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Investigation of Factors Affecting Consumers' Purchase of Food Products: The Case of Hatay Mustafa Kemal University

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ABSTRACT

This study examines how the factors affecting the food purchasing preferences of university employees' and students differ according to personal and socio-economic variables based on increasing food security concerns due to global problems. In the study conducted with 220 participants in the 2022-2023 academic year, 14 criteria taken into account when purchasing food, and 7 issues of concern in terms of food safety were evaluated with a 5-point Likert scale. Data was analysed using an independent sample t-test and One-way ANOVA. Most participants (75%) are between the ages of 18-34, mostly single, and belong to the low-middle income group. Production and expiry dates, taste/flavour, freshness, hygiene and quality stand out in food purchasing preferences. Additives, genetically modified ingredients, chemical residues, and bacterial contamination are among the most important issues. It has been observed that participants make informed choices and are particularly sensitive to biological and chemical risks. It was observed that female respondents were more sensitive to the issues, and consumer sensitivity increased as income, education level and number of family members increased. Regarding settlements, individuals living in provincial and district centers make more conscious choices than in villages. Food safety and access should be improved through strategies that address the different needs of consumer groups. University and social media-based awareness campaigns for young people, specialized information for women, and nutrient-based products for the elderly should be offered. Subsidies, regional certifications and mobile markets for low-income groups should be supported. Label design should be clear and informative, offering single and family size product options. Provide access to information for consumers with different levels of education through appropriate digital and traditional content. Promote conscious consumption through food literacy and healthy living programs.

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Introduction

Scientific interest in food consumption has increased significantly in recent years due to its profound effects on the health and well-being of individuals and societies and its implications for the sustainability of local and global systems. Food purchases can be directly and indirectly related to household and consumer characteristics. While food purchasing habits can be dynamic and influenced by changing circumstances, much relevant research provides a snapshot of the issues studied within a single year or period or focuses on a particular social group or food product (Damari and Kissinger, 2024). Today, the health of individuals is significantly influenced by their consumption habits and behaviours. The COVID-19 pandemic, especially quarantine, has been shown to affect individuals' eating habits. It has been observed that consumers' food choices are influenced mainly by safety and health reasons (Sevim and Yalçın, 2022). Prices and quality have historically driven consumers' food purchasing behaviour. Today, food purchases are increasingly influenced by health concerns, ecological issues and even social costs (Cholette et al., 2013).

The main variables affecting food demand are nutritional needs, health, taste, ease of consumption, trust, similarity with reference group, prestige and environmental factors. It is possible to extend this list. These needs can also be ranked in Maslow's "Hierarchy of Needs" (Foxall and Goldsmith, 1988). Cultural, social and personal factors shape consumer preferences and purchasing decisions. Cultural factors can lead to the preference for or rejection of certain products, with consumer values, beliefs and traditions shaping food preferences. Social factors can influence consumer

behaviour through the influence of family, friends and society. For example, recommendations or comments prevalent on social media can influence consumers' decisions to purchase food products. Personal factors such as an individual's age, gender, economic status, and health consciousness guide food preferences, leading to purchasing decisions based on specific needs and preferences. Consumers also make purchasing decisions based on information about the value and trust brands offer. This information leads consumers to choose products that fit their daily lifestyles and health goals. With the combined effect of these factors, factors such as brand loyalty, product safety, price and quality become important in consumers' food purchasing behaviour. Variables affecting consumer demand for a product can be categorised under three main headings: product price, consumer income, consumer tastes and preferences. As consumer incomes increase, the influence of consumer tastes and preferences on their demand also increases. As the welfare levels of societies increase, the share of tastes and preferences in changes in consumption patterns is expected to increase more than changes in income and price.

In Turkey, the Turkish Food Codex Regulation has been prepared to ensure the safe use of food additives. However, unconscious use of food additives may pose health risks, necessitating effective control and consumer education. Today, food additives preserve the safety and freshness of foods, improve their taste and appearance and increase their shelf life. However, their potential adverse health effects should not be ignored. While food additives benefit the food industry, they also require toxicological assessments and toxicity testing. These additives include enhancing nutritional value, preventing microbiological spoilage, and improving physical structure and quality. Although food additives play an important role in the food industry, their use should be cautiously approached due to their potential adverse health effects. Addressing consumers' lack of knowledge about additives and continuously evaluating their health effects are critical for food safety.

The problems faced by consumers in food purchasing processes in Turkey vary in line with demographic characteristics and consumer priorities. Consumers in Turkey face various structural, economic and psychological barriers when purchasing food. In recent years, increases in food inflation and fraudulent products subject to imitation and adulteration in the food sector have forced consumers to make decisions. These problems include price fluctuations and low purchasing power due to inflation, food safety concerns, distrust of label information, accessibility of local products and logistics problems, especially in rural areas, lack of consumer information, awareness of healthy and sustainable product preferences, changing habits according to income, age, gender and family structure according to the effect of socio-demographic factors. Analyzing these problems can contribute to the creation of more equitable, accessible and sustainable policies in Turkey's food systems. In addition, an in-depth understanding of the determinants of consumer behavior can guide the promotion of domestic production and the development of food safety strategies.

The main objective of the study is to examine the informed decision-making behaviors of individuals with high levels of knowledge and awareness, such as university students and employees, in food selection processes and to develop improvement strategies for consumer preferences in this direction. In this context, the study aims to systematically analyze knowledge levels, awareness levels and existing prejudices regarding food additives. In line with the pioneering role of universities in the field of scientific production, education, and social development, it is envisaged that the findings of the study can both set an example for large segments of society and make a strategic contribution to sustainable development and social welfare. The data obtained in this direction will constitute an important resource that will serve to understand consumer behavior in more depth and inform the public about food safety.

Materials and Methods

Data Collection Method

The number of university students and staff was considered when determining the study's sample size. Hatay Mustafa Kemal University employs a total of 1,717 academic and administrative staff. This number consists of 1,041 academic staff and 676 administrative staff. There were 23,133 students at Hatay Mustafa Kemal University during the research period (2022-2023 Education Period). The research sample was calculated using Simple Random Sampling method (Neuman, 2014; Levy and Lemeshow, 2008). Simple Random Sampling is one of the most basic and fair sampling methods used in statistical research. In this method, each individual in a main mass has an equal probability of being selected for sampling and the selection is based entirely on chance.

$$n = \frac{N \times t^2 \times p \times q}{d^2 \times (N-1) + t^2 \times p \times q} \quad (1)$$

Inequality;

n: Number of individuals to be sampled,

N: The number of individuals in the population,

p: Frequency of the event to be examined,

q: Frequency of non-occurrence of the event to be investigated (1-p),

t: t table value at 95% confidence level (1.96),

d: Deviation from the mean according to the frequency of occurrence (5%).

$$n = \frac{24850 \times 1.96^2 \times 0.8 \times 0.2}{0.05^2 \times 24849 + 1.96^2 \times 0.8 \times 0.2} = 246$$

Care was taken to ensure that all academic and administrative units were equally represented in the study. It was deemed appropriate to select a sample of 1% of students and 10% of employees. Participants were randomly selected from the relevant academic and administrative units. Participation in the study was voluntary. The questionnaires were conducted face-to-face, and the participants were informed about the purpose of the study beforehand. Participants who provided incomplete or inconsistent information were excluded from the study. The sample size was 220, of which 117

were students, and 103 were employees and their relatives. The characteristics and purchasing behaviours of the participants were handled according to 4 groups formed according to their monthly income. When forming the income groups, the minimum wage and lower level was determined as the lower group (40%), while in the distribution of other income groups, according to the proportional distribution, the 2nd group was distributed as 30% and the 3rd and 4th groups as 15%. Income groups are as follows: 1: 15 thousand ₺/month and below; 2: 16-40 thousand ₺/month; 3: 41-60 thousand ₺/month; 4: 61 thousand ₺/month and above. Regarding age, respondents were categorised as 18-24, 25-34, 35-44 and 45 years and over. Family populations are categorised into four groups as: 1, 2-3, 4-5 and 6 or more people. Consumers' food purchasing considerations were scored on a 5-point Likert scale. In scoring, 1 is unimportant, and 5 is very important.

Data Analysis Method

Descriptive statistics were used to highlight the characteristics of the study sample. The socio-demographic characteristics of the participants were summarised in total, and percentages and classified according to gender, age, marital status, family population, education level, employment status and place of residence. Before the analysis, it was ensured that the data were normally distributed according to the skewness and kurtosis coefficients (-2.0 to +2.0 was accepted as the threshold) and by checking for outliers (-3.0 to +3.0 Z values). Questionnaires that did not meet these criteria were excluded from the evaluation (Montgomery & Runger, 2018; Newbold et al., 2009). In addition, the collected data were subjected to an Independent Sample t-test for variables with two factors and One-way ANOVA for variables with three or more factors to determine the relationships and connections between variables. In multiple comparisons between groups, Tukey and Scheffe tests were applied when the variances were considered equal, and Tamhane's T2 test was applied when the variances were not equal.

Results and Discussion

Consumers are not homogeneous; they have different socio-economic characteristics. Psychological, social, cultural and technological factors affect their purchasing behavior. Therefore, analyzing consumer subgroups in the light of these environmental factors is important for marketing and consumption strategies (Minh and Thi Quynh, 2024; Açıkalın, 2022; Kılıç et al., 2019; Şahin and Akballı, 2019).

The study analyses various characteristics of university staff and students in 4 different groups according to their monthly income in Table 1.

Table 1. Distribution of participants' characteristics according to income groups (1000 ₺/month)

Characteristics	Group 1		Group 2		Group 3		Group 4		General/Total	
	N	%	N	%	N	%	N	%	Σ	%
Income	88	40.0	63	28.6	34	15.5	35	15.9	220	100.0
Gender										
Female	43	19.6	25	11.4	19	8.6	13	5.9	100	45.5
Male	45	20.5	38	17.3	15	6.7	22	10.0	120	54.5
Age groups										
18-24	71	32.3	29	13.2	10	4.5	9	4.1	119	54.1
25-34	12	5.5	11	5.0	10	4.5	13	5.9	46	20.9
35-44	2	0.9	7	3.2	7	3.2	5	2.2	21	9.5
45 and above	3	1.4	16	7.3	7	3.2	8	3.6	34	15.5
Marital status										
Single	80	36.4	35	15.9	16	7.3	13	5.9	144	65.5
Married/divor./wid.	8	3.6	28	12.7	18	8.2	22	10.0	76	34.5
Education level										
Less than high school	4	1.8	12	5.5	5	2.3	2	0.9	23	10.5
High school	10	4.5	17	7.7	11	5.0	10	4.5	48	21.8
Associate degree	11	5.0	8	3.6	2	0.9	3	1.4	24	10.9
Undergraduate/grad.	63	28.6	26	11.8	16	7.3	20	9.1	125	56.8
Family population										
1	5	2.3	0	0.0	2	0.9	1	0.5	8	3.6
2-3	18	8.2	17	7.7	5	2.3	10	4.5	50	22.7
4-5	35	15.9	31	14.2	19	8.6	19	8.6	104	47.3
6 and above	30	13.6	15	6.8	8	3.6	5	2.3	58	26.3
Employment status										
Student	64	29.1	33	15.0	12	5.5	8	3.6	117	53.2
Employee	14	6.4	17	7.7	17	7.7	24	10.9	72	32.7
Others	10	4.5	13	5.9	5	2.3	3	1.4	31	14.1
Place of residence										
Province	33	15.0	26	11.8	14	6.4	18	8.2	91	41.4
District	34	15.5	26	11.8	18	8.2	15	6.8	93	42.3
Village/neighborhood	21	9.5	11	5.0	2	0.9	2	0.9	36	16.3

Income groups: 1: 15 thousand ₺ and below; 2: 16-40 thousand ₺; 3: 41-60 thousand ₺; 4: 61 thousand ₺ and above.

When the characteristics considered in the study are evaluated in general, it is seen that the majority of the participants are in the 1st and 2nd income groups (69%), In terms of age characteristics, participants between the ages of 17-34 are the majority (75%), singles are prominent in terms of marital status, university students are mostly between the ages of 18-25. The marriage rate is naturally lower in this age group. Those with bachelor's degree education are more than half, families of 4-5 people are in the majority in terms of family population, students (not working full-time) are in the majority in terms of employment status. At the same time, provincial and district centers are evenly distributed regarding settlements, while residence in villages or neighbourhoods is very low.

Various scientific studies have been conducted on the factors affecting consumers' food purchasing behaviour and concerns about food safety. According to the studies, consumers pay the most attention to the expiration date, the reliability of the product and its source. In addition, education level, income status, and information obtained from media sources play an important role in affecting their level of awareness about food safety. Comparative studies conducted in Turkey and European Union countries show that consumers' awareness of food safety has increased in Turkey, but it still has not reached a sufficient level. In European Union countries, it is stated that there is no direct relationship between the education and income status of consumers and their food safety awareness levels (Aydın Eryılmaz and Kılıç, 2020; Onurlubaş and Gürler, 2016). Multiple factors influence consumers' food purchasing decisions. Research shows that consumers attach great importance to product quality, price, nutritional value and sustainability. Especially in recent years, organic and local production concepts have become more preferred. However, consumers have some concerns about food safety. Factors such as food additives, pesticide residues, counterfeit products (counterfeit and adulterated products) and hygiene standards are serious causes of concern for conscious consumers.

The percentages, means and standard deviations of the scores of university students and staff regarding the issues that are important in food purchasing and that may be of concern in terms of food safety are presented in Table 2. Production and expiration dates ranked first with a mean score of 4.62 and is the most important issue that the consumers participating in the research attach importance to when purchasing food. Taste and flavor of food is ranked with a mean score of 4.54, freshness with a mean score of 4.48, processing and hygiene with a mean score of 4.40, safety of food with a mean score of 4.35 and quality with a mean score of 4.31. Consumers tend to make conscious choices when purchasing food, considering production and consumption dates, taste and flavor, freshness and hygiene. In terms of food safety, bacterial contamination (4.38), genetic modification (4.32), hormone/antibiotic/chemical residues (4.27) and additives (4.11) are the top four issues that consumers are concerned about when purchasing food. It can be said that consumers express biological and chemical residues in food products as the primary source of concern.

According to the findings, university students and staff make health and safety-oriented conscious choices in food purchasing decisions. In particular, production and expiration dates received the highest mean score, indicating that consumers attach importance to time-related parameters in terms of food freshness and safety. This is followed by sensory attributes such as taste and flavor and freshness, indicating that quality perception is shaped not only by technical criteria but also by consumer experience.

Table 2. Importance levels of the issues that consumers consider in food purchasing (%)

Variables	1	2	3	4	5	$\bar{X}$	SD
Scores of issues of importance in food purchasing							
S1. Date of production / expiry date	2.7	2.7	2.3	14.5	77.7	4.62	0.88
S2. Taste and flavor	2.3	0.5	4.1	27.7	65.5	4.54	0.80
S3. Freshness	1.8	1.8	7.3	25.0	64.1	4.48	0.85
S4. Handling and hygiene	1.8	3.2	7.7	27.7	59.5	4.40	0.90
S5. Safety of food	2.7	4.1	8.2	25.0	60.0	4.35	0.98
S6. Quality	1.8	5.0	7.3	31.8	54.5	4.31	0.94
S7. Non-contribution	5.0	5.5	16.4	31.8	41.4	3.99	1.12
S8. Price	5.9	8.6	10.0	33.6	41.8	3.97	1.18
S9. Nutritional value	2.7	10.0	15.0	36.8	35.5	3.92	1.07
S10. Food content	4.1	12.3	12.7	31.8	39.1	3.90	1.17
S11. Company and brand	7.3	10.9	16.8	21.8	43.2	3.83	1.29
S12. Production type	7.3	10.9	13.6	28.6	39.6	3.82	1.26
S13. Type of food	3.2	10.5	23.6	31.8	30.9	3.77	1.10
S14. Oil content	6.4	21.4	13.6	23.2	35.5	3.60	1.33
Scores of issues of concern in terms of food safety							
G1. Bacterial contamination	1.8	1.8	10.9	27.3	58.2	4.38	0.89
G2. Genetic modification	1.8	5.0	9.1	27.7	56.4	4.32	0.96
G3. Hormone/antibiotic/chemical residues	3.6	5.5	9.1	23.6	58.2	4.27	1.07
G4. Containing additives	4.1	5.9	15.0	24.5	50.5	4.11	1.12
G5. Fat/cholesterol content	7.3	12.3	13.6	28.6	38.2	3.78	1.27
G6. Being frozen	9.5	11.4	23.6	24.5	30.9	3.56	1.29
G7. Being irradiated	10.0	10.9	23.6	26.4	29.1	3.54	1.29

1: Not at all important; 2: Less important; 3: Undecided; 4: Important; 5: Very important; $\bar{X}$: Average, SD: Standard Deviation

Table 3. Differentiation of the issues that consumers consider in foods according to gender

Variables	Male		Female		P-Value
	$\bar{X}$	SD	$\bar{X}$	SD	
S2	4.40	0.844	4.70	0.704	0.005
S3	4.34	0.903	4.64	0.759	0.009
S4	4.29	0.956	4.53	0.810	0.050
S6	4.20	0.975	4.45	0.880	0.049
S9	3.75	1.110	4.13	0.991	0.009
S12	3.62	1.330	4.07	1.139	0.008
G1	4.25	0.998	4.54	0.702	0.015
G2	4.18	0.979	4.48	0.915	0.022
G3	4.13	1.112	4.45	0.999	0.025
G6	3.33	1.304	3.84	1.229	0.003
G7	3.34	1.369	3.77	1.145	0.014

Table 4. Differentiation of the issues that consumers consider in foods according to age groups

Groups	Age range	N	$\bar{X}$	SD	F	p	η^2	Significance
G5. Fat/cholesterol content					3.877	0.010	0.05	IV-I
I	17-24	119	3.60	1.310				
II	25-34	46	3.70	1.331				
III	35-44	21	4.05	1.071				
IV	45-+	34	4.38	0.985				

F: Calculated F value, η2: Effect size

In terms of food safety, issues such as bacterial contamination, genetic modification and chemical residues stand out with high scores, revealing that individuals develop sensitivity to biological and chemical risk factors and that these factors affect their purchasing behavior. Overall, these findings indicate that consumer behavior is shaped by both health consciousness and sensory preferences and provide important clues for food policies and producer strategies.

The differentiation of the issues that consumers consider in food purchasing according to gender is analysed in Table 3. Firstly, taste and flavour, freshness, processing and hygiene, quality, nutritional value and production method were statistically significantly different. It is seen that the mean values of female participants are higher in all these significant variables. It can be evaluated that female consumers are traditionally busier with food in Turkish society, and therefore, they stand out in terms of the variables found to be significant.

In the second section, which examined the differences in food safety concerns according to gender, bacterial contamination, genetic modification, hormone/antibiotic/chemical residues, frozen and irradiation were found to be significantly different. It is seen that the mean values of female consumers are higher in terms of all issues that are found to be significantly different. It is understood that female consumers are more sensitive to food safety issues and the issues considered in food purchasing. Studies on female consumers' food consumption and purchasing habits have revealed that they are more conscious and sensitive than men (Demir et al., 2022; Martinez-Perez et al., 2021; Özdemir, 2019).

In the comparison of the differences in the sensitivities of consumers in food purchasing according to age groups, it was determined that only the variable of fat/cholesterol content (G5) was significantly different according to age groups ($F_{(3-216)}$=3,877; p<0,010). The mean scores for fat/cholesterol content of food products in age groups were I: 3, II: 3.70, III: 4.05 and IV: 4.38. In the multiple comparisons between age groups, it was determined that the difference between groups I and IV was significantly different (Table 4). Generally, it can be said that the issues of importance in food purchasing and the issues of concern regarding food safety do not cause much difference among the participants regarding age groups. When previous studies are examined, it is determined that older generations are more careful in food purchasing than younger generations, mainly due to health concerns (Biletska et al., 2020; Sarı and Harta, 2018; Armağan, 2016; Bekar and Gövce, 2015).

The differences between the university staff and students whose opinions were taken in the study in terms of different income groups are presented in Table 5. According to the results, the differences between some groups in production/expiration dates, taste and flavour, quality, nutritional value and frozen status of food products were statistically significant. Although the effect values of the issues found to be significant according to income levels are at low levels, it can be said that being a conscious consumer increases as the income level increases among consumers in general.

Low-income groups consider price the most important criterion, while high-income groups may give more importance to quality and health factors. As income increases, the tendency towards organic and healthy foods increases. High-income consumers, especially, may prefer natural and sustainable products that do not contain additives. Middle- and high-income groups are more interested in local and regional products. Consumers may want to know the source of food and support local producers. As the income level increases, consumers may tend to read the packaging information more, and the rate of orientation towards known brands may increase (Damari and Kissenger, 2024; Sevim and Yalçın, 2022; Shen et al., 2021; Biletska et al., 2020; Ashraf et al., 2019; Eti İçli et al., 2016).

Table 5. Differentiation of the issues that consumers consider in foods according to income groups

Groups	Income range	N	$\bar{X}$	SD	F	p	η^2	Significance
S1. Production/expiry date					3.107	0.027	0.04	IV-I
I	15 thousand ₺ and below	88	4.42	1.080				
II	16-40 thousand ₺	63	4.70	0.796				
III	41-60 thousand ₺	34	4.68	0.768				
IV	61 thousand ₺ and above	35	4.91	0.284				
S2. Taste and flavor					3.320	0.021	0.04	III-II
I	15 thousand ₺ and below	88	4.49	0.816				IV-II
II	16-40 thousand ₺	63	4.35	0.986				
III	41-60 thousand ₺	34	4.76	0.496				
IV	61 thousand ₺ and above	35	4.77	0.426				
S6. Quality					3.178	0.012	0.05	IV-II
I	15 thousand ₺ and below	88	4.24	0.922				
II	16-40 thousand ₺	63	4.10	1.043				
III	41-60 thousand ₺	34	4.59	0.821				
IV	61 thousand ₺ and above	35	4.63	0.770				
S9. Nutritional value					2.930	0.035	0.04	IV-I
I	15 thousand ₺ and below	88	3.73	1.090				
II	16-40 thousand ₺	63	3.87	1.129				
III	41-60 thousand ₺	34	4.15	0.857				
IV	61 thousand ₺ and above	35	4.29	1.017				
G6. Being frozen					4.687	0.03	0.06	III-I
I	15 thousand ₺ and below	88	3.31	1.359				
II	16-40 thousand ₺	63	3.83	1.071				
III	41-60 thousand ₺	34	4.06	1.229				
IV	61 thousand ₺ and above	35	3.23	1.352				

Table 6. Differentiation of the issues that consumers consider in foods according to marital status

Variables	Married/Divorced/Widowed		Single		P-Value
	$\bar{X}$	SD	$\bar{X}$	SD	
S5	4.70	1.107	4.40	0.918	0.030
S6	4.24	1.089	4.74	0.857	0.019
G6	3.49	1.136	3.71	1.369	0.017

Table 6 presents the preferences categorized according to the marital status of the respondents whose food consumption preferences were considered. The price, fat/cholesterol content and frozen status of food products differed significantly between married and single consumers. Married/divorced/widowed individuals were found to be more sensitive in terms of price and fat/cholesterol content of food products, while single consumers were found to be more sensitive in terms of being frozen. However, no significant difference was observed between the marital status of the consumers and the other analyzed characteristics.

Research shows that individuals' lifestyles and socio-demographic characteristics shape their food consumption habits. For example, single individuals generally prefer foods that are more practical and can be consumed quickly, while married individuals or those who have a family may prefer products that are healthier and suitable for long-term nutrition plans. There is also evidence that married individuals make more conscious choices about organic food consumption. In addition, factors such as income level, age and education level may also affect food purchasing behaviours along with marital status. It has been observed that married individuals tend to tend towards more economical and nutritious foods in line with the family budget (O'Neill et al., 2023; Martinez-Perez et al., 2021; Eti İçli et al., 2016; Bekar and Gövce, 2015).

The issues consumers consider in food consumption according to their education level are given in Table 7, and among the statistically significant issues were taste and flavour, food safety, quality, and additives. In general, it was determined that there was an increase in sensitivity to the issues examined according to the level of education.

Education level significantly impacts consumers' food purchasing and conscious consumption habits. Research shows that awareness of food safety and healthy nutrition increases with higher levels of education. For example, individuals with higher levels of education tend to read food labels more carefully, check expiration dates and prefer reliable food sources. In addition, consumers' sources of food safety information also change with increasing educational attainment. While more educated individuals obtain information from the internet and academic sources, individuals with lower education levels are influenced by traditional media such as television and radio (Thompson et al., 2024; Öztürk et al., 2019; Dayılar, 2018; Salazar-Ordóñez et al., 2018; Onurlubaş and Gürler, 2016).

Table 7. Differentiation of the issues that consumers consider in foods according to educational status

Groups	Education level	N	$\bar{X}$	SD	F	p	η^2	Significance
S2. Taste and flavour					4.514	0.004	0.06	III-I
I	Less than high school	23	4.00	1.314				III-II
II	High school	48	4.50	0.799				IV-I
III	Associate degree	24	4.71	0.464				
IV	Undergrad. /Graduate	125	4.62	0.681				
S5. Food safety					3.403	0.014	0.05	III-I
I	Less than high school	23	3.78	1.380				IV-I
II	High school	48	4.27	1.086				
III	Associate degree	24	4.58	0.654				
IV	Undergrad. /Graduate	125	4.45	0.875				
S6. Quality					3.655	0.013	0.05	IV-I
I	Less than high school	23	3.83	1.267				
II	High school	48	4.17	1.173				
III	Associate degree	24	4.29	0.690				
IV	Undergrad. /Graduate	125	4.46	0.768				
G4. Containing additives					4.529	0.004	0.06	III-II
I	Less than high school	23	4.30	1.105				V-II
II	High school	48	3.65	1.296				
III	Associate degree	24	4.54	0.779				
IV	Undergrad. /Graduate	125	4.18	1.055				

Table 8. Differentiation of the issues that consumers consider in foods according to family population

Groups	Family population	N	$\bar{X}$	SD	F	p	η^2	Significance
S1. Production/expiry date					6.692	0.001	0.09	I-II
I	1	8	4.88	0.354				III-II
II	2-3	50	4.22	1.234				III-IV
III	4-5	104	4.85	0.436				
IV	6-+	58	4.52	1.030				
S3. Freshness					4.561	0.004	0.06	III-II
I	1	8	4.63	0.518				
II	2-3	50	4.10	1.182				
III	4-5	104	4.62	0.628				
IV	6-+	58	4.53	0.821				
S4. Processing and hygiene					3.503	0.016	0.05	III-II
I	1	8	4.25	0.886				
II	2-3	50	4.06	1.018				
III	4-5	104	4.54	0.762				
IV	6-+	58	4.47	0.959				
S5. Food safety					2.825	0.040	0.04	I-II
I	1	8	4.88	0.354				
II	2-3	50	4.04	1.142				
III	4-5	104	4.44	0.984				
IV	6-+	58	4.40	0.836				
S6. Quality					2.779	0.042	0.04	III-II
I	1	8	4.50	0.756				
II	2-3	50	4.00	1.195				
III	4-5	104	4.45	0.799				
IV	6-+	58	4.31	0.902				
S10. Food content					2.810	0.041	0.04	IV-II
I	1	8	3.63	1.302				
II	2-3	50	3.56	1.264				
III	4-5	104	3.91	1.183				
IV	6-+	58	4.19	0.982				
S12. Production type					4.654	0.004	0.06	III-II
I	1	8	3.50	1.195				
II	2-3	50	3.32	1.477				
III	4-5	104	4.10	1.111				
IV	6-+	58	3.81	1.221				

In this study, which included university employees and students, when the differentiation of the issues that the participants took into consideration in food consumption according to their family population was examined, the production and expiry dates of food products, freshness, processing and hygiene, food safety, quality, food content and production method were found to be statistically significantly different between the groups (Table 8). According to the general analysis of the results, the sensitivity to the analysed issues increased as the number of family members increased. In other words, it can be said that more attention is paid to various features of food products in crowded family groups.

Various factors shape consumers' food preferences according to family size. Family size, income level, age distribution and eating habits can determine consumers' food choices. Large families usually try to gain cost advantages by making bulk purchases. Low-income families may prefer products with a high price-performance ratio. Families with children prioritise nutritious and healthy foods, while families with elderly individuals may prefer easily digestible and low-calorie products. As the family population increases, more conscious choices can be made about food safety. In particular, families consuming traditional foods may consider factors such as place of production, processing and packaging. Large families may prefer durable and long-lasting products to avoid food waste. Small families may have more diverse and specialised eating habits (Garai-Fodor et al., 2022; Shen et al., 2021; Demir et al., 2020; Taştan et al., 2014; Madenci et al., 2019).

Table 9 analyzes the differentiation of the factors that respondents consider when purchasing food according to their employment status. There is no statistical difference in most of the factors that consumers consider when purchasing food according to their employment status. It is noteworthy that university employees are more sensitive to the nutritional value of foods than students.

Working individuals tend to prefer practical and fast-consuming products, while those who spend more time at home may prefer meals that require more time. Research shows that income level, occupational group and working hours shape consumers' food choices. Busy working individuals are more likely to prefer convenience foods and packaged products, while those with flexible working hours may prefer meals prepared at home. Lifestyle and socio-economic factors are among the important factors determining consumers' food purchasing behaviour (De Bauw et al., 2022; İnan et al., 2021; Li et al., 2021; Eti İçli et al., 2016; Bekar and Gövce, 2015).

Table 10 shows the differentiation of the issues considered in food purchasing according to the last characteristic of the consumers analysed, which is their place of residence. Statistically, the importance levels of consumers in terms of production and expiration dates, prices, nutritional values, and food types of food products were found to be different between the settlements. According to multiple comparisons, it can be said that consumers residing in provincial and district centers are generally more sensitive than those residing in villages or neighbourhoods in terms of the issues examined.

Table 9. Differentiation of the issues that consumers consider in foods according to employment status

Groups	Employment status	N	$\bar{X}$	SD	F	p	η^2	Significance
S9. Nutritional value					2.202	0.013	0.06	II-I
I	Student	117	3.82	1.111				II-IIII
II	Employee	72	4.14	0.924				
III	Others	31	3.81	1.195				
G6. Being frozen					4.091	0.018	0.06	III-I
I	Student	117	3.49	1.311				III-II
I	Employee	72	3.42	1.308				
II	Others	31	4.16	1.036				

Table 10. Differentiation of the issues that consumers consider in foods according to the place of residence

Groups	Place of settlement	N	$\bar{X}$	SD	F	p	η^2	Significance
S1. Production/expiry date					3.654	0.027	0.03	II-III
I	Province	91	4.59	0.882				
II	District	93	4.76	0.682				
III	Village/neighborhood	36	4.31	1.215				
S8. Price					3.674	0.027	0.03	I-II
I	Province	91	4.21	1.049				
II	District	93	3.74	1.259				
III	Village/neighborhood	36	3.94	1.218				
S9. Nutritional value					5.767	0.004	0.05	I-III
I	Province	91	3.98	0.943				II-III
II	District	93	4.08	1.086				
III	Village/neighborhood	36	3.39	1.202				
S13. Food variety					6.438	0.002	0.06	I-III
I	Province	91	3.98	0.989				II-III
II	District	93	3.77	1.124				
III	Village/neighborhood	36	3.22	1.124				

Significant differences between rural and urban areas regarding access and consumer behaviour can be seen. In rural areas, consumers often turn to local markets and direct producers, while supermarkets and chain stores are more common in cities. This also affects the perception of product diversity and price. As income levels are generally higher in cities, consumers are more inclined towards processed or imported products, whereas in rural areas, staple foods and local products are more preferred. Local cuisine culture, traditional consumption habits and family structure also shape purchasing decisions. For example, rural households with large families tend to buy in bulk, while city dwellers may prefer smaller portions. Urban consumers have access to more information through digital platforms and advertisements. This affects brand preference and product selection.

Consumers living in urban areas generally have higher levels of education, and they may be more sensitive to issues such as organic products, sustainability and food safety (Peulić et al., 2023; Eti İçli et al., 2016).

Conclusion

Today, global disruptions such as climate change, migrations, wars and epidemics are causing disruptions in the food supply chain, which has become a source of greater concern for food safety and security among consumers. This study examined the differentiation of some factors known to be considered in the purchase of food products by university staff and students according to various personal and socio-economic variables. Based on the assumption that university students and staff have better knowledge and awareness levels than other segments of society, it is assumed that their preferences and behaviours when purchasing food products will set an example.

Research findings reveal that a sample of young, educated, and mostly single individuals, such as university students and academic staff, exhibit a high degree of health- and quality-oriented preferences in their food purchasing behavior. Although the majority of respondents are from the low-income group, they attach high importance to criteria such as production and expiry dates, taste and aroma, freshness, hygiene, and food safety. This shows that consumers tend to make informed choices and that time-related parameters especially shape the perception of food safety. The fact that female participants attach more importance to quality and health-oriented variables in food purchasing decisions can be interpreted in the context of gender roles and the traditional distribution of responsibilities. In addition, the fact that significant differences were found between age groups, especially in sensitivity to fat/cholesterol content, supports that health concerns increase with age. The fact that differences based on income level were significant with a low effect size indicates that higher income levels may increase the level of awareness in food selection, but this relationship is limited. In general, consumer behavior is shaped by both health awareness and sensory preferences, and increased sensitivity to biological and chemical risk factors requires a reconsideration of food policies and producer strategies. Research findings show that the relationships between consumer preferences and socio-demographic characteristics are evident. As income level increases, price orientation decreases, and the orientation towards quality, health, and sustainability criteria strengthens. Higher income groups are more interested in organic and natural products and tend to prefer locally sourced foods and well-known brands. Married, divorced, or widowed individuals show higher sensitivity to price and fat/cholesterol content when purchasing food, while single consumers give more importance to frozen products. No significant differences were observed between married and single groups in terms of other criteria. As the level of education increases, sensitivity to taste, food safety, quality, and additives increases; label reading habits and the rate of consulting scientific sources increase. Consumers with lower levels of education rely on traditional media tools. As the family population increases, the importance given to criteria such as expiry date, freshness, hygiene, quality, ingredients and production method increases. While crowded families are generally looking for cost advantages by buying in bulk, they tend towards products that offer durability and long shelf life to prevent food waste. The findings reveal that consumers do not differ in most purchasing criteria based on employment status, but university employees have a higher sensitivity to nutritional value compared to students. While working individuals prefer products that are practical and can be consumed quickly, groups with more flexible working hours or longer periods of time spent at home choose meals that require more time to prepare at home. This shows the decisive role of lifestyle and socio-economic factors in food preferences. In terms of place of residence, it was found that consumers living in provincial and district centers attach more importance to factors such as production/end date, price, nutritional value, and food type than those living in rural areas. While consumers in rural areas are in close contact with local markets and direct producers, the urban population has easier access to chain markets and processed products. The tendency to access information and make brand preferences through digital platforms is also higher in cities.

Although young consumers are sensitive to health and safety issues, campaigns to increase their knowledge, effectively communicate risks, and change behavior are important, especially through universities and social media. The importance attached to production and expiry dates necessitates clear and visible label design and information on sensory quality elements such as taste, aroma, and freshness. Women's more careful food choices should support women-focused information and marketing activities. It is crucial to develop accessible, safe, and nutritious food policies for low-income groups. Older consumers' sensitivity to nutritional criteria, such as cholesterol and fat, should be met with information content and product categories specific to this group. Seminars and digital guides on budget-friendly and nutritious products can be prepared in response to consumer needs that vary according to income level. Academic content should be provided for the highly educated, while access for the less educated should be provided through radio, TV, and local events. Label designs should be simple, clear, and communicate nutritional value, additives, and origin. Practical, single-serving packs for single consumers and economical, durable products for large families can be recommended. A price-performance product range should

be created for low-income groups, while organic, additive-free, and locally produced certified products should be marketed for middle and high-income groups. Access to nutritious food for low-income families can be increased through various subsidies and support practices. Regional certification programs and public markets would be useful in building safe food networks that support both producers and consumers. Food literacy seminars should be organized in universities and workplace canteens, and modular training content on food safety, label reading, and quality should be made available digitally. Promote practical, nutritious snacks for employees and durable, packaged local products in rural markets. Cooperatives and mobile markets can bring producers and consumers together directly. "Local market corners" can be set up in city centers to offer products tailored to consumer preferences. Cold chain and logistics infrastructure should be supported in rural markets; "healthy life promotion programs" should be initiated through universities and workplaces. Periodic surveys and field studies should be conducted to monitor residential and employment-based consumer habits; targeted flexible strategies should be developed with the data obtained.

Declarations

Ethical Approval Certificate

Hatay Mustafa Kemal University Social Sciences and Humanities Scientific Research and Publication Ethics Committee (Approval date and number: 14.01.2022, 21817443-050.99-02).

Conflict of Interest

"The author declares no conflict of interest."

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