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How Different Consumer Groups with Distinct Basic Human Values Gather, Seek and Process Information on Meat Topics: The Case of the German Animal Welfare Initiative

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ABSTRACT

In January 2015, German retail and industry jointly started a sector-wide initiative ("Initiative Tierwohl" - ITW) to improve animal welfare standards. The principle of the ITW is communicated mostly via the websites of ITW and its participating companies. However, uncertainty remained whether or not these websites provide the necessary information consumers need on the ITW products. Based on Schwartz's basic human values, different types of consumers were identified by a cluster analysis (ward-method, k-means). The results showed that depending on expressed meta-values (Self-Transcendence/Openness to Change Self-Enhancement or Conservation), respondents had different specific information sources and needs. Online sources were rarely mentioned, the majority of consumers referred to brochures, flyers and interpersonal contacts.

Keywords: Schwartz's portrait value questionnaire (PVQ); Values; Information needs; Factor and Cluster analyses; Consumer; Attitudes; Communication

1 Introduction

This study was motivated by the launch of a sector-wide initiative ("Initiative Tierwohl" - ITW) in January 2015, when German retail and industry sectors jointly started to improve basic animal welfare standards on pig and poultry farming with the purpose "to achieve a broad market penetration" (Heise et al. 2017, Heise and Theuvsen 2017). This initiative displays a comprehensive factual description on its website, but provides little information to aid consumers in their conscious decisions on the purchase of meat. These limitations in explanations and transparency have been reported in recent studies on ITW (Zühlsdorf et al. 2016): consumers hardly noticed the ITW, current designation of the ITW-meat (an ITW-slogan) is misleading. An ITW-slogan printed directly on the product raised expectations of the German consumers by 73.6% in the belief that exactly the purchased piece of meat came from animal husbandry with higher animal welfare standards (Zühlsdorf et al. 2016). Generally, the ongoing debate on animal welfare is difficult to understand, to define and to frame due to the large number of stakeholders involved in the discussions (Meyer et al. 2016). Since these debates can be followed on internet and social media platforms, the latter study suggests to introduce user generated content on the internet, such as users' online comments and their statements, for instance, to "better understand consumers attitudes concerning animal welfare initiatives, their thoughts, their problem definitions and their solutions" (Meyer et al. 2016). According to Olsen and Christensen (2016), social media has made "the voice of the consumer" stronger due to "facilitating consumer-to-consumer communication, by allowing customers to express their opinion and share their experience". Against this background, consumers have the possibility to learn about the ITW initiative either through the ITW website or through articles about ongoing processes on the ITW in (major) online news portals, published by journalists and commented by readers. The main question is, if social media and internet are the right information channels on ITW for every individual consumer. According to studies focusing on internet use and personal characteristics (personality and/or socio-demography) (Umbach 2004, Amichai-Hamburger and Vinitzky 2010), the answer seems to be negative. Umbach (2004) emphasised how little the internet is consulted by certain population segments; Amichai-Hamburger and Vinitzky (2010) pointed out that "personality is a leading factor in understanding why people behave the way they do on the Internet". However, independent of a consumer's internet behavior, Fall (2008) identified in her study on the relationship between individual's personal values and information sources five information sources factors: journalism, advertising, organizational, interpersonal and new media. Thus, for certain consumers types the internet might be one of the possible information sources; taking into consideration their personality, views or values might be an asset for targeted information provision. Against this background, the aim of this study is to connect personal values of consumers with their information gathering and processing on meat. Especial importance of the study is to review and to alter communication strategies of the ITW that will be understood by consumers. This is in line with the suggestions made by Heise and co-authors (2017) on intensifying communication in the society. In the remainder of the paper, we give an overview on literature, introduce the methods used, present the results and discuss the impact of human values on information acquisition and processing by consumers, and then highlight the major outcomes of the cluster analysis. Our conclusions provide a foundation for developing recommendations, to enable different consumers to make informed consumption decisions in the interest of both animal welfare and sustainability, using the fact that sustainable meat consumption is directly related to aspects of animal welfare and ethical issues.

2 Human values and their influence on consumer behavior

2.1 Human values

Personal human values as variables for consumer studies gain importance, since they allow determining differences and similarities of psychological nature between groups of people. The relations between values and consumer behavior were studied since 1971 (Caracciolo et al. 2016, Cembalo et al. 2016). Among different models on definitions and classifications of values, Schwartz suggests the most universally applicable approach in the 1990s (Schwartz 1992). Schwartz and Bilsky (1987) constructed a theory "of the universal types of values as criteria by viewing values as cognitive representations of three universal requirements: (a) biological needs, (b) interactional requirements for interpersonal coordination and (c) societal demands for group welfare and survival". The theory postulates the existence of motivationally different value types. Schwartz (1992) identified ten basic values, which guide human behavior: 1. Self-Direction; 2. Stimulation; 3. Hedonism; 4. Achievement; 5. Power; 6. Security; 7. Conformity; 8. Tradition; 9. Universalism; 10. Benevolence and four higher-order values (meta-values) such as Openness to Change, Self-Enhancement, Conservation and Self-Transcendence. The ten values are

organized in a circular structure to explain links between individual values (Figure 1). The closer two of the value types are located in the circle, the more similar are their underlying motivations. To measure the individual values and amongst others, Schwartz proposed the Portrait Value Questionnaire (PVQ), which consists of short verbal portraits of 40 different people. The PVQ has considerable advantages over other existing measurements, since this reduces the cognitive complexity of other Schwartz' approaches (such as Schwartz Value Survey (SVS) with its 56 items), consists of self-assessment of human needs' similarities (SVS measures guiding principles in my life) and is time-effective.

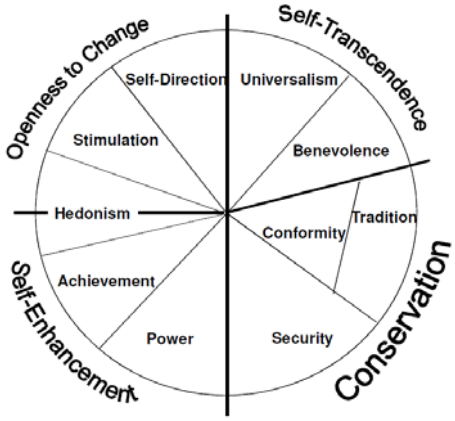

Figure 1. Theoretical model of relations between the ten motivational types of values (based on Schwartz 2012)

2.2 Influence of values on attitude to animal welfare

Recent studies (Cembalo et al. 2016, Herlin and Gunnarsson 2016, Autio et al. 2017) emphasized that different stakeholder's look at and understanding of animal welfare is strongly connected with their respective values. Cembalo with co-authors (2016) identified, which personal values determine different dimensions of animal welfare and came to the conclusion that human values related to self-transcendence – such as benevolence and universalism – are strongly associated with the overall animal welfare attitudes. Whereas, values related to the spheres of self-enhancement and conservation such as for instance power, achievement and tradition are significantly associated to less sensitive attitudes to animal welfare (Cembalo et al. 2016). These results are in line with earlier findings on linkages between self-transcendence values and pro-environmental behavior of consumers (Homer and Kahle 1988, Dreezens et al. 2005, Cembalo et al. 2015, Lombardi et al. 2015, Caracciolo et al. 2016).

2.3 Influence of values on purchase intentions and shopping behavior

Personal values influence consumer attitudes and behavior (Homer and Kahle, 1988; Shim and Eastlick, 1998). Most prominent scientific works on how personal values affect consumer behavior cover two models: the means-end chain model (Carman 1977) and the value-attitude- behavior hierarchy (Kahle 1988). In the means-end chain model, values provide the basis for a consumer behavior; with other words, people have preferences in their shopping behavior, which lead to the fulfillment of their personal values. In the value-attitude-behavior hierarchy, the values (measured by the List of Values (LOV) developed by Kahle et al. 1986) impact attitudes towards the product and influence consumer's behavior (Grunert et al. 1993). In terms of food, a number of studies are conducted on values and their influence on food shopping (Botonaki and Mattes 2010), cooking (Botonake and Mattes 2010) and dining (Nejati and Parnia Parakhodi 2013) behavior, food related perceptions (Osinga and Hofstede 2004), attitudes (Chryssohoidis and Krystallis 2005) and lifestyles (Brunsø et al. 2004). Self-transcendence values and openness to change were related to sustainable food purchases or sensitivity towards sustainability issues in different studies (Verain et al. 2012, Caracciolo et al. 2016, Aschemann-Witzel 2015).

2.4 Values influence information needs, seeking and processing

Verbeke (2005) supports the argument made by researchers from the non-food field, that "more information does not necessarily mean better informed consumers"; he emphasizes the consideration of specific information needs of targeted audience. Therefore, information needs, its search and processing

are depending on personality – individual's unique pattern of traits[1], which tied directly to personal human values. The model of information behavior, revised by Wilson in 1997, is person-centered and incorporates the concepts of information need, seeking, exchange and use.

According to Wilson (2000), human information behavior is ''the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use''. Wilson's model of information behavior is a nested model with three layers: inside the first layer is the information on searching behavior, in the middle is the layer on information seeking and the outside layer is the information behavior "that embraces all kinds of human interactions with information" (Greifeneder 2014). Furthermore, Wilson (1999) links information seeking with communication through information providers (communicators) and channels of communications, which means sources of information. Preferred information channels, for instance based on literature of consumer research (e.g. Berger and Raghuram 2013) or health communication (e.g. Dutta-Bergman 2004) studies, might be printed media, television, informal networks such as friends and doctors, radio and organizations. Furthermore, opinion leaders, peers and other socialization agents (Rogers 2003) as well as interpersonal information sources such as word of mouth can play an important role in the communication and diffusion of information (Solomon et al. 2010).

3 Research methodology

3.1 Study design

For this study, German citizens were questioned through a standardized quantitative online survey as well as face-to-face interviews using the same questionnaire in spring 2016. The quota for the online survey was set as follows: residents of the Federal Republic of Germany from the age of 18, 50% male / 50% female. 218 participants were recruited by the professional research agency Respondi through an online access panel, while 200 respondents were interviewed between May and July 2016 in two supermarkets (Rewe and Hit[2]) in Rheinbach, North-Rhine Westphalia, Germany.

The intention of the online questionnaire was to generate optimal sample due to consideration of online access panel of the research agency. To cover both internet savvy consumers, which were supposed to be reached via the online approach, and consumers outside of the internet, face-to-face interviews were carried out. This served as control interviews for the answers given in the online-questionnaire. Additionally, that data collection through face-to-face interviews enhanced a direct contact to the respondents and increased the validity of the questionnaire.

This study uses the theory on basic human values (Schwartz 2012) as the main reference frame as mentioned in the chapter 2.1. The central element of the survey was a questionnaire based on the Portrait Value Questionnaire (PVQ) described in the theoretical chapter of this paper. The questionnaire was divided into the following sections: (1) a shortened version of Schwartz's PVQ (21 items), (2) opinions on the ITW, (3) perceptions on meat purchase and consumption, (4) information acquisition with regard to meat before purchase as well as (5) online information acquisition and online comment behavior. Before the survey started, the questionnaire was pretested and adjusted according to feedbacks from respondents. Section 1 contains questions on personal human values on a 6-point scale (6 = "very much like me" while 1 = "not like me at all"). Section 2 consists of open questions and is structured in the shape of 6-point scale answer options as well (6 ="fully correct" up to 1 = "not correct at all"). Sections 3 to 5 were designed with checkboxes (respondents were asked to choose one of the answers by ticking the respective box) and multiple choice-answers. The questionnaire was developed and operationalized using reflections from existing studies on human values and how they influence attitudes to welfare, how they form consumers' behavior as well as consumers' information seeking and processing (see also Chapter 2). Since there are hardly any studies available on how German ITW recognized by by the consumers with different human values and especially over which channels, we build on work of Meyer et al. (2016), who carried out a web content analysis referring to German animal welfare initiatives based on readers' comments on discussions concerning animal welfare initiatives in online portals. Additionally, reflections from the studies on animal welfare in general context (Heise and Theuvsen 2017, Nocella et al. 2010, Vanhonacker and Verbeke 2014, Franz et al. 2010, Spiller and Schulze 2008, Schulze et al. 2008) were considered in the formulation of some questions for the survey.

[1] As cited in Bilsky and Schwartz (1994).

[2] Both supermarkets are members of the German "Initiative Animal Welfare".

3.2 Statistical analysis

The data were analyzed using IBM SPSS Statistics 23 (Backhaus et al., 2011). For a brief overview of the interviewed people on socio-demography and their meat eating behavior, frequency distributions were conducted. Since the main idea of this study was to determine consumers with differently pronounced values based on PVQ and their information acquisition and comment behavior on meat purchase and consumption, a Principal Component Analysis (PCA) was performed on the ten Schwartz values (see chapter 2.1.) to examine the so-called meta-values, obtained from the PVQ answers collected by section 1 of the questionnaire. Next, a number of components to retain was determined by eigenvalue > 1 criterion, scree test and proportion of variance for each component as well as the cumulative proportion of expected variance (Backhaus et al. 2011). The quality of the PCA was verified using the Kaiser-Meyer-Olkin criterion and the Bartlett test for sphericity with a subsequent reliability analysis (Bühl 2011). In the next step, these components – selected Schwartz's meta-values – were used as cluster-building variables for a hierarchical cluster analysis.

3.3 Sample description

The socio-demographic information is summarized in Table 1.

Table 1.
Sample of the socio-demographic information (N=418).

Socio-demographic variables	Sample size	Percentage	Composition of the basic population in Germany
Gender[3]			
Male	194	46.4	49.21
Female	224	53.6	50.79
Age, in years[4]			
18-29 years	96	23.0	46[5]
30-39 years	90	21.6	
40-49 years	87	20.9	
50-59 years	97	23.3	
60 years and older	47	11.3	
Net Household Income Level in %[6]			
not more than € 1000	39	9.3	14
€1000 – 1.999	93	22.2	25
€ 2000-2.999	94	22.5	23
€3000-3.999	66	15.8	17
more than € 4000	81	19.4	21
not specified	45	10.8	
Education[7]			
still at school	4	1.0	3.7
completed 8 years of education	18	4.3	31.4
completed 10 years of education	94	22.5	22.7
completed gymnasium	90	21.5	30.8
completed professional education	94	22.5	47.2
hold a university degree	114	27.3	16.5
others	4	1.0	

The share of respondents were 46% men and 54% women; the share of men was slightly below the average in the German population (49.21%), whereas women's share was slightly above (50.79 %) (DESTATIS 2016a). The average age in the sample was 42 ± 14 years, which is below the average age in

[3] Destatis, 2016a.
[4] BiB, 2016.
[5] Ø Age in years.
[6] Destatis, 2016b.
[7] Destatis, 2016c.

Germany (BIB 2016), but the group of respondents with age around 46 years is quite well represented. Nearly 10% of the respondents earn not more than €1000. Furthermore, about 22% have a net household income between €1,000 and €1,999, while almost 23% earn between €2,000 and €2,999. Nearly 16% earn between €3,000 and €3,999 and around 19% earn €4,000 or more. These numbers are consistent with data of the Federal Statistical Office for Germany (DESTATIS, 2016b). In terms of education, 4.3% of respondents had completed eight years of education, 22.5% had completed ten years of education, 21.5% of respondents had finished gymnasium (high school – 12-13 years), 22.5% had completed professional education and another 27.3% of respondents held a university degree. Therefore, the sample shows a slightly higher educational level than in the average German population (DESTATIS, 2016c).

4 Results

4.1 Principal Component Analysis

In order to identify types of participants and their preferences for various information sources about meat consumption, a Principal Component Analysis (PCA) was performed. The calculation of a PCA should clarify, whether it is appropriate to summarize ten values to less numbers of components. Component charges below 0.3 were suppressed. The quality of the data was tested by the Barlett test through Kaiser-Meyer-Olkin measure. The determined value of 0.529 proved the suitability of the dataset. The three components extracted explained 73.9 % of the total variance (Table 2, Fig. 2). The first component, characterized by *Achievement* and *Power* values, summarized the *Self-Enhancement* domain. The second component includes values in the domain of *Self-Transcendence/Openness to change* (*Self-Direction* and *Universalism*). The third component concerns the values of the *Conservation*-oriented interests such as *Security* and *Tradition*.

Table 2.
Schwartz values, Cronbach's alpha and principal component analysis.

Value Item	Self-Enhancement	Self-transcendence/ Openness to change	Conservation
Power	.886	-.065	.104
Achievement	.876	.136	.032
Cronbach's alpha = .736			
Self-Direction	.113	.842	.145
Universalism	-.072	.839	-.038
Cronbach's alpha = .602			
Security	-.034	.129	.828
Tradition	.168	-.027	.810
Cronbach's alpha = .535			

Variance explained 73.9%; Kaiser-Meyer-Olkin sampling adequacy 0.529; statistical significance following Barlett .000 (highly significant).

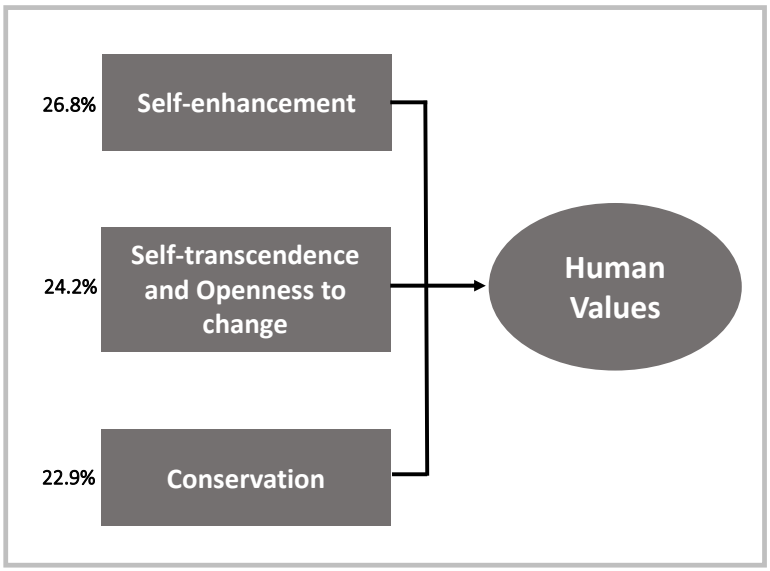

Figure 2. Explained variance (Author's calculation).

4.2 Cluster analysis

Based on the extracted components, a cluster analysis classifies consumers into groups according to their human values. A hierarchical clustering method was applied with the usage of the single-linkage method; outliers were detected (Bühl 2011). The optimal number of clusters was identified by the Ward-method, which aims to maximize differences between clusters relative to variations within clusters. Additionally, an optically reasonable clustering was detected both by creation of a dendrogram as well as by the examination of a classic elbow criterion (Bühl 2011). The ward-method determines initial partitions; the final partition was carried out by the k-means-approach (Bacher al. 2010, Janssen and Laats 2007), which checks whether the number of observations in each cluster satisfies the grouping objectives. The results of the cluster analysis were rounded up by a discriminant analysis (Table 3) (Backhaus et al. 2011).

To examine the extent to which the clusters differ from each other, a homogeneity of variances for each cluster-forming variables was asserted using Levene's test. Depending on results of the Levene's test, either a classic single-factor analysis of variance (ANOVA) or a Welch-ANOVA was carried out. In case of unequal variances (e.g. Self-Enhancement and Conservation), by a significant Welch-ANOVA, a Games-Howell post-hoc test was applied; by equal variances (Self-Transcendence/Openness to Change) a Gabriel post-hoc test was most appropriate (Field 2013, Moder 2010).

Table 3.
Results of the cluster analysis.

Cluster-forming variables[1;2]	**Cluster 1 n=112 (27%)**	**Cluster 2 n=94 (22.7%)**	**Cluster 3 n=114 (27.5%)**	**Cluster 4 n=95 (22.9%)**
Self-Enhancement ***[3] *Personal success through demonstrating competence according to social standards (**Achievement**) and social status and prestige, control or dominance over people and resources (**Power**)* ***"Isolationist"***	3.4[bc]	2.6[acd]	4.7[abd]	3.6[bc]
Self-Transcendence/Openness to Change***[4] *Independent thought and action – choosing, creating, exploring (Self-Direction) and understanding, appreciation, tolerance and protection for the welfare of all people and for nature (Universalism)* ***"Ready to change and concerned of the wellbeing of others"***	5.2[bd]	4.9[acd]	5.1[bd]	3.9[abc]
Conservation***[3] *Restraint of action, inclinations, and impulses likely to upset or harm others and violate expectations or norms (Conformity) and respect, commitment and acceptance of the customs and ideas that one's culture or religion provide (Tradition)* ***"Self-restriction, preservation of the past and resistance to change"***	3.56[bcd]	4.92[ad]	4.74[ad]	4.32[abc]

[1]Level of significance: n.s.=not significant; p≤0.05 significant*; p≤0.01 very significant**; p≤0.001 highly significant***; [2] Scale for underlying variables: 1 = not like me at all; 2 = not like me; 3 =somewhat like me; 4 = a little like me; 5 = like me and 6 = very much like me; [3] Post hoc test - Games-Howell; [4] Post hoc test- Gabriel; [abcd] Significant differences between the clusters on the level of significance 0.05.

Cluster 1 is characterized by the strongly over-represented meta-values of *Self-Transcendence/Openness to Change*; the *Conservation* meta-value is under-represented in this group. Due to the predominance of these values, this cluster was called *Caring Adventurous Consumers* (27%). Due to the strong over-representation in the *Conservation* meta-value, Cluster 2 can be described as *Sympathetic Conservative* (22.7%); the meta-value *Self-Enhancement* is strongly under-represented. Cluster 3 (*Status-Oriented Harmony Seekers* (27.5%)) is characterized by a strong over-representation of the value *Self-Enhancement*; the other two meta-values are also present: meta-values of *Self-Transcendence/Openness to Change* are pronounced to a lesser extent than by the Cluster 1 and the *Conservation* meta-value – lesser than in the Cluster 2. Cluster 4, the *Rigid Informed Conservative* (22.9%) group, has features with a very strongly under-represented *Self-Transcendence/Openness to Change*.

The socio-demographic characteristics of the identified clusters above are presented in Table 4. It shows that both Clusters *Caring Adventurous Consumers* and *Sympathetic Conservative* are characterized by rather higher female share with an age above 40 years. Especially, *Caring Adventurous Consumers* (Cluster 1) represent the highest share of vegetarians of the study.

Table 4.
Differences between clusters and socio-demographic characteristics.

	Cluster 1 n= 112 (27%)	**Cluster 2 n=94 (22.7%)**	**Cluster 3 n=114 (27.5%)**	**Cluster 4 n=95 (22.9%)**
Socio-demographic characteristics[1]				
Gender (female) in %*	31.3	26.8	22.8	19.2
Age (in years) **[2]	42.7	47.6[cd]	40[b]	39.2[b]
Vegetarian in %[n.s.]	37	25	25	12,5

[1]Level of significance: n.s. = not significant; p≤0.05 significant*; p≤0.01 very significant**; p≤0.001 highly significant***; [2]Post hoc test – Gabriel; [abcd] Significant differences between the clusters on the level of significance 0.05.

Rigid Informed Conservative consumers (Cluster 4) had heard least about the ITW as shown in Table 5. The highest appreciation towards the ITW as a good and credible approach was scored by *Sympathetic Conservative* consumers (Cluster 2), followed by *Status-Oriented Harmony Seekers* (Cluster 3), whereas ITW is most known by Cluster 3. *Sympathetic Conservative* consumers (Cluster 2) would find an ITW label a little bit more useful then representatives of other clusters.

Table 5.
Differences between clusters and ITW awareness.

	Cluster 1 n=112 (27%)	**Cluster 2 n=94 (22.7%)**	**Cluster 3 n=114 (27.5%)**	**Cluster 4 n=95 (22.9%)**
Awareness level of Initiative Animal Welfare (ITW)				
Have you already heard about the ITW? (yes in %)*	23.8	29.8	36.9	9.5
I think that the ITW is a good approach[23]*	4.71[d]	4.85[d]	4.65[d]	4.24[abc]
I think that the ITW is a trustful approach[4n.s.]	4.21	4.30[d]	4.27[d]	3.94[bc]
Would be buy products with ITW label (if it would be one) [5n.s]	4.91	5.03[d]	4.92[d]	4.47[bc]

[1]Level of significance: n.s. = not significant; p≤0.05 significant*; p≤0.01 very significant**; p≤0.001 highly significant***; [2] Scale for underlying variables: 1 = does not apply at all; 2 = does rather not apply; 3 = partially applies; 4 = rather applies; 5 = largely applies and 6 = fully applies;[3]Post hoc test - Gabriel; [4] Post hoc test-LSD, [5]- Post hoc test – Games-Howell; [abcd] Significant differences between the clusters on the level of significance 0.05.

As Table 6 illustrates*, Caring Adventurous Consumers* and *Status-Oriented Harmony Seekers* tend to gather information interpersonally (from friends and acquaintances) and on-site (asking staff/reading packages) prior to purchasing meat or meat products, but also read brochures and flyers. *Caring Adventurous Consumers* gave particular attention to reports of non-governmental organizations (NGOs) and consumer protection organizations, whereas *Status-Oriented Harmony Seekers* rely in printed media and use slightly more internet search engines (e.g. google) than representatives of Cluster 1. To the same extent, *Caring Adventurous Consumers* and *Status-Oriented Harmony Seekers* inform themselves prior purchase in online press. *Sympathetic Conservative* and *Rigid Informed Conservative* prefer social networks for information sources in pre-purchase search. A relatively large share of representatives from Cluster 2 (*Sympathetic Conservative* - 24.3%) and 4 (*Rigid Informed Conservative* - 34.3%) marked that they do not come into contact with such information.

The sources of general information on animal welfare, meat quality/consumption for *Caring Adventurous Consumers* and *Status-Oriented Harmony Seekers* are subject-specific blogs; beside this, the use of websites of companies and/or ministries is quite popular for both clusters. As source of information by topics, *Caring Adventurous Consumers* prefer websites on animal welfare and meat quality/consumption of associations (nature protection, animal protection). News portals, for instance bild.de, tagesschau.de, stern.de, received also a relative high preference by both clusters mentioned above. *Sympathetic*

Conservative consumers have similar preferences in the information gathering on meat topics like *Caring Adventurous Consumers*, except subject-specific blogs. *Rigid Informed Conservative* would rather not to inform themselves on the internet; when doing so, they would rather use news portals like bild.de, tagesschau.de, stern.de.

Table 6.
Information acquisition by different clusters.

	Cluster 1 n=112 (27%)	**Cluster 2 n=94 (22.7%)**	**Cluster 3 n=114 (27.5%)**	**Cluster 4 n=95 (22.9%)**
Where do you inform yourself before purchase of meat? (in %, quoted answers)[12]				
Printed press*	23.8	28.6	33.3	14.3
Online press [n.s.]	36	16	36	12
Conversation with friends and acquaintances [n.s.]	32.2	21.5	27.3	19
Social networks*	14.3	42.9	14.3	28.6
Brochures and flyers*	33.3	18.3	30	18.3
Shop's staff*	31.4	20	29.3	19.3
Packing of the product [n.s.]	29.2	21.6	28.7	20.5
Internet search using a search engine (e.g. google) [n.s.]	28.6	21.4	30.4	19.6
Reports of consumer protection organizations [n.s.]	33.3	23.8	28.6	14.3
Reports of non-governmental organizations (NGOs)*	55	20	15	10
Do not come into contact with such information [n.s.]	20	24.3	21.4	34.3
Where on the internet do you gather information on the topics: meat consumption, meat quality and animal welfare (meat topics)? (in %, quoted answers)				
News portals, e.g. bild.de, tagesschau.de, stern.de [n.s.]	29.3	20	29.3	21.3
Subject-specific blogs*	36.8	13.2	39.5	10.5
Subject-specific fora [n.a.]	31.4	25.7	28.6	14.3
Social media such as facebook and twitter [n.s.]	27.5	26.1	29	17.4
Websites of companies [n.s.]	28.2	23.1	35.9	12.8
Websites of ministries [n.s.]	27.3	27.3	30.3	15.2
Websites of associations (nature protection, animal protection)*	40	26.7	23.3	10
I do not inform myself on the internet [n.s.]	26.2	26.2	22.7	25

[1]Level of significance: n.s. = not significant; p≤0.05 significant*; p≤0.01 very significant**; p≤0.001 highly significant***; [2]- the results are based on the Chi-Square Test.

5 Discussion and conclusions

This study was set out to cluster groups of consumers regarding their basic human values in order to identify specific information needs and their potential consideration by the German Animal Welfare Initiative products. For this purpose, the results of the survey of 418 German citizens concerning their awareness level of ITW and their information acquisition and processing as well as consumption behavior

on meat and meat products was analyzed. The results showed that generally the respondents have a relatively low level of awareness of the ITW. Consumers with the strongly under-represented meta-values of *Self-Enhancement* and *Self-Transcendence/Openness to Change* (Cluster 4) have the lowest awareness about the ITW in comparison to other clusters. This is in line with the findings of former studies on the limitations and transparencies of the ITW, which is hardly noticed by consumers (Heise et al. 2017, Zühlsdorf et al. 2016). Partly, this is due to the actual promotion or communication of the ITW, which actually take place only via the websites of the ITW itself and participating retail companies and sporadically through posters or flyers[8] (Heise et al. 2017). This study enters the debate at this point and proves, which types of consumers – based on their human values – are using these information channels. The results reveal that the identified consumer groups generally use the internet for their information needs, in different intensity and different channels.

For instance, consumers, who expressed the meta-value of *Self-Transcendence/Openness-to-Change* (Cluster 1) or *Self-Enhancement* (Cluster 3), acquire their pre-purchase information on meat products on an interpersonal basis as well as pay attention on information provided on the packing of the product. *Caring Adventurous Consumers* (Cluster 1) with pronounced meta-value *Self-Transcendence-/Openness-to-Change,* who concerns for wellbeing and interest of others as described by Schwartz (1992) and supported by Cembalo with co-authors (2016), had the highest share in the sample on information sources from NGOs for their pre-purchase of meat. Cluster 3 (*Status-Oriented Harmony Seekers*), who supposed to be less sensitive on welfare issues (Cembalo 2016), inform themselves before purchase of meat by using print and online press more than other clusters. Overall, the study shows that the internet[9] is not often mentioned as a source of information for pre-purchase on meat products. Consumers, especially of Cluster 1 and 3, instead referred to brochures, leaflets and personal contact with salespersons or peer-groups. *Rigid Informed Conservatives* (Cluster 4) prefer social networks for information sources or do not come with such information in contact in pre-purchase search.

Speaking about general information gathering on meat related topics (animal welfare, meat consumption, meat quality), significant differences between clusters could be found in reading of subject-specific blogs and websites of associations (nature protection, animal protection) only. The first source is especially preferred by *Caring Adventurous Consumers* (Cluster 1) and *Status-Oriented Harmony Seekers* (Cluster 3); the second by *Caring Adventurous Consumers* (Cluster 1) and *Sympathetic Conservative* consumers (Cluster 2).

From the results obtained, it can be concluded that for meat products and especially for products of the ITW the consideration of specific information needs of targeted audience is essential. This is in line with the findings of Verbeke (2005), who emphasized the importance of identification and accurate understanding of the needs of the target audience as well as appropriate information provision management, which optimally addresses particular needs.

Therefore, this study found out that *Caring Adventurous Consumers* (Cluster 1) and *Status-Oriented Harmony Seekers* (Cluster 3) use information sources for their pre-purchase brochures and flyers as well as consultations by the shop's staff at the appropriate points of sales, whereas *Sympathetic Conservatives* (Cluster 2) and *Rigid Informed Conservatives* (Cluster 4) rely more on social networks. The *Caring Adventurous Consumers* (Cluster 1), who named reports of NGOs most often, seem to have these specific information needs.

As Zühlsdorf and co-authors (2016) already pointed out, the ITW is hardly communicated by means of such as brochures and flyers, which will be required by the identified clusters. The main promotion and advertising of the ITW takes place on the internet over the websites of the participating retail companies, but not through websites of other organizations, for instance NGOs. The current communication for the German "Initiative Animal Welfare" leaves room for improvement as far as countering the criticism of the initiative from (online) mass media (e.g. online news portal of major German news sites (Spiegel online, Welt online, Focus online)) goes.

Due to the rather small sample size and the limited diversity of socio-demographic data, we acknowledge that the picture presented above is not complete. Therefore, further research is required regarding the satisfaction of information needs of the targeted audience on the ITW products based on their basic human needs and personal traits. Additionally, complementation of this quantitative survey with qualitative tools such as Focus Group interviews with consumers would be an asset.

[8] Rather cashier bills (addition of the authors to the current study).

[9] We emphasize the internet as a source for pre-purchase, since the ITW is communicated mostly over websites of participating organizations.

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