

The Influence of Packaging Attributes on Consumer Buying Pattern in Food Packaging: A Case of Kathmandu Valley

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Abstract

This study examines the influence of packaging attributes on consumer buying behavior in Kathmandu Valley. Consumer buying behavior is the dependent variable. The selected independent variables are packaging color, packaging material, graphics, information and innovation. The primary sources of data is used to assess the opinions of respondents regarding the packaging color, packaging material, graphics, information and innovation. The study is based on the primary data of 127 respondents. To achieve the purpose of the study, structured questionnaire is prepared. The correlation and multiple regression models are estimated to test the significance and importance of the influence of packaging attributes on consumer buying pattern in food packaging: A case of Kathmandu Valley.

The study showed a positive impact of packaging color on consumer buying behavior. It indicates that attractive packaging color leads to change in consumer buying behavior. Likewise, packaging material is positively correlated to consumer buying behavior. It indicates that quality packaging material stimulates the consumer buying behavior. Similarly, graphics is positively correlated to consumer buying behavior. It indicates that better graphics of products change the consumer buying behavior. Further, information is also positively related to the consumer buying behavior. It indicates that reliable information of the products leads to change in consumer buying behavior. Moreover, innovation is positively correlated to consumer buying behavior. It shows that the innovative packaging communicates the brands and commitment to quality towards consumer buying behavior.

Keywords: packaging color, packaging material, graphics, information, innovation, consumer buying behavior

1. Introduction

Consumer buying behavior refers to the actions taken (both on and offline) by consumers before buying a product or service. Food products brands use a range of packaging attributes, combining colors, designs, shapes, symbols, and messages (Aday and Yener, 2014). These attract and sustain attention, helping consumers identify with the images presented. The importance of packaging design and the use of packaging as a vehicle for communication and branding is growing (Retie and Brewer, 2000). As packaging takes on a role similar to other marketing communications elements. One reason for this

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is simply the fact that consumers may not think very deeply about brands at all before they go into the store to buy. One recent study estimated that 73 percent of purchase decisions are made at the point of sale (Connolly and Davidson, 1996). Consumer intention to purchase depends on the degree to which consumers expect that the product can satisfy their expectations about its use (Farooq *et al.*, 2015). The package becomes a critical factor in the consumer decision-making process because it communicates to consumers at the time they are actually deciding in the store. How they perceive the subjective entity of products, as presented through communication elements in the package, influences choice and it is the key to success for many food products marketing strategies. To achieve the communication goals effectively and to optimize the potential of packaging, fast moving consumer goods (FMCG) manufacturers must understand consumer response to their packages, and integrate the perceptual processes of the consumer into design (Hausman, 2000). In the design process, marketers and package designers must take account of consumers' past experiences, needs and wants; understand how packaging design elements get consumers to notice the package and notice messages on the package; and, broadly, evaluate packaging design and labeling for their effectiveness in the communications effort. In doing this, it is particularly important to remember that not all consumers evaluate packaging the same way. Just as in consumer response to other elements of marketing, segmentation is an important factor (Orth *et al.*, 2004). However, some observers believe that standard segmentation schema, often based on demographics, are inadequate.

Abdullah and Wan (2013) examined the packaging factors determining consumer buying decision. The study found that color of packaging and front style of packaging have perfect positive correlation to the consumer buying decision. Similarly, Lialiuk *et al.* (2019) emphasized the significance of packaging as a crucial marketing tool. The study stated that packaging plays a vital role in influencing consumer behavior. Likewise, Adam and Ali (2014) examined the verbal and visual components of package design, as outlined. The study explored the significance of both verbal and visual elements in package design and their impact on consumer behavior. In addition, Connolly and Davidson (1996) developed a theoretical framework for understanding consumer impulse purchasing, as presented in their research published in *Advances in Consumer Research*. The study focused on analyzing the factors that contribute to impulse buying behavior and proposed a framework to explain this phenomenon. It provided valuable insights into the psychological and situational factors that influence consumers' impulsive purchasing

decisions. Further, Zhu *et al.* (2013) assessed the perceptual mapping of food consumption in two national cultures. The study revealed that perceptual mapping techniques to understand the underlying factors influencing consumers' food choices and preferences within each culture.

Miremadi and Faghani (2012) examined the relationship between anti dandruff and attractive packaging. The study found that durability, quality and price are considered as the major cause to purchase branded shampoo and it should be calculated as a major unique selling point strategy for branded shampoo. Similarly, Bhattacharjee and Bhattacharjee (2005) found that customers of backward areas see packaging as value addition. Majority of people considered that packaging is a fundamental element of the product and in addition is important to boost the sale after all it is a cost element. Likewise, Mousavi and Jahroni (2014) found that packaging is the major tool to influence consumer buying behavior for inexpensive goods. In addition, Raisanen (2014) explored the strategic use of color in brand packaging. The study found that there is a positive relationship between packaging color and consumer buying behavior. Further, Yeoh *et al.* (2014) revealed that packaging size, packaging material packaging color and product information have positive association with customers buying behavior and thus marketers should particularly concentrate on these aspects so that positive association could be increased with consumer buying behavior. Further, Mousavi and Jahroni (2014) found that packaging is the major tool to influence consumer buying behavior for inexpensive goods. Likewise, Koutsimanis *et al.* (2012) found that packaging material has a significant impact on the purchase decision. Further, Khuong *et al.* (2016) showed that packaging materials have positive and significant impact on the buying behavior.

In the context of Nepal, Sharma (2008) revealed that branding, labelling, and packaging play an important role in consumer buying behavior decisions, therefore further study needs to be carried out to explore the impact of labelling, packaging and branding on consumer buying decisions. Likewise, Poudel (2022) Consumer buying behavior of frozen foods in Chitwan district. Research was done to analyze the buying behavior of frozen foods in Chitwan district. The study found a positive relationship between branding elements and consumer preferences. Further, Ghimire and Pant (2019) investigated the influence of labeling on consumer buying behavior in the Nepalese context. The study found that labelling acts as an information source for consumers, affecting their purchase decisions. Moreover, Khanal and Pokhrel (2021) examined the impact of packaging and branding on consumer perceptions in

Nepal. The study found a positive correlation between packaging attributes, branding elements, and consumer buying decisions. In addition, Adhikari and Bhattarai (2018) examined the influence of pricing strategies on consumer behavior in Nepal. The study found that price discounts, promotions, and perceived value have positive impact on consumer decision-making processes. The study found that cultural factors, such as traditions, customs, and religious beliefs, influence consumer preferences and decision-making.

The above discussion shows that empirical evidences vary greatly across the studies on the influence of packaging attributes on consumer buying pattern in food packaging. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The major objective of the study is to examine the influence of packaging attributes on consumer buying pattern in food packaging: A case of Kathmandu Valley. Specifically, it examines the relationship of packaging color, packaging material, graphics, information and innovation with consumer buying behavior: A case of Kathmandu Valley.

The remainder of this study is organized as follows: section two describes the sample, data, and methodology. Section three presents the empirical results and final section draws the conclusion.

2. Methodological aspects

The study is based on the primary data. The data were gathered from 127 respondents through questionnaire. The study employed convenience sampling method. The respondents' views were collected on packaging color, packaging material, graphics, information, and innovation within Kathmandu Valley. This study is based on descriptive as well as causal comparative research designs.

The model

The model used in this study assumes that consumer buying behavior depends upon influence of packaging attributes on consumer buying pattern. The dependent variable selected for the study is consumer buying behavior. Similarly, the selected independent variables are packaging color, packaging material, graphics, information and innovation. Therefore, the model takes the following form:

Consumer buying behavior = f (packaging color, packaging material, graphics, information and innovation).

More specifically,

$$CB = \beta_0 + \beta_1 PC + \beta_2 PM + \beta_3 G + \beta_4 IN + \beta_5 INF + e$$

Where,

CBB = consumer buying behavior

PC = Packaging color

PM = Packaging material

G = Graphics

IN= Innovation

INF = Information

Packaging color was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include “consumers buy more product when the packaging color is good”, “packaging color can also motivate consumers to make a purchase” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.792$).

Packaging material was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include “Consumers generally seek packaging material when making purchasing behavior”, “Packaging material can lead to higher levels of consumer satisfaction” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.771$).

Graphics was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include “Consumers may be more likely to choose graphics such as wall, canvas, screen, paper, or stone, to inform, illustrate, or entertain”, “The quality of a food product based on its packaging” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.776$).

Information was measured using a 5-point Likert scale where the

respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include “Information is a key factor while choosing a strategy, quality, impact on individual, impact on organization, distribution of power”, “Information is responsible for me to perform certain functions in order to achieve certain results that define the appropriate use of the data” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.825$).

Innovation was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include “Innovation influence me to addressing deep social and global challenges, like ageing, resource scarcity, disease and climate change”, and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.796$).

Consumer buying behavior was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include “While purchasing a product the behavior of seller is conducted”, “I prefer products having low price with high quality” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.793$).

The following section describes the independent variables used in this study along with the hypothesis formulation.

Packaging color

Color is the characteristic of human visual perception described through color categories, with names such as red, orange, yellow, green, blue or purple. Deliya and Parmar (2012) argued that using attractive color in packaging grabbed the customer’s attention. Similarly, Ahmed *et al.* (2015) revealed that packaging color has a positive relationship with consumers buying behavior. Likewise, Borishade *et al.* (2016) showed that there is a significant and positive relationship between product color and consumer interest. Further, Saeed *et al.* (2013) revealed that packaging color has a positive relationship with purchase decisions. Moreover, Karbasivar and Yarahmadi (2011) revealed that there is a positive relationship between color and consumer buying behavior. Based on it, this study develops the following hypothesis:

H₁: There is a positive relationship between packaging color and consumer buying behavior.

Packaging materials

A material is a chemical substance or mixture of substances that constitutes an object. Deliya and Parmar (2012) stated that materials are the main visual elements that influence consumer's purchase decision when purchasing milk and washing-powder. Ahmed and Ahmad (2013) concluded that packaging material has a strong positive impact on buying behavior. Similarly, Ahmed *et al.* (2014) showed that packaging material has a positive relationship with purchase decisions. Likewise, Koutsimanis *et al.* (2012) found that packaging material has a significant impact on the purchase decision. Further, Khuong *et al.* (2016) showed that packaging materials have positive and significant impact on the buying behavior. Based on it, this study develops the following hypothesis:

H₂: There is a positive relationship between packaging material and consumer buying behavior.

Information

Information is the resolution of uncertainty; it is that: answers the question of "what an entity is" and thus defines both its essence and nature of its characteristics. Silayoi and Speece (2004) revealed that delivered information on packaging generates a strong impact on the consumers' purchase decision. Similarly, Deliya and Parmar (2012) stated that product information is the main verbal element that influences consumer's purchase decision when purchasing milk and washing-powder. Likewise, Shah *et al.* (2013) printed information related to the product quality, price, description have positive relationship with consumer purchase decision. Further, Estiri *et al.* (2010) showed that information of the package influences the purchase decision of food products to a great extent. Moreover, Borishade *et al.* (2016) found that there is a positive and significant relationship between product information and consumer evaluation. Based on it, this study develops the following hypothesis:

H₃: There is a positive relationship between information and consumer buying behavior.

Graphics

Graphics are visuals, images or designs on some surface, such as a wall, canvas, screen, study or stone to inform, illustrate or entertain. In contemporary usage, it includes a pictorial representation of data, as in

computer-aided design and manufacture, in typesetting and the graphic arts, and in educational and recreational software. Hofacker and Sultan (2016) concluded that graphics have positive and significant impact on consumer buying behavior. Similarly, Silayoi and Speece (2004) found that graphics have positive influence on consumer buying decision. In addition, Mubin *et al.* (2015) argued that graphics have positive relation with the consumer's buying behavior. Further, Rashid and Anwar *et al.* (2015) found that nice and beautiful/delightful packaging graphics of cosmetics have strong influence on the buying behavior of female consumers. Moreover, Borishade *et al.* (2016) showed that there is a direct and significant relationship between product graphics and consumer trial purchase. Based on it, this study develops the following hypothesis:

H₄: There is a positive relationship between graphics and consumer buying behavior.

Innovation

Innovation in its modern meaning is a new ideas, creative thoughts, and new imaginations in form of device or method. Innovation is often also viewed as the application of better solutions that meet new requirements, unarticulated needs, or existing market needs. Deliya and Parmar (2012) argued that there is a significant relationship between buying behaviour and packing innovation. Similarly, Silayoi and Speece (2004) revealed that there is a positive relationship between innovation and consumer buying behavior. Likewise, Mazhar and Munawar (2015) showed that there is a significant relationship between innovation and consumer buying behavior. In addition, Mohebbi (2014) revealed that innovation has a positive relationship with purchase decision. Further, Raheem *et al.* (2014) revealed that there is a positive and significant relationship between innovation and consumer buying behavior. Based on it, this study develops the following hypothesis:

H₅: There is a positive relationship between innovation and consumer buying behavior.

3. Results and discussion

Correlation analysis

On analysis of data, correlation analysis has been undertaken first and for this purpose, Kendall's Tau correlation coefficients along with mean and standard deviation has been computed and the results are presented in Table 1.

Table 1

Kendall’s Tau correlation coefficients matrix

This table presents Kendall’s Tau coefficients between dependent and independent variables. The correlation coefficients are based on 127 observations. The dependent variable is CBB (Consumer buying behavior) and independent variables are PC (Packaging color), PM (Packaging material), G (graphics), INF (Information) and IN (Innovation).

Variables	Mean	S.D.	CBB	PC	PM	G	INF	IN
CBB	3.461	0.861	1					
PC	3.280	0.879	0.374**	1				
PM	3.496	0.875	0.578**	0.509**	1			
G	3.328	0.894	0.333**	0.374**	0.388**	1		
INF	3.472	0.885	0.470**	0.430**	0.589**	0.453**	1	
IN	3.460	0.855	0.526**	0.485**	0.553**	0.386**	0.582	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 1 reveals that packaging color is positively correlated to consumer buying behavior. It indicates that attractive packaging color influences consumer buying behavior. Likewise, packaging material has a positive impact on consumer buying behavior. It indicates that quality of packaging material leads to change in consumers buying behavior towards product. Further, graphics is also positively related to the consumer buying behavior indicating that attractive packaging design pursue the customer to purchase a food product. Likewise, information is positively correlated to consumer buying behavior. It indicates that reliable information provided on food packaging influences consumers buying behavior. Further, innovation are also positively correlated to the consumer buying behavior. It indicates that the innovative food packaging communicates the brands and commitment to quality towards consumer buying behavior.

Regression analysis

Having indicated the Kendall’s Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it shows the regression results of packaging color, packaging material, graphics, information and innovation on consumer behavior in Kathmandu valley.

Table 2

Estimated regression result of packaging color, packaging material, graphics, information, and innovation on consumer buying behavior

The results are based on 127 observations by using linear regression model. The model is $CB = \beta_0 + \beta_1 PC + \beta_2 PM + \beta_3 G + \beta_4 IN + \beta_5 INF + e$ where, dependent variable is CB (Consumer buying behavior). The independent variables are PM (Packaging material), PC (Packaging color), G (Graphics), IN (Innovation) and INF (Information).

Model	Intercept	Regression coefficients of					Adj. R_bar2	SEE	F-value
		PC	PM	G	INF	IN			
1	1.744 (6.939)**	0.523 (7.070)**					0.280	0.731	49.982
2	1.015 (4.545)**		0.700 (11.291)**	0.507 (6.921)**			0.501	0.608	127.487
3	1.775 (7.033)**						0.271	0.735	47.897
4	1.360 (5.569)**				0.605 (8.874)**		0.382	0.677	78.750
5	1.088 (4.623)**					0.686 (10.38)**	0.459	0.634	107.916
6	0.949 (4.041)**	0.079 (0.918)	0.645 (7.493)**				0.500	0.609	64.084
7	0.806 (3.302)**	0.039 (0.453)	0.583 (6.399)**	0.146 (1.902)			0.511	0.602	44.830
8	0.747 (3.025)**	0.034 (0.392)	0.504 (4.679)**	0.111 (1.372)	0.136 (1.372)		0.514	0.600	34.335
9	0.830 (3.488)**		0.606 (7.960)**	0.154 (2.073)*			0.514	0.600	67.575

Notes:

- i. Figures in parenthesis are t-values.
- ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
- iii. Dependent variable is consumer buying behavior.

Table 2 shows that the beta coefficients for packaging color are positive with consumer on buying behavior. It indicates that packaging color has a positive impact on consumer buying behavior. This finding is consistent with the finding of Raheem *et al.* (2014). Similarly, the beta coefficients for packaging material are positive with consumer buying behavior. It indicates that packaging material has a positive impact on consumer buying behavior. This finding is similar to the findings of Ahmed and Ahmad (2013). Likewise, the beta coefficients for graphics are positive with consumer buying behavior. It indicates that graphics have positive impact on consumer buying behavior. This finding is similar to the findings of Rashid *et al.* (2015). In addition, the beta coefficients for information are positive with consumer buying behavior. It indicates that information has a positive impact on consumer buying behavior. This finding is consistent with the findings of Raheem *et al.* (2014). Further, the beta coefficients for innovation are positive with

consumer buying behavior. It indicates that innovation has a positive impact on consumer buying behavior. This finding is consistent with the findings of Estiri *et al.* (2010).

4. Summary and conclusion

Packaging is the overall package offered by the company to its consumers which stimulates the impulse buying behavior. Packaging attracts consumers and increases its sales. It also reduces the marketing and advertisement cost of the product. Companies are focusing more on the product packaging as there is a tough competition among all the products.

This study attempts to examine the influence of packaging attributes on consumer buying pattern in food packaging: A case in Kathmandu Valley. The study is based on primary data of 127 respondents.

The study showed that packaging color, packaging material, graphics, information and innovation have positive impact on consumer buying behavior. The study also concludes that packaging material followed by innovation is the most influencing factors that affect the consumer buying behavior.

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