

## Determining the Significance Level of Factors Affecting Young Consumers' Purchasing Preferences by Ahp\*

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**Abstract :** Today's marketing researchers agree that young consumers' consumption intensively consists of three main product groups: food and beverages, clothing and accessories, and technological products. The aim of this research is to determine the significance level of factors affecting young consumers' purchasing preferences regarding food and beverages, clothing and accessories, and technological product groups and to study young consumers' purchasing behavior. The data obtained from 204 students studying in Business Administration Faculty of Uşak University were examined by the Analytic Hierarchy Process (AHP) technique, not previously applied on this subject in literature. According to our results, interestingly for all three product groups, the most important factor affecting young consumers' purchasing preference is the quality of the product and the second most important factor is discounts and promotions for the product. The least important factor was found to be commercials for the product in all three product groups.

**Keywords:** AHP, Consumer Preferences, Customer Behaviours, Purchasing Decisions.

### I. Introduction

Rapid advances in technology and communication have increased the competition among firms. In this context, in order to develop successful strategies that will increase their competitiveness, firms need to understand more closely consumers' (especially today's young consumers') needs and behaviors. In the daily life, consumers evaluate the features of the product and pick the one that is most suitable for them.

For businesses to predict consumer's preferences and behaviors and to prepare marketing plans according to them has always been a challenging process. Nowadays, businesses are faced with more diverse target groups that have more choice than ever. One of the most important groups is that of young consumers. This fact reveals that young consumers' buying behavior needs to be better analyzed.

Modern marketing requires achieving customer loyalty by giving the highest level of customer satisfaction. For that reason, it has been crucial to have effective market research to understand what a high level of satisfaction means in the attempt to build a strong loyalty relationship. In this paper we research young consumers' preferences and the factors affecting them.

The introduction of the paper should explain the nature of the problem, previous work, purpose, and the contribution of the paper. The contents of each section may be provided to understand easily about the paper.

### II. Purchasing Preferences

*"All of us are consumers. We consume things of daily use; we also consume and buy these products according to our needs, preferences and buying power. These can be consumable goods, durable goods, speciality goods or, industrial goods"* (Khan, 2007:4).

The most important environmental element that marketing managers cannot get directly under their supervision is the consumer himself. The reason for this is environmental changes cannot be predicted in advance. Therefore, in developed countries marketing executives are focused on consumer researches (İslamoğlu, 2006:127).

Firms should identify individual consumption decisions and the factors that affect those decisions across today's more conscious and discerning customers. Consumers' preferences may be affected by several factors such as; brand preference, price, quality perception, color and design, advertising, availability, promotions and discounts, fashionableness and after-sales service and so on.

Although there have been recent studies on the factors affecting young consumers' buying preferences, in the literature review we have not found a study analyzed using the Analytic Hierarchy Process (AHP) about young consumers' buying preferences. In the study by Cömert and Durmaz (2006), when young consumers purchase a product or service; eligibility of the product or service with his/her age (91%), personal preference to

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product or service (89%), his/her economic status (88%), product or service compatibility to his/her culture, beliefs and traditions (88%), ease of finding replacement parts (82%), warranty period (80%), in accordance with his/her profession (78%), color and the design of product (75%), a presence of usage tariff (73%), family's opinion about product (70%), price of the product (70%), the store image (65%), the brand of product or service (63%) were indicated as an influential factors. Meanwhile, nearly half of the respondents stated that quality of product or service, giving gifts on besides the product and convincing ability of seller are influential factors as well. Yet, they stated that fashion, friends' opinion, commercials, and sample group are not influential factor on their buying preference.

In another study by Çakır et al., 2010; it is stated that for college students food expenditure (15%), and clothing expenditure (14%) are prominent factors. In addition, it is stated that the color of product has also significant effect on purchasing behavior. In the study it is determined a significance difference on factors affecting a product preferences. Prominent factors as determinants on product preference are as follows: country/city of production (11,63%), the appearance of store (10,43%) and commercial of product (10,28%).

In the study by Firat et al., (2014), it was carried out to obtain factors affecting the choice of beverage products for households in their supermarket shopping. Factors are listed as; the taste of beverage, brand loyalty and given gifts/promotions.

The method used in this study AHP is a multi-criteria decision making method, which addresses problems in a hierarchical structure and based on pairwise comparison logic, has been developed by Thomas L. Saaty in 1977. Pairwise comparisons are found by comparing the priorities of each element in decision problem with each other. Pairwise comparison is a natural process of individuals when determining the level of similarities, importance or preference for the particular feature of compared elements. When pairwise comparison made at the conscious level, it contains thoughts and reflection of minds. When deciding about our bodies, the pairwise comparison occurs subconsciously. For example, before taking a stroll out, our body temperature is compared with outside weather temperature by subconsciously to decide whether or not hot enough. The signals received from the body are continuously processed in the order of priority. Therefore non-stop pairwise comparisons are the part of human nature (Saaty, 2001:1).

AHP used decision-making process should contain following steps (Bhushan and Rai, 2004:15):

1. Defining the problem and creating the hierarchical structure.
2. Collecting the information based on pairwise comparison from the experts and decision makers.
3. Converting the data obtained from pairwise comparison into a square matrix whose diagonal element is 1. This matrix is called the pairwise comparisons matrix.
4. Synthesizing the pairwise comparison matrix to determine the priority level of alternatives.
5. Calculating the consistency index.
6. Calculating the compound relative priority values.

In a cooperative decision making situation to combine the peoples' judgments on each pairwise comparison, the geometric mean is used in the AHP. If the people have different ability and expertise, we can prioritize them and use these priorities as the exponents of their numerical judgement and then take the geometric mean of their judgements (Saaty, 2012:161).

### **III. Determining The Significance Level Of Factors Affecting Young Consumers' Purchasing Preferences By AHP**

#### **3.1 Methodology**

This study aims to determine the significance level of factors that affect young consumers' purchasing preferences by AHP. In this direction; hypothesis are determined as follows:

1. There is a difference in significance level of factors affecting the young consumers' purchasing behavior.
2. Significance levels of factors affecting the young consumers' purchasing behavior are differentiated according to product groups.

To determine the significance level of factors that affect young consumers' purchasing preferences by AHP the following research design has been created.

In order to obtain the essential product groups and factors affecting the young consumers' purchasing preferences, a brainstorming method with a group of seven young people were applied. By the result of brainstorming method, the following three product groups are determined:

1. Food and Beverages
2. Clothing and Accessories
3. Technological Products

Additionally, the same group of people determined product features, which are the criteria of our study and have influence on purchasing preference. Product features were determined as followings; brand, price, quality, color and design, commercial, accessibility, promotions and discounts, fashionableness and after sales services.

In questionnaire structure, to determine the alternative priorities and the weights of criteria, 1-9 rating scale that is proposed by Saaty (2001) is used. In this case, the sample is attained which contains 36 comparisons for each group and in total 108 comparison for 3 groups.

The hierarchical structure of the problem on the determination of the significance level of factors that affect young consumers' purchasing preferences by AHP is shown in Fig. 1.



Figure 1: Hierarchical structure of the problem on the determination of the significance level of factors that affect young consumers' purchasing preferences by AHP

Due to determining the significance level of criteria and to analyze them by AHP, the sample consisted of young consumers between the ages of 16-24 according to data from the Statistics Institute of Turkey. Therefore, pairwise comparison based questionnaire were distributed and applied to freshman and sophomore students in business administration faculty of Uşak University.

### 3.2 Findings

First of all, out of 250, 228 questionnaire forms were returned and reviewed. Due to the fact that 24 of the forms were not filled appropriately, they were excluded from the assessment. Thus, 204 questionnaires were evaluated which are performed by 130 (64%) female and 74 (36%) male subjects.

Regarding to the food and beverage, clothing and accessories, and technological product groups, it has been accepted that attitudes and experiences are all equivalent weight for the young consumers in sample. It has been preferred that single value is obtained by using 204 values obtained from each pairwise comparison with the use of Excel 2007. This process is continued by taking geometric means of each pairwise value given in the range of 1-9. As a result of this calculation, pairwise comparison matrix was obtained for each product group.

Pairwise comparison matrix obtained from the comparisons of the criteria that affect the young consumers' buying behavior related to group of food and beverage is given in Table 1.

Table 1. Pairwise comparison matrix for Food and Beverage

Criteria	Brand of product	Price of product	Quality of product	Color & Design of product	Commercial of product	Accessibility to product	Promotions & Discounts	Fashionableness of product	After sales services
Brand of product	1.000	1.961	0.291	1.541	2.628	0.744	0.568	1.385	0.777
Price of product	0.510	1.000	0.420	1.247	2.707	0.593	0.650	1.749	0.886
Quality of product	3.435	2.382	1.000	2.899	3.993	1.239	1.383	2.603	1.295
Color & Design of product	0.649	0.802	0.345	1.000	1.711	0.558	0.515	1.160	0.758
Commercial of product	0.381	0.369	0.250	0.584	1.000	0.390	0.342	0.849	0.490
Accessibility to product	1.345	1.686	0.807	1.792	2.565	1.000	0.996	2.225	1.182
Promotions & Discounts	1.759	1.538	0.723	1.940	2.926	1.004	1.000	2.324	1.161
Fashionableness of product	0.722	0.572	0.384	0.862	1.178	0.449	0.430	1.000	0.595
After sales services	1.287	1.128	0.772	1.319	2.042	0.846	0.861	1.681	1.000
Σ	11.087	11.438	4.992	13.186	20.749	6.823	6.746	14.977	8.145

By using the values of pair-wise comparison matrix for food and beverage, the priorities of criteria and  $\lambda_{max}$ , Consistency Index (CI), Random Index (RI), Consistency Ratio (CR) are calculated and given below in Table 2 from Saaty's (2005) table, the randomly generated consistency index R.I. for  $n=9$  is 1.45.

As the value of CR is less than 0.1, the judgments for Food and Beverages are acceptable. As it is seen in analyze results for food and beverages product group in Table 2, quality of the product with 20,6% has the highest importance and it is followed by promotions and discounts 14,7% and accessibility of product 14,2%. Commercial of product has the lowest importance with 4,8%.

Criteria	Priority Vector	Priority
Brand of product	0.105	5
Price of product	0.095	6
Quality of product	0.206	1
Color & Design of product	0.076	7
Commercial of product	0.048	9
Accessibility to product	0.142	3
Promotions & Discounts	0.147	2
Fashionableness of product	0.065	8
After sales services	0.117	4
	$\Sigma = 1.000$	
$\lambda_{max} = 9.1390$ ; $CI = 0.0174$ ; $RI = 1.45$ ; $CR = 0.0120 < 0.1$		

Pair wise comparison matrix obtained from the comparisons of the criteria that affect the young consumers' buying behavior related to group of clothing and accessories is given in Table 3.

Criteria	Brand of product	Price of product	Quality of product	Color & Design of product	Commercial of product	Accessibility to product	Promotions & Discounts	Fashionableness of product	After sales services
Brand of product	1.000	1.100	0.460	0.643	2.989	0.824	0.588	0.753	0.820
Price of product	0.909	1.000	0.591	0.935	3.179	1126	0.550	0.720	1201
Quality of product	2.173	1.691	1.000	1.609	4.338	1.481	1.266	1.572	1.642
Color & Design of product	1556	1070	0.621	1.000	3.315	1209	0.733	1.370	1251
Commercial of product	0.335	0.315	0.231	0.302	1.000	0.425	0.316	0.428	0.494
Accessibility to product	1.214	0.888	0.675	0.827	2.353	1.000	0.730	0.984	1.181
Promotions & Discounts	1.700	1.818	0.790	1.365	3.160	1.370	1.000	1.575	1.466
Fashionableness of product	1328	1389	0.636	0.730	2.339	1016	0.635	1.000	1196
After sales services	1.219	0.833	0.609	0.799	2.026	0.847	0.682	0.836	1.000
$\Sigma$	11.433	10.103	5.614	8.210	24.699	9.297	6.501	9.237	10.251

By using the values of pair-wise comparison matrix for Clothing and Accessories, the priorities of criteria and  $\lambda_{max}$ , Consistency Index (CI), Random Index (RI), Consistency Ratio (CR) parameters are calculated and given below in Table 4.

Criteria	Priority Vector	Priority
Brand of product	0.091	8
Price of product	0.103	6
Quality of product	0.177	1
Color & Design of product	0.125	3
Commercial of product	0.041	9
Accessibility to product	0.106	5
Promotions & Discounts	0.153	2
Fashionableness of product	0.109	4
After sales services	0.096	7
	$\Sigma = 1.000$	
$\lambda_{max} = 9.0701$ ; $CI = 0.0088$ ; $RI = 1.45$ ; $CR = 0.0060 < 0.1$		

As the value of CR is less than 0.1, the judgments for clothing and accessories are acceptable. As it is seen in analyze results for clothing and accessories product group in Table 4, quality of the product 17,7% has the highest importance, and it is followed by promotions and discounts 15,3% and color and design of product 12,5%. Commercial of product has the lowest importance with 4,1%.

Pair wise comparison matrix obtained from the comparisons of the criteria that affect the young consumers' buying behavior related to group of technological products is given in Table 5.

Criteria	Brand of product	Price of product	Quality of product	Color & Design of product	Commercial of product	Accessibility to product	Promotions & Discounts	Fashionableness of product	After sales services
Brand of product	1.000	2.312	0.367	1.988	2.386	1076	0.767	1.937	0.871
Price of product	0.433	1.000	0.416	1.567	3.115	0.797	0.701	1.917	1042
Quality of product	2.724	2.406	1.000	2.968	4.720	1.510	1.526	3.210	1.640
Color & Design of product	0.503	0.638	0.337	1.000	1.779	0.805	0.483	1.332	0.745
Commercial of product	0.419	0.321	0.212	0.562	1.000	0.403	0.338	0.669	0.448
Accessibility to product	0.929	1.255	0.662	1.242	2.482	1.000	0.766	1.912	0.869
Promotions & Discounts	1.304	1.427	0.655	2.069	2.961	1.305	1.000	2.205	1.129
Fashionableness of product	0.516	0.522	0.312	0.750	1.495	0.523	0.453	1.000	0.586
After sales services	1.148	0.959	0.610	1.343	2.230	1151	0.886	1.708	1.000
$\Sigma$	8.977	10.840	4.570	13.489	22.169	8.571	6.921	15.890	8.330

By using the values of pair-wise comparison matrix for Technological Products, the priorities of criteria and  $\lambda_{max}$ , Consistency Index (CI), Random Index (RI), Consistency Ratio (CR) parameters are calculated and given below in Table 6.

As the value of CR is less than 0.1, the judgments for technological products are acceptable. As it is seen in analyze results for technological products group in Table 6, quality of the product 21,9% has the highest importance and it is followed by promotions and discounts 14,2% and brand of product 12,5%. Commercial of product has the lowest importance with 4,5%.

Criteria	Priority Vector	Priority
Brand of product	0.125	3
Price of product	0.103	6
Quality of product	0.219	1
Color & Design of product	0.076	7
Commercial of product	0.045	9
Accessibility to product	0.113	5
Promotions & Discounts	0.142	2
Fashionableness of product	0.062	8
After sales services	0.116	4
	$\Sigma = 1.000$	
$\lambda_{max} = 9.1310; CI = 0.0164; RI = 1.45; CR = 0.0113 < 0.1$		

#### IV. Conclusions

For businesses that are eager to succeed in today's competitive environment, to influence the consumers' purchasing preference is highly important. The main purpose of businesses is to make profits. So, to preserve continuity of this, it is required to reach more customers, have more loyal customers and to understand consumer's behaviors very well.

According to results, criteria that affect the young consumers' purchasing preference for those there product groups are not standard. However, the first two significance levels of all product groups have same results. As it is in Table 7; interestingly for all those three product groups, the most important factor that affects young consumers' purchasing preference is the quality of the product and the second most important factor is discounts and promotions for the product. Likewise, the least important factor is found as commercial of product for those entire product groups.

Criteria	Priority		
	Food and Beverage	Clothing and Accessories	Technological Products
Brand of product	5	8	3
Price of product	6	6	6
Quality of product	1	1	1
Color & Design of product	7	3	7
Commercial of product	9	9	9
Accessibility to product	3	5	5
Promotions & Discounts	2	2	2
Fashionableness of product	8	4	8
After sales services	4	7	4

When product groups are examined; quality of product, which is the first priority in all three groups, has the highest Priority Vector value at technological products group. This result demonstrates that quality is more important than the others for consumers regarding to this product group. Due to the fact that we may come to the conclusion that priority of quality stems from very high price of the technological products.

For the food and beverage product group; following the quality of product, the criteria those are promotions & discounts and accessibility to product have very close Priority Vector values. With the promotion and discount, which is secondly prior criteria of all product groups, coming into prominence with accessibility to product criteria matching up with the fact that this product group is frequently consumed and perishable product group. Besides, an interesting result is obtained that after sale services criteria emerged as the forth priority.

As it is mentioned above, first two priorities are the same for all of product groups. So the following criteria for clothing and accessories product group are the color & design and fashionableness of the product. As the color & design or fashionableness are the basic criteria in the nature of this product group, being on top two most prior criteria for quality of product and promotions & discounts shows their importance for young consumers. Contrary to common belief, brand of the product is not a top priority product criterion for young consumers.

For technological product group, it is reasonable that quality of product and promotions & discounts are followed by brand of product and after sales services. Due to the fact that the significance levels of brand of product and after sales service are so close, it can be interpreted that young consumers are conscious about linking them to each other for technological products. Not having the price of product criterion a very high priority (6th level) for all those three product groups show that consumers are quite ready to pay required price.

Finally, in order to direct young consumers' preferences, to respond better the young consumers' needs and wishes or to increase the loyalty for their brand, obtained results show that companies operating in those three sectors should reduce the cost of commercials and increase the quality of the product and make more promotion and sales for the product.

This study is a research on the application of AHP technique. In the age of technology and communication, where the businesses have to acquaint more closely the behaviors and needs of their customers, to get information and to make realistic predictions as well as in the stage of developing successful strategies to increase their competitiveness, it is believed that the obtained results will be a crucial as a source of data for managers.

## V. Limitations And Future Research

All results that are achieved in this study are limited with the views of young people in the survey sample attained, product groups, and features used in the study. For the future studies, it is recommended to study on the larger sample groups and also the more product groups as well.

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