

**Food Quality from the Consumer's
Perspective – An Empirical Analysis of
Perceived Pork Quality**

Carola Grebitus

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Ames, im November 2007

Carola Grebitus

**FOOD QUALITY FROM THE CONSUMER'S PERSPECTIVE:
AN EMPIRICAL ANALYSIS OF PERCEIVED PORK QUALITY**

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Abbreviations

bn	billion
CAU	Christian-Albrechts-Universität zu Kiel
c.d.f.	cumulative probability distribution function
CM	Concept Mapping
CMA	Centrale Marketing-Gesellschaft der deutschen Agrarwirtschaft mbH
Cons.	Constant
E	Equation
Ed. / Eds.	Editor / Editors
EDU	Education
e.g.	lat. <i>exempli gratia</i> (for example)
et al.	lat. <i>et alii</i> (and others)
etc.	lat. <i>et cetera</i> (and so on)
FET	Free Elicitation Technique
GfK	Gesellschaft für Konsumforschung (Growth from Knowledge)
HH	Household
ibid.	lat. <i>ibidem</i> (at the same place)
i.e.	lat. <i>id est</i> (that is)
Kg	Kilogram
LR-Test	Likelihood-Ratio Test
Max.	Maximum
Min.	Minimum
ML	Maximum Likelihood
n	Number of Participants
Negbin	Negative Binomial Model
NIP	New Involvement Profile
n.d.	no date
n.s.	not significant
OLS	Ordinary Least Square
PII	Personal Involvement Inventory
PoS	Point of Sale
QS	Qualität und Sicherheit GmbH
RPII	Revision of the PII
sensu	lat. in the sense of
Std. Dev.	Standard Deviation
Std. Err.	Standard Error
t	tons
TFQM	Total Food Quality Model
Y	Income
ZMP	Zentrale Markt- und Preisberichtsstelle für Erzeugnisse der Land-, Forst-, und Ernährungswirtschaft GmbH (Central Agency for Market and Price Reports on Agricultural, Forest and Food Products Ltd.)

1. Introduction

Today, the European agribusiness is characterised by saturated markets and increasingly homogeneous products (HERRMANN ET AL., 2002; SPANNAGEL AND TROMMSDORFF, 1999; HENNEKING, 1998). In such highly competitive markets, the quality of food products is among others one key factor for success (DU AND SUN, 2005; LAWLESS, 1995; STEENKAMP, 1989). Food quality has a remarkable influence on a firm's profitability because of its customer satisfaction and customer value. For example, food manufacturers can employ food quality to establish a preference for their products, by differentiating them in a way meaningful to consumers (KROEBER-RIEL AND WEINBERG, 2003; CRAWFORD, 1997; OUDE OPHUIS AND VAN TRIJP, 1995). Any effort to differentiate products and promote food quality can only be successful if new or advanced attributes can be communicated to consumers (MEYER, 2003; VON ALVENSLEBEN AND SCHEPER, 1997). The winning companies are those that can meet consumers' needs economically and with effective communication (KOTLER AND ARMSTRONG, 1994). To be able to fulfil consumers' expectations and to market products effectively it is therefore important for the industry to know which quality characteristics¹ are relevant and accessible to consumers and to analyse which parameters influence their purchase decisions (BRYHNI ET AL., 2002; GLITSCH, 2000). To survive in the market and moreover to be successful, agribusiness companies have to become more consumer-oriented concerning food quality (HANF AND KÜHL, 2005; VERBEKE ET AL., 1999; KOHLI AND JAWORSKI, 1990).

In this context, it must be stated that food quality is not a single, recognizable characteristic. It is rather a multidimensional, diffuse concept depending on who provides the definition. In fact there is an "abundance of ways" in which the term has been defined (GRUNERT, 2005; LAWLESS, 1995; GARVIN, 1984A).² But although there have been many attempts to clarify and define the concept, there is still no general agreement on the term 'food quality' (BRUNSØ ET AL., 2004; GRUNERT ET AL., 1996). From a food scientist's perspective, e.g. a nutritionist or food technologist, food quality can be considered as a well-defined concept, because the scientist can revert to a multitude of standardized, instrumental tests

¹ In this thesis the term 'quality characteristics' is used to refer to 'quality cues' and 'quality attributes' simultaneously.

² For example the special issue of *Food Quality and Preference* (1995) provides a broad range of proposals on the definition of food quality.

to quantify food quality. At the same time, food quality can be considered as the least well-defined concept in the food industry, because food scientists represent only a small percentage of those people concerned with food quality (CARDELLO, 1995). Consumers decide what is 'good' and what is 'poor' (LAWLESS, 1995). Although the consumer's definition of food quality drives the food industry's economy, "it is precisely the consumer's definition of food quality about which we know the least and which we are most challenged to quantify" (CARDELLO, 1995). Consequently, the view of the consumer has to be considered.

1.1. Problem Statement and Motivation

The problem is that, in reality, quality refers to aspects of food products and the basic production process that can be measured and documented in an objective way. But, the quality consumers associate with a food product is often not equivalent to this objective quality evaluation. Consumers do not buy objective attributes but subjective product benefit (SCHOLDERER AND BREDAHL, 2004; ESCH, 2000). Hence, it is essential to distinguish between the objective attributes per se and consumers' subjective perceptions of these attributes. The perception is a result of consumers' selection, organisation and interpretation of product information. It can be understood as the impression made by the product (GRYNA, 1998). It is the perception that affects behaviour, not the characteristic itself. It is the consumer who ultimately decides what kind of food product to buy (STEENKAMP, 1990).

The key to success is to uncover the subjective quality perception of consumers. It is to analyse which quality characteristics are important for them to perceive quality and how impressions of quality are actually formed based on objective characteristics (ZEITHAML, 1988). Research has to be based on the consumers' individual quality perceptions, because consumers differ in their individual perceptions of the same product (GRUNERT ET AL., 1996). Consumers' quality perceptions are influenced by information stored in memory. The stored information is organised in cognitive structures based on former experiences. Cognitive structures are basically a key factor in developing a useful understanding of consumers' purchase behaviour. They are known as the most important aspects in making assumptions about the quality perception and purchase decision (OLSON AND REYNOLDS, 1983). The cognitive structures include simplifying programmes for information processing, namely irradiation, the halo effect and key information. Irradiation denotes that the consumer uses one impression to infer another impression, i.e. infers one attribute by another

(e.g. evaluating freshness by means of colour). The halo effect describes the evaluation of single characteristics influenced by an overall impression of the product (e.g. organic products have a better taste, are healthier etc.). Key information claims that a single key product characteristic (e.g. brand) is used to evaluate the overall product quality. In this case it is relatively easy for consumers to perceive and evaluate a products' quality (KROEBER-RIEL AND WEINBERG, 2003).

The key information *brand* is usually used for processed, highly standardized food products (BECH-LARSEN AND BREDAHL, 2003). Manufacturers employ this key information in order to enable consumers to recognize the product. The brand enables consumers to recall their previous experience with the product for quality evaluation (GRUNERT, 2002; CRAWFORD, 1997). Unprocessed foods such as fresh fruits, vegetables and meat are seldom branded (BECH-LARSEN AND BREDAHL, 2003). Unbranded products make it hard for consumers to evaluate the product and to form quality expectations. Consumers have to use other quality characteristics to evaluate the quality. Research within this field is important because empirical studies demonstrate for example that consumers have difficulties in evaluating meat quality (GRUNERT ET AL., 2004; BREDAHL ET AL., 1998; GRUNERT, 1997). It is important to know what characteristics are used for quality perception and in turn what evaluation is related to the single quality characteristic. With regard to fresh meat the characteristics colour or counter are of major importance to perceive and evaluate the quality (LÜTH AND SPILLER, 2006; ALFNES, 2004). Consumers might perceive the colour to evaluate the freshness of a product. Furthermore, colour is used to infer taste. This already shows that several complex relations are present within the cognitive structures concerning food quality (BRUHN AND GREBITUS, in press). By far the most consumed meat in Europe is pork, covering almost half of total meat consumption (NGAPO ET AL., 2007A). In Germany, pork is the most purchased and consumed meat as well (BURCHARDI ET AL., 2007; HANSEN ET AL., 2006; ZMP, 2006A).

Against this background, this thesis emphasises consumers' perceptions of pork quality. Even if meat consumption as well as consumer behaviour towards meat have been research subjects for many years, not much research has been done on consumers' perceptions of pork quality and how certain quality characteristics are actually used to make pork purchase decisions. However, reasons for the constantly high interest lay particularly in changes at consumer level and in image problems as well as continuous scandals that have affected

and continue to affect the meat sector on a regular basis (e.g. VERBEKE AND VIAENE, 1999). Several studies have focused on how consumers generally perceive pork quality (E.G. NGAPO ET AL., 2004; NGAPO ET AL., 2003; BRYHNI ET AL., 2002; GLITSCH, 2000; DRANSFIELD ET AL., 1998). But the concrete relations between the quality characteristics, what is stored in the consumers' memory and how the quality perception at the point of sale is influenced by these memories has not been established. Only few studies have analysed the impact of cognitive structures on quality perception (e.g. GRUNERT AND VALLI, 2001; NIELSEN ET AL., 1998; GRUNERT, 1995).

1.2. Statement of Objectives

The main target of this thesis is to explain food quality from the perspective of consumers in general and to empirically analyse perceived pork quality in particular. This target can be divided into four sub-targets with regard to theoretical, methodological, empirical and practical purposes.

The **first target** refers to theory: the aim being to connect consumer behaviour research to the economics of information approach to analyse consumer-oriented food quality and consumers' quality perception processes.

The **second target** concerns methodology: the intention being to find a way to elicit the consumers' stored information and to measure the consumers' use of current information at the point of sale to make the pork purchase decision. In this context, associative elicitation techniques as well as the new involvement profile are tested on their reliability in agricultural economics. A method for eliciting cognitive structures, i.e. concept mapping, is applied in a consumer survey in agricultural economics for the first time. The analyses of the data depict the information process in detail; social network analysis and count data analysis among others are applied. Furthermore, the new involvement profile, an instrument for measuring consumers' depth of information processing, is tested with regard to unprocessed products, i.e. pork.

The **third target** is empirical: the aspiration being to analyse which quality characteristics are used by consumers to perceive pork quality. The importance of quality characteristics regarding consumers' decision-making when purchasing pork is investigated. An analysis of the interactions between stored information and current information at the point of sale when buying pork is

carried out. Furthermore, influencing socio-demographics and attitudes³ towards the quality characteristics are determined.

The **fourth target** regards practical advice: the use of quality as a marketing instrument for consumers' perceptions of quality must be investigated, the desire being to measure the importance of single quality characteristics regarding pork quality and to uncover relations between quality characteristics meaningful for marketing strategies. The aim being to give recommendations to create marketing strategies for unprocessed food, to develop communication strategies especially for experience and credence quality attributes and to segment consumers into meaningful target groups regarding the communication of pork quality.

1.3. Organisation of the Thesis

Against this background, the structure of this thesis is as follows. After this introduction, Chapter 2 discusses the theoretical background of food quality. Consumer-oriented definitions of food quality are presented. Appropriate approaches to investigate food quality by connecting consumer behaviour research and economic theory of quality are introduced. The perceived quality approach and the economics of information approach are explained with regard to food quality. Models of the quality perception process are described to demonstrate the way consumers perceive the quality of a product. The basics of information processing are used to investigate the perception process, i.e. interactions between stored and current information. The constructs of cognitive structures and semantic networks help to understand these processes. The construct of involvement is taken into account to make assumptions about the depth of information processing. The spreading activation network model is applied to draw conclusions about the activation of stored information at the point of sale to be used for purchase decision-making.

Chapter 3 gives an overview of previous studies concerning meat quality perception. It is shown what kind of quality characteristics are used by consumers to perceive quality and infer attributes not visible before purchase

³ Attitudes are the personal evaluation of a psychological object. They are determined by beliefs about the likelihood of consequences of the behaviour and evaluations of how good or bad those consequences would be if they occurred (Trafimow and Finlay, 2002; Ajzen, 1991). Attitudes influence psychological processes such as perception, learning and thinking. Strong attitudes can affect the purchase behaviour and quality judgment of consumers (Trommsdorff, 2003).

(e.g. taste). Furthermore, systems for categorisation and systematisation of quality characteristics are introduced to offer frameworks for classifying the characteristics according to their potential to be perceived and evaluated by consumers.

The 4th chapter explains the methods used to investigate the perception process. Associative elicitation techniques are applied to elicit the cognitive structures regarding pork quality. An involvement measurement instrument is used to research what quality characteristics are used at the point of sale to make the pork purchase decision. Furthermore, statistical and econometric methods such as network analysis and an ordered logit model for data analysis are explained.

In the 5th chapter, empiricism is provided. In this thesis, two consecutive consumer surveys are presented. The first survey was conducted in 2004 at private household level (n=260) to investigate the stored information, i.e. cognitive structures consumers hold against pork quality by applying free elicitation technique and concept mapping. This enables assumptions about the way consumers perceive pork quality. The cognitive structures and semantic networks of pork quality respectively were researched by means of network analysis and count data analysis. The impact of stored information on pork consumption frequency was investigated using an ordered logit model. The second survey was carried out in 2005 at the point of sale (n=767) to analyse what information, i.e. quality characteristics are actually used to make the pork purchase decision. In this context, it was assumed that the stored information influences the kind of current information used at the point of sale. The new involvement profile is applied to measure the depth of information processing. Furthermore, binomial logit and ordered logit models are applied to investigate determinants of importance and utilisation of current information to make the pork purchase. Consumers are segmented into target groups according to their use of current information at the point of sale.

The 6th chapter summarises the main results, gives marketing recommendations, criticizes research limitations and offers suggestions for future research.

2. Theoretical Background of Food Quality from the Consumer's Perspective

This chapter discusses the theoretical background of food quality from a consumer's perspective. The theory of consumer-oriented food quality is presented in Section 2.1. Afterwards, consumers' information processing as the underlying theory of the perception process is explained in Section 2.2. Section 2.3 sums up the most important findings.

2.1. Concept of Consumer-Oriented Food Quality

In the following, consumer-oriented definitions of food quality are given and the perceived quality approach as well as the economics of information approach are introduced to classify the concept of food quality (see Section 2.1.1). Furthermore, theoretical models of the quality perception process are discussed (see Section 2.1.2).

2.1.1. Definition and Classification of Consumer-Oriented Food Quality

Various studies differentiate between objective and subjective food quality (GRUNERT, 2005; BRUNSØ ET AL., 2004; GRUNERT ET AL., 1996; GRUNERT, 1995). 'Objective quality' is product- and process-oriented quality (e.g. fat content, use of pesticides) and 'quality control' (the standards a product has to meet) since it can be measured at the product itself. 'Subjective quality' is consumer-oriented quality because it is based on measures of individual perception only. It is not what producers or other third persons think (BOOTH, 1994). Consumer-oriented definitions of food quality are those where the individual consumer is the starting point. Table 1 presents several definitions of food quality, taking the subjective, consumer-oriented view into account.

Table 1: Definitions of Food Quality from a Consumer’s Perspective

PERI, 2006	Food quality is a set of consumer requirements such as safety, commodity, nutritional and sensory.
ANDERSEN ET AL., 2005A	The term meat (food) quality covers inherent properties of meat (food) decisive for the suitability of the meat (food) for eating, further processing and storage including retail display. Quality is to be considered a complex and multivariate property of meat (food), which is influenced by multiple interacting factors including the conditions under which the meat (food) is produced.
BREDAHL, 2003, 65	“The perceived quality of food products has been found to comprise sensory, health, convenience and process dimensions.”
ISSANCHOU, 1996	Food quality is not an inherent characteristic of food, but rather linked with the concept of acceptability.
BOOTH, 1995, 201	“A food’s quality is an objective matter of psychological science: what observable factors influence different consumers’ selections of that food from among the alternatives available in common situations? “
CARDELLO, 1995, 165	“Food quality is a psychological construct. It is both perceptually based and evaluative. (...) To be valid, food quality must be judged by consumers of the product.”
GRUNERT, 1995, 171	“(…) a rough distinction between three types of food quality. Product-oriented quality is measured by means of a food product’s physical properties (...). Process-oriented quality is concerned with the extent to which the product-oriented quality remains stable at pre-specified levels (...). User-oriented quality is the subjective quality perception of a user, and this may be the end user or an intermediate user in the food chain, e.g. a retailer.”
MOLNAR, 1995, 185	“The concept of food quality (...), in conformity with consumer requirements and acceptance, is determined by their sensory attributes, chemical composition, physical properties, level of microbiological and toxicological contaminants, shelf-life, packaging and labeling. Within this model, food safety has primary significance for food quality. Another unique trait of food quality is the hierarchical and dynamic interactions of almost all of its attributes (MOLNAR ET AL., 1979 in MOLNAR, 1995).”
STEEN-KAMP, 1989, 107	“Perceived product quality is an idiosyncratic value judgment with respect to the fitness for consumption of the product which is based upon the conscious and/or unconscious processing of appropriate and available intrinsic and extrinsic quality cues in relation to relevant experience and credence quality attributes, and formed within the context prior experience, perceived quality risk, quality-consciousness, usage goals, and other personal and situational variable.”

With regard to the consumer-oriented definitions of food quality presented in Table 1 it should be highlighted that consumer-oriented food quality is mainly seen as a psychological construct, based on consumers' perceptions.

Perceived Quality Approach

Consumers' quality perceptions are taken into account by the perceived quality approach of marketing and consumer behaviour.⁴ This approach regards the quality perception process focusing on how consumers form judgments about product quality based on product information. The impact of the product itself, the place of purchase (point of sale) and the purchase situation as well as the person on the quality perception process is investigated (CARDELLO, 1995; STEENKAMP, 1989). In this context, the product for instance affects the perception process in the sense that the importance of certain product characteristics may differ, because some consumers prefer e.g. marbled meat and others lean meat. The point of sale influences the perception process according to the intended purpose of usage or other situational factors, e.g. service, hygiene (OUDE OPHUIS AND VAN TRIJP, 1995). With regard to the person, it should be stated that consumers differ in their perceptual abilities, personal preferences and experience level. The perception of a product will vary accordingly. In this context, the level of consumers' involvement should be mentioned. Involvement is an unobservable state of motivation or interest (ROTHSCHILD, 1984). Consumers' degree of involvement in products or issues is commonly held as a major impact factor of the depth of information processing and related consumer behaviour. It influences whether or not the consumer puts lots of effort into information search and decision-making (KAPFERER AND LAURENT, 1985).

Consumers' perceptions, needs and goals affect consumers' quality evaluations. This is expressed by the 'concept of perceived quality'. Perceived quality is regarded as consumers' overall evaluative judgment about a product's overall

⁴ In the literature further approaches are mentioned. For example STEENKAMP (1989) describes three more approaches regarding the definition of quality. 1. The economic approach regarding for example quality competition and market equilibrium when products vary in quality. 2. The metaphysical approach of philosophy focusing on the being of quality. 3. The production management approach studying the standardized manufacturing procedures, quality control and quality costs. For further readings see for example FEIGENBAUM, 1991; GARVIN, 1984; LEFFLER, 1982; CROSBY, 1979; LELAND, 1977; PIRSIG, 1974; BREMS, 1957; LANCASTER, 1971, 1966; DORFMAN AND STEINER, 1954; ABBOTT, 1953; CHAMBERLIN, 1953; HOUTHAKKER, 1952; THEIL, 1952.

2. Theoretical Background

superiority (STEENKAMP, 1990; STEENKAMP, 1989). This judgment is made with respect to the fitness for consumption, i.e. conformity with consumer requirements. It refers to those features of products which meet customers' needs and thereby provide satisfaction to customers. Quality is not only the summation of all attributes but of the evaluation of specific quality-determining characteristics. Therefore, perceived quality itself can be seen purely as an evaluative measure (AMERICAN SOCIETY FOR QUALITY, 2007; PERI, 2006; GRUNERT, 2005; TAGUCHI ET AL., 2005; ENGELAGE, 2002; JURAN, 1998; ISSANCHOU, 1996; BERTOZZI, 1995; DAY, 1993; MOLNAR, 1995; DODDS AND MONROE, 1985; MAYNES, 1976; JURAN, 1974; KUEHN AND DAY, 1954; OXENFELDT, 1950).

Quality perception and quality judgment of consumers depend on acceptability rather than on concrete characteristics. The quality judgment is based upon the conscious and/or unconscious processing of perceivable quality cues in relation to relevant quality attributes within the context of significant personal and situational variables. Per definition, a quality cue is any informational stimulus which is, according to the consumer, related to the product's quality, and can be ascertained by him/her via the senses before purchase (POULSEN ET AL., 1996; OLSON, 1978; OLSON, 1972). OLSON (1972) assumed the quality perception process to have two steps in which consumers first choose quality cues, of product quality from an assortment of product-related attributes, and then combine their own evaluations of the individual cues into an overall judgment of product quality (OUDE OPHUIS AND VAN TRIJP, 1995).

Consumers' perceptions of quality are based on one or more cues (e.g. DODDS AND MONROE, 1985; OLSON, 1978). Quality cues can be separated into intrinsic and extrinsic quality cues (NORTHEM, 2000; OLSON, 1972). Intrinsic quality cues refer to physical aspects of the product, such as colour, form, shape, brightness, or odour (BERNUÈS ET AL., 2003; BECH ET AL., 2001). This type of cue is particularly relevant for fresh foods. For example, the appearance of fresh vegetables or meat is an indicator of the expected perceived quality (OUDE OPHUIS AND VAN TRIJP, 1995). Extrinsic quality cues are related to the product without being a part of it, e.g. quality stamp, packaging, production information, brand, specific labels, price or retail outlet (VERBEKE ET AL., 2005). In situations of uncertainty, and this is common in the case of meat quality, the consumer predominantly reverts to extrinsic quality cues (GRUNERT ET AL., 1996; TOLLE, 1994).

Economics of Information Approach

Quality cues resemble search quality attributes (STEENKAMP, 1990). Attributes are descriptive features characterizing a product. Furthermore, they are what consumers assume the product is or has and what is involved with its purchase or consumption (KELLER, 1993).

Search quality attributes were introduced by NELSON (1974) to refer to characteristics of the product to be judged by the consumer himself.⁵ Search quality attributes can be evaluated by the customer before purchase, for example the colour or fat rim of a pork chop. Furthermore, he referred to experience quality attributes as attributes that can be evaluated after purchase or consumption such as the taste or tenderness of a pork chop. DARBY AND KARNI (1973) introduced credence quality attributes to investigate markets with information asymmetries between seller and buyer with the sellers being the experts who determine the customers' needs. In this sense, credence quality attributes can never be evaluated by average consumers themselves but remain purely cognitive such as the use of antibiotics or hormones (OUDE OPHUIS AND VAN TRIJP, 1995).⁶ The separation of quality attributes into search, experience and credence quality attributes refers to the economics of information approach, classifying goods in terms of information becoming available to the consumer (BAKER, 2003).⁷⁻⁸

Based on NELSON (1974, 1970) and DARBY AND KARNI (1973) other authors have gone on to categorise product characteristics according to the level of

⁵ NELSON (1970) first introduced search and experience goods.

⁶ Recently, some authors have referred to 'Potemkin' quality attributes, meaning quality attributes which will never be known by anyone. As this approach will not be used in this thesis one may find further information in e.g., SPILLER, 2002; BECKER, 2000; BECKER, 1999.

⁷ STEENKAMP (1989) discusses the economics of information approach in the context of the economic approach of quality. BECKER (1999), BROCKMEIER (1993) and STEENKAMP (1989) confer the impact of economic theories such as the HOUTHAKKER/THEIL model (1952) and the LANCASTER model (1966), on consumers' perception of food quality. An economic analysis of food quality is for example given by BROCKMEIER (1993). She empirically applies the hedonic approach (ROSEN, 1974) to investigate implicit prices for fruit juice. The results provide a basis for quantifications of simulated changes in food quality.

⁸ NELSON'S (1974, 1970) and DARBY AND KARNI'S (1973) models of information seeking behaviour are based on STIGLER (1961). STIGLER (1961) developed an economic model of the shopping behaviour of imperfectly informed consumers interested in purchasing a homogeneous good. STIGLER'S (1961) approach is not discussed as he did not refer to quality.

information becoming available to consumers. For example, VERBEKE ET AL. (2005) categorised quality characteristics by dividing them into intrinsic and extrinsic attributes. Intrinsic attributes are related to the physical product (e.g. odour) and extrinsic attributes (e.g. price) are related to the product without being physically part of it. According to VERBEKE ET AL. (2005) this separation has some resemblance to the classic attribute classification by NELSON (1974, 1970) meaning intrinsic attributes including 'search' and 'experience' attributes. However, the intrinsic and extrinsic attributes sensu VERBEKE ET AL. (2005) do not resemble intrinsic and extrinsic quality cues sensu OLSON (1972) as the intrinsic attributes include search and experience quality attributes.

BECKER (2000) understands search quality as the quality known by inspection in the shop and refers to it as inspection quality. He uses the term 'quality in the shop' instead of 'search quality attributes' stressing that this particular quality does not consist of quality attributes but of cues or indicators for the product quality in consumption. 'Quality in the shop' consists of cues predicting the consumption quality. BECKER (2000) assumes that the quality detected in the shop is not directly utility-generating, and accordingly should not be entitled a search quality attribute. In this context he refers to experience quality as 'eating quality attributes'.

With regard to credence quality attributes of food products HANF (2000) defined two groups.

1. Metaphysical credence quality attributes referring to attributes such as 'organically produced', 'animal husbandry appropriate to the species' or 'fair trade'. Metaphysical credence quality attributes are usually unrelated to the physical product. They concern the production process and cannot be detected at the product itself.
2. Risk credence quality attributes regarding attributes such as 'free of salmonella', 'no toxic residuals' or 'no health risk'. Risk credence quality attributes are strictly related to the physical product. They could be evaluated but not by the individual consumer as costs of examinations would be prohibitively high. Even the state would only take samples because of extraordinarily high costs.

HANF'S (2000) approach provides a differentiation regarding the utility of metaphysical and risk attributes. Metaphysical attributes offer only a limited utility while risk attributes offer a high utility, meaning that products are only purchased if the probability of harm is extremely low, i.e. trust towards the retailer is high. Hence, this approach provides a basis to explain purchase

behaviour influenced by scandals and loss of trust.

As all categorisation systems refer to the classical categorisation used in industrial economics literature, the author follows the classical categorisation of NELSON (1974) and DARBY AND KARNI (1973) to systematise the quality attributes into experience and credence quality attributes. Search quality attributes are classified into intrinsic and extrinsic quality cues according to OLSON (1972). Describing food products, these goods are only to a limited degree characterised by quality cues but mainly characterised by experience and to an increasing extent by credence quality attributes. ALFNES (2004) for instance, states that in the case of food it is almost impossible for consumers to identify the quality of products prior to purchase. Especially, unpackaged food products such as meat, fish and fruits and vegetables give little information to consumers.

In this context, it should be stated that due to increasing concerns regarding topics such as healthiness, naturalness, wholesomeness, safety and ethical aspects consumers show an increasing interest in credence quality attributes. They demand not only product characteristics but to an increasing amount process characteristics. Process characteristics are mainly credence quality attributes such as guaranteed animal feeding, environmental friendly produced and food safety issues such as BSE. Accordingly, there might be credence quality attributes of importance for consumers without accessible information in the process of buying and consuming (BECKER, 2000; GIERL AND STUMPP, 2000; ISSANCHOU, 1996; WANDEL AND BUGGE, 1997). Hence, information is needed to overcome information asymmetries and accordingly, to make the credence quality attributes accessible to the consumer before purchase and consumption. But this means as well that consumers have to rely on information to make purchase decisions. They have to trust the judgment of others (HANF AND KÜHL, 2005; BAKER, 2003).

Interaction between Perceived Quality Approach and Economics of Information Approach

The perceived quality approach and the economics of information approach are related due to consumers' use of quality cues to infer the quality attributes of a product (BERNUÈS ET AL., 2003). Quality cues have to make intrinsic, difficult-to-evaluate product attributes, extrinsic and visible. Quality cues must be related to specified objective product attributes to communicate specific quality attributes. Objective product characteristics should be related to subjective perceptions (BRUNSON ET AL., 2004). However, the way consumers perceive