Are animal welfare aspects of relevance in consumers' purchase decision?

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Abstract

Recurring reports on animal husbandry conditions as well as the maltreatment of animals during transport to slaughterhouses in the last years increased public concerns about animal welfare conditions showing the need to act for all stakeholders throughout the meat supply chain (e.g. Bánáti, 2011). As a consequence animal welfare has become one of the priorities on the agenda of politicians (see the coalition agreement in 2013; CDU et al., 2013), consumer policy and protection agencies and is intensively discussed in the private sector as well as in academia. In Germany, in particular the 'Initiative Tierwohl' continuously gains in importance and in 2013 for the first time an EU animal welfare label was established.

However, the increasing stated interest in animal welfare is not yet reflected by sales figures in the meat market. In literature different reasons addressing multiple levels of the topic are discussed for this discrepancy (e.g. Hartmann et al., 2014). One factor is the lack of a universally accepted definition and understanding of animal welfare due to its multidimensional character (Lagerkvist and Hess, 2014). Another reason is the potential social desirability bias which occurs to different extent depending on the survey method used to elicit the preferences of the actors.

Therefore, the aim of the present study is to get deeper insights into first, consumers' understanding of animal welfare by identifying the relevant aspects of animal welfare in consumers' decision making process while purchasing meat. Second, we use two methods to assess the relevance of animal welfare issues for consumers when thinking about the purchase of meat to quantify the extent the different survey methods construct survey results rather than elicit consumer preferences.

For this purpose an online survey with N = 926 participants was conducted in July 2012. The investigated meat products were chicken and pork cutlet. Consumers' preferences for different product attributes were measured via a questionnaire as well as by an individualized Information Display Matrix (IDM).

As to the first research question, the results indicate that with respect to animal welfare aspects the one of especially high relevance to consumers is animal husbandry conditions while e.g. slaughtering or feeding is of lower importance. The results also indicate that animal husbandry conditions are much more relevant for con-

sumers when thinking about the purchase of chicken cutlet compared to pork cutlet. With regard to the second question survey results show that respondents' preferences obtained via questionnaire and IDM deviate to a considerable extent regarding the attribute price. While participants stated in the questionnaire that price is of minor importance, the analysis based on the IDM displays clearly that price plays a paramount role in consumers' meat information search process. Thus, we see evidence that the two survey methods are prone to suffer to a different degree from the social desirability bias.

The results can help policy makers, manufacturers and retailers as well as NGOs in promoting and selling meat produced according to higher animal welfare standards. Successful promotion of such products is only possible if there is a good understanding of the animal welfare characteristics important to consumers.

Keywords: Animal welfare, Information Display Matrix, meat supply chain, chicken and pork cutlet

1 Introduction

Animal welfare is a topic high on the political agenda and intensively discussed in the private sector as well as in academia. At national as well as European level action plans for animal protection and welfare have been established (EC, 2006). As one example, the EU commission started an action plan in the year 2006 continuing in the period 2012 to 2015 by the strategy for animal protection and welfare by the EU (EC, 2012). This strategy seeks to identify gaps in EU's animal welfare legislation. One aim is to improve the way animals are kept, transported and slaughtered and prevent maltreatment of animals. Furthermore, it investigates how transparency on animal welfare factors could be improved and helping consumers to consider animal welfare issues in their purchase decisions (EC, 2012). To regain consumer trust, multistakeholder actions are also taken by economic actors in different member states as can be illustrated by the example of piglet castration.

In 2007 the Declaration of Noordwijk which aims to put an end to piglet castration was signed by the Dutch Food Retail Association (CBL), the Dutch Central organisation for the meat industry (COV), and the farmers' organization in the Netherlands (LTO) (LTO et al., 2007). In the year 2008, various stakeholders involved in the pig/pork value chain (the German farmers association, DBV; the German meat association, VDF; the German retail federation, HDE) compromise that castration de facto is only allowed under an anesthetic (DBV et al., 2008). Furthermore, in the year 2011 'Westfleisch', a group of companies in the meat industry, launched a widely criticized and in the year 2014 ceased program for animal-friendly production for fresh meat and meat products. They established the first label sold in selected retailers solely focusing on animal welfare. One year later, the initiative for 'more animal welfare' ('Für mehr Tierschutz') introduced another label for animal welfare for POS communication. A further step was taken by the foundation of the industry-wide 'Initiative Tierwohl' for improving animal welfare. Contrary to the first mentioned actions, increased standards for animal welfare and animal protection are initially not visible for consumers at the POS. Whether and in what manner consumers get informed is still uncertain (FAZ, 2014).

Consumers itself claim to be interested in and concerned about animal welfare (e.g. Vanhonacker and Verbeke, 2014; de Jonge and van Trijp, 2013): Furthermore, studies underline the importance of animal welfare for con-

sumers' purchase decision (Ingenbleek and Immink, 2011). The Eurobarometer on 'Attitudes of EU citizens towards Animal Welfare' for example indicates that animal welfare is of great importance for consumers (EC, 2007a). It seems as if every stakeholder worries about animal welfare but the market share of such products is very small (Norwood and Lusk, 2011; Ingenbleek et al., 2013). So, the question arises why consumers do not purchase animal welfare products. Hartmann et al. (2014) describe five different barriers to ethical consumption in general, one of which is unreliable or insufficient information on the products. With respect to this barrier we can distinguish two aspects that prevent consumers to easily choose animal welfare friendly products at the point of sale. (1) Animal welfare is a credence attribute that cannot be assessed by consumers even after the product is purchased. A label, even better a third party certified animal welfare label, is needed to reduce the information asymmetry on the side of consumers. (2) For an average consumer who is not fully aware of the plurality of initiatives mentioned above as well as their differences and the degree to which producers comply with such standards animal welfare friendly products different labels can create mistrust or reactance. Research shows that a large number of labels can confuse consumers who are as a consequence unable (i) to distinguish between various labeling schemes and (ii) to assess labeling schemes' credibility (e.g. Gerlach and Schudak, 2010). The experiences with other labelling schemes food products shows that especially when certification schemes overlap and the majority of products carry at least one other certification (see e.g. organic versus Fair Trade certified coffee; Givannucci et al., 2008) consumers are hardly able to identify the differences between different labels (see e.g. Giovannucci and Koekoek, 2003) and easily get confused due to their bounded rationality.

Against this background the objective of the present study is to investigate the importance of different animal-welfare aspects in consumers' purchase decision for meat. With this respect the study aims to answer the following research questions:

What do consumers understand by the topic animal welfare? What are the most important aspects consumers are interested in regarding animal welfare? How relevant are animal welfare issues for consumers' meat purchase decision?

The data was obtained via an online survey using a standardized questionnaire and an Information Display Matrix (IDM). By comparing the preferences obtained via statement batteries of the questionnaire with the revealed preferences by the IDM, consumers' preferences for different animal welfare issues are indicated.

The paper is structured as follows. Section 2 provides a brief review of consumers' research regarding animal welfare. Study design, materials and methods are introduced in section 3. In section 4 the results are presented. In section 5 the results are discussed and conclusions are drawn.

2 Consumer reflections regarding animal welfare: How animal welfare is understood

Ambiguities regarding how to grasp and define animal welfare can be attributed to the fact that animal welfare has a 'multidimensional character of animal welfare and its assessment' (Lagerkvist and Hess, 2011, p. 56). Hence, up to now it lacks a common understanding of the issues underlying animal welfare. Hartmann et al.

(2014) distinguish between the concept of biological functioning, the feeling based perspective focusing on the absence of negative emotions such as pain and the concept of natural behavior in which animals have all possibilities to enjoy life. The three concepts are supported by different stakeholder groups. For example, farmers tend to argue that the biological functioning with its focus on animals' health status is able to disclose animals wellbeing consumers tend to argue for the concept of natural behavior and the absence of negative emotions. This is not surprising since consumers in general evaluate animal welfare from an anthropomorphic perspective. Consequently, they have an idea about what constitutes a good quality of life and transfer this to the inner state of animals.

A large strand of literature exists focusing on individuals' perception of animal welfare (e.g. EC, 2005; Frewer et al., 2005; Harper and Makatouni, 2002; Harper and Henson, 2001; Maria, 2006; Miele, 2010; Vanhonacker et al., 2006; Van Poucke et al., 2006; Verbeke, 2002). Studies conducted in Europe reveal that similar aspects come into consumers' mind when asked about animal welfare. This aspects are 'space allowance', 'humane transport', 'presence of trained staff', 'humane slaughtering', 'access to outdoor areas', 'exposure to natural light', 'absence of movement restrictions by chains or tethers', 'expression of natural behaviors', 'absence of mutilation' and 'social contact' (see e.g. Vanhonacker et al., 2009; EC, 2005; Miele, 2010; Verbeke et al., 2010).

The differences in the comprehension of animal welfare can be a result of two parallel developments in industrialized economies: First the rapid urbanization and hence an increasing distance between farmers and consumers (see e.g. Edwards, 2004; Müller and Schmitz, 2002) and second a value shift in affluence societies (see e.g. Olynk, 2012; Napolitano et al., 2010) which leads to a rising relevance of animal welfare.

Furthermore, studies investigate consumers' attitudes towards the issues related to animal welfare (EC, 2005; EC, 2007a; EC, 2007b) as well as citizens' evaluation of current animal husbandry conditions (EC, 2005; Schulze et al., 2008). The study by the European Commission (2005) as well as by Schulze et al. (2008) show that consumers perceive problems with regard to animal welfare and consider the current animal husbandry conditions as inadequate (EC, 2005; Schulze et al., 2008). The majority of the European participants are of the opinion that an improvement of welfare protection for farm animals is needed in their respective countries (EC, 2007a). Simultaneously, surveys reveal that most consumers' do know, according to their own statement, little about animal husbandry. Interesting to mention is hereby that only 12 % of the respondents claim to be informed 'a lot' about the animal husbandry conditions in their countries while the majority of Europeans (57 %) state to know only 'a little' and even 28 % declare to understand 'nothing at all' (EC, 2007a).

Furthermore, multiple studies have shown that consumers have a (high) willingness to pay (WTP) for improved animal welfare (Dransfield et al., 2005; EC, 2005; Elbakidze et al., 2013; Lagerkvist and Hess, 2011). Meuwissen et al. (2004) and Verbeke (2009) show that consumers have a high willingness to pay for alternative animal husbandry methods.

3 Study design, materials and methods

To reach the aim of the study an online survey with N = 926 participants was conducted in Germany in July 2012. The objects under investigation were pork and chicken cutlet. The sample was quoted by age, gender and education and carried out by a marketing agency. The online survey consisted of two parts. At the beginning of the first part, consumers were asked about their meat consumption frequency and their meat shopping habits. After these more general questions, an open question followed where consumers were requested to write down what they get in mind when thinking about animal welfare. Additionally, the first part included questions about their knowledge and usage of different labels as well as consumers' attitudes towards meat and animal welfare aspects. Finally, respondents were asked to provide information with respect to their socio-demographics.

In the second part, participants were splitted into two groups according to their consumption habits. From that point on, participants who stated to consume pork at least once a week got questions regarding chicken cutlet and vice versa for pork cutlet. All others were randomly distributed. First, participants had to evaluate the relevance of different traditional (e.g. price) and ethical (e.g. animal welfare) product characteristics on a scale from 1 (not important) to 5 (very important) imagining a usual pork or chicken cutlet purchase situation in the supermarket. The properties of the cutlets referred to the following 16 dimensions: 'animal husbandry', 'brand', 'environmental aspects of production', 'feeding practices', 'fresh versus frozen', 'health related information', 'packaging size', 'preparation instructions', 'price', 'region of origin', 'retail store', 'seal', 'slaughtering conditions', 'special offer', 'transportation time to slaughtering' and 'use by date'. Furthermore, we applied the Information Display Matrix (IDM) to investigate respondents' information search behavior before making a purchase decision. The IDM is an information tracing tool that can be used to monitor the information acquisition process of consumers prior to their purchase decision at the point of sale. Consumers are asked to imagine a normal meat purchase situation in the supermarket where a multitude of different products characterized by various attributes are available. In our survey respondents had the choice between three different meat packages. At the beginning all product information is hidden. However, as consumers should arrive at a decision they need to investigate those attributes relevant for their purchase decision. To make the experiment as close to the market situation as possible consumers are requested to only consider those information they really need for their product choice. As it can be assumed that information (e.g. on price) is more relevant (the so-called cue information) the earlier it is considered (Muehlbacher and Kirchler, 2003), a conclusion can be drawn as to the relevance of the respective attribute.

The IDM provides not only insights regarding the kind of information (information content) considered by the respondents but also regarding its sequence (order) and its intensity (frequency) (Jacoby et al., 1977; Jasper and Shapiro, 2002; Payne et al., 1993). For analyzing the information search process, the method of sequence analysis using Stata SQ ados (Brzinsky-Fay et al., 2006) was applied. Sequence analysis covers techniques for describing and analyzing sequence data. It allows taking the full complexity of sequences into account. For example, it considers the number as well as the order and length of different sequences. Sequence analysis has gained relevance in different scientific fields. In biology e.g. DNA sequences are analyzed while in the social sciences life courses, marital histories or employment biographies can be studied as sequences (e.g. Brzinsky-Fay et al., 2006).

4 Results

A total of 926 consumers participated in the study, whereof 483 got the pork cutlet and 443 the chicken cutlet questionnaire. Regarding the chicken cutlet sample, there are a little bit more females than males. The opposite occurs for the pork cutlet sample. Compared to the German census, younger people were slightly overrepresented in our sample (StBa, 2014). This deviation from the German population is typical for online-users (Bandilla et al., 2001; Verhovar et al., 2002).

Table 1: Demographics of the sample

Characteristic	% of the sample			Characteristic	% of the sample		
	Pork cutlet (N=483)	***German census[1]***	***Chicken cutlet (N=443)***		***Pork cutlet (N=483)***	***German census[1]***	***Chicken cutlet (N=443)***
Gender							
Female	45.1	51.1	53.5	18-25 years	19.0	7.9	18.5
Male	54.9	48.9	46.5	26-40 years	26.5	18.0	26.9
				41-65 years	54.5	37.2	54.6
Income per month							
Lower than 900€	13.5	11.9	12.4	Without any graduation	0.2	3.8	0.7
900 to 1499€	24.6	20.9	22.6	Low school education	34.0	35.6	32.3
1500 to 1999€	12.0	15.8	14.2	Medium school education	22.6	22.1	30.5
2000 to 2599€	15.5	15.0	21.2	University entrance diploma	24.4	27.3	22.8
Greater than 2600€	34.4	32.6	29.6	University degree	17.8	12.9	13.1
				Holding a doctorate		1.1	0.7

Note: Based on StBa (2014).
Source: Own calculation.

Consumers' perception of the topic animal welfare

For economic actors in the meat value chain as well as for policy makers it is also important to know consumers' requirements regarding animal welfare. Therefore, we asked survey participants what they have in mind when they hear the term 'animal welfare'. The most frequently mentioned term connected with 'animal welfare' is 'animal husbandry' (66 % of the participants). Furthermore 17 % of the respondents associate it with 'well-being', 5 % with 'breeding', 2 % with 'feeding' while 'animal treatment', 'respect', 'slaughtering', 'health', 'quality of life' and 'transport' are hardly mentioned (1 % and less than 1 % of answers to an open question).

Thus, from a consumers' perspective animal welfare is more or less synonym to animal husbandry. This might explain why in the IDM 'feeding', 'transportation time' and 'slaughtering' were hardly considered. These aspects of animal treatment are not associated with 'animal welfare'.

Important meat purchase characteristics – findings from stated preference methods

To assess the relevance of the product attribute animal welfare relative to other product characteristic in consumers' decision-making we asked respondents to indicate on a Likert-scale ranging from 1 ('not important) to 5 ('very important') the importance of 16 attributes for their meat purchase decision. The answers are summarized in Table 3 and the appendix.

The results reveal that the 'use by date' is stated to be of particular importance for respondents when buying chicken as well as pork cutlet. For 48 % of the respondents this criterion is very important for the pork cutlet decision and for 56 % and of the chicken cutlet respondents. The mean is with 4.2/4.4 (pork cutlet/chicken cutlet) highest for this criterion. This result is not surprising as meat is a very sensitive and perishable product while it belongs at the same time to the high value goods. Thus, consumers want to be sure that the product is still suitable for consumption for some time. Furthermore, it is interesting to note, that 'animal husbandry' is more relevant for the purchase of chicken cutlet (rank 2) compared to pork cutlet (rank 5). This is also not astonishing as in recent years a huge amount of negative media reporting focusing on poor animal husbandry conditions of poultry occurred. The criteria 'special offer' (rank 14), 'brand' (rank 15) and 'preparation instructions' (rank 16) play a minor role for respondents.

Important meat purchase characteristics – findings from revealed preference methods

Especially with regard to the labeling of ethical product characteristics such as fair production and animal welfare stated preferences might suffer from a social desirability bias. For this reason we investigated consumers' revealed preference by using an IDM. For each respondent those eight characteristics (of the whole set of 16 presented criteria listed in Table 2) which (s)he ranked highest were used to arrive at a personalized IDM. This way we attempt to reduce information overload as respondents are only confronted in the IDM with those attributes that they have stated to be particular important for their individual decision making. As mentioned above the IDM records the order in which consumers consider the product attributes of the matrix. Consumers were requested to look at the most important attributes, those which they feel that they need to know about before they can choose one of the three meats presented.

To understand the intensity of the information search process it is interesting to investigate the length of the sequence and thus the number of information pieces respondents requested before making their choice. A maximum of eleven clicks was allowed, thus restricting the possible length of the sequence to eleven. As Table 2 reveals, on average consumers stopped their information search process after they had obtained 9.5 clicks in the pork cutlet IDM and 9.3 clicks in the chicken cutlet IDM. Table 2 provides additional information on the information search process.

The maximum number of different attributes participants could potentially investigate was eight. On average respondents looked at 5.6 different attributes (see Table 2). This implies that on average each participant neglected three of the eight presented attributes in the information search process.

Table 2 reveals that 480 sequences are only observed for 1 respondent for the pork cutlet sample and 442 sequences are unique for the chicken cutlet sample.

Table 2: Characteristics of consumers' information search process

	Pork cutlet (n=483)	**Chicken cutlet (n=443)**
Unique sequences	480	442
Diversification degree	99.38	99.77
Length of clicks sequence	Ø 9.5 clicks / 11	Ø 9.3 clicks / 11
Number of different elements in click-sequence	Ø 5.6 attributes / 8	Ø 5.6 attributes / 8

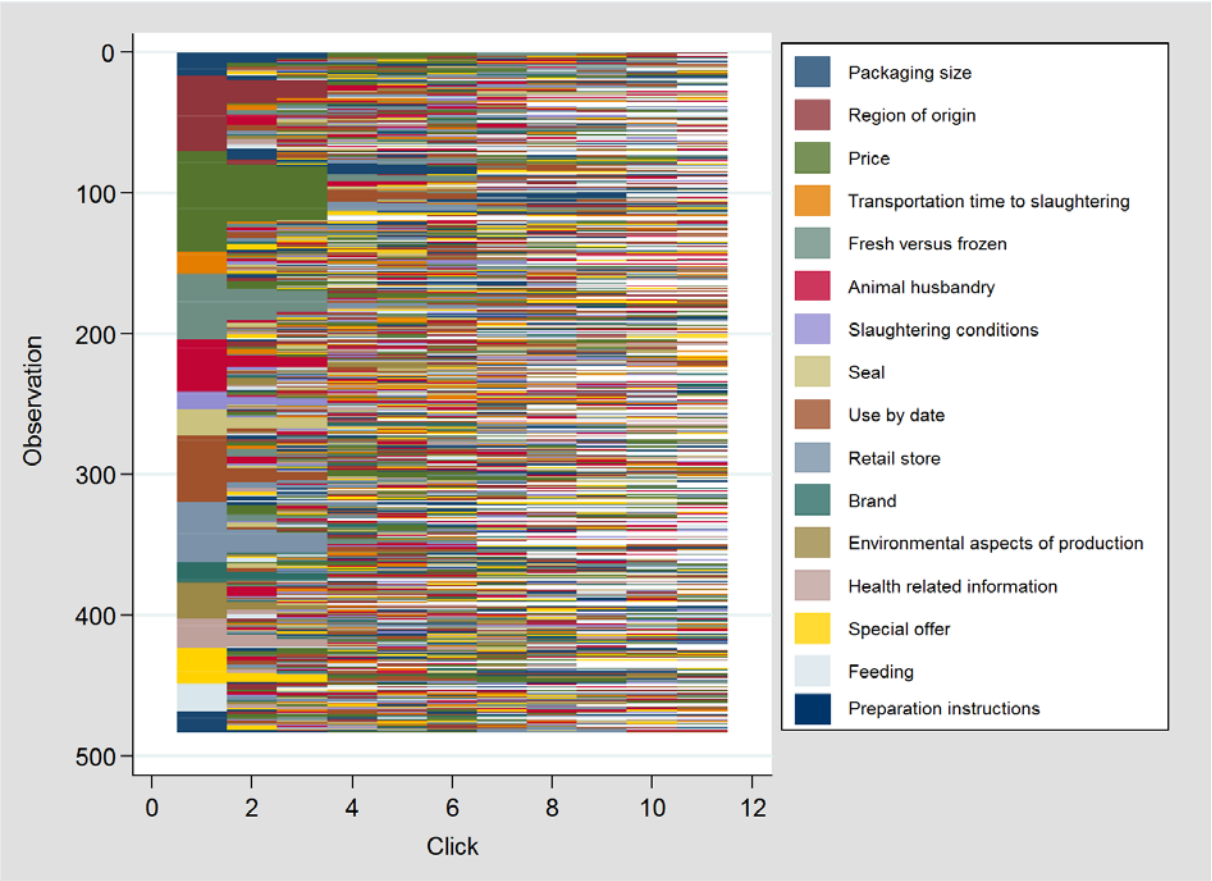
Source: Own calculation.

Figure 1 and 2 show the sequence index plots for the pork cutlet and chicken cutlet data. The advantage of visualizing the sequences is that it unveils which attributes are of special importance in consumers' information search process. In addition, the combination of attributes requested can be detected.

Focusing on the first click for the pork cutlet IDM, Figure 1 shows that 'price' is the most frequently regarded attribute for the first click in the information search process (15 %) followed by 'region of origin' (11 %), 'use by date' (10 %) and 'fresh versus frozen' (10 %). Only a small share of respondents considers the attributes 'slaughtering conditions' (3 %), 'brand' (3 %) or 'preparation instructions' (3 %) on their information search.

Regarding the attributes participants looked at, 'use by date' is the most often considered attribute (57 %). 52 % of the respondents regarded the attribute 'price' at least once before making a choice. The share is a little bit smaller for 'animal husbandry' (45 %). Information on 'transportation time to slaughtering' or 'slaughtering conditions', in contrast, is with 30 % and 27 % less important. However, 'brand' is only for 15 % of the consumers part of their information search process.

Figure 1: Sequence Index Plot – pork cutlet

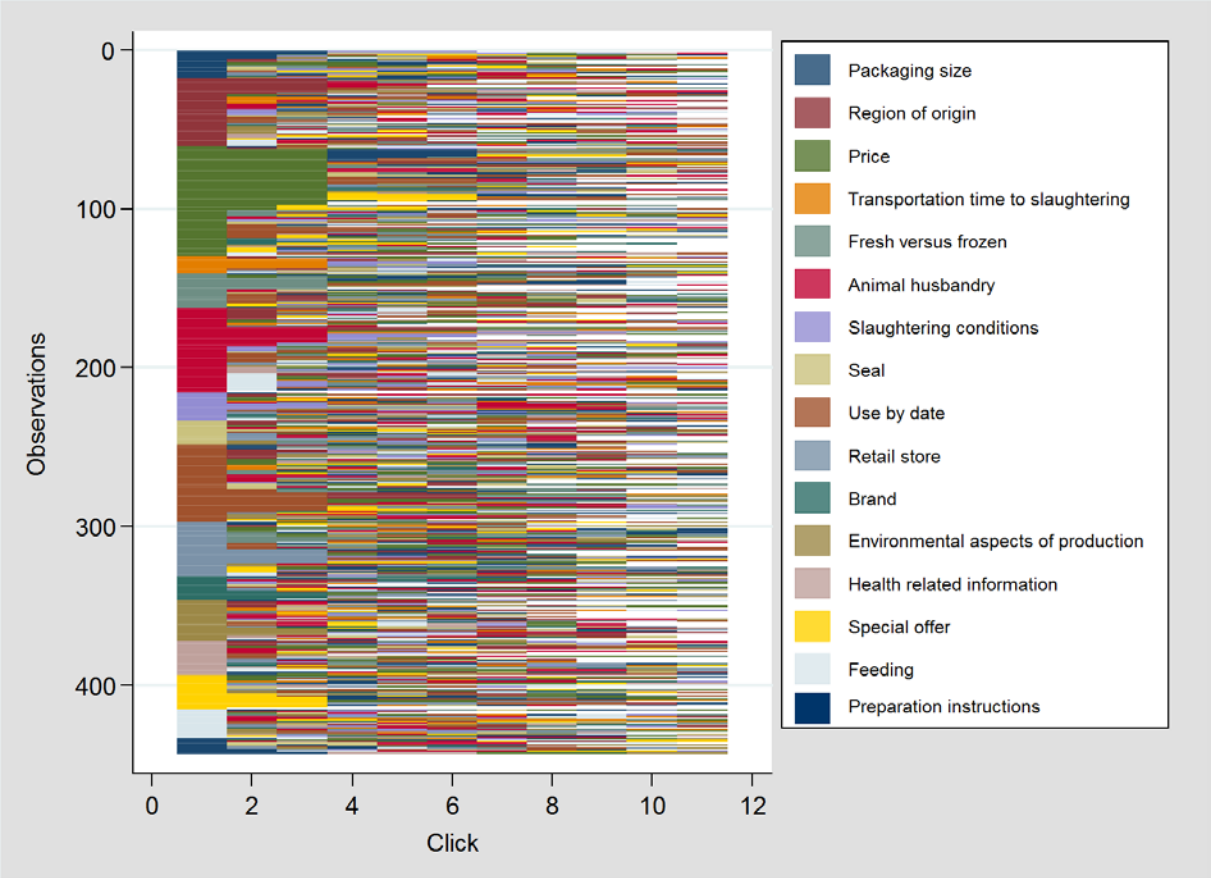


Source: Own calculation.

Figure 2, the sequence index plot for chicken cutlet, reveals that for the chicken cutlet purchase decision, 'price' is the attribute most often considered first in the information search process (16 %). Considering the first click also the attributes 'animal husbandry' (12 %), 'use by date' (11 %), and 'region of origin' play a role for participants' information search process. Attributes such as 'transportation time' (3 %) and 'preparation instructions' (2 %) are of minor importance for participants at the beginning of their information search process.

Overall, about every second consumer considers the attribute 'use by date' (58 %) and 'price' (51 %) at least once before making a choice. The share is similar to the latter for 'animal husbandry (46 %).

Figure 2: Sequence Index Plot – chicken cutlet



Source: Own calculation.

Important meat purchase characteristics – comparison of the results obtained by the methods applied

A comparison of Figures 1 and 2 and the results of the statements provide some information with respect to the consistency between stated and revealed preferences (see table 3). It becomes obvious that 'animal husbandry' is of high importance for consumers regardless of the method applied. 'Use by date' and 'price' as well as 'region of origin' are those attributes which are more (due to stated preferences) and similar essential (due to the IDM).'Slaughtering conditions' as well as 'transportation time to slaughtering' can be summarized under the topic animal welfare. In the statements these issues were of medium or less relevance. In the IDM consumers avoid the active information search for criteria such as 'slaughtering conditions' (rank 14/pork cutlet; rank 11/chicken cutlet) and 'transportation time' (rank 12/pork cutlet; rank 14/chicken cutlet). 'Brand' as well as 'preparation instructions' are similar unimportant for consumers regardless of the elaboration method (ranks 15 and 16/pork and chicken cutlet). 'Special offer' is of hardly any relevance in the questionnaire (rank 14) but of medium interest when tested by means of the IDM for pork cutlet (there rank 8). Also 'packaging size' becomes important in the IDM (rank 7/pork cutlet; rank 8/chicken cutlet) compared to the stated importance (rank 12/pork and chicken cutlet).

Table 3: Consumers' preferences obtained via questionnaire and IDM – Ranking[a]

Preferences via questionnaire		Attributes	Preferences via IDM	
Pork cutlet[b]	Chicken cutlet[c]		Pork cutlet[b]	Chicken cutlet[c]
1	1	Use by date	2	2
2	4	Fresh versus frozen	3	5
3	3	Region of origin	5	6
4	6	Price	1	1
5	2	Animal husbandry[d]	6	3
6	8	Retail store	4	4
7	5	Environmental aspects of production	9	7
8	7	Health related information	11	10
9	9	Feeding[d]	10	9
10	10	Slaughtering conditions[d]	14	11
11	13	Transportation time to slaughtering[d]	12	14
12	12	Packaging size	7	8
13	11	Seal	13	13
14	14	Special offer	8	12
15	15	Brand	15	15
16	16	Preparation instructions	16	16

Note: [a] From '1=most important attribute' to '16=least important attribute', ordered according to pork cutlet ranking; [b] Calculation based on means, Likert-scale ranging from '1=not important' to '5=very important'; [c] Calculation based on total clicks in IDM (see appendix); [d] Animal welfare aspects.
Source: Own calculation.

5 Discussion and conclusions

Even though animal welfare is a topic intensively discussed in western societies the market share of animal welfare products is still small. Against this background the paper analyses the relevance of animal welfare for consumers' purchase decision.

From a consumers' perspective animal welfare is mostly associated with husbandry conditions and less so with transportation time to slaughtering or slaughtering conditions. Consumers have a strong reluctance to deal with information about slaughtering. According to Hartmann and Simons (2012) consumers want to keep this information at a distance as it might affect the pleasure of eating meat.

Furthermore, our results reveal that preferences measured via a questionnaire differ to some extent from those assessed through an IDM. Some ethical aspects of production such as 'animal husbandry' are of high importance for consumers regardless of the method applied. But self-related attributes are ranked high in the survey as well. For example 'use by date' is of crucial importance for consumers according to the results of the questionnaire. 57 %/58 % of respondents consider this item as being very relevant for their pork/chicken cutlet purchase decision. The results based on the IDM confirm this finding. However, 'price' which is of medium importance based on the statements of respondents move to the second rank if the results of the IDM are considered. Also other more price related attributes such as 'special offer' play a stronger role in the information search process than anticipated by the statements of the respondents. Thus, there is evidence for the existence of a social desirability bias in the results of the stated preferences. Using an IDM might be one possibility to reduce this bias being closer to real purchase decision (Langen, 2013; Ott and Roidl, 2008). Especially with regard to the labeling of ethical product characteristics such as animal welfare the reduction of bias due to social desirable answers is valuable.

Additionally our results show that it is possible, and can be considered as a methodological advancement in IDM research, to apply sequence analysis in analyzing data acquired via an IDM. The visualization techniques applied in sequence analysis allow an easy and intuitive understanding of main characteristics of the data.

In a next step, the use of optimal matching techniques followed by a cluster analysis to investigate whether different patterns of information search can be detected for various groups of respondents is planned.

Acknowledgment

The authors thank the state government of North Rhine-Westphalia and the European Union for funding this study which was accomplished within the scope of the project 'Forschungsnetzwerk Innovation durch Qualitätskommunikation' (FIN-Q.NRW).

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Appendix

Table 4: Importance of the attributes for respondents' pork cutlet purchase decision

Attribute	Mean[1]	Not at all important	Rather im-portant	Neither/ Nor	Quite important	Very important	
		[%]	[%]	[%]	[%]	[%]	N
Use by date	4.18	1.7	4.6	15.5	30.6	47.6	483
Fresh versus frozen	3.94	2.7	4.6	23.4	35.2	34.2	483
Region of origin	3.83	3.3	5.8	25.7	34.0	31.1	482
Price	3.76	3.7	6.8	26.5	35.4	27.5	483
Animal husbandry	3.75	3.9	8.9	26.5	29.6	31.1	483
Retail store	3.71	3.3	7.7	29.2	34.8	25.1	483
Environmental friendly	3.68	5.0	6.4	30.2	32.7	25.7	483
Health related information	3.57	5.2	10.6	30.0	30.8	23.4	483
Feeding	3.52	5.2	11.4	32.5	28.4	22.6	483
Slaughtering conditions	3.47	4.8	10.8	37.1	27.5	19.9	483
Transportation time	3.40	7.5	13.9	31.7	24.9	22.0	482
Packaging size	3.34	8.9	11.0	34.0	29.8	16.4	483
Label	3.34	7.5	11.6	34.8	31.5	14.7	483
Special offer	3.30	9.9	12.2	32.7	27.7	17.4	483
Brand	2.77	14.9	24.2	38.5	13.7	8.7	483
Preparation instructions	2.63	25.1	21.9	26.5	17.6	8.9	483

Note: [1] Scale from 1 to 5.

Table 5: Importance of the attributes for respondents' chicken cutlet purchase decision

Attribute	Mean[1]	Not at all important	Rather im-portant	Neither/ Nor	Quite important	Very important	
		[%]	[%]	[%]	[%]	[%]	N
Use by date	4.38	0.7	3.2	10.0	30.1	56.1	442
Animal husbandry	3.94	2.0	5.2	26.6	29.1	37.0	443
Region of origin	3.92	2.9	5.2	24.6	31.2	36.1	443
Fresh versus frozen	3.92	1.8	6.8	22.3	35.4	33.6	443
Environmental friendly	3.85	2.9	4.3	28.4	33.4	30.9	443
Price	3.82	3.2	5.4	27.8	33.6	30.0	443
Health related information	3.80	3.6	6.3	26.0	34.8	29.3	443
Retail store	3.76	2.7	6.1	32.1	31.2	28.0	443
Feeding	3.70	3.8	7.9	30.9	28.9	28.4	443
Slaughtering condition	3.67	2.9	9.0	32.5	29.1	26.4	443
Label	3.59	5.2	8.6	30.2	34.1	21.9	443
Packaging size	3.51	5.6	115	29.8	32.1	21.0	443
Transportation time	3.49	5.4	12.4	33.9	24.8	23.5	443
Special offer	3.23	10.2	14.2	33.2	27.5	14.9	443
Brand	3.02	12.2	18.5	36.8	20.5	12.0	443
Preparation instructions	2.78	19.2	24.8	28.2	14.4	13.3	443

Note: [1] Scale from 1 to 5.

Table 6: 1st to 11th click on 16 possible attributes - pork cutlet

Attribute \ Click	1	2	3	4	5	6	7	8	9	10	11	Total	Rank
Price	14.7	16.2	15.7	12.7	11.1	12.9	8.8	6.7	8.4	10.1	9.2	11.5	1
Use by date	9.7	7.9	9.4	12.9	8.3	9.4	10.9	10.8	14.0	9.5	9.2	10.2	2
Fresh versus frozen	9.7	9.4	8.8	8.2	6.3	7.6	8.8	9.0	9.8	9.1	6.8	8.5	3
Retail store	8.9	7.3	9.6	9.2	8.5	8.9	9.7	8.2	6.7	8.2	6.8	8.4	4
Region of origin	11.2	7.9	6.9	7.5	8.9	8.5	4.8	6.9	5.9	9.8	8.6	7.9	5
Animal husbandry	7.7	8.5	6.5	7.7	7.6	7.3	7.6	7.7	6.1	8.5	8.6	7.6	6
Packaging size	3.3	6.0	5.0	5.4	9.2	6.9	8.6	7.7	7.8	5.5	6.5	6.5	7
Special offer	5.2	5.2	5.0	5.2	5.4	5.6	5.2	5.6	5.9	5.2	6.2	5.4	8
Environmental aspects of production	5.4	4.6	4.8	4.5	6.5	4.9	5.2	6.2	4.5	5.2	6.2	5.3	9
Health related information	4.3	6.9	4.8	4.9	3.3	3.6	3.8	5.9	7.3	7.3	5.5	5.2	10
Feeding	4.1	3.3	3.8	4.1	4.8	4.0	5.7	5.4	6.4	7.0	6.5	5.0	11
Transportation time to slaughtering	3.3	2.9	4.2	5.8	7.0	6.2	5.9	4.6	3.1	3.7	6.2	4.8	12
Seal	3.9	5.0	6.7	4.7	4.6	4.9	5.2	4.1	4.2	4.3	3.4	4.6	13
Slaughtering	2.5	3.5	4.8	4.5	4.6	4.2	4.8	6.2	4.7	3.7	3.4	4.3	14
Brand	2.9	3.1	3.1	2.4	2.2	2.2	2.1	2.8	2.0	1.5	3.8	2.6	15
Preparation instructions	3.1	2.3	1.0	0.4	1.7	2.9	2.9	2.3	3.4	1.5	3.1	2.2	16
N	443	440	438	425	417	397	379	352	310	276	244		

Table 7: 1st to 11th click on 16 possible attributes - chicken cutlet

Click / Attribute	1	2	3	4	5	6	7	8	9	10	11	Total	Rank
Price	15.6	14.3	13.9	10.1	12.0	10.1	9.0	9.7	8.4	8.7	9.0	11.0	1
Use by date	11.1	12.7	11.0	8.5	10.1	10.1	9.5	10.5	8.7	10.9	11.9	10.4	2
Animal husbandry	12.0	8.9	8.4	6.1	7.4	8.6	11.9	8.8	10.6	6.2	6.6	8.7	3
Retail store	7.7	7.5	6.8	8.2	8.4	8.8	7.1	6.5	8.1	9.4	7.4	7.8	4
Fresh versus frozen	5.0	6.4	8.9	6.8	5.8	4.3	9.2	11.1	8.1	8.0	11.9	7.8	5
Regio of origin	9.7	9.5	6.6	6.6	7.0	9.1	8.2	7.1	7.7	4.3	6.6	7.5	6
Environmental aspects of production	5.9	5.9	5.5	6.6	7.4	5.8	5.0	4.5	7.1	8.0	6.6	6.2	7
Packaging size	3.8	3.9	4.1	8.9	7.0	6.8	7.9	7.1	7.7	3.6	6.1	6.1	8
Feeding	4.1	5.9	5.3	4.2	5.8	5.8	5.5	4.8	6.5	7.6	4.9	5.5	9
Health related information	4.7	2.7	4.8	4.5	5.0	4.0	4.5	6.0	4.5	6.2	9.0	5.1	10
Slaughtering conditions	4.1	3.6	4.3	6.8	7.4	5.3	4.7	4.8	3.2	4.7	4.9	4.9	11
Special offer	5.0	4.8	6.8	6.1	5.5	3.8	4.0	5.4	3.2	4.3	3.3	4.8	12
Seal	3.4	4.1	4.1	5.9	4.6	5.3	5.0	4.3	5.8	5.8	3.3	4.7	13
Transportation time to slaughtering	2.5	4.3	4.6	4.5	2.9	4.3	4.5	4.0	4.8	5.4	4.1	4.2	14
Brand	3.4	3.9	3.0	3.8	2.4	4.3	3.2	3.7	3.9	3.6	2.5	3.4	15
Preparation instructions	2.3	1.6	1.8	2.4	1.4	3.8	0.8	1.7	1.6	3.3	2.0	2.1	16
N	483	481	479	466	459	449	421	390	358	328	292		