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THE EFFECT OF VISUAL AND FUNCTIONAL CRITERIA OF PACKAGING: CONSUMER EXPECTATIONS OF ELEMENTS FOR DAIRY PRODUCT PACKAGING

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Abstract

Manuscript type: *Research paper*

Research Aims: *This study seeks to investigate the effect of visual and functional criteria on packaging and consumer expectations towards the packaging elements of dairy products for children.*

Design/methodology/approach: *For this purpose a sample containing 334 children between 7-12 years were used. Sampling method was random sampling and measuring tool was questionnaire. In order to data analysis and hypothesis testing, structured equations test by means of "Lisrel software" was used and the research results show that recyclability of product, easy to carry, packaging (product) form and illustrations on packaging variables haven't positive and significant effect on consumer's expectations toward packaging elements of product.*

Research Findings: *On the other hand packaging (background) color and font style variables have positive and significant effect on consumer's expectations toward packaging elements of product. Thus, according to the results visual criteria have more effective role on packaging than functional criteria.*

Theoretical Contribution/Originality: *As the general rule of all affecting factors in stimulating Visual and Functional Criteria of Packaging of customers, this is a rare study which investigates and provides insights to clarify the exact role of the factors in the field.*

Practitioner/Policy Implication: *Scrutinizing the motivators of Visual and Functional Criteria of Packaging and their interrelationships would help professionals as well as scholars to understand its determinants, which will lead to more insightful decisions. Further, this understanding may be useful in shaping marketing policies and strategies for Iranian and the other firms all around the world.*

Research limitation/Implications: *Lack of cooperation of some respondents; As well as the limited results to the respondents' perceptions of the questionnaire questions.*

Keywords: Easy to Carry, Font-style, Product Form, Background Color.

INTRODUCTION

Everyday consumers are faced with purchase complex decisions (Shiffman, G.L., Kanuk L.L., and Hansen, H, 2008). The reason for complex decisions can be a lot of advertising of various products. (Yong, 2004). According to this point, pure milk packaging is considered an important factor for attracting consumers. Packaging is an important factor in attracting consumers. (Azad and Hamdavipour, 2012). On the other hand, consumer perception of the product and their packaging is of particular importance to marketing managers. Consumer behavior and their relationship with product selection and purchase also depends on several factors, including job, social status, income, education, and so on. Another factor in buying behavior is how a product is introduced to customers. A good package indicates the use of packaging such as storage, ease of use, product savings, easier storage, transportation, which play an important role in customer decisions (Rasouli, Zangi, 2016). On the other hand, many factors affect consumer' behavior, that recognition of these factors are very important for managers of marketing advertisement. Several factors such as consumer' job, level of education and demographic and economic factors affect their behavior and relation to product. Among other factors in consumers' behavior, the beauty is of dairy product packaging.

Nevertheless, dairy consumption has many benefits for the growth and health of children due to its unique food composition. New research shows that adding 1 glass of milk to a child's daily diet increases the walking speed by 5% and reduces the risk of imbalance in adulthood by 25% (Pelsmaecker et al., 2013). Thus, Color composition of packaging, along with other sub-elements of persuasion aspect of packaging like shape,

size and so can give identity to packaging which distinguish that package from other packages in market. One of the tools that packaging designers use to attract the attention of customers is the use of colors in the packaging of products that can give identity to the packaging and distinguish it from other packages on the market. Therefore, using different colors in packaging plays an important part in increasing sales and customer satisfaction with the selection and purchase of goods (Youssef & El-Sayed, 2018). Beautiful and childish packaging encourages young consumers at the point of sale (Letona et al, 2014). Research has shown Packaging elements can be divided into visual Features (e.g., graphic, color, shape, size); (Sahhafzadeh et al, 2016; Letona et al, 2014; Silayoi & Speece, 2004; Estiri et al, 2010, Purnhagen et al, 2016; Vyas, 2015; Velasco et al, 2015; Heide & Olsen, 2017; Matthews et al, 2019). For example, color and graphic meanings and behavioral responses to packaging Pictures and colors vary as a function of the context in which the color is perceived) (Júnior et al, 2020). These visual elements generally attract more consumer attention than textual information. While textual information could, besides being a marketing practice, serve as a classical form of consumer information to overcome the information asymmetry, businesses preferably use pictorial claims, which are much closer to nudging techniques, to enhance market share (Purnhagen et al, 2016). The packaging design also utilized to handle, transport, distribute, retail and promote the product (Betancur-Muñoz, 2014; Yang, 2012). As everyone knows, dairy is one of the most important foods for child care that parents should pay special attention to. A child's nutritional needs vary based on age, size, metabolism, health status, and

other factors. One of the food groups suitable for feeding children is dairy products. Dairy products include milk and its products such as cheese and yogurt, which are rich in calcium, protein and vitamins, especially vitamins A and D.

LITERATURE REVIEW

Boarca et al (2019) they concluded that packaging has an important effect on product protection, product hygiene, easy maintenance and distribution of products. Celhay et al (2019) they found that the labels on the packaging give the respondents a commercial meaning. Tohir & Soewardikoen (2018) studied the One of the most important factors in packaging is visual identity, which small and medium-sized businesses do not realize the importance of a product, easy naming of packaging with an attractive logo can be easily remembered and cause a competitive advantage and easily by consumption be recognized.

Araújo et al (2018) investigated that the majority of visually impaired consumers have difficulty reading and opening packages. Sahhafzadeh et al (2016) carried out a research on the effect of packaging dimension on customer satisfaction and purchase mental involvement by emphasizing on mediator role of their view (perspective) about packaging. The study findings imply the significant effect of packaging dimensions such as color, attractiveness, shape, insertion of product information on packaging, size, quality and hygienic issues on customers view about packaging and significance effect of customers view about packaging on their satisfaction and purchase mental involvement.

Ebrahimi et al (2015) in a research titled study the effect of aesthetic aspect of

packaging, purchase intention and packaging preference. Findings show that packaging preference could mediate the relationship between aesthetic aspect of packaging and purchase intention, completely. Other findings signify that informational aspect of packaging has adjusted the relationship between aesthetic aspect of packaging and packaging preference. On the other hand, food products price, quality and brand of variables have moderated relationship between packaging preference and purchase intention.

Feiz et al (2015) have investigated the effects of packaging design on consumer' choice. The study findings show positive influence of some variables, including color, shapes and images on the napkin packaging on consumer' choice. Also, considering numerical value of chi-square statistic (χ^2) it was evident that elements related to sexuality and age of respondents have influenced the choice of their concerning color of packaging.

Azad et al (2012) have investigated the role of children' foodstuffs packaging features in parents purchasing decisions. The results show that there is a significant relationship between packaging features of children foodstuffs, purchase preference of children foodstuffs and the choice of children's food on parents' decision about product purchasing. Mootsi Kiwa and Maroom Booa (2013) in their study have considered the effect of packaging design aesthetic on consumers purchase decision. Of course this effect is different for various colors, so that according to the research findings, white and cream colors in foodstuffs packaging influence purchasing, but yellow and blue colors have not much effect on customers' purchase behavior.

Pigianto (2013) in his study on symbolic aesthetic of packaging design has pointed out that an orange image on packaging has more effect than writings about product, like orange flavor. On one hand this researcher by presenting an example about two laughing little boy and girl, one with orange hair and the other with red hair, points out that in addition to animation applied in this design which is attractive itself, two concept of

product flavor inside packaging and resulted happiness of consuming what is inside the packaging have intelligently induced to addressee by packaging. Also Marshal et al (2006) showed high correlation between interested color and product choice for individuals throughout the sample. Interested colors customers were; pink, purple, yellow and blue and the most interested color was pink.

Table 1. Influence of effective variables on visual and functional criteria of packaging

The main purpose of the research	Sub-criteria under each criteria	Source
Investigated Bioactive Packaging for Modern Beverage Industry	Protecting the product, Dispensing of the products.	Boarca et al. (2019)
Package graphic design	Brand culture, Visual signs.	Celhay et al. (2019)
Visual Identity and Packaging of Dairy Products	Identity for a product, Naming with a rather difficult pronunciation.	Tohir and Soewardikoen. (2018)
Accessible Packaging	Opening the packages, Indicate difficulties.	Araújo et al. (2018)
Packaging dimension on customer satisfaction	Effect of packaging dimensions such as color, attractiveness, shape, insertion of product information on packaging, size, quality and hygienic issues.	Sahhafzadeh et al. (2016)
Aesthetic aspect of packaging, purchase intention and packaging preference	Food products price, quality and brand.	Ebrahimi et al. (2015)
Packaging design on consumer' choice	Color, shapes and images on the napkin packaging on consumer' choice, Sexuality and age of respondents.	Feiz et al. (2015)
Children' foodstuffs packaging features in parents purchasing decisions	Color, shapes and images.	Azad et al. (2012)
Packaging design aesthetic on consumers purchase decision	Various colors, Purchase decision.	Mootsi Kiwa and Maroom Booa (2013)
Symbolic aesthetic of packaging design	Effect colors, Animation applied in this design.	Pigianto (2013)
Packaging color and product choice in preschool children	Interested color and product choice.	Marshal et al. (2006)

Hypotheses and conceptual model

When choosing and buying dairy products, a complex decision is made between the consumer and the product. The complexity of the decision-making process at the time of purchase reflects the importance of each milk package to consumers (Saaty, 1980).

Then, Visual criteria in this study are the font style, product form, image and background color, and the purpose of the performance criteria is easy portability and product recyclability.

Taking into account the theoretical foundations, research hypotheses were developed. The authors tried to examine the following two hypotheses regarding the impact of aesthetic criteria, performance criteria of customer expectations about the packaging elements of dairy products in terms of purchasing decisions:

H1: *Aesthetic Criteria positively influences the Consumer expectations of packaging.*

H2: *Functional Criteria positively influences the Consumer expectations of packaging.*

As we can see in the model, performance criteria include easy portability and recyclability, and aesthetic criteria include font, shape, image, and background color. So we have two main hypotheses and six sub-hypotheses; The sub-hypotheses are:

H1a: Font-style positively influences the Consumer expectations of packaging.

H1b: Product Form positively influences the Consumer expectations of packaging.

H1c: Illustration positively influences the Consumer expectations of packaging.

H4d: Background Color positively influences the Consumer expectations of packaging.

H2a: Easy to Carry positively influences the Consumer expectations of packaging.

H2b: Recyclability of product positively influences the Consumer expectations of packaging.

RESEARCH METHOD

The designed hypotheses are shown in the form of a conceptual model (Figure 1).

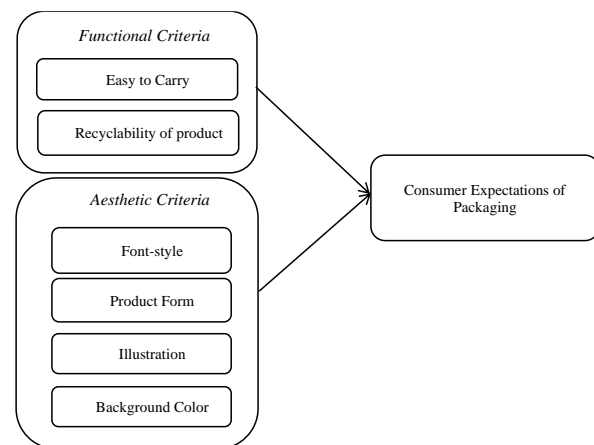


Figure 1. Conceptual model

Source: Research Findings

In order to design research hypotheses, initial library studies were conducted. Then, with an experimental study, we have examined the hypotheses. The field collection method and data collection tool in this study was a researcher-made questionnaire (Corbin and Strauss, 2008)

Research Methods

In this part of the study, the study is of applied type and in terms of descriptive-survey method. In this part of the study, research method is functional, subjectively and descriptive- survey methodologically. And field method was used in order to collecting data. The data collection tool was a researcher-made questionnaire. Therefore,

for the validity of the questionnaire questions, the opinions of experts in the field of children's packaging design and marketing managers have been used.

Questionnaire including 21 items with 5 point Likert scale inferred from this research quality level. This study population includes all 7-12 years old elementary school child of Arak city and their parents who are 6000 people. Sample number according to Morgan table is 360 people. After questionnaire distribution, 334 questionnaires were returned. The questionnaires were distributed by available sampling method.

Pilot study was carried out to identify potential packaging elements and features of dairy products influencing purchase decision which was tested in second phase of research process. First phase of research process allowed preparing final version of scientific research tools involving transparent and communicable questions.

Table 2. Cronbach's Alpha Coefficients of the Variables (Research Findings)

Questions	Variables	Reliability
3	Recyclability of Product	0.782
3	Easy to Carry	0.784
3	Background Color	0.748
3	Product Form	0.755
3	font-style	0.817
3	Illustration	0.785
3	Expectations Towards Elements of Dairy Product	0.837

In order to investigate the research model, it is necessary to ensure that the model is suitable and suitable before confirming the structural relationships. In other words, to refute or accept that the model developed by the researcher on the basis of his theoretical framework and theoretical background is consistent with the facts and data collected, the criteria are considered as fit indicators of the model. The fitting of the model

determines the degree to which sample covariance variance data such as structural equations are supported. The research model was evaluated on the basis of the optimal values of the fit indices, which are presented in Table 3.

Table 3. Research Fit Indicators (Research Findings)

Symbol	Index
(χ^2/df)	2.30
(RMSEA)	0.048
(RMR)	0.055
(NFI)	0.91
(NNFI)	0.94
(CFI)	0.95
(IFI)	0.95
(GFI)	0.85
(AGFI)	0.85

Questionnaire reliability was confirmed by "Cronbach coefficient alpha". In data analysis, structured equations by means of "Lisrel software" were used. In structured equations diagrams, exogenous variables are: Recyclability of product (RP), easy to carry (EC), packaging colour (PC), product form (PF), font style (FS), illustration (I), and endogenous variable is consumer's expectations towards elements of product packaging. As we observe from "t" coefficients estimation chart, variables including recyclability of product, easy to carry, packaging colour, product form, illustration on the packaging did not have positive and significance effects on consumer's expectations towards elements of product packaging because their t-coefficients are below 1.96. On the other hand, product colour and font style variables had positive and significance effects on consumer's expectations towards elements of product packaging since their t-coefficients are above 1.96 and 2.58, respectively. Therefore it can be said that at confidence level of 99%, are significant.

Standard estimated of coefficients are homogeneous, means that their scales became equal and comparison between them is possible. Between latent variables, path coefficients or standardized beta are regressed.

Table 4. λ Coefficient values and and t-statistic (Research Findings)

Variables	Observed Variables	λ	t
Recyclability of product	RP1	0.80	16.10
	RP2	0.91	19.27
	RP3	0.55	10.35
Easy to Carry	EC1	0.81	15.60
	EC2	0.82	15.69
	EC3	0.60	10.94
Background Color	BC1	0.69	12.63
	BC2	0.81	15.30
	BC3	0.63	11.38
Product Form	PF1	0.68	12.69
	PF2	0.83	16.08
	PF3	0.66	12.35
Font-Style	FS1	0.79	15.96
	FS2	0.83	16.99
	FS3	0.71	13.83
Illustration	I1	0.77	15.19
	I2	0.82	16.42
	I3	0.65	12.13
Expectations Towards Elements of Dairy Product	ET1	0.77	-
	ET2	0.83	14.34
	ET3	0.79	13.79

Result Analysis

The results of the test show structural equation analysis with LISREL software:

Table 5. Result Analysis

Hypothesis	Item	Beta	t
H1	RP-ET	-0.08	-1.06
H2	EC-ET	0.05	0.71
H3	BC-ET	0.10	2.41
H4	PT-ET	0.12	1.29
H5	FS-ET	0.43	5.65
H6	I-ET	0.14	1.81

RESULT AND DISCUSSION

As we can see in the table, the coefficients are higher than 1/96.

Packages contain a variety of messages from the manufacturer to the buyer and are largely responsible for creating the desired mental image in the customer. Targeted packages, made with creative intelligence, can simplify and even shorten the buying process. Specifically, optimal packaging can be considered as the kind of packaging that protects the product against possible damage, while respecting the principles of shape and color design, size and typography on the one hand, and creating double desirability for the customer through Features such as durability, ease of opening, easy portability, recyclability and reusability on the other hand provide them with motivation to buy the product.

Packaging, today, do not play just the role of protecting and keeping of a product, rather it has potentials like influencing consumers. Main features such as visual and functional factors can cause more importance of dairy product's packaging. Visual criteria are so important because in first sight it attracts customer' attentions and leads customers to choose product according to packaging shape. Therefor results of this research show that packaging colure and font style have significant effect on consumer's expectations towards elements of product packaging. This hypothesis results are in accordance with several studies (Boarca et al. 2019; Celhay et al. 2019; Tohir and Soewardikoen. 2018; Sahhafzadeh et al. 2016; Feiz et al. 2015; Azad et al. 2012; Mootsi Kiwa and Maroom Booa. 2013; Pigianto. 2013; Marshal et al. 2006; Rasuli, et al. 2016; Ebrahimi et al. 2014; Espis et al. 2004; and Yang, 2004). Because relationship between packaging and consumers particularly child is made by colure and font style. And least changes on

packaging can cause more profit during purchase process. Packaging form and illustration do not have significant effect on consumer's expectations towards elements of product packaging. Also, results of this research show that visual criteria have more important and significant role than functional criteria. Since results of functional criteria analysis shows that recyclability of product and easy to carry have not significant effect on consumer's expectations towards elements of product packaging. This hypothesis results are not in accordance with some researches (Izabel, et al. 2016; Rahimnia, et al. 2012, and Deng, 2009). Customers pay more attention to visual features, when purchasing dairy products and in other words packaging functions are placed in second stage of attention.

Consumers consider packaging information to be one of the most effective factors in purchasing food products. Packaging of products for Kokan should be compatible with the physical characteristics of the child's age in terms of weight, size, shape, etc. Having simplicity and variety, having a happy color, are other features. Because packaging and design in packages are the most important factor in buying by children. Children's goods should be a combination of attractiveness for children and sufficient and necessary information for adults.

It is important to conclude that, contrary to popular belief, companies should not refrain from providing complete information on their packaging on food; as otherwise, the customer may be unaware of their information needs. On the packaging, avoid buying a food in the form, color, and even size of a package. Functional aspects are a protection-oriented look and are based on the power of packaging to protect the goods covered.

By producing a product having high quality and appropriate price in packaging and presence of a well-known brand on it, can increase the chance of getting a food product in customer's purchase decisions basket. In other words, if the customer prefers packaging but he isn't satisfy by products price or quality or because of brand being unknown, or even of bad prior experience of that purchasing, hasn't a proper image about that brand in mind, this packaging will not lead to buying.

Therefore, based on the rejected hypotheses, the following recommendations are given to managers and designers of baby dairy products packaging:

- Using different shape designs (such as rectangular, triangular, polygon and circle) in packaging. Since this issue can affect volume and size and according to made distinction, compared with other competitors, increase packaging preference likelihood as one of the contingencies of product purchase intent in children.
- Producing dairy product packaging by considering its informational and aesthetic aspects simultaneously, so that these aspects can reinforce each other effects.
- It is recommended to use beautiful packaging with fancy shapes and childish characters in the packaging of dairy products.
- Given the importance of the environment in society, and especially for our future children, who are the same children, introduce them from an early age by buying environmentally friendly packaging. Managers are also advised to use recyclable and reusable packaging in the production of dairy products.

Avoiding price increases for packaging under the pretext of beautification of the product,

especially due to inflation and on the other hand domestic market competition, based on that the customers are more sensitive to the final price component and this price

increasing can lead to product elimination from customer's purchase basket.

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Appendix

Appendix I. Structural equations model, Standard Coefficients (Research Findings)

