



A Study of the Effects of Packaging on the Increase of Sale of Foods Industry in Chocolate

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Abstract

Present study in terms of purpose is functional and in terms of method is descriptive - survey research. That study on 5 factors affecting in packaging such as graphic design of packaging, size of packaging, product information listed on the packaging, technology of product on packaging and the range of product listed on the packaging. Sample size was 390 persons and to collect information, the questionnaire included 22 questions with Likert scale was used. After analyzing data collected through one-sided Wilcoxon test the results indicate that from purchasers of Chocolate 's view, all elements of graphic design of packaging, size of packaging, product information listed on the packaging, product technology listed on the packaging and the range of product listed on the packaging has a positive and significant impact on increasing chocolate sales. Also, in the buying behavior of the respondents more than any other factor, the operating range of the product are listed on the packaging was important and they less care to technological factors listed on the product packaging.

Keywords: packaging, chocolate, sales, graphic design, size, product information, product technology, the range of product consumption.

Introduction

One of the important factors in the field of purchasing is the point of sales; however packaging forms an important part of the sales process. The packaged foodstuffs products are supplied to large markets and supermarkets where the products will remain there for a long time and consumers can also have a variety of choices. In the storage sector of materials as well as in the domestic sector, because of self-service format in most supermarkets, from the point of purchasing packaging is itself a seller placed on a shelf. Extreme importance of packaging designs in the competitive markets has evolved rapidly since packaging is an important tool to communicate. The various packages on the shelves of the supermarkets will have a great effect on the process of consumer decision making, hence the packaging design should ensure the consumer's desired response (1).

An appropriate packaging is able to play its role as a silent seller. According to the fact that packaging is not just in the production domain but it is in the area of marketing as well, the common task of production and markets managers is to make decision on how to do that. Packaging task in terms of creating a relationship with a customer, induce demand and encourage the customer to purchase are among the tasks of marketing managers and their common decision with production managers can be effective in adopting an appropriate and attractive method for packaging and marketing. Studies and researches of big

companies in the field of marketing and ways to promote the sales show that packaging has the greatest effect on the customer's absorption and the sales method in domestic and foreign markets (2).

Study Problem Statement

Today market trends and also other several factors indicate a growing importance of packaging as a strong tool for marketing. Growth and development of the expansion of self-service stores in most countries have caused the role of packaging as a silent seller becomes more prominent than before (3). In the current self-service business, packaging provides a final opportunity to the producers to convince the prospective customers before they take their final decision and it is considered as a strong primary stimulus in relationship with many of the purchasing decisions related to the foodstuffs products (4).

The increasing of globalization has forced organizations to reconsider and redefine the cases that help them to develop a competitive advantage. In an environment bombarded with advertisement, promotions and weekly or even daily discounts in which the quality of the foreign products of companies' production line experiences a surprising convergence, the importance of packaging topic becomes clear more than ever and attention and reflection to its mechanisms are considered an undeniable necessity (5). Today, the issue of packaging in industries is considered as one of the important marketing tools and competition in international communities for executive authorities and owners of productive industries and commercial companies and the need to investigate about it is felt more day by day (6).

It is the packaging that makes a product. A good product will not have a good sale in an average packaging unless the buyer is faithful to it. On the other hand, an attractive package for a product that does not have a good quality only makes the customer disappointed. It would be useless that a package attracts the public attention, but fails to create positive effects (7). Although today management focuses more to packaging, a quick review of the marketing literature confirms that, theoretically a very little attention has been dedicated to packaging and as a result negligible efforts have been made in relation to its effects on marketing activities. In this regard and following the compensation of these shortcomings, this study examines the effects of observing important points in chocolate packaging in the marketing and sales of producers of this product. There are a very wide range of effective factors on packaging, but the factors evaluated in this study include: packaging design and graphic, the size of packaging, the product information printed on packaging, the product technology printed on packaging, the product range of consumption printed on packaging.

Given that several factors are effective in the consumer decision of purchasing and as a result the sales rate, in this research only the effect of packaging factor has been evaluated and other effective factors have been considered constant on the sales.

The main question of this study is that how packaging affects the sales of foodstuffs (chocolate)?

Importance and the Necessity to Perform Study

The reasons of packaging importance:

- 1) Media's new habit and the role of brand creation by media advertisements
- 2) The importance of purchasing decisions in stores (sudden decision)
- 3) Structural changes within retail stores have created new demands in the distribution system.
- 4) Increased awareness of management about using packaging as a tool to build differentiation and identity for consumer goods (8).

The necessity of this issue is from the aspect that today the country in the field of chocolate production and exports has advanced so much and attendance in international festivals confirms this claim. Regarding this issue, it seems necessary to study packaging indicators and dimensions.

Study Question

The main question of this study is that how packaging affects the sales of foodstuffs (chocolate)?

Study Hypotheses

According to the question proposed, the main hypotheses of this study are:

- 1) There is a positive and significant relationship between packaging design and graphic and increase in chocolate sales.
- 2) There is a positive and significant relationship between the size of packaging and increase in chocolate sales.
- 3) There is a positive and significant relationship between the product information printed on packaging and increase in chocolate sales.
- 4) There is a positive and significant relationship between the product technology printed on packaging and increase in chocolate sales.
- 5) There is a positive and significant relationship between the product range of consumption printed on packaging and increase in chocolate sales.

Statistical community and determining the sample size

The statistical community of this study includes all chocolate consumers that it is an unlimited statistical community. In this research the simple random sampling method was used and the sample size was obtained 384 people by Cochran formula that rounded to 390 people.

Methodology

The current study is an applied research based on objective and the consequence is to obtain applicable results in the field of increase in sales. In terms of information collection, the current research is a descriptive study that seeks to collect real and comprehensive information about the considered phenomena. Also this research is a survey study. Validity is derived from the word of valid meaning permissible and true and validity means being 'true' and 'correct' (9). The concept of reliability or validity replies to this question that the measurement tool to what extent measures the considered characteristic (10). The term reliability that is used sometimes synonymous with trustiness, stability, consistency, predictability of accuracy or correctness is consistency of sizes in the number of measurement. In the current study to investigate the validity, the questionnaire was distributed among some consumers, related managers, graphic designers, printing experts and practitioners in the field of packaging and they expressed their opinions about the proposed structure and content of the questionnaire and then the ambiguous questions that were away from the research objectives were corrected by experts opinion and advisors and finally the questionnaire was designed containing 4 demographic questions and 22 specialized question. To calculate the internal consistency of the questionnaire Cronbach alpha coefficient has been used that is the most appropriate method for the ordinal scales. Alpha range is between 0 and 1, and the larger is this coefficient, the more is the reliability that in the current study this coefficient is equal to 0.82.

Statistical Methods

To analyze the data collected, both descriptive and inferential statistical methods were used. In descriptive statistics, the observations are provided by appropriate tables and figures. It should be noted that the objective of descriptive statistics is to describe data and not justify the events related to the community; and in inferential statistics one-sided Wilcoxon test was used that the objective of inferential statistics is to infer about the community through the analysis of information in the sample data as well as is to measure the uncertainty in these inferences. In addition, to analyze the information SPSS software was used.

Evaluating Normality of Variables of the Study

At first the normality of variables of the study is evaluated by the Kolmogorov Smirnov test before examining the hypotheses of the study. In the case of normality, parametric tests and in the absence of normality, non-parametric tests are used to examine the hypotheses of the study.

Variable Name	Value in Kolmogorov – Smirnov Test	Test Result
Purchase Act		
Packaging design and graphic	0.031	non-normality
The size of packaging	0.000	non-normality
The product information printed on packaging	0.000	non-normality
The product technology printed on packaging	0.003	non-normality
The product range of consumption printed on packaging	0.000	non-normality
Tend to Purchase		
Packaging design and graphic	0.046	non-normality
The size of packaging	0.000	non-normality
the product information printed on packaging	0.000	non-normality
the product technology printed on packaging	0.001	non-normality
the product range of consumption printed on packaging	0.000	non-normality

According to the results obtained from the above table it can be seen that none of the variables of the study has a normal distribution, therefore, to investigate the hypotheses of the study the non-parametric one-sample Wilcoxon test is used.

The hypotheses of this test are defined as follows:

Null hypothesis: The median value is less than 3.

Hypothesis 1: The median value is greater than 3.

Inferential Analysis

Evaluating the Hypotheses in the Case of Tend to Purchase

Hypothesis 1:

There is a positive and significant relationship between packaging design and graphic and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
66818.5	0.000	4

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that tend to purchase chocolate, packaging design and graphic increases the tendency to purchase chocolate and potentially will affect the increase in sales of chocolate, or in other words, there is potentially a positive and significant relationship between packaging design and graphic and increase in chocolate sales.

Hypothesis 2:

There is a positive and significant relationship between the size of packaging and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
61933.5	0.000	4.1

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that tend to purchase chocolate, the size of packaging increases the tendency to purchase chocolate and potentially will affect the increase in sales of chocolate, or in other words, there is potentially a positive and significant relationship between the size of packaging and increase in chocolate sales.

Hypothesis 3:

There is a positive and significant relationship between the product information printed on packaging and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
65265	0.000	4.08

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that tend to purchase chocolate, the product information printed on packaging increases the tendency to purchase chocolate and potentially will affect the increase in sales of chocolate, or in other words, there is potentially a positive and significant relationship between the product information printed on packaging and increase in chocolate sales.

Hypothesis 4:

There is a positive and significant relationship between the product technology printed on packaging and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
51026	0.000	3.83

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that tend to purchase chocolate, the product technology printed on packaging increases the tendency to purchase chocolate and potentially will affect the increase in sales of chocolate, or in other words, there is potentially a positive and significant relationship between the product technology printed on packaging and increase in chocolate sales.

Hypothesis 5:

There is a positive and significant relationship between the product range of consumption printed on packaging and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
66603	0.000	4.33

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that tend to purchase chocolate, the product

range of consumption printed on packaging increases the tendency to purchase chocolate and potentially will affect the increase in sales of chocolate, or in other words, there is a potentially positive and significant relationship between the product range of consumption printed on packaging and increase in chocolate sales.

Evaluating the Hypotheses in the Case of Purchasing Act

Hypothesis 1:

There is a positive and significant relationship between packaging design and graphic and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
64450.5	0.000	3.93

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that have acted to purchase chocolate, packaging design and graphic has increased the tendency to purchase chocolate and it is actually effective on the increase in sales of chocolate, or in other words, there is actually a positive and significant relationship between packaging design and graphic and increase in chocolate sales.

Hypothesis 2:

There is a positive and significant relationship between the size of packaging and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
60841.5	0.000	4.16

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that have acted to purchase chocolate, the size of packaging has increased the tendency to purchase chocolate and it is actually effective on the increase in sales of chocolate, or in other words, there is actually a positive and significant relationship between the size of packaging and increase in chocolate sales.

Hypothesis 3:

There is a positive and significant relationship between the product information printed on packaging and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
65857.5	0.000	4.08

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that have acted to purchase chocolate, the product information printed on packaging has increased the tendency to purchase chocolate and it is actually effective on the increase in sales of chocolate, or in other words, there is actually a positive and significant relationship between the product information printed on packaging and increase in chocolate sales.

Hypothesis 4:

There is a positive and significant relationship between the product technology printed on packaging and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median

46808.5	0.000	3.66
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According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that have acted to purchase chocolate, the product technology printed on packaging has increased the tendency to purchase chocolate and it is actually effective on the increase in sales of chocolate, or in other words, there is actually a positive and significant relationship between the product technology printed on packaging and increase in chocolate sales.

Hypothesis 5:

There is a positive and significant relationship between the product range of consumption printed on packaging and increase in chocolate sales.

Statistic value of Wilcoxon test	P-value of the test	the estimated median
64386.5	0.000	4.33

According to the results obtained from this test it is observed that the P-value of the test is 0.000 that is smaller than 0.05. Therefore, the null hypothesis of the test is rejected. It means that the value of the median is significantly greater than 3. So, in people’s opinion that have acted to purchase chocolate, the product range of consumption printed on packaging has increased the tendency to purchase chocolate and it is actually effective on the increase in sales of chocolate, or in other words, there is actually a positive and significant relationship between the product range of consumption printed on packaging and increase in chocolate sales.

Conclusions and Recommendations

After analyzing the data collected by the one-sided Wilcoxon test, the obtained results suggested that in the chocolate buyers’ opinion, all the factors including packaging design and graphic, the size of packaging, the product information printed on packaging, the product technology printed on packaging, the product range of consumption printed on packaging have positive and significant effect on increasing sales of chocolate. Also, in purchasing behavior the respondents notice to the factor of the product range of consumption printed on packaging more than other factors and they care less about the factor of the product technology printed on packaging than other factors.

According to the results of the study the following recommendations are provided:

- 1) Establishing a scientific – research center in the packaging industry by the authorities, interested people and owners of industries.
- 2) Eliminating the cumbersome rules, and facilitating the import of the raw materials for the packaging industry and comprehensive and follow-up support.
- 3) Strict controlling of foodstuffs producer workshops especially perishable materials by the authorities of the Ministry of Health, Treatment and Medical Education and their obligation regarding the supply of goods in packaging for prevention of waste as well as preservation of the community's health.
- 4) Participation in international exhibitions, holding specialized exhibitions, organizing conference and symposia, and inviting international experts to describe and explain the importance of packaging industry and the necessity to pay attention to it.
- 5) In many cases, importing packages compatible with Iranian experts design made outside the country is also cost effective. In these cases, customs rules should allow temporary entrance of these packages into the country. But due to unknown reasons the administrative problems have actually prevented Iranian exporters to use this way.
- 6) One of the key trends in packaging industry is foodstuff products (sustainable packaging). The meaning of sustainable packaging is designing a special mechanism for production and use of containers that are

non-renewable in order to preserve the resources. So, companies and environmental groups by working together should reduce the effects of this industry on the primary sources of the world.

7) Some of the most dramatic progresses in foodstuffs packaging industry are related to nanotechnology. Nanotechnology that is the study of nanoparticles has had a major effect on the cases used in foodstuffs packaging industry. By taking advantage of innovations take place at the nanoscale, new ideas in technical properties and inhibitory capability of dishes, new ideas in pathogens and new solutions in active and smart packaging can be achieved.

References

1. Silayoi, Pinya & Speece, Mark, (2004), Packaging & Purchase Decisions, British food journal.
2. Afrasiabi, Narges (2010), Packaging. Tehran, the Ministry of Commerce.
3. Rundh Bo, 2005, "The multi-faceted Dimension of Packaging: Marketing Logistics or Marketing Tool?" "British Food Journal, Vol. 107 No. 9, pp. 670-684.
4. Ampuero Olga, Vila Natalia, 2005, "Consumer Perceptions of Product Packaging", Journal of Consumer Marketing, Vol. 23 No. 2, pp. 100-112.
5. Sha Yang, Can bottles speak volumes? The effect of package shape on how much to buy (2004).
6. Rahimnia, Fariborz; Alavi, Muslem; Najafi Siahroodi, Mahdi. (2008). Systematic approach in packaging management by providing a comprehensive model in the products' packaging process. The third conference on marketing management.
7. Gharaei, Shabnam. The color in packaging: (2001). Printing and Packaging Magazine, No. 29.
8. Faiz, Davood; Salahshoor, Akbar (2007). The role of packaging in marketing.
9. Khaki, Gh. (2007). Research method by an approach to dissertation, Baztab publications, Tehran.
10. Sarmad, Z et al. (2005). Research methods in behavioral science, Agah publications, Tehran.