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Modeling the Effect of Packaging on Canned Goods Purchasing Decisions among Job Subcultures

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Abstract. Market saturation, increased competition, change in tastes and needs of customers have made Iranian companies, especially canned industries, face various challenges in relation to consumers. Under such conditions, cannery companies with the ability for proper use of available facilities and equipment such as design and development of new products, supplying high-quality and economic products and appropriate packaging can overcome these challenges and guarantee their survival. Now, it's time for experts and marketers to pay special attention to importance of packaging and its effect of purchasing decision of consumers and as a result, increased profitability of companies and re-evaluation of their attitude. Although companies have found that they should pay attention to physical aspect and attractiveness of packaging of products for this purpose, it could be observed that majority of

them have not used scientific methods in this way. Applied method in this study is applied-developmental method in terms of purpose and the study is a mixed exploratory research in terms of nature. The results obtained from the study show that two identified indices including functional (informational) and visual (aesthetics) features could be effective factors on purchasing decision of consumers. Finally, the study has suggested considering the two indices to improve effectiveness in decision making among job subcultures.

Keywords: Packaging, Functional Features, Visual Features, Purchasing Decision, Meta-Synthesis.

1. Introduction

Packaging is the first media for identification and recognition of preference of a brand at the growing market of consumptive goods. In other words, packaging can provide certain brand image and can help the customer-brand relationship. In terms of aesthetics, attractive products can result in positive brand evaluation (Kreuzbauer and Malter, 2005: 165-176). A review of relevant literature about the products shows that traditional analyses have been just focused on internal features of product and this can never meet needs of the current highly growing markets; although consumers could be also affected by physical and external features of the products too. Physical appearance of product like packaging, especially in food industries, could firstly affect the brand image and can also affect purchasing decision of customers through using brand as a shortcut. Packaging industry has a history less than half a century in Iran; although the industry has been established in the Europe just 2 centuries ago and supplies today considerable incomes for suppliers of agricultural and industrial products. Packaging industry in Iran was begun through making metal can by a person called Derakhshan in 1930. In 1951, the first metal can was made for packaging solid vegetable oil using modern machines and was supplied to the market and in 1965,automatic lacquering system was used in Iran. At the current age, packaging industry companies are also using imported metal sheets to make cans. However, other methods such as using glass dishes, paper packages, plastic dishes and different types

of using aluminum compounds are also common in Iran for packaging products.Paper-making industry using modern technology has also an antiquity about 25 years in Iran. The foundation of paper making industry was formed based on production of paste and paper and then the technology of the industry was completed day by day. Currently, domestic industries have the capability to produce the outer layer of boxes paper, paper used in boxes, paper protected with a layer of plastic for pasteurized and sterilized products. Over the 20 years, relative advancement and evolution is created in packaging industry (MirnezamiZiabari, 2002, 1-11). According to the importance of packaging and its effect on purchasing decision by the consumers, if the packaging is adjusted with taste and desire of the consumer, the consumer can select the product with more reliability and easily and the product supplied to the market and retail shops would not remain in shelves for long time and can lead to increased sales of the product at the supermarkets and stores.

2. Literature review

Ahmadi et al (2016) have conducted a study under the title of "assessment of active packaging indices in food industries". In this study, they found that recognition of smart and active packaging technology by food industry, development of durable packaging systems economically and increased acceptance of consumer to for commercial realization of these packaging systems are required.Natarajan S et al (2016) have conducted a study under the title of "factors affecting improvement of effectiveness of packaging in marketing success and increased sales". Effectiveness on purchasing is not from perspective of customers. Today, customers follow other goals by paying attention to packaging. Apra, N et al (2014) have conducted a study to investigate effect of packaging on development of exports in India. In this study, the authors have claimed that one reason for failure of export of Indian products could be lack of appropriate packaging for maintenance on one hand and inference of sense of trust in consumer on quality of products on the other hand.

3. Method

In terms of purpose, the method in this study is applied and fundamental study. The scope of this research in terms of subject, time and place is as follows: subject scope: design and development of model of the effect of packaging on purchasing decision of canned products with emphasis on job subcultures. Area: in terms of place, this study has been conducted in Hormozgan. Time scope: this study has been conducted from Dec of 2015 to Nov of 2016. Statistical population in this study is divided to two general groups. At the first step that is related to model construction and interview is used to identify the criteria; statistical population consists of marketing managers and experts, especially experts in field of packaging and academic experts. In next step that questionnaire is used for data collection; statistical population consists of job subcultures like doctors, academic professors, employees, laborers and students working at the University Of Medical Sciences Of Hormozgan in Bandar Abbas. The reason for selecting two groups of people for the statistical population is that on one hand, the research process needs existence of two statistical groups and on the other hand; the classification could result in increased quality and reduced number of questionnaires and low-quality and heterogeneous data. Statistical population size of first group is considered to 12 people and the size of second group is to 875 people.

4. Findings

In this study, for purpose of testing conceptual model, structural equation modeling (SEM) is used in smart PLS software. To test significance of model relations, significance coefficient (t-value) is used and this value for each structural and measurement relation is illustrated in Fig 1 and Fig 2.

In this section, research hypotheses are tested using path coefficients and t-test. If the t-value is higher than 1.96 for a path, it could be found that the path has been significant and the hypothesis is confirmed at the p-value level of 0.05. Table 1 has shown the results obtained from t-test.

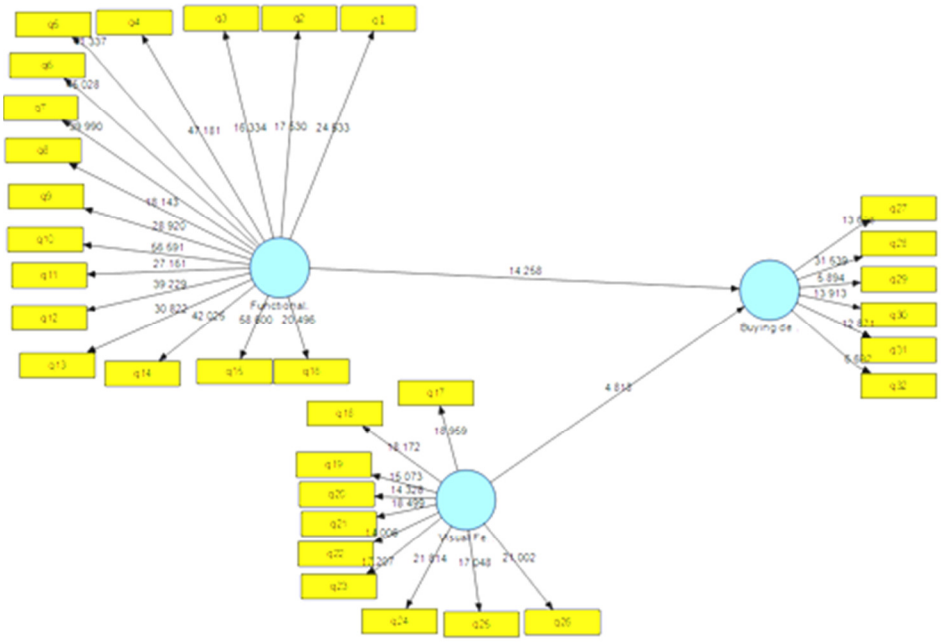

Fig 1. PLS model in state of significance coefficients

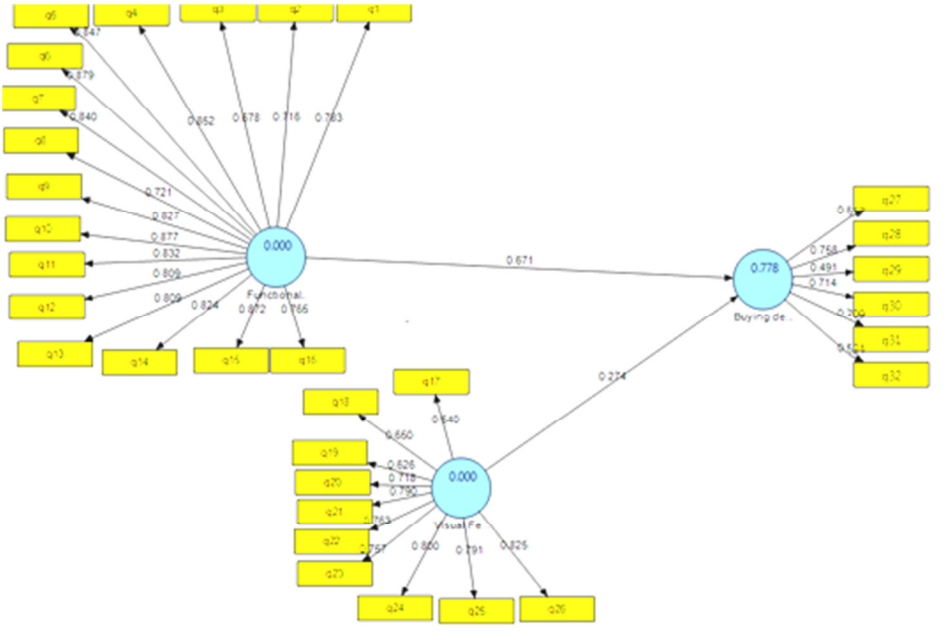

Fig 2. PLS model in state of standardized coefficients

Table 1. Results of t-test: research hypothesis

hypothesis	variable		path coefficient ( )	t-value	result
	independent	dependent			
1	informational features	purchasing decision	0.671	14.258	confirmed
2	aesthetics features	purchasing decision	0.274	4.818	confirmed

Model fitness: in this section, structural model is examined and total research model is fitted. For this purpose, significance and path coefficients of have been examined using Bootstrap Method (consecutive sampling) and t-student test. In fact, the coefficient of determination is more rational criterion than correlation coefficient and is the most important criterion to determine correlation between two variables. The coefficient shows percent of variances of function by means of independent variable. Coefficient of determination is a value between 0 and 1. If the coefficient of determination is equal to 0, it means that regression line has not been able to attribute variances of dependent variable to independent variable. In other words, if no change is explained in dependent variable by the regression, the coefficient of determination is equal to 0. If the coefficient of determination is equal to 1, it means that regression line has been exactly able to attribute variances in dependent variable to variances in independent variable. In other words, if all variances in dependent variable are explained by a regression equation, the coefficient of determination could be equal to 1 and other values are between the two limits. R2 values close to 0.67 are favorable, close to 0.33, are normal and the R2 values close to 0.19 are weak (Chen, 1998, 7-16). Finally, the predictability of model is also tested using Aston Geisler's nonparametric test. In this test, two values (Q^2 values) are presented: CV.Redundancy and CV.Communality. The CV.Redundancy value evaluates structural model and measurement model simultaneously and CV.Communality value measures just the measurement model (Tenenhaus, 2005; Haier et al, 2014). Positive and high Q^2 shows high predictability of model. Negative Q^2values show very weak estimation of latent variable (Hensler et al, 2009: 277-320).

Table 2. Coefficients of determination of research model

structures	coefficient of determination	CV.Red	CV.Com
purchasing decision	0.778	0.293	0.413

As it is clear in Table 2, coefficients of determination for latent variables show effect of independent variables on dependent variables. In fact, it could be found from the table values that 0.778% of variances of the structure "purchasing decision" are explained by the structure affecting it (informational and aesthetic features). The Q^2 values show that no Q^2 value has been negative and least values required for prediction are provided. At last, total model fitness sis referred; GOF index is used in PLS-based models and should be higher than 0.3. The index, due to the formulation, is calculates as follows for the proposed model and shows good model fitness:

$$\text{GOF}=\sqrt{Communalities \times R^2} = 0.399$$

5. Conclusion

In this study, to identify the packaging features affecting purchasing decision, the author has used a meta-synthesis method. Through reviewing credited articles published since 2006 in a 10-year period of qualitative studies, the author has tried to classify the identified indices in qualitative studies in this field. After the investigations, the author has achieved two important features in field of packaging including visual features (aesthetics) and functional features (informational) in packaging. In this study, identification indices for informational features include durability, easy opening, recyclability, environment-friendly, packaging material, portability, type of packaging, advertising on the packaging, useful information on packaging, reusability and brand slogan. If the research tends to provide an important suggestion for the designers of packaging in this section, the issue is related to social responsibility of packaging designers. Manu consumers of canned products tend to get modern packaging in this industry to have fewer damages for the natural environment. Currently, this issue is a completely market-oriented and customer-oriented issue in addition to be a responsibility for suppliers, since many consumers of the current age know that they should consume products with least damage for the

natural environment. On the other hand, cognitive information about synthesis of products, information about better identification of products and their information can give useful information for the consumers. On the other hand, aesthetic criteria (visual) are also important criteria considered as packaging features. Finally, it could be mentioned that for better improvement of packaging, two functional and aesthetic factors should be used alongside in packaging of food products, especially in field of canned products to cover different social classes.

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