

CORE Organic Project Series Report

Farmer Consumer Partnerships: WP 5 Report on the results of Consumer Choice Experiments



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ANIPLAN	Minimising medicine use in organic dairy herds through animal health and welfare planning: aniplan.coreportal.org
FCP	Farmer Consumer Partnerships: fcp.coreportal.org
COREPIG	Prevention of selected diseases and parasites inorganic pig herds – by means of a HACCP based management and surveillance programme: corepig.coreportal.org
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List of acronyms

ANI	Highest animal welfare standards
AT	Austria
CCE	Consumer Choice Experiment
CH	Switzerland
CHF	Confoederatio Helvetica Franc
COU	From the respective country
DE	Germany
EC	European Commission
EU	European Union
€	Euros
EUR	Euros
FAIR	Fair prices for our organic farmers: <i>20 pence/20 cents/50 Rappen extra</i>
FCP	Farmer Consumer Partnerships
GBP	British Pounds
H	Hypothesis
IT	Italy
LL	Log Likelihood
ML	Maximum likelihood
MNL	Multinomial logit model
n	Number of observations
%	Percent
S-I-R	Stimulus-Organism-Response
REG	From the respective region
UK	United Kingdom
WTP	Willingness to pay

Executive Summary

More and more European consumers demand products with specific social, ethical and environmental attributes as well as food products with a regional identity (FLO, 2010; Padel et al. 2009, Zanolini et al. 2004). As a result, voluntarily generating added value by integrating and communicating social, ethical and environmental activities (so-called OrganicPlus arguments) that go beyond the European organic standards as defined in the EU Council Regulation (EC) 834/2007 and their implementation EU Council Regulation (EC) 889/2008 represents a promising strategy for product differentiation.

However, voluntary activities on the part of organic producers may lead to higher production costs and to a competitive disadvantage for these producers unless consumers are willing to compensate the higher production costs by paying a higher product price. The project CORE Organic Farmer Consumer Partnerships shall provide information on consumers' preferences and willingness to pay for selected OrganicPlus arguments in the five European countries Austria (AT), Germany (DE), Italy (IT), Switzerland (CH), and United Kingdom (UK). The arguments focussed in this research are:

- From the respective country
- From the respective region
- Highest animal welfare standards
- Fair prices for our organic farmers: 20 cents extra

The results of this research should serve as an empirical basis for organic farmers' initiatives for their strategic positioning in the organic market. A further objective has been to determine causal relationships between the preferences for OrganicPlus arguments and consumer characteristics and to identify relevant consumer segments.

We tested organic consumers' preferences and willingness to pay for the selected OrganicPlus arguments on organic eggs by means of consumer choice experiments in a near-buying situation. In the choice experiments, consumers were faced with 6 choice sets (buying situations) with different organic egg alternatives with and without OrganicPlus arguments displayed on the egg packages. Consumers were asked to purchase the most preferred alternative in each choice set. After the choice experiments, the consumers completed a standardised questionnaire. The questionnaire was aimed at collecting information that might explain any preferences for selected OrganicPlus arguments. The data collected in the choice experiments and in the survey was analysed with multinomial logit models.

The models showed that organic egg packages displaying OrganicPlus arguments were more preferred by organic consumers than packages without OrganicPlus arguments. This finding illustrates that OrganicPlus arguments may serve as a marketing strategy and a tool for differentiation of organic products from "anonymous" organic trades. However, consumers' preferences varied considerably between the countries. In Germany, Italy, Switzerland and the UK, the argument, "from the respective region" was identified to be the most preferred argument. In Austria, "highest animal welfare standards" was the most preferred. Only in Germany and Switzerland, the argument "fair prices for our organic farmers: 20 cents extra" was relevant for consumers. Besides this, "from the respective country" was preferred only in Austria.

The willingness to pay for OrganicPlus arguments also varied considerably between the countries and between arguments. In all countries except in AT, the willingness to pay was highest for "from the respective region". It was 1.54 EUR in DE, 0.87 EUR in IT, 0.93 EUR in CH and 0.56 EUR in UK, while it was only 0.34 EUR in AT. In Austria, the willingness to pay was highest for "highest animal welfare standards" (0.49 EUR).

The higher the organic share of consumers' food and beverage expenditures, the more they preferred the argument "from the respective region". Higher income and higher shares of organic food and beverage expenditures increased the probability that consumers preferred eggs with the OrganicPlus argument "highest animal welfare standards". Furthermore, this argument was preferred by consumers with high level of involvement into animal welfare. The same applies to consumers who stated that the government and food companies should promote high animal welfare standards and that farmers should be compensated for integrating such animal welfare standards in their production system. Furthermore, the social commitment had an impact on consumers' preferences for the argument "fair prices for our organic producers: 20 cents extra".

To conclude, OrganicPlus arguments do show promise, however, they are not preferred or welcomed by all organic consumers. Preferences depend on education, household income, organic food and beverages expenditure as well as on consumers' attitudes towards the OrganicPlus arguments and social commitment.

1 Introduction

1.1 Background

There is an increasing trend among European consumers to demand products produced under specific social, ethical and environmental conditions as well as food products with a regional identity (FLO, 2010; Padel et al. 2009, Zanolli et al. 2004). Considering the increasing competition in the organic market, linking such social, ethical and environmental attributes (so-called OrganicPlus arguments) which go beyond the European organic standards as defined in the EU Council Regulation (EC) 834/2007 and their implementation EU Council Regulation (EC) 889/2008 to organic products might therefore represent a promising strategy for product differentiation.

However, such voluntary activities may lead to higher production costs and to a competitive disadvantage for organic producers, unless consumers are willing to compensate for the higher production costs by paying a higher product price. Several examples show that consumers are willing to pay a price premium for producers' voluntary commitment to integrate social or ethical activities. "Toni's free-range eggs", an Austrian organic and free-range egg producers' association is one example. The association promotes animal welfare standards that go beyond the European organic standards. Another example is "fair milk price", which was initiated by German and Austrian dairy farmers. The intention of the farmers is to obtain higher producer prices by getting a price premium of 5 cents, which is directly paid from consumers to producers (Burchardi and Thiele, 2006).

Whether there is a consumer preference for OrganicPlus arguments and whether consumers are willing to pay a price premium for products with OrganicPlus arguments is the key research question of the project CORE Organic Farmer Consumer Partnerships. The overall objective of the project is to analyse and to test innovative communication strategies of organic companies as a means to reconnect organic farmers and consumers in the five European countries Austria (AT), Germany (DE), Italy (IT), Switzerland (CH), and the United Kingdom (UK).

1.2 Objectives

The research presented in this report is based on previous work conducted under the framework of this project. Padel and Gössinger (2008) analysed OrganicPlus approaches and communication arguments of organic companies. The background of OrganicPlus approaches was furthermore explored in depth in 20 case study companies. Subsequently, Zander and Hamm (2009) tested 14 communication arguments by means of an information-display-matrix. Zander and Hamm found "regional", "animal welfare" and "fair producer prices" to be the communication arguments which are preferred most by consumers. These findings led to the development of a communication tool for organic eggs which was tested through focus group discussions (Naspetti und Zanolli, 2010). The focus group discussion showed that the concepts including "animal welfare" followed by "regional/local production" were liked most.

Based on this previous work, the objective of the subsequent empirical research presented in this report was to analyse consumers' buying behaviour and willingness to pay for the three most preferred communication arguments using a communication tool for organic eggs which was revised according to the findings of Naspetti and Zanolli (2010). The research was also aimed at identifying relevant consumer segments who demand OrganicPlus arguments. The arguments were tested in a consumer choice experiment combined with a subsequent survey in the five countries Austria, Germany, Italy, Switzerland and the United Kingdom. The following OrganicPlus arguments were tested on egg packages:

- From the respective country
- From the respective region
- Highest animal welfare standards
- Fair prices for our organic farmers: 20 cents extra

In addition to "from the respective region", we tested "from the respective country" in order to see any differences between these two levels referring to the geographical origin of food.

The arguments were adapted to the country-specific context. Thus, the arguments referring to the geographical origin included the name of the respective study country or a specific region in that country respectively. The claim related to fair prices was adapted to the context of the respective study country as well: "Fair prices for our organic farmers: 20 cents (in AT, DE, and IT)/20 pence (in UK)/50 Rappen (in CH) extra".

This report then presents the results of testing consumers' preferences and willingness to pay for the OrganicPlus arguments. After this introduction and description of the objectives, the conceptual framework and hypotheses as well as the methods used are described in chapters 2 and 3. The results are presented in chapter 4, followed by the discussion of the results and concluding remarks in chapter 5.

2 Conceptual framework and hypotheses

This chapter provides an overview on the Random Utility Theory, on which this research is based. It describes the consumer characteristics we emphasised in order to identify relevant consumer segments and to explain consumers' choices (behaviour) observed in the choice experiments.

To explain the underlying principle of consumers' buying behaviour towards the most convincing OrganicPlus arguments (Zander and Hamm, 2009), we refer to the Random Utility Theory (Lancaster, 1966). The theory is derived from Economic Consumer Theory and is commonly used to explain choice behaviour observed in experimental approaches (Ben-Akiva and Lerman, 1985). According to the Random Utility Theory, consumer choices between several choice alternatives depend on the utility of the attributes of the alternatives available. Random Utility assumes that in buying decisions, consumers attempt to maximise their utility U that derives from the product alternatives (Louviere et al. 2000). Thus, consumers will choose the product alternative with the highest perceived utility. The probability that a consumer n will choose alternative i from a choice set of J alternatives is:

$$P_{ni} = P(U_{ni}) > P(U_{nj}) \text{ for all } j \neq i$$

In Random Utility Theory, utility is further split into a systematic portion and a stochastic component (Louviere et al. 2000):

$$U_{ni} = V_{ni} + \varepsilon_{ni}$$

While ε_{ni} is an error term that represents behavioural inconsistencies and unobserved sources of utility in choice behaviour, V_{ni} summarises the measurable attributes available which have an impact on the choice decision. This systematic portion of utility is defined as a linear expression in which each attribute is weighted by a unique coefficient to account for that attribute's marginal utility input (Hensher et al. 2005). Using f as a generalised notation, the systematic component of utility with $k=1, \dots, K$ and X attributes may be written as:

$$V_i = \beta_{0i} + \beta_{1i}f(X_{1i}) + \beta_{2i}f(X_{2i}) + \beta_{3i}f(X_{3i}) + \dots + \beta_{Ki}f(X_{Ki}),$$

where β_{ji} is the weight associated with a product attribute or consumer characteristic X_j and alternative i and β_{0i} the alternative-specific constant that summarises behavioural inconsistencies and unobserved sources of utility.

Attributes belonging to the systematic portion of utility may be alternative-specific, e.g. product price, packaging, logos, etc. The alternative-specific attributes we emphasised in this research are the OrganicPlus arguments on organic eggs as described in the previous section and the price levels for different Organic Plus alternatives. From these theoretical considerations, we formulated the hypotheses H1 and H2:

H1: Organic egg packages displaying OrganicPlus arguments – representing a stimulus to consumers – are more preferred than packages without OrganicPlus arguments.

H2: Consumers are willing to pay a price premium for OrganicPlus argument displayed on organic egg packages.

In order to be able to explain consumer preferences on the basis of the choice experiments, we furthermore considered attributes referring to characteristics on the part of consumers belonging. These components are described in Neo-behaviouristic Theory in Stimulus-Intervention-Response-Models (S-I-R-models) (Howard and Sheth, 1969). According to Howard and Sheth (1969) consumers' behaviour towards a product

alternative is determined by intervention variables. The intervention variables are formed by i) activating and ii) cognitive processes as well as iii) external factors. Activating processes include attitudes, motivations and emotions. Attitudes are formed by motivation and a cognitive evaluation of the stimulus (choice alternative). Motivation consists of emotion and instincts directed towards the behaviour. Emotions are feelings which are subconsciously perceived on the one hand, and to a certain extent by cognition on the other hand. The cognitive component is formed by perception, processing and memorising of information (Howard and Sheth, 1969). Furthermore, intervention variables consist of external environmental and socio-demographic factors.

Previous research has revealed that especially consumers' attitudes determine consumer preferences for organic food (Tenbült et al. 2008; Magistris and Gracia, 2008; Michaelidou and Hassan, 2008; Onyango et al. 2007, Krystallis and Chrysosoidis, 2005; Saba and Messina, 2003; Hill and Lynchehaun, 2002; Loureiro et al., 2001; Laroche et al., 2001, Gil et al. 2000). Potential determinants explaining consumers' preferences for the OrganicPlus argument "regional" are a perceived higher quality and safety, strong association with the region and avoidance of long-distance transportation (Stolz et al., 2009; Banik and Simons, 2008; Leitow, 2005; Roosen et al., 2003; Van Ittersum, 2002; Van der Lans et al., 2001; Wilson and Fearn, 2000; Belk, 1996). Moreover, Leitow (2005) and Wirthgen (2003) suggest that consumers might prefer locally produced food as they want to support local economy and local farmers. As far as consumer preferences for domestic food are concerned (OrganicPlus argument "from the respective country"), similarly, Loureiro and Umberger (2007) showed that depending on the kind of product, consumers might prefer domestic food due to a perceived higher quality and safety.

For this study we therefore consider for both OrganicPlus arguments referring to the geographical origin of the product (region and country) following potential consumer attitudes: strong connection with their own country/region, the intention to avoid long transport distances, supporting domestic economy and farmers and a perceived higher quality and safety of domestic or regional products respectively.

With respect to animal welfare, Liljenstolpe (2008), Michaelidou and Hassan (2009), Lusk et al. (2007) and Roosen et al. (2003) suggest consumers' personal involvement in and commitment to animal welfare issues as well as consumer's mindset on how highest animal welfare standards should be supported as factors that might determine consumers' preferences for the OrganicPlus argument "highest animal welfare standards". Apart from these aspects, we additionally test consumer's attitudes towards specific aspects of animal welfare standards (e.g. flock size of laying hens, plenty of perches, littered nests, etc.).

So far, literature on the issue of fair producer prices with respect to egg production is rather scarce. Analogously to factors that might determine consumers' preferences for higher animal welfare standards, we test consumers' social or environmental commitment as well as consumer's mindset on a supportive environment for fair producer prices.

Onyango et al. (2007), Hill and Lynchehaun (2002), Loureiro et al. (2001) and Laroche et al. (2001) confirm socio-demographic characteristics to play an important role in consumer's buying decision processes related to organic food. Therefore, we include following socio-demographic characteristics in our study: age, gender, monthly net household income and educational level.

Finally, following the overall conceptual framework of the entire project on the one hand and the research already completed within the project (Naspetti and Zanolli, 2010; Zander and Hamm, 2009; Padel and Gössinger, 2008), we consider furthermore consumers' purchasing habits of organic products, such as the purchasing frequency, the share of expenditure on organic food products, and the preferred places to buy organic food to have potentially an impact on preferences for OrganicPlus arguments.

3 Methods

Chapter 3 provides an overview on the methods chosen in this research, the organisation and procedure of data collection and data analysis.

Consumers' buying behaviour towards and willingness to pay for the selected OrganicPlus arguments was investigated by means of a consumer choice experiment combined with a questionnaire-based survey. We chose this approach because the results from real choices between product alternatives in a near-buying situation are closer to reality than simply asking consumers to state their preferences. Conclusions drawn from behaviour observed in choice experiments have a higher transferability to real buying situations compared to interviews (Hair et al. 2006).

In practice, experiments are conducted as repeated observations, in which at least one variable is systematically changed (Hair et al. 2006). In this research, the choice experiments were conducted as a buying simulation in which consumers were asked to choose between organic egg packages with varying OrganicPlus arguments and product prices. The choice experiments were carried out as laboratory choice experiments. Other than in field experiments, laboratory choice experiments usually have a relatively high internal validity as the control level is higher than in field experiments (Hair et al. 2006). It is possible to standardise the experimental design and procedure. In terms of comparability, standardisation is an important issue, and particularly if the experiment is conducted in different locations or, as in this research, different countries. Thus, laboratory choice experiments were the method of choice.

3.1 Experimental design

In the choice experiments, 6 choice sets (buying situations) of organic egg packages were presented to each consumer. The labels of the egg packages were designed by Skymax_DG, an advertising company in Milano, Italy. The general layout of the egg package labels was the same in all choice alternatives and countries (see Figure 1). The egg package labels were specifically adapted to the local context and language in the partner countries Austria, Germany, Italy, Switzerland and the United Kingdom. One complete set of labels with country-specific information was prepared for each of the five countries (see Appendix 4). The egg packages showed the usual product-specific as well as country-specific information.



Figure 1: Example of a choice set presented in the choice experiment in the UK

The choice experiment was based on a fractional factorial d-efficient design with 3 blocks. The blocks were used to reduce the number of choice sets the consumers were faced with. We created the design by using the software NGENE (ChoiceMetrics). It was built on one effect coded variable for each OrganicPlus argument as well as a metric price variable with three levels 1, 1.2, and 1.4. (Table 1). Price level 1 represented the average organic egg price in each country. This price level was determined by a price

inventory. Price level 1.2 was calculated from price level 1 and was 120 percent of this price level. Same applies to price level 1.4, which was 140 percent of price level 1. The absolute price levels used in the single partner countries are presented in Table 1.

Table 1: Country-specific price levels

Price level	UK	DE	AT	IT	CH
1	2.02 GBP	1.89 EUR	2.89 EUR	2.19 EUR	5.15 CHF
1.2	2.42 GBP	2.29 EUR	3.45 EUR	2.63 EUR	6.20 CHF
1.4	2.83 GBP	2.69 EUR	3.99 EUR	3.07 EUR	7.20 CHF

To create the experimental design, prior parameters from previous studies were taken for “highest animal welfare” and for “from the respective region/country” (see Naspetti et al. 2010), while we assumed slightly positive prior parameters for “fair prices for our farmers, 20 cents extra” and a slightly negative prior parameter for PRICE. Based on these prior parameters, a first d-efficient design was generated and following this experimental design, a pilot choice experiment with 8-10 consumers in each country was conducted. The data from the pilot study was then analysed with a multinomial logit model. The parameters estimated from this model were used to generate the final d-efficient design.

The experimental design was an unlabelled design, consisting of 18 different choice sets (see Appendix 1). The choice sets (and sample) were split into the 3 blocks. Each respondent faced 6 choice sets. Repeated choices from the 6 choice sets revealed the trade-offs that consumers are willing to make between the different organic egg alternatives presented.

The OrganicPlus arguments were displayed either separately or in combination on the egg packages. This resulted for each country in 12 different egg package labels displaying OrganicPlus arguments or argument combinations as well as one label without OrganicPlus arguments (see Appendix 4). The choice sets were presented on several tables. Each choice set consisted of three organic egg alternatives:

- Choice alternative 1 and 2: displayed OrganicPlus argument or argument combinations
- Choice alternative 3: basic organic eggs without OrganicPlus arguments (reference alternative)

While choice alternative 1 and 2 were offered at three different price levels (see Table 1), alternative 3 was offered at price level 1, only. In addition to the 3 choice alternatives, consumers could also choose none of the three alternatives presented. The “none-of-these” option was offered to consumers in order to avoid bias caused by forced choices (see Dhar and Simonson, 2003).

3.2 Questionnaire-based survey

Subsequent to the choice experiments, the consumers were surveyed based on a standardised questionnaire (see Appendix 5, Experimental questionnaire). The survey focused on consumer characteristics that might explain consumers’ preferences and willingness to pay for single OrganicPlus arguments and to identify consumer segments. The questions included in the survey referred to the characteristics as described in the conceptual framework (see section2) and were related to:

- Attitudes towards the OrganicPlus arguments: region/country; highest animal welfare standards; fair producer prices
- Socio-demographic characteristics
- Stated purchasing patterns and consumption habits related to organic food
- Social and environmental commitment

Consumers reported their attitudes towards the arguments in statements that were measured on 7-point scales. For this, 18 statements referred to “from the respective region” and to “from the respective country”. Another 17 statements concerned “highest animal welfare standards” and 11 statements “fair prices for our organic producers: 20 cents extra”. Finally, 2 statements were related to consumer trust in organic products and to the identification of organic products at the point of sale.

To be consistent with the overall conceptual framework (Padel and Gössinger, 2008) and previous research within the project (Zander and Hamm, 2009; Naspetti and Zanoli, 2010), the next part of the questionnaire addressed the stated buying patterns of the consumers. Particularly the consumption frequency and share of expenditures on organic food products was measured as well as the consumers' preference for specific sales channels. The third part contained questions concerning consumers' social and environmental commitment, which was reported in the following categories: donation, membership in a social/environmental association, "other" and none. The questionnaire finally addressed the consumers' socio-demographic characteristics: age, gender, net household income and level of education.

3.3 Recruitment of consumers

A minimum of 80 consumers were recruited in each country. The consumers belonged to the same region communicated within the OrganicPlus argument "from the respective region". To identify appropriate consumers, the recruitment was based on a consolidated questionnaire (see Appendix 2) which included the recruitment criteria. Consumers were only invited to take part in this research, who:

- are organic consumers
- have purchased organic food during the month before the choice experiments
- are familiar with the concept of certified organic products
- are responsible or at least co-responsible in their household for the food purchase
- do not work or live on a farm, or work in the food sector or in market research
- who had not taken part in a survey during the past four months

Quota sampling was employed for:

- age
- gender
- state of employment

The sample was split into age group 1 of 18-45 years and age group 2 of 46-70 years. The share of consumers in each age group should correspond to the share of the total population in the two age groups in each country. Consumers, who were younger than 18 or older than 70, were excluded. Additionally, as women are predominantly responsible for the food purchase, two thirds women and one third men were recruited from both age groups. Furthermore, quota sampling was used with regard to the status of employment: at least one third of the consumers in the sample should be employed. The sample was split into three experimental blocks corresponding to the age, gender and state of employment quotas as described above for each country.

Consumers who fulfilled these criteria and quotas were asked to participate in the study and an appointment for the choice experiment and interview was made. Table 2 provides an overview on the organisation of the recruitment in the five countries.

The consumers were approached by telephone calls. In Austria, the recruitment was accomplished by a marketing institute. The consumers were recruited from Vienna and surrounding regions. They were selected from an existing consumer panel according to the specific requirements for the experiments. In Germany, a marketing research agency situated in Kassel recruited consumers in the district of Kassel and surrounding region. The consumers were randomly contacted. In Italy, the recruitment was accomplished by the Università Politecnica delle Marche, Ancona. As a starting point, a panel of organic consumers from Ancona and surrounding region interviewed in previous surveys were contacted and added to by "snowballing" technique to fulfil the quotas of the screening questionnaire. In Switzerland, the recruitment was organised by a marketing research agency. The consumers were recruited in Bern and surrounding region from a consumer panel of the marketing research agency. In the UK, the recruitment was carried out by a sensory research institute. The company recruited consumers from a panel from Reading and the surrounding region.

Table 2: Organisation of the recruitment

	AT	DE	IT	CH	UK
Start and end of recruitment	November 27, until December 5, 2009	November 9, until December 6, 2009	November 7 until December 18, 2009	November 10, until November 26, 2009	November 17 until November 19, 2009
Recruitment accomplished by	Marketing research agency	Marketing research agency	Università Politecnica delle Marche	Marketing research agency	Sensory research institute
Recruited consumers are from	Vienna and surrounding region	Kassel and surrounding region	Ancona and surrounding region	Bern and surrounding region	Reading and surrounding region
Consumers were selected from and approached by	Selected from a consumer panel, approached by telephone	Randomly selected, approached by telephone	Selected from a consumer panel & snowballing technique, approached by telephone	Selected from a consumer panel, approached by telephone	Selected from a consumer panel, approached by telephone

The choice experiments and surveys were conducted in November and December 2009. An overview of the organisation of data collection is provided in Table 3). In Austria, consumers were surveyed by the University of Natural Resources and Applied Life Sciences in Vienna. The experiments took place in a seminar room of the Division of Organic Farming at the University. In Germany, the location for the experiments was a large seminar room at the Evangelische Studierenden Gemeinde in Kassel near the university campus. The room was rented for the days of data collection. The choice experiments were conducted by the University of Kassel. In Italy, the choice experiments were conducted in Ancona by the Università Politecnica delle Marche in Ancona. The choice experiment was organised in 3 different rooms. In each room a large table (one for each block) was arranged. In Switzerland, the choice experiments were conducted in a rented seminar room in Bern by the Research Institute of Organic Agriculture. In the UK, the choice experiments were conducted in the facilities of the sensory company in Reading by staff of the sensory research institute and the UK partner from the Organic Research Centre - Elm Farm. In most cases, the consumers finished the experiments within 15 to 30 minutes.

Table 3: Overview on organisation of data collection

	AT	DE	IT	CH	UK
Start and end of data collection:	November 27 to December 5, 2009	From November 25 to December 7, 2009	From December 10 to December 18, 2009	From November 24 to November 26, 2009	November 19, 2009
The data collection was done by:	University of Natural Resources and Applied Life Sciences, Vienna	Kassel University	Università Politecnica delle Marche, Ancona	Research Institute of Organic Agriculture	Subcontracted sensory research agency, Organic Research Centre – Elm Farm
The choice experiments were located at/in:	Seminar rooms at the University of Natural Resources and Applied Life Sciences, Vienna	Rented seminar room at the Evangelische Studierenden Gemeinde in Kassel	Seminar rooms at the DIIGA-Università Politecnica delle Marche in Ancona	Rented conference room at the Swiss Milk Association in Bern	Rented laboratory at the Sensory research agency in Reading

3.4 Data collection

The data was collected in autumn/winter 2009 and was done in 5 steps:

Step 1: Welcoming and information on procedure of experiment and survey

After welcoming and briefly informing the consumer about the project, we told the consumer that he/she would receive an incentive of approximately 5 € (depending on the country) which he/she could use for buying eggs in the choice experiment. Then we explained the procedure of the choice experiment: The consumer was told that he/she would face 6 different choice sets with 3 choice alternatives and that he/she could choose one or none of the alternatives in each choice set. The consumer was informed that at the end of the session, one of the six choice sets would be randomly selected and that the chosen alternative within the randomly selected choice set would be a binding buying decision. We told the consumer that he/she would have to spend the incentive for the alternative chosen in this choice set and would receive corresponding real eggs as well as the change at the end of the session. This approach aimed at reducing the hypothetical bias of decision-making in choice experiments (Lusk and Schroeder, 2004).

Step 2: Information on OrganicPlus arguments

After the introduction, the consumers received a leaflet with information about the OrganicPlus arguments (see Appendix 4).

Step 3: Conduct of choice experiment

After having read the information on the OrganicPlus arguments, consumers conducted the choice experiments. Afterwards, consumers were asked for reasons of no choice (if necessary) and the researcher marked down the chosen alternatives in the experimental protocol (see Appendix 5).

Step 4: Completion of questionnaire-based survey

Consumers were then asked to complete the standardised questionnaire.

Step 5: Handing out products/incentive/allowance

Finally, one of the choices was randomly selected and the consumer could buy corresponding eggs with his/her incentive was taken. However, if the consumer was not willing to buy these eggs, he/she could keep the incentive. If in the randomly selected choice set the "none of these" option was chosen, the consumer could keep the incentive as well.

Besides this, the consumers received an allowance for taking part in the survey (20-30 EUR, depending on the country). By introducing allowances, income effects are adjusted to a certain extent. However, allowances are necessary to compensate consumers for participation.

3.5 Data analysis

In a first step, the data was analysed with descriptive statistics. Afterwards, scales of consumers' attitudes were built, in order to summarise the single statements referring to the respective OrganicPlus arguments. In the next step, multinomial logit models (MNL) (Long and Freese, 2006) were estimated. These models are consistent with the Random Utility Theory and are designed for a nominal outcome variable (choice) with more than two levels and several independent variables.

Usually, the MNL model is the starting model when dealing with discrete choice data (Hensher et al. 2005). Thus we calculated separate MNL models for each country as well as one model across all countries. In the model, each OrganicPlus argument, as well as the price for the choice alternatives were included as independent variables. The MNL simultaneously estimates binary logits (logarithm of odds that an alternative is chosen or not chosen) for all comparisons among the choice alternatives, while one of the alternatives (or levels of the dependent variable) is the base category, which is referred to as the comparison group. The MNL is written as:

$$P(y_n = j) = \frac{\exp(X_n \beta_j)}{1 + \sum_{j=1}^J \exp(X_n \beta_j)},$$

and

$$P(y_n = 0) = \frac{1}{1 + \sum_{j=1}^J \exp(X_n \beta_j)}$$

where y_j is the observed outcome and X_n is a vector of explanatory variables for the n th individual.

The parameters β_j estimated for each of the explanatory variables provide information on whether an explanatory variable increases or decreases the probability of choosing a product alternative. The positive or negative effect is shown by the positive or negative sign of the parameter. Furthermore, the impact of the independent variable on the choice probability can be derived from the parameters. This is achieved by calculating the logits of the parameters. A logit z is the logarithm of an odds ratio of $Y=1$ (alternative is chosen) and $Y=0$ (alternative is not chosen):

$$\text{Odds} = y \frac{p(y=1)}{1 - p(y=1)} = e^z,$$

$$\text{whereas } z = b_0 + \sum b_j * x_{jn}$$

In addition, the parameters estimated by MNL models provide information on consumers' average willingness to pay (WTP) for the OrganicPlus arguments. The average willingness to pay for an OrganicPlus argument is calculated from the ratio of the OrganicPlus parameter and the price parameter (Hensher et al. 2005). For example, the WTP for the OrganicPlus argument FAIR is:

$$WTP_{FAIR} = -(\beta_{FAIR} / \beta_{PRICE})$$

As the OrganicPlus variables are non-metric variables and are included in the models as effect coded variables, the WTP value has to be multiplied by the factor 2 (Bech and Gyrd-Hansen, 2005).

4 Results

In the following sections, the outcomes of the consumer choice experiments and questionnaire-based surveys conducted in the five countries AT, DE, IT, CH and UK are presented. After the descriptive statistics shown in section 4.1, an overview on the scales of consumers' attitudes is presented in section 4.2. The results of the econometric models are presented in section 4.3.

4.1 Descriptive statistics

The aim of the descriptive statistics, which are presented in the following section, is to provide a general overview on the data that was included in the multivariate econometric models.

4.1.1 Sample description

Table 4 provides an overview of the age, gender and state of employment of the consumers who took part in this research. In general, the age quota as described in section 3.3 was met despite slight variations between the countries, mainly due to "noshow" of recruited consumers. The mean age of consumers in the total sample was 44.4 years (see Table 4). It was highest in the UK (48.4 years) and lowest in Italy (42.0 years). According to the quota, the shares of consumers in the two age groups 18 to 45 years and 46 to 70 years were almost similar in the total sample, with a slightly higher share of consumers belonging to the age group of 46 to 70 years.

In the total sample, about 65 percent of all consumers were female (see Table 4). This share corresponds to the gender quota of two thirds women and one third men in the samples (see section 3.3). The shares of females only differed slightly between countries with a higher share in the Austrian and Italian samples and a slightly lower share in the German sample. About two thirds of the consumers were employed. The share of employed persons was highest in the Swiss sample and lowest in the German sample.

Table 4: Sample description

		All	AT	DE	IT	CH	UK
		n=411	n=80	n=78	n=82	n=86	n=85
Age	Average age (in years)	44.4	44.7	43.2	42.0	43.4	48.4
	Thereof between 18 to 45 years old (in %)	51.8	46.3	56.4	54.9	52.3	49.40
	Thereof between 46 to 70 years old (in %)	48.2	53.7	43.6	45.1	47.7	50.6
Gender	Female (in %)	65.0	66.3	60.3	65.9	65.1	67.1
	Male (in %)	35.0	33.7	39.7	34.1	34.9	32.9
State of employment	Employed (in %)	66.8	63.8	61.0	69.5	76.7	62.4
	Unemployed (in %)	33.2	36.3	39.0	30.5	23.3	37.6

Within the overall sample, 3.6 percent of the consumers had no formal education, while 33 percent visited school for at least 9/10/11 years. About 30 percent visited school for at least 12/13 years. Altogether 33.7 percent of the consumers graduated at college or university. This relatively high share of consumers with a high level of education in the overall sample may be explained by a commonly higher share of college or university degrees among organic consumers (Niessen, 2008). Differences between the samples were found between the countries. In the UK sample, the share of consumers with no formal education was relatively high (17.6 percent), while in the other countries, consumers without formal education did not take part in the survey at all. Consumers with college or university degrees (17.5 percent) were under-represented in the UK sample compared to the share within the total population of the UK, where about 29 percent have a college or university degree (Eurostat, 2008). In Italy, the share of consumers with a college or university degree was considerably higher than in the other countries and much higher compared to the total Italian population, where about 13 percent of persons of 25 to 65 years have a college or university degree (Eurostat, 2008). This is probably due to the fact that especially regular organic consumers are characterised

by high educational levels in Italy (ISMEA, 2005). The snowballing technique applied in the recruitment may have further contributed to the over-representation of persons with high educational levels.

Table 5: Education, household size and income

		All	AT	DE	IT	CH	UK
		n=411	n=80	n=78	n=82	n=86	n=85
Educational level (in %)	No formal education	3.6	0	0	0	0	17.6
	9/10/11 years of school visit	33.1	32.5	41.0	6.1	43.0	42.4
	12/13 years of school visit	29.7	41.3	28.2	32.9	24.4	22.4
	college or university degree	33.7	26.3	30.8	61.0	32.6	17.6
Mean household size	-	2.4	2.1	1.9	2.9	2.2	3.0
Household net income per month (in %)	< 600 €	6.2	0.0	10.3	8.5	7.4	4.7
	600-1200 €	21.7	26.3	35.9	24.4	8.6	14.1
	1201 to 1800 €	16.3	26.3	15.4	18.3	7.4	14.1
	1801 to 2400 €	14.3	13.8	19.2	19.5	4.9	14.1
	2401 to 3000 €	12.1	13.8	5.1	15.9	14.8	10.6
	3001 to 3600 €	9.4	6.3	3.8	6.1	11.1	18.8
	36001 to 4200 €	6.4	6.3	5.1	6.1	9.9	4.7
	4201 to 4800 €	5.9	2.5	2.6	0.0	11.1	12.9
	>4800 €	7.9	5.0	2.6	1.2	24.7	5.9

In the Italian and UK samples, the mean household sizes were higher than in the other samples (see Table 5). Compared to the average household sizes in these countries, which is 2.6 persons per household in Italy and 3.0 in the UK, the average household size in the Italian sample is slightly higher than in the total Italian population. In the UK sample, it corresponds to the average household size of the total population (Eurostat 2008). Compared to the mean household sizes of the total populations in Germany (1.8) and Austria (2.1) (OECD, 2009), the sample means are still slightly higher. In the Swiss sample, the household size is slightly lower than the average household size of 2.3 persons per household in Switzerland (OECD, 2009).

Consumers reported their household net income in 9 income categories. The net household income was the highest in Switzerland (see Table 5). This corresponds to the higher average income in Switzerland compared to the other countries (Eurostat, 2008).

4.1.2 Stated purchasing behaviour

Consumers reported their most preferred places for the purchase of organic food. Up to four answers per consumer were given. Conventional retail shops and discount stores were reported to be the most relevant places for organic food purchase in most countries (see Table 6). This corresponds with the results from other studies (Soil Association, 2009; Oekobarometer, 2008; Bio Suisse, 2008; Bio Austria, 2007; D'Amario et al. 2005). In the Italian sample, however, the frequency of consumers purchasing organic food at regular food retailers was much lower than compared to the other countries. In Italy, the share of consumers buying organic food in supermarkets and consumers buying organic food in specialised organic food shops/health food shops is almost equal (ISMEA, 2005).

Table 6: Preferred places for the purchase of organic food by consumers in percent

Places of organic food purchase	All	AT	DE	IT	CH	UK
Conventional retail and/or /discount store	78.8	91.3	82.1	59.8	83.7	77.7
At a farmers' market	22.6	30.0	32.0	23.2	18.6	10.6
Directly from the farm (farm shops, farmers' box schemes, mail order)	29.4	28.8	26.9	18.3	54.7	17.7
Specialised organic shop/organic supermarket	34.8	33.8	44.9	48.8	33.7	14.1
Specialised shops (e.g. bakeries, butchers,...)	17.5	12.5	16.7	17.1	30.2	10.6
Health food shop	13.6	16.3	18.0	14.6	14.0	5.88
Other places	3.9	3.8	3.9	2.4	4.7	4.7
Total	411¹	80	78	82	86	85

¹ Up to four answers per consumer

6.8 percent of all consumers interviewed purchased organic food less than once per month (see Table 7), and 16.1 percent of the total sample purchased organic food less than once per week. The majority of the consumers, who took part in this research, purchased organic food approximately once per week, while 29.2 percent purchased organic products several times per week. In the DE and CH samples, the share of consumers who purchased organic products approximately once per week or several times per week was higher than in the other countries.

Table 7: Purchase frequency of organic products in percent

Purchase frequency	All	AT	DE	IT	CH	UK
	n=411	n=80	n=78	n=82	n=86	n=85
Less than once per month	6.8	0	2.6	13.4	3.5	14.1
Less than once per week	16.1	10.0	16.7	25.6	3.5	24.7
Approx. once per week	47.9	60.0	44.9	39.0	50.0	45.9
Several times per week	29.2	30.0	35.9	22.0	43.0	15.3

Consumers further stated the share of their organic food expenditure out of total expenditure for food on a 10-class scale (1= 0 to 10%, 2 = 11 to 20%, ..., 10 = 91 to 100%). Table 8 shows that in the total sample, 82.7 percent of the consumers' stated organic food and beverages expenditure was up to 50 percent, while 17.3 percent stated it was more than 50 percent. The stated shares of organic consumption varied between

the countries. While the organic food consumption was higher in DE and CH compared to the total sample, it was slightly lower in AT and IT, and much lower in the UK.

Table 8: Stated share of organic food and beverage expenditure in total food and beverage expenditure in percent

	All	AT	IT	DE	CH	UK
0 to 10 %	14.6	8.8	18.3	10.3	9.3	25.9
11 to 20 %	21.4	23.8	26.8	19.2	12.8	24.7
21 to 30 %	22.9	25.0	23.2	16.7	27.9	21.2
31 to 40 %	14.8	17.5	11.0	14.1	16.3	15.3
41 to 50 %	9.0	13.8	7.3	7.7	8.1	8.2
51 to 60 %	5.6	3.8	7.3	6.4	8.1	2.4
61 to 70 %	5.1	6.3	1.2	12.8	5.8	0
71 to 80 %	3.6	1.3	2.4	5.1	8.1	1.2
81 to 90 %	2.2	0	2.4	3.8	3.5	1.2
91 to 100 %	0.7	0	0	3.8	0	0

4.1.3 Social and environmental commitment

Consumers reported their social and environmental commitment in five categories: "Donation", "Membership in a non-profit social/environmental aid association", "Active commitment in a non-profit social/environmental aid association", "Other", "None". Multiple answers were possible. An overview of the responses regarding the social and environmental commitment is provided in Table 9 and Table 10 respectively.

In general, the share of donations was higher for social than for environmental purposes. The stated social and environmental commitment as well as the share of persons being members in social or environmental associations were higher in DE and CH than in the other countries. Donations were the most common form of social or environmental commitment. In total, 49.9 percent of the consumers stated that they give donations to social associations, while 11.4 percent of the consumers were members in a social and 7.5 percent in an environmental association.

Table 9: Social commitment of the consumers in percent

	All	AT	DE	IT	CH	UK
Donation	49.9	48.8	52.6	42.7	58.1	47.1
Membership in a non-profit social aid association	11.4	8.8	15.4	12.2	18.6	2.4
Active commitment in a non-profit social aid association	9.2	16.3	14.1	6.1	8.1	2.4
Other	9.2	7.5	5.1	2.4	8.1	22.4
None	31.9	31.3	35.9	43.9	21.2	27.6

Multiple answers were possible

Table 10: Environmental commitment of the consumers in percent

	All	AT	DE	IT	CH	UK
Donation	36.7	33.8	35.9	32.9	52.3	28.2
Membership in an environmental association	7.5	6.3	3.8	4.8	20.9	1.2
Active commitment in an environmental association	1.5	1.3	1.3	2.4	2.3	0
Other	1.5	0	0	1.2	0	5.9
None	57.2	61.3	61.5	60.0	37.7	65.5

Multiple answers were possible

4.1.4 Attitudes

Consumers reported their level of agreement relating to attitudinal statements on a seven-point scale (1 = I totally agree and 7=I totally disagree). To facilitate the interpretation of the data, we recoded the scale of the statements before analysing the data (1=I totally disagree and 7=I totally agree). An overview of the means and standard deviations of the items related to the OrganicPlus arguments are presented in Table 11, Table 12 and Table 13 respectively.

In general, differences between the countries regarding means and standard deviations of the single statements are small. In the total sample, the level of agreement for statements related to the geographical origin, the statement "Long distance transport of food products causes severe environmental pollution" had the highest degree of agreement. The statement "It is very important to me that eggs are not transported over a long distance" had the second highest level of agreement and "I trust in the quality of domestic organic eggs more than in organic eggs from other countries" was ranked in third place.

In contrast, consumers had a rather neutral attitude of "Organic eggs produced in the respective region taste better than organic eggs from other regions" (3.74 points) and "Organic eggs from the respective region are safer in terms of contaminants or residues than organic eggs from other regions" (3.74 points) (see OR11, OR3, OR2, and OR6 in Table 11).

Table 11: Attitudes related to the geographical origin of eggs

		All	AT	DE	IT	CH	UK
OR18: Long distance transports of food products cause severe environmental pollution.	Mean	6.34	6.74	6.74	6.15	6.64	5.51
	STD	1.33	0.82	0.75	1.53	1.01	1.73
OR1: It is very important to me that eggs are not transported over a long distance.	Mean	6.30	6.53	6.54	6.18	6.53	5.78
	STD	1.10	0.86	0.82	1.30	0.85	1.33
OR9: I trust in the quality of domestic organic eggs more than in organic eggs from other countries.	Mean	6.01	6.59	6.03	5.63	6.16	5.66
	STD	1.47	0.77	1.63	1.72	1.41	1.43
OR4: I am willing to pay a higher price for organic eggs that are produced in the respective country.	Mean	5.95	5.96	6.05	5.83	6.29	5.61
	STD	1.31	1.27	1.13	1.48	1.10	1.46
OR14: It is very important to me that the food I consume is produced in the respective country.	Mean	5.91	6.35	5.74	6.15	5.91	5.45
	STD	1.35	0.97	1.48	1.24	1.27	1.53
OR7: Organic eggs produced in the respective country are fresher than organic eggs from other countries.	Mean	5.77	6.16	5.95	5.52	5.64	5.61
	STD	1.56	1.40	1.44	1.77	1.57	1.51
OR15: I feel strongly connected to the respective country.	Mean	5.76	6.18	5.28	5.55	5.91	5.87
	STD	1.56	1.20	1.75	1.78	1.42	1.48
OR5: Most of my family/friends would prefer eggs from the respective country.	Mean	5.65	5.44	5.53	5.74	5.75	5.75
	STD	1.42	1.40	1.39	1.59	1.11	1.55
OR17: I am willing to pay higher prices for organic eggs that are produced in the respective region.	Mean	5.41	4.99	5.69	5.52	5.39	5.46
	STD	1.52	1.59	1.39	1.50	1.54	1.52
OR10: Most of my family/friends would buy eggs that are produced in the respective region.	Mean	5.36	5.31	5.38	5.32	5.53	5.26
	STD	1.43	1.39	1.31	1.73	1.30	1.37
OR16: Domestic organic eggs are safer in terms of contaminants or residues than organic eggs from other countries.	Mean	5.27	6.01	5.31	4.76	5.29	5.04
	STD	1.70	1.23	1.71	1.82	1.81	1.63
OR12: I feel strongly connected to the respective region.	Mean	5.17	4.36	5.13	5.34	5.52	5.45
	STD	1.75	1.86	1.88	1.64	1.59	1.58
OR8: Traditions and customs are very important to me.	Mean	5.02	4.85	4.77	4.96	5.15	5.35
	STD	1.81	2.04	1.81	1.68	1.87	1.62
OR13: I prefer regional conventional eggs rather than organic eggs that were transported over a long distance.	Mean	4.62	4.85	3.94	4.37	4.96	4.94
	STD	2.04	2.08	2.26	1.94	1.94	1.84
OR11: Organic eggs produced in the respective region are fresher than organic eggs from other regions.	Mean	4.45	4.41	4.81	4.83	3.45	4.76
	STD	1.86	1.63	1.77	1.95	1.94	1.65
OR3: I trust more in the quality of regional eggs than in the quality of eggs from other regions.	Mean	4.30	5.09	4.28	4.43	3.40	4.34
	STD	2.06	1.82	2.24	1.92	2.17	1.79
OR2: Organic eggs produced in the respective region taste better than organic eggs from other regions.	Mean	3.74	4.06	3.87	3.68	3.00	4.09
	STD	1.85	1.69	1.98	1.65	1.99	1.74
OR6: Organic eggs from the respective region are safer in terms of contaminants or residues than organic eggs from other regions.	Mean	3.74	4.39	3.53	3.84	3.04	3.94
	STD	1.90	1.73	1.97	2.00	1.75	1.83

Regarding the statements related to animal welfare, the statement "The well-being of laying hens is very important to me" had the highest level of agreement, followed by "The government should take a more active role in promoting farm animal welfare". The statement "I trust more in the quality of organic eggs that are produced with highest animal welfare standards" was ranked on the third place. In contrast, consumers on average only slightly agreed with the statements "Farmers and food companies put their own profits ahead of treating farm animals humanely" (on average 4.50 points), while they slightly disagreed

with the statement "Affordable organic egg prices are more important than the highest animal welfare conditions" (on average 2.93 points).

Table 12: Attitudes related to animal welfare

		All	AT	DE	IT	CH	UK
AW1: The well-being of laying hens is very important to me.	Mean	6.54	6.79	6.82	6.15	6.85	6.09
	STD	0.91	0.50	0.50	1.07	0.42	1.31
AW4: The government should take a more active role in promoting farm animal welfare.	Mean	6.36	6.60	6.53	6.33	6.18	6.21
	STD	1.13	0.70	0.82	1.14	1.37	1.38
AW3: I trust more in the quality of organic eggs that are produced with highest animal welfare standards.	Mean	6.31	6.63	6.38	6.41	6.15	5.99
	STD	1.15	0.80	1.06	0.99	1.37	1.30
AW6: Farmers should be compensated if forced to comply with higher animal welfare standards.	Mean	6.25	6.68	6.62	5.90	6.42	5.69
	STD	1.23	0.65	0.67	1.73	0.89	1.47
AW8: Large barns provided with plenty of perches and littered nests are important for the welfare of laying hens.	Mean	6.24	6.52	6.32	6.11	6.32	5.95
	STD	1.19	0.96	1.16	1.25	1.08	1.40
AW11: The design of the range of laying hens including shade for rest and sand bath facilities is important to provide a high quality of life.	Mean	6.23	6.60	6.46	5.74	6.55	5.84
	STD	1.14	0.63	0.98	1.38	0.75	1.40
AW7: I am willing to pay higher prices for eggs produced with extra high animal welfare standards that go beyond organic standards.	Mean	6.11	6.19	6.47	6.04	6.37	5.52
	STD	1.21	1.04	0.91	1.21	1.10	1.46
AW2: The organic farming sector should improve the welfare standards of laying hens.	Mean	5.95	6.20	5.95	6.13	5.54	5.94
	STD	1.36	1.16	1.35	1.20	1.61	1.39
AW17: Extra large free range areas of more than 10 m2 per laying hen are important for their welfare.	Mean	5.92	6.11	6.00	5.49	6.22	5.78
	STD	1.30	1.29	1.36	1.43	1.07	1.21
AW15: My personal food choices have a large impact on the well-being of farm animals.	Mean	5.89	6.31	6.37	5.34	6.29	5.16
	STD	1.34	0.82	1.09	1.34	1.00	1.70
AW9: The flock size of laying hens has a significant impact on the welfare of the hens.	Mean	5.86	5.89	5.71	6.27	5.54	5.89
	STD	1.39	1.33	1.49	1.11	1.55	1.34
AW5: Food companies that require farmers to treat their animals better, no matter what it costs, are doing the right thing.	Mean	5.83	5.86	5.60	6.00	5.65	6.01
	STD	1.37	1.27	1.34	1.41	1.46	1.32
AW14: I feel responsible for the well-being of laying hens when purchasing eggs.	Mean	5.67	6.18	6.18	4.61	6.29	5.12
	STD	1.48	0.84	1.16	1.71	0.97	1.64
AW16: Laying hens have roughly the same ability to feel pain and discomfort as humans.	Mean	5.55	5.76	5.70	5.22	5.66	5.40
	STD	1.48	1.38	1.41	1.52	1.45	1.57
AW12: Most of my family/friends would buy eggs that were produced to the highest animal welfare standards.	Mean	5.37	5.40	5.27	5.34	5.38	5.47
	STD	1.35	1.20	1.39	1.56	1.19	1.39
AW13: Farmers and food companies put their own profits ahead of treating farm animals humanely.	Mean	4.50	4.53	3.69	5.33	4.00	4.94
	STD	1.87	1.61	2.08	1.89	1.74	1.57
AW10: Affordable organic egg prices are more important than the highest animal welfare conditions.	Mean	2.93	3.40	2.03	3.29	2.27	3.64
	STD	1.75	1.70	1.49	1.72	1.50	1.72

Among the statements related to fair producer prices and to trust in and recognisability of organic products at the point of sale, "Fair producer prices are very important to me" and "I am willing to pay higher prices for organic eggs that guarantee fair producer prices" had the highest level of agreement. In contrast,

consumers were neutral regarding the statement “In my opinion, organic eggs are too expensive” (4.20 points), while they slightly disagreed with the statement “Affordable organic egg prices are more important than fair producer prices” (3.49 points).

Table 13: Attitudes related to fair producer prices, trust in and recognisability of organic products

		All	AT	DE	IT	CH	UK
FP4: Fair producer prices are very important to me.	Mean	6.06	6.31	6.32	6.00	6.27	5.42
	STD	1.17	0.77	0.96	1.31	1.02	1.42
FP10: I am willing to pay higher prices for organic eggs that guarantee fair producer prices.	Mean	5.94	6.00	6.31	5.70	6.24	5.46
	STD	1.18	0.99	0.96	1.25	0.97	1.44
FP12: The government should take a more active role in promoting fair producer prices.	Mean	5.92	6.26	6.06	6.17	5.40	5.73
	STD	1.37	0.96	1.23	1.27	1.65	1.47
FP9: My personal food choices have a large impact on producer prices.	Mean	5.76	6.29	6.33	5.29	6.14	4.81
	STD	1.39	0.92	1.00	1.64	1.00	1.49
FP5: The organic farming sector should raise the prices paid to producers.	Mean	5.67	6.06	5.97	5.41	5.75	5.18
	STD	1.26	0.90	1.07	1.56	1.00	1.43
FP8: I would support initiatives that stipulate minimum wages for workers in farming.	Mean	5.51	5.78	5.82	4.80	5.66	5.51
	STD	1.68	1.30	1.43	2.00	1.56	1.84
FP6: Food companies that guarantee fair producer prices, no matter what it costs, are doing the right thing.	Mean	5.50	5.68	5.45	5.66	5.51	5.24
	STD	1.42	1.23	1.38	1.59	1.45	1.41
FP3: Most of my family/friends would buy eggs that guarantee fair producer prices.	Mean	5.35	5.58	5.27	5.12	5.45	5.32
	STD	1.33	1.17	1.27	1.66	1.13	1.32
FP1: I like the fact that low priced organic food products are sold in discount stores.	Mean	5.27	5.70	5.01	5.79	4.41	5.46
	STD	1.73	1.37	1.94	1.58	1.93	1.38
FP13: I am not sure if all food products sold as organic really are organic.	Mean	5.11	5.20	5.63	5.23	4.81	4.73
	STD	1.87	1.98	1.60	1.93	1.99	1.72
FP7: Some food products are hard to identify as organic at the point of sale.	Mean	4.49	4.79	4.55	4.18	4.09	4.85
	STD	1.92	1.93	2.03	1.98	1.87	1.69
FP2: In my opinion, organic eggs are too expensive.	Mean	4.20	4.86	3.62	4.10	4.06	4.36
	STD	1.74	1.63	1.85	1.57	1.72	1.71
FP11: Affordable organic egg prices are more important than fair producer prices.	Mean	3.49	3.90	2.42	3.68	2.77	4.62
	STD	1.80	1.61	1.65	1.87	1.59	1.36

4.2 Attitude scales

To facilitate the econometric analysis, the total number of the items was reduced by scales. The scales were built-upon statements belonging to the same topics. We tested the reliability of each scale with Cronbach's Alpha (α) (Cronbach 1951).

Regarding the topic of geographical origin, three scales were developed (see Table 14). Scale 1 refers to the region of origin and includes three items on the quality and safety of regional eggs. Scale 2 includes the same statements, however, the scale and statements refer to the country instead of the region of origin. Scale 3 is built upon three statements. The scale summarises items that demonstrate the sense of belonging to the region and country and the importance of traditions and customs. As the Cronbach's Alpha of all three scales is above 0.7, the reliability of the scales is satisfactory.

Table 14: Scales related to the geographical origin

Scale	Statement	Cronbach α
Scale 1: Regional eggs have higher quality and safety	OR 3: I trust more in the quality of regional eggs than in the quality of eggs from other regions.	0.797
	OR 6: Organic eggs from the respective region are safer in terms of contaminants or residues than organic eggs from other regions.	
	OR 11: Organic eggs produced in the respective region are fresher than organic eggs from other regions.	
Scale 2: Domestic eggs have higher quality and safety	OR 7: Organic eggs produced in the respective country are fresher than organic eggs from other countries.	0.787
	OR 9: I trust in the quality of domestic organic eggs more than in organic eggs from other countries.	
	OR 16: Domestic organic eggs are safer in terms of contaminants or residues than organic eggs from other countries.	
Scale 3: Feeling connected with own region/country	OR 8: Traditions and customs are very important to me.	0.750
	OR 12: I feel strongly connected to the respective region.	
	OR 15: I feel strongly connected to the respective country.	

Regarding the topic of animal welfare, another three scales were developed (see Table 15). Scale 4 refers to the consumers' level of involvement with animal welfare and includes four items. Scale 5 was built from four items referring to the improvement of single components of the housing system that might be relevant to further improve animal welfare standards. Scale 6 includes four statements describing the role of the government and food companies in promoting animal welfare and whether farmers should be compensated if forced to comply with higher animal welfare standards. As the Cronbach's Alpha of scale 4 and 5 scales is above 0.7 or matches upon 0.7 in the case of scale 6, the reliability of the scales is satisfactory.

Table 15: Scales related to animal welfare

Scale	Statement	Cronbach α
Scale 4: High involvement with animal welfare	AW 1: The well-being of laying hens is very important to me.	0.800
	AW 7: I am willing to pay higher prices for eggs produced with extra high animal welfare standards that go beyond organic standards.	
	AW 14: I feel responsible for the well-being of laying hens when purchasing eggs.	
	AW 15: My personal food choices have a large impact on the well-being of farm animals.	
Scale 5: Improvements of housing systems is important	AW8: Large barns provided with plenty of perches and littered nests are important for the welfare of laying hens.	0.735
	AW 9: The flock size of laying hens has a significant impact on the welfare of the hens.	
	AW 11: The design of the range of laying hens including shade for rest and sand bath facilities is important to provide a high quality of life.	
	AW 17: Extra large free range areas of more than 10 m2 per laying hen are important for their welfare.	
Scale 6: Claim for supportive environment for animal welfare issues	AW 2: The organic farming sector should improve the welfare standards of laying hens.	0.692
	AW 4: The Government should take a more active role in promoting farm animal welfare.	
	AW 5: Food companies that require farmers to treat their animals better, no matter what it costs, are doing the right thing.	
	AW 6: Farmers should be compensated if forced to comply with higher animal welfare standards.	

Regarding the topic of fair producer prices, two scales were developed (see Table 16). Scale 7 refers to the personal involvement of the consumer with fair producer prices and includes four items. Scale 8 includes three statements describing the role of the government and food companies in promoting fair producer prices. The Cronbach's Alpha of scale 7 with a value of 0.718 is satisfactory, while the value of scale 8 is 0.625 and thus is rather low but still acceptable.

Table 16: Scales related to fair producer prices and other topics

Scale	Statement	Cronbach α
Scale 7: High personal involvement with fair producer prices	FP 4: Fair producer prices are very important to me.	0.718
	FP 8: I would support initiatives that stipulate minimum wages for workers in farming.	
	FP 9: My personal food choices have a large impact on producer prices.	
	FP 10: I am willing to pay higher prices for organic eggs that guarantee fair producer prices.	
Scale 8: Claim for supportive environment for domestic fair production	FP 5: The organic farming sector should raise the prices paid to producers.	0.625
	FP 6: Food companies that guarantee fair producer prices, no matter what it costs, are doing the right thing.	
	FP 12: The Government should take a more active role in promoting fair producer prices.	

4.3 Outcomes of the choice experiments and econometric models

In the following sections, an overview of the alternatives chosen in the choice experiments is presented. After this overview, the results of the econometric models are presented.

4.3.1 Overview on the alternatives chosen in the single choice sets

In the choice experiments, each consumer was asked to choose among three different egg alternatives in each of the six choice sets. The number of choices of each alternative is presented in Table 17. The table shows that the majority of consumers chose alternative 1 or 2 (eggs displaying OrganicPlus arguments) rather than alternative 3 (the reference alternative without OrganicPlus argument) or the no choice option. In the case that neither alternative 1 nor alternative 2 was chosen, slightly more consumers opted for alternative 3 (119 choices in the total sample) rather than for the no choice option (107 choices in the total sample).

To identify statistical differences between the countries regarding the preferences observed, the Kruskal-Wallis-test (Kruskal and Wallis, 1952) was used. Significant differences were found in block 1 in choice set 1.4 ($\chi^2=12.50$, $p=0.014$). In this case the majority of consumers in the AT, IT and the UK sample opted for alternative 2, while the majority of consumers in DE and CH preferred alternative 1. Furthermore, the test revealed significant differences between the countries in block 1 in choice set 1.5 (12.96 , $p=0.015$). Consumers in AT and CH chose alternative 1 less frequently than consumers in the other countries.

Table 17: Overview on frequencies of alternatives chosen in the choice sets

Block	Set	Alternative 1					Alternative 2					Reference alternative					No choice					
		UK	DE	AT	IT	CH	UK	DE	AT	IT	CH	UK	DE	AT	IT	CH	UK	DE	AT	IT	CH	
1	1.1	24	26	27	28	25	4	0	1	1	5	0	0	1	0	0	0	0	0	0	0	2
	1.2	4	6	5	12	6	24	19	24	16	19	0	0	0	0	1	0	1	0	1	3	
	1.3	13	12	23	13	16	15	14	6	15	9	0	0	0	0	1	0	0	0	1	3	
	1.4	9	15	8	6	10	13	10	11	13	5	3	1	6	6	6	3	0	4	4	8	
	1.5	23	20	13	23	14	3	6	10	6	10	1	0	4	0	1	1	0	2	0	4	
	1.6	0	1	1	1	2	23	22	21	26	17	3	2	4	1	4	2	1	3	0	6	
2	2.1	2	0	0	1	0	27	26	26	26	23	1	0	0	0	2	0	1	1	0	1	
	2.2	25	26	27	25	24	3	0	0	1	0	2	0	0	1	2	0	1	0	0	0	
	2.3	3	0	1	1	1	26	26	26	25	24	1	1	0	1	1	0	0	0	0	0	
	2.4	17	13	12	13	10	8	7	9	11	8	5	6	3	2	3	0	1	3	1	5	
	2.5	4	1	1	2	1	24	24	26	25	24	2	1	1	0	1	0	0	0	0	0	
	2.6	27	27	26	25	23	1	0	0	1	0	2	0	0	0	1	0	0	1	1	2	
3	3.1	8	3	5	9	11	21	20	18	13	15	0	2	0	1	0	0	2	1	4	4	
	3.2	27	26	23	24	27	2	1	1	1	2	0	0	0	1	0	0	0	0	1	1	
	3.3	20	24	15	24	24	3	2	1	1	3	6	1	4	1	1	0	0	4	1	2	
	3.4	3	3	0	2	2	18	19	18	19	23	8	4	2	2	1	0	1	4	4	4	
	3.5	24	25	23	21	26	5	1	0	2	2	0	1	0	0	0	0	0	1	4	2	
	3.6	6	7	3	3	5	23	20	21	24	23	0	0	0	0	0	0	0	0	0	0	

4.3.2 Multinomial logit models

In this section, after a brief overview of the estimated models and the variables included in the models, the results of the models and the willingness to pay for the selected OrganicPlus arguments derived from the models are presented.

We estimated so-called main effect multinomial logit models (MNL) including alternative-specific variables (COU, REG, ANI, FAIR, PRICE), only (see Table 18). From these models, we derived the marginal willingness to pay for single OrganicPlus arguments. Main effect MNL models were estimated for each country separately and across all countries. The main effect models, however, did not include explanatory variables referring to characteristics on the part of the consumers (covariates).

To allow the comparison of the values of the willingness to pay between the countries, the values of the three price levels in CH and UK were converted to Euros (exchange rate of 23th of November, 2009; Bundesverband Deutscher Banken). The MNL models were estimated with price levels measured in EUR. The outcomes of the main effect multinomial logit models are shown in Table 19 and the logits derived from the parameters (as described in section 3.5) are presented in Table 20

Table 20.

Besides this, we estimated a multinomial logit model with additional covariates representing consumer characteristics including the data of all countries. This model was estimated in order to identify causal relations between consumers' preferences observed in the choice experiment and certain consumer characteristics. In a first analysis step, we included all covariates collected in the quantitative survey. As the choice experiment was design as an unlabelled experiment, the covariates were related to each single OrganicPlus argument by multiplication (see Hensher 2005). In a next step, covariates that were not significant were removed from the model. The final model only contains significant covariates. Table 18 shows the covariates included in the final model.

Although both claims "from the respective country" and "from the respective region" referred to the geographical origin of the product alternative, COU and REG were included as separate variables in the main effect models because it is likely that there is a non-linear relationship between these two levels of geographical origin.

As apart from the two choice alternatives displaying OrganicPlus arguments, a reference alternative as well as a no-choice option were offered in the choice experiments, the econometric models included an alternative specific constant for both the reference alternative (ASCSQ) and the no-choice option (ASCNB). The alternative specific constants are variables which have the value 1 for the respective choice alternative and 0 for all other alternatives.

Table 18: Description of variables included in the econometric models

Variable (VARIABLE NAME)	Operationalisation
COU: OrganicPlus 1a: from the respective country	
REG: OrganicPlus 1b: from the respective region	
ANI: OrganicPlus 2: highest animal welfare standards	effect coded
FAIR: OrganicPlus3: fair prices for our organic farmers: 20 cents extra	
PRICE	metric
S1REG = Scale1 * REG	
S2COU = Scale2 * ANI	
S4ANI = Scale 4 * ANI	
S6ANI = Scale 6 * ANI	
S8FAIR = Scale 8 * FAIR	
FSOC12 = Being an active member in a social organisation * FAIR	effect between dummy coded social engagement and effect coded OrganicPlus variable FAIR
REDU = Educational level * REG	effect between metric educational level and effect coded OrganicPlus variable REG
AINC = Income class * ANI	effect between metric income class and effect coded OrganicPlus variable ANI
CBU2 = Share of organic expenditures * COU	effect between metric share of organic expenditures and effect coded OrganicPlus variable COU
ABU2 = Share of organic expenditures * ANI	effect between metric share of organic expenditures and effect coded OrganicPlus variable ANI
ASCSQ = Alternative specific constant of reference alternative	constant=1 if reference alternative was chosen, otherwise 0
ASCNB = Alternative specific constant of no choice	constant=1 if no choice option was chosen,

Among the OrganicPlus arguments, the parameter estimated for the OrganicPlus argument "from the respective region" (REG) was highly significant in the MNL models in all countries except in AT (see Table 19). The logits were highest for this parameter in all countries except AT (see Table 20). This result reveals that REG was the most preferred OrganicPlus argument in all countries except in AT, where it was still significant. The parameter estimated for the OrganicPlus argument "highest animal welfare standards" (ANI) was significant in AT, DE and CH. In AT, it was the most preferred OrganicPlus argument. In DE and CH it was ranked after REG (see Table 20). In contrast, the parameter was not significant in IT and UK.

Table 19: Parameters estimated in the main effect multinomial logit model

	ALL	AT	DE	IT	CH	UK
REG	0.903***	0.491*	1.224***	0.961***	0.642***	0.570***
COU	-0.191*	0.544*	-0.392	0.058	0.172	-0.328
ANI	0.560***	0.722**	0.759***	0.241	0.563**	0.054
FAIR	0.370***	0.263	0.445***	0.163	0.270*	0.198
PRICE	-1.352***	-2.930***	-1.589***	-2.454***	-1.386***	-2.032***
ASCSQ	-1.125***	-1.691*	-0.942	-2.144***	-1.212*	-2.252***
ASCNB	-6.595***	-12.178***	-6.727***	-8.685***	-6.982***	-8.971***
Final LL	-1688.511	-289.092	-262.967	-317.852	-416.837	-347.669
Pseudo-R ²	0.323	0.409	0.399	0.340	0.268	0.281

$p \leq 0.001 = ***$; $p \leq 0.01 = **$; $p \leq 0.05 = *$

Besides this, the parameter estimated for the OrganicPlus argument "fair prices for our organic farmers: 20 cents extra" (FAIR) was significant in the DE and CH models although being less relevant than REG and ANI. In contrast, FAIR was not significant in the MNL models of AT, IT and UK.

The value of the parameter "from the respective country" (COU) was negative in the models of DE and UK. In contrast to this, COU had a positive value in IT and CH. The parameter was even significant in the AT models; this argument was ranked after ANI. Thus, in AT, in contrast to the other study countries, the OrganicPlus argument "from the respective country" was more preferred than "from the respective region".

The parameter estimated for PRICE was highly significant and had a negative value in all models and countries. This shows that the higher the price level of an organic egg alternative, the lower was the probability that a consumer chose the alternative. The negative price effect was strongest in AT and IT and weakest in DE and CH.

The values of the pseudo-R², which is a measure of model-fit for discrete choice models that gives the proportion of variation on the data that is explained by the model (Hensher et al. 2005), was above 0.2 in all models and even bordering or above 0.4 in DE and AT (see Table 19). Therefore, the fit of the MNL models is ranging between acceptable and good (Backhaus et al. 2006).

Table 20: Logits of the OrganicPlus arguments derived from the multinomial logit model

	ALL	AT	DE	IT	CH	UK
REG	2.47	1.63	3.40	2.61	1.90	1.77
COU	0.82	1.72	0.80	1.06	1.19	0.72
ANI	1.75	2.06	2.14	1.27	1.76	1.06
FAIR	1.44	1.30	1.56	1.18	1.31	1.72

In order to identify causal relations between consumers' preferences for single OrganicPlus arguments and consumer characteristics that might explain their single OrganicPlus arguments, another MNL was estimated across all countries. The results of the MNL model with covariates (consumer characteristics) are presented in Table 21. The final model only includes significant covariates (described in Table 18).

The OrganicPlus argument "from the respective region" was especially preferred by consumers with higher education. The higher the educational level, the higher was the probability of choosing organic egg alternatives with the argument "from the respective region". Also a high level of agreement with scale 1 (regional eggs have higher quality and safety) was significant with respect to REG.

There is evidence for a causal relationship between the share of consumers' organic food and beverages expenditures and the preference of eggs with the argument "From the respective country" (COU): the higher the share of consumers' organic food and beverages expenditures, the higher the probability of choosing domestic eggs. Besides this, consumers who strongly agreed with scale 2 (domestic eggs have higher quality and safety) especially preferred eggs "From the respective country".

Higher income and share of organic food and beverages expenditures had a positive impact on the choice of eggs with the OrganicPlus argument "highest animal welfare standards". Furthermore, eggs with this argument were especially preferred by consumers with a high level of agreement with scale 4 (high involvement into animal welfare) and with scale 6 (claim for supportive environment for animal welfare).

Besides this, the models revealed that particularly consumers who are active members in a social association significantly preferred organic eggs with the argument "fair prices for our organic farmers: 20 cents extra". This also applied to consumers with a high level of agreement with scale 8 (claim for supportive environment for fair domestic production).

Table 21: Multinomial logit models with covariates across all countries

Parameter	MNL
REG	0.66***
COU	-0.68***
ANI	0.18
FAIR	0.23***
PRICE	-1.35***
REDU	0.17***
S1REG	0.04***
CBU2	0.09**
S2COU	0.06***
AINC	0.03*
ABU2	0.09***
S4ANI	0.04***
S6ANI	0.11***
FSOCI2	0.40**
S8FAIR	0.03*
ASCSQ	-1.08***
ASCNB	-6.36***
Final LL	-1576.952
Pseudo-R ²	0.347

$p \leq 0.001 = ***$; $p \leq 0.01 = **$; $p \leq 0.05 = *$

4.3.3 Marginal willingness to pay for OrganicPlus arguments

The marginal willingness to pay for the OrganicPlus arguments was calculated as is described in section 3.5 from the parameter estimates of the main effect multinomial logit models (see Table 19). The marginal willingness to pay is shown in Table 22. It is presented in EUR and in percent of the average organic egg prices (= price level 1, see Table 1, converted in EUR in CH and UK).

Table 22: Marginal willingness to pay for OrganicPlus arguments per 6 egg-package

OrganicPlus argument		AT	DE	IT	CH	UK
REG	in EUR	0.34	1.54	0.78	0.93	0.56
	in % of av. egg price	11.76	81.48	35.62	27.25	25.11
COU	in EUR	0.37	-	-	-	-
	in % of av. egg price	12.80	-	-	-	-
ANI	in EUR	0.49	0.96	-	0.81	
	in % of av. egg price	16.96	50.79	-	23.73	
FAIR	in EUR	-	0.56	-	0.39	
	in % of av. egg price	-	29.63	-	11.43	

-Parameter of OrganicPlus argument was not significant in the MNL model, therefore WTP is not shown in the table

av.=average

In Austria, the marginal willingness to pay was highest for the argument ANI, second highest for COU and third highest for REG (see Table 22). The marginal WTP in percent was consequently highest for ANI, while it was almost similar for COU and REG.

In Germany, consumers marginal willingness to pay was highest for REG, second highest for ANI and third highest FAIR. The WTP for ANI was approximately 30 percent lower than for ANI and about 20 percent lower for FAIR than for ANI.

In Italy, there is a marginal consumer willingness to pay for Organic eggs with the argument REG of 36 percent of the average organic egg price in this country, while the parameters for the other arguments were not significant and thus no WTP values are presented for these parameters (see Hensher et al. 2005).

In Switzerland, consumers' marginal willingness to pay was highest for REG, second highest for ANI and third highest for FAIR. The willingness to pay for ANI was only 3.52 percent lower than for REG, while the WTP for FAIR was only 11.43 percent and thus much lower than for REG and ANI.

In the UK, there was a marginal consumer willingness to pay for Organic eggs with the argument REG of 25 percent of the average organic egg price in this country, while the parameters for the other arguments were not significant.

5 Discussion

In this chapter, the results of our research are discussed. In addition, we emphasise the underlying hypotheses and describe which of them were confirmed or rejected in the course of the research and then draw conclusions from our findings.

H1: Organic egg packages displaying OrganicPlus arguments – representing a stimulus to consumers – are more preferred than packages without OrganicPlus arguments.

As hypothesised, organic egg packages displaying OrganicPlus arguments were more preferred by organic consumers than packages without such arguments as long as the price level did not exceed a certain range. From this result, we conclude that OrganicPlus arguments are a promising marketing tool and suitable for product differentiation.

However, we found considerable differences between the study countries regarding the relevance of the single arguments. In DE, IT, CH and UK, “from the respective region” was the most preferred argument. The high relevance of this argument may be explained by altruistic as well as hedonistic motives. An altruistic motive is supporting the local economy and farmers (Leitow, 2005; Wirthgen, 2003). Furthermore, consumers prefer regional products due to environmental concerns regarding long-distance transportation of food (Stolz et al. 2009). These concerns are especially strong in relation to organic products. From the perspective of consumers, long-distance transportation does not fit with the concept of organic farming or of saving natural resources and producing food in local nutrition cycles (Stolz et al. 2009).

Hedonistic motives, such as the perceived higher quality and safety of regional products may play an important role regarding consumers’ strong preferences for regional products (Banik and Simons, 2008; Leitow, 2005; Roosen et al. 2003; Van Ittersum, 2002; Van der Lans et al. 2001). Besides this, consumers might form a connection to their region of residence or the region where they were born and raised (Wilson and Fearne, 2000; Belk 1996). These consumers prefer locally or regionally produced products to underpin their own identity and to preserve their cultural boundaries (Belk, 1996). The high relevance of the argument “from the respective region” in this research probably also emerged from the fact that it was tested in relation with organic eggs. The relevance of the provenance strongly depends on the kind of product. Regional origin is especially relevant in relation to unprocessed products (Stolz et al. 2009, Banik and Simons, 2008; Von Alvensleben, 2004).

It is remarkable that the parameter estimated for the OrganicPlus argument “from the respective country” was not significant in all countries except in AT. In DE and UK, the presence of this argument even led to a reduction in the probability of choosing eggs. This result is striking because in the questionnaire, consumers rated the statements about the country-of-origin higher than the statements related to the region-of-origin (see Table 14). Several studies furthermore revealed that consumers strongly prefer domestically produced food products (Bolliger and Révion, 2008; Loureiro and Umberger, 2007). E.g. consumers in the USA on average are willing to pay a price premium of about 20 percent for a steak with the country-of-origin-label (Loureiro and Umberger, 2007). However, in the context of this research, it is likely that the argument “from the respective country” was substituted by the argument “from the respective region”. The latter argument probably has been perceived as a “country-of-origin” argument plus additional values in this case. Accordingly, the values of the marginal WTP associated with the argument “from the respective country” were also lower compared to the other arguments (except in AT) and even had a negative sign in DE and the UK.

In Austria, in contrast, the argument “from the respective country” was more relevant than “from the respective region”. The strong preference for domestic eggs is also reflected by the marginal WTP, which is higher for “from Austria” than for “from the Waldviertel”. Consumers in Austria – as the country is rather small compared to DE, IT, and UK – might be much less aware of regions than the other countries. This corresponds with previous research on regional and domestic provenances, which revealed that domestic is more relevant than regional origin in AT (BMLFUW, 2008). Besides this, the region focused in the experiment “from the Waldviertel” is only a small region among other regions in the surrounding of Vienna. It is likely that consumers did not consider the provenance of organic eggs from particularly this region to be important.

In Austria, the argument “highest animal welfare standards” was the most preferred argument, while in DE and CH it was ranked after the argument “from the respective region”. In contrast, the argument was not significant in IT and the UK.

A European-wide survey revealed that the majority of consumers in countries situated in the North of the European Union buy eggs more likely produced in free-range or outdoor systems and are willing to pay

higher prices for animal friendly produced eggs (European Commission, 2007). The reverse holds true in several new EU Member States and in several southern countries European Commission, 2007). Considering the case of Italy, Hughner et al. (2007), Zanolini et al. (2004) and Torjusen et al. (2004) furthermore found that animal welfare is less relevant among Italian consumers in comparison to other countries. Such general differences between countries may result from differences regarding the public debate and the more or less active role of the media and others in promoting high animal welfare standards. In contrast, consumers in the UK are considered to be interested in animal welfare even if a stated propensity may not always lead in reality to willingness to pay (IGD, 2007). The lack of consumers' preference for extra animal welfare in the UK may also be a reflection of the fact that UK consumers consider free-range organic eggs already to be a "high welfare" product and are not convinced by any additional benefit. Another explanation might be strong preference heterogeneity among consumers regarding this argument, resulting in a non-significant parameter estimate.

The argument "fair prices for our organic farmers: 20 cents extra" was preferred by consumers in DE and CH, although the argument was less relevant than "from the respective region" and "highest animal welfare standards". In contrast, the argument was not preferred by consumers in AT, IT and the UK. It is likely that the public debate on fairness of domestic food production and the fair-milk campaigns and marketing initiatives launched in DE and CH have led to growing consumer awareness. Also in AT the fair milk price was part of public debates and was especially discussed during the "milk strike". In addition, the Austrian-wide initiative "A faire Milch" (IG-Milch, 2006) communicates the importance of a higher milk price for the survival of dairy farms, the cultivation of the landscape, regional sourcing, etc. to consumers. It is not clear why the argument was less relevant than in DE and CH. In contrast to this, the topic of fairness of domestic production was not part of the public debate in IT and UK. This explains why the argument was not relevant for these two countries.

In previous research in the frame of this project, Zander and Hamm (2009) found that the share of respondents who considered certain attributes as important was highest for animal welfare in all study countries except in Germany. Regional production was ranked after animal welfare in all countries except in DE, where it was considered as the most important attribute. Fair prices were ranked after animal welfare and regional production (Zander and Hamm, 2009). These slight differences between the two studies with respect to the importance of single attributes are probably due to the different research contexts, survey instruments and due to differences in the wording of the attributes.

H2: Consumers are willing to pay a price premium for OrganicPlus arguments displayed on organic egg packages.

This hypothesis was confirmed by this research except for the case of "from the respective country". In DE and CH, however, the parameter estimated for this argument was negative.

The marginal willingness to pay for OrganicPlus arguments varied considerably between the countries and was generally higher in DE and CH compared to the other countries. However, comparing the values between different countries is not useful as the values are based on country-specific price levels. Besides this, the willingness to pay for OrganicPlus arguments was measured in an experimental situation. Thus, it is not directly transferable into real-life purchasing situations. But the WTP estimates still provide interesting insights into the relative importance of the single arguments **within** the single countries.

In DE, IT, CH, and UK, consumers' marginal WTP was highest for the argument "from the respective region". The values ranged from 12 percent in AT to 36 percent in IT, while in DE the price premium was even 81 percent of the average organic egg price in this country. Other studies Leitow (2005) found a marginal WTP to pay more for regional apples of 10 to 23 percent compared to domestic apples, depending on the product price. Another study investigated the marginal WTP for regional cherries, which ranged from 10 to 17 percent (Pohl and Stange, 2001) and for asparagus from 20 to 41 more compared to domestic cherries and asparagus (Pohl 2003). Banik and Simons (2008) compared consumers' WTP for different brands and found that consumers' WTP for local brands was about 16 percent (38 cents) higher than for other brands.

Although the WTP measured in previous research is strongly linked with the specific context and with different products, the values of marginal WTP in AT, CH, IT and UK are in the same range as values measured in previous studies, while the marginal WTP in DE is remarkably high. One explanation for the high values is potential non-attention to the price. The phenomenon of attribute-non-attendance (Scarpa et al. 2009) will be emphasised in further analyses.

Consumer characteristics that explain consumers' preferences for single OrganicPlus arguments

Some of the consumer characteristics we emphasised in order to explain consumers' preferences for OrganicPlus arguments indeed explained the observed preferences. Among the attitude scales, scale 1 and 2 – referring to higher quality and safety of regional/domestic products – were significant in relation with the OrganicPlus argument “from the respective region” and “from the country”. In contrast, “feeling connected with the own region/country) does not significantly affect consumers' preferences for domestic or regional organic eggs.

Besides this, we found causal relationships between consumers' attitudes and their preferences for “highest animal welfare standards”. The argument was preferred by consumers who strongly agreed with the scale “feel responsible for the welfare of laying hens” and by consumers who strongly agreed with “improvement of housing systems are important”. Similarly, Michaelidou and Hassan (2009) found causal relations between personal values towards animal welfare on the preference of free-range produced food. The preference for “highest animal welfare standards” might be driven by a food safety orientation among consumers as shown in other studies (Michaelidou and Hassan, 2009; Liljenstolpe, 2008). Furthermore, particularly consumers who claim for supportive environment for animal welfare issues” preferred the argument “fair prices for our organic producers: 20 cents extra”.

Also some consumers' socio-demographic characteristics explained consumers' preferences for some OrganicPlus arguments: the argument “from the respective region” was especially preferred by consumers with high education levels. This corresponds with findings from previous research on OrganicPlus arguments Zander and Hamm, 2009). Besides this, especially consumers with a high education level and with a high share of organic food consumption choose organic eggs “from the respective country”. The OrganicPlus argument “highest animal welfare standards” was also preferred by consumers with a high income level. Similarly, Michaelidou and Hassan (2009) found that persons with a high income level are more likely to choose animal friendly products.

High share of organic food and beverages expenditures positively influenced consumers' preferences for organic eggs displaying the arguments “from the respective country”. The same applies for “highest animal welfare standards”. Also Zander and Hamm (2009) found relations between the level of consumers' organic food consumption and information access with respect to animal welfare. Furthermore, consumers who are active in a social association preferred the argument “fair prices for our organic farmers: 20 cents extra”. In previous research in the same project, Zander and Hamm (2009) found that female more frequently access information on fair prices than male. In the choice experiments, however, female did not chose organic eggs displaying the argument FAIR more than male.

Design of the choice experiments and the survey

In the choice experiments, consumers could choose between two egg alternatives displaying OrganicPlus arguments and a reference alternative without OrganicPlus arguments. Consumers could also choose the no choice option if none of the three alternatives presented in a choice set was convenient. We assume that including a reference alternative reduced the number of “no choices”. Besides this, it is likely that the bias of over-estimating the WTP could be reduced by offering the invariant reference alternative with the average organic egg price.

We conducted the choice experiment as an unlabelled activity in which the OrganicPlus alternatives as well as the price levels were varied over two “generated” egg alternatives. This approach is more flexible compared to labelled experiments regarding the combination of attributes to be tested. However, dealing with covariates becomes difficult in the case of unlabelled experiments. Causal relations between the consumer characteristics and preferences for certain arguments could only be identified by relating the characteristics to each single argument by building an interaction variable. This procedure led to a large amount of explanatory variables, which are difficult to handle in econometric models. So, after a pre-selection of significant explanatory variables, only a few of these variables were significant in the final econometric models.

Most of the eight scales reporting personal values have a relatively high reliability. These scales could be used in future research, while scale 6 “government and food companies should promote animal welfare standards and farmers should be compensated” and scale 8 “government and food companies should promote fair producers prices” with a Cronbachs' alpha below 0.7 should be improved.

6 Conclusions

This research showed that OrganicPlus arguments are a promising tool for product differentiation and that there is a marginal willingness to pay for OrganicPlus arguments. However, the relevance of the single arguments strongly differs between the study countries. The country differences should be taken into account by producers and marketers who are interested in successfully integrating and communicating OrganicPlus arguments in the production system and in the marketplace. An overview on the OrganicPlus arguments recommended in the single study countries is provided in Table 23.

In Austria, we recommend the use of all arguments except "fair prices for our organic farmers: 20 cents extra", while the most promising argument is "highest animal welfare standards". Organic farmers and marketers in Germany and Switzerland are advised to use all arguments for product differentiation except "from the respective country", while "from the respective region" represents the most promising argument in both countries. In contrast, organic producers and marketers in IT and UK should only focus on "from the respective region", as no other argument is recommended.

Table 23: Recommendation of OrganicPlus arguments in the five study countries

OrganicPlus argument	AT	DE	IT	CH	UK
"From the respective region"	+	++	++	++	++
"From the respective country"	+	-	-	-	-
"Highest animal welfare standards"	++	+	-	+	-
"Fair prices for our organic farmers: 20 cents extra"	-	+	-	+	-

++ = strongly recommended; + = recommended; - not recommended

The likely success of OrganicPlus arguments depends on the kind of product. Thus, organic producers and marketers other than egg producers should verify whether there is a market and a willingness to pay for a certain OrganicPlus strategy. Further research, investigating consumers' preferences and willingness to pay for OrganicPlus arguments on products other than eggs, would provide helpful information.

As different consumer segments prefer different OrganicPlus arguments, communication strategies including the OrganicPlus arguments should be closely tailored towards these target groups. It is worth checking if an OrganicPlus argument is suitable for a particular client base. The target groups to be addressed regarding the single arguments are presented in Table 24.

The argument "from the respective region" is especially preferred by consumers with a high education level as well as by persons, who strongly agree that regional eggs have a higher quality and safety. Thus, pointing out the quality and safety aspect in communication strategies of regional eggs and selling regional organic eggs in shops which are frequented by consumers with high education level are promising moves.

Consumers with relatively high organic food and beverage expenditures as well as persons who believe that regional eggs have a higher quality and safety prefer eggs "from the respective country". We therefore recommend using this argument especially in supermarkets which offer a large range of organic products, as well as in organic shops and direct sales channels which are frequented by heavy users of organic products.

The argument "highest animal welfare standards" is particularly preferred by consumers with a high income and high organic food and beverage expenditures. Besides this, consumers, who feel responsible for the welfare of laying hens and consumers who find that the improvement of housing systems is important are interested in this argument. These consumers should be informed (e.g. by leaflets) about the voluntary activities of organic egg producers to improve the welfare of laying hens that go beyond organic standards.

Furthermore, selling organic eggs produced with highest animal welfare standards looks promising in shops which are frequented by heavy users of organic products as well as by persons with a high income.

Finally, it is necessary to create more public consciousness of fairness in domestic food production chains. Policy makers are invited to actively promote this issue. Besides policy makers, organic farmer associations – following the example of Bio Suisse, who decided to establish fairness standards in April 2010 - should take on an active role in developing, establishing and implementing fairness standards.

Table 24: Determinants for the single OrganicPlus arguments

Preference for the OrganicPlus argument	Target groups/relevant characteristics of consumers
"From the respective region"	<ul style="list-style-type: none"> • High education level • High level of agreement with: "Regional eggs have higher quality and safety"
"From the respective country"	<ul style="list-style-type: none"> • High level of agreement with: "Domestic eggs have higher quality and safety" • High share of organic food and beverage expenditures
"Highest animal welfare standards"	<ul style="list-style-type: none"> • High level of agreement with: "I feel responsible for the welfare of laying hens" • High level of agreement with: "Improvements of keeping systems are important" • High income level • High share of organic food and beverage expenditures
"Fair prices for our organic farmers: 20 cents extra"	<ul style="list-style-type: none"> • High level of agreement with: "Government and food companies should promote fair producers prices" • Being active member in a social association

7 References

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8 Appendix

Appendix 1: Experimental design

Choice sets No.	Block	Alternative 1		Alternative 2		Reference alternative	
		Egg package No.	Price level	Egg package No.	Price level	Egg package No	Price level
1.1	1	8	1	4	1.2	1	1
1.2	1	7	1.2	10	1	1	1
1.3	1	10	1	9	1.2	1	1
1.4	1	4	1.4	7	1.4	1	1
1.5	1	9	1.2	4	1.2	1	1
1.6	1	2	1.4	3	1.2	1	1
2.1	2	2	1.4	8	1	1	1
2.2	2	12	1	2	1.4	1	1
2.3	2	7	1.4	12	1	1	1
2.4	2	4	1.2	7	1.4	1	1
2.5	2	3	1.2	12	1	1	1
2.6	2	10	1	1	1.4	1	1
3.1	3	2	1.4	4	1	1	1
3.2	3	8	1	6	1.4	1	1
3.3	3	9	1.2	7	1.4	1	1
3.4	3	7	1.4	7	1.2	1	1
3.5	3	10	1	4	1.2	1	1
3.6	3	4	1.2	9	1	1	1

Appendix 2: Recruitment Questionnaire

NOTE: To be filled out at the end of the interview:

Name: _____
Telephone (Home): _____ (Work:) _____ (Mobile:) _____
E-mail: _____
Comments: _____ _____

Quotas

- Attention: apply these quotas to each Choice Experiment Consumer. Be sure you stop recruiting one category of consumers once you have reached the maximum.
- Given the CORE focus we will ONLY recruit either regular or occasional organic EGG consumers
- Consumers are to be aged between 20 and 70 years: 50 percent between 20 & 45 Years, 50 percent between 46 & 70 Years
- Gender: 1/3 male - 2/3 Female
- Employment: at least 1/3 and at most 2/3: full-time or part-time worker
- ALL responsible or CO-responsible for household food purchases
- Not employed in Agriculture (farmer or grower)
- Not employed in Food industry/ food processing
- Not employed in Market research company
- Not interviewed in the last 4 months on food

INTRODUCTION: Good morning/afternoon/evening, my name is..... . I am from [name of institution]. We are conducting a European study on organic products. The aim is to test innovative communication strategies in relation with organic eggs in a buying simulation. We plan to conduct the buying simulations at [university/other location].

Would you like to take part in this study?

Yes	1	
No	2	end interview

Note comments:

.....

There are some requirements consumers of our research have to meet. That is why I would like to ask you some questions now.

NOTE: If the person does not fulfil the requirements/quotas, briefly explain the reason why the interview is stopped and why the person will not be selected for participation in the experiment and thank for helping.

Question1: Are you responsible or co-responsible for food shopping in your household?

Yes	1	
No	2	end interview

Question 2: Do you buy or consume ORGANIC EGGS?

Yes	1	
No	2	end interview

Question 3: How do you identify organic products?

ATTENTION NOTE FOR Interviewer: Do not read out possible answers. Multiple answers are possible.

<p>Part A</p> <p>Organic food label <input type="checkbox"/></p> <p>I buy in organic food shops/farm <input type="checkbox"/></p> <p>Logo of the certification body <input type="checkbox"/></p> <p>Code number/name of the certification body <input type="checkbox"/></p>	<p>satisfying</p>	<p>Part B</p> <p>I buy free range eggs <input type="checkbox"/></p> <p>I eat only home production/relatives eggs <input type="checkbox"/></p> <p>I buy from farmers <input type="checkbox"/></p> <p>Other <input type="checkbox"/></p>	<p>not satisfying</p>
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If none of the replies in Part A are mentioned answers are to be considered as:

not satisfying → end interview

Question 4: Are you or someone else in your household working in one of the following professions?

Agriculture (farmer or grower)	0	end interview
Food industry/ food processing	1	end interview
Market research company	2	end interview
No, none of the mentioned professions....	3	

Question 5: Have you been interviewed on food within the last 4 months?

Yes	1	end interview
No	2	

Question 6: Are you working part- or full-time outside the household?

Yes	1	
No	2	Check quotas

Question 7: Register GENDER:

Male	1	
Female	2	Check quotas

Question 8: May I ask in what year you were born?

After 1989 (20 years)	1	end interview
Between 1989 and 1964 (45 years)	2	
Between 1963 and 1939 (70 years)	3	
Before 1939 (70 years and more)	4	end interview

Thank you for your cooperation and for agreeing to participate in the study. The persons who participate in this study will receive an allowance of 20 €. This is a kind of compensation for the time you spend in participating in our study. You are very welcome to contact us if you have any questions.

Interviewer: Give Contact of person at the university/institution involved in the project.

I would like to note down your name, email address and telephone number so that we will be able to contact you.

NOTE: Contact information to be written on the front page.

Appendix 3: Attribute combinations on the egg package labels tested in the choice experiment

Label No.	UK	DE	AT	IT	CH
1	<i>no claim</i>	<i>no claim</i>	<i>no claim</i>	<i>no claim</i>	<i>no claim</i>
2	British eggs	aus Deutschland	aus Österreich	prodotto Italiano	Schweizer Eier
3	from Berkshire	aus Nordhessen	aus dem Waldviertel	prodotto nelle Marche	aus dem Kanton Bern
4	highest animal welfare standards	höchste Tierhaltungsstandards	höchste Tierhaltungsstandards	massimi standard di benessere animale	höchste Tierhaltungsstandards
5	fair prices for our organic farmers: 20 pence extra	faire Preise für unsere Biobauern: 20 Cent extra	faire Preise für unsere Biobauern: 20 Cent extra	prezzi equi: 20 cent direttamente ai nostri allevatori bio	faire Preise für unsere Biobauern: 50 Rappen extra
6	British eggs highest animal welfare standards	aus Deutschland höchste Tierhaltungsstandards	aus Österreich höchste Tierhaltungsstandards	prodotto Italiano massimi standard di benessere animale	Schweizer Eier höchste Tierhaltungsstandards
7	British eggs fair prices for our organic farmers: 20 pence extra	aus Deutschland faire Preise für unsere Biobauern: 20 Cent extra	aus Österreich faire Preise für unsere Biobauern: 20 Cent extra	prodotto Italiano prezzi equi: 20 cent direttamente ai nostri allevatori bio	Schweizer Eier faire Preise für unsere Biobauern: 50 Rappen extra
8	from Berkshire highest animal welfare standards	aus Nordhessen höchste Tierhaltungsstandards	aus dem Waldviertel höchste Tierhaltungsstandards	prodotto nelle Marche massimi standard di benessere animale	aus dem Kanton Bern höchste Tierhaltungsstandards
9	from Berkshire fair prices for our organic farmers: 20 pence extra	aus Nordhessen faire Preise für unsere Biobauern: 20 Cent extra	aus dem Waldviertel faire Preise für unsere Biobauern: 20 Cent extra	prodotto nelle Marche prezzi equi: 20 cent direttamente ai nostri allevatori bio	aus dem Kanton Bern faire Preise für unsere Biobauern: 50 Rappen extra
10	highest animal welfare standards fair prices for our organic farmers: 20 pence extra	höchste Tierhaltungsstandards faire Preise für unsere Biobauern: 20 Cent extra	höchste Tierhaltungsstandards faire Preise für unsere Biobauern: 20 Cent extra	massimi standard di benessere animale prezzi equi: 20 cent direttamente ai nostri allevatori bio	höchste Tierhaltungsstandards faire Preise für unsere Biobauern: 50 Rappen extra
11	British eggs highest animal welfare standards	aus Deutschland höchste Tierhaltungsstandards	aus Österreich höchste Tierhaltungsstandards	prodotto Italiano massimi standard di benessere animale	Schweizer Eier höchste Tierhaltungsstandards

	fair prices for our organic farmers: 20 pence extra	faire Preise für unsere Biobauern: 20 Cent extra	faire Preise für unsere Biobauern: 20 Cent extra	prezzi equi: 20 cent direttamente ai nostri allevatori bio	faire Preise für unsere Biobauern: 50 Rappen extra
12	from Berkshire highest animal welfare standards fair prices for our organic farmers: 20 pence extra	aus Nordhessen höchste Tierhaltungsstandards faire Preise für unsere Biobauern: 20 Cent extra	aus dem Waldviertel höchste Tierhaltungsstandards faire Preise für unsere Biobauern: 20 Cent extra	prodotto nelle Marche massimi standard di benessere animale prezzi equi: 20 cent direttamente ai nostri allevatori bio	aus dem Kanton Bern höchste Tierhaltungsstandards faire Preise für unsere Biobauern: 50 Rappen extra

Appendix 4: Information on claims

Please read carefully the information on the claims that you will find on egg packages in the subsequent purchase simulation.

1.

- a. **From *the respective country*.** Organic eggs with the claim “from *the respective country*” are a domestic organic produce. When buying these eggs, you support the organic farmers in your country and contribute to avoid long transport distances.
- b. **From *the respective region*.** Organic eggs with the claim “from *the respective region*” are a regional organic product. When buying these eggs, you support the organic farmers in your region and contribute to avoid long transport distances.

2. highest animal welfare standards

Animal standards in organic egg production are higher than in conventional egg production. Organic eggs with the claim “highest animal welfare standards” are from farms that follow the highest animal welfare standards, which are higher than organic standards. The laying hens have an extra large free range area of more than 10 m² per laying hen. The range is designed to provide a high quality of life including sand bathing facilities and shelter. The large barns provide plenty of perches and littered nests. When buying these eggs, you support especially animal friendly egg production.

3. fair prices for our organic farmers: **20 pence extra**

Organic eggs with the claim “fair prices for our organic farmers: *20 pence extra*” guarantee fair producer prices. At the moment, a farmer in (*please enter your country*) receives X *euros/GBP/Swiss Francs (please list the actual producer price in your country for 6 eggs, unit 63g/L)* per 6 organic eggs. When buying eggs with the claim “**fair prices for our organic farmers: 20 cents/pence/ 50 Rappen extra**”, an additional payment of 20 cent per box is paid directly to the egg producer. When buying these eggs you contribute to a higher farm income.

Appendix 5: Experimental protocol and questionnaire

Experimental Protocol

Interviewer: Please enter the consumer number starting with your initials (e.g. H.S.) the consumer number (starting with 1) and the block number the consumer is belonging to:

Initials of interviewer	
Consumer number	
Block	

Results of the choice experiment

Interviewer: Enter into the table below, which alternative was chosen in each of the 6 choice sets.

Choice set	Alternative 1	Alternative 2	Alternative 3	No choice
X.1	[1]	[2]	[3]	[4]
X.2	[1]	[2]	[3]	[4]
X.3	[1]	[2]	[3]	[4]
X.4	[1]	[2]	[3]	[4]
X.5	[1]	[2]	[3]	[4]
X.6	[1]	[2]	[3]	[4]

X=block number

Reasons for no choice

Interviewer: If in one or more choice sets no alternative was chosen:

What is / are the reason(s) that you did not choose any of the alternatives in choice set X?

Interviewer: please note down the reasons for no choice for the respective choice set(s)

Choice Set	Reasons for no choice
X.1	
X.2	
X.3	
X.4	
X.5	
X.6	

Experimental Questionnaire (English version)

The following statements address your attitudes of the geographical origin of eggs. Please indicate your level of agreement to the following statements on a scale from 1 ("I totally agree") to 7 ("I totally disagree".)

Item	Statement	I totally agree							I totally disagree
		1	2	3	4	5	6	7	
1	It is very important to me that eggs are not transported over a long distance.	<input type="checkbox"/>							
2	Organic eggs produced in Berkshire taste better than organic eggs from other regions.	<input type="checkbox"/>							
3	I trust in the quality of organic eggs produced in Berkshire more than organic eggs from other regions.	<input type="checkbox"/>							
4	I am willing to pay a higher price for organic eggs that are produced in Britain.	<input type="checkbox"/>							
5	Most of my family/friends would prefer eggs from Britain.	<input type="checkbox"/>							
6	Organic eggs from Berkshire are safer in terms of contaminants or residues than organic eggs from other regions.	<input type="checkbox"/>							
7	Organic eggs produced in Britain are fresher than organic eggs from other country.	<input type="checkbox"/>							
8	Traditions and customs are very important to me.	<input type="checkbox"/>							
9	I trust in the quality of domestic organic eggs more than in organic eggs from other countries.	<input type="checkbox"/>							
10	Most of my family/friends would buy eggs that are produced in Berkshire.	<input type="checkbox"/>							
11	Organic eggs produced in Berkshire are fresher than organic eggs from other regions.	<input type="checkbox"/>							
12	I feel strongly connected to Berkshire.	<input type="checkbox"/>							
13	I prefer regional conventional eggs rather than organic eggs that were transported over a long distance.	<input type="checkbox"/>							
14	It is very important to me that the food I consume is produced in Britain.	<input type="checkbox"/>							
15	I feel strongly connected to Britain.	<input type="checkbox"/>							
16	Domestic organic eggs are safer in terms of contaminants or residues than organic eggs from other countries.	<input type="checkbox"/>							
17	I am willing to pay higher prices for organic eggs that are produced in Berkshire.	<input type="checkbox"/>							
18	Long distance transports of food products causes severe environmental pollution.	<input type="checkbox"/>							

The following statements address your attitudes of animal welfare. Please evaluate these statements on a scale from 1 to 7, while 1 means "I totally agree" and 7 "I totally disagree".

Item	Statement	I totally agree					I totally disagree	
		1	2	3	4	5	6	7
1	The well-being of laying hens is very important to me.	<input type="checkbox"/>						
2	The organic farming sector should improve the welfare standards of laying hens.	<input type="checkbox"/>						
3	I trust more in the quality of organic eggs that are produced with highest animal welfare standards.	<input type="checkbox"/>						
4	The government should take a more active role in promoting farm animal welfare.	<input type="checkbox"/>						
5	Food companies that require farmers to treat their animals better, no matter what it costs, are doing the right thing.	<input type="checkbox"/>						
6	Farmers should be compensated if forced to comply with higher animal welfare standards.	<input type="checkbox"/>						
7	I am willing to pay higher prices for eggs produced with extra high animal welfare standards that go beyond organic standards.	<input type="checkbox"/>						
8	Large barns provided with plenty of perches and littered nests are important for the welfare of laying hens.	<input type="checkbox"/>						
9	The flock size of laying hens has a significant impact on the welfare of the hens.	<input type="checkbox"/>						
10	Affordable organic egg prices are more important than the highest animal welfare conditions.	<input type="checkbox"/>						
11	The design of the range of laying hens including shade for rest and sand bath facilities is important to provide a high quality of life.	<input type="checkbox"/>						
12	Most of my family/friends would buy eggs that were produced to the highest animal welfare standards.	<input type="checkbox"/>						
13	Farmers and food companies put their own profits ahead of treating farm animals humanely.	<input type="checkbox"/>						
14	I feel responsible for the well-being of laying hens when purchasing eggs.	<input type="checkbox"/>						
15	My personal food choices have a large impact on the well-being of farm animals.	<input type="checkbox"/>						
16	Laying hens have roughly the same ability to feel pain and discomfort as humans.	<input type="checkbox"/>						
17	Extra large free range areas of more than 10 m2 per laying hen are important for their welfare.	<input type="checkbox"/>						

The following questions are related to your attitudes towards fair prices for organic farmers and further issues related to organic food. Please indicate your agreement to these statements on a scale from 1 ("I totally agree") to 7 ("I totally disagree").

Item	Statement	I totally agree					I totally disagree	
		1	2	3	4	5	6	7
1	I like the fact that low priced organic food products are sold in discount stores.	<input type="checkbox"/>						
2	In my opinion, organic eggs are too expensive.	<input type="checkbox"/>						
3	Most of my family/friends would buy eggs that guarantee fair producer prices.	<input type="checkbox"/>						
4	Fair producer prices are very important to me.	<input type="checkbox"/>						
5	The organic farming sector should raise the prices paid to producers.	<input type="checkbox"/>						
6	Food companies that guarantee fair producer prices, no matter what it costs, are doing the right thing.	<input type="checkbox"/>						
7	Some food products are hard to identify as organic at the point of sale.	<input type="checkbox"/>						
8	I would support initiatives that stipulate minimum wages for workers in farming.	<input type="checkbox"/>						
9	My personal food choices have a large impact on producer prices.	<input type="checkbox"/>						
10	I am willing to pay higher prices for organic eggs that guarantee fair producer prices.	<input type="checkbox"/>						
11	Affordable organic egg prices are more important than fair producer prices.	<input type="checkbox"/>						
12	The government should take a more active role in promoting fair producer prices.	<input type="checkbox"/>						
13	I am not sure if all food products sold as organic really are organic.	<input type="checkbox"/>						

BU1 How frequently do you purchase organic food?

- Less than once per month [0]
- Less than once per week [1]
- Approx. once per week [2]
- Several times per week [3]

BU2 Please estimate roughly the share of organic products in your total expenditure for food and beverages!

- 0 to 10 % [0]
- 11 to 20 % [1]
- 21 to 30 % [2]
- 31 to 40 % [3]
- 41 to 50 % [4]
- 51 to 60 % [5]
- 61 to 70 % [6]
- 71 to 80 % [7]
- 81 to 90 % [8]
- 91 to 100 % [9]

BU3 Where do you mainly buy organic food? (multiple answers possible)

- Organic shop selling organic products only [0]
- Organic supermarket selling organic products only [1]
- Conventional retail shop →Which? (name of chain) _____ [2]
- Discount store →Which? (name of chain) _____ [3]
- At a farmers' market [4]
- Directly from the farm (farm shops, farmers' box schemes, mail order) [5]
- Specialised shops (e.g. bakeries, butchers, greengrocers) [6]
- Health food shops [7]
- Other places →Which? _____ [8]

SE1 Do you support social organisations (e.g. Amnesty International, Oxfam, Christian Aid, Save the Children, Red Cross) in one of the following ways? (Multiple answers possible)

- Donation [0]
- Membership in a non-profit social aid association [1]
- Active commitment in a non-profit social aid association [2]
- Other _____ [3]
- None [4]

SE2 Do you support environmental organisations (e.g. Friends of the Earth, Greenpeace, WWF) in one of the following ways? (Multiple answers possible)

- Donation [0]
- Membership in an environmental association [1]
- Active commitment in an environmental association [2]
- Other _____ [3]
- None [4]

SD1 How many people live in your household?

.....

A person living in shared accommodation (students etc.) counts as a one-person household (unless they purchase their food together)

SD2 What are your household earnings after tax per week (all members of the household included)

- up to below 100£; [0]
- from 100 up to below 200£ [1]
- from 200 up to below 300£; [2]
- from 300 up to below 400£; [3]
- from 400 up to below 500£ [4]
- from 500 up to below 600£; [5]
- from 600 up to below 700£; [6]
- from 700 up to below 800£; [7]
- more than 800£ [8]

SD3 Please mark if you are full/part-time employed outside the household:

- full/part-time employed [0]
- not employed [1]

SD4 What education do you have? Please indicate the highest level you have obtained:

- No formal qualification [0]
- GCSE (about 10 years of school visit) [1]
- A level (12 or 13 years of school visit) [2]
- College or university degree (BSc, BA, MSc, MA, PhD) [3]

SD5 How old are you?

.....

SD6 Please mark:

- female [0]
- male [1]

Thank you for your help in this research!

Farmer Consumer Partnerships

Abstract

Within the European-funded research project CORE Organic Farmer Consumer Partnership, we tested selected OrganicPlus arguments displayed on organic egg packages in consumer choice experiments in the five study countries of Austria, Germany, Italy, Switzerland and the United Kingdom. The focus was on investigating consumers' preferences and willingness to pay for the selected OrganicPlus arguments: "from the respective country", "from the respective region", "highest animal welfare standards" and "fair prices for our organic farmers: 20cents extra". Furthermore, the objective was to determine causal relationships between the preferences observed and the relevant characteristics of the consumers by means of a questionnaire-based survey. The data was analysed with multinomial logit models.

As hypothesised, organic egg packages displaying OrganicPlus arguments were more preferred by organic consumers than organic eggs without OrganicPlus arguments. However, consumer preferences varied between the arguments and between countries. The argument, "from the respective region" was the most preferred argument in all countries, except in Austria, where it was ranked after "highest animal welfare standards" and "from the respective country". The argument "highest animal welfare standards" was the most preferred argument in Austria, while it was ranked after the argument "from the respective region" in Germany and Switzerland. The argument "fair prices for our organic farmers: 20 pence/20 cents/50 Rappen extra" was significantly preferred among German and Swiss consumers, although the argument was less relevant than "from the respective region" and "highest animal welfare standards".

The willingness to pay for OrganicPlus arguments varied considerably between the countries, however, it was highest for "from the respective region" in most study countries. Causal relationships were found between consumers' attitudes and their preferences for some of the OrganicPlus arguments. Besides this, socio-demographic characteristics, purchase patterns related to organic food as well as consumers' social commitment all had an impact on consumers' preferences for OrganicPlus arguments.

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