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Consumers' Perception of Animal Welfare in the West Aegean Region, Türkiye

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ABSTRACT

This research was conducted to examine consumers' perceptions of the West Aegean region regarding animal welfare. The Animal Welfare Perception Scale consisted of 5 extents and a total of 52 items, including housing, feeding, personnel, health, and other conditions. The participants comprised 415 consumers over 18 years of age in İzmir and Aydın City centers and districts. The animal welfare perception scale was applied to consumers who decided to participate in the study face-to-face. It was founded that the West Aegean region's consumers perceived animal welfare positively and associated the animal welfare concept with animal health, ethical values, natural food, and food safety and quality. These findings revealed that the consumers' knowledge, opinion and awareness were in parallel with the basic welfare needs of the animals. However, the consumers had insufficient knowledge about animal welfare and the effects of animal breeding methods practiced in intensive production systems on farm animal welfare. One-third of consumers declared they wanted to buy products produced under animal welfare standards and were willing to pay more. The perception of animal welfare was influenced by consumers' gender, educational background, companion animal ownership, food-label reading behaviour, and willingness to pay. It was concluded that the West Aegean region's consumers perceive animal welfare as very important, and the proportions of consumers who demand welfare-friendly products and are willing to pay more could be increased with increased knowledge of animal welfare.

Key Words: Animal welfare, Consumer, Perception, Turkiye, West Aegean Region

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Batı Ege Bölgesi'ndeki Tüketicilerin Hayvan Refahı Algısı

ÖZ

Bu araştırma Batı Ege bölgesindeki tüketicilerin hayvan refahına ilişkin algısının incelenmesi amacıyla yapılmıştır. Hayvan Refahı Algı Ölçeği barındırma, besleme, personel, hayvan sağlığı ve diğer şartları içeren 5 boyut ve toplam 52 adet maddeden oluşmuştur. Araştırmanın evrenini İzmir ve Aydın İl Merkezleri ile bağlı ilçelerde bulunan ve 18 yaş üzerindeki toplam 415 tüketici oluşturmuştur. Araştırmaya katılmayı kabul eden tüketicilere Hayvan Refahı Algı Ölçeği yüz yüze uygulanmıştır. Batı Ege bölgesi tüketicilerinin hayvan refahını pozitif algıladıkları ve hayvan refahı kavramını hayvan sağlığı, etik değerler, doğal gıda ve gıda güvenliği ve kalitesi ile ilişkilendirdikleri belirlenmiştir. Bu bulgular tüketicilerin bilgi, düşünce ve farkındalık durumlarının hayvanların temel refah gereksinimleri ile paralellik gösterdiğini ortaya koymuştur. Bununla birlikte, tüketicilerin hayvan refahı ve yoğun üretim sistemlerinde uygulanan hayvan ıslahı yöntemlerinin çiftlik hayvanlarının refahına etkisi konularındaki bilgisinin yetersiz olduğu görülmüştür. Tüketicilerin üçte birisi hayvan refahı standartları altında üretilen ürünleri satın almak istediğini ve daha fazla ödemeye gönüllü olduğunu beyan etmiştir. Hayvan refahı algısı, tüketicilerin cinsiyeti, eğitim seviyesi, evcil hayvan sahipliği, gıda etiketi okuma davranışı ve ödeme istekliliği ile etkilenmiştir. Batı Ege bölgesi tüketicilerinin hayvan refahını çok önemli olarak algıladıkları ve hayvan refahı bilgisi arttıkça refah-dostu ürünlere talep yapan ve yüksek ödemeye gönüllü olan tüketicilerin oranının artabileceği sonucuna varılmıştır.

Anahtar kelimeler: Algı, Batı Ege bölgesi, Hayvan refahı, Tüketici, Türkiye

INTRODUCTION

Food safety is a high topic on the global policy agenda, and the impact of animal welfare on the food chain is increasing. The most important reasons for this trend are that intensive production systems cause high stress on animals (Blokhuis et al. 2008, Oltenacu and Broom 2010), healthier and quality foods are obtained from farm animals raised under high welfare standards, and increased consumer concern about healthy food (Blokhuis et al. 2008).

As a general concept, animal welfare is the ability of an animal to adapt to its environment without being forced (Broom 1991). According to other definition of animal welfare provided by the World Organization for Animal Health (OIE), an animal is in a good state of welfare if it is healthy, comfortable, well-fed, safe, able to express innate behaviours, and does not experience negative feelings such as pain, fear, and distress (Vapnek and Chapman 2010). Animal welfare reflects the animal's physical and mental health and well-being (Alonso et al. 2020). In this context, the World Organization for Animal Health (OIE) has been conducting policies that take into account the critical relationship between animal health and animal welfare since 2003. This actions has encouraged risk managers and legislators in the food chain to integrate animal health, animal welfare and food safety a legal framework in an integrative way (Blokhuis et al. 2008, Fernandes et al. 2021). Nowadays, efforts to develop sustainable animal production strategies and environment-friendly and animal-friendly production policies are rising. Food producers and public authorities adopt the application of high animal welfare standards in order to reduce the loss of confidence in intensive production systems and eliminate consumer concerns, and establish a traceability policy to withdraw related products from the market when necessary (Henry et al. 2018, Garnett et al. 2013, Pettitt 2001). In this context, legal infrastructure and sectoral practices related to animal welfare assurance schemes and animal-friendly food certifications in the food industry are being completed rapidly (Pettitt 2001). To prevent consumer concerns from causing a consumption crisis, food manufacturers began to take the management initiative in the food chain to ensure high standards that could be proven through auditing and thus gain a commercial advantage (Blokhuis et al. 2008, Pettitt 2001).

In the last 30 years, global health risks such as BSE, A (H7N9), Salmonella, and the horsemeat scandal have drawn attention to food quality and safety and have caused loss of confidence of consumers in the food supply (Pettitt 2001). Many consumers, who attach importance to various quality parameters of food, are increasingly giving importance to animal welfare quality parameters. They believe that animal-friendly food products are healthier, better quality,

tastier, cleaner, traditional, and eco-friendly (Alonso et al., 2020). This approach reveals that consumers are also interested in the welfare of animals. They want to ensure that the food products satisfy all the criteria covered by good animal welfare (Blokhuis et al. 2008, Miranda-de la Lama et al. 2019). To measure and assess the welfare of animals on the farm level and to manage potential risks to meet societal concerns and market demands, efforts are ongoing to develop practical welfare improvement strategies and reliable on-farm monitoring systems. It is crucial to determine what information consumers want about final products because there is a need to establish an intensive dialogue with all segments of society on animal welfare issues and develop effective communication strategies to communicate animal welfare standards to the public (Blokhuis et al. 2003). However, it is also seen that consumers' knowledge of animal welfare is relatively low, their concerns are not evenly distributed across all livestock species, and there is no clear consistency in their willingness to pay more for higher animal welfare (Alonso et al. 2020). In these circumstances, information on consumers' opinions on animal welfare is needed so that consumers' concerns about farm animal welfare do not drive them not to purchase products produced in intensive production systems and so that farmers and the food chain's actors can construct informed decisions. Many studies examining the opinions, concerns, preferences, and perceptions of consumers regarding animal welfare were conducted in the EU (Nocella et al. 2010), Japan (Derstappen and Christoph-Schulz 2022, Kitano et al. 2022), USA (McKendree et al. 2014), Poland, Italy, and South Korea (Derstappen and Christoph-Schulz 2022) and China (Carnovale et al. 2021). In Turkiye, conducting negotiations with the EU for full membership, EU legislation related to animal welfare at the farm level and during transport has already been transposed. Still, there is an urgent need to analyze consumer approaches that will set light on developing strategic policies regarding animal welfare in the food sector. There are very few studies on the opinions, perceptions, and attitudes of Turkish farmers and consumers regarding animal welfare (Çelik and Bozkurt 2016, Kılıç and Bozkurt 2020, Sarıal and Bozkurt 2020). However, it was reported that consumer perception could be affected by demographics and the residential region of consumers (Dimitri and Dettmann, 2012).

Studies examining the effect of geographic regions on animal welfare perception are pretty limited. Results regarding the consumers' animal welfare perception living in the West Aegean region (İzmir, Aydın, Muğla), one of the regions with the highest population and animal food consumption could provide valuable information on sustainable animal production models to be developed in Türkiye. This research was conducted to

examine consumer perceptions about animal welfare in the West Aegean region of Turkiye.

MATERIAL AND METHOD

The research data were collected using the field survey method. For this purpose, a questionnaire consisting of two parts was used. In the first part of the questionnaire, there were questions that demonstrated the consumers' demographic and individual characteristics that may affect their animal welfare perceptions. In this part, questions were asked to the consumers regarding the status of having a child and companion animal ownership, monthly income, occupation, residential area, animal welfare knowledge, the habit of food-label reading, and frequency of animal food consumption. They were subsequently asked how much more they are willing to pay to purchase food produced under high animal welfare standards. The second part of the questionnaire involved the Animal Welfare Perception Scale on factors affecting animal welfare developed by Kılıç and Bozkurt (2014).

The Animal Welfare Perception Scale consists of 5 extents and 52 items in total: housing conditions (11 items), feeding conditions (6 items), personnel conditions (7 items), health conditions (15 items), and other conditions (13 items). Consumers marked their opinions on the effect of each of these extents on animal welfare by choosing among the options (1: No impact at all, 2: Slight impacts, 3: Moderate impacts, 4: Strong impacts, 5: Extreme impacts) prepared with the 5-point Likert system. The research population consisted of consumers over the age of 18 in İzmir and Aydın city centers and their districts. After the content and purpose of the research were explained, face to face, the animal welfare perception scale was applied to the consumers who agreed to participate in the research. In the study, sampling was used due to limitations such as time and cost. The following formula was used, employing the stratified sampling method to represent groups of different ages, education, marital status, and gender. The formula (N>10.000) suggested by Sekaran (2003), for quantitative research and infinite universes was used to calculate the minimum sample size.

n = S2. Zα2 / d2

In the formula;

S (standard deviation) = 1,

Zα2= 1.96 (corresponding theoretical value for significance level α = 0.05)

D= 0.1 (effect size) were used as parameters, and the minimum sample size was calculated as 384. Considering that some questionnaires may be excluded due to incomplete, inaccurate, or low reliability, 550 questionnaires were printed, 415 were evaluated as reliable, and statistical analyses were made on 415 questionnaires in the research. The Animal Ethics Committee of Afyon Kocatepe University approved this study with decision number AKUHADYEK-87-18.

Statistical Analysis

The demographic characteristics were presented with frequency, and the scale items were described with frequency percentage distributions, arithmetic mean, and standard deviation values. In addition, Cronbach's alpha coefficients for the perception scale and its sub-extents were calculated for the reliability analysis of the characteristics. After that, t-tests for two groups (independent samples) and One-way-ANOVA were used for more than two groups to compare consumers' perceptions toward animal welfare according to individual characteristics. The data obtained from the consumers were analyzed with the SPSS 21st version package program. 0.05 was taken for the significance level (Ural and Kılıç 2013).

RESULTS

Descriptive statistics of consumers' perceptions regarding the impact of housing conditions on animal welfare are given in Table 1. Consumers exhibited the lowest participation in items "Barn emergency planning for animals to provision against disasters" ($\bar{x}$=3.80), "Barn lighting" ($\bar{x}$=3.96), and "Barn floor surfaces' characteristics" ($\bar{x}$=3.99) related to the impact of housing conditions on animal welfare. The highest participations of consumers for this sub-extent were in items "Barn temperature" ($\bar{x}$=4.50), "Barn ventilation system and indoor air quality"($\bar{x}$=4.44), "Barn humidity" ($\bar{x}$=4.44), and "Barn cleaning" ($\bar{x}$=4.41).

The results on consumers' perception of the impact of feeding conditions on animal welfare are given in Table 2. The consumers participated at the lowest rates for the items "Early weaning of young animals" ($\bar{x}$=4.03), "The physical conditions provided to the animals during feeding" ($\bar{x}$=4.13), and "The characteristics of the vegetation in the pasture" ($\bar{x}$=4.13). The items with the highest participation rate were respectively, "The size of the pasture where the animals are grazed" ($\bar{x}$=4.38) and "The feed characteristics that animals are fed" ($\bar{x}$=4.32).

The descriptive statistics on consumers' perception of the impact of personnel conditions on animal welfare are shown in Table 3. The highest participation rates of the consumers were related to the items "The behaviours of animal carers or farmers toward animals" ($\bar{x}$=4.38) and "Personnel's happiness and job satisfaction" ($\bar{x}$=4.21), and the lowest participation rates were determined for the item " Gender of the personnel" ($\bar{x}$=2.71) and "Education level of the animal carers or farmers" ($\bar{x}$=3.35).

The obtained results on the effects of health conditions on animal welfare are provided in Table 4. The participants scored the highest on the items "Pain and suffering of animals due to their illness" ($\bar{x}$=4.42), "Stress and exhaustion in the animals" ($\bar{x}$

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=4.40), "The happiness of the animals" ($\bar{x}$=4.38), "Slaughtering conditions in the abattoir" ($\bar{x}$=4.37), and "Violence against animals" ($\bar{x}$=4.34). Their lowest scores were for the items "Cutting ears, tails, claws, nails, beaks, wings and fingers of animals" ($\bar{x}$=3.68), "Castration (for cat, dog, horse, bull, etc.)" ($\bar{x}$=3.68) and "Culling (killing) sick animals)" ($\bar{x}$=3.81).

The descriptive statistics on the effects of other conditions on animal welfare are delivered in Table 5. The highest consumer participation rates were for the items "Climatic conditions" ($\bar{x}$=4.41), "Touching animals (stroking, hugging)" ($\bar{x}$=4.31), "Conditions that frighten animals" ($\bar{x}$=4.23), and "The state of animal feels safe" ($\bar{x}$=4.20). In contrast, the items "Abandoning animals on the streets (cats, dogs, etc.)"($\bar{x}$=3.73) and "Giving names to animals" ($\bar{x}$=3.95) received the lowest scores from the consumers.

The Cronbach's Alpha coefficient for the animal welfare perception scale was determined as 0.988. The Cronbach's Alpha coefficients of the housing, feeding, personnel, health, and other conditions sub-extents of the scale were 0.954; 0.955; 0.853; 0.966 and 0.957 respectively (Table 6). The findings on the effects of consumers' demographic and individual characteristics on their animal welfare perception are shown in Table 7. The consumers' perception of animal welfare was affected ($p < 0.05$) by gender, educational background, companion animal ownership, food-label reading behaviour, and willingness to pay more for animal-friendly foods. However, age, marital status, number of children, occupation, monthly income, residential area, animal welfare knowledge, and frequency of animal food consumption did not significantly affect consumers' animal welfare perception.

DISCUSSION

According to the consumers who participated in the survey, the climatic conditions (temperature, humidity, air quality), equipment, farm cleanliness, and housing density (crowded housing of the animals) affect the welfare of the animals. In light of these findings, it was seen that consumers have a perception that housing conditions affect animal welfare. According to them, the comfort inside the farm (cleanliness, quality air, comfort-enhancing equipment, adequate resting area) had the most potential to affect the welfare of the animals. This view is accurate because housing comfort straight affects animal welfare (Grandin 2017, Kaplan et al. 2018).The consumers thought that the floor characteristics of the animal barn, the lighting inside the barn, the noise, or the measures to be taken to protect the barn against natural disasters would affect the animal welfare relatively less. However, unsuitable or wet floors may cause animals to slide, inappropriate lighting may cause developmental delay

and reproductive problems, or natural disasters may cause the death of animals (Waiblinger 2009).

Consumers in the study thought that animal welfare was most affected by nutritional conditions (quality of feed, water and equipment, grazing capacity, and early weaning). In other words, consumers were aware that good animal feeding would support the health and well-being of the animals and positively affect the quantity and quality of animal products. This result was not surprising because the relationship between feeding and health, fitness, and positive emotions involves a fundamental biological dialectic. Broom (2010) reported that low welfare decreases animal health and vitality. Napolitano et al. (2008) reported that lambs weaned at an early age and separated from their mothers experience nutritional deficiencies, adversely affecting their development. Various functions of these lambs are significantly damaged. In addition, consumers agreed with the judgment that grazing animals on large pastures would improve animal welfare. However, only pasture-based feeding may not meet the daily nutritional needs of especially high-yielding farm animals (Knaus 2016). These findings showed that consumers think traditional and natural animal husbandry conditions increase animal welfare more than intensive animal production systems (mainly carried out in closed barns). They may have thought that keeping animals in captivity would negatively affect their health and emotions. The reason for their high participation in the judgment regarding the grazing impact may be based on their view that the quality of the air and rest in the barn are poor and adversely affects animal welfare. These findings show that consumers perceive that animals grazing on large pastures will be happier and healthier if fed with natural and quality plants, breathe fresh air, and are not restricted. Spooner et al. (2014) reported that the citizens in their research mostly associate animal welfare with a positive emotional state and access to natural living conditions. Also, Clark et al. (2016) reported that people think that naturalness and humane treatment of animals is central to good animal welfare. Similar results are also seen in consumer perception and attitude towards organic products where pasture grazing is mandatory. Miele (2010) stated that it is widely believed that organic production systems provide positive animal welfare. Sutherland et al. (2013) stated that one of the most important reasons for the worldwide demand for food products grown under organic principles is the high level of welfare provided to farm animals in this method of production. Soroka and Wojciechowska-Solis (2019) also determined that Polish consumers think organic foods contain fewer harmful substances and are healthier.

Table 1. Descriptive statistics related to housing condition extent of the animal welfare perception scale

Items	Effect level (%)					$\bar{x}$	SD
	1	2	3	4	5		
The barn dimensions and the living area allocated per animal in the barn (sufficient or crowded, etc.)	5.3	5.5	12.5	9.4	67.3	4.28	1.19
Barn cleaning	5.3	5.5	3.6	14.2	71.4	4.41	1.13
Barn ventilation system and indoor air quality	5.3	5.5	3.6	11.1	74.5	4.44	1.14
Barn temperature	5.3	5.5	3.6	5.3	80.3	4.50	1.14
Barn humidity	5.3	5.5	3.6	11.3	74.3	4.44	1.14
Barn equipment	5.3	5.5	3.6	28.0	57.6	4.27	1.11
Barn lighting	5.5	8.9	14.2	26.5	44.9	3.96	1.20
Barn isolation	5.5	5.3	17.8	23.1	48.3	4.03	1.17
The noise level in the barn	5.5	8.9	14.2	22.7	48.7	4.00	1.22
Barn floor surfaces' characteristics	8.9	8.4	14.7	11.1	56.9	3.99	1.36
Barn emergency planning for animals to provision against disasters(warning system, alarm, evacuation, etc.)	8.9	8.4	21.9	15.2	45.6	3.80	1.33

Table 2. Descriptive statistics related to feeding condition extent of the animal welfare perception scale

Items	Effect level (%)					$\bar{x}$	SD
	1	2	3	4	5		
The feed characteristics that animals are fed	5.5	5.3	12.5	4.8	71.9	4.32	1.21
The drinking water characteristics that animals are given	5.5	5.3	3.6	25.8	59.8	4.29	1.12
The physical conditions provided to the animals during feeding	8.9	5.5	8.9	16.6	60.1	4.13	1.30
The size of the pasture where the animals are grazed	5.5	5.3	3.6	16.6	69.0	4.38	1.14
The characteristics of the vegetation in the pasture	5.3	5.5	12.5	24.1	52.6	4.13	1.16
Early weaning of young animals	5.5	5.3	16.1	27.0	46.1	4.03	1.16

Table 3. Descriptive statistics related to personnel condition extent of the animal welfare perception scale

Items	Effect level (%)					$\overline{x}$	SD
	1	2	3	4	5		
The behaviours of animal carers or farmers toward animals	5.5	5.3	0.0	24.1	65.1	4.38	1.11
Education levels of the animal carers or farmers	17.1	13.0	18.3	20.7	30.9	3.35	1.46
Animal welfare knowledge of the animal carers or farmers	14.5	5.3	12.3	29.2	38.7	3.73	1.40
Animal breeding experience of the animal carers or farmers	8.9	5.5	11.8	22.2	51.6	4.02	1.29
Gender of the personnel	43.1	5.5	12.5	15.2	23.7	2.71	1.67
Personnel's motivation level (living and working conditions, salaries, insurances, etc.)	8.9	5.5	11.8	16.9	56.9	4.07	1.31
Personnel's happiness and job satisfaction	5.3	5.5	16.1	9.2	63.9	4.21	1.21

Table 4. Descriptive statistics related to animal health condition extent of the animal welfare perception scale

Items	Effect level (%)					$\overline{x}$	SD
	1	2	3	4	5		
Providing regular veterinary care to animals	5.5	8.9	11.8	14.2	59.6	4.13	1.25
Types and ways of the treatments applied to sick animals	5.5	8.9	8.9	14.2	62.5	4.19	1.24
The minerals and vitamins are given to animals on a veterinarian's advice	5.5	5.3	15.4	7.7	66.1	4.23	1.21
Pain and suffering of animals due to their illness	5.5	5.3	3.6	12.5	73.1	4.42	1.14
The happiness of the animals	5.5	5.3	7.2	9.2	72.8	4.38	1.17
Stress and exhaustion in the animals	5.5	5.3	3.6	14.2	71.4	4.40	1.14
Cleaning of the animals	5.5	5.3	16.1	24.3	48.8	4.05	1.17
Culling (killing) sick animals	14.2	5.5	8.9	27.5	43.9	3.81	1.41
Castration (for cat, dog, horse, bull, etc.)	10.6	8.9	19.3	24.1	37.1	3.68	1.33
Cutting ears, tails, claws, nails, beaks, wings, and fingers of animals	10.6	8.9	14.9	32.5	33.1	3.68	1.30
Modifications such as claw pulling in cats forced molting in laying hens, and dehorning of calves	5.5	11.8	12.5	16.4	53.8	4.01	1.28
Fighting, wrestling, or racing involving animals(dog racing, cock and dog fighting, etc.)	5.5	5.3	15.4	25.5	48.3	4.06	1.16
Violence against animals	5.5	5.3	6.7	14.2	68.3	4.34	1.16
Slaughtering conditions in the abattoir	3.6	5.5	8.9	14.5	67.5	4.37	1.09
Handling animals with power tools (such as electric pads to walk cattle)	5.5	5.3	16.1	10.6	62.5	4.19	1.21

Table 5. Descriptive statistics related to other conditions extent of the animal welfare perception scale

Items	Effect level (%)					$\bar{x}$	SD
	1	2	3	4	5		
Climatic conditions	5.5	5.3	6.5	8.2	74.5	4.41	1.17
Conditions that frighten animals	5.5	5.3	12.5	13.5	63.2	4.23	1.19
Applications to increase animal productivity (hormone, genetic selection, etc.)	5.5	8.9	8.9	14.5	62.2	4.19	1.24
Conditions on the animal reproductive process (artificial inseminations, embryo transfer, etc.)	5.3	5.5	14.9	28.4	45.9	4.04	1.14
Conditions that adversely affect the relationship of animals with their offspring	5.3	5.5	12.5	31.6	45.1	4.06	1.13
Technical equipment for raising animals on the farm	5.3	11.8	12.8	17.6	52.5	4.00	1.27
The state of animals feels safe	5.3	5.5	7.2	27.7	54.3	4.20	1.13
Business terms and strategies such as crisis and risk management	8.9	5.5	16.1	13.0	56.5	4.02	1.32
Accepting animals as individual	8.2	5.5	10.8	22.2	53.3	4.07	1.27
Giving names to animals	9.2	11.8	8.9	15.2	54.9	3.95	1.39
Touching animals (stroking, hugging)	5.3	3.6	9.2	18.8	63.1	4.31	1.12
Conditions during the transport of animals from one place to another	5.5	5.3	12.5	34.9	41.8	4.02	1.12
Abandoning animals on the streets (cats, dogs, etc.)	7.2	14.5	16.9	21.0	40.4	3.73	1.32

Table 6. Cronbach's Alpha coefficients, mean and standard deviations of the animal welfare perception scale and its sub- extents

Scale and sub-extents	n	Cronbach's Alpha	$\bar{x}$	SD
Perception scale	415	0.988	4.097	0.965
Sub-extents				
Housing condition	415	0.954	4.191	0.989
Feeding condition	415	0.955	4.213	1.069
Personnel condition	415	0.853	3.780	0.990
Animal health condition	415	0.966	4.131	1.003
Other conditions	415	0.957	4.094	0.991

Table 7. The effects of consumers' demographic and individual characteristics on their animal welfare perceptions

Variable	Groups	n	$\overline{X}$	SEM	P
Gender	Women	218	4.195	0.063	0.029*
	Men	197	3.988	0.070	
Age	25 and younger	108	4.087	0.101	0.816⁻
	26-32	134	4.160	0.078	
	33-40	89	4.043	0.104	
	41 and older	84	4.065	0.103	
Marital status	Single	137	4.100	0.085	0.957⁻
	Married	278	4.095	0.057	
Educational background	Primary education	79	3.844 [b]	0.122	0.033*
	Secondary school	58	4.125 [ab]	0.119	
	Higher education	278	4.163 [a]	0.056	
Companion animal ownership	No	311	4.081[b]	0.055	0.044*
	One animal	84	4.031[b]	0.114	
	More than one animal	20	4.615[a]	0.088	
Number of children	No	116	4.021	0.096	0.491⁻
	One child	145	4.164	0.079	
	More than one child	154	4.090	0.074	
Occupation	Public employee	48	4.232	0.109	0.395⁻
	Private sector employee	177	4.010	0.080	
	Merchants	83	4.108	0.097	
	Farmer	107	4.170	0.091	
Monthly income (TL)	3000 and less	158	3.981	0.084	0.101⁻
	3001-5000	130	4.112	0.083	
	5001 and more	127	4.226	0.075	
Residential area	Province	192	4.024	0.074	0.360⁻
	District	166	4.162	0.072	
	Town and village	57	4.152	0.112	
Animal welfare knowledge	Well know	89	3.969	0.109	0.325⁻
	Know litte	249	4.117	0.062	
	Do not know	77	4.180	0.099	
Food-label reading	Yes	58	3.804[b]	0.150	0.043*
	Sometimes	109	4.120[a]	0.092	
	Always	248	4.155[a]	0.058	
Frequency of animal food consumption	Sometimes	41	4.055	0.167	0.605⁻
	Generally	170	4.154	0.073	
	Always	204	4.058	0.067	
Willingness to pay more	No	155	3.927[b]	0.084	0.030*
	I pay 15% more	109	4.182[ab]	0.092	
	I pay 30% more	92	4.139[ab]	0.097	
	I pay 50% more	59	4.318[a]	0.097	

*:p<0.05, ⁻: Non-significant ᵃ˒ᵇ: The means within the same columns with different letters differ significantly (p<0.05).

According to the results on the personnel conditions of this study, the consumers thought that the behaviour of the personnel who have direct contact with the animals and are responsible for animal care affected animal welfare. This consumer approach was compatible with the proven relationship between the quality of human-animal interaction and animal welfare (Bozkurt et al. 2013, Napolitano et al. 2019). Kılıç and Bozkurt (2013) determined that there is a significant positive relationship between the perception of animal welfare of the farmers responsible for the care and management of sheep and the welfare standards they provide for their sheep. Nonetheless, consumers participating in this study were less likely to agree that other individual characteristics of personnel (such as gender, education level, knowledge of animal welfare, motivation, and job satisfaction) affect the quality of

animal behaviour and may affect the level of animal welfare. These findings may be because consumers need more information about how animals are handled in intensive production systems and the scope of human-animal interactions. Consumers thought with strong common sense that stroking animals by touching them (such as hugging) will increase animal welfare, but in intensive livestock systems, animal-human contacts are minimal. Similar results were reported by Kılıç et al. (2013).

Consumers who have been surveyed thought that animal health significantly impacted animal welfare. As Webb et al. (2019) reported, animal happiness, which reflects how an animal feels and is predominantly associated with an excess of positive emotional states, is associated with the affective extent of animal welfare (Webb et al., 2019). Consumers also believed that negative (pain, fear, stress, frustration, violence) and positive (happiness) feeling states would significantly affect animal welfare. As expected, these results revealed that consumers could establish the relationship between a healthy animal and a healthy product and between a negative feeling state and poor well-being. However, it was noted that they showed a high level of participation in the need for positive animal feelings, especially for high animal welfare. Well-being and positive emotions are requirements for high animal welfare (Broom and Corke 2002, Sutherland et al. 2013). The participants thought that the practices (modifications such as castration, tail clipping, and beak trimming) that are routinely performed in livestock farming and can cause acute and chronic pain and suffering in animals would have a relatively less impact on animal welfare. However, they thought that some processes and breeding practices (hormones, genetic selections, etc.) applied to increase animal yields would affect the animals' health more. This seemingly contradictory situation in consumer perception suggested that they were familiar with high-yielding animals (with genetic selection) to maintain the food supply and that they might have accepted this situation to some extent. Godfray and Garnett (2014) also identified similar contradictions regarding the sustainability of food production systems. In this research, it was seen that consumers generally associate the concept of health with positive or negative emotions of animals more intensely in animal health issues. Also, Spooner et al. (2014) reported that although the people participating in their study agreed that it is essential to maintain good health and biological functioning in animals, they primarily participate in the benefits of natural life.

In general, surveyed consumers associate animal welfare with animal health (good nutrition, housing, and resting comfort), ethical values related to animal handling (animal suffering, animal happiness), and safe and natural food (hormone use). These consumers were mainly respectful of animal nature

(early weaning and the importance of the mother-child relationship) and the emotions of animals in the food chain (pain, suffering, fear, happiness, inhumane treatment methods, and stance against animal violence). They cared about the biological functionality of animals (good nutrition) and their needs, such as comfortable rest, freedom and comfort, and good treatment from birth to slaughter. These findings revealed that consumers' knowledge, opinions, and awareness are in parallel with the basic animal welfare needs of the animals. However, conflicting scores indicate that they do not know the basic concepts of animal welfare well enough. Respondents agreed that slaughterhouse conditions would affect animal welfare but placed less emphasis on the judgment that using electric pads would reduce animal welfare. They believed that the personnel's behaviour towards the animal, job satisfaction, or happiness would significantly affect the animal welfare. However, they identified less emphasis on other socio-demographic factors that impacted the personnel's behaviour. They highly agreed that touching or cuddling animals would improve animals' well-being but placed less emphasis on getting to know the animal as an individual (as opposed to the damage done by mass animal handling in the production chain). Similarly, according to participants' scores, consumers believed that genetic modifications for higher yields or hormone use on animals would affect animal welfare. On the other hand, they showed less sensitivity to the effects of painful practices involving nearly all farm animals (ear and tail clipping, neutering, dehorning) on animal welfare.

Consumers agreed that violence against animals would reduce animal welfare but placed less emphasis on the impact of violent animal fights. Similarly, they evaluated the weak relationship between leaving animals on the street and animal welfare. This may be related to the fact that consumers do not find the streets very unsafe for animals or that 75% of the participants do not have a companion animal. Spooner et al. (2014) reported in the study they conducted with non-animal producers in Canada that the participants did not have enough knowledge about modern and intensive production systems, and they requested information about animal welfare, which they consider an ethical basis. Miele (2010) found that in France and the Netherlands, consumers' and citizens' knowledge of farm animal welfare and animal husbandry practices is fragmented, ambivalent, and intertwined with negative emotions. They found that the majority of respondents in Italy had little knowledge of animal welfare and production systems. Topuzoglu et al. (2007) reported that consumers approve at a relatively low rate of attitudes requiring food information. In addition, these researchers pointed out a lack of knowledge regarding consumers choosing the right products for healthy nutrition. Already, only 21.45% of the participants in this study stated that they knew animal welfare well. Sarıal

Kubilay and Bozkurt (2020) reported similar results for companion animal owners. Broom (2010) reported that poor welfare reduces animal health and well-being, and the loss of quality in products derived from sick and afflicted animals is unacceptable for many people. Clark et al. (2016) noted that approaches toward modern and intensive farming methods for consumers are primarily negative. The fact that most of the participants in this study lived in big cities (46.27% in provinces) may have caused them to have minimal observations and experience in livestock management. Only 25.78% of the participants are farmers, supporting this interpretation. It is also seen that consumers' perception of animal welfare is associated with high food safety and quality. There was high agreement that factors such as high meat, milk, and egg yields and the use of hormones that affect the safety and quality of food, regular veterinary care, and animal fitness will affect animal welfare. They were acutely aware of the benefits of treating sick animals or providing regular veterinary care. In addition, 90% of these consumers consumed animal food and associated animal welfare with healthy food and wildlife.

As it was widely evidenced in the literature, female consumers in the West West Aegean region had a higher perception of animal welfare than males (Kılıç and Bozkurt 2013, García-Gudiño et al. 2021). As the level of education increased, participants' animal welfare perception also increased. This result shows that consumers who learn about animal breeding practices are more aware of how animals are treated in actual commercial conditions (Estévez-Moreno et al. 2021). Companion animal ownership has gradually influenced consumers' perceptions of animal welfare. Because there is an increase in the perception of animal welfare, especially among consumers who own more than one companion animal, this situation is not surprising. Sarıal Kubilay and Bozkurt (2020) reported similar results. They stated that companion animal owners believed that animal welfare was most affected by housing, feeding, and sanitation conditions and least by slaughtering, sacrificing, or naming animals. A linear relationship was found between the West Aegean region consumers' willingness to pay more for animal-friendly foods and their perceptions of animal welfare. It was also seen that the Food-label reading behaviours of the same participants were also positively related to their perceptions of animal welfare. These findings showed that the consumption behaviours of the participants were affected by the animal welfare standards in the food chain.

CONCLUSION

As a result, it was determined that the West Aegean region consumers perceive animal welfare as necessary and associate it with animal health, ethical values, natural food, and food safety and quality.

These findings revealed that consumers' knowledge, thoughts, and awareness are in parallel with the basic needs of animal welfare. However, it has been determined that the level of knowledge of consumers on animal welfare is weak, and their knowledge about how breeding practices in intensive animal production systems affect animal welfare losses was also poor. In addition, the perception of animal welfare was influenced by consumers' characteristics such as gender, educational background, companion animal ownership, food-label reading behaviour, and willingness to pay. In light of these findings, it was concluded that the West Aegean region consumers have a high perception of animal welfare, and if their information needs are met, consumers' demand for animal welfare-friendly products may increase even more.

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