

Consumer requirements for food product transparency

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Abstract

In view of the increasing significance of transparency in the farming and food industries, an online questionnaire was used to record the food product transparency requirements of consumers (n = 1,009) in an open query. The results showed a broad spectrum of transparency requirements among consumers. Information on the origin and composition of food products were most important, followed by details on production and processing methods and sustainability aspects. The results give insights for creating a level of food transparency which is acceptable to consumers.

Keywords: Transparency, consumers, food products

Introduction

The concept of transparency is used in a range of academic disciplines and it has also gained importance in various aspects of social life [1]. Depending on the academic field, the definition of the term takes on different nuances [2]. In general terms, transparency stands for clarity and plausibility [3]. Transparency includes communicative aspects [2] and according to Mol [4] (p. 51), is to be understood as the “disclosure of information”. In general, transparency is associated with the acquisition and processing of information, which is linked to a change in the state of knowledge of a recipient [5].

In the agriculture and food industries too, transparency is becoming increasingly important. Systematizations of transparency in the field of (agricultural) economics involve the whole value chain. Mol [4] who, as stated above, defines transparency as the “disclosure of information” (p. 51), distinguishes various model forms of transparency in value chains. This paper focuses on consumer transparency, i. e. the disclosure of information by economic players in the value chain, regulatory authorities and certification offices for consumers. Other postulated forms of transparency are management transparency (= disclosure of information by players at the beginning of the value chain for the levels further on), regulatory transparency (= disclosure of information by economic players in the value chain for regulatory authorities and inspection authorities) and public transparency (= disclosure of information by economic players in the value chain, regulatory authorities and certification bodies for the public and media) [4].

The increasing relevance of transparency in the agriculture and food industries in general and for consumers in particular is understandable in view of various development trends. Food crises and media reports about them have contributed to a reduction of con-

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sumer trust in food products and manufacturers [2], resulting in the need for transparency. Furthermore, the production, processing and consumption of food products are often separated spatially and in terms of personnel. Global commercial and market networks characterized by anonymity predominate [2]. And added to this is the advancing urbanization. This means that the distance between consumers and food production or processing is increasing, which leads to decreasing knowledge about food production and a loss of trust [6] and a desire or need for transparency. Other aspects are advances in food technology enabling the creation of more complex products. For consumers it is becoming more difficult to evaluate the quality of food products [7]. In addition, in the case of food properties there are varying levels of information asymmetry, so that certain characteristics cannot be checked when making a purchase [8].

An examination of the studies carried out up to now on food product information needs from a consumer viewpoint reveals various areas of focus. On the one hand, studies examine what information on food products is important to consumers in general. Thus, for instance, it was possible to show the relevance of information on health risks [9]. Furthermore, a relatively large number of studies deal specifically with the importance of traceability or information relating to this aspect [10]. Another focus is on studies investigating the relevance of predefined characteristics regarding specific products. For instance, it was shown that for pork environmental standards and food safety are relevant [5].

It is clear that the focus of studies up to now has been on individual transparency-related or product-related aspects. Most studies use closed questions, the transparency-relevant aspects are established in advance and the term transparency is not explicitly mentioned in the instructions.

The significance of many transparency requirements has been shown in a wide variety of areas, although comparability of the results is difficult. The intention of this study is to establish consumer requirements with regard to transparency using an open question. This method is intended to activate all memory content and associations linked to the term food product transparency [11].

A comprehensive analysis of transparency requirements is important because increased transparency can only be useful and effective if there is also knowledge available on what transparency means to consumers when they are making food product purchases [12]. Although it has been shown that the absence of information on food products is generally judged negatively by consumers and its availability is seen as useful [5], the provision of additional and more detailed information does not necessarily mean that consumers will be better informed [13]. In the case of too much and too complex information, the limited capacity for cognitive processing creates a risk of information overload which can result in disinterest and confusion [14].

Methods

Sample description and data collection

In August/September 2014, 1,009 German consumers were surveyed using an online questionnaire. The establishment of quotas enabled recruitment from an online access panel of a random sample almost representative of the German population in terms of age, gender, federal state, education status and net monthly household income.

48.5% were male and 51.5% female, 36.5% of the participants were between 18 and 39 years old, 46.9% between 40 and 59 years and 16.7% between 60 and 69 years. The reported frequencies differ by a maximum of 1.7% from the representative frequencies in the overall population (corresponding to information from the Federal Statistical Office [*Statistisches Bundesamt*]).

Measuring instrument

To ascertain transparency requirements in the online survey an open question was put: *"In public debates there is much discussion about greater transparency on the food market. What exactly does "transparency" mean to you in this context? What are your transparency requirements on food product companies when you are making your purchase decision? If possible, please give three requirements for food product transparency."*

The open question enables respondents to freely express their associations and memories relative to the term food product transparency [11]. Answers are not influenced or restricted by predefined categories.

Analysis

The qualitative data was evaluated by performing a content-structured content analysis [15]. The statistical program SPSS was used to ascertain the frequencies with which each of the established answer categories was mentioned.

Results

62.1% of participants gave at least one answer, overall 1,572 references were included in the analysis. Besides the answer category "other transparency requirements" (includes all references with a frequency of less than 1%), 21 categories were established (♦ Table 1).

Transparency requirements (categories)	Percentage
origin	23.5%
details of ingredients, composition	18.9%
processing and production methods	6.3%
sustainability aspects	4.6%
consumer-friendly declaration of ingredients	4.1%
declaration of additives	4.0%
transparency-related associations or synonyms (e. g. openness, clarity)	3.4%
nutritional values (i. e. fats, proteins, carbohydrates), energy content	3.3%
details on animal-based products	2.9%
pricing aspects	2.7%
genetic modification/GM free	2.7%
details of manufacturers	2.3%
chemical treatment and residues	1.7%
food quality	1.7%
shelf life	1.5%
naturalness of the ingredients, clean labeling	1.5%
clear descriptions of food products	1.5%
health-related information	1.3%
details on plant-based food products	1.2%
food safety	1.2%
transport	1.1%
other transparency requirements	8.7%

Tab. 1: Consumers' food-related transparency requirements

The analysis shows that information on origin is the most important, followed by details on food composition and information on processing/production methods. Between 4.0% and 4.6% of references related to sustainability aspects, a consumer-friendly declaration of ingredients and particularly declaration of additives. Transparency-related associations or synonyms (e. g. honesty, openness, clarity, trustfulness, clearness), nutritional values or energy content, details on animal-based products, price and genetic modification aspects and details on manufacturers were the subjects covered by between 2.3% and 3.4% of the references. Between 1.1% and 1.7% related to the other nine answer categories which included among others food quality, food safety and health-related information.

Discussion

The aim of this paper was to establish via an open question which aspects consumers associate with food product transparency and what transparency requirements exist.

The analysis shows that information on origin is most important. Its relevance is understandable in view of conditions in the agricultural and food industries. Production chains are characterized

by anonymity and complexity. In addition, production, trade and consumption are separated by a considerable distance. Consumers can often feel overwhelmed and uncertain, which creates a need for transparency [16]. Information on origin enables consumers to select products from specific countries or regions [17].

Information on the composition of food products represents the second most important aspect. Constant new developments in food technology enable the creation of more complex products. In the course of this, consumer knowledge of food production reduces so that evaluation of the products becomes more difficult [7]. In the case of highly processed products it is hardly possible for consumers to understand the ingredients at all anymore. In addition, incorrect declarations on food products (e. g. horsemeat declared as beef) have contributed to mistrust in food product ingredients and calls for transparency [18].

The third most frequently mentioned requirement for clarity on production and processing

methods was mentioned considerably less frequently than origin and composition in 6.3% of the answers. Only a small proportion of food products go straight from production to the consumers. The value chain is getting longer, an increasing number of processing steps are transitioning from the household to the industry [19]. Production and processing methods as Potemkin characteristics are hardly discernible for the consumer in the final product [8].

Various attributes relevant to sustainability are also Potemkin or credence characteristics. Certification could enable these to be converted into search attributes which would contribute to increased transparency. The interest in transparency with regard to sustainability aspects can be explained on the one hand by an increased focus on sustainability on the part of consumers [20]. The increasing demand for sustainable products on the other hand, is linked to rising import rates. As the size of the market increases, so too does the vulnerability to crises, which goes hand in hand with uncertainty and the need for transparency [21].

Another expectation relates to the consumer-friendly declaration of ingredients. Despite consumer interest in food product information there is often a lack of consumer proximity in the labelling which makes evaluation and comprehension more difficult [18]. In addition, the declaration of additives is important. Although only approved additives may be used, which have no detrimental health effects [22], consumers still have concerns about health damaging effects [23]. The vague uncertainty is caused among other things by comprehension issues and misinformation [24].

3.4% of the references relate to transparency-related associations or synonyms. No specific transparency requirements were mentioned, instead there were general requirements towards the food industry. As stated above, the demand for more openness and information results from consumers' uncertainty [25]. Transparency goes hand in hand with a reduction of the risk of making incorrect purchase decisions [26].

The desire for information on nutritional values or energy content is connected to greater health awareness and the increasing frequency of nutrition-related diseases [27]. In line with Regulation (EU) No. 1169/2011, packaged food products must state seven nutritional values. In general, nutritional value information serves to reduce information asymmetries [14]. If there are no details on nutritional values, consumers, but also nutritional experts, consistently underestimate the energy content of food products [28, 29].

The need for details on animal-based food products results on the one hand from the uncertainty caused by negative media reports on agricultural issues or food crises [18]. In addition, health-related concerns are an issue, particularly with regard to drug residues [30]. Animal ethics aspects are also gaining importance [31] and there is much discussion on the recognition of farm animals' rights [32].

Price-related transparency needs relate to the price in general, which is linked to quality-based associations [33]. Other relevant aspects are price details per item, information on pricing and the proportions received by players in the value chain. From a consumer viewpoint, the farming industry should receive a larger proportion and food retailers a smaller proportion of the profits [34].

2.7% of the references relate to genetic modification or GM free status of food products for human and animal consumption. Consumers have concerns with regard to genetic modification [35]. Whilst food products have to be labelled if they contain genetically modified components, there is no labelling duty with regard to genetic modification for animal feed [36]. Even though genetically modified food-stuffs do not affect meat, eggs or milk [37], consumers want products of animals that were fed GM free [38].

Information on the manufacturer of a food product concerns traceability and contributes to increasing consumer trust [10]. Up to now there has been no requirement to state the manufacturer on packaged food products (Regulation [EU] 1169/2011). For some selected products more detailed information is mandatory.

The need for information on chemical treatment/residues is a result of health concerns. One reason for the fact that, despite its relevance, only 1.7% of references related to this category could be that chemical risks are not directly perceptible up to the point at which damages occur. In phases without acute crises, food safety considerations play a subordinate role since the value chain overall is seen as relatively safe. In crisis situations, the evaluation of food safety and its influence on purchase decisions changes [39]. The results for food quality and safety should also be interpreted against this background. Although both aspects are central to consumers [40], of the references only 1.7% (food quality) and 1.2% (food safety) related to these issues.

The need to avoid eating inedible food products leads to the requirement for information on shelf life. The comparatively low percentage of references (1.5%) could be due to the fact that use-by dates are viewed critically in connection with food waste [41]. Moreover, it is a mandatory detail on packaged food products and available as standard. The labelling duty could also explain the low number of statements (1.5%) in the category "clear descriptions of food products". The name of a food product (previously "trade description") is an important piece of information [42]. As a mandatory detail this may perhaps be seen as a given as regards transparency.

The need for healthy eating drives the desire for natural ingredients /clean labelling [43]. This requirement is closely related to already

discussed answer categories (e.g. declaration of additives), the requirement for naturalness is perhaps implicit here which could explain the low proportion of references (1.5%) in this category. The same can be assumed for the category “health-related information” which had only 1.3% of the references although health awareness is increasing. Besides the general statements on health in this category, more specific health-associated aspects were stated (e. g. nutritional values), which were allocated to other categories.

Only 1.2% of references relate to details on the agricultural production of plant-based food products. Processed (plant-based) products are becoming more important. With increasing levels of processing, the information needs of consumers are changing in that the last value-adding step before purchase is of particular relevance [44]. Perhaps transparency requirements on plant-based products related more to processed products and were allocated to other categories.

The low importance of details on transport was also shown by Rudolph and Meise [6]. Although transport details yield information on environmental impact, this has up to now been considered very little in the evaluation of a product’s environmental friendliness [45].

Conclusion

Overall, the analysis shows a broad spectrum of food product transparency requirements among consumers. The 1,572 references were able to be aggregated into 21 main categories. As regards the proportions of references related to the individual answer categories, there were significant variations. Information on origin and the constituents of food products are the most important, followed by details on the processing/production methods and sustainability aspects. The results yield implications for the establishment of a consumer-friendly level of transparency. Further studies could be done to analyze transparency requirements in various target groups.

Conflict of Interest

The author declares no conflict of interest.

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