Consumer attitudes towards animal welfare and their willingness to pay

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Summary
The interest of European consumers towards animal welfare can be influenced by several variables, both related to the consumers themselves and to the different countries of the EU. In order to assess animal welfare at farm level, it is essential to develop animal-based measures in accordance with the animals' actual welfare state in terms of their behaviour, health and physiology. The search for valid and reliable indicators is a key objective of several research programs especially for assessing welfare at farm level and the tools may include surveys addressed to farmers. However, there is a need to guarantee financial support for farmers who breed animals in accordance with such welfare conditions, to cover their additional costs. The aim of the study was to investigate the eating habits of Italian consumers regarding meat consumption linked to their knowledge of animal welfare and to their willingness to pay. We investigated consumers' understanding of animal welfare using a questionnaire (based on a list of twenty-three closed-ended questions) designed for collecting data from large numbers of respondents and multivariate statistical analysis. The data in our study showed that the variable with the greatest influence on purchase price was the place of meat purchase. As regards level of education, it appears that people with a high level of education are more concerned about animal welfare and, consequently, are willing to spend a higher price when buying meat. Consumer attention to the animal-welfare issue is on the rise and, in parallel with this growth, there is also a greater willingness to pay, i.e. a surcharge for the products obtained in the respect of animal welfare. This growth is influenced by the awareness and knowledge of the characteristics of animal welfare.

Interesse dei consumatori nei confronti del benessere animale e loro disponibilità a pagare

Parole chiave
Benessere animale,
Consumatore,
Disponibilità a pagare,
Questionario.

Riassunto
L'interesse dei cittadini europei verso il benessere degli animali risente di diverse variabili: la tipologia di consumatore e il suo paese di appartenenza, ad esempio. Al fine di valutare il benessere degli animali nell'azienda agricola, è essenziale sviluppare parametri oggettivi, ovvero *animal-based measures*, riguardanti il comportamento, la salute e la fisiologia degli animali. La determinazione di indicatori validi e affidabili di benessere animale rappresenta l'obiettivo chiave di diversi programmi di ricerca. Agli strumenti utilizzati vanno aggiunte, inoltre, indagini rivolte agli agricoltori, a esperti del settore e ai consumatori di carne. L'obiettivo dello studio è stato indagare le abitudini alimentari degli italiani rispetto al consumo di carne e di valutare la loro conoscenza del benessere degli animali correlandola con la disponibilità a pagare un prodotto etichettato *animal-friendly*. Durante lo studio è stato sottoposto un questionario composto di ventitré domande a risposta chiusa a cinquecento intervistati. I risultati dell'indagine sono stati, quindi, elaborati attraverso analisi statistiche multivariate. La variabile che è risultata in grado di influenzare maggiormente il prezzo di acquisto della carne è il luogo di acquisto, con un'ampia oscillazione tra la Grande Distribuzione Organizzata (G.D.O.) e i piccoli esercizi commerciali che propongono prodotti biologici. Inoltre, si evince che l'interesse verso il tema del benessere degli animali è direttamente correlato alla disponibilità economica e al grado d'istruzione del consumatore.

Infine, dallo studio emerge la necessità di garantire un sostegno finanziario agli agricoltori che allevano gli animali in conformità al loro benessere, per coprire i costi aggiuntivi necessari ad assicurare tali condizioni di allevamento.

Introduction

Welfare Quality® is an EU-funded project aimed at achieving 'integration of animal welfare in the food quality chain: from public concern to improved welfare and transparent quality'. Recent European research (European Parliament Committees 2017) has shown considerable and growing interest among European consumers in the intangible characteristics of products, such as environmental protection, social equity and animal welfare (Sassatelli 2006). Indeed, large parts of western societies, where some events (BSE, avian influenza, etc…) have raised awareness of the effects that animal husbandry has on meat safety, believe that animal welfare standards in livestock production need to be improved (De Jonge and Van Trijp 2013, EC 2007). However, considerable variability has been observed between different parts of the world (Kjørstad 2005) and even across the EU (Nocella *et al.* 2010), where consumers in northern EU member countries seem to be more concerned with animal welfare problems (Nocella *et al.* 2010). German consumers, for example, rate animal-welfare aspects very highly, with 61% feeling that it is important to protect farm animal-welfare. In contrast, only 34% of Polish citizens agree with this statement [European Commission (EC) 2016]. Little is known about the views of consumers from some developing countries, such as Brazil, regarding animal production systems (Clark *et al.* 2016).

State of the art

In recent years, the eating habits of the population have changed. Indeed, some people respond to their growing concerns over animal welfare by eating less meat or by becoming vegetarians or even vegans (Vanhonacker *et al.* 2010). Additionally, the number of consumers who source meat from more animal-friendly production systems has increased constantly (Lusk and Norwood 2012, Schulze *et al.* 2008). As a result, a number of animal welfare programs have been developed, introducing so-called "animal welfare products" onto the market (Heise and Theuvsen 2017).

Furthermore, consumers are requesting not only for safe and quality foods, but also for a certification that animals had been bred and slaughtered ethically (Salamano *et al.* 2013). In a 2007 study by the European Commission, consumers were asked to rate the importance of farm animal protection on a scale from 0 to 10, with their answers averaging 7.8. This shows that the food quality opinion is established, along with the complete nature and safety of the final product, also by the welfare of the animals involved (Blokhuis *et al.* 2008, Napolitano *et al.* 2007).

In order to assess animal welfare at farm level, it is essential to develop animal-based measures founded on the animals' actual welfare state in terms of their behaviour, health and physiology (Blokhuis *et al.* 2003). The search for valid and reliable indicators is a key objective of several research programs, especially for assessing welfare at farm level – the tools may include surveys addressed to farmers; in this case, the methodology used to conduct interviews is decisive. Studies conducted by Heise and Theuvsen (Heise and Theuvsen 2015) and Heise and colleagues (Heise *et al.* 2015) clearly indicated that different methodological approaches (open-ended and closed-ended questions) can lead to substantial differences in the perceptions of Farm Animal Welfare (FAW) of farmers and veterinarians. A similar pattern might also exist regarding consumers' definitions and appreciation of animal welfare. Differences in approaches complicate the development of a common assessment framework for animal welfare, that would be unanimously accepted by the various stakeholders. Most scientific concepts defining FAW are actually criticized for not adequately addressing public conceptions of FAW (Fraser 2008, Vanhonacker and Verbeke 2014). The animal welfare concept is characterized by scientific, ethical, economic, cultural and religious dimensions that continue to evolve (Fraser 2009, Green and Mellor 2011). Knowledge about the public's understanding of FAW should be augmented by encouraging the scientific dialogue between citizens and stakeholders along the food supply chain and by developing animal-welfare programs. Indeed, one of the key goals of new EU-funded projects is to develop a concept that adequately considers society's definition of animal welfare (Heise and Theuvsen 2017).

Previous studies (De Greef *et al.* 2006, Lassen *et al.* 2006, Marie 2006) showed that consumers strongly associate FAW with outdoor access, adequate space requirements and the ability of animals to engage

in natural innate behaviour. Other frequently named criteria related to feed and water supply and naturalness of feed. Meuwissen and colleagues (Meuwissen *et al.* 2004) found that citizens rated space, medicines and living surface as the most important indicators of the level of animal welfare. Miele and colleagues (Miele *et al.* 2011) found that citizens define FAW based on 12 established criteria known as the "welfare quality" approach.

In response to this public endorsement, an increasing number of regulations have been issued on the welfare of farm animals during growth (EC 2016), transportation (EC 2005)[1] and slaughter (EC 2009)[2]. Legislation on animal protection (Italian Legislative Decree No. 146)[3], although necessary in order to provide a minimum level of welfare to animals, does not guarantee to farmers sufficient revenues to sustain the increased costs, in spite of the subsidies introduced by the regional Rural Development Programme (RDP). Despite this public drive towards increased farm animal welfare standards, many farmers, practitioners and research groups are concerned about the extra costs arising from increased levels of animal welfare. They claim that this may lead to a reduced market competitiveness: for instance, without this increased cost, it has been estimated that farmers' added value for meat is only 19% (Economic Research Service 2004). The results of the surveys of EU and non-EU operators suggest that the application of AW legislation/standards implies higher production costs for operators, regardless of their geographical position, to achieve and maintain compliance with AW legislation/standards (European Commission 2017).

Conversely, such added value may be offset by raising the price of certified meat. A recent study (Napolitano *et al.* 2008) on Willingness To Pay (WTP) for yogurt revealed that consumers were influenced by information about low standards of animal welfare and moved their WTP towards their expectations. However, the difference between expectancy and WTP was not totally correlated with FAW, because WTP was also associated with other aspects such as the sensory properties of the products (Napolitano *et al.* 2008) and different meat types (i.e. species of origin) (Carlsson *et al.* 2007).

Studies show that WTP tends to be influenced by national policy, the awareness of food scandals and cross-cultural differences (Nocella *et al.* 2010, Lagerkvist and Hess 2011). For instance, a study showed that EU countries such as Germany, France and Great Britain have a higher WTP for animal-welfare attributes than Spanish, Danish and Italian consumers. Accordingly, a higher WTP has been observed for salmon and pigs reared in improved welfare conditions, although the presence of unsuitable products (over-pale salmon from organic farming and boar-tainted pork from uncastrated male pigs) decreased WTP (Lagerkvist *et al.* 2006, Liljenstolpe 2008, Olesen *et al.* 2010).

Studies based on choice experiments and cost estimates showed that animal-friendly practices may be economically sustained by consumers' increased WTP; further studies are necessary to verify whether the rise in WTP at least covers the increased costs to farmers. Thus, consumer WTP provided a useful tool to obtain information about the real value that consumers give to animal welfare and they could sustain the implementation of the corresponding animal-friendly practices as assessed by benefit-cost estimates (Carlsson *et al.* 2007). However, WTP is often over-estimated because of hypothetical bias and social desirability effects in the answers (Dransfield *et al.* 2005, Napolitano *et al.* 2010).

In contrast to the large number of studies regarding WTP for animal welfare or sustainability attributes (Verain *et al.* 2012), relatively few studies have been conducted segmenting consumers based on their preferences for a broader range of production-related attributes (animal welfare, environmental impact, health and safety) and for more traditional product characteristics (i.e. colour, fat content, country of origin, price). Some studies (Dransfield *et al.* 2005, Swanson and Mench 2000) indicated that consumer intent to pay, measured through questionnaires, was higher for products obtained using animal-friendly farming techniques. In particular, people appeared to be prepared to pay an average 5% extra for pork from outdoor-raised pigs, with one-fifth of consumers claiming to be willing to pay 20% extra (Dransfield *et al.* 2005). In another study conducted on citizens from the 25 EU member states, the majority of respondents (57%) stated that they were prepared to pay more for eggs from animal welfare-friendly production systems: 25% could accept a 5% increase, 21% declared that an increment of 10% would be acceptable and 11% were prepared to pay 25% extra or more (EC 2005). Similar results were obtained in the USA, where 44% of respondents expressed the intent to pay 5% more for food from animals raised humanely and 20% said they were prepared to pay up to 10% more (Swanson and Mench 2000).

The aim of the study was to investigate the eating habits of Italian consumers regarding meat

[1] European Commission (EC) 2005. Council Regulation (EC) No. 1/2005 of 22 December 2004 on the protection of animals during transport and related operations and amending Directives 64/432/EEC and 93/119/EC and Regulation (EC) No 1255/97. *Off J*, **L 3**, 05/01/2005, 1-44.

[2] European Commission (EC) 2009. Council Regulation (EC) No. 1099/2009 of 24 September 2009 on protection of animals at the time of killing. *Off J*, **L 303**, 18/11/2009, 1-30.

[3] Decreto Legislativo 26 marzo 2001, No. 146 riguardante l'attuazione della direttiva 98/58/CE relativa alla protezione degli animali negli allevamenti. *Off J*, **95**, 24/04/2001.

Table I. *An outline of the questions put forward to the respondents.*

Questions			
1) Age	<25	14) Are you concerned with animal welfare?	Yes
	25-40		I am quite interested
	40-60		No
	>60		I never thought about it
2) Gender	Male	15) When you buy meat, do you think about how the animals were raised and slaughtered?	Yes, most of the time
	Female		Yes, sometime
3) Highest academic qualification	Primary school/Middle school		No, never
	High school		I don't know
	Graduate	16) Which of these animals, according to you, has the worst quality of life?	Chickens and laying hens
	Postgraduate qualification		Cattle
4) Place of residence	Small town (up to 5.000)		Pigs
	Town (5.000-30.000)		Sheep
	City (more than 30.000).	17) What characteristics should cattle breeding have to ensure animal welfare?	Animals are bred in a healthy and natural way
5) Do you eat meat?	Yes		Animals are free to move around an open area
	No		Animals are free to behave naturally
6) If you answered No to question 5, please state why?	Ethical and religious reasons		Animals are bred to ensure a good yield
	Meat is harmful to the human health	18) How do you keep yourself updated on animal welfare?	Newspaper and magazines
	Meat production is unsustainable for the environment		Internet
7) How do you consider your meat consumption in the last years?	Increased		TV shows about animal
	Unchanged		I don't normally keep updated, but if I find news about it, I pay attention
	Decreased		I am not interested
8) How often do you eat beef?	Often	19) What do you think about products made following animal welfare?	They are healthier foods
	Sometimes		They are higher quality foods
	Never		They are more profitable for the farmer
9) How often do you eat pork?	Often		They are more sustainable for the environment
	Sometimes	20) Are you willing to buy more expensive meat that has been produced following animal welfare measures?	Yes, up to 10% more
	Never		Yes, up to 20% more
10) How often do you eat sheep?	Often		No, I'm not willing to pay more
	Sometimes		I don't know
	Never	21) How should the product obtained according to animal welfare be tagged?	Informative labels on the pack
11) How often do you eat poultry?	Often		Rating and scoring system
	Sometimes		A logo on the package
	Never		Realistic picture about the livestock
12) Where do you usually buy meat?	Butcher's	22) In your opinion, who should guarantee animal welfare?	Producers and farmers
	Supermarket		Veterinarians
	Discount store		European Commission
	Other (producer or organic shops)		Italian Government
13) When buying, does the meat price influence your choice?	Yes, a lot	23) Do you consider the information about livestock and animal slaughter exhaustive on current labels?	Yes, information is clear and sufficient
	Yes, enough		No, information is not sufficient
	No		No, information is not fully clear
	I don't know		I don't know.

consumption linked to their knowledge of animal welfare, using Willingness To Pay (WTP) as a proxy of their behaviour.

Material and methods

Sampling and data collection

We investigated consumers' understanding of animal welfare using a questionnaire designed for collecting data from large numbers of respondents and multivariate statistical analysis. The questionnaire was based on a list of twenty-three closed-ended questions (Table I). Five hundred respondents compiled the questionnaire and data were collected in the months of September and October 2018. The opportunity to fill out the questionnaire both in paper format and in digital version was provided in order to interview more people, and thereby achieve better statistical representativeness. Given the ubiquitous presence of smartphones, a link was created whereby people could also answer the questionnaire from their computers or phones. A total of three hundred respondents used social media and internet links to respond to the questionnaire; conversely, others were interviewed in areas adjacent to supermarket butchers' counters.

The questionnaire was divided into three different parts, according to the nature of the questions:

- Socio-economic data: information on social, cultural and economic issues (gender, age, place of residence); this information allowed us to segment the sample and to study different meat consumption behaviours.
- Meat consumption habits: characteristics of spending habits (frequency and place of purchase, quality, price ratio), regarding meat consumption.
- Animal welfare interest: knowledge and awareness of respondents about animal welfare, ranging from a description of animal welfare, its importance and how clearly they were able to interpret labelling information to recognize that a given food had been produced respecting animal welfare.

Questions about the WTP surcharge for meat products compliant with animal welfare criteria were asked at the end of the questionnaire.

Statistical analysis

A multiple linear regression analysis was carried out to predict the WTP for the sample and to assess specific forms of relationship between variables collected and the WTP. In the multiple regression model, we assume that there is a linear relationship between the dependent variable Y and Xn independent variables. The independent variables are sometimes called both explanatory variables, because they are able to explain the Y statistical variation, and predictor variables, due to the predictive capability of the Y value (Daniel and Cross 2013).

In our study, the dependent variable was the consumer's Willingness To Pay (WTP), while the independent variables included all information collected from the interviewees. After a frequency analysis and a statistical correlation index of all the data, eight variables were chosen: (i) type of consumer; (ii) concern; (iii) consumer's qualification; (iv) place of meat purchase[4]; (v) age; (vi) gender; (vii) residence and (viii) trend of meat consumption in the last years. As regression method, we used the forward type in which the independent variables were entered one at a time according to the probability that they affect the significance of the obtained model. According to the highest level of determination coefficient (R^2), the best fitting model was obtained.

Results

The percentages of respondents who often eat chicken meat and beef were respectively 33.8% and 27.2%, whilst the consumption frequency of pork meat was 21.9% and of sheep meat was only 2.32%. As results of the former regression model, based on the eight variables listed above, R^2 was very low due to the high outlier presence that influenced the total variability of the sample. Several statistical methods reduced this effect. We used the Percentage Difference (PD) between the observed value of WTP and the calculated value by the regression model. In the final regression, we used 147 observations in which the PD was higher than - 25% and lower than + 25% so that a high R^2 was obtained (Table II). The fitting model chose four of the original variables as significant: (i) type of consumer; (ii) concern; (iii) consumer's qualification and (iv) place of meat purchase. Conversely, the remaining variables: (i) age; (ii) gender; (iii) residence and (iv) trend of meat consumption in the last years, did not affect the model's significance.

By looking at the fourth box in Table II, it is clear that

[4] The significance of the four variables used in the analysis is as follows: the variable 'type of consumer' was related to the frequency of meat consumption; 'concern' indicated consumer sensitivity to various aspects of animal welfare; 'consumer's qualification' regarded the educational level (primary school, middle school, high school, degree or post-degree); 'place of meat purchase' was butcher's, supermarket, discount store, producer or organic shops.

the place of meat purchase was the most significant variable. The second variable that may influence the consumer's WTP was concern, the third variable was the type of consumer while the fourth was the level of education. The linear equation obtained (Table III) was as follows:

WTP = -2.9 (constant) + 3.6 (place of purchase) + 1.3 (concern) - 1.4 (type of consumer) + 1.9 (qualification)

Discussion

The limit of our study is represented by the part of the population which answered the questionnaire (Table IV). As in previous studies (Carlucci *et al.* 2009, Grunert and Valli 2001), we considered mainly younger subjects with a higher level of education. Indeed, since the questionnaire was also disseminated via internet, the people who responded were mainly young people and students, as they were the most frequent social media users at the time.

Table III showed that the variable with the greatest influence on purchase price was place of meat purchase. Indeed, from our results, it emerged that if the meat is bought in a supermarket or in a discount store, the consumer has a lower WTP; on the other hand, if the meat is bought in a butcher's, from the producer or in an organic shop, consumers raise their WTP. This difference could be explained by the several kinds of customer in retail settings whose purchases are strictly linked to quality-price ratio. As regards the second variable, it is clear that the greater the consumers' interest in animal welfare, the higher their WTP. Conversely, frequency of meat purchases negatively affected WTP. Finally, as regards level of education, it appears that people with a high level of education are more concerned about animal welfare and, consequently, are willing to spend a higher price when buying meat.

The data in our study showed that educational background influences experts' views on certain animal-welfare aspects. These results are in agreement with those from other studies (Nøhr *et al.* 2016, Bracke *et al.* 2008) investigating the influence of expert education and current profession in regards to their opinion on the validity of welfare measures. Moreover, results involving 196 European experts showed that current profession was more pivotal than educational background in their approach to welfare measures and criteria. However, Rodenburg and colleagues (Rodenburg *et al.* 2008) showed that welfare scientists including ethologists and veterinarians presumably are better qualified than lay people to make judgements on the overall animal-welfare state whenever the welfare judgement is to be based on a complex dataset on various welfare indicators.

According to a previous study conducted by the

Table II. *The sample coefficient of determination.*

Model	R	R-squared	Adjusted R-squared	Standard Deviation (SD)
1	0.738	0.545	0.542	3.344
2	0.853	0.727	0.724	2.597
3	0.903	0.816	0.812	2.139
4	0.935	0.874	0.870	1.778

Table III. *Coefficients.*

Model	Unstandardized Coefficients		Standardized Coefficients	t	P
	B	Standard Deviation (SD)	Beta		
1) (Constant)	5.652	0.697		8.107	0.000
Place of meat purchase	5.014	0.379	0.738	13.218	0.000
2) (Constant)	-0.521	0.828		-0.629	0.531
Place of meat purchase	3.733	0.322	0.550	11.595	0.000
Concern	1.399	0.142	0.467	9.854	0.000
3) (Constant)	2.831	0.791		3.577	0.000
Place of meat purchase	3.606	0.266	0.531	13.573	0.000
Concern	1.309	0.117	0.437	11.147	0.000
Type of consumer	-1.346	0.161	-0.301	-8.348	0.000
4) (Constant)	-2.944	0.971		-3.033	0.003
Place of meat purchase	3.590	0.221	0.529	16.261	0.000
Concern	1.275	0.098	0.420	12.858	0.000
Type of consumer	-1.426	0.134	-0.319	-10.614	0.000
Consumer's qualifications	1.858	0.230	0.241	8.093	0.000

Institute of Grocery Distribution (IGD 1999), a strong influencing factor on the knowledge of, and interest in, food production is where the consumer lives, in particular whether they are of rural or urban origin (Table I). Tuyttens and colleagues (Tuyttens *et al.* 2010) also showed significant differences in animal-welfare understanding with regard to many socio-demographic variables. Gender, age, place of residence and children significantly influenced the perceived importance of the 12 animal-welfare criteria, while education level had no significant effect on consumers' animal welfare definitions (Tuyttens *et al.* 2010). Conversely, in our study, the consumer's place of residence was excluded among the variables able to influence consumer WTP.

Table IV. *Characteristics of the consumers interviewed.*

Questions		Answers (%)
1) Age	<25	13.5
	25-40	47.0
	40-60	31.4
	>60	8.0
2) Gender	Male	36.5
	Female	63.5
3) Highest academic qualification	Primary school/Middle school	1.1
	High school	9.7
	Graduate	41.8
	Postgraduate qualification	47.5
4) Place of residence	Small town (up to 5.000)	18.1
	Town (5.000-30.000)	27.6
	City (more than 30.000).	54.2
5) Do you eat meat?	Yes	96.0
	No	4.0
6) If you answered No to question 5, please state why?	Ethical and religious reasons	60.9
	Meat is harmful to the human health	21.7
	Meat production is unsustainable for the environment	17.4
7) How do you consider your meat consumption in the last years?	Increased	7.8
	Unchanged	48.9
	Decreased	42.6
8) Where do you usually buy meat?	Butcher's	39.2
	Supermarket	47.9
	Discount store	1.5
	Other (producer or organic shops)	8.9
9) How do you keep yourself updated on animal welfare?	Newspaper and magazines	16.0
	Internet	17.3
	TV shows about animal	12.0
	I don't normally keep updated, but if I find news about it, I pay attention	45.6
	I am not interested	8.6
10) Are you concerned with animal welfare?	Yes	69.8
	I am quite interested	19
	No	1.3
	I never thought about it	9.3

The results of our study showed that only 7.9% of the respondents were unwilling to pay extra costs for products obtained in respect of animal welfare; 33.7% said they were willing to pay up to 10% more and as many as 58.4% of the persons interviewed claimed to be prepared to meet an increase of up to 20% more than normal (Figure 1).

Conclusions

Using social media for public investigation appears to be a rapid and effective method to reach people and explain the nature and aims of the survey; moreover, this method saves time for collecting and inputting data. The statistical procedure we used is very common in marketing and consumer studies and its results have also been used for commercial purposes.

As regards our results, it is clear that consumer attention to the animal-welfare issue is on the rise and, in parallel with this growth, there is also a greater WTP, i.e. a surcharge for the products obtained in the respect of animal welfare. This growth is influenced by the awareness and knowledge of the characteristics of animal welfare. For this purpose, more efforts should be made to clarify to consumers what are exactly the animal-welfare criteria, chiefly by public bodies, to raise awareness among citizens. Interestingly, in our study the level of income clearly affected consumer WTP. This was particularly evident between customers of supermarkets and of discount stores.

It is also clear that the farmers who breed animals in

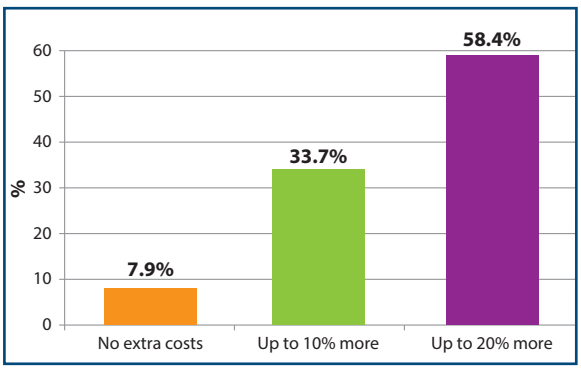

Figure 1. *Consumer willingness to pay.*

accordance with the appropriate welfare conditions, deserve financial support to cover the additional costs. To achieve this, two actions in particular are required: i) a more comprehensive and simplified certification system could increase consumer awareness on topics such as sustainability, food safety, human health and animal life quality and could help avoiding non-compliant claims. For instance, some European countries (France, Denmark) in large-scale retail have launched products of animal origin subject to stringent welfare criteria with the label "animal welfare" on their packaging; ii) an institutional subsidies system for farmers who choose animal welfare would help achieving a good quality/price ratio, increasing the supply of animal-welfare certified products and, conversely, lowering their market price. Institutional subsidies are essential to cover the farmer expenses required to obtain the necessary certifications.

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