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Quality Seals in the Food Sector: Consumers Information Needs and Sources

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ABSTRACT

This study analyzes consumers' information needs concerning quality seals in the food sector. A survey was conducted taking one of the most well-known quality labels for food products in Austria (the AMA Quality Seal). Apparently, there is a lack of consumer-oriented information. Up to now, the type of information consumers of AMA sealed products demand is more or less unknown. Therefore, the objectives of this study were (1) to identify consumers *actual use of information* and (2) their *information needs* about the AMA Quality Seal in order to provide needs-based consumer information.

***Keywords**: quality seal, information needs, consumer survey, cluster analysis*

1 Introduction

Consumer-oriented information should meet the requirements of potential information seekers. Within this study, the actual use of information with regard to one specific quality label (the quality seal of the Austrian federal marketing organization "Agrarmarkt Austria Marketing" [AMA]) was analyzed as well as the need for user-oriented information. Data was collected through an Austrian consumer tracking household panel. In total, a sample size of N = 1718 was achieved. The data are representative for the Austrian population and brought important insights into the information behavior and needs of Austrian consumers with reference to quality seals in the food sector.

2 Quality Management and the AMA Quality Seal

2.1 Quality Management in Austria

Food quality has several dimensions: sensory quality (hedonistic quality), health, technical processes, intangible quality aspects (e.g. ecologically sustainable processing), psychological and economic aspects. "In addition to sensory quality, there are factors such as nutritional content, safety, shelf-life and reliability, that contribute to the consumer's overall opinion of a food product" (Lawless, 1995). Consequently, a food product can be considered to be of high quality with respect to e.g. health but not to ecology. Whenever we discuss quality management in the food system, we have to take that into account; therefore, the quality management system in the food sector is multi-dimensional.
In order to classify food products in respect to their quality attributes, several regulations within the framework of the European Community have to be applied. As community law impinges on national law, the Austrian government is forced to include the relevant EU legislation, where food quality related aspects are based on REGULATION (EC) No 178/2002, the central food quality related EU regulation „general principles and require-

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ments of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety ".

The EU quality system is a comprehensive, integrative approach („from farm to fork"), where the agriculture and food and feed processing companies are primarily responsible; where food and the components of food are traceable; and where a uniform, comprehensive risk analysis and risk assessment system guarantees the highest food quality within all stages of the supply chain. The basic EU risk alert system "RASFF" (Rapid Alert System for Food and Feed) was introduced more than 35 years ago. Due to this comprehensive quality scheme, the EU has now one of the highest food safety standards worldwide. A solid set of EU legislation ensures that food is safe for consumers and that they can trust in the food and feed sold within the EU market. Adequate national regulations based on the fundamental principles of RASFF were developed after Austria joined the EU in 1995. The governmental organization "Agrarmarkt Austria" (AMA) coordinates all relevant information flows and implement an adequate quality control system.

2.2 EU and National Quality Labels

Consumers usually are unable to evaluate the quality of food products before purchase, they use quality cues like brands, prices or labels (Steenkamp, 1990; Grunert and Aachmann, 2016). For the purpose of helping consumers within their evaluation of quality, the EU introduced important quality labels, namely PDO (Protected Designation of Origin) or PGI (Protected Geographical Identification) and TSG (Traditional Specialty Guaranteed). However, "the role of the EU quality labels in consumer decision-making seems to be relatively small" (Grunert and Aachmann, 2016). In contrast to these internationally recognized quality schemes, the most important national quality label in Austria (the AMA quality seal) is one of the most well known labels in Austria. It is usually applied by Austrian consumers to assess quality of food. Meanwhile, the AMA Quality Seal is one of the most well known quality seals in Austria. Asked for their knowledge of quality seals, and even if the graphic sign is not presented to consumers, 56% of them immediately named the AMA Quality Seal in surveys (n=1006; representative for the Austrian population). Overall, if quality seals are presented to interviewees, about 98% identified the AMA Quality Seal (AMA-Marketing, 2014).

2.3 The Austrian AMA quality seal for food products

The AMA Quality Seal is established and controlled to guarantee the high quality of Austrian food and to make sure that the trust of consumers can be maintained (within the domestic market but also on an international level). Without this activity, promotion campaigns are not useful, because there is no possibility to guarantee safe food. "Quality control is essential in the food industry, and efficient quality assurance has become increasingly important" (Wilcock et al., 2004).

Figure 1: AMA Quality Seal for Austrian products

The AMA Quality Seal is a registered trademark. The main tasks and obligations of the AMA Marketing are defined by law: The organization has to market Austrian food products within the domestic and foreign markets. It has to maintain and promote high quality standards for Austrian food production. If producers outperform national and international (EU) food production quality standards and meet the standards of the AMA, they may use the AMA Quality Seal for their products as licensees. If the producers deliver organic food, they also may use the AMA organic seal.

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All quality seal regulations are developed by a sub-company of the AMA (AMA Marketing GesmbH) in co-operation with experts from the relevant food sectors. They are only published if the Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW) agrees the these regulations (the regulations can be found under www.ama-marketing.at). The AMA Quality Seal regulations contain essential processing, labeling, and documentation requirements in connection with all measures guaranteeing high hygienic standards. Many of them are far beyond legal requirements.
The AMA Quality Seal is an officially recognized and approved quality seal to brand food products designated for human nutrition. This is an important difference to the huge number of private based quality seals, which have no such governmental and official legitimation comparable to the AMA Quality Seal (the latter are based on civil rights' contracts).

Quality requirements: Food producers use the quality seal voluntarily, but if they do so, they have to fulfill all relevant guidelines of the quality program. Only if they do so, can they get the licensee of the AMA Quality Seal status, thus proving that the high quality of the food confirming the mentioned quality seal guidelines is at least graded with quality A or 1. By introducing the AMA Quality Seal, the quality of Austrian food products should be continuously improved.

Origin: The origin of the food has to be traceable. The value giving raw material must be of Austrian origin, and processing has to be done in Austria – unless selected ingredients are not available in Austria, up to 1/3 of the total food may come from outside Austria. And, finally, AMA Marketing is allowed to control all steps of the food processing (cross-sectorial, from field to shelve).

Finances: Food producers have to pay license fees to finance the whole quality system necessary to guarantee the high standards of the AMA Quality Seal and to maintain the trust of consumers. Food producers can license single products or whole product lines if they fulfill the requirements of the AMA. Usually, fresh products like milk and milk products, meat and meat products, fruits and vegetables, and eggs carry the AMA Quality Seal. Some processed food products like cooking oil, deep frozen vegetables, bread and pastries, fruit juice, and beer also carry the AMA Quality Seal. According to AMA Marketing, about 43 000 Austrian producers are meanwhile using the AMA Quality Seal (33 000 milk producers, 5 500 cattle farmers, 1 900 pork farmers, 400 poultry producers, 1 900 from the fruit, vegetable, and potato sector, and about 700 food processors) (AMA, s.a.).
Control mechanisms: "… quality control is essential in the food industry, and efficient quality assurance has become increasingly important" (Wilcock et al., 2004). By introducing comprehensive guidelines for the AMA Quality Seal, the provenance and quality is made easy to evaluate by consumers. Consumer trust is an integrative part of the communication goals of the AMA Marketing, by guaranteeing independent and comprehensive control mechanisms (based on a 3 step control process): (1) Each licensee has to provide an adequate corporate control system, where all results of the internal control system are documented; (2) Besides internal control mechanisms, accredited agencies are effectively controlling on-site all relevant quality aspects by using pre-defined check lists; (3) in order to steadily improve the AMA Quality Seal guidelines, the AMA Marketing itself provides controls by their own employees or external experts. Confirming D'Souza et al. (2007) this is a very important point: Quality Seals have to be provided and controlled by external organizations with respect to pre-defined criteria.

2.4 Consumer Information Needs with Respect to Food Safety

It is well documented that if consumers are not able to assess superior quality, they will not be willing to pay more (Akerlof, 1970). Furthermore, there is a rising demand for safe and high quality food, a trend which has already lasted for decades (Mascarello et al., 2015). Therefore, producers are usually eager to use quality cues to signal the high quality of their products to consumers. In the food sector, quality labels (governmental and non-governmental) are usually applied for this purpose.
If consumers already know something about a product they are interested in, their information search is affected (Alba and Hutchinson, 1987). Therefore, if they know at least a little bit about specific quality labels, they will probably trust food products carrying these labels. In our case, we wanted to know more about consumers interested in this kind of information.
Information should be comprehensive and detailed to help consumers in their purchase decisions (Moussa and Touzahni, 2008). If trustworthy information is available, effectiveness of quality label related expenses can be increased significantly. Trustworthiness is especially important in the case of attributes that cannot easily be

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assessed like, method of production or ingredients. This is considered to be the core function of quality labels: communicating quality related information that cannot immediately be evaluated by consumers (Grunert et al., 2001). Of course, this does not imply that all consumers will actively search for quality related information. Therefore, it is especially interesting to learn more about the type of consumers who are interested in label related information and where they are usually looking for this information.

3 Methods and Survey

To get more insights into information behavior and needs of consumers in view of the AMA Quality Seal covering the Austrian population we decided to conduct an Austria wide survey by use of a consumer tracking panel. By doing so we can guarantee that the results are transferable to the Austrian population. In total, the consumer tracking panel of the AMA consists of 2 800 households representing the food markets' consumer side. All of them were contacted by means of a questionnaire. The bases of this questionnaire were a comprehensive literature review and a qualitative focus group. The questionnaire contained questions referring to:

- Importance of attributes when buying food (price, method of production, Austrian provenance, social and ecological parameters, genetically modified organism, etc.)
- Information sources consumers generally use when searching information about food (Internet, social media, peer groups, etc.) and how often they use these sources
- Trust in quality labels in general
- Knowledge about the AMA Quality Seal (in general) and attitudes towards the label
- Information sources consumers use when searching information about AMA Quality Seal, inclusive of evaluation of these sources
- Frequency of use of these information sources
- Reasons for not using information sources (not interested, already informed, not trustworthy, etc.)
- Information sources consumers would like to use
- Kind of information consumers would prefer (animal husbandry, feeding, traceability of products with AMA Quality Seal, quality controls, etc.)

Out of the qualitative results of the focus group and the comprehensive literature review, we assumed that there is a group of consumers that are interested to learn more about food in general and, more specifically, about the AMA Quality Seal. Furthermore, we assumed that this group is already actively searching out food related information using different information sources. Depending on their degree of involvement, they will expect (more general or even detailed) information about the quality label and they will prefer certain communication channels. If we succeed in identifying this group of consumers, user based information can be generated and will help to provide information that meets the information needs of consumers. This implies that there is a section of consumers, that are not and were not interested in quality label related information. As we have no knowledge about these consumers, the main goal of the study was to identify clusters of consumers with homogeneous information needs.

4 Results

The total size of the sample was 2 800 (all of them were contacted within the consumer tracking panel). Altogether, the return rate amounted to about 60% with N = 1718. This is an excellent result which is due to the fact that these households are used to returning their purchase data regularly. The general socio-demographics of the sample are closely comparable to the overall Austrian population. Therefore, the results are considered to be representative for the Austrian food market.

4.1 Knowledge and Information Usage and Needs

About 99% knew the AMA Quality Seal, which is comparable with the 98% of other studies (see above). Most consumers already looked for general food related information (only about 14% are not looking at all for food related information). However, almost 2/3 of the respondents had never actively searched out any information about quality labels before. Most of them are simply not interested in doing so, or they suppose subjectively, that they already know at least something about the AMA Quality Seal (76% agree at least partially to the relevant statement). The overall knowledge about quality labels in general is considered to be even lower (56% agree). The interesting relationship here is that there is a positive correlation between (subjective) knowledge

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and trust in the Seal (r = 0.514). So the following hypothesis seems to be true: if consumers know more about a quality label, trust in these labels will increase.

Confirming the non-information seeking respondents, acquiring information about quality labels is too time-consuming, respondents already feel sufficiently informed or they did simply not know that there are any information sources available, or where to look for info. Actually, the main sources of information concerning food are leaflets (e.g. distributed by AMA), peer groups (family and friends), newspapers, TV, and publications of consumer protection organizations (Figure 2).

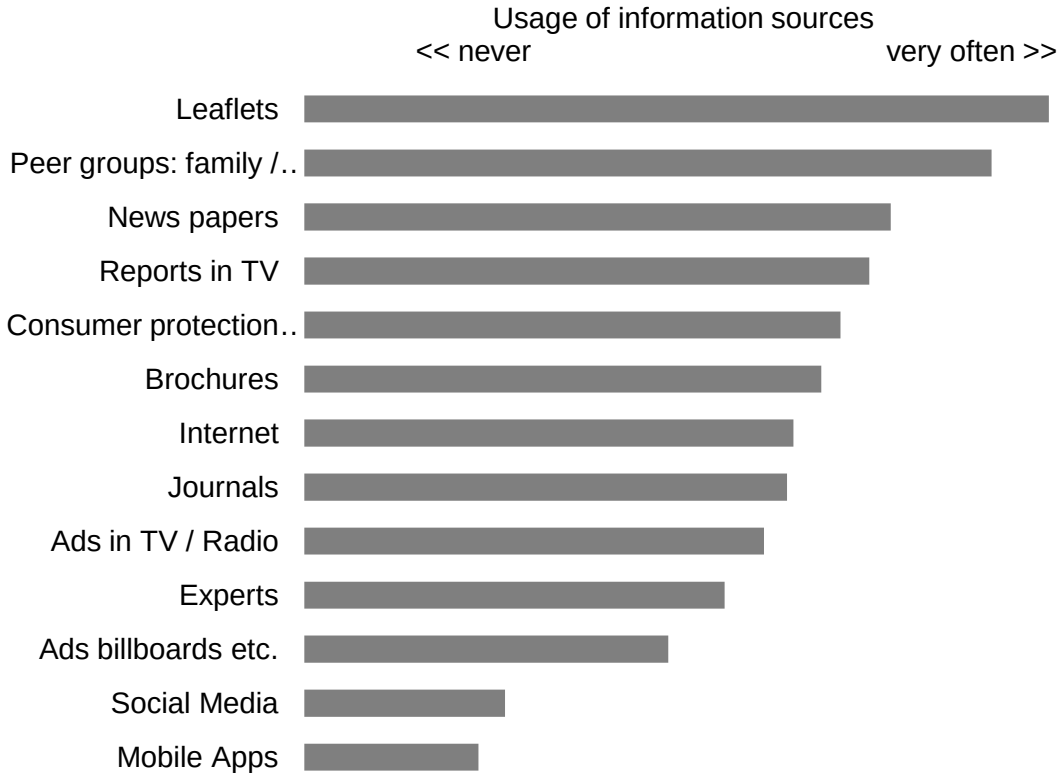

Figure 2: Importance of information sources (food in general) – frequency of usage

If we refer to the AMA Quality Seal, the usage of parts of the information sources are changing significantly (see Figure 3): Internet, consumer protection organizations, peer groups, and publication in journals are the most important sources for this purpose. For both purposes, social media and mobile apps (the latest technologies) are usually not used to acquire information about these topics which definitely does not imply that no information about e.g. food is spread. This sharing of information is not for the purpose to get better informed about food. “Entertaining” food information – like pictures of the last meal – are spread on a regular basis by users.

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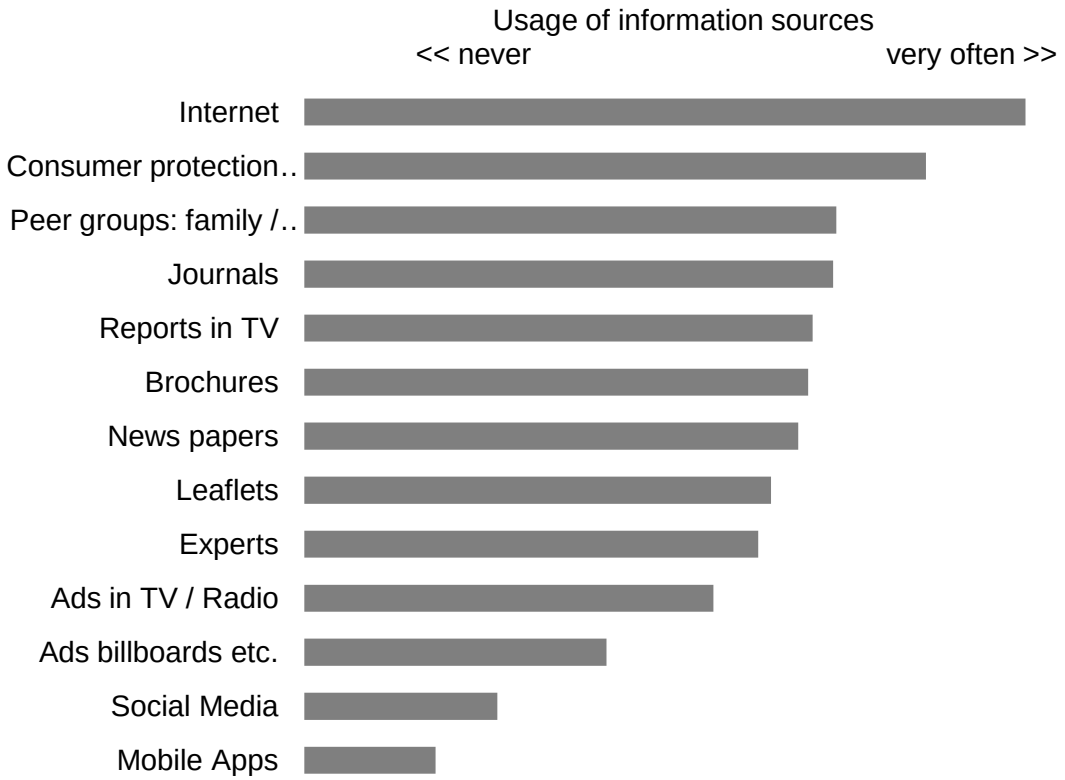

Figure 3: Importance of information sources (AMA Quality Seal) – frequency of usage

This was the most important information tip for the organization: You must focus on the Internet if quality label related information should be transferred to users (which is definitely a goal of AMA Marketing).

4.2 Cluster Analysis

As mentioned above, a large part of the sample never looked for information about quality labels. Therefore, the sample was separated into two sub-samples by means of a filter question: those who never looked for quality label related information (C0; n = 1103) and those who already did (n = 599; missing = 16). Information seekers were further classified by means of a hierarchical cluster analysis (in view of their information acquisition behavior referring to the AMA Quality Seal). Two groups or segments of consumers were identified. Considering their use of information sources, we named these clusters: “Low information demand” (C1; n = 350) and “Heavy information demand” (C2; n = 249).

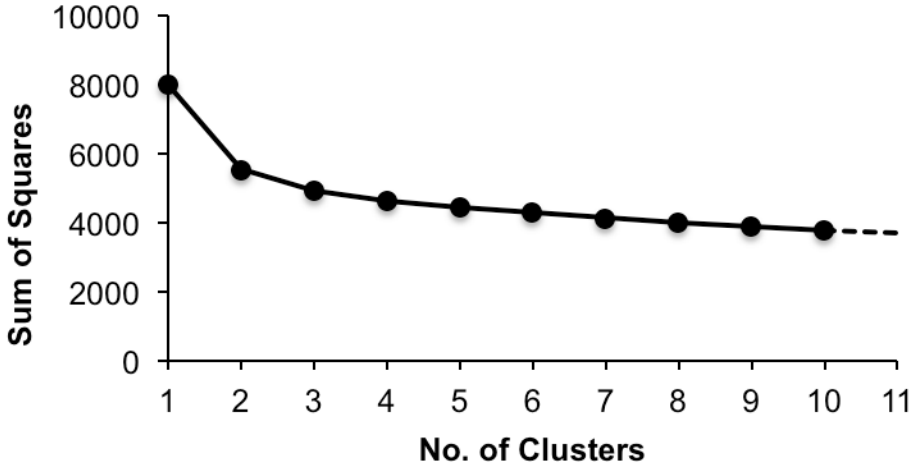

Figure 4: Cluster analysis, Elbow criterion (Information use, AMA Quality Seal)

DOI 2016: pfsd.2016.1635

The decision to select a 2-Cluster-solution was based on the elbow criterion, where the sum of squares is compared with the relevant aggregation step (Figure 4; Backhaus, 2011). The point at which the information loss (additional sum of squares) increases significantly from one aggregation step to the next (= the elbow) shows us which cluster solution we should take (in our case 2 cluster C1 and C2). Including C0 (no information demand), this groups amount to 20% (C1) and 15% (C2), respectively (Figure 5).

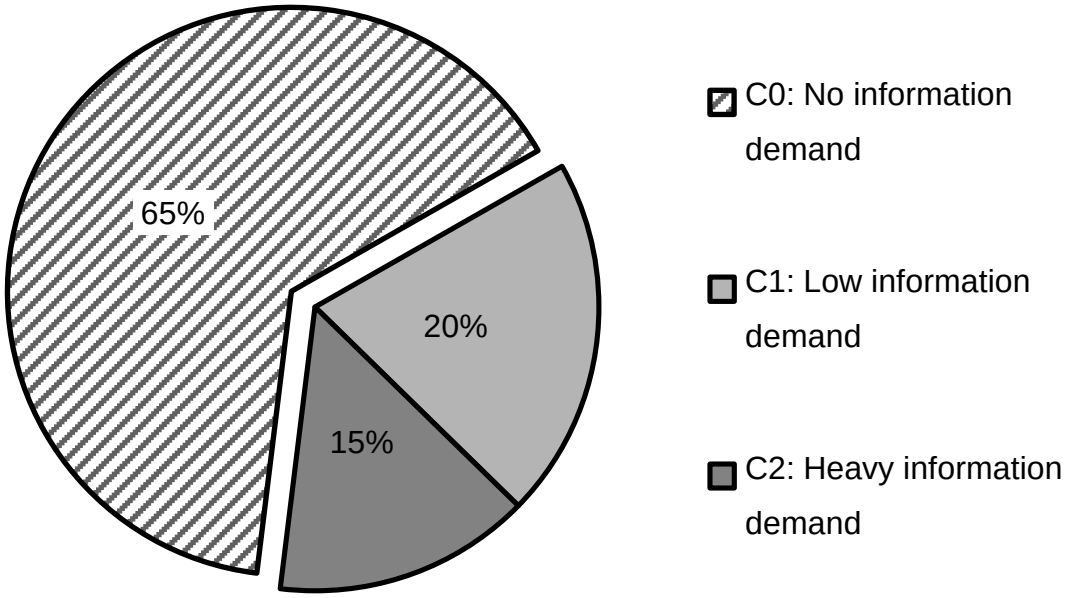

Figure 5: Cluster analysis – information users

Including the respondents who never used information sources C0, the core group of people actively and intensively searching for quality label related information sums up to 15% of all respondents. As the total sample is representative for the Austrian population, we assume that the group of people actively seeking information about the AMA Quality Seal amounts to around 15% (±2%).

The most important sources where information is expected to be found is the Internet (this is valid for C1 and C2, there are no significant differences). However, there are significant differences between the clusters concerning other channels: Heavy users are much more aware of peer groups, experts, and written communication (newspapers, journals, etc.). Despite "Internet", all differences are significant between C1 and C2 (Table 1).

Table 1: Average importance (frequency of use) of information sources (AMA Quality Seal)

	Low information demand		High Information demand		Total			
	Mean C1	Std. Dev.	Mean C2	Std. Dev.	Mean	Std. Dev.	F	Sig.
Internet	1.82	0.97	1.89	0.97	1.85	0.97	0.6	0.421
Social Media	3.64	0.66	3.14	0.89	3.44	0.80	61.8	0.000
Mobile Apps	3.76	0.56	3.36	0.85	3.59	0.72	48.0	0.000
Peer grp. family, friends	2.88	1.04	1.93	0.91	2.48	1.09	133.0	0.000
Experts	3.12	1.01	2.06	0.89	2.68	1.09	178.7	0.000
Leaflets	3.27	0.86	1.78	0.69	2.65	1.08	510.3	0.000
Journals	3.06	0.92	1.72	0.76	2.50	1.08	357.5	0.000
Consumer protect. org.	2.72	1.09	1.58	0.72	2.25	1.11	207.0	0.000
Brochures	3.13	0.84	1.68	0.63	2.53	1.05	530.4	0.000
News papers	3.22	0.81	1.71	0.69	2.59	1.07	569.7	0.000
Ads in TV, Radio	3.38	0.72	2.05	0.86	2.83	1.02	418.3	0.000
Ads billboards etc.	3.59	0.57	2.48	0.91	3.13	0.91	331.6	0.000
Reports in TV	3.07	0.94	1.73	0.78	2.52	1.10	341.5	0.000

Scale: 1 = very important (frequently used) ... 4 = not important (never used)

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If we assume that the information demand shown in the past will be more or less relevant for future behavior (which is not completely true; see below), it can be expected that the groups of consumers identified above will also need different channels and will show different intensity concerning information demand. The core group which is eager to get more information about the AMA Quality Seal (and probably concerning other food related attributes, too) will be C2. Concerning socio-demographics we found not a lot of suggestions that these group members are different from the average (which would in fact have been surprising): They seem to be a little bit older than the average (more exactly: information demand rises with age; this relation is significant below 0.000; Table 2 and Table 3), but no other relation between the information demand and socio-demographics could be detected.

Table 2: Age household leader * Cluster AMA Quality Seal 0-1-2 Cross-tabulation

		Cluster AMA Quality Seal 0-1-2						Total	
		0 No information demand		1 Low information demand		2 High information demand			
Age of household leader	0 to 24 years	30	2,7%	9	2,6%	2	0,8%	41	2,4%
	25 to 29 years	61	5,5%	19	5,4%	7	2,8%	87	5,1%
	30 to 34 years	119	10,8%	29	8,3%	13	5,2%	161	9,5%
	35 to 39 years	110	10,0%	35	10,0%	22	8,8%	167	9,8%
	40 bis 49 years	298	27,0%	87	24,9%	61	24,5%	446	26,2%
	50 bis 59 years	247	22,4%	81	23,1%	67	26,9%	395	23,2%
	60 bis 64 years	76	6,9%	46	13,1%	29	11,6%	151	8,9%
	65 years +	162	14,7%	44	12,6%	48	19,3%	254	14,9%
Total		1103	100%	350	100%	249	100%	1702	100%

Table 3: Chi-Square Tests Age of household leader * Cluster AMA Quality Seal 0-1-2

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35,076[a]	14	0,001
Likelihood Ratio	36,379	14	0,001
Linear-by-Linear Association	18,409	1	0,000
N of Valid Cases	1702		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,00.

4.3 Information demand and sources

With regard to the future information supply, important topics and information sources were identified which are highly relevant to all user groups. The most important topics are GMO food, animal welfare, and traceability of food. Special emphasis should be drawn to the core group, the heavy information seekers, and their behavior when seeking information. The most important information sources are amongst others the Internet (for all groups), information provided by consumer protection organizations and word of mouth communication with family or friends (Figure 6).

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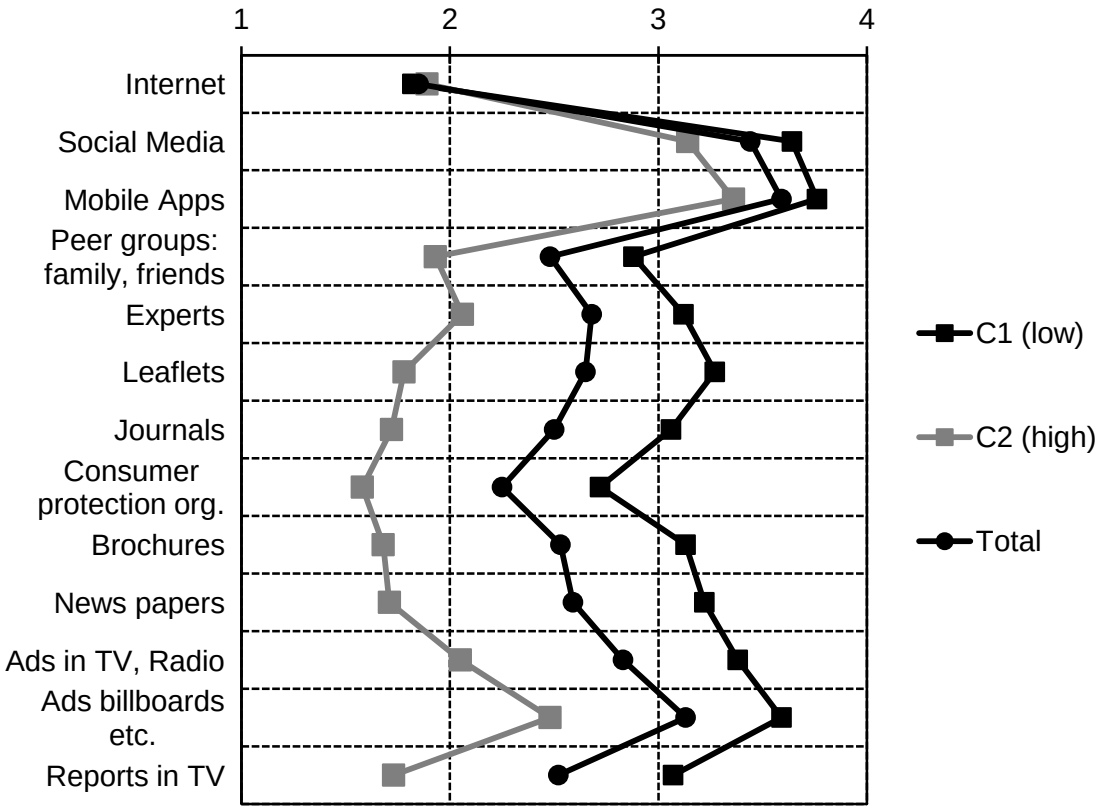

Figure 6: Average importance (frequency of use) of information sources (AMA Quality Seal)

If we come back to more general information use related to food, information sources are different here. However, the heavy information demand cluster C2 quoted much more frequent usage here, too (Figure 7). Information sources like trustworthy publications from consumer protection organizations, leaflets, brochures, and articles in newspapers are of primary importance for C2, far more important compared to the AMA Quality Seal. This might be due to the fact that general publications in the Internet are not seen as very trustworthy in general (in spite of those coming from official organizations). However, this is only an assumption which was not proven within this study.

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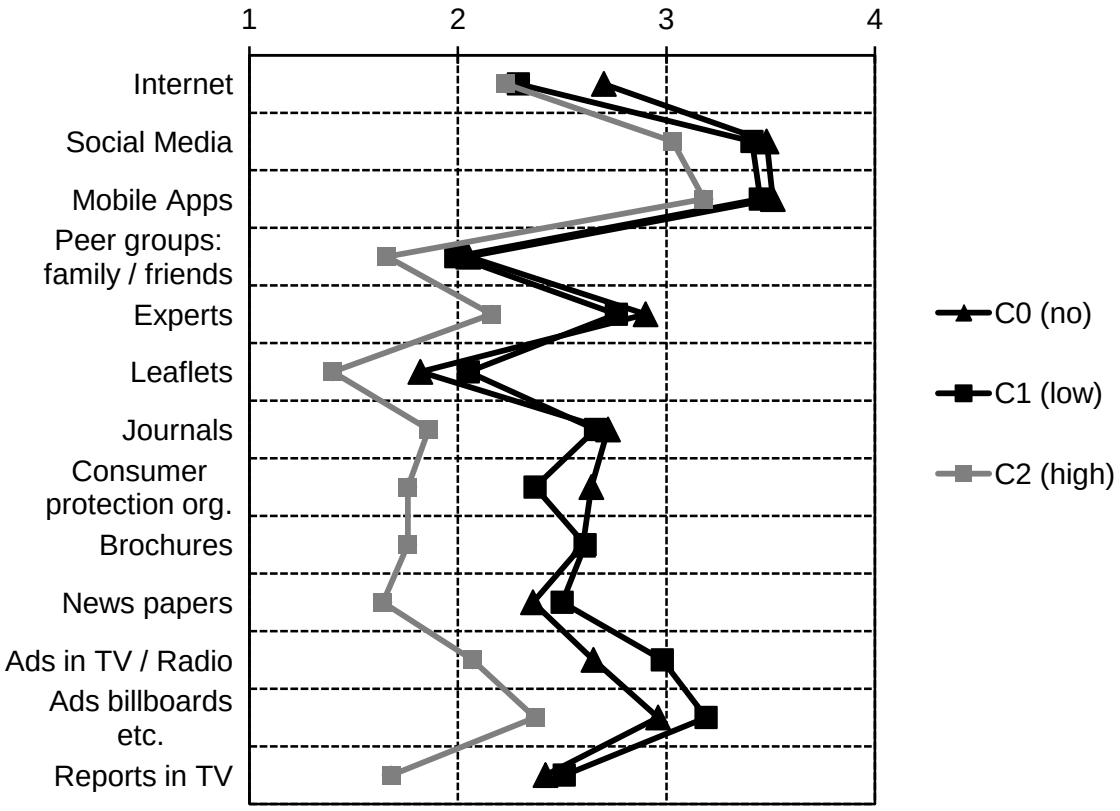

Figure 7: Average importance (frequency of use) of information sources (food in general)

5 Discussion

The research object of this study was one of the most famous quality labels in the Austrian food sector, the AMA Quality Seal. The survey delivers results which are representative for the Austrian market. However, if we want to transfer the results to other comparable objects (like other quality labels, private labels of trade organizations, etc.) we have to take into account the specifics of the AMA Quality Seal: it is very well known in Austria and it is a quality label guaranteed by a governmental organization. Because of the latter, trust and knowledge might be significantly higher compared to other labels.

Nevertheless, some generalizations are probably valid for other labels as well: The primary information sources for all relevant topics with respect to food labeling seem to be the Internet (but not for food in general). It is by far the most important source where consumers will look for information. Not all of them can be motivated to get more information about food in general and quality labels. But there is a core group of consumers which is especially eager to acquire information. The size of it might differ (also dependent on the overall publicity, actual developments in the food sector like food scares, and related factors) and probably amount to the identified 15%. The group members are using multiple information platforms, discuss with family and friends, and new forms of communication (social media, mobile apps) are – up to now – of only minor importance for this core group.

The results of this study are representative for the Austrian population. Of course, the depth of the information is limited due to the empirical approach of the study. More insights into consumer information behavior could be gained by use of other research methods like qualitative interviews.

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