major concerns in packaging.
- All most all the respondents(customers and retailers) are happy about protection of the products from packaging and packaging which help in identification & differentiation of the products along with customers are agree on the facts that packaging help in less contamination. Furthermore, it has been found that both customer are retailers agree on the facts that packaging help the customer for product protection and help in decision making at the point of purchase.
- Studies show that most of the respondent's believe packaging help in the protection of thecontents most.
- Customers and retailers agree on the fact that now packaging has become the major factor in increasing environmental pollution. Majority of the respondent suggested that packaging adversely affects

respondents purchase behaviour as it increases pollution and cost of the product to a large extent, it only means proper packaging for a reasonable price no one can deny its importance because these days it is considered as fifth P, if there is an increase in the cost of the product than it is likely to affect the purchase behaviour of the people falling in the average income group. But some arguments are given as pollution is not due to packaging but it is the result when people spread waste package here and there.

• It has been found out that people who belong to the age group of 20-30 and 30-40 had differences in their opinion. Group 20-30 gives more importance to the shape size and safety of the package. On the other hand, On the basis of gender quality factor too show inconsistency. Males are giving more importance to the quality rather than women. Furthermore occupation there is a significant difference between the opinion of house wife and working professionals regarding certification and usability. Housewives are more concerned about the certification of product quality.

Recommendations

- Customers are more interested in the environment friendly packaging so companies should focus on a packaging which are recyclable and bio degradable as well.
- Customer more prefer a product which come with less lost and attractive package. This aspect should be seriously concerned by the companies.
- Reusability of package significantly considered by the customers, so package should make as which look like asset to the customer.
- Brand is important and its strategy is in consideration in the units. Product packaging is valuable for brand equity, product differentiation, market segmentation, new product introduction, pricing, promotion etc. Brand name using plan implementation must be effective in the units.

Conclusion

This empirical study confirms that packaging significantly impacts food processing industries, influencing consumer behaviour, product quality, and market performance. The findings highlight the importance of innovative packaging solutions that prioritize freshness, convenience, and sustainability. Food manufacturers can leverage these insights to develop effective packaging strategies, enhancing product safety, quality, and consumer satisfaction. By investing in packaging innovation and quality, food processors can gain a competitive edge, drive business growth, and meet evolving consumer demands. This study's results have significant implications for the food industry, informing packaging decisions that balance functionality, sustainability, and consumer needs, ultimately driving industry success. Last but not the least it could be stated that detail evaluation of package elements and their impact on consumer's purchase decision, taking into consideration involvement level, individual characteristics of consumers, is necessary in order to implement efficient packaging decisions.

References

- Ahmed, A., Ahmed, N., & Salman, A. (2005). Critical issues in packaged food business. *British Food Journal Business*, 107, 760-780.
- Ampuero, O. & Vila, N. 2006. Consumer perceptions of product packaging. *Journal of Consumer Marketing*. 117.
- Ampuero, O., & Vila, N. (2006). Consumer perceptions of product packaging. *Journal of ConsumerMarketing*, 23(2), 100-111.
- Azad, N., SeyedAliakbar, S.M., &Kordalivand, N. (2012). Investigating effective factors on multimedia advertising: A case study of travel agencies. *Management Science Letters*, 2(1), 409-416.
- Azad, N., Rafiee, M., &Hamdavipour, L. (2012). The role of children's food packaging characteristics on parent's purchasing decision. *Management Science Letters*, 2(3), 827-832.
- Aygen, .F.G (2012), "Turkish Consumers' Understanding and Use of Nutrition Labels on Packaged Food Products", *International Journal of Business and Social Science*, Vol. 3 No. 6, pp. 171-183.
- Boyce, J., Broz, C., & Binkley, M. (2008). Consumer perspectives: take-out packaging and food safety. *British Food Journal*, 110, 819-828.

- (2012). "Role of Packaging on Consumer Buying Behavior - Deliya M. & Parmar B. Patan District. Global Journal of Management and Business Research, 12(10) Version 1.0 June 2012
- Imram, N. (1999)., The role of visual cues in consumer perception and acceptance of a food product. Nutrition and Food Science, 5, 22. 4-8.

Books

- Kotler P.(2002) Marketing Management, 11th Edition, Pearson Education, New Delhi
- Kumar S. And Gaikwad S.A (2002), Municipal Solid Waste Management In India: An Approach For Betterment, Altantic Publisher 7 Distributor, New Delhi.
- Malhotra N. (2010), Marketing Research, 6th Edition, Pearson Education, New Delhi.
- Philip Kotler(2014)Marketing Management, 14th edition, Pearson Education, New Delhi.
- Philip Kotler&Keller(2107)Marketing Management, 17th edition, Pearson publication, New Delhi.