

CONSUMERS` VIEW ON FOOD SAFETY: A PRACTICAL ANALYSIS IN TURKEY

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ABSTRACT

Food safety and standards issues are important subject which is closely interested in consumers, manufacturers and governments. Especially in recent years, governments enact numerous laws and regulations ensuring food safety, control and monitoring. In the last quarter of the twentieth century people increasingly pay more attention on the quality of the food and health safety. Now that consumers pay attention the food that is produced in certain standards when they consume from the supermarket or the restaurants in they consume. In addition to health concerns, consumers begin to focus on the quality of the food which are consumed. This study aimed to examine consumers' awareness of safe food is based on the survey method.

KEY WORDS: Food Safety, Consumer conscious, Factor Analysis.

1. INTRODUCTION

Food is fundamental to the physical wellbeing and development of humans. However, food should be consumed in quantities as advised and not excessively and should consist of the requisite nutrients for healthy body development. In the developed countries, food signifies healthy living and prosperity "Health and Diet", whereas in the under-developed and developing countries it is an essential element for survival "Life-Death"(Yalcin Kizilarslan

2013:11)The phenomenal growth in world population today has highlighted the necessity for the world to find ways to increase food production supply, in order to meet the growing demands. This has resulted in the advent and innovation of modern technological developments in food production, manufacturing and food industry in general and the proliferation of which has necessitated the need for food safety to be taken seriously.

After 1990, food safety was used by both producers and manufacturers as an important marketing tool to enhance and expound the quality of their food products for sale to the general public. In parallel to these developments in the world, quality, healthy and safe food product studies have gained equal recognition and momentum in our county too.

The food consumption habits of humans can vary over time and evidently correlated to the changes in

the economic, social, environmental and cultural structures of a particular society or country. Income growth will have fundamental changes in the socio-cultural infrastructures, increase in educational standards, increase of women's participation in the workforce, technological advancement in communication and transportation, elimination of market boundaries and the change in the methodology in retailing, can affect and impugn on the national food consumption habits of the populace. (Dolekoglu 2003:97)

The rapid modernisation of the lifestyles of the urban population, as a result of growth and economic development, coupled with increased social activities, places severe time constraints on individuals. In order to cater for these changes and needs, the market has exploited this demand with a proliferation and implosion of ready-made meals. This phenomenon has resulted in some revolutionary and unimaginable developments (pros-positive) and changes (cons-negative) in the food industry, which has been exposed in recent scandals over the so-called "healthy foods."

As a result, consumers are becoming increasingly sophisticated, educated and prudent in the manner in which they purchase their food products and to identify food which is guaranteed to be free of Genetically Modified (GDO) and chemical additives. This shift in selective consumption, which is attributable to increased concerns about health and

environment, has created a new classification of consumer group called "Green Consumer". Green Consumer, also commonly known as "organic" consumer, reflect their environmental concerns, and has a different set of criteria and values of purchasing preferences compared to the rest of the consumers. (Karabas 2012:132)

In a society where the manufacturing-marketing-consumption chain is an unavoidable structure for the people of that society, it is crucial that in order for a society to develop conscious and responsible eating habits, all parties, manufacturers, marketing experts and consumers needed to be well educated. Conscientious consumers would, collectively, be able to compel the producing, manufacturing and marketing fraternity to embrace fundamental changes which will serve to change the economy and the society. (Kizilaslan ve Kiziaslan,

2008:73)

Food safety and food standards are important matters for all in the food consumption chain, the consumers, producers, manufacturers and for the governments. Governments, especially in recent years, are beginning to realise the important and fundamental shift in food consumption and production and have legislated and enacted health and safety laws and regulations in order to promote and regulate food safety, consumption, production with rigorous food inspection regimes in situ.

In the last quarter of the 20th century, consumers have gradually started to be more conscious of food safety and quality. They are more aware of the quality standards of the food they purchase from supermarkets and from restaurants. They have grasped the concept by prioritising on health consciousness and have begun to focus on the quality of the food.

Food safety, defined as the food which is preferred without losing any nutritional value, and suitable to consume in terms of physical, chemical and biological constituents, not harmful to humans. Any diminution of food safety and hygiene will have unintended consequences and in certain instances will cause local and global problems. This is of vital importance when considering the indispensability and importance of food in our lives...As consumers become more sophisticated and educated, the demand for the food products, which has embraced the safety and production guarantees, will increase exponentially.

Quality food products, are defined as food which has acceptable properties propagated by the consumers. This definition represents the values: objective (the product's energy, vitamins, minerals, toxin content and freshness) and subjective (the product's colour, shape, taste and smell, etc..) of the product. The processes, in which determination of whether the food is healthy for consumption, involved extensive and careful tests and checks. The best controllers are; manufacturer itself, legal control agencies and consumers. Thus, consumer behaviour at this point becomes important. (Kızıllarslan, Kızıllarslan 2008:68)

Quality of food items can be measured by acceptance of the consumers of the products. These can be best obtained by the use of methods that can receive direct feedback from consumers and which reflects the increased importance of the concept of conscious consumers. (Topuzoğlu, 2007:254)

The standards in food safety was promulgated by the Uruguay Round negotiations in 1994, which resulted in the establishment of the World Trade Organization (WTO). WTO the establishment and transport of agricultural products has gained an international dimension to the determination of the required standard.

Food safety and quality of many national and international standards in the field are formally recognised and adopted. These include ISO 9001:2000, ISO

22000, HACCP, Global GAP (Formerly known as European GAP), ISO 17025, GLP-Good Laboratory Practices (Good Laboratory Practice), BRC, IFS and Traceability can be considered. It should also be noted, international food standards is based on: HACCP and traceability. (Ali Koç 2008:84)

In Turkey, it is mandatory that marketed food products and labelling of its ingredients must fully comply with the regulations and legislation of Turkish laws. According to the law, food products that are neither safe nor approved cannot be marketed. Places that manufacture and sell food primarily for human consumption, must have a manufacturing licence. According to the recently introduced municipal law (Jan 2012), such licence must be obtained within a month. Food additives can only be used if there is a technological need for it. If necessary, only the food additives which comply with the law are allowed to be used.

2. METHODOLOGY AND FINDINGS

The primary data of the study was based on the households residing in four different districts of Istanbul in 2014. In this research 700 questionnaires were distributed, but only 398 questionnaires were found suitable to be used for this research. The age range of the individuals who participated in the research was between 17 and 75 years old and comprised of 203 women and 195 men. In the research, in order to measure the attitudes, Linkert Scale is adopted, as this scale is the easiest and the most useful.

In order to measure the food consumption, awareness and attitudes of the people who took part in the research, different questions are placed in the 5 lined Linkert Scale.

Rates values of what defines consumers purchase preferences:

1-Strongly Disagree 2-Disagree 3-I have no idea 4-Agree 5-Strongly Agree

The answers to these questions were analysed by using SPSS 19 package program.

Table 1: Gender Breakdown of Participants

	Frequency	% value	% cumulative
Woman	203	51,0	51,0
Man	195	49,0	100,0
Total	398	100,0	

Table 2: Age range of participants

Age Range	Frequency	% value	% cumulative
17-20	50	12,6	12,6
21-29	198	49,7	62,3
30-39	66	16,6	78,9
40-49	54	13,6	92,5
50- +	30	7,5	100

Factor analysis is a type of statistical technique that aims to measure similar characteristics of variables in small numbers. First of all the sample survey's reliability was tested. Cronbach's Alpha method which was used to test the consistency of the questionnaire was calculated as 0.805, this value implied that the scale method used was trustworthy

Following that, the Kasser Meyer Olkin (KMO) and Bartlett Sphericity tests were used in order to ascertain whether factor analysis results were beneficial and useful or not. The KMO test result was

calculated as 0.782 and the Bartlett Test Statistics value was calculated high as (2855, 687) These results showed the strong correlation among the variables that were imputed in the model.

The Hottel T-kare test method, which was used to find out the average percentage value differences, came out at 473.005. This result indicated that the survey questions were precise and accurately formulated. From the onset of the tasks, the factor analysis solution was used in deciding the number of factors, the eigenvalues . The variances and cumulative variance values were calculated.

According to the results of these calculations, the factors with Eigen values greater than one has been selected.

As a preliminary step in analysis of the data, it is essential to understand that the main component consists of several factors encompassing the change

in food consumption, awareness and attitude which collectively explain what variables are collated. Accordingly varimax rotation solution named by the factors and variables with factor loadings of 0.4 and above was interpreted, by taking into account the loads.

Table 3. Factors' Eigenvalues and Total Loadings

Factors	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% variance	%cumulative variance	Total	% variance	%cumulative variance
1	5,145	19,787	19,787	2,677	10,297	10,297
2	3,001	11,542	31,329	2,555	9,826	20,123
3	1,621	6,235	37,564	2,092	8,046	28,169
4	1,414	5,440	43,004	1,991	7,658	35,827
5	1,331	5,120	48,124	1,803	6,933	42,760
6	1,251	4,811	52,934	1,683	6,474	49,234
7	1,034	3,977	56,912	1,564	6,014	55,248
8	1,001	3,849	60,761	1,433	5,513	60,761

From the analysis of the 26 variables, those producing Eigen values greater than 1 are grouped under eight factors. Accordingly, 10% of the total variance of the first factor, the second factor of 9%, 8%, as the third factor, 7.6% as fourth factor, 6.9% as the fifth factor, 6.4% as the sixth factor, a seventh factor of 6%, and finally 5.5% as the eighth factor are explained. Considering the cumulative percentage of variance of the total variance 60.7% explained by the first eight factors, it can be seen that 60% of the total variance explained by these factors is.

Table 4 Factors and Factors Values

Factors and the agents that makes up agents	Factors' Loadings
Factor 1 Conscious Food Consumption	
I have enough knowledge about food safety	0,758
When I buy preservatives contained food check the package for the ingredients. .	0,664
I know the measures for the protection of nutrients	0,702
I know which ingredients have the elements of threat to the food safety	0,669
Fruit and vegetables which has been subjected to extreme degree of chemical Fertilisers are harmful to human health	0,527
Factor 2 Control and Audit	
Do company officials comply with food security when marketing their products?	0,756
I find the places that we purchase food have adequate supervision by the health teams	0,741
I believe local authorities give sufficient information about food safety.	0,766
I believe local authorities produce sufficient work on food security.	0,647
Factor 3 Religious Sensitivities	
I would ask if the food I purchase has a halal certificate.	0,788
I pay attention that the food I buy has a halal certificate.	0,785
I don't buy food from open market as I don't think	0,521

they are healthy.	
Factor 4 Healthy Nutrition	
I find the fruit and the vegetables grown in the fields are more natural	0,708
We pay attention to our diet in our family.	0,673
I care for food safety	0,737
I find home cooking meal healthier.	0,434
Factor 5 Healthy Manufacturing	
The main reason for many diseases derived from unhealthy food.	0,700
I find the ISO22000 system implementation is right.	0,702
I don't think the food sold in the open street is suitable for human health.	0,541
Factor 6 Food awareness training	
I think sufficient information is provided on food security in educational institutions.	0,728
I can find food comply with the food security in education institutions.	0,873
Factor 7 Food contents and labels	
I Check the ingredients of food products	0,750
I check the expiration dates of foods.	0,671
Factor 8 Preferences and Consumer awareness	
I report the food sellers who do not comply with the regulations	0,587
I am very selective about eating out.	0,548
I believe fast food threatens our health.	0,410

Factor 1 “Sub-Conscious food consumption” This factor consists of several presumptions as indicated below:

“I have enough knowledge about food safety”

“When I buy food, which may contain preservatives and/or additives, I check the packages for the ingredients”

“I am aware and have sufficient knowledge on the measures for the protection of nutrients”

These basic factors are correlated and associated with food safety consciousness. The sample size should be reasonably adequate to include enough individuals involved in research on food consumption, in terms of awareness on the subject. This is an important factor. Food safety awareness pertaining to these factors comprises 10% of variance explained.

Factor 2 “control and supervision” The second most important factor that the consumers most concerned about food safety is “control and supervision” which is carried out by the authorities. This factor reflected in 9% of the variance. There is a very marginal difference between the first and the second factor.

In order to attain the desired standard and level of control to be instigated by the authorities, it is imperative that the authorities recognise that the consumers’ awareness of the subject has evolved and risen to a significant standard and that any failure by the authorities in uphold and maintain such standards will be construed as a dereliction of duty. At the same time, the awareness of consumers is a contributory factor directed towards the company/corporate officials, compelling them to improve and execute more effective control mechanisms to ensure standards are maintained and improved.

Factor 3 "Hygiene and selectivity" This factor is concerned with food hygiene and religious sensitivities. These factors registered 8, 4% of the variance. Data indicates that consumers give significant importance to whether the food they purchased is halal.

Factor 4: “Healthy eating” Families care about healthy eating and they prefer homemade food. This factor is confirmed unequivocally and illustrated by the 7.6% indicated in the variance.

Factor 5: “Production standards” The variance of 6.9% 5 clearly identifies the degree of importance placed on the factors of production conditions and standards and includes significant constituent components involved in the process.

This result clearly augments and confirms previous findings which contain these factors.

Factor 6: “Healthy nutrition and Awareness” This training is classified as Food Factor 6 food awareness training in educational institutions and other organisation dealing with food handling and production, manufacturing and sale. This factor is borne out in the Variance of 6.4% recorded. Consumers are concerned and wary about the importance of food security and content of his food. A further factor that generates area for concern is the expiration date which will bear either a “SELL BY” or “CONSUMED BY”. There is an obvious significant difference between the two.

Factor 7: “Food ingredients and labels” Explanatory power of this factor is

6%. This last factor has been titled as the consumer preference and primary control. This factor re-enforces the view and perception that consumers would be selective when eating out. Fast food style meals are unhealthy and as we may not be able to fully identify the ingredients and certainly labelling would not be appropriate in restaurants, brasseries and cafes. For purveyors of food, to find suitable places to sell their products, they have to notify to the appropriate authorities and to declare their expressions of intent on the relevant forms. This factor load factor 5.5% is.

To measure the effect of gender on the factor MANOVA test was conducted. The Manova Test needs to be conducted before moving to the equality of variance-covariance matrices was analysed. This equation can be determined by looking at the Box-M statistical values. Sig. value 0.300, respectively, which is

0.01 greater than the variance-covariance matrix, is equal to that. Also to be representative of the variance of the variables measured, the Levene's test at the significance level of 1% of the variables were found to have equal variance.

Table 5. Levene Test Value

	F	df1	df2	Sig.
Conscious Food Consumption	4,238	1	396	,040
Control and Audit Religious Sensitivities	,009	1	396	,923
Healthy eating	,144	1	396	,705
	,316	1	396	,574

Table 6. Multiple variables Test Values

Effect	Value	F	Sig.	Partial Eta Squared
Gender Pillai's Trace	,055	5,709 ^a	,000	,055
Wilks' Lambda	,945	5,709 ^a	,000	,055
Hotelling's Trace	,058	5,709 ^a	,000	,055
Roy's Largest Root	,058	5,709 ^a	,000	,055

Multiple variables are also tested. 4 values of these tests indicate that factors all have an influence on the gender variable. Sig. Values in all tests are found to be less than 0.01 and is therefore construed to be is small. However, this data alone is insufficient and in adequate. Considering the analysis of variance table, only the gender variable, factor 1 and factor 3 is

observed to have a significant effect on. Sig. values for only 0.01 factor 1 smaller; As for the third factor 0.10 was smaller. This condition is called gender awareness of food and religious sensitivity and the factors identified as one factor that represents over 3 ditched.

Table 7. Variance Analysis Value (Tests of Between-Subjects Effects)

Independent Variable	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Gender	Conscious Food Consumption	18,169	1	18,169	18,992	,000	,046

Control and Audit	,044	1	,044	,044	,834	,000
Religious Sensitivities	3,268	1	3,268	3,287	,071	,008
Healthy eating	,320	1	,320	,320	,572	,001

3. DISCUSSIONS AND CONCLUSIONS

General evaluation and results derived from Istanbul's European side were examined. This study covered the four regions and is conducted on the degree and significance of consumer awareness of food safety issues and priorities. The study covers the attitudes of consumers when buying food items and their explanations and the factors attached thereto were examined were collated and allocated to eight main groups. These are attitudes formed under the grouping are made according to the nomenclature factors. Accordingly, the initial plan in the implementation of consumer awareness of food safety is that food establishments be inspected by the competent institutions and religious sensitivities and give priority to the conclusion that have been reached.

In this study, the first factor set forth in Ümraniye is similar to the findings of the study. Consumers are concerned and cared about healthy eating and food safety and deem them as a priority as with other production.

In Samsun on organic food consumption, it is in line with the results of the research. Samsun concluded that the study's findings on impact of foodstuffs on health effects be sensitive to organic agriculture and to consumer health for their positive contributions. Consumers have amassed a wide and varied knowledge on this subject and the rise in organic food consumption is a testament to that (Karabas and Gürler, 2012).

In another study conducted in Adana, determinants of health factors taken into consideration as a factor, have arrive with similar conclusions (Dölekoglu,

2003). Training on food safety and safe food in educational institutions is a key factor in achieving a better understanding on the subject, particularly in terms of educating future generations on the essentials of healthy living and safe food

consumption. At this juncture of the study, participants expression on the subject resonated a mean value which was calculated as 3.5. Formal teaching of the awareness of food safety has positive effects on the finding and is reflected in many studies. (Uzunöz vd 2008, Kose, and Yaman, 2010). However, in this study, carried out within the educational institutions, the particular subject concerning food security on enlightenment emphasis was introduced.

Many studies on the above subject have also been carried out, as set forth (Ozgul and Aksulu, 2012; Kızılaslan and Kızılaslan, 2008; Topuzoğlu, 2012; Dölekoğlu, 2003) The study concentrated on consumers understanding and awareness of food safety and labelling and, in particular, expiration label and table of contents have stated. For example, in a research conducted in Trakya, food shopping for consumers the most determinative factor is the production and expiry dates. (Yilmaz vd 2009).

The rapid urban growth has propelled the change in food consumption and purchasing habits of consumers. It, therefore, does not come as a surprise that at the top of the tree is the fast food style diet. It is unclear whether the survey has promulgated the health at risk issues in formulating the questions and the participants of this style of diet in terms of health risk were aware of such risks. The result was high with an average of (3.97) in the assessment.

The findings of the study indicated that the participants pay close attention to food safety; they try to act consciously, but have average knowledge about food safety but the knowledge falls short of the satisfactory level advocated which is borne out from the information obtained. Although there are many publications on the subject, Subjective and is dependent on who publishes the information-purveyors of the product will expound certain views and may be contradicted by others.

There is a proliferation of food programmes shown on the television but they are inconsistent in the manner in which the subject of food is portrayed. The conflict of varying opinions and profusion of scientific evidence, which at the best of times are confusing is not conducive to consumer's understanding on this subject and do languish some manufacturers in turmoil as a result.

Information decimated to Participants about food safety and inspection of local authorities has been found to be inadequate. In this context, it is the duty of the relevant local official organizations to fully inform the consumers as well as the purveyors of the food products that has undergone inspection and examination with clear information based on scientific data obtained.

If further the inspection is required, the results should be decimated and shared with both consumers as well as business and manufacturers, who would benefit from this information.. Those found guilty of exploitation and misleading the consumers should be prosecuted and it will send a deterring signal and warning to the perpetrators that such actions which are deemed detrimental to the well-being of the consuming public will not be tolerated or ignored.

A mutual respect and co-operation by and between both producers and consumers should ultimately be exploited and enhanced to create awareness of health and safety and promote such consciousness to our country. This will, in turn, promote a healthy shopping environment and with the creation of this environment the welfare of the populace will be enriched. This will ultimately benefit both producers and consumers.

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