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Identifying and Prioritizing Factors Affecting Consumer Behavior Based on Product Value

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***Abstract*—**Nowadays, without the awareness of consumer behavior and correct understanding of it, it is not possible for organizations to take appropriate measures to meet the consumer needs and demands. The aim of this paper is the identification and prioritization of the factors affecting the consumer behavior based on the product value. The population of the study includes all the consumers of furniture producing firms in East Azarbaijan province, Iran. The research sample includes 93 people selected by the sampling formula in unlimited population. The data collection instrument was a questionnaire, the validity of which was confirmed through face validity and the reliability of which was determined, using Cronbach's alpha coefficient. The Kolmogorov-Smironov test was used to test data normality, the t-test for identification of factors affecting the product value, and Friedman test for prioritizing the factors. The results show that quality, satisfaction, styling, price, finishing operation, performance, safety, worth, shape, use, and excellence are placed from 1 to 11 priorities, respectively.

***Keywords*—**Consumer Behavior, Consumer Satisfaction, Product, Value

I. Introduction

In the modern world of business, understanding consumer behavior and the identification of the main features of a product, which play an important role in the consumer's decision-making, constitute the main concern of the marketing programs of any organization. Without a clear and accurate understanding of consumer behavior, the organizations would be incapable of fulfilling the needs and demands of the consumers [1]. Consumer behavior is defined as the behaviors the consumers show while searching, purchasing, using and evaluating the new products, services and ideas that they need [2]. Many factors affect consumer behavior one of which is the product value from the consumer's viewpoint.

Nowadays, manufacturers are looking for the products which are favoured by customers and attract their satisfaction, so they can assign a particular and noticeable share of market to themselves. For this reason, manufacturers try to produce products with low cost and high quality so as to attract the customer's satisfaction. The manufacturers are really interested in presenting the products which have value because, otherwise, they will be doomed to failure. Value is a subjective quality which is defined by feelings and, on the other hand, it is a real quality such as life, operation and the reliability of a product which are defined by some properties and specifications [3].

The concept of customer value can be expressed in the form of an equation: the "perceived customer value" in this equation shows the difference between the "customer's perceived benefits" and "customer's perceived costs" [4]. In a sense, value has internal, intuitive and abstract meanings such as appearance, shape and style, which are perceived by individuals' internal feelings. On the other hand, value is a real quality such as life, efficiency and reliability, which are defined by features and specifications. Therefore, the concept of value cannot be defined easily because the extensive ranges of definitions and vast applications have made value a vague and complex concept. Table I, represents a summary of values with different concepts.

TABLE I
THE CONCEPT OF VALUE

No	Factor	No	Factor
1	Quality	10	Use
2	Price	11	Efficiency
3	Performance	12	Satisfaction
4	Safety	13	Precision
5	Finishing operation	14	Life
6	Reliability	15	Worth
7	Support Service	16	Esteem
8	Shape	17	Styling
9	Excellence	18	-

Lowrance D. Miles, the founder of value engineering, believed that a product or service is considered to be valuable when it has a suitable performance and reasonable cost. Consequently, value is identified by two main factors; namely, performance and cost. Arthur E. Mudge defines "value" as the least cost which provides service or essential performances confidently at a desired time and place with a required quality.

Based on the multiplicity of manufacturers and competitors, manufacturers should aim at making parts which have much economic value and desirability for customers. Only in this way can they make profit and guarantee the survival of their organization. This will be possible when the required performance is carried out at a suitable price and the customer's desire is satisfied. Despite the above-mentioned issues, manufactures with are faced difficulties, barriers and weaknesses for creating values for which careful study and investigation are required to identify the barriers and weaknesses. Some improvement barriers are listed in Table II, reviewing the performed studies and investigations [2].

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TABLE II
IMPROVEMENT BARRIERS FOR PRODUCT VALUE

1	Lack of enough information
2	Lack of creative ideas
3	Shortage of time
4	Low quality
5	Routine thinking
6	Risk Aversion
7	Lack of enough experience
8	Habits and attitudes
9	Unrealistic situations
10	Extreme bias towards personal acts and ideas
11	Technological changes
12	Poor relationship among the personnel
13	Misinterpretation and wrong perceptions
14	Honest but wrong beliefs
15	Tendency to conform with existing conditions
16	Unwillingness to receive guidance and consultation from others
17	Change in conditions

Based on the above discussion, not only is the product value beneficial for the producer, but it affects the consumer behavior as well. Based on his/her perception of the product value, the consumer will demonstrate different reactions. As such, the present study aims at the identification and prioritization of the factors affecting customer perceptions of product values.

II. LITERATURE REVIEW

Numerous studies have been conducted on product value some of which are as follows:

Alibabic et al. focused on attitudes, behaviors, and perceptions of consumers from northwestern Bosnia and Herzegovina toward food products in the market [5]. Khare discussed mall shopping behavior of Indian small-town consumers. This research was directed at small-city consumers to understand their mall shopping behavior. Most people in small cities are unfamiliar with the concept of malls, and their exposure to the organized retail was limited in the past [6]. Lee et al. tested the psychometric properties of three scales (MVS, PRS and PERVAL scale) that measure consumer values and the perceived attributes of a product within licensed sport merchandise (LSM) setting, and then they examined the relationships between consumer values (CV) and perceived product attributes (PPA) [7]. Browning et al. aimed to advance the theory and practice of evaluating progress and added customer value in product development (PD). They proposed that making progress and adding customer value in PD amounts to producing useful information that reduces performance risk [8]. Snoj et al. focused on two of the perceived value impact factors: perceived product quality and perceived risk. Based on the existing literature and their own findings, their main objective was to design a model of relationships among perceived value, perceived quality and perceived risk [9]. Mazumdar offered a framework which can assist managers to carry out new product planning and development activities with an explicit focus on consumer value perceptions. He described how consumer perceptions of benefits and sacrifices are related to value perception. He presented conditions for the success of each orientation and provided directions for modifying strategic focus in response to changing conditions [10]. Sweeney and Soutar described the development of a 19-item measure, PERVAL that can be used to assess customers' perceptions of the value of a durable consumer product at a brand level. The measure was developed for use in a retail purchase situation to determine what consumption values drive purchase attitude and behavior [11]. Sánchez et al. developed a scale of measurement of the perceived overall value of a purchase through 24 items grouped into six dimensions: (1) functional value of the travel agency (installations); (2) functional value of the contact personnel of the travel agency (professionalism); (3) functional value of the tourism package purchased (quality); (4) functional value price; (5) emotional value and (6) social value [12]. Woodruff presented frameworks for thinking about customer value, customer value learning, and the related skills that managers will need to create and implement superior customer value strategies [13]. Creyer and Ross examined how ethical and unethical corporate behavior influence the perceived value of a firm's products, operationalized as the price consumers are willing to pay for that product relative to the competition. Their second study explored ways in which a firm can improve the perceived value of its products after an unethical act has been committed [14]. Brannon et al. developed frameworks describing the economic life cycles of products and consumer purchasing behavior. They then linked the frameworks with the product value matrix and illustrated how they can be used in focusing a firm's efforts [15]. Morris and Dunne examined the issue of "certification requirements" from a value chain perspective [16]. Sakao and Shimomura first explained the scheme of Service Engineering (SE); then they presented a methodology of modeling and designing services, and a computer-aided design tool called Service Explorer. Finally, they proved the efficacy of these through two applications. In SE, positive and negative changes of consumers were modeled as value and cost, respectively [17]. Zhang et al. focused on strategies to improve the functional value of meat and meat products [18]. Bovea and Vidal proposed a model that allows the added value assigned by the customer to a product a product by means of the integration of the environment, cost and customer evaluation during the designing process. Their model was based on the combination of three methodologies [19]. Guatam & Singh presented a mathematical model offering a step-by step methodology to capture the optimized design changes with cost implications. Through conducting a case study on automotive vehicle development, they showed how the proposed model and method can be used for highest value added change selection. The Application of optimization model for perceived value and change trade-off in general was presented along with some special policy cases for different scenarios [20]. Brad determined the mathematical relationship between the business value of the new product and the influential factors in the decision-making process of investors using the strategic

analysis matrix approach and general dimensional analysis [21]. Andersen discussed the concept of product value as the ratio between the degree of need satisfaction of a product and product life cycle cost. Strategies for improving product value were presented [22]. Chadraba and O'Keefe tested value perception by comparing samples from four countries [23].

III. Methodology

This study is applied in its objectives and descriptive in methodology. Since, in descriptive research, the properties of population are tested by survey, the current research employs a descriptive survey with special properties suitable (for) this topic. Library studies have been utilized for the purpose of preparing and developing the theoretical concepts and literature review in this research. In addition, field methods have been used to collect the necessary data.

Fiche research has been used for gathering the theoretical concepts and literature review. In addition, a questionnaire has been designed to answer the research questions. The validity of the questionnaire has been determined by face validity method. It means that a number of experts on this subject have been asked to express their comments on the designed questionnaire after studying it. By applying the received comments on the questionnaire, it was found out that the designed questionnaire has the necessary validity. Cronbach's alpha coefficient has been employed to calculate the reliability of this questionnaire; that is, the questionnaire has been sent to 25 members of the population, and this coefficient has been computed for them. The computed value is 0.88, indicating a high reliability of the questionnaire.

The population of the study was all customers of furniture producing companies in the East Azarbaijan Province in Iran. Due to the unlimited number of population, using equation (1), the sample size was calculated to be 93(the variance has been estimated with a sample of 30 subjects):

$$n = \left(\frac{Z_{\frac{\alpha}{2}} \times \sigma}{\varepsilon} \right)^2 \quad (1)$$

Where standard deviation is 4.90, $Z_{\frac{\alpha}{2}} = 1.96$ and $\varepsilon = 1$

IV. Research Findings

Having collected, summarized and classified the data, whether or not the data were normal was tested by the Kolmogorov Smirnov test. Then, the t-test was used to identify the factors affecting customer behavior based on product value. Finally, the priority of each factor was determined using Friedman test. The results of the t-test and Friedman test are displayed in table III, table IV and table V respectively.

Table III
Results of Normal Distribution

	Variable description	Kolmogorov-Smirnov Z	Sig.	Result
1	Quality	1.151	0.141	Normal
2	Worth	0.783	0.572	Normal
3	Price	1.122	0.161	Normal
4	Reliability	0.925	0.360	Normal
5	Shape	0.601	0.863	Normal
6	Support Service	0.685	0.737	Normal
7	Precision	0.984	0.248	Normal
8	Styling	1.083	0.191	Normal
9	Efficiency	1.045	0.225	Normal
10	Satisfaction	0.666	0.767	Normal
11	Performance	0.783	0.572	Normal
12	Life	1.064	0.214	Normal
13	Finishing operation	1.262	0.083	Normal
14	Esteem	1.143	0.158	Normal
15	Use	1.084	0.190	Normal
16	Excellence	0.777	0.581	Normal
17	Safety	1.093	0.183	Normal

Table IV
Results of T-Test

	Variable description	Average	t value	Sig.	Result
1	Quality	4.287	19.337	0.000	Accepted
2	Worth	3.956	12.768	0.000	Accepted
3	Price	4.175	17.943	0.000	Accepted
4	Reliability	2.675	1.580	0.116	Rejected
5	Shape	3.968	13.508	0.000	Accepted
6	Support Service	2.995	1.950	0.059	Rejected
7	Precision	1.541	0.648	0.518	Rejected
8	Styling	4.200	17.357	0.000	Accepted
9	Efficiency	1.355	0.537	0.726	Rejected
10	Satisfaction	4.243	19.134	0.000	Accepted
11	Performance	4.131	16.234	0.000	Accepted
12	Life	2.565	1.428	0.155	Rejected
13	Finishing operation	4.087	14.941	0.000	Accepted
14	Esteem	2.296	1.202	0.231	Rejected
15	Use	4.037	15.379	0.000	Accepted
16	Excellence	4.143	15.897	0.000	Accepted
17	Safety	4.018	14.422	0.000	Accepted

Table V
Results of Friedman Test

Factor	Mean Rank	Chi-Square	df	Sig.
Quality	6.87	71.769	10	0.000
Safety	5.81			
Worth	5.65			
Finishing operation	6.10			
Shape	5.57			
Satisfaction	6.79			
Use	5.24			
Performance	5.90			
Price	6.47			
Styling	6.49			
Excellence	5.11			

V. Conclusion

The purpose of the present study was the identification and prioritization of the factors affecting customer behavior toward product value of furniture producing companies of East Azerbijan, Iran. As such, in this paper, the factors affecting

customer behavior toward the product value of furniture producing companies of East Azerbijan were initially identified and later prioritized using Freedman test. The results identified the factors affecting customer behavior toward product value. These factors, in order of priority, include: quality, satisfaction, styling, price, Finishing operation, performance, safety, worth, shape, use, and excellence.

Generally, it should be noted that the organizations should identify the factors affecting customer behavior to choose their target markets. The customers' perceptions of product value, which was investigated in this study in relation to concepts like quality, satisfaction, price, and styling, can affect the purchase behavior of consumers or customers. The results of the present study indicate that furniture producing companies in East Azerbijan should pay special attention to the priority order of the mentioned factors in producing and selling their products to customers. Accordingly, the following suggestions are offered:

1. Considering the concepts of quality and price, and also due to the fact that there are differences between consumers in their expected quality and price of products, it is suggested that furniture producing companies develop customer contact systems to collect thorough information about the customer opinions about and attitudes toward the quality and their expected price in order to cater for different customer tastes and expectations.

2. Due to the swift changes in demands and the emergence of new competitors, customer tastes are growingly changing, as well. Therefore, it is suggested that furniture producers use new technology and manufacturing methods to improve the style and shape of their products and offer then in accordance with their customers' tastes.

3. To gain higher customer satisfaction, it is suggested that the manufactures should keep in contact with the customers after selling the product in order to keep track of customer satisfaction.

4. It is suggested that the manufactures should assess the performance, safety and utility of their products based on customer opinions to improve and develop the mentioned features in their products.

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