CORE Organic

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CORE Organic Project Series Report

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Farmer Consumer Partnerships: Information search and decision making – the case of ethical values of organic products

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This project is one of the eight research pilot projects selected in 2007 for transnational funding by the partners of the CORE Organic ERA-net project. The pilot projects, which are running in the period 2007 – 2010, are:

AGTEC-Org	AGronomical and TEchnological methods to improve ORGanic wheat quality: agtec.coreportal.org
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
iPOPY	innovative Public Organic food Procurement for Youth: ipopy.coreportal.org
PathOrganic	Risk and Recommendations Regarding Human Pathogens in Organic Production Chains: pathorganic.coreportal.org
PHYTOMILK	Potential improvement of the salutary effect of organic dairy milk by forage species and by supplementation: phytomilk.coreportal.org
QACCP	Quality analysis of critical control points within the whole food chain and their impact on food quality, safety and health: qaccp.coreportal.org

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List of acronyms

ANOVA	Analysis of variance
AT	Austria
CAPI	Computer Assisted Personal Interview
CH	Switzerland
DE	Germany
FCP	Farmer Consumer Partnerships
IDM	Information Display Matrix
IT	Italy
N	Number of observations
PC	Personal computer
Rk	Rank
UK	The United Kingdom
WP	Work package

Executive Summary

The CORE Organic pilot project 'Farmer Consumer Partnerships' aims at analysing and testing innovative communication strategies of organic companies with respect to ethical values as a means of reconnecting organic farmers and consumers against the varying cultural and behavioural backgrounds of consumers in five European countries (AT, CH, DE, IT UK).

The previous work packages (WP1 and WP2) provided a selection of the most promising communication arguments with respect to ethical values of organic food based on literature review and on the farmers' or farmers' initiatives point of view. Based on this, the task is to narrow down the wide range of existing arguments related to ethical values in organic food production. Therefore, the arguments were categorised in a pragmatic way, taking into consideration the likely beneficiaries of these ethical activities and the expert rating of research partners. The final selection included the three major categories of economic, social and environmental concerns and, additionally, animal welfare as well as cultural issues. Finally, 14 ethical arguments belonging to the following sub-dimensions were chosen: biodiversity, animal welfare, regional production, fairness in relation to the farmer, care farming, social aspects of production, and the preservation of cultural features. The aim of this work package was to confront consumers with these ethical concerns and to identify the most promising communication attributes for further analyses within the next work packages. It was to be determined which ethical information is most interesting for consumers in the partner countries with respect to the purchase decision on organic food.

Chapter 2 concentrates on the theoretical perspective of information search within consumer behaviour. Factors influencing extensiveness and content of information search are presented.

Chapter 3 is dedicated to the description of the methodological approach of the research within this research step. For the analyses within this research, it was decided to use the Information Display Matrix (IDM). The IDM is a process tracing method aiming at monitoring the cognitive processes underlying information search, judgement and choice. The IDM was used to analyse the depth of information search regarding ethical values of organic food and to identify those ethical attributes most relevant for decision making. The two-dimensional matrix lists alternative product stimuli in columns, while product attributes are listed in rows. Each cell contains concealed information about a product-related attribute, which has to be accessed one after another by the subject in order to obtain the information (Jacoby et al. 1987, Mühlbacher and Kirchler 2003). The ethical attributes were tested with the product organic milk. The IDM was accompanied by a questionnaire aiming at the validation of the results obtained by the IDM, at an explanation of the information acquisition behaviour and at giving answers on the 'real life' information behaviour concerning organic food. 240 organic milk buyers were interviewed face-to-face, in a computer assisted manner in the five study countries.

Subject of chapter 4 is the description of the sample regarding socio-demographic indicators of participants and 'real life' information and purchasing behaviour. Concerning the sources of information on organic food, the results show that 'articles in newspapers etc.' are preferred, followed by 'conversation with family and friends' and 'product packaging'. 'Information by sales personnel' was frequently mentioned in Italy but rarely in Switzerland and in the UK. 'Reports on radio or TV' seem to be less important in Italy than in all other countries. When asked for the kind of information they had actively been looking for within the last two months, 'product origin' was mentioned most often, followed by information on 'ingredients'. In Switzerland and Germany, on the other hand, information on 'organic certification' and 'production and processing methods' was ranked higher than information on 'ingredients'. In Italy, information on 'product quality' was more frequently asked for than on 'ingredients' whereas in the UK, information on 'food miles' is more important. Information on 'prices' seems to be much more important in Austria than in all the other countries.

Chapter 5 concentrates on the depth and content of information search for ethical values of organic food obtained by means of the IDM. On average, respondents spent 4:28 minutes for information search and opened 34 information fields within the IDM. There are marked differences between the countries. Besides socio-demographic factors like age and the level of education, attitudes regarding organic food consumption could be identified to have an impact on the amount of information looked for preceding the product choice. The importance of different attributes for the choice of the organic product was analysed via the share that each attribute has in all firstly accessed attributes and via the frequency of accession of each attribute. According to these indicators, the most important attributes are 'animal welfare', 'regional production' and 'fair prices for farmers'. These attributes were followed by 'product price', indicating that consumers tend to prefer cheaper products over ethical products with attributes like 'care farming', 'social criteria of production', 'protection of biodiversity' and 'cultural aspects'. There are only minor differences between the

countries in the order of the most important attributes. Only in Italy 'product price' seems to be more important than 'fair prices' and 'animal welfare'. Factors impacting on the preferred ethical concern are age, gender, level of education and motives for organic consumption. Expected relationships between attitudes towards organic consumption and the preferred ethical concern proved to be weak.

The choice decision shows that the cheaper organic product without any additional ethical values was preferred by 6% of the respondents only. While in Germany 3% decided in favour of the cheaper product, 9% of the Austrian respondents chose the cheaper one. This result allows the conclusion that a large share of consumers of organic food would be willing to pay a price premium for ethical products.

The report is completed by some concluding remarks (Chapter 6) pointing at the appropriateness of the IDM for the task fulfilled but also its methodological limitations. The central result of the analyses of work package 3 for the whole project is the identification of the most important ethical values from the consumers' point of view. However, there are still some open research questions, particularly as for the joint effect of different variables on the respondents' information behaviour. The corresponding analyses will take place during the next months and will be published in scientific journals.

1 Introduction

1.1 Background

Globalisation and anonymity of trade with organic products are regarded as a problem by many organic farmers and consumers in Europe. European organic farmers often fear competition with producers from countries, in which production costs are much lower due to climatic conditions, lower costs of labour or land, lower production standards, etc. Therefore, organic farmers are under pressure to find ways to decrease their production costs in order to keep up with world-wide competition, either by realising economies of scale through increased production or by lowering their individual production standards and serving the organic mass market. Organic farmers and other suppliers such as manufacturers or traders who do not make use of all possibilities to lower their production costs but offer ethical values instead, would face competitive disadvantages and would probably disappear from the market in the end. On the other hand, more and more consumers are discontented with the consequences of globalisation on organic food provision: anonymous, uniform and replaceable organic food products, which are produced under unknown social and environmental conditions. Various publications indicate that consumers are interested in ethical values, that ethical consumerism is a growing trend worldwide and that moral responsibility is a relevant buying motivation among various consumer groups (Newholm and Shaw 2007, Carrigan et al. 2004, Shaw and Shiu 2003). There is sufficient evidence of ethical motives of organic food consumers like environmental concerns, concerns about animal welfare, the support of the local economy as well as concerns for the well-being of people involved in the production of organic food (Hughner et al. 2007, Torjusen et al. 2004, Ozcaglar-Toulouse et al. 2006, Goig 2007). Organic consumers are characterised by a strong interest in sensible social consumer behaviour (Zanoli et al. 2004, Spiller and Lüth 2004, Sylvander and Francois 2006). They want greater traceability and information about the conditions under which organic food from different origins was produced and from where and how it was transported (energy use for food miles).

Several examples illustrate that consumers of organic food are willing to pay an additional price premium if ethical values that go beyond the mere organic standards are added to organic products and if these values are well communicated. Thus, information was found to be one of the obstacles to intended ethical buying behaviour by consumers (Newholm and Shaw 2007). In the organic food sector, fair trade products from developing countries and the direct support of small farmers' initiatives in disadvantaged (mountainous) areas are examples for successful communication of values (Zanoli et al. 2004, Schmid et al. 2004). Recently, very successful "fair milk price" projects were initiated by organic dairy farmers in Germany and Austria (Sobczak and Burchardi 2006, IG Milch 2006).

In order to structure the broad range of ethical values, which can be realised in organic farming, it is helpful to use an extended approach based on the three elements of sustainability (see Padel and Gössinger 2008):

- Social issues such as fair, safe and equitable working conditions; ban on child labour and exploitation of foreign workers; employment of disabled people; re-integration of drug addicts or delinquents; Preservation of agricultural or manufacturing traditions.

- Environmental issues such as protection of natural resources, water, soil, biodiversity or climate; conservation and enhancement of landscapes.

- Economic issues such as fair prices for organic farmers, manufacturers or retailers; long-term contracts for smaller farms, processing or trading companies; support for enterprises in disadvantaged or mountainous regions.

- Other issues such as cultural, religious or other spiritual convictions issues and the well-being of animals.

1.2 Aim of the whole research project

The overall objective of this research project is to analyse and to test innovative communication strategies of organic companies as a means to reconnect organic farmers and consumers against the varying cultural and behavioural backgrounds of consumers in five European countries. Many organic companies in Europe are currently deliberating on how to differentiate their products and services from the global organic market. The results of a comparison of different communication arguments in five European countries will provide a valuable tool for organic farmers' initiatives for their strategic positioning in the organic market. The results will also be interesting for policy makers to gain a better understanding of the country-specific attitudes of ethical consumers. This finally offers an insight into the challenges how to fulfil expectations for a sustainable development of Europe.

The objectives are in detail:

(i) to identify successful initiatives in each partner country and to analyse their communication strategies with the general public, with stakeholders and particularly with consumers in a case study approach;

(ii) to test the most promising communication arguments in all partner countries with different methods;

(iii) to develop and test new generic communication strategies as a valuable tool for the strategic positioning of farmers' initiatives, following approaches to reconnect organic farmers and consumers.

1.3 Aim of the project part 'Information search and decision making'

The outcome of the previous work packages (WP1 and WP2) was a selection of the most promising communication arguments with respect to ethical values of organic food based on literature review and on an analysis of arguments used by organic farmers' and farmers' initiatives. Organic production that considers ethical values was called an 'organicPlus' activity, thus indicating the realisation of values beyond organic farming standards. According to the definition, a promising argument had to refer to an 'organicPlus' activity and had to be verifiable. The wide range of 'organicPlus' activities was categorised according to the dimensions: economic, social, environmental, cultural concerns, concerns for animal welfare and aspects focussing on the whole system (Padel and Gössinger 2008). Based on the outcome of WP1 and WP2, the wide range of existing arguments related to ethical values in organic food production was to be narrowed down. Therefore, the arguments were categorised in a pragmatic way, taking into consideration the likely beneficiaries of such activities and the expert rating of research partners. The final selection included the categories economic, social, environmental concerns and a fourth category containing cultural issues. Finally, 14 ethical arguments belonging in the following sub-dimensions were chosen: biodiversity, animal welfare, regional production, fairness in relation to the farmer, care farming, social aspects of production, and the preservation of cultural features (Table 1-1).

Table 1-1: Communication arguments to be tested by means of the IDM

Attribute	Argument 1	Argument 2
Protection of biodiversity	Protection of the diversity of wild plant and animal varieties on the farms	Protection of traditional plant varieties and traditional animal breeds
Animal welfare	When the animals are transported to the slaughterhouse, they are accompanied and looked after by a person they know in order to reduce unnecessary stress.	Animal husbandry according to the animals' physical, physiological and behavioural needs
Regional production	Using regional supply chains to reduce food miles	Support of the local economy
Fair prices for farmers	Of the total price for every litre of milk, five cents are additionally paid to local farmers	The farmers get fair prices that allows them to secure their livelihood and future
Care farms	Integration and participation of disabled people in the work place	Providing support and work for disadvantaged young people and former convicts (IT: Support of people opposing criminal structures like the Mafia)
Social aspects of production	Support for family farms	Good working conditions for farm workers
Preservation of cultural features	Revival of traditional artisan processing methods	Preservation of the local cultural landscape

Source: Padel and Gössinger (2008)

The aim of WP3 was to confront consumers with these ethical concerns and to identify the most promising ethical concerns for further analyses within the next work packages. It was to be determined which information is most interesting for consumers in the partner countries with respect to the purchase decision

on organic food with ethical values. The seven ethical attributes and the corresponding arguments were tested in WP3 by means of an Information Display Matrix (IDM). The analyses are expected to deliver results at different levels.

a. Description of the actual information behaviour

   o Where do organic consumers get their information from and

   o Which kind of information are they looking for?

   The answers of these questions will provide information on how and by which instrument ethical values should be communicated to the consumer in order to develop product information material within the next work packages.

b. Information acquisition behaviour

   o To which extent do consumers acquire information on ethical values of organic food? (depth of information search)

   o Which attributes are most important within the information acquisition process for ethical food? (content of information search)

c. What are the factors that determine consumers' information acquisition behaviour?

2 Theory on information acquisition behaviour

Consumer behaviour is a very complex issue as there are many impacting factors. Some of them are relatively easy to control and to measure, like demographic and socioeconomic factors and other factors concerning e.g. the economic environment (prices, availability). The psychological components inherent in consumers are classified in activating and cognitive processes. While activating processes are related to internal motivations and tensions, cognitive processes determine information acquisition, processing and storage. The cognitive level asks for information on price, quality, other product characteristics and situational factors like familiarity with the product. The affective level contains emotional elements and social values. The relations between activating and cognitive processes are rather manifold and difficult to separate from each other (Kroeber-Riel and Weinberg 2003). This research concentrates on information acquisition behaviour as part of cognitive processes, having in mind that activating processes also may have some impact on information search.

Information search is part of the decision making process of consumers with respect to purchase decisions, and can be described as the 'process by which the consumer surveys his or her environment for appropriate data to make a reasonable decision' (Solomon et al. 2006:265). With respect to the extent of information search, it is helpful to have a look on types of decision making processes. Decision making is described by the two extremes of habitual decision making and extended problem solving. Habitual decision making is characterised by a very scarce conscious effort. Minimised time and energy spent on decision making can be found predominantly with frequently purchased products. Extended problem solving on the other hand is the case when e.g. decisions on rarely bought goods going along with high risk are to be made. The majority of decisions are somewhere between the two extremes of habitual and extended decision making and are thus called limited problem solving strategies (see e.g. Solomon et al. 2006). Table 2-1 summarises some of the main characteristics of limited and extensive problem solving processes.

Decisions on food products are every day life decisions and practices. They are seen as an example for a limited problem solving process in which consumers employ simple decision rules based on passive information search rather than actively processed information (Solomon et al. 2006). Although this fact restricts the existence of the 'active ethically conscious food consumer', experiences and observations of consumer behaviour with respect to ethical values in organic food contradict to this perspective (e.g. Sobczak and Burchardi 2006, IG Milch 2006).

Table 2-1: Characteristics of limited and extended problem solving

	Limited problem solving	Extended problem solving
Motivation	Low risk and involvement	High risk and involvement
Information search	Little search	Extensive search
	Information processed passively	Information processed actively
	In-store decision likely	Multiple sources consulted prior to store visits
Alternative evaluation	Weakly held beliefs	Strongly held beliefs
	Only most prominent criteria used	Many criteria used
	Alternatives perceived as basically similar	Significant differences perceived among alternatives
	Non-compensatory strategy used	Compensatory strategies used
Purchase	Limited shopping time; may prefer self-service	Many outlets shopped if needed
	Choice often influenced by store displays	Communication with store personnel often desirable

Source: Solomon et al. (2006)

The extent of the information search activity depends on the importance of the purchase decision, the availability of information and the difficulty of information search. Additional determinants of information search and acquisition are the subjective relevance of the purchase decision, the expected benefit of the information search, the subjective risk of purchase, the complexity of the product, attitudes towards shopping, experiences from former decisions (knowledge), priority of decision and involvement (Foscht and Swoboda 2004). Involvement is understood as a hypothetical construct defining a status of activity towards

an object and is described as the degree of activation for information search, acquisition, processing and storage (Trommsdorf 2004). An 'object' can be a product (or a brand), an advertisement or a purchase situation (Solomon et al. 2006). In explaining consumer behaviour, the concept of involvement becomes more and more important (Mittal and Lee 1989). Generally, food products, grocery products and other products of daily consumption are assumed to be of medium to low involvement (Zaichkowski 1985; Knox et al. 1994). Higher involvement results in a higher cognitive effort in information seeking and in a higher likelihood of systematic decision making. The degree of involvement therefore determines the amount of product information the consumer will search for (Fischer and van der Wal 2007, Beatty and Smith 1987, Knox et al. 1994).

Solomon et al. (2006) state that people with little knowledge and people with good knowledge search less information than others. While in the first case people might not even know where to start with information search, persons well familiar with a product will know exactly which information to select in order to come to a decision. Most information is acquired by people that are moderately familiar with a product.

Information search regarding content is even more complex and more difficult to structure, since it is highly dependent on personal values and attitudes and thus on the perceived need to be (better) informed. Assuming the consumer to act in a rational and efficient manner, information search focuses on that kind of information relevant for decision making. Following the economic principle of decreasing marginal utility, most valuable information is collected first (Foscht and Swoboda 2004). Information is searched for until the marginal utility exceeds the marginal costs of information search (Foscht and Swoboda 2004, Solomon et al. 2006). Thus, earlier and more frequently acquired information has a higher impact on decision making than information asked for later or less frequently (Aschemann and Hamm 2008; Hofacker 1985 cited in Schopphoven 1996).

3   Survey as methodological approach

The surveys were conducted between May and July 2008 in the study countries Austria (AT), Switzerland (CH), Germany (DE), Italy (IT) and the United Kingdom (UK). Participants were acquired and interviewed at the point of sale. The survey locations or the types of shops were selected according to their share in the national organic market in each country. Since only organic consumers were to be interviewed, the shops where the interviews took place had to have a relatively high share of organic consumers in order to have a higher chance to meet organic consumers for the interviews in an appropriate period of time. This procedure was necessary to control survey costs. Nevertheless, it overestimates the importance of organic shops and organic supermarkets. The share of interviews in different shop types is listed in Table 3-1.

Table 3-1: Interview places in the study countries

	ALL N=1192	AT N=240	CH N=239	DE N=240	IT N=233	UK N=240
Organic food shops	39.6	20.0	20.5	50.0	63.1	45.0
Conventional supermarkets	60.4	80.0	79.5	50.0	36.9	55.0

The acquisition of participants was done at random and no quotas had to be met. The interviewers were requested to approach every second person passing after having completed the previous interview. Participants had to be more than 18 years old, purchase organic products more than once a month and needed to be buyers of organic milk. The computer assisted survey was conducted in each participating country with approximately 240 consumers in urban and rural regions. The software was provided for the partners in English and German language. Both versions were checked by partners and corrected when necessary. The Italian translation was provided by the Italian partner in close collaboration with the partner from the University of Kassel. The software was tested by a pre-test in all countries and adjustments took place. Guidelines were developed for the pre-test and adjusted guidelines for the main survey in order to grant a common understanding and an interview procedure as similar as possible in all research countries. The duration of the interviews was on average 20 to 30 minutes with some extremes of 40 minutes.

The survey consisted of three main parts: The IDM was positioned in the centre of the exercise. The accompanying questionnaire was divided into two parts, one preceding and one following the IDM.

3.1   Information-Display-Matrix

The Information-Display-Matrix (IDM) is one among several methods for analysing information acquisition behaviour. The IDM is a process tracing method aiming at monitoring the cognitive processes underlying information search, judgement and choice. The two-dimensional matrix lists alternative product stimuli in columns, while product attributes are listed in rows. Each cell contains concealed information about a product-related attribute, which has to be accessed one after another by the subject in order to obtain the information (Jacoby et al. 1987, Mühlbacher and Kirchler 2003).

The method enables a detailed analysis of cognitive processes within decision making. A variety of measures exist on the kind, sequence and amount of information sought as well as the duration and structure of the information acquisition phase preceding choice and decision. That way, relevant product-related criteria and their relative importance for the purchase decision can be identified (Jasper and Shapiro 2002). The three main objectives for the identification of processes related with information acquisition and search are:

- Evaluation and extension of decision-making theories (e.g. analysis of individual decision behaviour with respect of compensatory or non-compensatory preferences)

- Identification of variables that affect decision-making and individual differences in it

- Comprehension of decision making processes in practice (this can be helpful in designing decision aids, such as labels on products or packages and assistance in policy making (Jasper and Shapiro 2002).

The main advantage of the IDM compared to a direct inquiry of respondents is the higher precision of results concerning the decision making process, since information acquisition might not be consciously controlled or not properly reported. An important reason not to report the information acquisition process properly might be the social desirability of answers (Kroeber-Riel and Weinberg 2003).

The measures obtainable by an IDM are (Schopphoven 1996):

a) the **amount or depth of information** accessed from the available information. Indicators are:

- the total number of information items accessed
- the amount of accessed information
- the number of options or attributes considered
- the amount of options or attributes considered
- the decision time and the average time spent per acquisition
- size of the sub-matrix (number of alternatives by number of attributes considered)

b) **content measures** which analyse the kind of information that was acquired and the options that were chosen:

- the relative frequency with which a given option or attribute was accessed
- the relative time spent on each attribute or action
- the share of subjects considering a given option or attribute
- the relative importance of each attribute assessed through attribute values
- the relative frequency of chosen options.

c) the **sequence measures** which refer to the structure of the information search and the underlying decision heuristics:

- the identification of different types of information search regarding the structure (e.g. by product, by attribute)
- the share of the different types of information search.

There are some limitations of the IDM-method, namely the over-rationalisation of decision behaviour and the presentation of more information than in real decision making situations. This implies a higher cognitive effort for the test person than in usual purchase decisions. However, the question on the information relevant for decision making cannot be answered directly by the IDM (Kroeber-Riel and Weinberg 2003, Muehlbacher and Kirchler 2003). Instead, assumptions based on economic efficiency of consumer behaviour have to be used to develop hypotheses on the information that is relevant for the purchase decision (see above).

3.2 Information-Display-Matrix in this research

In this research, the IDM was used to track the information search regarding ethical values of organic food and to identify the information on ethical values relevant for decision making. The ethical values were tested for the product organic milk. The ethical attributes and corresponding arguments to be tested can be found in Table 1-1 of Chapter 1. The selection of attributes and arguments was the outcome of a literature review, a survey among organic farmers or representatives of farmers' initiatives and extensive discussions among the project partners during project meetings as well as telephone conferences. It was decided to have eight attributes distributed on seven hypothetical products (1 litre of organic milk each). The number of rows was defined by the number of attributes to be tested. The number of different products resulted from the necessity of having one repetition for each argument in different products.

The ethical attributes were assigned at random to six of the seven products (Table 3-2). For the use within the IDM, product price was added to the list of attributes. The seventh product was defined without any additional ethical value but at a lower price, namely 1.00€ per litre of organic milk, compared to 1.20€ for all other products with ethical attributes, irrespective of the kind. In deciding on the number of products, there was a trade-off between the size of the matrix and the number of arguments on one product. There were also information fields without any available information, indicating that the product was without any of the ethical values to be tested within this research step.

Table 3-2: Distribution of ethical attributes and low product price on organic milk (Product A-G)

Attributes	Product A	Product B	Product C	Product D	Product E	Product F	Product G
Regional production		X	X		X	X	
Animal welfare	X	X	X			X	
Protection of biodiversity	X	X		X	X		
Fair prices for farmers	X		X	X		X	
Social criteria of production	X	X	X	X			
Care farming		X	X		X	X	
Preservation of cultural features	X			X	X	X	
Low price							X

Figure 3-1 shows the implementation of the theoretical concept of the IDM into the survey software. At the outset of the IDM, all information fields were closed and the information thus concealed. The columns (stimuli) and the rows (attributes) were rotated within the same category in order to avoid any order biases.

Figure 3-1: The Information-Display-Matrix (1)
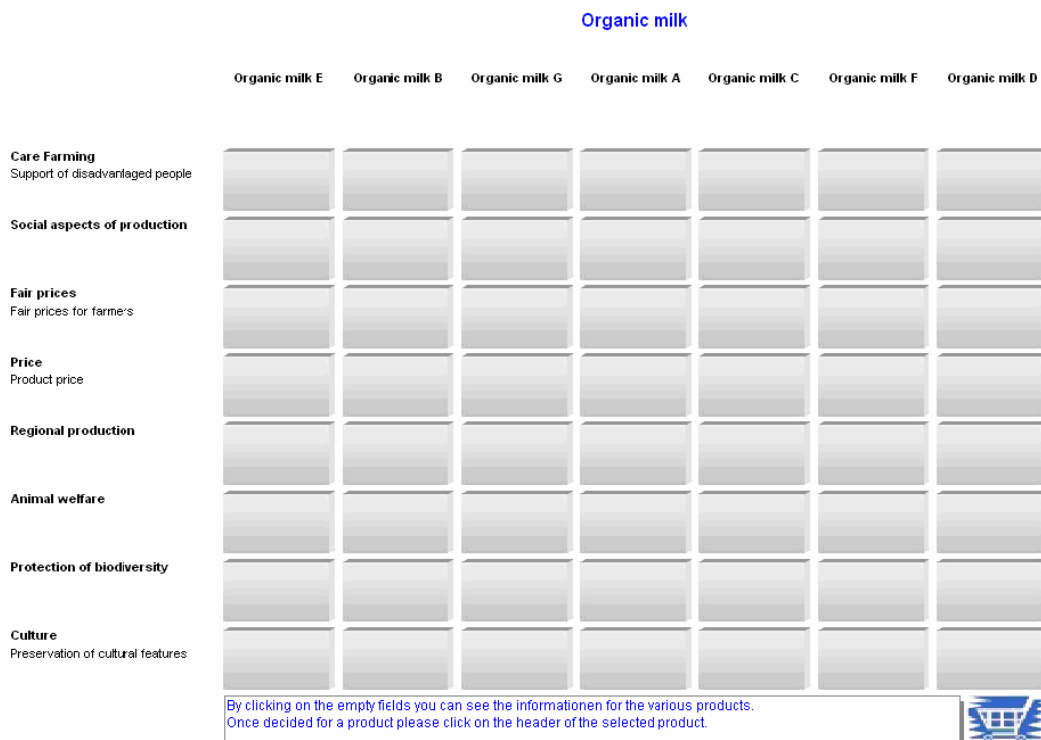
Respondents could open various information fields one after the other according to their individual preferences and interests (Figure 3-2). The number of fields to be opened was not limited and repeated opening of the same field was possible as well. Once opened fields changed colour after closing. In order to help the test persons not to get lost in the rather large matrix they were offered the possibility to mark interesting information fields. These fields got another (third) colour after closing.

Figure 3-2: The Information-Display-Matrix (2)
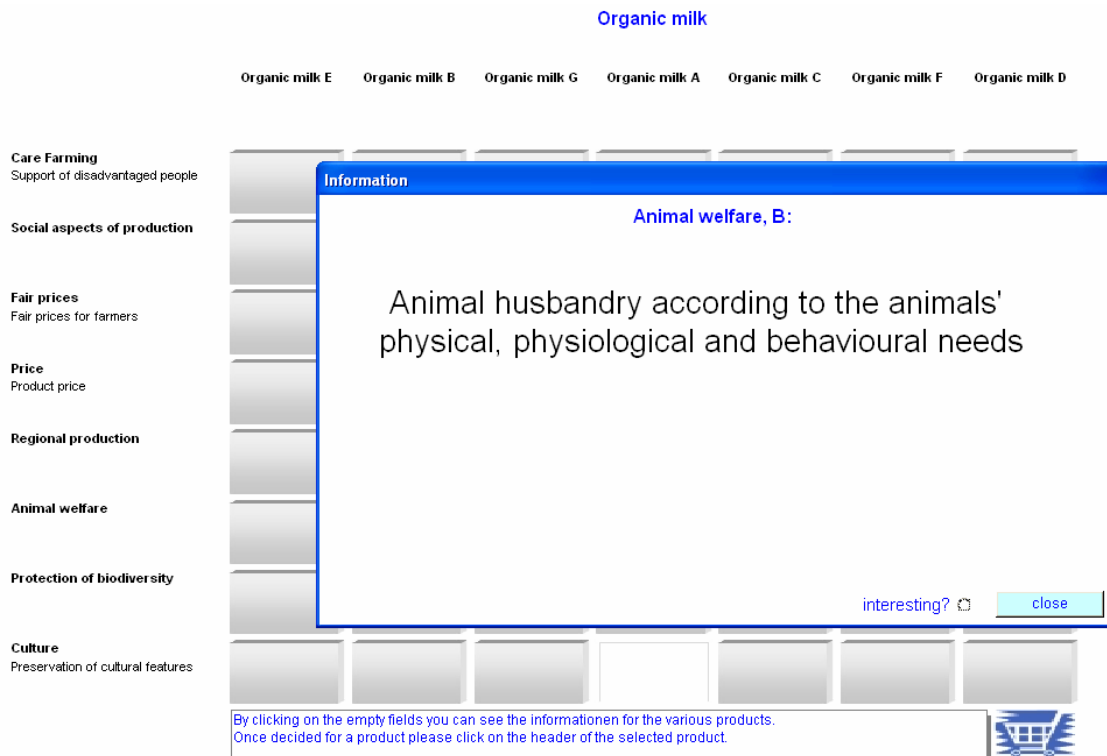
Once the respondents had come to a purchase decision they had to click the header of the selected product. The software then confirmed their choice by asking the respondents if they really wanted to buy the selected product (Figure 3-3). With this virtual final purchase decision, the IDM exercise stopped and the decision time measurement ended.

Figure 3-3: The Information-Display-Matrix (3)
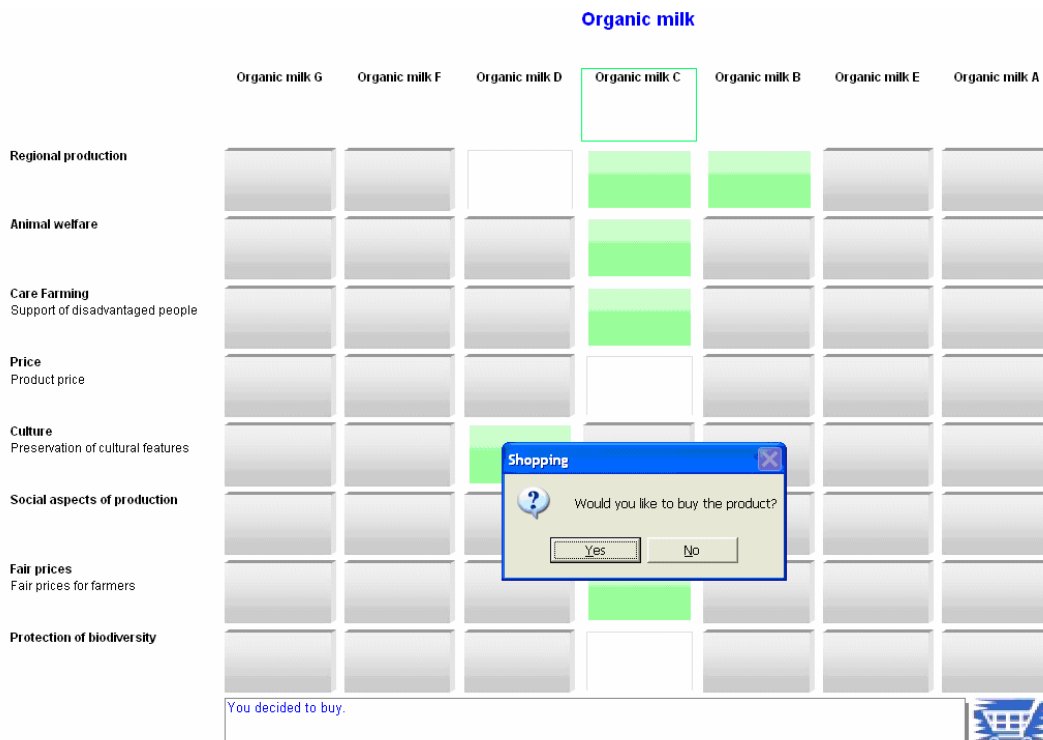
The IDM software saved the information of all accession incidents, the order of accession, the time spent on each information field and the total time needed from starting the information acquisition until deciding for a product.

3.3 Computer assisted personal interview

The IDM was accompanied by a computer assisted personal interview (CAPI) aiming at the validation of the results obtained by the IDM, at an explanation of the information acquisition behaviour and at giving answers on the 'real life' information behaviour concerning ethical values.[1]

The questionnaire of the CAPI was divided into two parts: one taking place before and the other after the IDM exercise. The first part contained questions on aspects like consumer motives for buying organic food, preferred purchase place, the sources of information search with respect to organic food and the kind of information the interviewees are interested in. The test persons were then asked to estimate roughly the share of organic products in their total expenditure for food and beverages. After completing the IDM, the consumers were asked questions on their social and environmental engagement, followed by an item battery, where the test persons were asked to state their degree of agreement on 15 statements on attitudes towards organic food products on a seven-point Likert scale ('1' indicating 'total disagreement' and '7' 'total agreement' (Table 3-3).

Table 3-3: Statement battery used to elicit the respondents' attitudes with respect to organic food products

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1. There are too few activities with respect to animal welfare in organic farming.

2. Much of the product information provided by the producer of an organic food product is more sales promotion than reliable information.

3. It is the consumer who should with his purchasing behaviour on the implementation of ethical values in organic production, rather than legal requirements.

4. I would rather buy conventional fruit and vegetables that are produced regionally than imported organic products.

5. Organic farming must set up more efficient and cost reducing structures.

6. There is too little emphasis on the protection of biodiversity in organic farming practices.

7. I am not sure if all food products sold as organic really are organic.

8. I support initiatives asking for minimum wages for workers in farming.

9. I am willing to pay a higher price for high quality organic food products.

10. Organic production systems should include more ethical aspects (e.g. social, environmental), even if the products would be more expensive.

11. Environmental problems are often overestimated.

12. Organic fruit and vegetables from overseas are a valuable supplement of the domestic supply in winter time.

13. I like it that low priced organic food products are sold in discount stores.

14. The preservation of traditional production methods in farming is more important than cost reduction.

15. Some food products are hard to identify as organic at the point of sale.

Question asked: Please indicate your level of agreement for each of the following statements!

In order to compare consumers' preferences elicited by means of the IDM method with answers from direct inquiry, the accompanying questionnaire contained a direct question on relevant criteria for the consumers' purchase decision on organic food. In this direct inquiry, some of the attributes and arguments used in the IDM were repeated. Additionally, criteria not considered in the IDM like 'no air freighting' were included, since this argument was heavily debated particularly in the UK at the time of data collection (Table 3-4). Respondents were asked to indicate the importance of various given criteria on a seven-point Likert scale, from 1 (not important at all) to 7 (extremely important).

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[1]   The whole questionnaire can be seen in Annex 1.

Table 3-4: Criteria used in order to elicit consumer preferences directly

- Product price
- Regional production
- No air freighting
- Protection of biodiversity
- Support for family farms
- Fair prices to farmers
- Good working conditions for farm workers
- Produced in sheltered workshops for disadvantaged people
- Animal welfare
- Revival of traditional artisan processing methods
- Preservation of local cultural landscape

These questions were followed by some on socio-demographic data and by questions on the familiarity with personal computers and internet.

4   Survey results

The aim of this chapter is to describe the sample with respect to socio-demographic characteristics as well as with respect to the test persons' reported 'real life' buying and information behaviour regarding organic food products.

4.1   Sample description

The participants were randomly chosen without any quotas. Interviewers had to ask every second or third person after having finished one interview. This was to avoid a selection bias, as younger people generally are more likely to be asked. In order to be able to assess the quality of the sample with respect to the basic population of all organic consumers, this chapter is dedicated to the description of the socioeconomic characteristics of the respondents.

On average over all countries, about 70% of the interviews were completed by women (see Table 4-1). With respect to German studies on consumer behaviour, the distribution of women (64%) and men (36%) in the sample is quite similar to the distribution found in other studies with interviews at the point of sale (Spiller et al. 2004).[2] The differences between the countries may reflect the differences in purchase responsibilities.

Table 4-1: Gender of participants (%)

Gender	All N=1182	AT N=237	CH N=239	DE N=240	IT N=231	UK N=235
Female	69.5	61.6	75.3	64.2	72.3	74.0
Male	30.5	38.4	24.7	35.8	27.7	26.0

Only people over 18 years were asked to participate in the interviews. There were major differences between the countries regarding the interviewed age groups. In Austria, the share of people belonging to the age group '18 to 30' is highest, while it is lowest in Italy. In Switzerland, the share of participants in the age group '65 and older' is highest and again lowest in Italy (Table 4-2). Comparing the frequency of the different age classes with data from EUROSTAT (2007) it becomes obvious that elderly people are underrepresented in all country samples. There are various reasons explaining this result: Firstly, elderly people often do not go shopping themselves but are supplied by younger family members, by caterers or live in retirement homes. Secondly, elderly people are known to have a smaller share of organic consumers (Michels et al. 2004, Niessen 2008) and thirdly, it is to be expected that elderly people were averse to the survey being computer based. The comparison with the overall population in the countries helps to get an idea whether specific age groups are overrepresented in the sample. Nevertheless, the basic population for this survey are not the total populations of the study countries but organic milk buyers.

Table 4-2: Age groups (years) of participants (%)

Age group	All N=1169	AT N=229	CH N=239	DE N=240	IT N=232	UK N=229
18 to 30	24.5	38.0	19.2	26.3	16.4	22.7
30 to 39	18.5	18.3	16.3	12.5	18.1	27.5
40 to 49	22.6	16.6	19.7	28.3	30.6	17.5
50 to 64	24.5	17.9	27.6	22.1	29.7	24.9
65 and older[1]	10.0	9.2	17.2	10.8	5.2	7.4

[1] The oldest participant was 88 years old.

The level of education of the participants is rather high, since in the whole sample almost 50% have a university or college degree (Table 4-3). The share is especially high in the UK, followed by Germany and Switzerland. In Austria and Italy, the share of participants with a college or university degree is considerably lower. However, in these countries the share of test persons with 12 or 13 years of school education is

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[2]   Another German study counted the share of women entering different supermarkets: 64 % were women (Müller and Hamm 2001).

higher. The large share of organic consumers with a relatively high educational degree has been reported also in other German studies (Michels et al. 2004, Niessen 2008).

Table 4-3: Level of education of participants (%)

Educational level	All N=1185	AT N=239	CH N=239	DE N=240	IT N=232	UK N=235
No formal education	1.6	4.2	0.8	0.0	0.9	2.1
9/10/11 years of school visit	18.4	22.2	29.7	19.2	12.1	8.5
12 or 13 years of school visit	32.2	39.3	20.9	32.1	53.4	15.3
College or university degree	47.8	34.3	48.5	48.8	33.6	74.0

Respondents were asked to allocate themselves to one of the preformed net income categories (Table 4-4). In order to describe the real income situation of the respondents, the income was divided by the number of household members. The level of income per household member is highest in Switzerland since the share of participants in the income groups over 1200€ per month is higher, while on the other hand Italian participants obviously have the lowest incomes. To be able to compare the income of the respondents between countries, mean values for the net monthly income per person were computed using the centre of the income groups. The average income is highest in Switzerland, followed by the UK and Germany. Participants in Austria and Italy have the lowest incomes.

Table 4-4: Income level (€ per month by household member) of participants (%) (1)[1]

Net income (€ per month by household member)	All N=1147	AT N=230	CH N=230	DE N=233	IT N=232	UK N=222
< 600 €	25.6	23.5	10.4	20.2	44.4	29.7
600 to below 1200 €	41.8	57.0	31.7	51.1	38.4	30.2
1200 to below 1800 €	17.8	10.9	27.0	16.7	13.8	20.7
1800 to below 2400 €	7.1	6.5	13.9	6.0	2.2	6.8
2400 to below 3000 €	5.1	1.7	9.1	4.7	0.9	9.5
≥ 3000 €	2.6	0.4	7.8	1.3	0.4	3.2

[1] The smaller number of answers in this question is due to missing values.

4.2 'Real life' purchasing behaviour of participants

This chapter aims at describing the buying behaviour of the participants with respect to the preferred shopping places, the organic share and the motivation for buying organic food. Regarding the preferred shopping places for organic food, it becomes obvious that conventional retail shops are most important followed by organic shops (Table 4-5). However, there are marked differences between the study countries: In Germany and Italy, organic shops are used rather frequently. Discount stores seem to be of importance for organic food purchases in Germany and Austria only. Farmers' markets were named by about 30% of the respondents in Germany and Switzerland. German consumers stated that they prefer to buy organic food in 2.3 shopping places on average, while Italian consumers named only 1.6 different shopping places on average, indicating a smaller number of alternatives for consumers to buy organic food than in other study countries. Consumers in Austria, Switzerland and UK have on average about two preferred purchase places. In Austria, Germany and in Switzerland, the share of respondents who prefer organic shops and supermarkets is higher than in other studies on organic consumption (Bio Austria 2007, Ökobarometer 2008, Bio Suisse 2008,). The reason is the bias caused by the selection of the interview places.

Table 4-5: Preferred places for the purchase of organic food of participants (%) [1]

Places of organic food purchase	All	AT	CH	DE	IT	UK
Conventional retail shops	62.4	69.2	84.5	46.7	49.8	61.7
Organic shops	37.8	24.6	29.7	51.7	53.6	29.6
Organic supermarkets	27.9	25.4	17.6	44.6	24.0	27.9
Farmers market	21.6	19.6	30.5	30.8	4.3	22.1
On farm purchase	13.3	17.9	13.8	11.7	9.4	13.3
Health food shops	12.2	9.6	13.0	10.8	7.3	20.4
Specialty shops	11.8	13.3	7.5	13.3	5.2	19.6
Discount stores	11.3	27.1	4.6	18.8	2.6	3.3
Other	1.8	0.4	2.1	0.8	0.9	4.6
Total	200.1	207.1	203.3	229.2	157.1	202.5

Question asked: Where do you mainly buy organic food?
[1] Up to three answers per respondent.

The answers were also analysed according to the share of respondents only choosing one type of shopping place. Out of all respondents (1192), 467 (39%) reported that they mainly buy organic food only in one type of shop. Out of this, the majority (58%) only shop in conventional supermarkets, about 20% in organic shops and about 10% in organic supermarkets. Another 5% stated to buy organic products only in discount stores.

The test persons were asked to estimate the share of organic products in their total expenditures for food and beverages on a 10-class scale (1 = 0 to 10%, 2 = 11 to 20%, … 10 = 91 to 100%). According to their answers regarding the organic share in their food budget, respondents were classified into two groups: occasional buyers (≤50% organic share) and regular buyers (>50% organic share in total expenditures). On average of all countries, more than one third of the participants fit into the group of regular consumers (Table 4-6). In Austria, only 20% are regular consumers whereas in Switzerland and Germany almost 50% belong to this group.

Table 4-6: Regular and occasional organic food buyers (%)

Organic food buyers	Share of organic in total food consumption	All N=1192	AT N=240	CH N=239	DE N=240	IT N=233	UK N=240
Occasional buyers	≤50%	62.8	80.0	55.6	53.3	63.9	61.3
Regular buyers	>50%	37.2	20.0	44.4	46.7	36.1	38.8

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

Looking at the motives for the consumption of organic food, it turns out that 'personal health' is by far the most frequently named motive, followed by 'environmental protection' and 'animal welfare' (Table 4-7). The comparison of the results between countries shows large differences. The focus of the motivation of Austrian, Italian and UK consumers seems to be more egoistic than altruistic: the arguments 'personal health' and 'natural products' are the most important motives in Austria and Italy; in the UK, the arguments 'personal health' and 'low level of residues' are mentioned most frequently. In contrast, in Switzerland altruistic concerns like 'animal welfare' and 'environmental protection' are mentioned by 50% of the participants. In Germany, 'animal welfare' is referred to most frequently, followed by 'environmental protection' and 'support for organic farming'. In Italy, on the other hand, 'animal welfare' seems to be less important. These results coincide with the results obtained in other studies (Hughner et al. 2007, Zanoli et al. 2004). Both studies summarise results from various previous studies on motives for organic food purchases and conclude that health and nutritional concerns seem to be most important for organic buyers.

Other main motives were found to be 'superior taste'[3], environmental concerns, concern on food safety[3], animal welfare issues and support of local economy[3]. It has also been found earlier that 'animal welfare' has less weight among Italian consumers (Zanoli et al. 2004, Torjusen et al. 2004).

Table 4-7: Motives for consuming organic food of participants (%)[1]

Motives	All	AT	CH	DE	IT	UK
Personal health	45.9	53.3	33.1	32.9	58.8	51.7
Environmental protection	37.4	28.3	46.0	37.1	37.8	37.9
Animal welfare	35.3	36.7	50.2	43.3	13.3	32.5
Natural products	31.2	36.7	31.8	28.8	40.3	18.8
Low level of residues	29.9	23.3	22.6	27.5	33.5	42.9
Better taste	27.9	30.4	28.5	30.0	21.9	28.3
Support for organic farming	26.6	20.4	29.3	37.1	18.9	27.1
GMO free	24.2	27.9	21.3	32.5	26.6	12.5
Support of alternative trade and processing structures	15.4	10.8	19.2	19.2	14.2	13.8
Total	273.8	267.9	282.0	288.3	265.2	265.4

Question asked: What are the most important motives for buying organic food products?
[1] Up to three answers per respondent.

In order to provide farmers and other marketers with information on how to communicate ethical values, relevance of information sources and the kind of information consumers are interested in were investigated. This information will be used within the next part of the overall research project in which communication tools will be developed by professional advertising companies and tested again with consumers.

Respondents were asked for their most important information sources with respect to organic food products (Table 4-8). The results show that 'articles in newspapers etc.' are referred to most frequently, followed by 'conversation with family and friends' and 'product packaging'. 'Information by sales personnel' is frequently mentioned in Italy but rarely in Switzerland and in the UK. 'Reports on radio or TV' seem to be less important in Italy than in all other countries. 'Advertisements in radio/TV or newspapers' is assumed to be quite important in Austria because of quite popular TV spots.

Table 4-8: Most important sources of participants for information on organic food (%)[1]

Sources for information	All	AT	CH	DE	IT	UK
Articles in newspapers etc.	55.4	44.2	62.8	65.8	47.2	56.7
Conversation with family and friends	43.4	44.2	41.0	50.4	37.8	43.3
Product packaging	37.5	38.8	37.2	31.7	32.6	47.1
Advertisement at POS	20.9	26.3	20.1	20.4	19.7	17.9
Reports on radio or tv	20.6	22.1	23.0	20.4	8.6	28.8
Internet	14.1	15.4	10.0	13.8	10.7	20.4
Information by sales personnel	13.8	12.5	7.9	17.1	27.0	5.0
Advertisement radio/tv or newspapers	11.7	20.4	11.3	5.4	12.4	8.8
Events and presentations	9.6	7.9	5.9	12.1	15.0	7.5
Other	5.5	4.6	5.9	6.7	6.0	4.2
None	3.4	3.3	3.3	2.9	3.9	3.8
Total	235.9	239.6	228.5	246.7	221.0	243.3

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3 Not offered as an answer in this survey.

When asked for the kind of information they had actively been looking for within the last two months, 'product origin' was mentioned most often, followed by information on 'ingredients' (Table 4-9). In Austria, Italy and the UK information on 'ingredients' was of high relevance. In Switzerland and Germany, on the other hand, information on 'organic certification' and 'production and processing methods' are ranked higher than information on 'ingredients'. In Italy, information on 'product quality' is more frequently asked for than on 'ingredients' and in the UK, information on 'food miles' is more important. Information on 'prices' seems to be much more important in Austria than in all the other countries. In most countries more than 10% of the consumers do actively search for information on pesticide residues, which are sometimes published by the governments or by environmental non-governmental organisations like e.g. Greenpeace.

Table 4-9: Kind of information participants are looking for (%)[1]

Kind of information	All	AT	CH	DE	IT	UK
Product origin	48.1	52.1	56.5	53.3	40.8	37.5
Ingredients	27.2	32.1	18.4	25.0	30.0	30.4
Organic certification	24.7	18.3	22.2	29.6	21.9	31.7
Product quality	24.0	22.5	19.2	17.9	36.9	23.8
Production + processing methods	22.9	18.8	24.3	25.8	30.5	15.4
Product prices	21.8	30.8	10.9	22.5	21.9	22.9
Food miles	20.6	14.6	21.8	13.3	18.0	35.0
Nutritional content	14.7	20.0	7.9	5.8	19.3	20.4
Residues of pesticides	12.6	12.5	6.7	13.8	13.3	16.7
Product quality tests	9.1	10.0	7.1	15.4	7.7	5.0
Impacts on climate change	7.0	5.8	10.9	7.9	3.4	7.1
None	9.6	6.3	16.7	12.1	6.4	6.7
Other	0.9	0.4	1.3	0.8	0.0	2.1
Total	243.2	244.2	223.8	243.3	250.2	254.6

4.3 Personal values and attitudes

In order to assess the impact of personal values and attitudes on the information behaviour regarding ethical values of organic food a statement battery was included into the second part of the questionnaire (see also Chapter 3.3). Respondents were asked to indicate their level of agreement to the statements on a seven point Likert scale ('1' signifying 'total disagreement' and '7' 'total agreement'). In all countries social aspects like 'minimum wages for farm workers' have the highest degree of agreement followed by 'quality aspects' (Table 4-10). There are some differences in the relative valuation of different aspects between countries: 'quality aspects' seem to be less important in Austria and in Italy, increasing 'cost efficiency' is most important in Italy and the agreement on the statement 'I would rather buy conventional fruit and vegetables that are produced regionally than imported organic products' is lower in Germany and in Switzerland than in the other countries.

Table 4-10: Extensiveness of information search and personal values and attitudes

Country	All	AT	CH	DE	IT	UK
I support initiatives asking for minimum wages for workers in farming.	5.8	5.8	5.9	5.7	6.0	5.8
I am willing to pay a higher price for high quality organic food products.	5.4	5.1	5.6	5.5	5.2	5.6
I like it that low priced organic food products are sold in discount stores.	5.2	5.6	5.2	5.0	5.1	4.8
Organic production systems should include more ethical aspects, even if the products would be more expensive.	5.2	4.9	5.3	5.2	5.0	5.4
Organic farming must set up more efficient and cost reducing structures.	4.8	4.8	4.3	4.1	6.0	4.9
The preservation of traditional production methods in farming is more important than cost reduction.	4.8	4.5	4.8	4.6	5.0	4.9
I am not sure if all food products sold as organic really are organic.	4.7	4.9	4.1	4.4	5.1	4.8
I would rather buy conventional fruit and vegetables that are produced regionally than imported organic products.	4.6	5.1	4.2	4.0	5.0	4.8
There are few little activities with respect to animal welfare in organic farming	4.3	4.4	3.7	3.8	5.3	4.8
There is too little emphasis on the protection of biodiversity in organic farming practices.	4.3	4.3	3.8	3.5	5.5	4.6
Much of the product information provided by the producer of an organic food product is more sales promotion than reliable information.	4.2	4.7	3.6	4.0	4.4	4.4
It is the consumer who should decide by his purchase behaviour on the implementation of ethical values in organic production, rather than legal requirements.	4.0	4.2	3.5	3.8	4.9	3.7
Some food products are hard to identify as organic at the point of sale.	3.8	4.0	3.4	3.4	3.9	4.4
Organic fruit and vegetables from overseas are a valuable supplement of the domestic supply in winter time.	3.8	3.9	3.5	4.1	3.2	4.2
Environmental problems are often overestimated.	2.4	2.3	2.1	2.0	2.9	2.7

Question asked: Please indicate your level of agreement for each of the following statements (Likert – scale from '1' - 'I totally disagree' to '7' 'I totally agree').

It has been hypothesised that people with personal ethical values, people with positive attitudes towards organic food consumption and people stating a high degree of own responsibility show more extensive information search. In this research, the following statements were used for assessing the attitudes of respondents regarding ethical values and regarding organic food:

a) Attitudes regarding ethical values

- There are too little activities with respect to animal welfare in organic farming.

- There is too little emphasis on the protection of biodiversity in organic farming practices.

- Environmental problems are often overestimated.

- The preservation of traditional production methods in farming is more important than cost reduction.

- Organic production systems should include more ethical aspects, even if the products would become more expensive.

- I support initiatives asking for minimum wages for workers in farming.

b) Attitudes regarding organic food consumption

- I would rather buy conventional fruits and vegetables that are produced regionally than imported organic products.

- Organic fruits and vegetables from overseas are a valuable supplement of the domestic supply in winter time.

- I like it that low priced organic food products are sold in discount stores.

- Organic farming must set up more efficient and cost reducing structures.

- I am not sure if all food products sold as organic really are organic (As organic products are quite well monitored and only products passing the organic certification system are sold as organic, this statement may serve as an indicator for the degree of the respondents' knowledge of the organic food system).

- Much of the product information provided by the producer of an organic food product is more sales promotion than reliable information.

- Some of the products are hard to identify as organic at the point of sale (Regular consumers of organic products know rather well, which products are organic and which are not. Mostly occasional consumers or even non-consumers use this explanation for non-consumption).

- I am willing to pay a higher price for high quality organic food.

According to the hypotheses above, people with a higher degree of own responsibility in acting reveal more extensive information search. The corresponding statement within the item battery was: 'It is the consumer who should decide by his purchase behaviour on the implementation of ethical values in organic production, rather than legal requirements.'

The relations between the extent of information search and expressed personal values and attitudes were assessed by means of a correlation analysis. The results presented in Table 4-11 show that some of the statements help to explain consumer behaviour in the given context. Respondents who highly agree with the statement 'environmental problems are often overestimated' tend to have a less extensive information search. This result supports the hypothesis that people with higher ethical values look for more information. However, some results seem to be contradictory. The direction of relationship between the extent of information search and the statements 'there are too few activities with respect to animal welfare in organic farming' and 'there is too little emphasis on the protection of biodiversity in organic farming practices' is unexpected, since it indicates that people with higher values regarding animal welfare and protection of biodiversity perform less information search.

The statement 'organic farming must set up more efficient and cost reducing structures' was included in the survey as a negative indicator for the ethical engagement of respondents, since efficiency and cost reduction are usually understood to hamper working conditions and environmental concerns. This hypothesis can be verified by the algebraic sign of the statistically significant correlation: the more important the respondent considers efficiency in organic production the less intensive the information search is.

The results of the statement 'I am not sure if all food products sold as organic really are organic' support the hypothesis that people with a high involvement in organic food purchases, indicated by better knowledge of organic products and labelling, ask for more information during their decision process.

The statement 'it is the consumer who should decide by his purchase behaviour on the implementation of ethical values in organic production, rather than legal requirements', was included to measure the degree of responsibility the respondents give to purchase decisions of consumers. The hypothesis that a high degree of perception of consumers' responsibility leads to a more extensive information search cannot be supported by the results. In fact, the results indicate that the higher the consumers' responsibility the less extensive the own information search is.

Table 4-11: Extensiveness of information search and personal values and attitudes

Values and attitudes	Number of opened fields	Decision time in minutes
Personal ethical values		
There are too few activities with respect to animal welfare in organic farming	-0.088 ***	-0.069 **
There is too little emphasis on the protection of biodiversity in organic farming practices.	-0.150 ***	-0.122 ***
Environmental problems are often overestimated.	-0.157 ***	-0.115 ***
The preservation of traditional production methods in farming is more important than cost reduction.	-0.088 ***	-0.010
Organic production systems should include more ethical aspects, even if the products would be more expensive.	0.031	0.029
I support initiatives asking for minimum wages for workers in farming.	-0.018	-0.023
Attitudes regarding organic food consumption		
I would rather buy conventional fruit and vegetables that are produced regionally than imported organic products.	-0.034	-0.134 ***
Organic fruit and vegetables from overseas are a valuable supplement of the domestic supply in winter time.	0.036	0.045
I like it that low priced organic food products are sold in discount stores.	-0.033	-0.005
Organic farming must set up more efficient and cost reducing structures.	-0.183 ***	-0.147 ***
I am not sure if all food products sold as organic really are organic.	-0.063 **	-0.084 ***
Much of the product information provided by the producer of an organic food product is more sales promotion than reliable information.	0.035	-0.040
Some food products are hard to identify as organic at the point of sale.	-0.038	-0.051 *
I am willing to pay a higher price for high quality organic food products.	0.077 ***	0.055 *
Consumers' responsibility in acting		
It is the consumer who should decide by his purchase behaviour on the implementation of ethical values in organic production, rather than legal requirements.	-0.151 ***	-0.142 ***

5 Information acquisition behaviour concerning organic food

Information acquisition behaviour can be described by three main measures: depth, content and sequence (see Chapter 3). In this report, depth (extensiveness of information search) and content (what kind of information was asked for) are analysed with respect to ethical values of organic food. In order to identify relationships according to the hypotheses, an exploratory approach using bivariate statistical methods was employed.

5.1 Depth of information search

The underlying hypotheses analysing the depth of information search regarding ethical values of organic food are:

- There are differences between countries with respect to the extent of information search because of cultural differences.

- Women look more intensively for information than men (Solomon et al. 2006).

- Younger people put more effort into information search (Solomon et al. 2006).

- People with a higher educational degree put more effort into information search (Solomon et al. 2006).

- Customers of organic shops show more extensive information search.

- People familiar with the use of PC will search more information.

- Personal ethical values lead to more extensive information search.

- Information search is closely related to the attitudes towards organic food consumption.

- People stating a higher degree of own responsibility in individual acting will reveal more extensive information search.

There are several indicators to evaluate the **extensiveness** of information search (see Chapter 3). In this report, the following indicators were used:

- Decision time (time from starting the IDM exercise until the virtual choice for a product takes place)

- Total number of information fields accessed during the decision making process

- Average time spent per opened field (decision time divided by the number of all opened fields)

- Size of the sub-matrix (number of different products considered by number of different attributes considered). The size of the sub-matrix is 'one' if the respondent asks only information on one attribute for one product; it is 'eight' if he/she opens all information fields for one product and e.g. '16' if he/she opens all attributes for two different products. It would also be '16' if he/she opens only some of the information fields for two products, given that the accessed attributes are not the same and add up to eight. The sub-matrix thus serves as an indicator for interest of the respondent for different aspects included in the whole IDM matrix.

Table 5-1 shows the results of the three indicators 'decision time', 'number of opened fields' and 'observation time per field'. It turns out that the respondents in Switzerland and Germany spent more time for their information search than respondents in the other study countries. German and Swiss respondents also opened the largest number of fields. The information search is least extensive among Italian consumers. Their average decision time amounts to less than three minutes and the number of opened fields is only 14. With respect to the average observation time per field, there are no differences between Italian, Austrian and Swiss participants.

Table 5-1: Extensiveness of information search (mean values)

Country	N	Decision time in minutes	Numer of opened fields	Observation time per field in seconds
AT	240	04:02 a	34.7 a	8.1 a
CH	239	05:29 b	41.1 b	15.1 b,c
DE	240	05:18 b,c	41.4 b	15.7 c
IT	233	02:45 d	13.5 c	9.2 a,b
UK	240	04:38 a,c	36.9 a,b	18.1 c
All	1192	04:28	33.6	13.2

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

The results presented above are also reflected in the number of attributes and products considered during the information acquisition process and the size of the sub-matrix (Table 5-2). The indicators are correlated, as the sub-matrix is the product of the number of attributes considered and the number of products considered. The size of the sub-matrix is displayed as the share in the whole matrix, which contains eight attributes and seven products, resulting in a matrix size of 56. It is remarkable that the information search of Italian consumers was much less extensive than in all other countries. However, it could not be clarified if cultural factors or maybe a differing introduction given by the interviewer to the test persons before interviewing was the reason for this result.

Table 5-2: Number of accessed attributes, products and size of sub-matrix (mean values)

Country	N	Number of accessed attributes	Number of accessed products	Size of sub-matrix (% of total matrix)
AT	240	6.3 a	6.7 a	75.4 a
CH	239	6.7 a,b	6.7 a	80.6 a
DE	240	6.9 b	6.4 a	80.8 a
IT	233	4.6 c	4.4 b	39.3 b
UK	240	6.2 a	6.4 a	72.9 a
All	1192	6.1	6.1	70.0

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

In the following analysis, the number of indicators of depth of information search was reduced to 'number of opened fields' and 'decision time' in order to clearly identify differences between the respective groups of the sample. In order to analyse the relationship between the respondents' age and the extensiveness of information search a correlation analysis was conducted. There are significant correlations (α = 0.01) between the respondents' age and the number of opened fields (correlation coefficient = -0.208) and the decision time in minutes, respectively (correlation coefficient = 0.152). The different arithmetic signs indicate that elder people needed more time but opened less information fields. The linear negative relationship between age group and effort made for the decision coincides with the results described in Solomon et al. (2006).

No differences between genders could be identified (Table 5-3). Women and men opened on average the same number of fields and needed the same time for coming to a purchase decision. Therefore, the hypothesis that women tend to express a deeper information search cannot be supported.

Table 5-3: Extensiveness of information search by gender (mean values)

Gender	N	Numer of opened fields	Decision time in minutes
Female	821	33.3 a	04:32 a
Male	361	34.9 a	04:21 a
All	1182	33.8	04:28

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

No linear relationship can be identified between the level of education and the extensiveness of information search (Table 5-4). There is no statistically significant difference in the decision time between test persons with different levels of education. People without any formal education opened more fields than people with a medium level of education (about 10 years of school education). However, they needed only short period of time for the large number of opened fields, particularly compared to respondents with medium education level. In any case, the size of the group of respondents without any formal education was quite small so that the results should be interpreted cautiously.

Table 5-4: Extensiveness of information search by level of education (mean values)

Level of education	N	Number of opened fields	Decision time in minutes
No formal education	19	40.9 a	04:23 a
About 10 years of school education	218	30.1 b	04:48 a
12 or 13 years of school education	381	32.9 a,b	04:05 a
College or university degree	567	35.5 a,b	04:36 a
All	1192	33.6	04:27

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

Table 5-5 shows the impact of the respondents' familiarity with personal computer (PC) on the extent of information search. While the number of opened fields varies with the familiarity with the PC, no differences between frequent and occasional users of PC regarding the decision time could be identified.

Table 5-5: Extensiveness of information search by respondents familiarity with personal computer (mean values)

Frequency of using PC	N	Number of opened fields	Decision time in minutes
Once per week and less	204	22.6 a	04:35 a
Several times per week	211	33.9 b	04:51 a
Daily	770	36.7 b	04:20 a
All	1185	33.6	04:28

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

There are some differences in the intensity of information search between the interview places, respectively shop types (Table 5-6). People interviewed in organic food shops gathered less information, regarding the number of opened fields than those interviewed in conventional supermarkets. The reason might be that the ethical properties under consideration are less questioned by customers of organic shops than by customers of conventional shops.

Table 5-6: Extensiveness of information search by interview place/shop type (mean values)

Shop type	N	Number of opened fields	Decision time in minutes
Organic food shop	465	31.1 a	04:31 a
Conventional supermarket	727	35.3 b	04:25 a
Total	1192	33.6	04:27

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

The location where people participated in the interviews, however, does not give information on the most favoured shopping place as the respondents might purchase organic products at several different shop types. Therefore, the depth of the information search was also analysed by the preferred shopping place (Annex 2). The differences in the extensiveness of information search between different preferred shopping places cannot be verified statistically and no interesting trend can be identified.

Regarding the time spent for decision making, there are differences in the depth of information search between regular and occasional consumers of organic food (Table 5-7). Regular consumers spent more time for decision making than occasional consumers. However, this is not reflected in the number of opened fields, indicating that regular consumers spent more time in reading and understanding every opened field than occasional consumers.

Table 5-7: Extensiveness of information search by purchasing intensity (mean values)

Purchasing Intensity	N	Number of opened fields	Decision time in minutes
Occasional consumers	749	33.3 a	04:11 a
Regular consumers	443	34.1 a	04:55 b
All	1192	33.6	04:27

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

Furthermore, it was determined whether different motives for consuming organic food go along with a different the extent of the information search. The results presented in Table 5-8 are sorted according to the number of opened fields. Respondents stating 'support of alternative trade and processing structures', 'environmental protection' and 'animal welfare' as motives for buying organic products opened significantly more fields than respondents stressing egoistic motives like 'personal health', 'low level of residues' or 'natural products' and 'GMO free'. These results are also reflected in the decision time.[4] Thus, respondents with predominantly altruistic motives for consumption of organic food consequently search more extensively for information related to ethical values.

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[4]   The differences are statistically significant at the level alpha = 0,05 (paired samples t-test)

Table 5-8: Extensiveness of information search by consumers' motives for organic consumption (mean values)

Motives	N	Number of opened fields	Decision time in minutes
Support of alternative trade and processing structures	184	40.4 a	05:03 a
Environmental protection	446	37.7 a	04:49 a
Animal welfare	421	37.3 a	04:48 a
Support for organic farming	317	36.4 a,b	04:42 a
Better taste	332	33.4 a,b	04:19 a,b
GMO free	288	32.3 b	04:35 a,b
Personal health	547	31.7 b	04:20 b
Low level of residues	357	31.4 b	04:26 a,b
Natural products	372	31.0 b	04:07 b
All	2634	33.6	04:28

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

Relating the kind of information respondents have actively been looking for within the two months before the survey with the extent of information search within the survey, the results differ somewhat between the two indicators of information search (Table 5-9). The number of accessed information fields is lowest and the information search is least extensive among respondents who are looking for information on 'residues of pesticides'. The decision time of respondents looking for information on 'prices' is equally low. The most extensive information search can be found among test persons who stated to look for information on 'climate change', 'food miles', 'product origin' and 'organic certification'. These topics are related in a wider sense with 'ethical values' of organic food, thus indicating consistency between behaviour in 'real life' and in the test situation.

Table 5-9: Extensiveness of information search determined by kind of information consumers are interested in (mean values)

Kind of information	N	Number of opened fields	Decision time in minutes
Impacts on climate change	84	39.6 a	05:19 a
Food miles	245	37.2 a	04:56 a
Product origin	573	35.8 a	04:34 a
Organic certification	295	35.5 a	04:42 a
Independent quality tests	108	34.5 a,b	04:39 a,b
Ingredients	324	34.3 a,b	04:24 a,b
Production and processing methods	273	33.6 a,b	04:23 a,b
Product quality	286	33.5 a,b	04:17 a,b
Prices	260	32.4 a,b	03:53 b,c
Nutritional content	175	30.1 a,b	04:04 b
Residues of pesticides	150	27.1 b	03:53 b
Other	11	41.5 a,b	07:42 d
None	115	33.0 a,b	04:55 a
All	1270	33.6	04:28

Differences between groups with unlike letters (a, b, c, d) are statistically significant (α = 0.05).

5.2 Content of information search (importance of different attributes)

The main aim of the IDM was to identify the most important ethical attributes of organic food from the consumers' point of view. This aspect refers to content measures of information acquisition behaviour. Several indicators are available within an IDM (see Chapter 3). In this research, the following indicators were used to identify the most important information, respectively ethical value:

a) Most important attribute

- Share of all first accession incidents per attribute: According to the literature cited in Chapter 3, the most valuable information is collected first (Foscht and Swoboda 2004, Solomon et al. 2006).

- Share of accession incidents per attribute in all accession incidents: The underlying assumption is that more frequently sought information is more important for the choice than information sought less frequently.

- Share of respondents considering the attribute.

b) Choice of products with given attributes: As described in Chapter 3, the attributes and arguments were randomly assigned to six of seven different products. The last product did not have any 'ethical value', but could virtually be purchased at a reduced price. The analysis concentrates on the choice of the cheaper product without any 'ethical value'.

Looking at the share of the first accessions in all countries (Table 5-10), 'animal welfare' and 'regional production' are the most important attributes. 'Cultural aspects', 'biodiversity' and 'social criteria' are the attributes least frequently accessed first. There are some differences between the countries: 'Product price' was most frequently accessed first in Italy and least frequently in Switzerland. 'Cultural aspects' seem to be least important in Germany.

Table 5-10: Share of attributes in all first accession incidents (%)

Attribute	All	AT	CH	DE	IT	UK
Animal welfare	21.4	21.3	27.6	22.1	18.0	17.9
Regional production	21.2	19.2	25.1	22.9	21.9	17.1
Fair prices	13.8	17.1	13.4	15.4	8.2	14.6
Product price	13.3	13.8	6.7	11.3	20.6	14.6
Care farms	8.2	9.6	4.6	7.9	9.4	9.6
Social criteria	7.8	6.3	5.9	10.8	9.4	6.7
Biodiversity	7.3	5.0	9.2	5.8	6.9	9.6
Cultural aspects	7.0	7.9	7.5	3.8	5.6	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

The second indicator used was the share of accession incidents of all opened fields. The order of the attributes (Table 5-11) remains similar to Table 5-10. However, there are some shifts between the countries: 'Product price' is more important when looking at the share of the accession incidents in all countries, except Switzerland. Although less frequently considered as first accessed attribute, 'animal welfare' is looked at more frequently in Italy compared with the other countries.

Table 5-11: Share of accession incidents per attribute in all accession incidents (%)

Attribute	All	AT	CH	DE	IT	UK
Animal welfare	14.6	14.7	14.5	14.2	15.6	14.8
Regional production	14.3	14.4	14.4	14.5	16.2	13.4
Product price	14.0	15.0	12.4	13.1	16.2	15.1
Fair prices	13.6	14.1	13.5	14.0	11.5	13.9
Biodiversity	11.1	9.9	11.6	11.0	11.5	11.5
Social criteria	11.2	11.0	11.6	11.4	9.8	11.0
Care farms	10.5	10.9	10.8	10.4	9.8	10.2
Cultural aspects	10.5	10.3	11.2	10.8	9.3	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Additionally, also the share of respondents who considered an attribute at all was calculated for the observations in the different countries (Table 5-12). This places attributes in a similar order than the other indicators above. Therefore, taking various indicators into account it can be concluded that the ethical values 'animal welfare', 'regional production' and 'fair prices' are most important in almost all countries. The only exception is Italy, where the relative importance of 'fair prices' compared to other ethical values and compared to the 'product price' differs between these indicators.

Table 5-12: Share of respondents who considered the attribute (%)

Attribute	All	AT	CH	DE	IT	UK
Animal welfare	86.2	87.9	91.6	93.3	70.4	87.5
Regional production	83.6	83.3	91.6	95.8	66.1	80.8
Fair prices	81.0	85.0	89.1	92.5	52.8	84.6
Product price	79.7	87.1	79.5	87.1	63.9	80.4
Biodiversity	72.8	72.1	82.4	79.6	57.9	71.7
Social criteria	71.6	70.0	79.9	80.8	50.6	75.8
Care farms	69.6	70.8	75.3	78.3	51.5	71.7
Cultural aspects	68.5	70.8	77.4	77.5	45.9	70.0

Another important outcome of the IDM is the information on the purchase decision. However, this information was not the main focus of this research, as no product profiles were defined. Thus, there are only two important results (Table 5-13): The lower priced product G, which is purely organic without any additional value, is preferred by only 6% of the respondents. There are differences between the countries, with low priced products being less frequently favoured in Germany and in Switzerland. The second interesting result is that product D and product E are chosen less often than the other products. Product D and E have only four additional values while the other products (except product G) have five. This (unexpected) result may serve as an indicator that firstly, the respondents did indeed understand the IDM and secondly, that they were able to identify products with more ethical values in total. The conclusion seems to be that different ethical values sum up to a joint value, which depends on the number of single values.

Table 5-13: Product choice within the IDM (%)

Product	All	AT	CH	DE	IT	UK
Product A	20.6	19.2	25.5	22.9	14.2	21.3
Product B	28.4	27.5	29.7	32.5	28.3	24.2
Product C	18.6	17.9	21.3	17.5	12.0	24.2
Product D	3.6	4.2	1.3	1.3	6.4	5.0
Product E	4.9	4.6	2.1	2.5	9.4	5.8
Product F	18.3	17.9	15.9	20.0	22.7	15.0
Product G	5.5	8.8	4.2	3.3	6.9	4.6

5.2.1 Factors influencing the most important attribute

In order to get a first idea on factors influencing the importance of certain attributes, cross tabulations were calculated, aiming at validating the results obtained by the IDM exercise. They give first indications on likely relationships, even though there can be interactions between the variables. In this section, the results of contrasting the first accessed attribute with socio-demographic data, with 'real life' buying behaviour, motives for organic consumption and with attitudes will be presented and discussed.

Significant differences were found between the respondents' age groups and the attributes firstly accessed (Chi²-Test, α= 0.05). While in the group of the youngest and the eldest respondents 'animal welfare' is accessed most frequently first, in the other age groups it is 'regional production' (Table 5-14). Some differences also exist in relation to the share of respondents firstly accessing 'product price': it is lowest among respondents in the age group '50 to 64 years'. The z-test comparing column proportions indicates that significant differences exist between respondents in the age group '40 to 49' years and '65 and older' regarding the frequency of approaching firstly the 'fair prices' attribute.

Table 5-14: First accessed attribute by age of participants (% of all first accessions)

Age group (years)	All N=1169	18 to 30 N=319	30 to 39 N=201	40 to 49 N=270	50 to 64 N=272	65 and older N=107
Animal welfare	21.4	21.0	17.1	22.3	23.1	24.8
Regional production	21.2	17.5	22.2	25.8	23.1	16.2
Fair prices	13.8	11.9	16.2	9.8	14.3	21.4
Product price	13.3	16.4	13.9	12.9	9.8	14.5
Care farms	8.2	8.7	8.3	8.7	9.1	2.6
Social criteria	7.8	10.1	7.4	5.3	6.3	9.4
Biodiversity	7.3	7.0	7.4	6.4	7.7	9.4
Cultural aspects	7.0	7.3	7.4	8.7	6.6	1.7

In Table 5-15, the results of gender and first accessed attribute are displayed. Although the results indicate some differences between the genders, these differences are not statistically significant (Chi²-test). Significant are only the 'fair prices', which were accessed first more frequently by women (comparison of column proportions, z-Test).

Table 5-15: First accessed attribute by gender of participants (% of all first accessions)

Gender	All N=1182	Women N=821	Men N=361
Animal welfare	21.4	22.0	19.9
Regional production	21.4	20.5	23.5
Fair prices	13.8	15.1	10.8
Product price	13.2	12.5	14.7
Care farms	8.2	8.2	8.3
Social criteria	7.7	8.2	6.6
Biodiversity	7.4	7.2	7.8
Cultural aspects	6.9	6.3	8.3

The share of respondents without any formal education is relatively low in all countries (see Chapter 4), that is why within this analysis a joint group was defined, containing respondents without any formal education and those with 10 years of school education or less (Table 5-16). Statistical analysis (Chi²-test) indicates that the firstly accessed attribute depends on the level of education (α = 0.1). More detailed analysis (comparison of column proportions) shows that only for the choice of 'animal welfare' as first attribute significant differences can be identified: Respondents with the highest educational level significantly less frequently chose this attribute firstly compared to respondents with the lowest educational level.

Table 5-16: First accessed attribute by level of education (% of all first accessions)

Level of education	All N=1185	Less than 11 years of school education N=237	11/12/13 years of school education N=381	College or university degree N=567
Animal welfare	21.4	26.6	21.8	18.9
Regional production	21.2	22.0	20.5	22.0
Fair prices	13.8	15.6	11.0	15.0
Product price	13.3	10.6	16.5	12.2
Care farms	8.2	5.5	6.8	10.4
Social criteria	7.8	6.8	8.1	7.8
Biodiversity	7.3	6.8	8.7	6.7
Cultural aspects	7.0	7.2	6.6	7.1

The results regarding the choices of the firstly accessed attribute and the level of consumption are presented in Table 5-17. There are only minor differences between the two consumer groups. The Chi²-independence test shows that no significant differences between the two sample groups exist. The z-test, which compares the column proportions, indicates that occasional consumers access the price more frequently first than regular consumers do. With the analysis of the original data, where consumers were asked to estimate the share of organic food in their total food consumption, it becomes clear that particularly respondents with the lowest share of organic food consumption (less than 10%) are more interested in the price.

Table 5-17: First accessed attribute by level of consumption (% of all first accessions)

Level of consumption	All N = 1191	Occasional consumers N = 748	Regular N = 443
Animal welfare	21.3	21.5	21.0
Regional production	21.2	20.1	23.3
Fair prices	13.8	13.2	14.7
Product price	13.4	15.6	9.5
Care farms	8.2	7.5	9.5
Social criteria	7.8	7.9	7.7
Biodiversity	7.3	7.6	6.8
Cultural aspects	7.0	6.6	7.7

Generally, the impact of the preferred shopping place on the first accessed attribute seems to be small and no statistically significant relationships can be identified (Table 5-18). Nevertheless there seem to be some trends: 'regional production' is most frequently accessed first not only by customers of farmers' markets but also by customers of organic supermarkets and discount stores. Another interesting result is that 'product price' was not only relatively important in discount stores but also in speciality shops, although consumers of speciality shops are not expected to be very price sensitive. The results support the hypothesis that respondents with a high preference for 'fair prices' preferably buy directly at the farm. However, there is a relatively high interest in 'fair prices' also among participants preferring discount stores and health food shops.

Table 5-18: First accessed attribute by preferred shopping place (% of all answers)[1]

Preferred shopping place	Organic shops	Organic super-markets	Con-ventional retail	Discount stores	Farmers market	On farm	Speciality shops	Health food shops	Other
Number of answers	450	333	744	135	257	158	141	146	21
Regional production	21.6	23.7	19.4	22.2	24.9	22.8	18.4	21.2	14.3
Animal welfare	20.0	20.7	22.3	19.3	22.6	23.4	21.3	26.7	23.8
Fair prices	13.3	10.5	14.5	16.3	17.5	18.4	14.2	17.1	9.5
Product price	12.7	11.7	13.4	17.8	11.3	12.0	17.0	10.3	9.5
Care farms	8.9	9.9	7.7	5.9	8.2	7.0	8.5	6.2	23.8
Cultural aspects	8.4	6.0	6.3	3.0	6.2	5.1	7.8	6.8	9.5
Biodiversity	7.6	8.7	7.3	7.4	4.3	8.2	7.1	7.5	4.8
Social criteria	7.6	8.7	9.1	8.1	5.1	3.2	5.7	4.1	4.8

Question asked: Where do you mainly buy organic food?
[1] Up to three answers per respondent.

Looking at the firstly accessed attribute and at the most important motives for buying organic products may help to understand the preferences of consumers (Table 5-19). As expected, people stating that 'animal welfare' is an important motive for buying organic products search primarily information on 'animal welfare'. Respondents who declared 'low level of residues', 'better taste' or 'natural products' to be important motives for the consumption of organic food looked more frequently first for information on 'regional production' particularly than respondents with 'animal welfare' as an important motive (z-test).

Table 5-19: First accessed attribute by motives for organic consumption (% of all answers)[1]

Motive	Animal welfare	Low level of residues	Better taste	Natural products	Environ-mental protection	Support for organic farming	GMO free	Support for alternative structures	Personal health
Number of answers	421	357	332	372	446	317	288	184	547
Animal welfare	32.3	17.4	20.5	19.6	23.5	20.8	26.0	15.2	17.6
Biodiversity	9.0	8.7	6.0	7.3	7.6	7.3	5.6	7.1	6.0
Care farms	5.2	9.5	7.8	8.3	9.4	8.5	8.3	9.8	9.3
Cultural aspects	7.6	6.2	5.7	7.3	6.1	5.4	6.6	8.7	7.9
Fair prices	14.3	13.2	14.8	12.4	12.8	15.5	14.6	14.1	14.4
Regional production	14.7	23.5	22.9	24.5	20.9	22.1	22.2	22.8	21.9
Product price	9.5	13.2	13.9	13.7	11.7	12.0	11.1	13.0	15.4
Social criteria	7.4	8.4	8.4	7.0	8.1	8.5	5.6	9.2	7.5

Question asked: What are your three most important motives for buying organic food products?
[1] Up to three answers per respondent.

In order to learn about the information search in reality, participants were asked for the kind of information on organic products they are generally looking for (see also Chapter 4). People who in 'real life' are interested in 'product origin', 'food miles' and in 'impacts on climate change' consequently asked most frequently in the IDM survey first for information on 'regional production' (Table 5-20). However, these results cannot be verified by statistical tests. Among consumers who stated that they are interested in information on prices, the highest share of 'product price' and 'fair prices' as firstly accessed attributes can be found. These results could be verified by the z-test.

Table 5-20: First accessed attribute by kind of information consumers are interested in (% of all answers)

Kind of information	Production and processing methods	Product quality	Product origin	Ingredients	Residues of pesticides	Quality tests	Organic certification	Prices	Food miles	Impacts on climate change	Nutritional content	None
Number of answers	273	286	573	324	150	108	295	260	245	84	175	115
Animal welfare	21.2	22.7	20.9	21.3	21.3	25.0	21.4	18.1	20.0	21.4	21.1	25.2
Biodiversity	8.8	6.6	6.8	7.1	6.0	4.6	8.8	3.5	7.8	4.8	8.6	7.8
Care farms	8.8	8.7	9.4	8.6	8.0	9.3	6.8	6.9	9.0	9.5	8.6	6.1
Cultural aspects	7.3	7.7	6.6	5.6	8.0	4.6	7.8	6.5	7.3	7.1	9.1	7.0
Fair prices	12.5	11.2	12.2	13.6	17.3	11.1	17.6	20.0	11.8	13.1	13.1	13.0
Regional production	20.5	19.2	26.0	21.6	20.0	25.9	20.7	17.7	25.7	25.0	17.7	18.3
Product price	12.1	15.4	11.2	13.9	10.0	10.2	9.5	20.0	13.1	8.3	12.0	14.8
Social criteria	8.8	8.4	6.8	8.3	9.3	9.3	7.5	7.3	5.3	10.7	9.7	7.8

Question asked: What kind of information in relation to organic food products have you been actively looking for within the last two months?
[1]   Up to three answers per respondent.

5.2.2 Consumers' attitudes and most important ethical attribute

The following section is dedicated to the relation between respondents' attitudes and the first attributes accessed. In the questionnaire, the respondents were asked for their agreement on various statements on organic farming in order to evaluate consumers' attitudes (see Chapter 3). Relationships are expected between the degree of agreement to selected statements and the most important attribute within the IDM (Table 5-21), here measured by the share of first accession of the respective attribute. In order to identify relationships between statements and attributes, an analysis of variance (ANOVA) was carried out, comparing the mean values of the agreement to the statements between the eight groups of the firstly accessed attributes. The last column of Table 5-21 shows that almost none of the expected relationships could be identified during the data analysis. Only respondents looking firstly at the 'product price' within the IDM exercise showed a lower degree of agreement with the statement 'organic production systems should include more ethical aspects, even if the products would be more expensive'.

Table 5-21: Respondents' attitudes with respect to organic food and impact on the most important attribute

Statement	Impact expected on attribute …	Expected impact identified
There are too little activities with respect to animal welfare in organic farming.	Animal welfare	No
I would rather buy conventional fruit and vegetables that are produced regionally than imported organic products.	Regional production	No
There is too little emphasis on the protection of biodiversity in organic farming practices.	Biodiversity	No
I support initiatives asking for minimum wages for workers in farming.	Social criteria of production Fair prices	No No
Organic production systems should include more ethical aspects, even if the products would be more expensive.	Product price (less frequently)	Yes
Organic fruit and vegetables from overseas are a valuable supplement of the domestic supply in winter time.	Regional production (negative)	No
I like it that low priced organic food products are sold in discount stores.	Product price	No
The preservation of traditional production methods in farming is more important than cost reduction.	Cultural aspects	No

Question asked: Please indicate your level of agreement for each of the following statements!

The bivariate approach of data analysis chosen within this chapter aimed at understanding and validating the data obtained by means of the IDM and the accompanying questionnaire. However, this approach suffers from being only two-dimensional and neglecting other relationships except those ones focused at. For this reason, further analyses should concentrate on multivariate statistical methods.

5.3 Comparison of the results of IDM and survey

Describing the methodology of the IDM (Chapter 3.2), one argument in favour of using process tracing methods like the IDM was that these methods achieve more precise results than direct inquiry. Therefore in the questionnaire there was a question included asking for the relevance of different criteria for the purchase decision on organic food. The list of attributes was amended by some additional criteria (see Chapter 3.3).

The results of the directly asked question do not give a precise order of the different criteria, since some of the differences in the means are not statistically significant[5] (Table 5-22). Nevertheless, the ranking of the criteria is similar in most of the countries, showing 'animal welfare' to rank highest, followed by social criteria of production like 'good working conditions for farm workers' and 'support for family farms', then followed by 'preservation of cultural landscape', 'regional production' and 'fair prices for farmers'.

'Product price' is ranked last in almost all countries, except in Austria, where it is ranked second last. Regarding ethical values, Italian consumers revealed a different preference structure than the other countries. 'Preservation of cultural landscape' ranked as high as 'animal welfare' and 'production in care farms' and 'revival of traditional processing methods' were ranked to be as important as social criteria of production like 'good working conditions for farm workers', 'support for family farms' and 'produced in care farms'. The criteria 'no air freighting' was expected to be relatively important as a purchase criterion in the UK, where it was in public debate at the time the interviews took place. The results, however, do not support this expectation. Interestingly, Swiss consumers ranked 'no air freighting' rather high.

Table 5-22: Importance of different criteria for the purchase decision for organic food[1]

Country	All Mean	Rk	AT Mean	Rk	CH Mean	Rk	DE Mean	Rk	IT Mean	Rk	UK Mean	Rk
Animal welfare	6.2	*1*	6.1	*1*	6.4	*1*	6.3	*1*	6.1	*1*	5.7	*1*
Good working conditions for farm workers	5.8	*2*	5.7	*2*	5.9	*2*	5.8	*2*	6.0	*4*	5.5	*2*
Support for family farms	5.8	*2*	5.7	*2*	5.8	*2*	5.9	*2*	5.9	*4*	5.5	*2*
Preservation of local cultural landscape	5.7	*4*	5.6	*2*	5.8	*2*	5.7	*2*	6.1	*1*	5.2	*4*
Regional production	5.6	*5*	5.7	*2*	5.8	*2*	5.7	*2*	5.7	*6*	5.2	*4*
Protection of biodiversity	5.5	*6*	5.4	*6*	5.7	*2*	5.6	*6*	5.8	*6*	5.2	*4*
Fair prices to farmers	5.4	*7*	5.3	*6*	5.4	*8*	5.5	*6*	5.7	*6*	5.3	*4*
No air freighting	5.3	*8*	5.1	*6*	5.7	*2*	5.2	*8*	5.4	*10*	5.0	*8*
Produced in care farms	5.2	*8*	5.1	*6*	5.1	*9*	5.1	*8*	6.0	*1*	4.6	*9*
Revival of traditional processing methods	5.0	*10*	4.8	*11*	5.1	*9*	4.9	*10*	5.8	*6*	4.7	*9*
Product price	4.8	*11*	5.2	*6*	4.2	*11*	4.7	*10*	5.4	*10*	4.5	*9*

Question asked: Please tell me how important the following criteria are for your purchase decision for organic food products.
[1] Criteria given the same rank indicate no statistically significant differences in the respondents' assessment (paired samples t-test).

Looking at the results in Table 5-23, the differences in the results of both methodological approaches become obvious. All different indicators used in the analysis of the IDM data for the assessment of the importance of attributes produce about the same ranking of attributes. In contrast, the ranking of criteria by direct inquiry differs considerably. Social production criteria like 'good working conditions for farm workers' and 'support for family farms' as well as 'preservation of cultural landscape' ranked higher in direct questioning than 'regional production' and 'fair prices for farmers'. These are the most important arguments in the IDM following 'animal welfare', which is most important according to both methodological approaches.

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[5] The values respondents attributed to different criteria were compared by the paired samples t-test.

The most outstanding example for differences in the preference structure is the relative importance of the product price. When asked directly, consumers ranked the price lowest (AT respondents second lowest) of all arguments, while in the IDM it was in close competition with the 'fair price' argument at the third or fourth position, respectively. Similar results with respect to the revealed preferences for prices were reported by Aschemann and Hamm (2008) who also compared results of an IDM with those ones obtained by direct questioning in a single source approach. Although not exactly the same ethical attributes were used, it can be concluded that the IDM is an adequate instrument to avoid socially desired answers in consumer surveys.

Table 5-23: Ranking/importance of different criteria for the purchase decision for organic food (all countries)

	IDM results		
Direct inquiry[1]	First attribute considered	Attribute most frequently accessed	Share of respondents considering the attribute
1. Animal welfare	1. Animal welfare	1. Animal welfare	1. Animal welfare
2. Good working conditions for farm workers	2. Regional production	2. Regional production	2. Regional production
2. Support for family farms	3. Fair prices for farmers	3. Product price	3. Fair prices for farmers
4. Preservation of local cultural landscape	4. Product price	4. Fair prices for farmers	4. Product price
5. Regional production	5. Care farms	5. Biodiversity	5. Biodiversity
6. Protection of biodiversity	6. Social criteria	6. Social criteria	6. Social criteria
7. Fair prices to farmers	7. Biodiversity	7. Care farms	7. Care farms
8. No air freighting	8. Cultural aspects	8. Cultural aspects	8. Cultural aspects
8. Produced in care farms			
10. Revival of traditional processing methods			
11. Product price			

[1] The same number within the same column indicates an identical ranking of different criteria.

6 Concluding remarks

This study provides an insight into the information search behaviour of consumers regarding ethical values of organic food. It focuses on the extensiveness of information search and on the relative importance of different ethical aspects. The most important results are in brief:

- The extensiveness of information search varies between countries. Besides socio-demographic factors like age and the level of education, attitudes regarding organic food consumption could be identified to have an impact on the amount of information looked for preceding a product choice.

- Concerning the relative importance of different ethical values, the results show that 'animal welfare', 'regional production' and 'fair prices for farmers' are most important in all countries. The preference structures of organic consumers regarding various ethical aspects differ much less between the study countries than previously assumed.

- Therefore, it can be concluded that organic farmers, processors and marketers should concentrate on these arguments, when trying to differentiate their products from the organic mass market.

- Additionally, ethical values were related to 'product price'. 'Product price' ranges at about the same level of relevance like 'fair prices for farmers', indicating that buyers of organic products would prefer cheaper products over food produced in an environment caring for 'biodiversity', 'social criteria' or other.

- Socio-demographic factors affecting the respondents' perception of the most important attribute are gender, age and education: Women are more interested in 'fair prices for farmers' than men are; younger and older respondents assess 'animal welfare' to be more important than respondents belonging to other age groups and test persons with higher educational level seem to value 'animal welfare' to be less essential than others. Relationships could be identified between the first accessed attribute (by definition the most important one) and the motives for organic consumption and the kind of information looked for in 'real life'. Only weak relationships could be recognised between the attitudes, elicited by a statement battery and the firstly accessed ethical attribute. This fact might be due to the bivariate analysis, impeding the identification of disturbing influences from other variables. Therefore, multivariate analyses will be performed in subsequent work steps.

- A vast majority of respondents preferred more expensive 'ethical organic products' (20% price premium) to cheaper organic products, indicating that with appropriate communication, ethical values of organic food really offer opportunities of differentiation in the organic markets.

Contrasting the results of the IDM with those from direct inquiry within the survey part, the IDM proved to be a valuable tool to elicit consumer preferences avoiding biases due to social desirability of answers. However, there are clear limitations to the use of the IDM. In order not to cause information overload at the respondents the number of products, attributes and arguments used in this IDM was at its maximum. Aiming at identifying the most important argument itself, a reduced orthogonal design would be needed. It should be considered to combine the methodological approaches of the IDM with choice experiments. Within this research the IDM proved appropriate to rank different ethical values according to the consumers' point of view.

The results are produced in a test environment, thus there might be some differences compared to real life behaviour. However, the task of this research step was to elicit relative preferences of consumers. There is no reason for assuming that relative preferences obtained in an experimental setting differ considerably from real behaviour, given that similar information is provided to consumers.

Further analyses, namely multivariate analyses of the data will bring light into the complex relationships between different impacting variables. Another issue that will be explored within further steps is the analysis of the sequence of information search.

The central outcome of WP3 is the identification of the most important ethical arguments for organic food which are 'animal welfare', 'regional production' and 'fair prices'. Based on this result the project partners decided to have a joint tender concentrating on these three concerns in all study countries on advertising material that will be used in focus group discussion in the next work packages (WP 4).

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Annex

Annex 1: Questionnaire Part One and Two

a) Questionnaire Part One

1. How often do you buy organic food products?

A	Less than once per month
B	Less than once per week
C	Approx. once per week
D	Several times per week

(If A: Thanks for your willingness to participate and end the interview)

2. Where do you mainly buy organic food? (Multiple answers possible)

A	Organic shop selling organic products only (in UK mainly)
B	Organic supermarket selling organic products only (in UK mainly)
C	Conventional retail shop→**Which?** Name of chain _____
D	Discount store →**Which?** Name of chain _____
E	At a farmers market
F	Directly from the farm (farm shops and farmers box schemes, mail order)
G	Speciality shops (like bakeries, butchers, fruit and vegetable shops / green grocers)
H	Health food shops
X	Other places →**Which?** _____

3. What are your three most important motives for buying organic food products? (Please tick a maximum of three answers!)

A	Animal welfare
B	Low levels of residues of pesticides
C	Better taste
D	Natural products
E	Environmental protection
F	Support for organic farming
G	Produced without genetically modified organisms or feed stuff
H	Support of alternative trade and processing structures
I	Personal health
X	Other →**Which?** _____

4. Please indicate your three most important sources for information on organic food products (Please tick a maximum of three answers!)

- A   Events and presentations
- B   Conversation with family and friends
- C   Articles in newspapers, magazines and customer magazines
- D   Reports on the radio or on TV
- E   Information given by sales personnel
- F   Product packaging
- G   Internet
- H   Advertisements at the point of sale (posters, leaflets etc.)
- I   Advertisements on the radio, TV or in newspapers/ magazines
- X   Other →**Which?** _____
- Y   None

5. What kind of information in relation to organic food products have you been actively looking for within the last two months? (Please tick a maximum of three answers!)

Information on:
- A   Production and processing methods
- B   Product quality
- C   Product origin
- D   Ingredients
- E   Residues of pesticides
- F   Product quality tests by independent institutions
- G   Organic certification
- H   Prices
- I   Food miles
- J   Impacts on climate change (CO_2-balance)
- K   Nutritional content
- X   Other →**Which?** _____
- Y   None

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

- A   0 to 10 %
- B   11 to 20 %
- C   21 to 30 %
- D   31 to 40 %
- E   41 to 50 %
- F   51 to 60 %
- G   61 to 70 %
- H   71 to 80 %
- I   81 to 90 %
- J   91 to 100 %

b) Questionnaire Part Two

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

    A   Donation
    B   Membership in a non-profit social aid association
    C   Active engagement in a non-profit social aid association
    D   Other _____
    E   None

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

    A   Donation
    B   Membership in an environmental association
    C   Active engagement in an environmental association
    D   Other _____
    E   None

9. Please indicate your level of agreement for each of the following statements!

	I totally disagree	I largely disagree	I partly disagree	Neither/nor	I partly agree	I strongly agree	I totally agree
There are too few activities with respect to animal welfare in organic farming.							
Much of the product information provided by the producer of an organic food product is more sales promotion than reliable information.							
It is the consumer who should decide by his purchase behaviour on the implementation of ethical values in organic production, rather than legal requirements.							
I would rather buy conventional fruit and vegetables that are produced regionally than imported organic products.							
Organic farming must set up more efficient and cost reducing structures.							

	I totally disagree	I largely disagree	I partly disagree	Neither/nor	I partly agree	I strongly agree	I totally agree
There is too little emphasis on the protection of biodiversity in organic farming practices.							
I am not sure if all food products sold as organic really are organic.							
I support initiatives asking for minimum wages for workers in farming.							
I am willing to pay a higher price for high quality organic food products.							
Organic production systems should include more ethical aspects, even if the products would be more expensive.							
Environmental problems are often overestimated.	1	2	3	4	5	6	7
Organic fruit and vegetables from overseas are a valuable supplement of the domestic supply in winter time.	1	2	3	4	5	6	7
I like it that low priced organic food products are sold in discount stores.	1	2	3	4	5	6	7
The preservation of traditional production methods in farming is more important than cost reduction.	1	2	3	4	5	6	7
Some food products are hard to identify as organic at the point of sale.	1	2	3	4	5	6	7

10. Please tell me how important the following criteria are for your purchase decision for organic food products?

	Not important at all	Not very important	Not important	Neither nor	Important	Very important	Extremely important
Product price							
Regional production							
No air freighting							
Protection of biodiversity							
Support for family farms							
Fair prices to farmers							
Good working conditions for farm workers							
Produced in sheltered workshops for disadvantaged people							
Animal welfare							
Revival of traditional artisan processing methods							
Preservation of local cultural landscape							

Finally I would like to ask you some general questions that will help us with our analyses.

11. How many persons including yourself live in your household? Number _____

12. What education do you have (Please indicate the highest level you obtain)

- A   No formal qualification
- B   GCSE (about 10 years of school visit)
- C   A level (12 or13 years of school visit)
- D   College or university degree (BSc, BA, MSc, MA, PhD)

13. How often do you use a computer?

- A   Never
- B   Less than once per week
- C   Approx. once per week
- D   Several times per week
- F   Daily

14. How often do you use the internet?

- A   Never
- B   Less than once per week
- C   Approx. once per week
- D   Several times per week
- F   Daily

15. What is your monthly net household income (the amount of money all members of the household can spend every week month)?

- O   up to below 600€
- F   from 600 up to below 1200€
- X   from 1200 up to below 1800€
- B   from 1800 up to below 2400€
- A   from 2400 up to below 3000€
- I   from 3000 up to below 3600€
- M   from 3600 up to below 4200€
- Z   from 4200 up to below 4800€
- R   more than below 4800€

16. In what year were you born? year _____

(Interviewer fill in)

17. Gender ? (Interviewer fill in)

- 1 – female
- 2 – male

18. PC-assistance

- 1 – Yes
- 0 – No

Thank you very much for participating in this interview.

Comments of the interviewer

_____

_____

Annex 2: Extensiveness of information search by preferred shopping place

Preferred shopping place	N	Number of opened fields	Decision time in minutes
Organic shops	450	33.3 a	04:36 a
Organic supermarkets	333	36.2 a	04:41 a
Conventional retail	744	35.7 a	04:38 a
Discount	135	36.6 a	04:19 a
Farmers market	257	37.9 a	04:56 a
On farm	158	35.4 a	04:35 a
Specialty shop	141	37.7 a	04:34 a
Health food shop	146	35.4 a	04:57 a
Other	21	43.1 a	05:56 a
All	2364	33.6	04:28

Differences between groups with unlike letters (a, b, c, d) are statistically significant ($\alpha = 0.05$).

Question asked: What kind of information in relation to organic food products have you been looking for within the two last months? (Please tick a maximum of three answers!)

Farmer Consumer Partnerships

Abstract

Globalisation and growing anonymity of trade with organic products causes farmers in Europe to see themselves forced to lower their production standards in order to stand up to world-wide competition. Furthermore, consumers criticise food products, which were produced under unsatisfactory social and environmental conditions. Thus, this project investigates marketing and communication strategies by which organic farmers try to include higher ethical values in their production than the statutory ones. The aim is to know, which communication arguments for ethical aspects have proved to be the most promising from the consumers' point of view in different countries.

In the first part of this project, promising communication strategies and arguments of farmers' organisations will be identified. Selected arguments will be tested in different regions by a so-called Information Display Matrix (IDM). With this tool, the best ranked alternative product attributes and sales arguments will be detected. Advertising companies will then develop product labels and leaflets with information using the best-ranked arguments per country. Afterwards, different proposals for labels and leaflets will be tested in a two step approach with consumers by using Focus Group Discussions and a sales experiment in a so-called Consumer Choice Test. The experiment will be used to analyse consumers' buying behaviour and willingness to pay by presenting real products in a close to realistic laboratory setting.

The results will provide a valuable tool for the strategic positioning of organic companies and farmers' initiatives to differentiate their products from the mass market of organic products and improve their products' image and the consumers' willingness to pay. The results will also be interesting for policy makers to gain a better understanding of the country-specific attitudes of ethical consumers.

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