Determination of Food Safety Awareness Levels Among University Students: The Case of Tekirdağ Namık Kemal University

Derya İlkay YILMAZ[1]

[1]Res. Ast. Dr., Department of Agricultural Economics, Faculty of Agriculture, Tekirdağ Namık Kemal University, Türkiye, deryailkay@nku.edu.tr, ORCID: 0000-0003-0273-3323

Abstract: Food safety has become a major public health concern due to changing consumption patterns and the increasing complexity of industrial food production. Ensuring safe food consumption requires not only effective control mechanisms but also informed and aware consumers. University students represent a particularly important group, as their current knowledge and attitudes are likely to influence future consumption behaviors. Understanding their level of food safety awareness is therefore essential for developing effective educational and policy interventions aimed at improving public health outcomes.

This study aims to evaluate the levels of knowledge, attitudes, and awareness related to food safety among university students and to identify key factors influencing their food safety perceptions and behaviors.

The study was conducted at Tekirdağ Namık Kemal University using data collected from 269 students selected through random sampling. Data were obtained via face-to-face questionnaires. Descriptive statistics were employed to summarize the data, while Chi-square analysis was used to examine relationships between variables. Factor analysis was applied to identify the main sources of food safety among students.

The results revealed that 81% of the students perceived their knowledge of food safety as insufficient. Regarding food label reading habits, most students (84%) reported checking expiration dates, whereas attention to product ingredients and nutritional information remained relatively low. Statistical analyses showed no significant differences in food safety knowledge levels based on gender or income level ($p > 0.05$). Factor analysis indicated that digital media platforms constitute the primary source of food safety information for students, surpassing traditional sources such as formal education and official institutions. These findings highlight notable gaps in students' understanding of food safety practices, particularly concerning certification systems and inspection processes.

The study concludes that food safety awareness among university students is inadequate and requires improvement. Limited knowledge of official food safety controls and certifications poses a potential risk to informed consumption. It is recommended that food safety and food literacy education be integrated into university curricula, supported by campus-based awareness programs and digital media initiatives. Promoting access to reliable and authoritative information sources may contribute to improving students' food safety awareness and long-term consumer behavior.

Key Words: Food Safety, Consumer Awareness, University Students, Label Reading, Consumer Behavior.

1. INTRODUCTION

Food safety is a multidimensional process that aims to control biological, chemical, and physical hazards that may threaten human health at all stages from food production and processing to storage and final consumption (Oğur, 2020). Access to safe food is regarded as a fundamental requirement for individuals to maintain a healthy life and for the protection of public health. However, population growth, urbanization, industrialization, and the increasing consumption of ready-to-eat foods have led to both the diversification of food safety risks and the emergence of a more complex risk structure (Gözener et al., 2009).

Food safety problems are not limited solely to production, distribution, or official inspection processes. Consumers' knowledge and behaviors during the stages of purchasing, storing, preparing, and consuming food also play a decisive role in ensuring food safety (Oğur, 2020; Yanğıç Yüksel & Karagözlü, 2022). This situation demonstrates that food safety is not only the responsibility of producers and regulatory institutions but also an area that must be supported by conscious consumer behavior.

The ability of consumers to act consciously with regard to food safety is closely related to their capacity to read food labels correctly and to accurately interpret elements such as expiration dates, ingredient information, and certification marks indicated on labels. Studies in the literature show that consumers tend to focus primarily on basic information such as expiration dates, while their level of knowledge regarding nutritional content, additives, certification systems, and official control mechanisms remains limited (Öztürk et al., 2019; Oğur, 2020; Kırmacı & Özçelik, 2021). These findings suggest that food safety awareness often remains superficial and that a gap exists between knowledge and practice.

University students hold particular importance in the assessment of food safety awareness. The university period represents a critical stage in which individuals begin to make dietary decisions independently of their families, consumption habits become permanent, and behaviors that will persist throughout life are formed (Şanlıer et al., 2017). For this reason, determining the levels of knowledge, attitudes, and awareness of university students regarding food safety is considered an important step that may contribute to the development of more conscious consumer profiles in the future.

Research conducted on university students in the literature indicates that students are generally familiar with the concept of food safety; however, they are unable to sufficiently internalize this concept in its technical, institutional, and practice-oriented dimensions. In particular, it is reported that their level of knowledge regarding food inspection systems, certification practices, and official complaint mechanisms such as the Alo 174 Food Hotline is quite low (İncedal Sonkaya et al., 2018; Palamutoğlu et al., 2021). In addition, it is noted that students mostly obtain information related to food safety from digital media and their social environment, while scientific and official sources remain in a secondary position (Gözener et al., 2009; Palamutoğlu et al., 2021).

Therefore, revealing the relationship between food safety awareness and consumption behaviors among university students has gained importance. Some studies demonstrate that as the level of awareness increases, label-reading habits improve and the element of reliability gains greater importance in purchasing decisions (Öztürk et al., 2019). On the other hand, there are also findings indicating that despite higher education levels, food safety practices do not reach the desired level and that inconsistency between knowledge and behavior persists (Oğur, 2020; Yanğıç Yüksel & Karagözlü, 2022).

This study aims to determine the levels of knowledge, attitudes, and awareness of students at Tekirdağ Namık Kemal University regarding food safety. Within the scope of the study, the relationships between students' perceptions of food safety, their habits of reading food labels, their level of knowledge concerning official institutions and certification systems, and their socio-demographic characteristics were examined. The findings obtained are expected to contribute to the development of food safety education programs for university students and to the formulation of policy recommendations targeting young consumers.

2. MATERIAL AND METHODS

The material of the study consists of primary data obtained from students enrolled at Tekirdağ Namık Kemal University. A structured questionnaire was used as the data collection instrument.

The population of the research comprises a total of 18,400 students studying at Tekirdağ Namık Kemal University. In calculating the sample size, the finite population formula for proportions, presented below, was employed (p=q=0.5).

$$n = \frac{N.p.q}{(N-1).\sigma_p^2 + p.q} \qquad (1)$$

The sample size was calculated based on a five percent margin of error and a ninety percent confidence level, and accordingly, 269 students were included in the scope of the research. The sample was selected using the simple random sampling method, and the data were collected through face-to-face and online survey applications.

The questionnaire consists of three main sections. The first section includes questions related to the socio-demographic characteristics of the students, namely gender, age, income level, employment status, and type of accommodation. The second section contains multiple-choice questions aimed at determining students' levels of knowledge, awareness, and risk perception regarding food safety. In the third section, a scale consisting of twelve statements measured on a five-point Likert type format (1 = strongly disagree, 5 = strongly agree) was used to assess students' attitudes toward food safety, their sources of information, and their perceived level of knowledge.

Descriptive statistical methods were used in the analysis of the data obtained. Frequency and percentage distributions were employed to summarize the data. In order to determine whether students' knowledge, awareness, and attitudes related to food safety differed according to socio-demographic characteristics, the chi-square (χ^2) analysis was applied.

To identify students' attitudes, awareness, and perceived knowledge levels regarding food safety, five-point Likert type questions consisting of twelve judgments were administered. For the data obtained from the Likert

type statements, a reliability analysis was first conducted. The Cronbach alpha coefficient of the scale was calculated as 0.898, indicating that the scale has a high level of reliability. To evaluate the suitability of the scale for factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were applied. The KMO value was determined as 0.906, and the results of Bartlett's test were found to be statistically significant. These results indicate that the data set is suitable for factor analysis (Hair et al., 1998; Akgül & Çevik, 2003; Nakip, 2003). As a result of the factor analysis, two factors with eigenvalues greater than one were identified. A lower threshold of 0.40 was adopted for factor loadings (Hair et al., 1998). The resulting factors were named by taking content coherence into consideration.

3. RESULTS AND DISCUSSION

Findings related to the socio-demographic characteristics of the students are presented in Table 1 and Table 2. It is observed that the proportions of female (50.9%) and male (49.1%) students in the sample are quite close to each other. The vast majority of the students are single (90.3%), and a substantial proportion are not employed in any job (83.3%). An examination of income distribution indicates that approximately half of the students belong to the low-income group, while the proportion of students in the high-income group remains relatively limited. These findings reveal that the sample predominantly represents a student profile with constrained economic conditions.

Table 1: Distribution of Students According to Socio-Demographic Characteristics

		Freq.	%			Freq.	%
Gender	Male	132	49.1	Marital status	Single	243	90.3
	Female	137	50.9		Married	21	7.8
					Other	5	1.9
Employment Status	Not working	224	83.3	Income	Below 5,000 TL	127	47.2
	Public sector employee	21	7.8		5,001–15,000 TL	70	26.0
	Private sector employee	17	6.3		15,001–30,000 TL	25	9.3
	Part-time	7	2.6		30,001 TL and above	47	17.5

An analysis of student accommodation reveals that the majority reside in state dormitories, followed by those in shared housing and those living with their families. Since more than half of the students live in communal or dormitory settings, their level of individual control over dietary habits may be limited.

Table 2. Distribution of Students by Type of Accommodation

	Frequency	Percent (%)
State dormitory	99	36.8
Student house	69	25.7
Living with family	53	19.7
Private dormitory	38	14.1
Living with relatives	10	3.7

An evaluation of students' perceptions of the concept of food safety shows that food safety is most commonly associated with the definitions "the production of food in a healthy and hygienic manner" (90.3 percent) and "the safe delivery of food to the consumer" (63.9 percent) (Table 3). In contrast, the lower frequencies of definitions related to microorganisms, label information, and technical risk factors suggest that students' perceptions of food safety are shaped more within a general hygiene framework rather than through technical details.

Table 3. Distribution of Students' Definitions Related to the Concept of Food Safety

	Frequency	%*
Production of food in a healthy and hygienic manner	243	90.3
Safe delivery of food to the consumer	172	63.9
Food labels being accurate and clear	112	41.6
Prevention of microorganisms present in food	102	37.9
I do not know any of these	7	2.6

* Students were allowed to select more than one option

Analysis of the students' self-assessments reveals that more than half perceive themselves as having 'some knowledge' of food safety, while only a small minority report a 'very high level of knowledge' (Table 4). This finding indicates that although students are familiar with the concept of food safety, they do not consider themselves sufficiently competent in terms of technical and practice-oriented knowledge. The results are consistent with studies in the literature reporting that food safety knowledge among university students tends to remain superficial. Gözener et al. (2009) drew attention to the presence of a group of students who were not familiar with the concept of food safety even among those studying in faculties directly related to food production, such as faculties of agriculture, and emphasized that this situation points to deficiencies in the educational dimension. Similarly, İstanbullugil & Gürbüz (2019) reported that 75% of university students had heard of the concept of food safety; however, their level of knowledge regarding technical systems such as Hazard Analysis and Critical Control Points (HACCP) and ISO 22000 was significantly lower. These findings demonstrate that the divergence between conceptual awareness and technical knowledge level is a widespread issue.

Table 4. Students' Evaluations of Their Knowledge Levels Regarding Food Safety

	Freq	%
Yes, I have some knowledge	137	50.9
No, I do not have much knowledge	98	36.4
Yes, I have very good knowledge	20	7.4
No, I have no knowledge at all	14	5.3

Analysis of food label preferences reveals that students check the expiration date more frequently than any other information (Table 5). This finding may be interpreted as indicating that students primarily associate food safety with product freshness and direct health risks. Studies conducted by Oğur (2020), İncedal Sonkaya et al. (2018), and Başer et al. (2022) also report that the expiration date is the label information most frequently checked by consumers.

The fact that the expiration date is followed by the ingredients list (71.8%) and price information (64.3%) suggests that both health-related and economic concerns play a determining role in students' label-reading behavior. The high level of attention paid to price information indicates that food purchasing decisions among university students are shaped under conditions of limited budgets. This finding is consistent with the results emphasized by İstanbullugil & Gürbüz (2019) and Esin & Kılınç (2025), who reported that price is an important decision criterion within the student group. When the findings are evaluated collectively, it can be stated that students attempt to strike a balance between product freshness, content, and cost at the purchasing stage.

An evaluation of information related to nutritional values and usage practices shows that elements such as storage instructions (44.2%) and calorie content (42.8%) attract a moderate level of attention, whereas more technical and detailed information, including vitamin and mineral content, sugar amount, and cooking instructions, is considered at relatively lower rates. In particular, the fact that students attach greater importance to macronutrients such as fat and protein compared to micronutrients suggests that label-reading behavior is shaped primarily around perceptions of energy and satiety. This finding supports the results reported by Öztürk et al. (2019) and Esin & Kılınç (2025), which indicate that students prioritize information on energy, fat, and protein over vitamins and minerals. The very limited interest in food safety certification systems may indicate that students evaluate food safety more through directly observable information rather than through institutional and systematic approval mechanisms. This situation is in line with the findings reported by Gözener et al. (2009) and İstanbullugil & Gürbüz (2019) in studies conducted on university students, which highlight low levels of awareness regarding technical food safety tools.

Table 5. Distribution of Information Types Reviewed on Food Labels by Students

	Freq.	%*
Expiry date	227	84.4
Ingredient's list	193	71.8
Price	173	64.3
Storage instructions	119	44.2
Calorie content	115	42.8
Fat and protein content	103	38.3

Net weight (quantity)	102	37.9
Vitamin or mineral content	68	25.3
Cooking instructions	66	24.5
Sugar content	58	21.6
Food safety certification systems	38	14.1

* Students were allowed to select more than one option

Analysis of the areas where students perceive risk suggests that their food safety concerns are largely centered on product reliability and direct health risks (Table 6). The primary source of concern among students is the expiration date and violations related to expiration dates (72.5%). This finding indicates that university students evaluate food safety primarily in terms of product freshness and the risk of spoilage. Studies conducted by Öztürk et al. (2019) and Oğur (2020) similarly report that violations related to expiration dates are at the center of both risk perception and label-reading behavior. In this respect, the results obtained from the present study are consistent with the existing literature.

The fact that concerns about expiration date violations are followed by concerns related to food poisoning and foodborne illnesses (65.4%) demonstrates that students associate food safety directly with health outcomes. Likewise, the high level of concern expressed regarding food fraud and counterfeit products (62.8%) suggests that students are sensitive not only to biological risks but also to unethical practices in the market. These findings may be interpreted as indicating that food safety is perceived by students through both health and reliability dimensions. The identification of "invisible" risk factors such as chemical residues (52.4%) and bacterial or microorganism control (48.7%) as sources of concern by approximately one out of every two students indicates that students possess a certain level of awareness regarding technical risk factors.

In contrast, the lower levels of concern associated with more specific and process-oriented risk areas, such as food allergens and transportation and storage conditions, suggest that these issues are perceived as secondary risks by students. Similarly, the very limited concern regarding social and ethical dimensions, including animal welfare and fair trade, as well as deficiencies in consumer education, reveals that university students tend to evaluate food safety primarily as a technical and product-oriented issue. Palamutoğlu et al. (2021), in their studies on food literacy, also emphasized that students mostly define food safety through technical elements, while social, ethical, and behavioral dimensions remain in the background.

Table 6. Students' Concerns Related to Food Safety

	Frequency	Percent (%)*
Date and expiry date violations	195	72.5
Food poisoning and foodborne illnesses	176	65.4
Food fraud and counterfeit products	169	62.8
Hygiene and sanitation deficiencies	157	58.4
Chemical residues	141	52.4
Control of bacteria and microorganisms	131	48.7
Control of food allergens	76	28.3
Food transportation and storage conditions	67	24.9
Social and ethical issues (animal welfare, fair trade, etc.)	43	15.9
Consumer education and awareness	21	7.8

* Students were allowed to select more than one option

Regarding food safety institutions and certification systems, students show the highest level of awareness for globally recognized organizations such as the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) (Table 7). These results indicate that students have a high level of familiarity with global health and agricultural authorities. However, this familiarity is considered to be related more to the general visibility of these institutions rather than to technical knowledge of food safety.

By contrast, the relatively low level of recognition of sector-specific food safety standards such as the International Organization for Standardization standard 22000 (ISO 22000) and Global Good Agricultural Practices (GLOBALG.A.P) indicates that students do not sufficiently evaluate food safety through institutional and practice-oriented systems. Similarly, the limited recognition of technical assurance systems such as HACCP, International Featured Standards (IFS), and British Retail Consortium (BRC) standards demonstrates that university students' knowledge of food safety remains largely general and superficial. This finding is consistent with previous studies conducted on university students reporting low levels of awareness regarding technical food safety tools (Açıkalın, 2019; İstanbullugil & Gürbüz, 2019; Öztürk et al., 2019). Gözener et al. (2009) attributed the higher recognition of ISO standards compared to other technical systems to their widespread use not only in the food sector but also across various fields, as well as to their brand recognition.

Table 7. Students' Awareness of Food Safety Institutions and Certification Systems

	Freq	%*
WHO	245	91.1
FAO	167	62.1
ISO 22000	94	34.9
GlobalG.A.P.	79	29.4
EFSA	59	21.9
HACCP	52	19.3
GMP	39	14.5
IFS	38	14.1
FSSC 22000	32	11.9
BRC	19	7.1

* Students were allowed to select more than one option

The observation of a similar tendency in the present study suggests that students' awareness of food safety standards is shaped more by general recognition than by sector-specific knowledge.

Overall, the findings reveal that university students perceive food safety mainly through general and institutional authorities, while a significant knowledge gap exists with regard to sectoral and technical implementation standards. This situation supports the argument emphasized in the literature that food literacy and technical food safety standards should be addressed within a broader educational framework in university curricula, rather than being limited solely to related academic departments (İncedal Sonkaya et al., 2018; Palamutoğlu et al., 2021).

Findings regarding students' levels of awareness, knowledge, and practices related to food safety are presented in Table 8. The fact that the vast majority of students agree that non-compliance with food safety rules leads to health problems indicates a high level of risk perception regarding food safety. The high level of awareness of the halal food certification concept (81%) is consistent with the findings of Yanğıç Yüksel & Karagözlü (2022), who reported that a large proportion of consumers are familiar with this certification.

One of the noteworthy findings of the study is that, despite a high level of risk perception, the proportion of students who have received training on food safety remains quite low. The fact that only 16.7% of students reported having received education in this field is consistent with studies indicating that university students generally acquire their food safety knowledge through personal experience and environmental sources rather than through systematic education (İncedal Sonkaya et al., 2018; Açıkalın, 2019).

As a reflection of this lack of education, students' awareness of food inspection and complaint mechanisms is also found to be low. The limited recognition of the Alo 174 Food Hotline is similar to findings reported in other studies conducted on university students. İncedal Sonkaya et al. (2018) and İstanbullugil & Gürbüz (2019) reported that accurate awareness of this hotline is quite low, while Esin & Kılınç (2025) indicated that the vast majority of students have never used this mechanism. These findings reveal that consumers' active participation in food safety inspection processes remains weak.

Analysis of student attitudes reveals that those who perceive food safety measures as insufficient significantly outnumber those who find them adequate. This perception of inadequacy is consistent with the findings reported by Açıkalın (2019) and Yanğıç Yüksel & Karagözlü (2022). However, the low level of use of individual monitoring and control mechanisms among students indicates that high awareness of food safety does not

adequately translate into active consumer behavior. This situation suggests that university students tend to evaluate food safety within the framework of a passive risk perception, while exhibiting limited engagement in behavioral dimensions such as informed choice, monitoring, and oversight.

Table 8. Levels of Awareness, Knowledge and Practices Regarding Food Safety Among Students

	Yes	%	No	%	No idea	%
Belief that non-compliance with food safety rules leads to health problems	224	83.3	29	10.8	16	5.9
Awareness of the concept of halal food certification	218	81.0	51	19.0	-	-
Knowledge about foodborne illnesses	152	56.5	89	33.1	28	10.4
Having heard of aflatoxin before	121	45.0	148	55.0	-	-
Awareness and preference of markets operating under Good Agricultural Practices (GAP)	98	36.4	171	63.6	-	-
Following food brands disclosed by the Ministry	85	31.6	163	60.6	21	7.8
Awareness of the Alo 174 Food Hotline number	57	21.2	212	78.8	-	-
Finding current food safety measures sufficient	48	17.8	177	65.8	44	16.4
Having received training on food safety	45	16.7	224	83.3	-	-

In order to determine whether students' awareness, knowledge levels, and risk perceptions regarding food safety differ according to socio-demographic characteristics, a chi-square analysis was conducted. The results show that students' awareness of institutional mechanisms, their behavior in following official information, and their perceptions of health risks differ significantly according to gender, income level, employment status, and type of accommodation.

A statistically significant relationship was found between gender and the practice of following the counterfeit and adulterated product lists published by the Ministry of Agriculture and Forestry (χ^2=8,772; p=0,012). The proportion of male students who follow these lists (40.2%) is higher than that of female students (23.4%). Similarly, awareness of the Alo 174 Food Hotline also differs significantly by gender (χ^2=10,810; p=0,004). While the proportion of students who stated that they know the hotline well is similar for both genders, the proportion of those who reported partial knowledge is higher among male students. Nevertheless, the fact that a large proportion of students (69.9%) stated that they do not know the hotline at all indicates a generally low level of awareness regarding food inspection mechanisms.

Awareness of the Alo 174 Food Hotline also differs significantly according to employment status (χ^2=29,254; p<0,001). The highest level of awareness is observed among students working in the private sector (47.1%), whereas this rate decreases to 21% among students who are not employed. Similarly, a statistically significant relationship was found between employment status and awareness and preference for markets operating under Good Agricultural Practices (χ^2=14,379; p=0,026). Students working in the public sector demonstrate higher awareness of such markets (42.9%), while the corresponding rate among non-working students is lower. These findings suggest that active participation in working life may increase awareness of food inspection mechanisms.

A statistically significant relationship was also identified between students' income level and their participation in food safety training (χ^2=17,604; p=0,007). As income level increases, the proportion of students who have received food safety training also increases, with approximately one-third of students in the highest income group having received such training. This finding suggests that economic resources may play a determining role in access to specialized training in the field of food safety. In addition, perceptions that non-compliance with food safety rules leads to health problems were found to be significantly associated with both income level (χ^2=12,866; p=0,045) and accommodation type (χ^2=17,000; p=0,030). While risk perception is higher among students in the low-income group, the proportion of indecision is relatively higher among students living with their families. The higher level of indecision among students residing in the family home may be related to the perception of food safety as an element ensured by the family rather than as an individual responsibility.

A statistically significant relationship was also found between accommodation type and having previously heard of the term aflatoxin, which is considered a critical food safety risk factor (χ^2=19,827; p=0,011). While 60.9% of students living in student housing reported being familiar with the term aflatoxin, this proportion decreases to 31.6% among those residing in private dormitories and to 36.4% among those living in state dormitories. This finding may be interpreted as indicating that students who assume individual responsibility for kitchen management have higher awareness of risks related to food storage and raw materials. Overall, the findings demonstrate that food safety awareness is shaped by daily life practices and socio-economic conditions, and that educational policies should address these differences through targeted and differentiated approaches.

2.1. Factor Analysis

In order to evaluate students' levels of awareness, knowledge, and perceptions regarding food safety in a more comprehensive manner, factor analysis was applied to the Likert type statements. As a result of the analysis, two factors with eigenvalues greater than 1 were obtained. These two factors explain 62.37% of the total variance (Table 9), indicating that the scale adequately represents the main dimensions related to food safety.

The first factor consists of statements covering health risks arising from non-compliance with food safety rules, perceptions related to foodborne illnesses, and concerns about product reliability. This factor reveals that students predominantly evaluate food safety from the perspective of health risk and individual protection. The second factor comprises statements related to students' sources of information on food safety, their awareness of official institutions, and their self-assessments of their own knowledge levels. This factor reflects the channels through which students acquire information on food safety and how they perceive their level of knowledge.

Considering the meanings conveyed by the items included in each factor, the resulting dimensions were named "Food Safety Awareness and Risk Perception" and "Information Sources and Perceived Level of Knowledge," respectively.

Table 9. Results of Factor Analysis Related to Food Safety

	Factor Loadings		Eigenvalue	Explained Variance (%)
	Food Safety Awareness and Risk Perception	Information Sources and Perceived Level of Knowledge		
Inadequate food safety practices may lead to health problems such as food poisoning.	0.867			
I believe that attention should be paid to food safety rules for a healthy life.	0.842			
Lack of knowledge about food safety threatens public health.	0.833			
Food safety is not only an important issue for restaurants or producers, but also for food preparation at home.	0.823		5.961	42.732
There is a need for more public education on food safety.	0.796			
There is a general lack of awareness about food safety in society.	0.731			
Serious health problems may arise when food safety rules are not followed.	0.712			
Food safety education should be included in school curricula.	0.701			
I follow information provided by the state or local authorities regarding food safety.		0.721		
I have obtained information about food safety through the media, such as television, the internet, and magazines.		0.715	1.523	19.634

I trust the information I have read about food safety.	0.714
I believe that I have sufficient knowledge about food safety.	0.676

4. CONCLUSIONS

The results of the study reveal that although university students' perceptions, awareness, and behaviors regarding food safety have reached a certain level of consciousness, this awareness remains superficial and is not sufficiently supported in terms of depth of knowledge and practical application. Students tend to evaluate food safety mainly through direct and visible elements such as expiration dates, hygiene, and health risks; however, they demonstrate limited awareness of technical assurance systems, institutional inspection mechanisms, and official

information channels that require more specialized knowledge. This situation suggests that despite a strong perception of risk, there is a significant gap in translating food safety awareness into actual behavior.

The findings further indicate that food safety awareness is associated not only with individual attitudes but also with socio-economic and structural factors such as gender, income level, employment status, and type of accommodation. In particular, the higher levels of awareness and technical knowledge observed among students who assume individual responsibility for food preparation and actively participate in working life suggest that food safety awareness is strengthened through daily life practices. In contrast, the indecision and limited awareness observed among students living with their families or relying on collective catering services indicate that food safety may be perceived by these groups more as an external responsibility rather than an individual one.

Within this framework, approaches to food safety targeting university students should not be limited solely to basic hygiene and health risks. A comprehensive approach that encompasses certification systems, official inspection processes, consumer complaint mechanisms, and informed choice behaviors may contribute to narrowing the gap between knowledge and practice. Transferring the technical and institutional dimensions of food safety not only through discipline-specific courses but also via common or elective courses and on-campus information activities aimed at all students may further support this process.

On the other hand, the persistence of limited individual monitoring and control behaviors despite students' lack of trust in existing food safety measures indicates that current information and inspection tools do not sufficiently motivate young consumers to take action. Presenting complaint and inspection channels such as the Alo 174 Food Hotline in a more visible and comprehensible manner within university environments may encourage students' more active participation in food safety processes.

The research findings demonstrate that food safety awareness among students does not exhibit a homogeneous structure but varies significantly according to socio-economic conditions and lifestyles. Although students in lower-income groups display a high perception of health risks, their rates of receiving food safety education remain low, highlighting the importance of free and accessible information tools tailored to this group. Short-term, practice-oriented information activities organized on university campuses or in dormitories may enhance access to technical knowledge for these students. Furthermore, the higher levels of awareness observed among students living in shared housing and those actively engaged in working life indicate that food safety awareness is reinforced through everyday practices. This finding suggests that applied, experience-based informational approaches that place students' own daily experiences at the center may be more effective than methods based solely on theoretical knowledge transfer.

Overall, this study demonstrates that food safety awareness exists among university students; however, this awareness requires further support in terms of depth, continuity, and transformation into behavior. Addressing food safety policies and educational strategies through targeted approaches that take into account students' living conditions and socio-economic differences will contribute to the development of a more durable and effective food safety awareness among young consumers.

Acknowledgment

REFERENCES

Açıkalın, B. (2019). Üniversite öğrencilerinin gıda güvenliğine yönelik bilgi, tutum ve davranışları [Yüksek lisans tezi]. Biruni Üniversitesi Sağlık Bilimleri Enstitüsü.

Akgül, A., & Çevik, O. (2003). İstatistiksel analiz teknikleri. Emek Ofset.

Başer, U., Kılıç, O., & Aydın Eryılmaz, G. (2022). Tüketicilerin gıda güvenliği bilinç düzeylerini etkileyen faktörler: Samsun ili örneği, Türkiye. Türkiye Tarımsal Araştırmalar Dergisi, 9(2), 239–244. https://doi.org/10.19159/tutad.1102254

Esin, E., & Kılınç, İ. (2025). Üniversite öğrencilerinin gıda etiketi okuryazarlık ve bilgi düzeylerinin incelenmesi. Journal of Engineering Sciences, 12(27), 478–497. https://doi.org/10.54365/adyumbd.1737503

Gözener, B., Sayılı, M., & Coşkun, F. (2009). Tüketicilerin gıda güvenliği konusundaki bilgi ve tutumlarının belirlenmesi. Atatürk Üniversitesi Ziraat Fakültesi Dergisi, 40(2), 123–131.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). Multivariate data analysis. Prentice Hall.

İncedal Sonkaya, Z., Karakaya, E., & Yıldız, F. (2018). Üniversite öğrencilerinin gıda güvenliği konusundaki bilgi ve farkındalık düzeyleri. Akademik Gıda, 16(3), 300–309.

İstanbullugil, F. R., Aydın, A., & Kılıç, O. (2019). Üniversite öğrencilerinin gıda güvenliği algısı ve bilinç düzeyleri. Türk Tarım ve Doğa Bilimleri Dergisi, 6(2), 245–253.

Kırmacı, B., & Özçelik, A. Ö. (2021). Tüketicilerin gıda güvenliği bilgi düzeyleri ve etiket okuma alışkanlıkları üzerine bir araştırma. Gıda, 46(3), 517–528.

Nakip, M. (2003). Pazarlama araştırmaları, teknikler ve (SPSS destekli) uygulamalar. Seçkin Yayıncılık.

Oğur, S. (2020). Bitlis'teki tüketicilerin gıda güvenliği ve gıda hijyeni konusundaki bilgi ve tutumları. BEÜ Fen Bilimleri Dergisi, 9(2), 780–796. https://doi.org/10.17798/bitlisfen.631281

Öztürk, D., Aydın Eryılmaz, G., & Kılıç, O. (2019). Öğrencilerin gıda güvenliğiyle ilgili bilinç düzeylerine göre tüketim davranışlarının belirlenmesi: Ordu Üniversitesi örneği. Turkish Journal of Agriculture – Food Science and Technology, 7(10), 1611–1617. https://doi.org/10.24925/turjaf.v7i10.1611-1617.2654

Palamutoğlu, M., Palamutoğlu, R., & Kasnak, C. (2021). Sağlık bilimleri fakültesi öğrencilerinin gıda okuryazarlığı ve gıda güvenliği konusundaki bilgi, tutum ve davranışlarının belirlenmesi. International Congress on Scientific Advances (ICONSAD'21) Bildiri Kitabı, 43–54.

Şanlıer, N., Adanur, E., Özata Uyar, G., Elibol, E., Beyaz Coşkun, A., Erdoğan, R., & Bozbaş, E. (2017). Gençlerin beslenme ve gıda güvenliğine ilişkin bilgi ve davranışlarının değerlendirilmesi. Kastamonu Eğitim Dergisi, 25(3), 941–956.

Yanğıç Yüksel, Ç., & Karagözlü, N. (2022). Tüketicilerin gıda güvenliği bilgi ve bilinçlerinin belirlenmesi: Ankara, Etimesgut örneği. Ege Üniversitesi Ziraat Fakültesi Dergisi, 59(4), 645–659. https://doi.org/10.20289/zfdergi.1121972