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Consumer Attitudes Towards Animal Welfare and Its Relation to Demographic and Socio-Economic Factors

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Abstract

To develop sustainable production and consumption models based on animal welfare, there is a need to determine the commercialization capacity of animal welfare-friendly products. This study was carried out to examine the cognitive, affective, and behavioral sub-dimensions of the West Aegean region consumers' attitudes towards animal welfare and determine the effects of the demographic and socio-economic profile of the consumers on their animal welfare attitudes. The Animal Welfare Attitude Scale (AWAS) was applied to 415 consumers in İzmir and Aydın. Consumers' attitudes towards animal welfare were positive, most associated with the cognitive and affective dimensions. These findings showed that consumers were susceptible to animal nature and animals' well-being and emotions, but the amount of this sensitivity reflected in their purchasing behavior was relatively low. Some demographic and socio-economic factors significantly affected respondents' attitudes toward animal welfare and their willingness to pay more for animal welfare-friendly products. Gender, education level, monthly income, label reading behavior, and companion animal ownership affected consumers' attitudes toward animal welfare. It was concluded that the consumers of the West Aegean Region have a positive attitude and motivation to support the development of national sustainable production and consumption models based on animal welfare.

Hayvan Refahına Yönelik Tüketici Tutumu ve Hayvan Refahı Tutumunun Demografik ve Sosyo-Ekonomik Faktörlerle İlişkisi

Özet

Hayvan refahına dayalı daha sürdürülebilir üretim ve tüketim modellerinin geliştirilmesi için refah-dostu gıda ürünlerinin ticarileştirilme kapasitesinin belirlenmesine ihtiyaç bulunmaktadır. Bu araştırma, Batı Ege bölgesi tüketicilerinin hayvan refahına ilişkin tutumlarının bilişsel, duyuşsal ve davranışsal alt boyutlarını incelemek ve tüketicilerin demografik ve sosyo-ekonomik özelliklerinin hayvan refahı tutumlarına etkilerini belirlemek amacıyla yapılmıştır. İzmir ve Aydın'da toplam 415 tüketiciye Hayvan Refahı Tutum Ölçeği uygulanmıştır. Tüketicilerin hayvan refahına yönelik tutumunun olumlu olduğu ve bu tutumun en çok bilişsel ve duyuşsal boyutlar ile ilişkili olduğu belirlenmiştir. Bu bulgular, tüketicilerin hayvan doğasına ve hayvanların refahı ve duygularına duyarlı olduklarını, ancak bu duyarlılığın satın alma davranışlarına yansıyan kısmının nispeten düşük olduğunu göstermiştir. Bazı demografik ve sosyo-ekonomik özellikler katılımcıların hayvan refahına yönelik tutumlarını ve refah dostu ürünler için fazla ödeme yapma istekliliğini önemli ölçüde etkilemiştir. Cinsiyet, eğitim ve aylık gelir düzeyi, etiket okuma davranışı ile evcil hayvan sahipliği tüketicilerin hayvan refahına yönelik tutumunu etkilemiştir. Batı Ege Bölgesi tüketicilerinin hayvan refahına dayalı ulusal sürdürülebilir üretim ve tüketim modellerinin geliştirilmesine destek verme konusunda olumlu bir tutum ve motivasyona sahip olduğu sonucuna varılmıştır.

Introduction

Since 2000 in the EU, the minimum animal welfare standards at the farm level and during transporting and slaughtering have been enforced, and the public and private quality assurance programs focused on animal welfare have been initiated for the certification of animal welfare-friendly products after 2010 (2010/C341/04) (Lundmark et al., 2018). Similarly, in Turkiye, which is negotiating full membership to the Union, EU animal welfare legislation has mainly transposed into national legislation in Turkiye (except for Council Directive 2008/120/EC and Council Regulation (EC) No 1099/2009), and the mandatory certification (Communiqué No: 2017/42) for table eggs was begun. The public or private certifications for other types of products are still in the early stages of development in Turkiye (Bozkurt, 2017). As for third countries, the animal welfare-friendly product industry is strategically vital in ensuring agriculture's sustainability against global threats such as climate change, inter-species use of limited resources, and public health crises. In this manner, in addition to achieving EU strategic goals, animal welfare-friendly food production offers potential opportunities for Turkey's compliance with EU common market policies and increasing competitiveness in these emerging markets (Torjusen et al., 2001; Miranda-de Ia Lama et al.,2017).

Attitude, which forms the basis of consumer behavior, is affected by the features of the product (taste, quality, safety, price) (Shafie and Rennie, 2012; Bryła, 2016; Estévez-Moreno et al., 2021), the processes of production and marketing (traceability, labeling, availability) (Shafie and Rennie, 2012; Paul and Rana, 2012; Clark et al., 2016), the socio-demographic profile (age, gender, education, number of children in the family, companion animal) (Taylor and Signal, 2005; Miranda-de la Lama et al., 2017; Bir et al., 2019; Grasso et al., 2019; Randler et al., 2021), the socio-economic profile (income, region, childhood experiences) (Kendall et al., 2006; Feil et al., 2020) and other individual characteristics (beliefs, norms, ethical values, animal use experiences)(Miranda-de Ia Lama et al., 2017; Estévez-Moreno et al., 2021) of consumers. Further, the attitude toward animals is becoming more complicated by animal usage for the purposes such as companionship, work, and food (Feil et al., 2020).

In a sustainable production system, the consumption dimension cannot be ignored because financial results must be achieved for the continuity of production (Loughnan et al., 2010). In addition to demographic and socio-economic characteristics, which are of great importance in determining the consumer profile, it is expected to determine complex and multidimensional relationships, including intentional, attitudinal and behavioral traits that will guide sustainable production strategies and practices (Shafie and Rennie, 2012). The consumer profile in each region may differ depending on the differences between regional consumers (Bir et al., 2019). These are related to the demographic and socio-economic factors specific to each region and consumers' behaviours, psychological variables, and historical processes, including cultural factors (Dimitri and Dettmann, 2012). Therefore, it is vital to determine the consumption patterns specific to different regions (Feil et al., 2020) and to understand the stakeholders' attitudes and personal characteristics that affect purchasing behavior to develop appropriate strategies to increase animal welfare (Randler et al., 2021). This study was carried out to examine the cognitive, affective, and behavioral dimensions of

the West Aegean region consumers' attitudes towards animal welfare and determine the effects of the demographic and socio-economic profile of the consumers on their animal welfare attitudes.

Material and Methods

This research was conducted in Izmir and Aydın, the most densely populated provinces in the Aegean region in western Turkiye. These cities were chosen because of their high rate of immigration-receiving, high consumption of animal-derived food, and large socio-demographic groups. The sample participants were over age +18, living in the city center and districts of İzmir and Aydın, Turkish speaking, and participating in the family's grocery shopping participated in the research.

Stratified sampling was employed to represent social groups such as age, education, gender, and region, and a formula recommended for quantitative research and infinite universes (N>10.000) was used to calculate the minimum sample size. The sample size was calculated as 384 consumers using the formula n = s2.Zα2/d2 (standard deviation=1; Zα2= 1.96; effect size of D=0.1; theoretical value corresponding to 0.05 significance level) (Sekaran, 2003). The participants were informed about this scientific research and given a short description of the animal welfare concept, and a three-part questionnaire developed for assessing attitudes toward animal welfare was applied to those who volunteered to participate (Kılıç et al., 2013; Kılıç and Bozkurt, 2020). Participants evaluated each item using the Likert scale. The data was collected with a face-to-face survey in 2020. Considering the possibility of missing, inaccurate, and low-reliability questionnaires, more questionnaires were allocated to interviews than the calculated sample size. Statistical evaluation was performed on 415 questionnaires, considered reliable among the questionnaires.

In the first part, there were questions related to the demographic profile of the participant (gender, age, education, companion animal ownership, marital status, number of children, residential area). The second part was involved the participants' socio-economic variables (occupation, monthly income, animal welfare knowledge, label reading behavior, and animal-derived food consumption frequency). Participants were asked whether they willingly volunteered to pay more for animal welfare-friendly foods and, if they were volunteers, how much more they were willing to pay. The third part of the survey was included the Animal Welfare Attitude Scale (AWAS).

The AWAS scale consists of a total of 42 items in Cognitive (20 items), Affective (10 items), and Behavioral (12 items) sub-dimensions. The reliability and validity of the animal welfare attitude scale (AWAS) were made by Kılıç and Bozkurt (2020), who developed this scale. Participants chose the option corresponding to their level of participation in each of the items in the attitude scale, which consists of thoughts and judgments about animal welfare (1:Strongly Disagree, 2:Disagree, 3:Neutral, 4:Agree, 5: Strongly Agree). This research was conducted with the approval of the Local Animal Ethic Committee of Afyon Kocatepe University (AKUHADYEK-87-18) and was summarized from the first author's master's thesis.

Statistical analysis

Each item of the Animal Welfare Attitude Scale was described with frequency percentage distributions, arithmetic means, and standard deviation values. The participants' demographics

and socio-economic variables were represented with percentages. Then, t-tests for two groups (independent samples) and One-way-ANOVA were used for more than two groups to compare participants' attitudes toward animal welfare according to their demographics and socio-economic traits. Finally, Cronbach's alpha coefficients for the attitudes scale and its sub-dimensions were calculated for the reliability analysis of the characteristics. In the study, the data obtained from the participants' attitude scale towards animal welfare were analyzed with the SPSS 21st version package program. A value of 0.05 was taken for the significance level.

Results

The descriptive statistics for the items in the cognitive dimension of the Animal Welfare Attitude Scale applied to consumers are given in Table 1. Participants mostly participated in items "Feeding quality affects animal welfare" ($\overline{X}$=4.73), "The well-being of animals affects animal welfare" ($\overline{X}$=4.59), and "Housing conditions affect animal welfare" ($\overline{X}$=4.56). They had the lowest participation in items "The religious sacrificing of farm animals affects animal welfare" ($\overline{X}$=3.06), "The slaughtering of farms animals affects animal welfare"($\overline{X}$=3.38), and "Activities of NGOs in animal protection movements affect animal welfare" ($\overline{X}$=3.70).The results of consumer attitudes toward the items in the affective dimension of the animal welfare scale are presented in Table 2. The items with which the respondents agreed with the highest rate were "I believe in animal welfare" ($\overline{X}$=4.47) and "I believe the happiest farm animals produce the most qualified foods (meat, milk, egg, etc.)" ($\overline{X}$=4.41), but the rate of respondents agreeing with the item "I believe that animals were created for human use" ($\overline{X}$=2.82) was relatively low. The results for the items in the behavioral dimension of the Animal Welfare Attitude Scale are presented in Table 3. The participant consumers gave the higher scores to items "I obey the animal welfare legislation" ($\overline{X}$=4.39) and "I am always kind to animals" ($\overline{X}$=4.24) highest, but their scores were lowest for items "I can comprehend that animal-friendly food by reading the product labels ($\overline{X}$=3.35), and "I purchase the foods produced under animal welfare standards" ($\overline{X}$=3.58).

Cronbach's alpha coefficients for reliability analysis were calculated as 0.977, and 0.958, 0.911, and 0.943 for the overall attitude scale and its cognitive, affective and behavioral dimensions, respectively (Table 4). The high values for Cronbach's alpha coefficients demonstrate good internal consistency of the items in the scale. The means for cognitive, affective, and behavioral dimensions for the AWAS attitude scale were 4.035, 4.132 and 3.834 and, overall mean value was 4.001. The results on the relationships between consumers' attitudes on animal welfare and their demographic and socio-economic characteristics are given in Table 5. Animal welfare attitudes of consumers were significantly affected by gender, education level, and owning companion animals, but not by age, marital status, number of children, and occupation.The participants' animal welfare attitudes were significantly affected by their some socio-economic variables such as monthly income, label reading behavior, and willingness to pay more for animal welfare-friendly foods. Animal welfare attitudes of the participants did not differ with the residential area, level of animal welfare knowledge, and consumption frequency for animal-derived foods.

Table 1. Percent frequency and means (± SD) for items in the cognitive dimension of the Animal Welfare Attitude Scale applied to consumers

Items	Agreement level (%)					$\bar{X}$	SD
	1	2	3	4	5		
C1 Housing conditions affect animal welfare	5.6	0.0	8.9	3.6	81.9	4.56	1.05
C2 Feeding quality affects animal welfare	0.0	0.0	9.2	8.9	81.9	4.73	0.62
C3 The well-being of animals affect animal welfare	5.3	5.5	0.0	3.6	85.6	4.59	1.10
C4 The animal owners' characteristic affects animal welfare	3.6	5.3	5.5	13.7	71.9	4.45	1.06
C5 The transporting of animals affects animal welfare	5.3	5.5	12.5	37.1	39.6	4.00	1.11
C6 Frightening conditions affect animal welfare	5.3	3.6	5.5	15.4	70.2	4.41	1.10
C7 The conditions related to reproduction affect animal welfare	5.3	3.6	5.5	21.0	64.6	4.36	1.09
C8 The conditions affecting parent-offspring relations affect animal welfare	10.8	3.6	10.6	25.8	49.2	3.99	1.31
C9 The technical tools used in animal management affect animal welfare	10.8	0.0	10.8	18.8	59.6	4.16	1.29
C10 Animal feeling safe affects animal welfare	5.5	8.9	6.5	22.7	56.4	4.15	1.21
C11 Accepting animals as individuals affects animal welfare	10.8	7.8	14.9	21.7	44.8	3.82	1.36
C12 The slaughtering of farms animals affects animal welfare	21.9	11.3	8.2	24.1	34.5	3.38	1.57
C13 Animal naming affects animal welfare	11.8	18.0	5.3	9.2	55.7	3.79	1.54
C14 Animal transporting circumstances affect animal welfare	11.6	5.5	11.8	39.3	31.8	3.74	1.28
C15 The religious sacrificing of farm animals affects animal welfare	31.7	5.5	15.4	20.7	26.7	3.06	1.61
C16 Abandonment of animals (cats, dogs, etc.) on the street affects animal welfare	12.5	5.5	14.9	15.9	51.2	3.87	1.41
C17 Activities of NGOs in animal protection movements affect animal welfare	17.8	5.5	15.4	11.4	49.9	3.70	1.55
C18 Animal welfare legislation affects animal welfare	9.2	8.9	14.2	25.5	42.2	3.83	1.31
C19 Purchasing animal welfare-friendly foods affect animal welfare	5.5	14.2	20.0	21.0	39.3	3.74	1.26
C20 Human-animal interactions affect animal welfare	5.5	0.0	18.3	3.2	73.0	4.38	1.13

1:Strongly Disagree, 2:Disagree, 3:Neutral, 4:Agree, 5: Strongly Agree

Table 2. Percent frequency and means (± SD) for items in the affective dimension of the Animal Welfare Attitude Scale applied to consumers

Items		Agreement level (%)						
		1	2	3	4	5	$\bar{X}$	SD
A1	I consider animals as an individual	9.2	8.2	3.6	14.9	64.1	4.17	1.34
A2	I believe that animals were created for human use	29.3	14.5	23.4	10.6	22.2	2.82	1.51
A3	I believe in animal welfare	0.0	5.3	9.2	19.0	66.5	4.47	0.87
A4	I believe animals are "sentient beings."	5.8	5.5	5.3	13.3	70.1	4.36	1.17
A5	I can assess whether an animal is in pain or suffering.	5.3	9.1	18.6	12.8	54.2	4.01	1.26
A6	Animal suffering is violence	5.3	5.5	5.3	18.4	65.5	4.33	1.14
A7	I believe the relationship between family violence and intentional injury to the animals	5.3	5.5	3.6	21.3	64.3	4.34	1.13
A8	I believe animals have rights just like humans	5.5	3.6	12.5	17.8	60.6	4.24	1.15
A9	A person's worth in society is affected by behavior toward animals	3.6	5.5	18.8	14.5	57.6	4.17	1.13
A10	I believe the happiest farm animals produce the most qualified foods (meat, milk,egg, etc.)	5.5	0.0	8.9	19.3	66.3	4.41	1.04

1:Strongly Disagree, 2:Disagree, 3:Neutral, 4:Agree, 5: Strongly Agree

Table 3. Percent frequency and means (± SD) for items in the behavioral dimension of the Animal Welfare Attitude Scale applied to consumers

Items		Agreement level (%)						
		1	2	3	4	5	$\bar{X}$	SD
B1	I am involved in animal welfare	8.9	5.5	18.8	26.6	40.2	3.84	1.26
B2	Animal welfare standards affect my choice when purchasing foods	12.5	5.5	16.6	31.2	34.2	3.69	1.33
B3	I talk about animal welfare to raise awareness among people	7.3	13.0	14.9	18.3	46.5	3.84	1.33
B4	I motivate people to be kind to animals	5.5	5.3	24.8	20.0	44.4	3.92	1.18
B5	I approach stray animals with compassion	9.2	5.3	11.7	18.1	55.7	4.06	1.31
B6	I support NGOs engaged in animal protection (membership, donating money, etc.)	9.2	13.0	19.5	10.8	47.5	3.74	1.40
B7	I obey the animal welfare legislation	3.6	5.5	0.0	29.6	61.3	4.39	1.00
B8	I am always kind to animals	5.3	5.5	7.2	24.2	57.8	4.24	1.14
B9	I make the necessary attempts when the animals are mistreated	5.5	13.0	21.1	28.4	32.0	3.68	1.21
B10	I purchase the foods produced under animal welfare standards	16.1	9.6	14.3	20.2	39.8	3.58	1.49
B11	I am willing to pay when purchasing animal-friendly food products	21.4	5.5	0.0	29.2	43.9	3.68	1.58
B12	I can comprehend that animal-friendly food by reading the product labels	28.7	5.5	12.5	8.7	44.6	3.35	1.72

1:Strongly Disagree, 2:Disagree, 3:Neutral, 4:Agree, 5: Strongly Agree

Table 4. Cronbach's Alpha coefficients, mean and standard deviations of the Animal Welfare Attitude Scale and its sub-dimensions

Scale and dimensions	n	Cronbach's Alpha	$\overline{X}$	SD
Attitude scale	415	0.977	4.001	0.907
Sub-dimensions				
Cognitive	415	0.958	4.035	0.946
Affective	415	0.911	4.132	0.883
Behavioral	415	0.943	3.834	1.052

Discussion

The high Cronbach's alpha values demonstrate good internal consistency of the items in the scale. The results showed that the West Aegean region consumers' attitudes towards animal welfare were most and least associated with affective and behavioral attitudes. Consumers showed a sensitive attitude toward complying with the legislation regarding the protection of animals. Overall, the participants stated that they took care of animals and were kind to them always. However, they had a non-proactive attitude toward participating in activities promoting animal welfare and raising awareness about animal welfare (promoting good animal handling, preventing animal abuse, purchasing animal welfare-friendly products etc.) personally or collectively. The participants opposed that animals were created for humans; on the contrary, they believed that animals are sentient beings, that animals have rights, and that happy farm animals can produce quality food (Taylor and Signal, 2005). The consumers those affective attitudes sensitive evaluated the abuse and violence against animals as brutal and immoral. In addition the participants with moderate cognitive attitudes had a sufficient understanding that favorable biological functions such as suitable housing, feeding, transporting, and health would increase animal welfare and that the welfare of animals in a negative feeling state would be decreased (Kılıç and Bozkurt, 2020). However, respondents did not have enough knowledge or awareness about chronic welfare losses caused by industrial livestock production systems (permanent confinement, genetic selection, modifications, intensive feeding, etc.) and acute welfare losses due to slaughter and killing.The data obtained showed that the consumers' cognitive and affective attitudes towards animal welfare in the West Aegean region were animal welfare-friendly. Compared to cognitive and affective dimensions, consumers' behavioral animal welfare attitude is non-proactive. Several reasons, such as animal welfare being a new global concept, the relevant national legislation having improved very recently, and the market availability of animal welfare-frinedly products being still insufficient, may be responsible for consumers' poor knowledge and awareness of animal welfare (Miranda-de la Lama et al., 2017; Feil et al., 2020).

Table 5. The findings relations between consumers' attitudes on animal welfare and their demographic and socio-economic features.

Demographic Variables	Groups	%	$\overline{X}$	SEM	P	Socio-economic Variables	Groups	%	$\overline{X}$	SEM	P
Gender	Women	52.53	4.088	0.058	0.040*	Income (TL)	3000 and less	38.07	3.849[b]	0.080	0.019*
	Men	47.47	3.904	0.068			3001-5000	31.33	4.049[ab]	0.077	
Age	25 and younger	26.02	3.987	0.092	0.508-		5001 and more	30.60	4.142[a]	0.068	
	26-32	32.29	4.095	0.071		Residential area	Province	46.27	3.952	0.070	0.384-
	33-40	21.44	3.947	0.101			District	40.00	4.076	0.065	
	41 and older	20.25	3.926	0.099			Town/village	13.73	3.947	0.114	
Marital status	Single	33.02	3.975	0.082	0.681-	Knowledge	Know well	21.45	3.901	0.104	0.446-
	Maried	66.98	4.014	0.053			More or less	60.00	4.042	0.057	
Education	Primary school	19.04	3.693[b]	0.119	0.002**		Dont know	18.55	3.983	0.098	
	Secondary school	13.98	3.975 [a]	0.114		Label reading	Sometimes	13.98	3.640[b]	0.145	0.004**
	University	66.98	4.094 [a]	0.051			Genarally	26.27	4.038[a]	0.087	
Children	No	27.95	3.976	0.089	0.935-		Always	59.75	4.069[a]	0.053	
	1 children	34.94	4.018	0.077		Consumption	Sometimes	9.88	3.927	0.160	0.616
	>1 children	37.11	4.004	0.069		frequefuency	Genarally	40.96	4.051	0.068	
Occupation	Public	11.60	4.083	0.107	0.552-		Always	49.16	3.974	0.063	
	Private sector	42.65	3.938	0.074		Willingness to pay	No	62.65	3.831[b]	0.080	0.028*
	Merchant	20.00	3.984	0.095			15% more	17.59	4.095[ab]	0.084	
	Farmer	25.75	4.081	0.085			30% more	13.01	4.073[ab]	0.089	
Companion animal	No	74.94	3.977[b]	0.052	0.025*		50% more	6.75	4.162[a]	0.093	
	1 animal	20.24	3.963[b]	0.103							
	>1 animal	4.82	4.538[a]	0.058							

*:p<0.05, **:p<0.01, -: Non significant [a, b]: The means within the same columns with different letters differ significantly (p<0.05)

Gender affected consumers' attitudes to animal welfare (Apostol et al., 2013; Miranda-de la Lama et al., 2017; Estévez-Moreno et al., 2021; Platto et al., 2022). Women's attitudes are better toward animal welfare because they have higher ethical sensitivity (Beardsworth et al., 2002; Miranda-de la Lama et al., 2019) and empathy (Taylor and Signal, 2005) to health, safe food, and protection of animals and environment. Age did not affect the attitude toward animal welfare, but sensitivity to animal welfare was slightly higher in the 26-32 age group. Studies report that age does not affect attitudes toward animals (Miranda-de la Lama et al., 2017). Nevertheless, Estévez-Moreno et al., (2021) and Randler et al., (2021) reported that young people have a more positive attitude toward animals than older people. In this study, regarding the age factor, a cohort effect may have occurred in which people from a common history are more likely to adopt the same attitudes (Kendall et al., 2006; Randler et al., 2021). Consumer attitude scores increased as the education level increased. These results expanded the literature identifying the relationship between education level and positive attitude towards animals (Kılıç and Bozkurt, 2020). It is thought that people with a high level of education may have received knowledge directly via professional training or indirectly through the media that will encourage them to gain a more heightened awareness of quality and safe food consumption and ethical concerns (analytical approach to animals, more realistic and anxious attitude) (Beardsworth et al., 2002; Kendall et al., 2006; Dowling, 2015; Miranda-de la Lama et al., 2017). In addition, their occupation with high income may have affected their ethical consumption preference and positively affected their motivation to purchase more expensive, welfare-friendly, and environmentally friendly foods (Feil et al., 2020).

This research expanded the minimal literature on the impact of marital status and the presence of children in the family on consumers' attitudes toward animals. Marital status, having children, and the number of children did not affect the consumers' animal welfare attitudes. The results did not confirm our expectation that married parents would also direct their affection towards their children to animals. These participants may have spent more time on their children's problems or marital responsibilities and therefore focused less on the environment and animals (Kendall et al., 2006). Also, over-devotion to norms and values about marriage and having children (Cassidy and Warren, 1996; Hepper and Wells, 1997; Kendall et al., 2006) and the higher demand for food in large families may have been other factors (Paul and Rana, 2012; Bryła, 2016; Feil et al., 2020). Consumers that are owners of one or more companion animals had higher animal welfare attitude scores. That may be due to taking care of an animal's needs resulting in positive human-animal interaction. This result is in line with other studies (Taylor and Signal, 2005; Apostol et al., 2013; Miranda-de la Lama et al., 2017). In addition, respondents interested in caring for a companion animal and thus experiencing the well-being needs of animals may have more knowledge and awareness of livestock welfare (Taylor and Signal, 2005). However, 75% of the participants were not companioned animal owners, and it is unclear to what extent overall research findings might be determined by companion animal ownership. Miranda-de la Lama et al., (2019) reported that adults' attitudes toward animal use were related to the quality of previous experiences with animals other than demographic factors. In this study, it was argued that the historical statuses and roles, including traditions, social and religious lifestyle, and opinions on women and children's rights, and animal and environmental

protection, may have mediated another cohort effect on their animal welfare attitudes (Keyes et al., 2021).

Two-thirds of consumers stated they would pay 15-50% more for animal welfare-friendly products. The willingness to pay of West Aegean region consumers was not lower than the willingness to pay rates determined in the countries where animal welfare standards are already applied, such as the EU (Maria, 2006; Martelli, 2009), USA (Tonsor et al., 2009), Canada (Yiridoe et al., 2005) Mexico (Miranda-de la Lama et al., 2017) and China (Xu et al., 2016). However, these rates were somewhat exaggerated, considering Turkiye's low average family income. This ratio may be because the availability of animal welfare-friendly foods in Turkiye is still low, and the participants need to know the current prices of those foods (Maria, 2006). The high animal welfare scores of the participants with pay more motivation showed that consumers care about animal welfare and may stress the purchasing behavior to increase the welfare of farm animals (Taylor and Signal, 2005; Loughnan et al., 2010). The high purchasing motivation of the consumers indicates a significant customer potential for the livestock industry for animal welfare-friendly products. This positive attitude may reflect the moral attitude towards the animal (Miranda-de la Lama et al., 2017), or it may be related to the healthier and higher quality food obtained from animals raised at high animal welfare standards (Frewer et al., 1996; Shafie and Rennie, 2012; Clark et al., 2016). In this study, 86% of the participants declared they read food labels during shopping, and we found a significant relationship between animal welfare attitudes and label reading habit.

Because the production and availability of animal welfare-friendly products in Turkiye are still few and animal welfare quality assurance programs are almost nonexistent except for organic certification (Bozkurt, 2017). There was no significant relationship between the participants' self-reported animal welfare knowledge and their animal welfare attitudes.This finding supports other studies reporting no relationship between consumers' knowledge of livestock rearing conditions or animal food production processes and their willingness to pay (Miranda-de la Lama et al., 2017; Bir et al., 2019). Also, the determined willingness to pay score in this research was related to all kinds of animal-derived food, and participants' purchasing motivations may differ for each animal species (Miranda-de la Lama et al., 2017). Indeed, a similar comment can be assembled for the insignificant relationship between animal-derived food consumption frequency and animal welfare attitude. In contrast, we expected that people who consume fewer animal foods would be more sensitive to animal welfare (Verbeke et al., 2010). This result may be related to the distribution of the participants to the meat consumption frequency groups. Because there were no vegetarian or vegan participants, the rate of participants who occasionally consumed animal foods was only 9.9%. In addition, respondents who reported that at least half of them always consume animal-derived foods may have denied their moral position when answering the questions to resolve the cognitive dissonance between their animal food intake frequency and their desire not to harm animals (Loughnan et al., 2010; Bir et al., 2019; Kılıç and Bozkurt, 2020). Further research should be conducted to clarify the relationships between participants' consumption frequencies specific to eggs, meat, or milk and their animal welfare attitudes and willingness to pay.

Participants' positive attitudes towards animal welfare and willingness to pay were affected differently by socio-

economic characteristics. Consumers' monthly income affected animal welfare attitudes. The participants' positive attitudes toward animal welfare increased as their monthly income increased. This finding brought to mind other factors, such as occupation and professional schooling, that affect income level (Paul and Rana, 2012) and access to niche markets where expensive organic or natural products are sold (Fernandes et al., 2021) that could affect participants' willingness to pay. In addition, this result supports the post-materialist idea that wealthier individuals should be more concerned with the welfare of animals (Feil et al., 2020; Kendall et al.,2006). Surprisingly, the participants' occupations, directly related to their income level, did not affect their animal welfare attitudes. This may be due to the distribution of respondents across occupational groups. Only 37,35% of participants were highly educated public officers and farmers, and they could understand animals' biology or care needs (Kendall et al., 2006; Miranda-de la Lama et al., 2017). A similar situation was also seen in the results about the place where the participants lived. Animal welfare attitudes of participants living in rural or urban areas were similar. This finding was inconsistent with the literature suggesting that urban people attach more importance to animal welfare than rural residents (Miranda-de la Lama et al., 2017). In this study, 86.26% of respondents lived in urban areas, but other characteristics such as whether they spent their childhood in an urban or rural area (Kendall et al., 2006; Platto et al., 2022) or the quality of their childhood relationships with companion animals or other animals may also have affected animal welfare attitudes (Taylor and Signal, 2005).

Conclusions

In conclusion, West Aegean region consumers had a positive attitude towards animal welfare based on cognitive and affective attitudes. These findings showed that consumers were sensitive about the needs of animals and were respectful of animal nature and emotions. However, it was comprehended that the part of consumers' sensitivity reflected in their purchasing behavior was relatively low. The demographic and socio-economic characteristics significantly affected respondents' attitudes toward animal welfare and their willingness to overpay for animal welfare-friendly products. It was concluded that the consumer profile of the West Aegean region has a positive motivation in terms of increasing the capacity to adapt to national and global sustainable production and consumption models that will be developed today and in the future. Also, this research contributes to the current and limited literature on the impact of differences on consumers' attitudes toward sustainable food production and consumption. Further efforts, including public regulatory support and innovative communication strategies, are needed to inform West Aegean Region consumers, raise their awareness about animal welfare, and encourage their willingness to pay for animal welfare-friendly products.

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