The International Food Standard: Bureaucratic Burden or Helpful Management Instrument in Global Markets?
- Empirical Results from the German Food Industry -

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The International Food Standard: Bureaucratic Burden or Helpful Management Instrument in Global Markets?
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Abstract. *At this point in time, quality assurance schemes in the food industry and agricultural sector are becoming increasingly popular. The International Food Standard is one of the most important. This paper presents the results of an empirical study in the German food industry. In early 2005, 65 food manufacturers answered an extensive questionnaire and gave insights into their perceptions of the advantages and disadvantages of certification systems. The study focuses on the International Food Standard, which has gained much relevance in the German food industry since all major German retailers have subscribed to the system and, for the most part, no longer accept suppliers that do not have IFS certificates.*

Keywords: Food industry, International Food Standard, Certification

1. Quality assurance schemes

Currently the introduction of quality assurance schemes into the European agrofood sector makes feelings run high. On the one hand, quality is viewed as a main determinant of the future development of food markets. The early introduction of industry-wide quality assurance schemes, for instance, is considered one important reason for the competitive advantage of Dutch and Danish hog producers over their German competitors [14]. Furthermore, several food crises have increased the speed with which state-of-the-art quality assurance and certification systems are making their way into agriculture and the food industry. This development is strongly supported by large retailers, fast-food companies [9, 11] and the European Union. Former EU Commissioner David Byrne, for example, wanted "... to see a quality-driven single market in foodstuffs" [15] due to growing consumer interest in safe, wholesome and tasty food. Food and feed quality and safety, therefore, have become one of the EC's preferred areas of regulation (see, for example, Regulation 178/2002).

On the other hand, there are also numerous critical assessments of the current trend towards intensified quality management in the agrofood sector. Many companies feel incapacitated by the strict regulations imposed by quality assurance schemes. For some commentators it is even

hard to see what sense these systems make at all. As a consequence, many farmers as well as companies still reject participation and active implementation of quality assurance and certification and do not participate in the systems at all or, if they do, do not participate voluntarily but have been forced to do so by powerful customers, such as large processors or retailers. One of the most common complaints about quality assurance systems is that, while they result in a huge bureaucratic workload, they offer no advantages for day-to-day operations in the agrofood sector [5, 12]. Therefore, the number of in-depth analyses of the efficiency and effectiveness as well as the proper design of quality assurance and certification schemes is rising [3, 6, 7, 13]. Despite these growing efforts, so far it is still an open question whether quality assurance schemes, such as IKB, EurepGAP, the BRC Standard, or the International Food Standard, can be considered a competitive advantage or disadvantage for European food manufacturers in the increasingly global markets for agricultural and food products.

Against this background, it seems worthwhile to have a closer look at quality assurance and certification schemes from the point of view of the agrofood sector. In this paper we present the results of an empirical study about the introduction of the International Food Standard in the German food industry. We focus on perceived strengths and weaknesses of the Standard and come up with three different clusters representing different groups of food manufacturers regarding their perceptions of strengths and weaknesses.

2. The International Food Standard

The International Food Standard (IFS) has gained much relevance in the German food industry since all major German retailers have subscribed to the system and usually do not accept suppliers that do not have IFS certificates. The IFS became one of the most important quality assurance schemes in 2003 as a result of preliminary work by the Arbeitskreis Qualitätssicherungssysteme des EuroHandelsInstituts (Arbeitskreis QSS). After the IFS earned more and more acceptance, the French Fédération des Entreprises du Commerce et de la Distribution (FCD) joined the effort and produced an updated version of the standard. The latest version (the fourth) is currently under revision [2, 10].

In this context, the certified companies are invited to assess the advantages and disadvantages of the certification system from their point of view. One of the main reasons for the continuous proliferation and development of the IFS has been the rising number of retailer-owned private labels in the German food industry. Beyond this, product liability legislation (that is, the German *Produkthaftungsgesetz*) defines a producer as any person who labels a product with a name, trademark or any other indication that distinguishes different products. Due to this, retailers with private labels were directly affected by product liability laws and introduced a growing number of external audits of their private label suppliers. Since many suppliers deliver to several retailers, a lot of unnecessary double-checks took place, contributing to the growing costs of quality assurance in the food sector. The IFS provided a neutral instrument based

on third-party audits that would decrease costs and improve quality at the same time [2]. For this reason, the standard has achieved broad acceptance in the German and French retail sectors and moved towards setting a certification standard—not only for private labels but also for manufacturer brands. Therefore, it now largely replaces the ISO standard in the German food industry.

The International Food Standard is divided into four parts: the IFS Protocol, the Catalogue of Requirements, the Requirements for Certification Bodies and Auditors and the IFS Report.
The IFS Protocol contains information about basic contractual requirements, including the IFS principles, the rating system, the stipulation that only certified bodies are allowed to audit food manufacturers, and all legal regulations [10]. Based on version 3 of the BRC standard, the IFS consists of three levels of IFS requirements: the foundation level, the higher level and the recommendations defined as best practices in the food industry. When a company is audited, it can be evaluated on four different levels: A (full compliance), B (almost full compliance), C (a small part of the criterion has been implemented) and D (the criterion has not been implemented). The IFS assigns different numbers of points, depending on the level aspired to (Table 1). Furthermore, four knock-out, or k.o., criteria are defined. These criteria must be fulfilled; otherwise a certificate cannot be awarded. These criteria embrace HACCP analysis, management commitment, general traceability and corrective actions.
Another way to characterize an aberration from the certification standard is a rating with a so-called major. This rating indicates that the safety of the food products cannot be guaranteed and that substantial negligence may lead to a serious health hazard; an example of such a case would be the storage of detergents with foodstuffs [4]. In contrast to the four k.o.-criteria, major non-conformance does not cause audit failure. Instead, corrective actions can be taken and verified in a follow-up audit. In general, an IFS certificate can be issued when the audited food manufacturer has achieved a total score at the foundation level of over 75 %. The requirement for receiving a certificate at the higher level is the achievement of over 90 % at the foundation level and over 70 % at the higher level. Recommendations for any single requirement have to be complied with and are separately marked. To retain certification under the various aspects of the IFS, an audit has to be performed annually at the foundation level (with the exception of some special events) and every 18 months at the higher level (with the exception of the first confirmatory audit after 12 months).

Table 1: Level of IFS Requirements

Category / **Level**	**A**	**B**	**C**	**D**
Foundation level	20	15	5	0
Higher level	10	7	3	0
Recommendation	5	-	-	-

The Catalogue of Requirements represents the technical core of the IFS. Like other system handbooks, such as those in the ISO and the German Quality and Safety systems, it provides the basis for the auditing process. In this regard, the structure of the IFS Standard resembles the ISO 9001;

the main technical chapters are management of the quality system, management responsibility, resource management and product realization, measurements, analyses and improvements (Figure 1)[2]. Therefore, it is easy for ISO-certified companies to acquire an IFS certificate. Nevertheless, a closer look reveals that both standards are also characterized by a remarkable difference. Unlike the ISO standard, the IFS is characterized by several industry-specific regulations, for instance, the introduction of different food product categories or various regulations important for the food industry in particular (medical examinations, staff hygiene, potable water analysis, pest control and so forth).

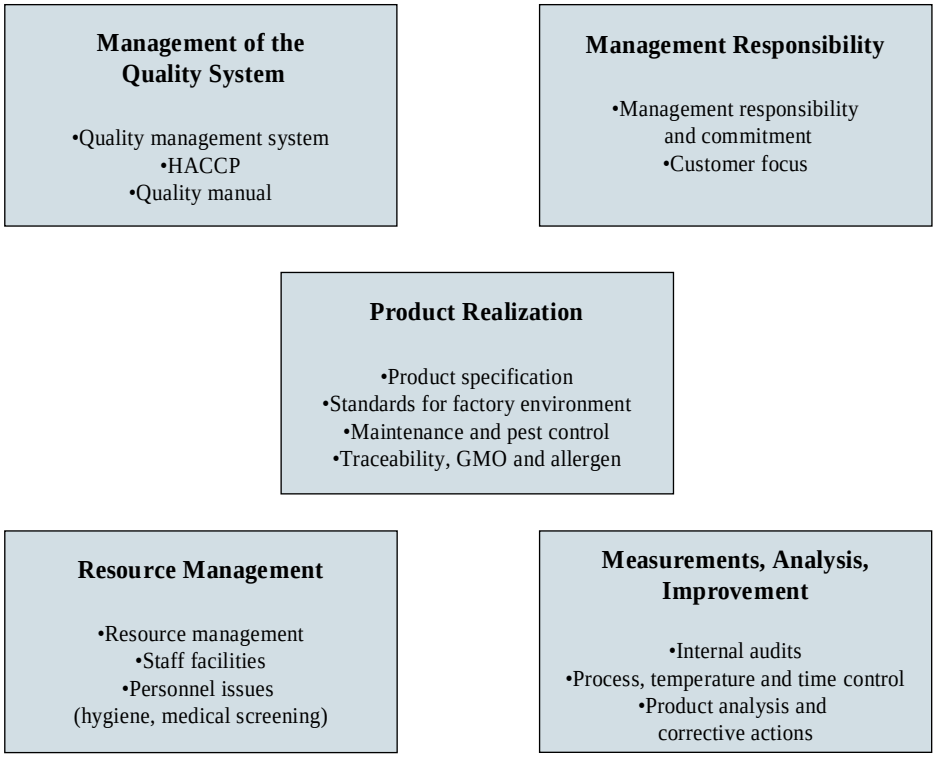

Figure 1: Technical chapters of the IFS Standard

Similar to other certification standards, the Requirements for Certification Bodies and Auditors include general precepts. One of the most important aspects is accreditation according to ISO 45011. Furthermore, the auditors have to demonstrate their knowledge of the IFS and their participation in continuous auditor training.

After the auditing process, the IFS Report has to be written and handed out to the audited company. With the help of the audit portal developed by the standard setter, selected results of the certification audits are presented in a password-protected website. The audited company decides which information will be displayed on the Internet; at the very least, it must display whether it holds an IFS certificate or not [2].

3. Survey results

In this paper we present the results of an empirical study of the appreciation and implementation of the IFS by German food manufacturers. In April and May of 2005, 65 IFS-certified food suppliers were interviewed by telephone. The companies interviewed represent eleven different subsectors of the food-processing industry: the majority are from the following industries: confectionery and snacks (twelve companies), meat processing (eleven), milk processing (ten), and bakery products (nine). Of the respondents 45.6 percent employ one to five hundred employees; however, there are also companies with more than three thousand employees in the sample. All the companies interviewed are private label manufacturers. The percentage of private label production is below 25 percent in 24.5 percent of the responding companies, between 25 and 50 percent (34 percent of respondents), between 51 and 75 percent (24.5 percent), or above 75 percent (17 percent; see Figure 2). Of the responding companies 83 percent have only domestic production; the remaining 17 percent also have foreign subsidiaries.

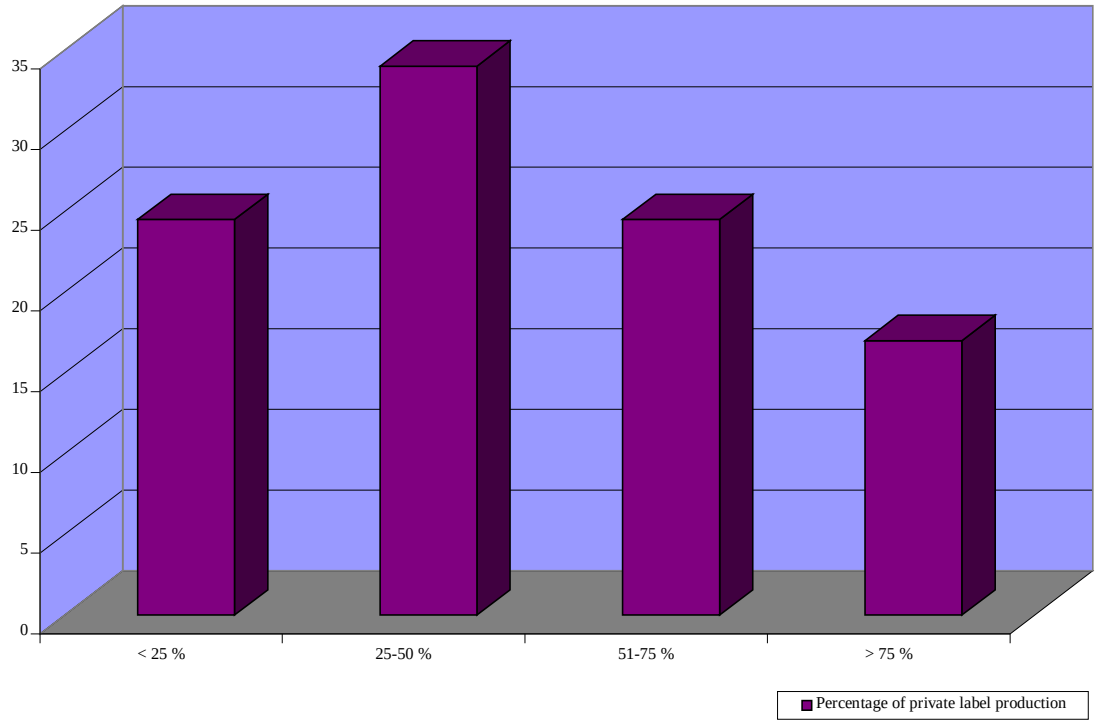

Figure 2: Percentage of private label production

As mentioned above, the survey was accomplished through telephone interviews with an average duration of 15 minutes (minimum 8 minutes; maximum 27 minutes). A standardized questionnaire with sixteen questions, both open and closed, covered various matters concerning the IFS. The persons interviewed could express their attitudes by evaluating statements on five point Likert scales from -2 (“do not agree at all”) to +2 (“fully agree.”). General introductory questions referred to company size, product spectrum, standards other than the IFS, the year and duration of IFS implementation and certification level. The interviews then mainly focused on the perceived advantages and disadvantages of the IFS. A pretest showed that the questionnaire was exhaustive and that the target group did not experience any difficulties with the questionnaire.

SPSS 12.0 was used for data analysis.

3.1 Implementation of the International Food Standard

The majority of the companies interviewed had implemented the IFS in 2003 (67.2 percent) or 2004 (31 percent). Taking into account the survey period, these results were expected. In 82.8 percent of the cases, the implementation of the standard took less than six months. About 83 percent of the companies with more than one production site, i.e. 34 companies, immediately implemented the IFS at every single site. With regard to the achieved level, 60 companies (94 percent) received a certificate at the higher level and only three (4.7 percent) at the foundation level. One of the responding companies had no certificate at the time of the interviews, but had already passed an audit and was still waiting for the result. Another refused to answer this question.
An external consultant supported the implementation process in 31.7 percent of the companies surveyed. An additional employee was recruited by 9.2 percent of the respondents to be responsible for preparing the certification audit.
Only 7.1 percent of the certified companies stated that they had no other standard than the IFS. In contrast to this, 53 companies had already implemented the ISO 9001 and 22 the BRC standard before implementing the IFS. Due to sample composition, only three companies were certificated according to another standard, such as the German Quality and Safety System or the EU Eco-label.

3.1.1 Strengths of the International Food Standard

Respondents were asked to express their perceptions of possible advantages of the IFS on Likert scales. As one can see in Figure 3, several advantages were mentioned. The statements that the IFS requirements are well structured ($\mu = 0.74$; $\sigma = 1.136$) and that other standards can be accomplished at the same time ($\mu = 0.70$; $\sigma = 1.136$) received the strongest agreement; 72.3 percent and 68.7 percent, respectively, of the respondents agree or fully agree with these statements. Besides evaluating the structure of the standard, the respondents were also asked to assess the effects of the IFS on their companies. In this context, the contribution of the IFS to a continuous improvement process is generally appreciated; 68.8 percent of the respondents agree or fully agree ($\mu = 0.80$; $\sigma = 1.237$). In contrast to this, positive effects on internal business processes ($\mu = 0.50$; $\sigma = 1.113$), quality motivation ($\mu = 0.46$; $\sigma = 1.300$) and external logistics ($\mu = 0.16$; $\sigma = 1.280$) are only somewhat rarely reported. Nevertheless, in most cases high standard deviations show a broad spectrum of diverse attitudes in the sample.

A controversial statement is the decrease in the number of external audits. While 43.1 percent of the respondents agree or fully agree that the IFS is able to reduce the number of audits, 44.8 percent do not think this aim can be achieved. A slightly negative mean value ($\mu = -0.12$) and a high standard deviation ($\sigma = 1.568$) clearly show the very diverse opinions in the food processing industry concerning the effect on the number

of audits. Furthermore, a reduction of the certification costs is not expected by a large majority ($\mu = -0.85$; $\sigma = 1.311$). Perhaps scattered hopes after the implementation of the ISO standard are one of the main reasons for this.

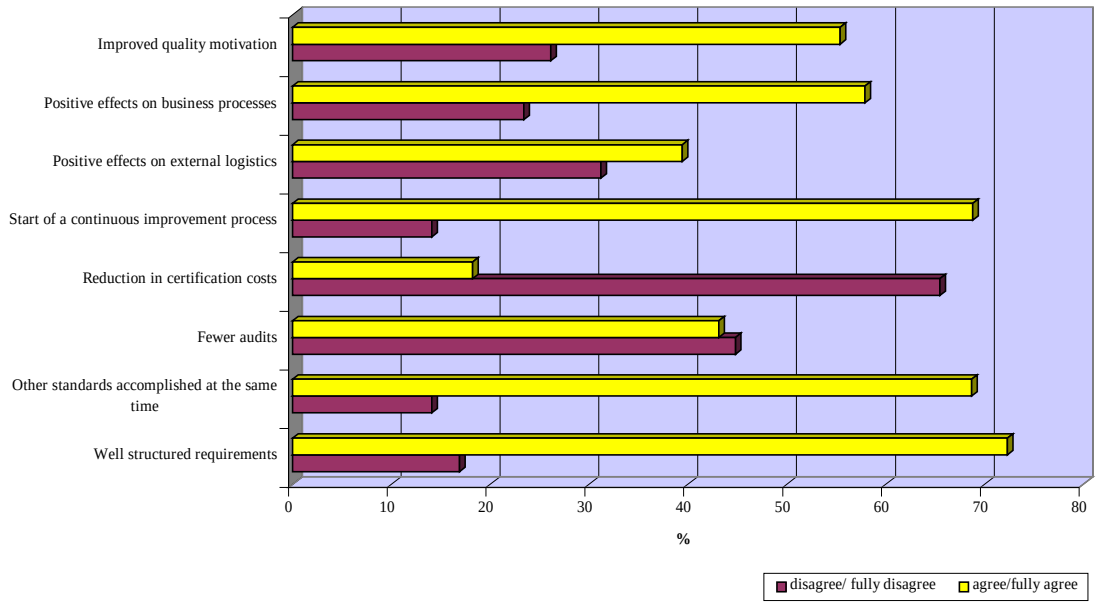

Figure 3: Perceived Advantages of the IFS

In an open question, the interviewees were asked to enumerate the most important advantages of the IFS for their companies. Since no statements were given, the number of answers differed sharply in this case [1]. The most frequently mentioned advantages were the high reputation of the IFS in the eyes of the costumers and improved product safety (each mentioned twelve times). Furthermore, the improvement of business processes (ten times), the comprehensible structure of the IFS requirements (six times), improved transparency (six times) and traceability (four times) are important advantages of the IFS. Other advantages were named only infrequently.

3.1.2. Weaknesses of the International Food Standard

The disadvantages were analysed in the same way as the advantages. As one can see from Figure 4, only the statement that the IFS is characterized by strict requirements is unanimously supported; 69.3 percent of the respondents agreed or fully agreed ($\mu = 0.77$; $\sigma = 1.196$). In contrast to this, the statement that the IFS will reduce certification costs was heavily discussed. On the one hand, one group of respondents agreed with the statement. On the other, one group of nearly the same size disagreed or even strongly disagreed ($\mu = 0.13$; $\sigma = 1.409$). Other disadvantages, such as a possible lack of reasonability ($\mu = -0.69$; $\sigma = 1.030$) and comprehensibility of requirements ($\mu = -0.72$; $\sigma = 1.111$), low action orientation ($\mu = -0.42$; $\sigma = 1.130$) and low managerial practicability ($\mu = -0.58$; $\sigma = 1.029$) were predominantly rejected. As seen before, the high standard deviations mark contradictory opinions.

Again, an open question allowed the respondents to enumerate the most important weaknesses of the IFS in their own words. Those most fre-

quently mentioned were a lack of decision power, objectivity, or industry-specific knowledge on the part of the auditor (mentioned thirteen times). Furthermore, the high level of bureaucracy (eleven times), a lack of consideration for properties of specific industry subsectors (nine times), the lack of broad acceptance by all companies in the retail sector (six times), many working hours required for preparing auditing and certification procedures (five times), and the ongoing release of different versions of the standard were cited as important disadvantages.

After the analysis of the advantages and disadvantages of the IFS, it is not surprising that the respondents expressed a variety of ideas on how to improve the standard. The majority of the respondents answering this question demanded the integration of more subsector-specific elements (mentioned nine times) and the strengthening of the managerial orientation (seven times). Overall, the number of disadvantages named turned out to be rather small.

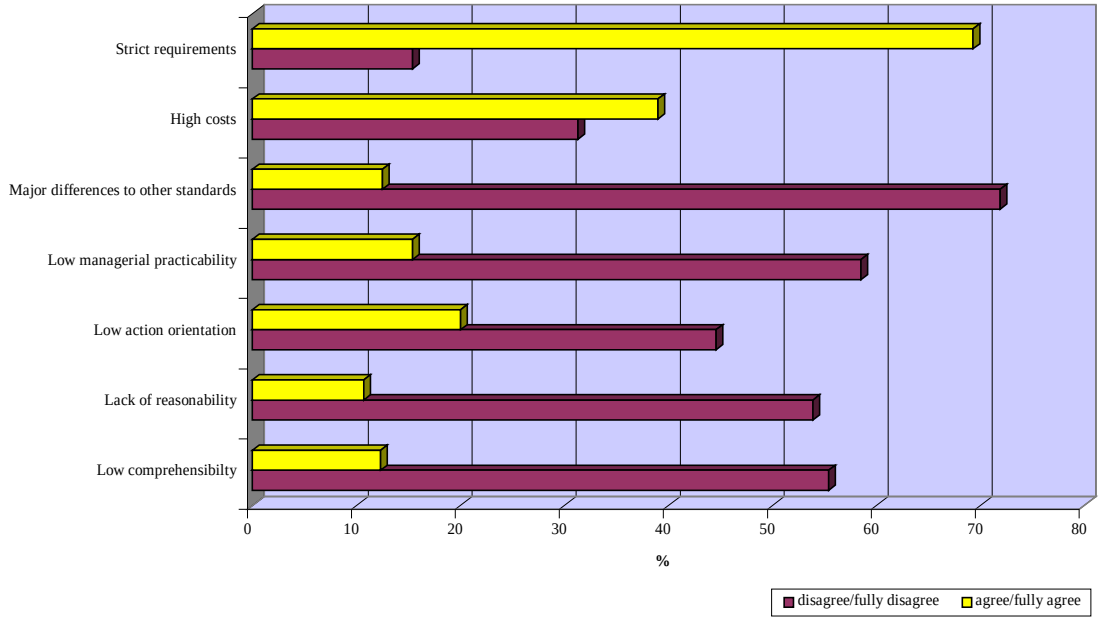

Figure 4: Perceived Disadvantages of the IFS

3.2. Evaluation of the International Food Standard: Three clusters

Taking the statements of the advantages and disadvantages as a basis, a hierarchical cluster analysis was conducted. After the elimination of two outliers by using a dendrogram and applying the ward method, three clusters were identified by comparing mean values.

Cluster 1: The Managers

The first cluster consists of 23 companies. Their attitudes towards the IFS are generally positive regarding internal effects on the enterprise, namely the initiation of a continuous improvement process, the improvement of employees' quality motivation and positive influences on internal and external business processes. Furthermore, the companies in this cluster expect a reduction in the number of audits. Most members of this cluster are medium- sized companies with one to five hundred employees, except for nine companies, which are large scale manufacturers with more than four production sites and more than three thousand employees. Since these companies saw positive effects on company management from IFS implementation, they were labelled "The Managers".

Cluster 2: The Supporters

All in all, 27 companies can be allocated to this cluster. They predominantly stress the structural advantages of the IFS. The first such advantage is that the IFS requirements are well structured. Furthermore, these companies perceive a high action orientation and high managerial practicability. Statements concerning a lack of reasonability and comprehensibility are strongly rejected. Reductions in the number of audits and in audit and certification costs are not expected. Thus, the "Supporters" perceive more advantages than disadvantages, but, unlike the members of the first cluster, they do not use the IFS certification as a managerial tool that helps to improve, for instance, business processes and employee motivation. The cluster is composed of small companies with less than five hundred employees and not more than three manufacturing sites. Accordingly, the implementation of the standard took less than six months in 96 percent of the enterprises interviewed. In most cases, the implementation of the IFS was managed without the help of an external consultant.

Cluster 3: The Rejecters

The third cluster has only thirteen members and is, therefore, smaller than clusters 1 and 2. The companies in this cluster have been certified, but, nevertheless, see no cost reductions or other advantages. The respondents were also disappointed by the standard structure. All in all, the group is very heterogeneous with regard to company size and product spectrum.

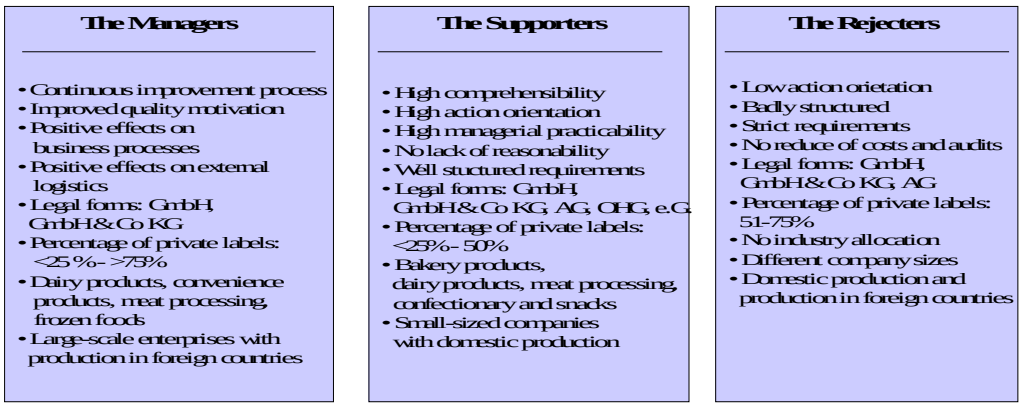

Figure 5: Evaluation of the IFS: Three Clusters

The results of the cluster analysis were tested with discriminant analysis to determine whether each object had been classified correctly [8]. The results showed that the percentage of false classifications is very low and that 92.1 percent of the objects in the identified clusters had been classified correctly. Therefore, the three- cluster solution remained unchanged.

4. Case study

In order to more fully understand how food manufacturers implement the IFS, an in- depth case study was conducted in a medium- sized food manufacturing company. The company is located in northern Germany and has two hundred employees. It is family- owned and delivers to wholesalers, retailers and packers. Due to privacy considerations, details that might allow identification of the company cannot be presented.

Table 2 shows the technical requirements of the IFS, the company's actions in implementing these requirements and both minor and major non- conformances identified by the external auditor. Due to space limitations, the presentation is limited to a few examples that clarify how companies deal with the IFS and how the IFS certification contributes to improved food safety and quality.

Table 2: Requirements, Implementation, Non-Conformances: A Case Study

Requirements	Implementation
Management of the Quality System	
Well-defined structure of the quality management system	Including staff description • Authorities • Responsibilities • Qualifications Process description including work instructions and other instructions (procedures)
Development of a quality manual	• General information • Detailed description of the chapter “Catalogue of Requirements”
Implementation of the HACCP concept	• Development of a HACCP team • Creation of a concept • Definition of critical control points • Formulation of monitoring measures (first k.o. criterion)
Management Responsibility	
Management commitment	Communication of firm politics and objectives in daily meetings (second k.o. criterion)
Regular verification of the system	Check up with internal and external audits
Resource Management	
Provision of necessary resources	• Determination and provision of financial, staff and equipment resources • Planning of training needs
Observance of staff hygiene	Use of protective headwear and adequate work clothing (staff and guests)
Product Realization	
Consideration of customer requirements	• Detailed arrangement • Development of specifications
Avoidance of potential risks of the working processes	Non-conformance: • Opening of bags with carpet knives • Paperclips on receipt documents

Traceability system of GMOs and allergens	Non- conformance : • Complete traceability of big bags not possible (third k.o. criterion)
Measure ments, Analysis, Improvements	
Elimination of physical, chemical and microbiological hazards	• Metal detectors • Control of wood pallets • Control of external laboratory
corrective actions	• Retast ing or, if necessary, laboratory analysis • Strong customer orientation and support • Meetings with staff and co-stumers (fourth k.o. criterion)

5. Summary and conclusions

A closer look at the empirical results reveals that the advantage statements receive more agreement than the disadvantage statements. All in all, the IFS is perceived as a useful instrument to assure product safety. The structure and the comprehensibility of the IFS were generally evaluated positively or were, at least, not considered disadvantageous. Furthermore, some respondents report positive effects on their companies, such as a continuous improvement process or improved quality motivation of staff members. In contrast, the cluster analysis also shows a more skeptical assessment by at least part of the respondents.

From the survey results, two managerial implications can be derived. First, the standard setter should improve the IFS by integrating more sub-sector-specific requirements, benchmarking the IFS against other certification standards in order to improve reciprocal acceptance and convincing retailers to refrain from auditing their own suppliers and to rely more heavily on third-party audits governed by the IFS. This may contribute to reducing criticism by food manufacturers and decreasing the number of audits. Second, companies that do not yet perceive any advantage to implementing the standard but, nevertheless, have to implement it due to strong pressure from retailers should try more intensively to use the IFS as a quality management instrument. Some companies provide a blueprint by, for instance, improving internal business processes through IFS implementation. These companies can serve as role models for the more reluctant food manufacturers.

In fact, the empirical study sample was comparatively small. Furthermore, the question whether the IFS is held in higher esteem than other standards, such as ISO 9001, was not answered. Future research studies should seek to identify the perceived advantages and disadvantages of the IFS on a broader empirical basis and in comparison with other certification standards.

References

1. Berekoven, L. *et al* (2004): Marktforschung: Methodische Grundlagen und praktische Anwendung. 10th ed., Gabler Verlag, Wiesbaden.
2. Buhlmann, B. *et al* (2004): Kompaktwissen zum IFS: Anforderungen, Umsetzung und Erfahrungsberichte zur Version 4. 2nd ed., Behr's Verlag, Hamburg.
3. Canavari, M.; Spadoni, R. (2004): Performances of ISO 9000 Certified Quality Management Systems in the Agro-Food Sector: A Questionnaire-Based Study in Emilia-Romagna and Veneto. In: G. Schiefer, U. Rickert (Eds.): Quality Assurance, Risk Management and Environmental Control in Agriculture and Food Supply Networks, ILB-Press, Bonn, pp. 71-77.
4. IFS Doktrin (2005): Hauptverband des deutschen Einzelhandels. URL: http://www.lebens mittelforum.info/forum_neu/topic.php?id=19&, date: 21.06.2005.
5. Jahn, G.; Peupert, M.; Spiller, A. (2003): Einstellungen deutscher Landwirte zum QS-System: Ergebnisse einer ersten Sondierungsstudie. Work-

ing Paper: Institute of Agricultural Economics, Georg- August- University, Göttingen.
6. Jahn, G.; Schramm, M.; Spiller, A. (2005): The Reliability of Certification: Quality Labels as a Consumer Policy Tool. In: Journal of Consumer Policy, Vol. 28., 2005, pp. 53- 73.
7. Lazo, A.; Jahn, G.; Spiller, A. (2006): Growers' Acceptance of EurepGAP in Developing Countries: Results of a Survey Carried out in Peru. In: Theuvsen, L.; Spiller, A.; Peupert, M.; Jahn, G. (Eds.): Quality Management in Food Chains, Wageningen Academic Publisher, Wageningen, (in press).
8. Nieschlag, R. *et al* (2006): Marketing. 19th ed., Duncker & Humblot, Berlin.
9. Schiefer, G.; Rickert, U. (Eds.) (2004): Quality Assurance, Risk Management and Environmental Control in Agriculture and Food Supply Networks, ILB-Press, Bonn.
10. Swoboda, A. *et al* (2004): International Food Standard; Standard zur Beurteilung von Eigenmarkenlieferanten, Version 4, Bundesverband Deutscher Handelsverbände, Bonn.
11. Theuvsen, L.; Spiller, A.; Peupert, M.; Jahn, G. (Eds.) (2006): Quality Management in Food Chains, Wageningen Academic Publisher, Wageningen (in press).
12. Theuvsen, L. (2005): Quality Assurance in the Agofood Sector: An Organizational- Sociological Perspective. In: K. Hagedorn et al. (Eds.): Umwelt- und Produktqualität im Agrarbereich, Landwirtschaftsverlag, Münster- Hiltrup, pp. 173- 181.
13. Theuvsen, L.; Peupert, M. (2004): Total Quality Management und Lebensmittelqualität. In: Dabbert, S. *et al* (Eds.): Perspektiven in der Landnutzung – Regionen, Landschaften, Betriebe – Entscheidungsträger und Instrumente, Landwirtschaftsverlag, Münster- Hiltrup, pp. 149- 157.
14. Traupe, C. (2002). Schlachtschweinevermarktung in Niedersachsen, Cuvillier, Goettingen
15. Verhaegen, I. and Van Huylenbroeck, G. (2002). Hybrid Governance Structures for Quality Farm Products: A Transaction Cost Perspective, Shaker, Aachen.