A study on effects of packaging characteristics on consumer's purchasing confidence

Naser Azad[*] and **Leila Hamdavipour**

Department of Management, Islamic Azad University, South Tehran Branch, Tehran, Iran

A R T I C L E I N F O	A B S T R A C T
	Packaging plays an important role on marketing products and services in many competitive environments. A good packaging can increase sale's of products, reduces the level of inventory, which yields to higher profitability. In this paper, we study the relationship between a good packaging program and customer's confidence as well as customer's attraction on purchasing goods and services. The paper uses a questionnaire based on Likert scale and distributes among the target population of this survey and the information of packaging are divided into two groups of visibility and informative. The results indicate that a good label with detailed and precise information on product could significantly impact customer's confidence while other visible information do not have much impact on customer's confidence.

1. Introduction

There is no doubt that a customer normally spends only a few seconds to select his/her purchasing materials and packaging is believed to influence people's mind in different forms. Any product with good packaging with sufficient information on labeling and suitable label will have a better chance of absorbing customers' attractions. During the past few decades, there have been tremendous efforts on studying the effects of packaging on products and services. Becker et al. (2011) studied the influence of packaging design on taste impressions and reported that shape curvature and color saturation may impact more general product evaluations and price expectations. Ho and Oh (2009) examined the use of e-security seals on web sites and their relative impact on e-commerce firm reputation by affecting customers' perceptions of trust in a service provider. They gathered information from 211 web users and reported that 106 respondents were cognitive and affective of e-security seals. The results also provided further clarification of the relationship between e-security seals and sales effectiveness and the findings pointed towards a positive belief by consumers in e-security seals.

* Correspondent author. Tel. + 982122895719
E-mail addresses: dr.naserazad@yahoo.com (N. Azad)

Gofman et al. (2010) performed a study to investigate approaches to consumer-driven optimization of package design. Their approach performed a dynamic creation and testing of a large number of design prototypes with consumers and found out some efficient solutions on an aggregated, segmented and individual basis. Ha et al. (2010) investigated the satisfaction consequences in repurchase situations based on some empirical studies and reported that psychological mediators were useful when repurchase situations were considered. Kauppinen-Räisänen and Luomala (2010) investigated the role of package colors in consumers' product experiences by studying the relationship between color meanings and product. They also studied the meanings associated with colors in a product context. Morgado (2008) explained a case associated with plastics packaging company in Portugal integrates itself into the value chain of company clients. They looked for assessing various objectives such as presenting a case of success in technological, processes and business innovation. The study also presented a case of success in business strategy, based on the build-up of partnerships to build a platform for discussion of a first mover strategy.

Oliveira et al. (2010) presented a pilot study characterizing the domestic usage of food packaging in terms of amount and type at the household level. They selected all the necessary information such as design, methodology, and approach from a sample of Portuguese consumers. The results achieved were then analyzed in relation to the current assumptions made for the safety assessment of materials based on European legislation. Rubdh (2009) performed an investigation to find out how packaging and packaging design can contribute to competitive advantage for marketing a consumer product. In this study, Rundh demonstrated different influences on the design process of a package from external and internal factors where the outcome of the design process depends on the interaction between the main actors in this process. The study also emphasized on the relevant importance of the interaction with customers for planning and conducting the design.

Silayoi and Speece (2007) focused in their study on understanding consumer behavior for buying decisions based on packaging specifications. They claimed visual package elements play a major role, representing the product for many consumers, especially when they do not want to spend much time. Silayoi and Speece (2007) studied the importance of packaging design and the role of packaging as a tool for consumer communication and branding as a growing engine. They examined these issues using a study among consumers for packaged food products in Thailand, which is a very competitive packaged food products market. Their results indicated that perceptions about packaging technology played the most important role in consumer to purchase. Vernuccio et al. (2010) performed an exploratory study of marketing, logistics, and ethics in packaging innovation. They showed that simultaneous integration among marketing, logistics and ethics recurs in only one third of the cases.

Wells et al. (2007) investigated the importance of packaging design for own-label food brands. The study clearly indicated that there is a strong association regarding the influence of packaging on the purchase decision. Williams et al. (2008) studied a life cycle perspective on environmental effects of customer focused packaging development. The study investigated the possibilities of increasing customer satisfaction and reducing the environmental effect from food-packaging systems in a life cycle perspective using results from a study on consumers' demands on packaging based on Kano's theory of attractive quality. Their results showed that there were some potentials to increase customer satisfaction and at the same time decrease in the environmental impact of the food-packaging system, especially when the packaging design assists to reduce food losses. Ogba and Johnson (2010) performed an investigation on how packaging affects the product preferences of children and the buyer behavior of their parents in the food industry.

In this paper, we present an empirical study to learn about the impact of packaging on customer's attraction. The orientation of this paper first presents details of our survey in section 2 and then it presents the results of our survey in section 3. The concluding remarks are given in the last to summarize the contribution of this paper.

2. The proposed study

The proposed study of this paper uses a questionnaire to gather customers' opinion on how packaging could impact customer's attraction on purchasing a product. The questionnaire consists of one main question with ten sub questions summarized in Table 1 as follows,

Table 1
The main questions of the survey

	Description	Symbol
H1	The size of a packaging plays an important role on customer's purchasing intention.	Size
H2	The present characteristics such as graphical design have an important impact on customers' purchasing intention.	Graphic
H3	The design of packaging product is important to by a product.	Design
H4	The color of packaging plays an important role on buying a product.	Color
H5	The materials used in a product play an important role on purchasing a product.	Kind
H6	The brand plays an important role on purchasing a product.	Symbol
H7	The information specified on the label of product plays an important role on purchasing a product.	PI
H8	The standard sign is the most important issue for purchasing a product.	Standard
H9	The name of the product is the most important influencing parameters on purchasing a product.	Trade Name
H10	Using a good technology plays an important role on attracting people for buying a product.	Technology
H11	Customer confidence is the most important parameters for buying a product.	Trust

The questions and concerns specified in Table 1 can be categorized in two important fields of visual and informative. The visualization part includes size, graphic, design, color, material and brand. The other four items of technology, brand, standard sign and the information of the content are categorized in the second part. In this paper, the population of the survey includes the people who purchase from a well-known chain. Since the size of the population is relatively large, a sampling technique has been used. The number of initial sampling was set to 30, which yields $\sigma^2 = 0.081$ when the error is 0.05. Therefore, we have $n = \dfrac{Z_\alpha^2 \sigma^2}{d^2} = \dfrac{1.96^2 \times 0.081}{0.05^2} = 124$. In this survey, the number of sample size is set to 230, which is approximately twice as much as initial calculated sample size. We have used SPSS software package (Levesque, 2007) to perform the computations and the reliability of the survey for a small sample size of 30 is 0.875, which means the questionnaire is highly reliable.
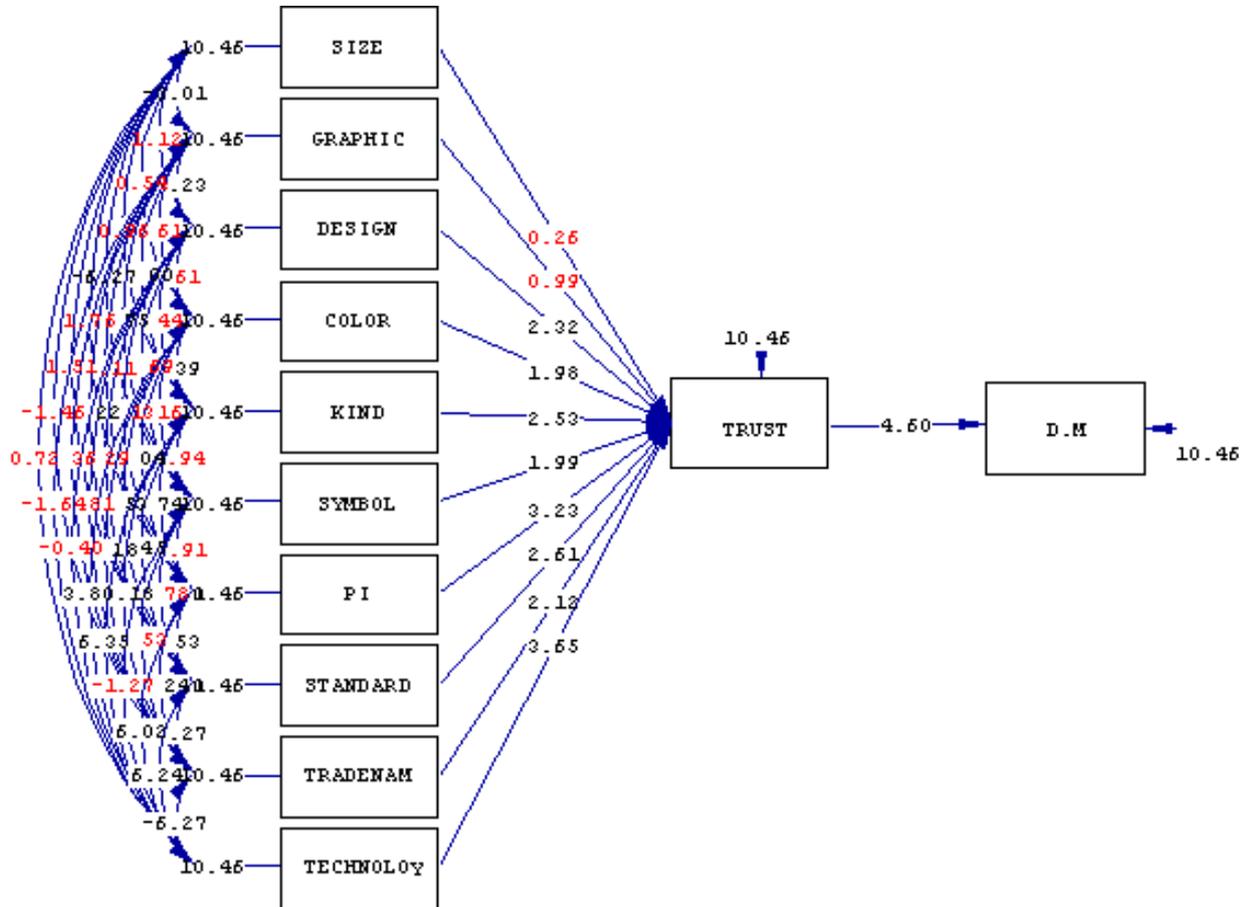
3. Results

In this section, we present the details of our survey results using LIZREL software packages (Joreskog & Van Thillo, 1972). Table 2 shows a summary of the outputs for the implementation of our LIZREL software package.

Table 2
The details of the implementation of LIZREL output parameters

Attribute	RGFI	AGFI	GFI	RMR	RFI	IFI	CFI	PNFI	NNFI	NFI	RMSEA
Value	0.13	0.94	0.99	0.025	0.94	1.00	1.00	0.15	0.99	0.99	0.020

Fig. 1 shows the details of the results of our LIZREL implementation.

Fig. 1. T-value for different components of the proposed model

Table 3 summarizes the details of the results of t-value and standardized loading for all the questions.

Table 3
The results of t-value and standardized loading factors

Scale	size	Graphic	Design	Color	Kind	Symbol	PI	Standard	Trade name	Technology
t-value	0.26	0.99	2.32	1.98	2.53	1.99	3.23	2.61	2.12	3.65
Hypothesis	R	R	A	A	A	A	A	A	A	A
Loading factor	0.02	0.06	0.14	0.11	0.16	0.12	0.26	0.20	0.14	0.23

R: Reject
A: Accept

Since the coefficients do not have standard values, we use t-student to test our entire hypothesis. As we can observe, the first two hypothesizes were rejected and for the remaining eight hypothesizes we do not have enough evidence to reject them. Therefore, we accept design, color, kind, symbol, product information, having a well-known standard, trade name and technology as the most important items. As we can observe product information with relatively higher t-student and loading factor values represent the most important factors followed by trade name and trademark name. Graphic and size represent the lowest impact factor, which means customer do care about the content of the product rather than its size and graphic representation. In other word, informative items represent higher values for customer's preferences compared with visualized factors.

4. Conclusion

In this paper, we have presented an empirical study on different important factors affecting packaging a product, which attract customers buying interest. The proposed study of this paper has considered ten most important factors. The factors have been divided into two categories of informative, and visualize items. A questionnaire were distributed among a sample of customers visiting a chain store and the data were gathered and analyzed using LISREL software package. The results indicated that informative factors such as product information and trade name play the most important role on choosing a product while graphic and size had virtually no significant impact on customer's decision for buying a product.

Acknowledgment

References

Becker, L., van Rompay, T.J.L., Schifferstein, H.N.K., & Galetzka, M. (2011). Tough package, strong taste: The influence of packaging design on taste impressions and product evaluations. *Food Quality and Preference*, 22(1), 17-23.

Ho, C.T. B., & Oh, K. B. (2009). An empirical study of the use of e-security seals in e-commerce. *Online Information Review*, 33(4), 655-671.

Gofman, A., Moskowitz, H. R., & Mets. T. (2010). Accelerating structured consumer-driven package design. *Journal of Consumer Marketing*, 27(2), 157–168.

Ha, H.Y., Janda, S., & Muthaly, S.K. (2010). A new understanding of satisfaction model in e-re-purchase situation. *European Journal of Marketing*, 44(7/8), 997-1016.

Kauppinen-Räisänen, H., & Luomala, H. T. (2010). Exploring consumers' product-specific colour meanings. *Qualitative Market Research: An International Journal*, 13(3), 287-308.

Joreskog, K.G., & Van Thillo, M. (1972). *LISREL: A General Computer Program for Estimating a Linear Structural Equation System Involving Multiple Indicators of Unmeasured Variables*. Princeton, NJ: Educational Testing Service.

Levesque, R. (2007). *SPSS Programming and Data Management: A Guide for SPSS and SAS Users*, 4th ed., SPSS Inc., Chicago Ill.

Morgado, A. (2008). Logoplaste: innovation in the global market, *Management Decision*, 46(9), 1414-1436.

Oliveira, J.C., Pinto, H.J., Zacarias, M.E., & Hogg, T. (2010). New paradigm for patterns of home packaged food intake. *British Food Journal*, 112, 500-510.

Ogba, I.E., & Johnson, R. (2010). How packaging affects the product preferences of children and the buyer behaviour of their parents in the food industry. *Young Consumers: Insight and Ideas for Responsible Marketers*, 11(1), 77-89.

Rundh, B. (2009). Packaging design: creating competitive advantage with product packaging. *British Food Journal*, 111(9), 988-1002.

Silayoi, P., & Speece, M. (2007). The importance of packaging attributes: a conjoint analysis approach. *European Journal of Marketing,* 41(11/12), 1495-1517.

Silayoi, P., & Speece, M. (2004). Packaging and purchase decisions. *British Food Journal*, 106(8), 607-628.

Vernuccio, M., Cozzolino, A., & Michelini, L. (2010). An exploratory study of marketing, logistics, and ethics in packaging innovation. *European Journal of Innovation Management*, 13(3), 333-354.

Wells, L.E., Farley, H., & Armstrong, G.A. (2007).The importance of packaging design for own-label food brands. *Journal of Retail &Distribution Management*, 35(9), 677-690.

Williams, H., Wikstrom, F., & Lofgren, M. (2008). A life cycle perspective on environmental effects of customer focused packaging development. *Journal of Cleaner Production*, 16(7), 853-859.