

## **Determining the Level of Food Safety Consciousness of the Households: Giresun Sample**

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**Abstract:** The main purpose of the study is to reveal the level of awareness of the households about food safety and quality and to present their perception of food safety and healthy nutrition as customers. The perspectives on food safety of different genders selected from the households in the city center of Giresun through the appropriate sampling method were included in this study. The socio-demographics and enterprise data were included, membership to European Union, which is an important process for the agriculture sector, was discussed, some basic perceptions of the cases which may threaten food safety were presented. Accordingly, average household size, average duration of education, customers' perceptions of food safety were included. Conventionality in the families participating in the research and what kind of differences are effective on the change of habits were studied.

**Keywords:** Food Safety, household, nutrition, Giresun

### **Hane halkının gıda güvenliği bilinç düzeyinin belirlenmesi: Giresun örneği**

**Özet:** Bu çalışmada; tüketici olarak sağlıklı beslenme, gıda güvenliği kalitesi ve gıda güvenliğinin tüketici üzerinde mevcut algısı hakkında, hane halkının bilinç düzeyi ortaya çıkarılmaya çalışılmıştır. Bu çalışma, uygun örnekleme metodu kullanılarak, Giresun ili merkez ilçede farklı cinsiyette seçilmiş hane halkının gıda güvenliği üzerine bakış açısını içermektedir. Avrupa Birliğine üyelik için tarım sektörü için önemli bir işlem olan, sosyal ve nüfusa dayalı değişken ve kurumsal veriler tartışılmış, gıda güvenliğini tehlikeye sokacak durumların bazı temel algıları sunulmuştur. Buna göre ortalama hane halkı sayısı, eğitim seviyesi, müşterilerin gıda güvenliği algıları tespit edilmiştir. Geleneksel olarak ailelerdeki katılımcıların, ne çeşit farklılıkların alışkanlıklarının değişimi üzerinde etkili olduğu incelenmiştir.

**Anahtar Kelimeler:** Gıda Güvenliği, Hane halkı, Beslenme, Giresun.

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## INTRODUCTION

Nourishment is the activity of taking the necessary elements and using them in the body so as to grow, develop, and be healthy and productive. For a community, which does not have an adequate and balanced diet, it does not seem possible to lead a healthy life to perform a work or increase its social and economic welfare (1,2).

There are two kinds of nutritional problems in the world. The first one is to access to adequate food. The other one is taking healthy and safe food resources that our body needs. The first problem is related to the concept of food safety. In order to enable all people to sustain a healthy and active life, food safety always provides access to adequate, safe good food, of high nutritional value, and includes concepts such as “obtaining food,” “reaching food,” and “using food” (2).

The second fundamental problem related to food is that food safety cannot be ensured. On the other hand, food safety is defined as complying with the required rules and taking measures during food production, processing, storage, transportation and distribution stages in order to ensure the production of healthy food, and includes such concepts as beneficial to health and preserved healthy food (2,3). Food-related risks are increasing due to environmental pollution caused by emerging technologies, population growth, changing consumption habits in the process of globalization, lower education and income levels, the inability to carry out the necessary physical investments in food production units, inadequate legislation and lack of supervision practices. Food safety and quality approach are complex and multidimensional. Food safety and quality include economic, social, cultural, environmental and political consequences, and is concerned with not only the first stage agricultural production, but also production place, animal health, storage conditions, marketing, hygiene requirements and regulations, consumer awareness and dietary habits, and new technologies such as genetically modified crops. At the same time, the concepts of food safety and quality are closely related to the relationship and policies among social actors, and social and cultural differences. Therefore, it is required that countries should demonstrate a holistic, participatory attitude to food safety and quality by taking gender into consideration as well (2,4).

The concepts of food safety and quality have a critical role in ensuring sustainability in the consumption behaviour of consumers and food safety in terms of food consumption. Hence, this study aims to demonstrate the level of consumer awareness of food safety, by studying consumers residing in the centre of the province of Giresun, find out their demographic and socio-economic characteristics, and also determine their perception of food safety and quality while buying food.

Food safety is defined as complying with the required rules and taking measures during food production, processing, storage, transportation, and distribution stages in order to ensure the production of healthy and ideal food. Access to safe food is one of the most fundamental rights and freedoms of everyone. In this respect, in *the Rome Declaration on World Food Safety*, it is mentioned that everyone has the right to safe and adequate food. Therefore, nobody shall be deprived of access to safe and adequate food, which is one of the most fundamental rights and freedoms. Food safety describes the situation that consumers, at all times, have physical and economic access to healthy, reliable and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Inequality in income distribution has great impact on the nature of nutrition problems and its frequency. Ignorance about nutrition leads to incorrect choice of food, incorrect preparation, cooking and storage methods to be applied, and the growth of the dimensions of nutrition problems. Apart from the economic conditions and other factors, advertisements, new products introduced to the

market and the spread of fast-food eating habits on a global scale also affect the nutrition of society (4,5).

Access to safe food is one of the most fundamental rights and freedoms of everyone. In this respect, in *the Rome Declaration on World Food Safety*, it is mentioned that everyone has the right to safe and adequate food (6). In terms of equality in access to food, everyone has equal rights to the provision of safe food for balanced and quality nutrition (<http://www.fao.org/economic/>). Food quality is one of the most important features of the concept of food safety. Food quality includes all of the features of a product that affect the value of the product in the eyes of the consumer. Food quality is a complex issue when viewed holistically, and the fundamental reason for that lies in the consumer perception of quality in addition to measured and recorded standards (6). As a result of the incorrect use of drugs and chemical fertilizers that began in the 1980s, ecological balance began to deteriorate, and this situation started to have negative consequences on the environment and public health. Therefore, the concepts of sustainable agriculture and food safety started to be discussed in developed countries due to increased consumer awareness. DPT (7) has conducted studies on food safety through a variety of conferences and food summits that international institutions, especially FAO, held with the participation of other countries following the increased consumer awareness.

The increase in the consumer awareness level of food safety forces manufacturers to produce in accordance with the expectations of consumers. Such an attitude of manufacturers to ensure food quality and safety does impose certain costs on them, although it subsequently provides great benefits in terms of the protection of public health and consumer satisfaction.

## **MATERIAL AND METHOD**

The main material of this study consists of data compiled through questionnaires distributed to families residing in the city centre of the province of Giresun. In addition to this, previous studies on the subject have been used and benefited. To determine the number of families (the sample size) to be provided with questionnaires, the total population in the city centre was found out by going through official records. The sample size was determined by using the following formula (8).

In the formula,  $n$  stands for the number of individuals the samples to be taken from;  $N$  for the number of individuals in the target audience (124,144);  $p$  for the likelihood of the realization of the event investigated (0, 50);  $q$  for the likelihood of the failure of the event investigated (0, 50),  $t$  for standard normal distribution value (1, 65) and  $d$  for the sampling error (0, 05). In the determination of the sample size (the number of questionnaires), we had 90% of confidence limits and 5% of margin of error. As a result of the calculation, the sample size was determined as 271. The data obtained from the questionnaire results were evaluated by mean and percentage calculations.

## **FINDINGS AND DISCUSSION**

55% of the consumers surveyed were men and 45% of them were women. The overall average age of the consumers was 29. When the consumers were analysed by age groups, the highest age group was 26-35 years with 40,81%, and this was followed by other age groups as 36-45 years with 29,04%, 25 years and under with 17,28%, 46-55 years with 11,40%, and 56 years and above with 1,47%. When the education level of the consumers surveyed were analysed, 9% were primary school graduates, 21% secondary school graduates, 42% high

school graduates, 17% university graduates, and 1% with a master's or doctorate degree. Most of the consumers taking the survey were single (63%), and 37% of the consumers were married (Table 1).

The concept of food safety first brings to mind chemical residues, additives and defective products, and chemical residues are indicated as a source of the most important risk. In our country, at the top of the most important chemically-induced food safety issues is the increase in the use of pesticides and their uncontrolled sales. Studies show the presence of the unconscious and uncontrolled use of pesticides in the production of vegetables and fruit to be exported. In this study, consumers residing in the city centre of the province of Giresun were asked whether they think there are chemical residues such as drugs, hormones or other chemicals in foods, and 96% of the consumers stated that they think there are chemical residues while only 4% stated that they don't think there are chemical residues in foods.

On the other hand, these participants were asked whether they think these chemical residues are harmful to human health. 88% of the participants stated that they think these chemicals are harmful, 3% stated that these chemicals are somewhat harmful, and 3% stated they don't have any idea about it (Table 1).

The participants were asked what precautionary methods they use for the foods that they think have chemical residues, and 58% of them stated they wash the product with a lot of water, 27% stated they add vinegar to the washing water, and 8% stated they prefer products they produce themselves. When they were asked who influence their food purchasing decisions, 53% of them stated that their family members are influential, 30% stated they get help from experts, 5% stated commercials play a key role in making up their mind, and 11% stated they always make their food purchase decisions by themselves (Table 1).

With improving technology, risks in food and agricultural products began to increase, and at the same time, hazards occurring began to be understood scientifically. The development of international trade, increased consumer awareness, diversity and differences in purchasing food products, as well as increasing health and environmental concerns make producers and decision-makers more sensitive about the issue and to approach the subject very consciously. The studies of public and private enterprises working on this issue became more widespread. While public enterprises were preparing the necessary regulations and legislation, the proven success of the system implemented by private organizations on a voluntary basis allowed the adoption of standards, and since the standards are based on certification, they have become the guarantee characteristics sought by consumers. Until recent years in the process from the producer to the consumer, the quality control which was the method to protect the outstanding features of the products was first replaced by the overall quality, then HACCP, GAP, GMP, GHP, ISO 9000 applications (9). Today, mass production and industrialization raise the reality of the formation of longer and more complex food chains. In this sense, such regulations ensuring food safety as, ISO 22000, HACCP, and EUREPGAP, have become inevitable elements today, and have created the preconditions for exports to the European Union countries.

**Table 1.** Socio-economic characteristics of individuals in the field of research

	Number of people	Percentage (%)
<b>Does any chemical residue (drugs, hormones and other chemicals) exist in food?</b>		
Yes	261	96
No	10	4
<b>Is it harmful residues in food?</b>		
A little	10	3
It harms	239	88
I have no idea	9	3
Other	13	5
<b>How do you take precautions for foods containing residues?</b>		
I do not do anything	13	5
I wash with plenty of water	158	58
I wash with water and use other things such as vinegar	73	27
I prefer products that we grow our own	21	8
Other (not purchase, the village product, control its view)	9	3
<b>How is the taste of the agricultural products according to the past?</b>		
Not as good as the old	213	79
Same	24	9
Better than before	10	4
I have no idea	24	9
<b>Who is the most effective while making decision on buying food?</b>		
Family members	144	53
Neighbors and Relatives	4	1
Trainers / Experts	81	30
Ads / TV Programs	13	5
Other (own idea, of buying a trial, etc.)	29	11

In this study, the consumers were asked if they know certificates, one of the evaluation tools of the quality of food products, to determine how much they know about certain food safety certificates. These are TSE, ISO, HACCP, EUREPGAP, GMP certificates. 61% of the consumers stated that they have some information about ISO safety certificate, and 30% of the consumers stated they have no information about any of these food safety certificates.

When the consumers surveyed were asked whether they have heard about GMO, 89% of them stated they have heard, and 11% stated they have not. However, when the participants were asked whether products containing GMOs are harmful to health, 93% stated they are harmful, while 7% stated they are not harmful.

To the statement that they do not pay attention to the production conditions of the products they buy, 85% of the participants said “yes,” and to the hygiene standards of the products they buy, 93% answered “yes” (Table 1).

## CONCLUSION AND RECOMMENDATIONS

Food safety and quality in recent years have been among the priority issues of the whole society. The growth after the industrial revolution and environmental and social problems caused by it directly affected the agricultural sector and the food industry. Food safety and quality are not only related to human health. There are also economic aspects. While job loss caused by foodborne illnesses and the cost of treatment services for these diseases constitute one dimension of the economic loss, the removal of the unsafe and poor quality products for the consumption chain, the restriction of export possibilities and environmental hazards of the chemicals used and the resources created to avoid them form the other dimension. This versatility also increases the importance of food safety and the work done in this regard.

The emergence of foodborne illnesses that adversely affect human health in recent years increased the consumer interest in safe food products. Increased interest in safe food products has led to more questioning of the factors that play a role in the process of production until the product is consumed. In the consumption of safe food products, there are many people and organizations taking different roles according to the product.

Among individuals and organizations that play a role in food safety, the most active ones are those who demand that product. Therefore, to determine the consumer awareness level of food safety is among the priority issues in the studies of consumption and marketing. In this context, revealing the socio-economic factors and behavioural characteristics belonging to consumers and the determination of the influential factors in safe food consumption are of great importance.

Certificates stating food safety and quality (ISO 9001, ISO 22000, HACCP, etc.), in terms of showing the consumer awareness level, is of paramount importance. In this study, those who said they are aware of at least one certificate are 57% of the participants. Among these certifications, in terms of demonstrating the product quality standards, ISO 9001 certification is important, and those who know this certificate are 47.92% of the participants. The low proportion of those who are aware of food safety and quality certificates demonstrates the necessity for training in this respect.

In this study, 84.37% of the consumers stated that they are concerned with GM foods. It has been found out that 73.69% of the consumers do not have sufficient information about GM foods although they are frequently mentioned in the written and visual media. This result supports the fact a large portion of the consumers, who have expressed their concern about GM foods, do not follow food-related sources for obtaining more accurate and detailed information. Therefore, before they consume foods, consumers need to know what kinds of risks they have in terms of health.

The importance of the issue of food safety is increasing with each passing day. In the limited number of studies conducted on food safety, the consumer awareness levels were examined by large. However, to determine the level of consciousness of people manufacturing and marketing food will help demonstrate the state of food products before making them available to consumers. Indeed, in order to ensure food safety in its entirety in a country, all individuals producing, marketing and consuming food must be conscious, responsible and educated.

#### **ACKNOWLEDGEMENT**

This study was presented as a summary paper in Balkan Agricultural Congress Edirne/TURKEY 8-11 September 2014.

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