Public perception of farm animal welfare in Spain[☆]

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Abstract

The social concerns regarding animal welfare have produced changes in European legislation for the livestock industry. Production systems will need to be modified to comply with the new requirements, which will directly affect production costs. The question is to determine whether consumers in countries such as Spain will accept the increased price to improve animal welfare. The objective of this study was to assess the human attitude and perception of farm animal welfare in Spain. People living in the urban area of Zaragoza were surveyed ($n = 3978$). The questionnaire comprised of three sections with a total of 12 questions. The first section referred to the general attitude towards animal welfare. The second section referred to perceptions of the treatment animals on the farm. The third part asked about the willingness to pay more for a product to improve welfare and the actual consumption of welfare friendly products. Descriptive statistics were calculated and the fixed effects of age, sex and occupation were analyzed. A high proportion of people agreed to pay more for a product, if this greater price would guarantee a better welfare. There was a trend indicating a positive response in young, female students. However, there was an inconsistency between the willingness to pay more and the actual consumption of welfare friendly products.
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1. Introduction

Livestock production under intensive conditions has received considerable criticism from various segments of the society. The animal rights movement has developed rapidly in northern Europe and North America. The strong social claim in favour of animal welfare has produced important changes in the European legislation controlling livestock industries. As a consequence, the current production systems must undergo important modifications which could then affect production costs. The question is to determine whether people in southern European countries such as Spain will accept to pay more for products in order to improve animal welfare. The objective of this study was to assess the attitude and perception of farm animal welfare of various livestock species using an urban population in Spain. The consumption level of welfare friendly products was also analysed.

2. Material and methods

The human perception of farm animal welfare was examined using a sample of 3978 people living in and

around Zaragoza, including the neighbouring regions of Aragón, Catalonia, the Basque Country, Madrid, Valencia, the Balearic Isles and Castile in the year 2003. The study used the modified "feeling thermometer" described by Jamison (1992). The sample breakdown was as follows: gender class, women ($n=1952$) or men ($n=2026$); age classes, <20 years old ($n=806$); 20–35 years old ($n=880$); 36–50 years old ($n=1076$); 51–65 years old ($n=626$) and >65 years old ($n=590$); occupation (13 clases) school students ($n=364$), university students ($n=586$), professionals ($n=292$), civil servants ($n=220$), workers ($n=442$), housewives ($n=254$), retired ($n=398$), school teachers ($n=294$), university professors ($n=280$), vets ($n=180$), farmers ($n=184$), contractors ($n=282$) and unemployed ($n=202$).

The survey included three main sections with 12 questions (Q1 to Q12). The first section referred to the general attitude towards animal welfare, with regards to the level of general concern about animal welfare (Q1); whether animal welfare is animal- or human-centred (Q2); if schools should include animal welfare issues in the *curricula* (Q3) and if they consume animal products (Q4). The second section referred to the perception of animal treatment at the farm level, including two questions; one about the general opinion towards animal welfare treatment (from very bad to very good; Q5) and another (Q6) regarding the score of animal welfare from 0 (very bad treatment) to 100 (excellent treatment) in two groups of livestock, namely: horses, sheep, beef, dairy cattle, veal calves and goats (Group1); and broiler chickens, laying hens, pigs, turkeys, rabbits and mink (Group 2). The third section asked about the agreement to pay more for a product to improve animal welfare (Q7) and about the consumption of welfare friendly products (WFP) like free range eggs (Q8), free range chicken (Q9) and free range pig (Q10). If the response to Q7 and Q8 was affirmative/positive, we asked why they bought WFP products (quality, welfare or safety). Finally, respondents were asked about their willingness to wear fur coats (Q11). If the answer was negative, they were also asked about the reasons (price, welfare, safety). The last question (Q12) provided an opportunity to comment on any issue of the survey. For more details on the survey format see http://wzar.unizar.es/catra. For the statistical analysis, livestock was assembled in two groups: Group 1 (ruminants and horses) and

Group 2 (swine, poultry and fur animals). Descriptive statistics were calculated and the fixed effect of respondents' gender (2 levels); age (5 levels); occupation (13 levels) and animal group (2 levels) were analysed using a factorial model (Statistical Analysis System Institute, 1988). Frequency values were analyzed using χ^2 statistics.

3. Results

The results for general public concern (Q1) are presented in Table 1, including the frequency distribution by sex, age and occupation. In general, and excluding the neutral answer (medium), the frequencies were clearly biased to a high or very high level of concern (χ^2 21.77 $p<0.001$). The frequency of positive attitude was significantly higher ($p<0.05$) in women (85%) than in men (74%). Age affected the frequency of Q1 ($p<0.05$), being more positive in young and medium age people (>78%) than in old

Table 1
Two way frequency table by sex, age and occupation of people's concern about animal welfare Question 1 (row %)

Main effects	Level of concern on animal welfare				
	Very low	Low	Medium	High	Very high
Overall	2.1	9.3	41.7	33.3	13.5
Gender					
Woman	1.23	6.80	42.81	33.56	15.61
Man	3.19	12.24	40.43	33.04	11.10
Age					
<20	1.45	10.40	45.09	28.90	14.16
20–35	1.20	9.81	43.06	33.73	12.20
36–50	1.84	7.17	41.80	36.27	12.91
51–64	4.94	7.82	34.98	36.63	15.64
>65	2.69	13.98	40.86	28.49	13.98
Occupation					
Student NU	1.22	10.37	47.56	26.83	14.02
Student U	0.60	8.46	45.06	32.63	13.29
Professional	2.06	12.37	38.14	36.08	11.34
Functionary	1.82	8.18	41.82	32.73	15.45
Worker	2.35	11.27	48.83	29.58	7.98
Houseperson	1.65	6.61	44.63	34.71	12.40
Retired	4.02	13.07	37.69	30.65	14.57
Teacher	3.09	9.28	45.36	36.08	6.19
Prof. univ.	0.00	7.50	52.50	30.00	10.00
Vet	2.50	2.50	25.00	38.75	31.25
Farmer	0.00	0.00	23.08	54.95	21.98
Contractor	2.25	13.48	34.83	35.96	13.84
Unemployed	12.24	14.29	42.86	22.45	8.16

people (71%). The frequencies for Q1 were affected by occupation ($p < 0.01$), with more positive attitudes in students, vets, farmers and professors and more negative in the workers, retired and unemployed.

Table 2 summarises the frequencies by gender, age and occupation for Q2 and Q3. Most people thought that animal welfare is important for both animals and humans (75%), 18% answered only for animals and less than 5% for humans. Excluding the most "neutral" answer (important for both humans and animals), the animal-centred opinion was significant more common (χ^2 11.32 $p < 0.01$). Women had a more animal-centred opinion than men ($p < 0.01$). Similarly, young and middle aged people had a more animal-centred opinion than older people. The effect of occupation was also significant for Q2, with higher frequencies of animal-centred opinions in students,

Table 2

Two way frequency table by sex, age and occupation on people concern and perception about animal welfare Questions 2 and 3 (row %)

Main effects	Q2. For you, animal welfare is important for?				Q3. You think that the school has to teach about animal welfare?	
	Yourself	Animal	Both	Other	Yes	No
Overall	4.8	18.3	75.3	1.6	87.6	12.4
Gender						
Woman	4.46	16.05	78.26	1.22	91.42	8.58
Man	5.23	20.79	71.94	2.04	83.04	16.96
Age						
<20	3.47	16.47	78.32	1.16	82.37	17.63
20–35	3.35	21.29	74.64	0.72	87.08	12.96
36–50	4.30	16.60	77.66	1.43	92.21	7.79
51–64	6.58	18.93	72.02	2.47	88.07	11.93
>65	9.68	18.28	69.35	2.69	85.48	14.52
Occupation						
Student NU	4.27	17.07	77.44	1.22	79.88	20.12
Student U	2.11	16.92	79.15	1.82	88.21	11.79
Professional	8.25	20.62	70.10	1.03	91.75	8.25
Functionary	1.82	18.18	80.00	0.00	88.18	11.82
Worker	2.82	25.35	71.36	.47	86.85	13.15
Houseperson	7.44	15.70	73.55	3.31	97.52	2.48
Retired	13.07	21.61	62.31	3.02	83.42	16.58
Teacher	5.15	15.46	78.35	1.03	87.63	12.37
Prof. univ.	5.00	12.50	82.50	0.00	82.50	17.50
Vet	0.00	15.00	85.00	0.00	100	0.00
Farmer	2.20	7.69	90.11	0.00	91.21	8.79
Contractor	6.74	17.98	70.79	4.49	79.78	20.22
Unemployed	2.04	24.49	69.39	4.08	85.71	14.29

civil servants, workers and vets. Significantly more people (87%) thought that animal welfare issues should be included in the school curricula (χ^2 26.31 $p < 0.0001$). This pattern was more evident for women (91%). Age differences for Q3 were only significant for very young people with lower frequencies (<80%) in favour of including animal welfare education than middle aged or elderly people (>85%). Occupation also affected Q3 frequencies ($p < 0.01$), where housewives (97%), vets (100%), farmers (91%) and professionals (92%) preferred to include animal welfare in the school *curricula*.

More than 97% of all people questioned said that they consumed animal products (Q4). The frequencies were affected by sex (χ^2 7.12 $p < 0.01$). More than 3.5% of women did not eat animal products, while in men this frequency was only 1.5%. Age also affected Q3 ($p < 0.01$), with more people between 20 to 35 years old who do not eat animal products. Occupation affected Q3 frequencies ($p < 0.05$), with the professionals, retired and unemployed eating less animal products.

The distribution by sex, age and occupation regarding public perception on overall animal treatment at the farm (Q5) is presented in Table 3. If we exclude the neutral type answers (regular), the frequencies are significantly (χ^2 6.32 $p < 0.05$) more negative (bad or very bad, 55%) than less negative (good or very good treatment, 45%). That bias was also affected by sex and age. Women were significantly ($p < 0.05$) more critical than men and young people were more critical than the middle aged or elderly. Occupation also affected the frequencies of a more critical opinion about animal treatment ($p < 0.01$). Students, professionals, teachers and professors were more negative (bad or very bad treatment). It was noteworthy that the profession that was least critical (good or very good treatment) was farmers.

The frequency table by sex, age and occupation for Q7 (willingness to pay more for a product to improve animal welfare) is presented in Table 3. Around 74% of the people agreed to pay more for welfare friendly products. All the classes of the main effects had the same trend. The willingness to pay more was significantly higher ($p < 0.001$) in women (79%) than in men (68%). The effect of age was significant ($p < 0.05$), where the young or middle aged were more willing to pay more. The effect of occupation on Q7

Table 3
Two way frequency table by sex, age and occupation on people concern and perception about animal welfare Questions 5 and 7 (row %)

Main effects	Q5. What is your "feeling" about animal treatment or animal welfare in the farm?					Q7: What is your willingness to pay more for a product to improve animal welfare?	
	Very good	Good	Regular	Bad	Very bad	Yes	No
Overall	3.2	24.2	41.3	23.9	7.4	73.8	26.2
Gender							
Woman	2.34	23.30	42.47	24.64	7.25	78.79	21.21
Man	4.09	25.32	40.03	23.02	7.54	68.16	31.84
Age							
<20	0.87	16.18	48.55	24.86	9.54	73.55	26.45
20–35	1.44	21.39	40.87	26.92	9.38	74.16	25.84
36–50	3.89	24.59	40.98	24.39	6.15	78.07	21.93
51–64	5.76	28.40	36.21	23.87	5.76	69.83	30.17
>65	5.91	39.25	36.56	13.98	4.30	67.74	32.26
Occupation							
Student NU	1.22	18.29	48.78	22.56	9.15	82.21	17.79
Student U	0.61	17.63	43.16	28.27	10.33	69.91	30.09
Professional	0.00	19.59	42.27	26.80	11.34	82.47	17.53
Functionary	3.64	29.09	36.36	28.18	2.73	75.45	24.55
Worker	2.82	23.00	38.03	27.23	8.92	74.65	25.35
Houseperson	3.31	33.88	41.32	15.70	5.79	79.34	20.66
Retired	7.54	36.68	33.67	16.08	6.03	56.78	43.22
Teacher	1.03	17.53	43.30	31.96	6.19	73.20	26.80
Prof. univ.	0.00	12.50	45.00	30.00	12.50	82.50	17.50
Vet	2.50	17.50	52.50	22.50	5.00	87.50	12.50
Farmer	17.58	45.05	32.97	4.40	0.00	83.52	16.48
Contractor	1.12	20.22	41.57	29.21	7.87	70.79	29.21
Unemployed	0.00	20.41	48.98	28.57	2.04	63.27	36.73

Table 4
Mean scores on farm animal treatment of various livestock by sex and age

Livestock	Overall	Gender		Age class				
		Woman	Man	<20	20–35	36–50	51–65	>65
Group I								
Horse	74 ± 0.5	72 ± 0.7a	75 ± 0.8b	72 ± 1.7a	73 ± 1.1a	77 ± 0.9b	74 ± 1.3b	74 ± 2.1b
Sheep	57 ± 0.5	57 ± 0.7a	59 ± 0.8a	52 ± 1.8a	57 ± 1.1b	59 ± 0.9b	61 ± 1.3b	60 ± 2.2b
Beef	57 ± 0.6	57 ± 0.8a	59 ± 0.8b	52 ± 1.9a	54 ± 1.2a	60 ± 1.0b	61 ± 1.4b	62 ± 2.3b
Dairy cattle	61 ± 0.6	60 ± 0.9a	62 ± 0.9b	59 ± 2.0a	59 ± 1.2a	61 ± 1.1a	66 ± 1.5b	62 ± 2.4a
Goat	56 ± 0.5	55 ± 0.8a	57 ± 0.8b	51 ± 1.8a	54 ± 1.1a	58 ± 0.9b	61 ± 1.4b	58 ± 2.2b
Veal	57 ± 0.7	57 ± 0.9a	58 ± 0.9a	54 ± 2.1a	54 ± 1.3a	59 ± 1.1b	61 ± 1.5b	59 ± 2.5b
Average	61 ± 0.5A	60 ± 1a	61 ± 1a	57 ± 1b	58 ± 1b	62 ± 1a	64 ± 1a	62 ± 2a
Group II								
Broiler	36 ± 0.6	36 ± 0.9a	37 ± 0.9a	32 ± 2.1a	35 ± 1.3a	36 ± 1.1a	41 ± 1.6b	39 ± 2.5a
Layer	39 ± 0.7	39 ± 1.0a	40 ± 1.0a	36 ± 2.2a	37 ± 1.4a	37 ± 1.2a	45 ± 1.7b	43 ± 2.7b
Swine	47 ± 0.6	47 ± 0.9a	48 ± 0.9a	42 ± 2.1a	44 ± 1.3a	47 ± 1.1b	53 ± 1.6c	51 ± 2.5bc
Turkey	45 ± 0.5	44 ± 0.9a	45 ± 0.9a	44 ± 2.0a	43 ± 1.2a	45 ± 1.1ab	48 ± 1.5b	43 ± 2.4a
Rabbit	42 ± 0.5	42 ± 0.9a	43 ± 0.9a	40 ± 2.0a	41 ± 1.2a	41 ± 1.1a	45 ± 1.5b	45 ± 2.4b
Mink	40 ± 0.7	40 ± 1.1a	44 ± 1.1b	39 ± 2.5a	37 ± 1.6a	38 ± 1.3a	42 ± 1.9b	55 ± 3.0c
Average	43 ± 0.5B	41 ± 1a	44 ± 1b	40 ± 2a	40 ± 1a	42 ± 1a	47 ± 1b	47 ± 2b

Means within rows with no common lowercase superscripts differ significantly for each mean effect (at least $p < 0.05$).
Means within column with no common uppercase superscript differ significantly for overall animal group mean (at least $p < 0.05$).

Table 5
Significance probabilities for fixed effects from the analysis of variance of the scores

Livestock	Main effect			
	Gender	Age	Occupation	Animal group
Group I				
Horse	*	*	***	NM
Sheep	NS	**	***	NM
Beef	NS	***	***	NM
Dairy cattle	NS	**	***	NM
Veal calf	NS	**	***	NM
Goat	NS	***	***	NM
Average GI	*	***	***	NM
Group II				
Broiler	NS	**	***	NM
Layer	NS	***	***	NM
Swine				
Turkey	NS	***	NS	NM
Rabbit	NS	***	***	NM
Mink	**	***	***	NM
Average GII	*	***	***	NM
Average I+II	*	***	***	***

NM = not in the model. $* = p \leq 0.05$; $** = p \leq 0.01$; $*** = p \leq 0.001$.

was significant ($p < 0.001$). School students, professionals, housewives, professors, vets and farmers were all willing to pay more, but this was not the case for the retired and unemployed.

The overall mean scores and the mean score assigned to each livestock by sex and age are presented in Table 4. In general, animals from the first group (ruminants and horses) were significantly ($p < 0.001$) higher than the second group (poultry, swine and fur animals). Within G1, horses got the highest value (74, $p < 0.01$) while the others get values around 60 (not significantly different among them). Within G2, broilers and laying hens got the lowest values (<40) and swine the highest (47). Significance probabilities for the fixed effects from the analysis of variance are presented in Table 5. The effects of age and occupation were highly significant. The effect of gender was significant for horses, mink and for the overall mean of animal Groups 1 and 2. The most critical group was young people and the less critical (higher scores) were middle aged to the elderly.

Overall mean scores and the mean score assigned to each livestock by occupation are presented in Table 6. The highest score was for farmers for both G1 and G2 type of livestock. The lowest values were assigned by professionals, teachers, contractors and the unemployed for G1. For G2 the lowest score (more critical) were observed in vets and professors.

The results for the consumption of WFP are presented in Table 7. More than 30% said they

Table 6
Mean scores on farm animal treatment of various livestock by occupation

Livestock	Occupation code												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Group I													
Horse	78±2a	75±1ab	71±2b	73±2ab	74±1ab	71±2b	78±2a	72±2b	79±3a	66±2c	78±2a	72±2b	73±3ab
Sheep	57±2ad	57±2ad	55±2ac	59±2ad	55±1ac	60±2d	62±2d	55±2ac	67±3b	56±2a	66±2b	54±2a	50±3c
Beef	59±2a	58±2a	56±2ad	60±2a	54±2bd	59±2a	63±2a	51±2b	55±3a	62±3a	68±2c	53±2bd	54±3ad
Dairy cattle	64±2bc	56±2ac	56±2ac	66±2bc	60±2ac	68±2b	70±2d	57±2ac	56±3ac	55±3ac	72±2d	55±2ac	60±3c
Goat	57±2ab	56±1ab	51±2ab	57±2ab	55±1ab	53±2a	59±2b	51±2ab	66±3d	59±2b	67±2d	54±2ab	47±3c
Veal	60±2b	53±2a	52±2a	56±2ab	53±2a	60±2b	65±2d	54±2a	52±3a	53±3a	74±2c	56±2ab	57±3ab
Average	63±2bd	59±1ad	57±2a	62±1d	58±1ad	62±1d	66±1b	57±2a	63±2bd	58±2ad	71±2c	57±2a	57±2a
Group II													
Broiler	39±2b	35±2a	35±2a	36±2a	34±1a	44±2b	44±2b	29±2d	32±3a	30±3a	52±2c	33±2a	32±3a
Layer	44±3b	38±2a	40±3ab	38±2a	39±2a	52±2e	48±2be	30±3c	25±3c	30±3c	53±3e	34±3ac	41±3a
Swine	50±2a	48±2a	43±2be	48±2a	43±2be	54±2c	55±2c	44±2ae	44±3ae	38±3e	60±2c	42±2a	43±3a
Turkey	44±2ac	41±2ac	39±2c	45±2a	42±2ac	51±2b	54±2b	40±2ac	42±3ac	37±3c	56±2b	45±2a	43±3ac
Rabbit	45±2c	40±2a	40±2a	43±2ac	42±2ac	48±2c	48±2c	40±2a	34±3b	37±3b	57±2d	42±2a	35±3b
Mink	41±3b	45±2b	40±3ba	38±3a	38±2a	43±3ba	40±3ba	43±3ba	36±4a	35±3a	57±3d	42±3ba	46±3b
Average	45±2a	43±1a	40±2a	43±2a	41±1a	49±2c	49±2c	40±2a	37±3b	35±2b	58±2d	41±2a	40±3a

(*) 1 = student; 2 = student university; 3 = professional; 4 = functionary; 5 = worker; 6 = houseperson; 7 = retired; 8 = teacher; 9 = professor; 10 = vet; 11 = farmer; 12 = contractor; 13 = unemployed.
Means within rows with no common lowercase superscripts differ significantly for each mean effect (at least $p < 0.05$).

Table 7
Two way frequency table by sex, age and occupation about the declaration of consumption of welfare friendly products (WFP) and about fur coat use

Main effect	Do you eat free range eggs? If yes, say reasons					Do you eat free range chicken? If yes, say reasons					Do you eat free range pork? If yes, say reasons					Do you wear fur coats? If no, say reasons				
	Yes	No	Q	W	S	Yes	No	Q	W	S	Yes	No	Q	W	S	Yes	No	Q	W	S
Overall	38.7	61.3	58	15	8	31.9	68.1	63	15	7	30.8	69.2	80	8	2	16.7	83.2	16	70	12
Gender																				
Woman	41.1	58.9	57	16	10	31.8	68.2	61	16	9	28.7	71.3	80	9	3	19.8	80.2	12	79	1
Man	35.9	64.1	59	14	6	31.9	68.0	66	13	5	33.2	66.7	80	8	2	13.2	86.8	20	60	1
Age																				
<20	42.8	57.4	60	9	10	33.0	67.0	64	13	10	30.3	69.7	81	8	3	10.2	89.8	10	81	1
20–35	35.5	64.5	55	15	8	29.4	70.6	60	20	5	26.6	73.4	81	11	3	11.1	88.9	15	70	1
36–50	42.4	57.6	57	17	9	35.7	64.2	62	13	7	35.0	65.0	77	8	3	16.0	84.0	16	72	2
51–65	34.3	65.7	56	19	7	28.9	71.1	61	12	9	32.6	67.4	83	5	1	21.8	78.2	22	60	2
>65	33.9	66.1	67	14	6	29.2	70.8	75	15	4	27.6	72.4	79	13	4	36.0	64.0	26	53	2
Occupation																				
Student NU	49.4	50.6	65	13	10	37.8	62.2	67	13	11	28.4	71.6	76	15	2	11.1	88.9	16	76	0
Student U.	34.7	65.3	54	8	13	24.2	75.8	61	16	8	30.9	69.1	86	4	3	11.0	89.0	13	76	1
Professional	52.1	47.9	58	22	4	39.2	60.8	53	29	0	41.7	58.3	80	15	0	11.6	88.4	15	61	1
Functionary	29.1	70.9	81	13	3	27.3	72.7	73	17	7	28.2	71.8	87	6	3	19.8	80.2	19	71	1
Worker	31.6	68.4	68	12	2	32.4	67.6	80	7	1	27.4	72.6	87	7	0	12.1	87.9	12	74	0
Houseperson	41.3	58.7	65	12	4	32.2	67.8	82	10	0	32.2	67.8	76	8	5	34.5	65.5	14	59	3
Retired	34.7	65.3	57	13	16	27.3	72.7	64	9	21	27.8	72.2	84	9	5	27.1	72.8	33	51	2
Teacher	27.1	72.9	54	23	8	33.0	67.0	52	26	8	37.5	62.5	83	11	6	16.5	83.5	11	73	0
Prof. univ.	12.5	87.5	77	23	0	27.5	72.5	85	14	1	25.0	75.0	70	16	0	12.5	87.5	17	83	0
Vet	42.5	57.5	35	50	0	32.5	67.5	42	54	0	32.5	67.5	88	12	0	13.7	86.3	4	78	4
Farmer	67.0	33.0	57	15	5	56.7	43.3	63	6	5	39.6	60.4	61	11	0	14.4	85.6	19	61	5
Contractor	48.3	51.7	67	17	10	40.5	59.5	70	14	8	29.2	70.8	88	8	0	15.9	84.1	16	72	0
Unemployed	32.7	67.3	47	3	9	30.6	69.4	53	2	8	22.4	77.6	75	8	8	25.0	75.0	11	81	0

Q = quality; W = welfare; S = safety.

consumed WFP like free range eggs, free range chicken and free range swine, the main reason being product quality. The frequency of reference to 'quality' as a reason to eat WFP was significantly higher in chicken and swine than for eggs ($p < 0.01$). Welfare as a reason to buy this type of products, ranged from 15% in poultry to 8% in swine. Safety was also argued as a reason to eat WFP (8% in eggs to 2% in pig meat). Others reasons included the interest to preserve traditional production systems, to preserve the environment or simply because some relatives reared the animals in that way. Significant differences were observed between sexes for free range eggs but not for broilers. Women ate significantly more free range eggs than men ($p < 0.01$). Men bought significantly more free range swine than women ($p < 0.01$). Welfare as a reason to eat WFP was higher in women than in men. No effect of age was observed for consumption rate of WFP.

Occupation has a significant effect on the declared consumption rate of this type of product. The highest values were observed for free range eggs for farmers, professionals and contractors, while the lowest were for professors, civil servants, university students, teachers, the retired and the unemployed. The highest values of positive frequencies for free range chicken were observed for farmers and contractors. The lowest values in this case were for retired, university students, civil servants, and professors. The differences between occupation classes were less important for free range pigs. In this case, the highest frequencies of consumption were professionals and farmers, and the lowest in retired, civil servants, workers and professors.

More than 83% of the people (see Table 6) preferred not to wear fur coats (Q11) and the main reason was welfare (70%). This observation was significantly ($p < 0.01$) higher in women than in men. Age also had a significant effect on frequencies. Young and medium aged people were significantly more critical of wearing fur coats than old or very old people ($p < 0.05$). The main reason was always welfare. The effect of occupation was significant ($p < 0.01$). The highest frequency of negative answers was observed in students, professionals, workers, professors, vets and farmers. The class with higher proportion of positive answers (to wear fur coats) was observed in housewives and unemployed.

4. Conclusions

The level of concern about animal welfare in Spain is important (and growing), but still lower than that observed in northern Europe or the USA. The results of the survey indicate a lack of information about the treatment of animals on the farm. In general, the perception was more negative if the production was seen as more intensive (i.e. broiler, laying hens, and pig).

A very high proportion of the people thought that welfare was important for both animals and humans. The majority of the people thought that schools should teach about animal welfare.

More than 75% of the people agreed to pay more for a product to improve animal welfare. This is inconsistent with the level of consumption of welfare friendly products (WFP), probably due to the low average incomes in Spain. The main reason to consume WFP was quality and, secondly for welfare

purposes. Most people did not use fur clothes, and the main reason was welfare.

The main effects analyzed were significant with a major welfare sensibility in younger people, women, students and professionals.

As a long term strategy, we conclude that it is important to inform and educate about animal welfare in the society. It will be necessary to investigate how to adapt the animal production systems to a modern concept of animal welfare (based on the Five Freedoms), developing a new concept of quality which involves the ethical aspects of the process. It is important to recognize that this new situation will involve additional costs that must be borne by the market.

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