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# Consumer risk perceptions towards food supply chain preferences: The case of the supermarket

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**Abstract**

In this study, customers' satisfaction levels and sensitivities related to choosing supermarkets are examined. Retailing policies of supermarkets are investigated from the view of customers risk perceptions using cross sectional data. The data used in this study were obtained from customers interviewed face to face in the urban area of Antalya province in Turkey. In this study, 400 customers were surveyed during the month of August in 2004. The results of the study show that customer satisfaction levels were insensitive to financial and time factors of supermarkets in the retailing market. Hence, customer perception on the indicated retailing factors was at high level. High price level as financial factor, waiting period during the check-out and insufficient parking lot of supermarket as time factor were determined as high risk factors on choosing supermarkets for customers.

***Key words:*** Consumer, perception, risk, supermarket, Turkey.

## Introduction

The main purpose of marketing is to meet and satisfy the needs of the targeted customers. From this perspective, at the "customer behavior" stage taking place in the marketing management concept, it is examined how individuals, groups, and organizations make choices, how purchasing decisions are made, and how the purchased goods and services are utilized in order to satisfy their needs [14]. Customer behavior consists of individual activities to choose, purchase and consume products in order to satisfy needs and willingness of customers. In other words, customer behavior is a decision process related to activities of individuals' purchasing and using goods and services, and causes of these activities [24]. For this purpose, marketers who investigate customer behavior, consider how the decision is made by consumers.

Retailing is defined as maximizing customers utility level by supplying foods and non-food products and services related to these [11]. According to this definition, food retailers need to provide completely high level of consumer satisfaction, product value and firm behavior [26]. Retailers are in search of differentiation from the others in an environment that faces rapid changes and developments occur in the sector. Customers' expectations tend to increase and differentiate as a parallel of increase in conscience of customers. Nowadays customers show a more knowledgeable, selective, concerned and sensitive approach on the decision process. Increasing competition in food retailing sector offers several supply channels for customers while increasing the cost of keeping existing customers and reaching the new customers for retailers.

If a customer turns towards a specific good, brand or store, it does so because this good, brand or store satisfies the customers or because other competitive goods, brands or stores give lower satisfaction. Previous studies show that 90% of non-satisfied customers digress from good, brand or the store without any reaction [13].

According to the theory of the customer, store reputation and distance of the store are two important factors to get customers [16]. The factors that affect the store reputation are pricing policy, quality and differentiation of products, customer services and store atmosphere. Therefore, customer satisfaction and perception depend on the factors like quality and price of products, easiness, and services [7].

Today's customers have become more oriented on the socio-physiological approach than on the physical one. Customers become more sensitive in terms of taking risks, improving living standards, and knowing their rights. All these changes have caused marketers to investigate consumer behavior with respect to social and physiological factors. In this perspective, the choices of goods, brands and points of sale and type, physiology and perception of customers are investigated by marketers.

Although, there are lot of studies at international level, these studies are limited to Turkey. For this reason, risk factors and customers' perception on supermarket choices have been investigated using cross-sectional data in Antalya province of Turkey. In this study, determining satisfaction and sensitivity levels of customers related to retailing was aimed.

## Methodology

The main data source of this study was obtained from face-to-face interviews with customers. In addition to this primary data, the previous studies related to this study were utilized.

The survey with customers was conducted in the urban area of

Antalya. Since the study aimed to shed light on risk perception and behaviors of customers' decisions on the supermarket choices, the customers were interviewed randomly. The sample consists of 400 individuals. The sample size for the study was determined using the formula below [3]:

$$n = t^2\left[1+(0.02)\times(b-1)\right]\times p\times q/e^2 \quad \text{n=t}^2 \qquad (1)$$

where n= sample size, t = t value at 95% significant level (1.96), b = sampling stage (b=1 since one stage sampling technique used), P = probability of having success (50%), Q = probability of not having success 50% (q=1-p), e = error term (5%).

Since b = 1, Equation 1 becomes:

$$n = (t/e)^2 \times p \times q$$

Using this formula, sample size is:

$$n = (1.96/0.05)^2 \times (0.50\times 0.50)$$
$$n \approx 400$$

The survey was conducted on August 2004. The data obtained from the customers was analyzed using SPSS version 9.0. The questions on risk factors and perceptions were designed using Likert scaling.

## Results and Discussion

***Consumer characteristics for supermarkets:*** In the market, gender distribution of customers plays an important role in order to reveal needs and preferences of customers. Gender also shows differences on purchasing patterns [20]. Age distribution of customers, on the other hand, has impact on the food consumption pattern, expenses and purchasing behavior. Another factor affecting consumer attitude and behavior is marital status. For instance, structure of food consumption and expense may cause differences on purchasing behavior depending on marital status. Customer's education level enables marketers to prepare marketing plans and strategies and to implement them effectively. Customers who have differences in terms of education levels will have different consumption patterns and also the impact and efficiency of advertisements on these customers will vary [20]. As education level increases, customers make more conscious purchasing decisions and they search more variety and quality in good and services [12]. In addition to this, occupation and income level are other major factors that have effects on consumption patterns and decisions [24]. Considering the relationship between household income and consumption expenditure, household income level directly affects the demand and may lead to a certain expenditure and behavior pattern.

Customer behaviors exhibit a complex structure and are affected by several variables. To understand demographic, economic and behavioral aspects of targeted customers' market is essential in order to understand customers' perceptions, preferences and purchasing patterns. On the other hand, gathering data on the market is crucial for firms in order to develop efficient marketing strategies and to have an advantage on the competition. In this study, socio-economic characteristics of surveyed households were analyzed in consumer market. Gender, age, marital status, education and occupation level of households, household size, income and expenditure level are given in Table 1.

The results of the study showed that out of 400 respondents, 52% are male and 48% female. Moreover, about more than 50% of consumers are in the middle-age group. More specifically, the rate of consumers over 50 years old and between 20-30 age groups is 15.5% and 29.5%, respectively. According to marital status, 74.5% of surveyed households had married respondents and only 21.5% had single ones.

Regarding to education level, survey results showed that a significant partition of consumers was in secondary school; one-third was university graduate. Further, the rate of respondents with post-graduate education was the lowest with 3.8% and 15.5% of consumers graduated from the lowest educational institutes.

Occupational situation of supermarket customers constitutes of 33.8% wage earners who work for the public and the private sectors. Second important group consisted of retired and housewives with 14% and 18.8%, respectively.

**Table 1.** Consumer profiles for supermarkets.

| Variables | % |
|---|---|
| *Gender:* | |
| Female | 52.0 |
| Male | 48.0 |
| *Age*: | |
| 20-30 | 29.5 |
| 31-40 | 27.0 |
| 41-50 | 28.0 |
| 51+ | 15.5 |
| *Marital Status:* | |
| Single | 21.5 |
| Married | 74.5 |
| Divorced | 4.1 |
| *Level of education:* | |
| Primary school | 15.5 |
| Secondary school | 10.8 |
| High school | 40.6 |
| College | 29.3 |
| MSc- Phd. | 3.8 |
| *Employment status:* | |
| Public & private sector employee | 33.8 |
| Tradesman | 15.3 |
| Traditional retailers | 18.1 |
| Retired | 14.0 |
| House wife | 18.8 |
| *Family Size* : | |
| 1 | 4.3 |
| 2 | 18.0 |
| 3 | 29.8 |
| 4 | 35.1 |
| 5 + | 12.9 |
| *Income level per month (YTL):* | |
| <501 | 9.5 |
| 501-1000 | 33.5 |
| 1001-1500 | 27.3 |
| 1501-2000 | 14.8 |
| 2000 < | 14.0 |
| *Supermarket expenditure (YTL/monthly):* | |
| <101 | 13.1 |
| 101-200 | 29.1 |
| 201-300 | 30.7 |
| 301-400 | 15.1 |
| 400 < | 12.0 |
| *Ratio of car owned* | 57.8 |
| *Ratio of employed women* | 33.2 |
| Number of surveyed consumers **(N)** | **400** |

*exchange rate in August 2004 in Turkey: 1 YTL= 1.459 $ or 1.761 EU.

Furthermore, survey results indicated that the ratio of wage earning women among households was 33.2%. In the research sample, the majority of households consisted of 3-4 people and only 4.3% had one person. The percentage of household size with 5 and higher than five people was 12.9%.

In the surveyed area, the majority of households was in the middle-income group. In fact, findings of the study showed that 60.8% of households' average monthly income ranged between 501-1500 YTL. The ratio of households with income less than 500 YTL was the lowest income group, with income higher than 2000 YTL was the highest income group, and were determined at 9.5% and 14%, respectively.

In terms of monthly supermarket expenditure, more than fifty percent of surveyed households spendings were between 101-300 YTL. However, the shares of households who spend less than 101 YTL and more than 400 YTL were 13.1% and 12.0%, respectively. Another economic indicator, having automobile was found as 57.8% among the surveyed household.

***Consumer risk perceptions towards supermarket preferences:*** Risk perception theory in food retail is a new approach referred to understanding and interpreting consumer purchasing behavior. Although there are numerous variables affecting consumer risk perception, in general these factors are categorized into 3 groups. The first one is personal factors. The personal factors include sex, age, socio-economic level and physiological characteristics of the consumers. Second important factor is retailing factors. The retailing factors cover distribution channel, branded or non-branded product composition, the use period of the products, the mix of product and service, and product origin. The third factor that affects consumer risk perception is conditional factors that express the interest of the consumer and relationship built with the consumer [18].

Having knowledge on risk components and the perception level of consumers of a product, brand or sale point preferences provides important contributions to retailers in developing market oriented strategies. In this sense, retailing characteristics are examined in consumer risk perception dimension [18]. For example, for a consumer in a position to make a choice between 2 supermarkets like A and B, if the time spend at the cashier's desk for the supermarket A is longer compared with B, in this situation it can be determined that time risk in A supermarket is higher in terms of consumer preference. Consequently it is expected that consumer preference would be higher for supermarket B due to the high satisfaction level.

When store characteristics in supermarket market are determined according to risk dimensions, there are 4 different risk perceptions for consumers. These can be defined as physical risks, financial risks, time risks and physiologic risks [17, 18]. In the scope of this study, satisfaction and sensitivity levels of supermarket consumers related to retailing factors were analyzed in four groups. The first one was related to physical components of the store. The major physical components were identified as "product quality, product and brand diversity, size and cleanness of store". In the study, satisfaction and sensitivity level of supermarket consumers related to mentioned variables were estimated. The results indicate that average satisfaction level of physical components of stores in consumer expectations ranges between 3.86 and 4.23 at 5-point scale.

Consumer sensitivity was found relatively high for store size and brand diversity in physical risk components. Based on this, store size and brand diversity terms in supermarket preference of consumers can be stated as the most important physical risk component. On the other hand, it could be expressed that a certain consumer satisfaction level in the market was formed in terms of store cleanness, product quality and diversity.

One of the basic store components affecting the supermarket preference of consumers is the financial one. In the scope of the financial components, consumer perception on "general price level, price and promotional sales and price labeling" of supermarkets was estimated.

The results showed that consumer satisfaction related to financial properties was found lowest, however, consumer sensitivity was found at the highest level compared with other components. Consumer satisfaction level related to financial components of stores was changed between 3.38 and 3.86 at 5-point scale. This result indicates that consumers were more sensitive to financial properties with respect to store preference. The highest risk perception for consumers was related to general price level of stores among the financial properties. However, satisfaction levels of consumers on price discount and promotional sale activities conducted by supermarkets and price labeling was found quite lower than consumer expectation.

For consumers, one of the most important terms is the time factor. In parallel to developments in demographics structure, especially the increasing role of women in business life, consumption and behavior patterns have changed. Today's consumer is expecting to complete the purchasing and the consumption functions in a short period of time. In this dimension, consumer sensitivity related to performance levels on time component of supermarkets in retail food market was measured. It was found that "long cashier's desk processes and insufficient parking places" constituted the highest time risk components in terms of consumers. Consumer satisfaction level related to the mentioned components was found at the lowest level with an average of 3.22 and 3.39 in 5-point scale, respectively (Table 2). It is concluded that consumer sensitivity was at the highest level for the examined time components.

Another important component in the supermarket preference of consumers is the physiologic component of the stores. Consumers have a desire and tendency to purchase a product with a suitable price, time, place and service. In the study, consumer evaluation related to physiologic supply of supermarkets was also investigated in risk dimension. The survey results showed that physiologic factors of store such as "personnel clothing, attitude and relationship quality, communication with consumer, playing music in store" was determined as the highest risk components. It can be said that consumer satisfaction of supermarkets for the mentioned components was low, but consumer sensitivity was high. However, it was observed that supermarkets have constituted a certain consumer satisfaction in terms of some properties such as store image, atmosphere and esthetics.

With a general assessment, retail factor order in which consumer satisfaction is low and consumer sensitivity was high in supermarket market was determined as "financial-time-physical-physiological component" (Fig. 1). His result indicated that consumer satisfaction expectation related to supermarket financial and time components was high in the research area. Therefore,

**Table 2.** Supermarket risk components and consumer perception.

| MODERN RETAIL CRITERIAS | ***Average score*/Standard deviation*** | *Supermarket A* | *Supermarket B* |
|---|---|---|---|
| *PHYSICAL RISK COMPONENTS* | **4.07** | ***4.62*** | ***3,96*** |
| - Product quality | 4.19 ± 0.79 | 4.47 | 4.24 |
| - Product diversity | 4.12 ± 0.88 | 4.73 | 4.01 |
| - Brand diversity | 3.93 ± 0.95 | 4.59 | 3.70 |
| - Store cleanness | 4.23 ± 0.76 | 4.59 | 4.17 |
| - Size of store | 3.86 ± 1.06 | 4.71 | 3.69 |
| *FINANCIAL RISK COMPONENTS* | **3.69** | **3.65** | **3.69** |
| - Price level (suitability) | 3.38 ± 0.83 | 3.18 | 3.23 |
| - Price discounts and promoted sales | 3.86 ± 0.96 | 3.79 | 4.04 |
| - Price labeling | 3.82 ± 0.85 | 3.97 | 3.81 |
| *TIME RISK COMPONENTS* | **3.84** | **3.87** | **3.81** |
| - Closeness to store | 4.27 ± 1.04 | 3.74 | 4.32 |
| - Location of store | 4.32 ± 0.88 | 4.02 | 4.29 |
| - Parking facilities | 3.39 ± 1.36 | 4.41 | 3.18 |
| -Store interior appearance (self design) | 4.02 ± 0.86 | 4.39 | 3.89 |
| -Waiting time at the cashier's desk | 3.22 ± 1.08 | 2.81 | 3.36 |
| *PHYSICOLOGIC RISK COMPONENTS* | **3.90** | **4.21** | **3.89** |
| - Image of store | 4.02 ± 0.88 | 4.50 | 3.97 |
| - Trust on the name of store | 4.18 ± 0.86 | 4.60 | 4.13 |
| - Service quality | 4.04 ± 0.88 | 4.42 | 4.01 |
| - Store exterior appearance (esthetic) | 4.06 ± 0.94 | 4.67 | 3.95 |
| - Store atmosphere (being modern-wide) | 4.05 ± 0.88 | 4.64 | 3.90 |
| - Playing music at the store | 3.05 ± 1.13 | 3.54 | 2.96 |
| - Appearance of staff (clothing, order) | 3.84 ± 0.84 | 4.08 | 3.88 |
| - Attitude and interest of staff to consumers | 3.81 ± 1.25 | 3.79 | 3.91 |
| - Communication with consumer | 3.81 ± 1.03 | 3.70 | 3.95 |
| - Value for money | 4.13 ± 0.73 | 4.16 | 4.22 |

*Scale: 1: Very bad, 2: Bad, 3: Medium, 4: Good, 5: Very good.

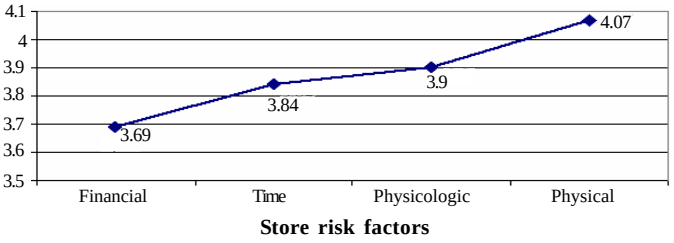



***Figure 1.*** Consumer perceived risk level of supermarket preferences (mean).

consumer interest and sensitivity to financial and time advantages in consumer store preferences could be defined as high. Consumers have an elastic approach to realize purchasing more economically and in less time. It was expected for consumer preference probability to be higher for a supermarket which was strong and attractive in terms of these store properties. In such situation, risk not to prefer the store by consumers would be lower.

Retail integration index calculated for the biggest 3 or 5 retailers in the market was an indicator that shows in which percentage did food distribution sector integrated. In other words, the sales of the biggest 5 retailers in their market share reflect the level of condensation-integration in this sector [21]. In the research area, many national and local supermarket groups have operated in retail food and retail sector. It can be said that the condensation level in retail sector is at high levels in Antalya province. The share of the biggest market chain in total sales was more than 80%. The biggest two supermarket chains in the market had a 54% market share.

In the scope of the study, because store components in supermarket preference was evaluated in consumer risk perception dimension, as an example, consumer data related to the biggest two supermarkets in the market was analyzed comparatively (Fig.2). The results showed that for a consumer in a situation to make a choice between two different supermarkets like A and B, preference risk of store A is higher when compared with store B in terms of financial properties. This means that the supermarket choice of consumer mass having price sensitive approach would choose store B. On the other hand, preference risk of store B in terms of time, physical and physiological store properties was higher. With a general approach, it can be expressed that in the financial properties store A provides higher consumer satisfaction, however, store B provides higher consumer satisfaction with respect to time, physical and physiological components.

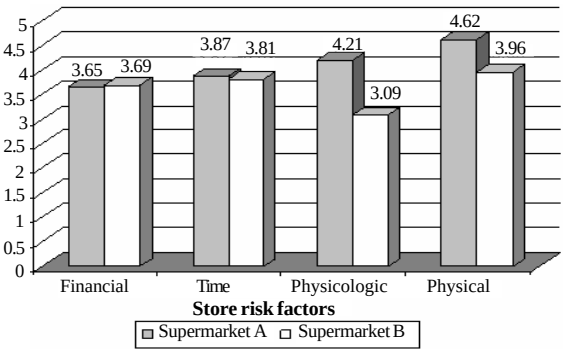



***Figure 2.*** Consumer preferences for supermarket A and B (mean).

## Conclusions

Consumers would like to purchase high quality products with reasonable price and at suitable time and place. In the retail market, the scale of the firm and its format causes increasing competition. Among alternative supply channels, sales points that satisfy consumers' expectation at high level are more likely to be preferred. The impact and priority levels of each factor vary among consumers. Similar to this, the impact and priority of the retail outlet selection factors on consumers' decisions are different among the consumer groups. Consumer's satisfaction level of each supermarket also varies depending on brands offered. In this study, the low satisfaction and high sensitivity level of consumers is found as 'financial-waiting period-physical-psychological factors', respectively. This order in the mean time reflects the consumer's level of risk perception on selection of retail outlet.

Therefore, store's financial situation and the duration of completing a sale are two major factors that are directly related to consumers' satisfaction level. As a result, it is expected that supermarkets that offer reasonable price and competitive strategies have an advantage on competitors. As a future direction of this study, it would be possible to investigate the effect of individuals' characteristics on risk perception of consumer preferences.


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## References


[1]Bauer, R. A. 1960. Consumer behavior as risk taking. In Hancock, R. S.(ed.) Dynamic Marketing for a Changing World. Proceedings of the 43rd Conference of the American Marketing Association, pp. 389-400.

[2]Bettman, J. R. 1973. Information integration in consumer risk perceptions: A comparison of two models of component conceptualization. Journal of Applied Psychology **60**(3):381-385.

[3]Collins, M. 1986. Sampling. In Worcester, R. (ed.).Consumer Market Research Handbook, Elsevier Science Publishing Company Inc., Amsterdam, The Netherlands.

[4]Cox, D. F. 1967. Risk taking and information handling in consumer behavior. Division of Research, Graduate School of Business Administration, Harvard University, Boston, MA.

[5]Christopher, M. 2004. Supply chains: A marketing perspective. In New, S. and Westbrook, R. (eds). Supply Chains, Concepts, Critiques and Futures. Oxford University Press, New York, pp. 23-42.

[6]Cunningham, S. M. 1967. The major dimensions of perceived risk. In Cox, D. F. (ed.). Risk Taking and Information Handling in Consumer Behavior. Harvard University Press, Boston, MA.

[7]Dawson, Y. A. 1993. Agro-food distribution. Course of Agro-Food Marketing, May 1993, IAMZ, Zaragoza, Spain.

[8]Dowling, G. R. 1986. Perceived risk: The concept and its measurement. Psychology in Marketing **3**:193-210.

[9]Dowling, G. R. and Staelin, R. 1994. A model of perceived risk and intended risk handling. Journal of Consumer Research **21**:119-134.

[10]Dunn, M., Murphy, G., Patrick, E. and Skelly, G. U. 1986. Research note: The influence of perceived risk on brand preference for supermarket products. Journal of Retailing **2**:204-216.

[11]German, G. A. and Leed, T. W. 1992. Food merchandising: Principles and practices. Lebhar-Friedman Books, New York.

[12]Hatiboglu, Z. 1993. Basic marketing. Series of New Economics and Administration Management No. 11. Beta Press Publication Distribution Ltd., Istanbul, Turkey (in Turkish).

[13]Karabulut, M. 1998. Professional selling and management. Universal Scientific Publications-4. Istanbul, Turkey (in Turkish).

[14]Kotler, P. 1997. Marketing management: Analysis, planning, implementation and control. International Ninth edn, Prentice Hall.

[15]Lamming, R., Caldwell, N. and Phillips, W. 2004. Supply chain transparency. In New, S. and Westbrook, R. (eds). Supply Chains, Concepts, Critiques and Futures.Oxford University Press, Oxford, pp. 130-150

[16]Meulenberg, M. T. G. 1993. Agro-food distribution. Course notes, I.A.M.Z., Zaragoza, Spain.

[17]Mitchell, V. W. 1998a. Defining and measuring perceived risk. Annual Conference Proceedings of the UK Academy of Marketing, Sheffield, pp. 380-385.

[18]Mitchell, V. W. 1998b. A role for consumer risk perceptions in grocery retailing. British Food Journal **100**(4):171-183.

[19]Mitchell, V. W. and Kiral, H. R. 1999. Risk positioning of UK grocery multiple retailers. The International Review of Retail, Distribution and Consumer Research **9**(1):17-39.

[20]Mucuk, I. 1999. Basics of marketing. 11th edn. Turkmen Pub., Istanbul (in Turkish).

[21]Myers, H. 2003. European food retailers: Paths for growth. Head of European Retail Research, Mintel, London.

[22]New, S. 2004. Supply chains: Construction and legitimation. In New, S. and Westbrook, R.(eds). Supply Chains, Concepts, Critiques and Futures. Oxford University Press, Oxford, pp. 69-108.

[23]Slovic, P., Fischoff, B. and Lichenstein, S. 1980. Facts and fears: Understanding perceived risks. In Schwing, R. and Albers, W. Jr. (eds). Societal Risk Assessment: How safe is safe enough? Plenum, New York, pp. 181-216.

[24]Tek, O. B. 1999. Principles of marketing. 8th edn. Beta Publications, Istanbul (in Turkish).

[25]Yeung, R. M. W. and Morris, J. 2001. Food safety risk: Consumer perception and purchase behaviour. British Food Journal **103**(3):170-186.

[26]Yurdakul, O. and Koc, A. 1997. Marketing of food products. C.U. Faculty of Agriculture Course Book Series No. 34, Adana, Turkey.

[27]Zwart, A. C. and Mollenkopf, D. A. 2000. Consumers assessment of risk in food consumption: Implications for supply chain strategies. Proceedings of 4th International Conference on Chain Management in Agribusiness and the Food Industry, Wageningen, The Netherlands, 25-26 May.





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