A decorative graphic on the right side of the page. It features three concentric blue circles of different sizes, arranged vertically. Two thin blue lines originate from the top left and extend diagonally towards the circles, creating a sense of perspective. A large, partially visible blue circle is at the bottom right corner.

Consumers' quality perception of steak from the supermarket vs. the in-store butcher

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Abstract

The main objectives of the present study are to understand how consumers perceive quality of steaks that are pre-packaged at the supermarket and steaks that are freshly cut-to-order at an in-store supermarket butcher. This is investigated by identifying what important quality aspects are for consumers in steak and what the leading aspect is consumers base their quality perception on. This is analysed with the conceptual quality model, which uses colour as intrinsic quality cue, authentic experience as extrinsic quality cue, whom lead to experience- and credence quality beliefs, which in turn, leads to anticipated quality. Furthermore, this study attempts to investigate whether level of self-confidence and consumer trust in the in-store butcher are of moderating effect in the quality perception process. Results show that colour, authentic experience, experience quality beliefs and artificial safety concerns are predictive for anticipated quality. Experience quality beliefs showed the largest significant effect on anticipated quality. Colour and authentic experience also have a direct effect on anticipated quality, colour was the most dominant of the two. The moderator's consumer trust showed no significant effects. Level of self-confidence interacted positively with colour quality on artificial safety concerns and negatively with authentic experience on artificial safety concerns. Furthermore, self-confidence itself had a negative effect on healthiness beliefs. Lastly, steaks of the in-store butcher were not always perceived as of better quality than pre-packaged steaks because bright red coloured steaks were perceived as of better quality, from the supermarket and the in-store butcher.

Keywords: Quality perception, steak, authentic experience, butcher, consumer trust, self-confidence.

1 Introduction

The post-war period can be characterized by three parallel transformations in the food and retail market, the 'supermarket revolution', the 'chain store revolution' and the 'consumer revolution' (Ekberg, 2012). Ekberg (2012) imposes that over the past decades, supermarkets went through a revolution when it comes to size, expanding in products, assortments and variety. The chain store revolution illustrates the era of standardization, mass production and long worldwide chains from producers to consumers. Lastly, the consumer revolution summarizes the changes on economic, demographic and cultural level (Leeftang and Van Raaij, 1993). Supermarket consumers are a diverse audience, with different incomes, household structures, beliefs and wants regarding supermarket products. Hunger is, in most cases, no longer the sole director of food choice and consumption. Instead, consumers are faced with a wide range of competitively priced food products of consistently high quality (Wilcock et al., 2004). Consumers expect each food product to be safe, aesthetically pleasing, good tasting and consistent with the product image. It is because of this, variations within a product range have to be kept to a minimum. Consumers interpret variations as an indicator of production faults (Wilcock et al., 2004). Products, especially fresh products, are thus looking generic in supermarkets.

The increase of generic looking and aesthetically pleasing fresh products has led to deskilling of the consumer when it comes to assessing the quality of fresh products (Jaffe and Gertler, 2006). While consumers assess the quality of fresh products by freshness, flavour, texture, look and smell, food system professionals assess quality by looking at the uniformity, colour and size (Jaffe and Gertler, 2006). An apparent mismatch between quality assessment of demand (the consumers) and supply (the food system professionals, i.e. food manufacturers and retailers). According to Jaffe and Gertler, most consumers are not aware of this mismatch and consumers trust the quality of fresh products in supermarkets. The overall trust of Western Europe consumers in the food system professionals is high, though actors in the meat sector are being trusted the least. (De Krom and Mol, 2010). Consumers also characterize quality assessment of meat as most difficult (De Krom and Mol, 2010).

To differentiate in the quality of meat and to provide aid to consumers in their search for quality meat, several Dutch supermarkets have re-introduced an in-store butcher (e.g. Albert Heijn XL with a Grill&Steak department). With this addition, consumers have the option to choose between pre-packaged meat from the shelf and fresh, even cut-to-order meat from the Grill&Steak department. This fresh, cut-to-order meat has not been processed and has a more natural appearance than pre-packaged meat. But since consumers are deskilling and fresh products look increasingly generic and aesthetically pleasing, consumers may find themselves struggling with evaluating which type is of better quality, the pre-packaged (aesthetically pleasing) or the fresh, cut-to-order meat.

The aim of this paper is to identify what the most important aspects are in the quality perception of consumers in fresh and pre-packaged meat. The question is what consumers ultimately see as dominant aspect in their quality perception, resulting in a higher anticipated quality for fresh or pre-packaged meat. In this research, the specialty meat (beef) steak will be taken as example. This because steak is assumed to be a non-daily product to consumers and thus consumers will want to have a steak of best possible quality.

1.1 Research objective

Identifying what the most important quality aspects are for consumers in fresh and pre-packaged steak.

1.2 Main research question

What is the leading aspect consumers base their quality perception on in fresh steak and pre-packaged steak?

1.3 Background

Consumers face issues in determining the quality of meat in the supermarket, due to the mismatch in their search for quality indicators and the quality indicators being used by the food system (Jaffe and Gertler, 2006). The generic look of meat and deskilling of the consumer also contributes to the increased difficulty consumers face in choosing a meat product (Jaffe and Gertler, 2006).

Assessing meat quality happens through perceived intrinsic and extrinsic quality cues (Grunert, 2006). Intrinsic quality cues are physical aspects of the product, that show as colour, visible fat and cut. Extrinsic quality cues are non-physical aspects of the product, they can be the point of purchase, but also brand name, quality labels and product origin (Bernués et al., 2003; Grunert, 2006; Bernués et al., 2012). The quality assessment of meat traditionally has been largely based on intrinsic quality cues, though extrinsic quality cues seem to gain importance in the quality assessment (Grunert, 2006). Especially origin and point of purchase seem to be important extrinsic cues. Origin gives important information about quality perception, same as meat from a butcher is believed to be of better quality (Grunert, 2006).

Intrinsic quality is predominantly determined by the fresh appearance and colour of meat (Glitsch, 2000; Grunert, 2006). The presentation of meat is manipulated with Modified Atmosphere Packaging (MAP) technique. MAP technique increases shelf life of meat products, from 150% to 400% (Cooksey, 2014). The use of MAP is complemented with Carbon Monoxide (CO), to preserve the colour of red meat, as a bright red colour is preferred by consumers (Glitsch, 2000; Bernués et al., 2003; Jaffe and Gertler, 2006; Grebitus et al., 2013; Cooksey, 2014). The use of CO-MAP techniques provide a more uniform and aesthetically pleasing presentation of meat and saves the need of a butcher at supermarkets (McMillin, 2008; Cooksey, 2014).

Contrary to this, consumers are less willing to purchase products that have been processed and involve technology (Grebitus et al., 2013; Cooksey, 2014). As Grunert (2006) mentions, consumers have become more demanding and critical towards the food system, resulting in more fragmentation in their food choices. To respond to this, differentiation of quality in food products is offered in order to satisfy the critical consumer. A dichotomy in purchases of meat can be distinguished. Processed (bulk) meat is sold widely, but there is also an increase of demand for information-intensive specialty meat (Grunert, 2006). To differentiate between specialty and bulk meat, added-value is increasingly being used to give the consumer the idea of better quality (Grunert, 2006). Extrinsic quality cues are added-values, as they are not physical aspects of the product, but are related to the product and consumers use them to predict quality (Grunert, 2006). Added value in form of extrinsic quality cues can be brand name, an origin label or point of purchase, cues that guarantee authenticity (Bernués et al.,

2003; Grunert, 2006; Ballin, 2010). The presence of an in-store butcher could be a solution for consumers that demand information-intensive specialty meat. Meat of a butcher mostly guarantees authenticity of the product (Grunert, 2006). Several studies highlight the importance of these 'new' extrinsic cues as point of purchase (butcher's) and authenticity (i.e. origin) (Becker et al., 2000; Glitsch, 2000; Bernués et al., 2003; Verbeke and Vackier, 2004; Grunert, 2006). The presence of an in-store butcher and the fresh, cut-to-order steaks will together be called as 'authentic experience' in this research. The question is to what extent consumers base their quality perception on intrinsic cues, as they are visible and concrete, or on extrinsic cues (the authentic experience) when searching for quality steak. The process of assessing quality and the different cues that play a role in this process are addressed in the next chapter. After that, the methodology chapter follows with a description of the experimental procedure and data analysis.

1.4 Conceptual model

Quality

First, a clear definition of quality is needed. There is a general agreement that quality contains an objective and a subjective dimension (Grunert, 2005). Objective quality can be measured, as it refers to the physical characteristics of and built into the product and is used by food professionals, like food technologists (Grunert, 2005). Subjective quality is the quality of a product, as it is anticipated by consumers (Grunert, 2005). It is generally believed in the field of consumer research that quality perception is a subjective impression as it is based on psychological processes of the individual consumer (Bredahl, 2004). Furthermore, the holistic approach of subjective quality will be used as definition of quality. The holistic approach suggests anticipated product quality is a sum of all the desired properties a product has, as evaluated by consumers (Grunert, 2005).

The process of anticipated quality of a product is central in this research, the steps consumers go through when deciding on the quality of a steak are crucial to determine which aspects are important. Generally, quality perception can be seen as a process of acquisition of cues, attributing personal importance to them and evaluating the attributes to result in an overall, anticipated quality of a product. The conceptual model of quality perception by Steenkamp (1990) has provided a foundation for these different stages of quality perception: (1) the acquisition and categorization of intrinsic and extrinsic quality cues, (2) the formation of quality attributes based on intrinsic quality cues and extrinsic quality cues, and (3) the integration of quality attributes between experience quality beliefs and credence quality beliefs, together leading to the perceived quality of a product.

Similarly, in this research there will be a distinction between the stage of acquisition and categorization of cues, the formation of quality attributes and the integration and evaluation into an overall quality perception, called anticipated quality. The first stage can be seen as the sensory stage, as acquisition and categorization of cues happens by perceiving the cues with the senses (viewing, smelling). Secondly, when personal importance is attached to these cues, the cues become personal attributes. Thirdly, attributes deliver input to predict experience and credence quality beliefs. Beliefs are benefits or consequences a consumer experiences when consuming the product (Steenkamp, 1990). Lastly, the quality beliefs combined form the anticipated quality of a product.

In the model of Steenkamp, personal factors such as age, gender and education are believed to influence the process as well. In this case, rather than including them as a factor, they will be used to test homogeneity within the group of respondents. When needed, the personal factors can be corrected for. However, it is believed there are factors moderating the process of quality evaluation that ought to be included. According to research outside the food domain, perceived applicability of a quality cue is a function of two factors: the degree to which the cue is perceived and the degree to which the consumer feels confident about his ability to use the cue (Bredahl, 2004). The degree to which perceived intrinsic and extrinsic cues are utilized in quality evaluation depends on the level of self-confidence (Steenkamp, 1990). Therefore, self-confidence is expected to be a moderator in the process of food quality as well. Secondly, it is expected that the point of purchase will enhance quality perception, as meat of a butcher is perceived as better quality meat (Becker, 2000). In turn, consumers will have an idea of quality of products of the supermarket shelf as well. Guenzi and Georges (2010) describe this as

consumer trust in the sales person, and in our case, this will be consumer trust in the point of purchase. Point of purchase still remains the supermarket store, but point of purchase can either be the supermarket shelf or the in-store butcher. In the model below, an overview is given of the different aspects and the moderator. In the next sections, the different aspects will be explained with associated hypotheses.

Sensory stage

The sensory stage represents the first stage of the quality perception process, in which intrinsic and extrinsic quality cues are presented. Quality cues are defined as “Informational stimuli that are, according to the consumer, related to the quality of the product and can be ascertained through the senses prior to consumption” (Steenkamp, 1990). Intrinsic quality cues are physically related to the product, extrinsic cues are non-physically related to the product (Grunert, 2006).

Intrinsic cues of red meat are generally visible fat, cut and colour (Bernués et al., 2003; Grunert, 2005; Grunert, 2006; Bernués et al., 2012). Though consumers are incapable of utilizing visible fat as a predictor for quality of steak and cut is merely used to predict price quality (Grunert, 1997; Grunert, 2005). The influence of visible fat and cut will remain neutral in this research as the cut and visible fat of steaks manipulated to be uniform. Moreover, colour seems to be the dominant intrinsic cue (Glitsch, 2000, Grunert, 2006). Colour is utilized to assess the freshness of meat, freshness is considered to be a quality belief (Becker, 2000). With the use of MAP and the addition of carbon monoxide (CO), the bright red colour of meat can be stabilized. The addition of CO even masks the shelf life of packaged meat products beyond their expiration date (Greibitus et al., 2013). Though packaged meat products are not fresh anymore, they retain the bright red colour, leading consumers to believe that bright red is a cue for freshness and thus higher quality. The question is to what extent consumers derive quality of pre-packaged and freshly cut meat from its colour, hence:

H1: Bright red colour leads to higher perceived colour quality

Extrinsic quality cues relate to the product but are not part of the physical product (Grunert, 2006). In general, extrinsic quality cues are brand name, quality labels, (geographical) product origin and point of purchase (Bernués et al., 2003; Grunert, 2006; Bernués et al., 2012). In the case of fresh products, meat especially, consumers tend to rely more on intrinsic cues in their quality evaluation (Grunert, 2006). Though ‘new’ extrinsic cues as point of purchase and authenticity are gaining in importance, because adding-value seems to enhance consumers’ quality perception (Grunert, 2006). According to Grunert, the story behind a product, also named as authenticity, is being used to enhance perceived meat quality (Grunert, 2006). Authenticity is often not defined in studies and there seems to be lacking a uniform definition. Authenticity is generally described in dictionaries as ‘real, truthfulness of origin and close to its source. Additionally, Grunert et al. (2011) define authentic as ‘original and of traditional origin’. Though not clearly mentioned, Grunert et al. (2011) describe traditional origin, as with the use of ‘traditional’ preservation methods, like smoking or salting meat. Therefore, I consider traditional origin as equivalent to not industrially processed or preserved, but fresh, even cut-to-order when needed. Authenticity then can be defined as fresh, not industrially processed and without additives (i.e. MAP and CO). The opposite of authentic meat with the definition described above then logically is processed, pre-packaged meat.

To increase added-value and as means of differentiation, the in-store butcher has been re-introduced in several Dutch supermarkets. Consumers are given the option to choose for fresh, cut-to-order meat that has not been processed nor is pre-packaged. Point of purchase has been proven to be an influential extrinsic cue, meat from a butcher is being perceived as of better quality (Steenkamp, 1990; Grunert, 2006). Research of McIlveen and Buchanan (2001) proved that a butcher at the point of purchase of meat gave consumers the idea of increased quality, even affecting the sensory evaluation of meat samples. The increased idea of quality was irrespective of type of meat. As presence of a butcher seems a predictive extrinsic quality cue and authentic meat does too, the butcher with authentic meat are together considered as 'authentic experience'. Logically, the authentic experience should be predictive to consumers as of higher quality than pre-packaged supermarket steak.

H2: The authentic experience of an in-store butcher cutting steak leads to a higher quality perception than pre-packaged supermarket steak.

Perception stage

Intrinsic and extrinsic quality cues provide input for the perception stage. Consumers derive at the quality attribution by perceiving cues and attributing personal importance to the cues provided by the product and the environment. There is a distinction between intrinsic quality attributes and extrinsic quality attributes. With the intrinsic quality attributes, a personal quality evaluation of the intrinsic product by evaluating the colour of the steak is carried out by the consumer. The intrinsic quality attribute can then be named colour quality attribute. With the extrinsic quality attribute, the consumer evaluates the importance of authenticity and point of purchase, together forming the extrinsic quality attribute authentic experience. In turn, the quality attributes deliver a foundation to forecast the quality beliefs. The two beliefs are experience and credence quality.

Experience quality beliefs are benefits or consequences a consumer will experience when consuming the product, experience quality is generally named expected eating experience (Becker, 2000). Both intrinsic and extrinsic quality attributes provide input for experience quality beliefs, as they both contain cues that can be translated into a certain quality belief of eating experience (Steenkamp, 1990). With credence beliefs, the consumer will never experience them while consuming but it contributes to the image the consumer forms of the product, the brand and its quality (Becker, 2000). Credence beliefs concern healthiness and safety (Becker, 2000; Grunert, 2005). These credence beliefs can be predicted partly by evaluating the intrinsic cue colour (Becker, 2000). But other cues on healthiness and safety concerns cannot be predicted and consumers have to rely on information given to them (Grunert, 2005). This happens through extrinsic cues, such as degree of authenticity (is the meat processed – and therefore less healthy?) and point of purchase, as a butcher can provide additional information. Both intrinsic and extrinsic quality attributes deliver input for experience quality belief and credence quality belief, hence:

- H3: High colour quality attribute leads to higher experience quality beliefs
- H4: High colour quality attribute leads to higher credence quality beliefs
- H5: High authentic experience leads to higher experience quality beliefs
- H6: High authentic experience leads to higher credence quality beliefs

Moderators

According to Bredahl (2004), the applicability of a quality cue is a function of the degree to which a cue is perceived (and thus attributed) and the degree to which the consumer feels confident to use that attributed cue as input for quality belief formation. The degree to which perceived cues are utilized in quality perception is dependent on the level of self-confidence (Steenkamp, 1990). Therefore, self-confidence is considered to be a moderator. Secondly, point of purchase (in-store butcher versus supermarket shelf) is expected to contribute to quality evaluation, as meat of a butcher is perceived as better quality (Becker, 2000). Consumers will have an opinion on quality of supermarket-shelf meat and in-store butcher meat that can contribute to quality evaluation. Guenzi and Georges (2010) describe this as consumer trust in the salesperson, and in this study, it can be translated into consumer trust in point of purchase. Level of self-confidence moderates particularly the importance of the intrinsic quality attribute (Steenkamp, 1990; Bredahl, 2004), while consumer trust moderates the importance of the extrinsic quality attribute in quality evaluation (Guenzi and Georges, 2010).

Level of self-confidence

The level of self-confidence determines whether the consumer sees himself as capable to comprehend the attribute correctly for the belief formation (Steenkamp, 1990). This capability is related to prior experience with the product, named as product knowledge (Bredahl, 2004). Product knowledge consists of objective knowledge, subjective knowledge and prior experience, with subjective knowledge as most important factor (Flynn and Goldsmith, 1999). The definition of subjective knowledge is "A consumer's perception on the amount of information they have stored in their memory" (Flynn and Goldsmith, 1999) or "The extent to which a consumer sees himself as knowledgeable on the subject" (Veale, 2008). Interestingly, consumers have higher subjective knowledge than objective knowledge, consumers thus see themselves as more knowledgeable than they actually are (Flynn and Goldsmith, 1999; Veale, 2008). Consumers feel confident about their own knowledge in certain contexts, resulting in a higher reliance on intrinsic quality attributes rather than extrinsic quality attributes (Bredahl, 2004; Veale, 2008). Whether level of self-confidence also moderates in quality evaluation of fresh and pre-packaged steak, will be tested with the following hypotheses:

- H7a: Higher level of self-confidence will lead to increased importance of intrinsic quality attributes as input for experience quality beliefs
- H7b: Higher level of self-confidence will lead to increased importance of intrinsic quality attributes as input for credence quality beliefs

Consumer trust in point-of-purchase

The purchase environment can enhance the quality evaluation, if coherent with the expectations of consumers (Becker, 2000; McIlveen and Buchanan, 2001). The presence of a butcher in-store allows consumers to gain additional information on the product and quality that is normally absent in a supermarket or cannot be assessed by the consumer himself. It is expected that the presence of a butcher will increase feelings of trust, leading to a preference of steak from the butcher instead of the supermarket shelf. It is also expected that in presence of a butcher, consumers will attribute more importance to extrinsic cues. The extent to which consumers use the quality cues of the presence of a butcher in their quality evaluation, depends on the degree of trust they have in the butcher. In a study of Guenzi and Georges (2010), antecedents of trust in salespersons were investigated for the financial service

industry. The financial service industry relies on personal contact, as well as the presence of a butcher does. Guenzi and Georges (2010) found evidence that customer trust in a salesperson is constructed by expertise of the salesperson and their customer orientation. Expertise was defined as the salesperson's knowledge, technical competence and ability to provide answers to specific questions. A salespersons' expertise can reduce uncertainty feelings of the consumer regarding product aspects a customer cannot evaluate himself (Guenzi and Georges, 2010). To conclude, antecedents of trust are the extent to which the butcher is customer oriented, i.e. the desire to assess customers make a satisfactory purchase and the degree of expertise a butcher has. Hypothetically, if customer (or in our case, consumer) trust in the butcher is high, consumers will use the information provided to them in that environment more in their quality evaluation than their own gathered (intrinsic) information. In the case the supermarket shelf is the point of purchase, expectations are consumers will not experience the moderating effect of consumer trust and consumer trust in the supermarket shelf will be neutral. This because research already proved that consumer trust is high in the food system (De Mol and Krom, 2010). It is expected consumers will experience enhanced levels of trust in the point-of-purchase when the authentic experience is measured. This leads to the following hypotheses:

- H8a: High level of consumer trust in authentic experience when point of purchase is the in-store butcher, will lead to increased importance of extrinsic quality attributes as input for experience quality beliefs
- H8b: High level of consumer trust in authentic experience when point of purchase is the in-store butcher, will lead to increased importance of extrinsic quality attributes as input for credence quality beliefs

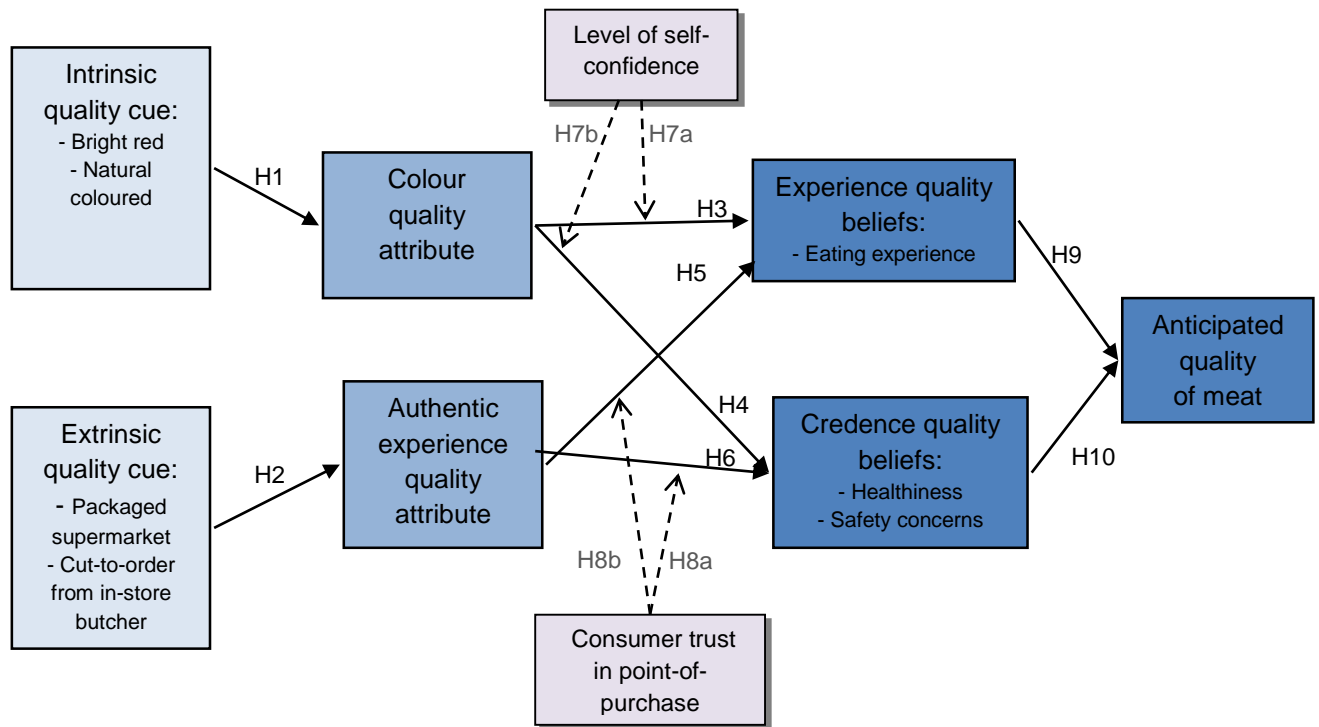
Evaluation stage

Finally, the last stage of the anticipated quality model concerns the evaluation of experience and credence quality beliefs of the product. The quality beliefs then lead to an overall anticipated quality idea. The term quality beliefs is used to indicate the more abstract level of the evaluation process, as it no longer concerns concrete cues or perceptible attributes (Steenkamp, 1990). The experience (eating experience) and credence (healthiness and safety) quality beliefs can be seen as a dichotomy, experience quality beliefs can be assessed partly prior, and further, during consumption. However, safety quality beliefs cannot be assessed by the consumer itself (apart from freshness) and thus relies on information of other sources. In general, eating experience quality beliefs are considered to be of greater influence in predicting quality (Steenkamp, 1990). This because healthiness and safety related quality attributes are more distant at time of purchase, and consumers tend to attach less importance to distant outcomes (Steenkamp, 1990; Bredahl, 2004). Though Steenkamp also mentions contradicting evidence for this. This can be explained by the growing importance of healthiness and safety quality beliefs in the last years, as consumers are increasingly interested in health and safety aspects of products (Grunert, 2006). Safety of meat concerns the addition of hormones, antibiotics, the level of fat/cholesterol, animal welfare and the chance of BSE (Becker, 2000; Verbeke and Vackier, 2004; Banović et al., 2009). As both experience and credence quality beliefs have found to be of influence in anticipated quality and it cannot be predicted which will be of greater influence, both beliefs will be measured with the following hypotheses:

H9: High eating experience beliefs leads to high anticipated quality

H10: High healthiness and safety beliefs lead to high anticipated quality

Ultimately, the different aspects described above will lead to an overall anticipated quality belief and will give insight into what consumers find important in their quality perception of packaged and fresh steak. The anticipated quality model of this research, specific according to relevant information and including hypotheses:



3 Methodology

3.1 Respondents

Respondents of this research were students of Wageningen University. The convenience sampling method was used to acquire respondents. Respondents were invited by e-mail.

3.2 Experimental procedure

Data collection

Data was collected by inviting respondents to participate in an online questionnaire. Data collection thus happened digitally with the use of Qualtrics.

Questionnaire design

The questionnaire consisted of two sections. The first section included questions to measure the importance of the different aspects of the model, the second section acquired demographic information. All aspects of the first section were measured as continuous variables. The variables of the colour quality attribute, authenticity experience attribute, eating experience belief, credence quality beliefs and anticipated quality were dependent variables.

The quality cues could be seen as discrete factors and were manipulated. Hence, colour could be bright red or natural coloured, the steak could either be cut to order from the in-store butcher or be pre-packaged from the supermarket shelf. This gave a factorial design of 2 x 2 factors, which resulted in four conditions that needed to be measured. The pictures used to illustrate the scenarios can be found in appendix 1.

| Condition | Colour | Experience |
|-----------|------------------|-------------------------------------|
| 1 | Bright red | Cut to order in-store butcher |
| 2 | Bright red | Pre-packaged from supermarket-shelf |
| 3 | Natural coloured | Cut to order from in-store butcher |
| 4 | Natural coloured | Pre-packaged from supermarket-shelf |

Measurements

Respondents were asked to participate in a questionnaire regarding meat quality perception. The questionnaire was specified to one of the four conditions and contained 33 questions (items), the questionnaire can be found in appendix 2. Items “The colour of the meat is as it should be”, “How do you like the colour of the meat?” and “This steak looks fresh” measured the colour attribute and were derived from studies of Bredahl (2004) and Glitsch (2000). Items concerning authentic experience were measured with the questions “This steak looks minimally processed, natural and authentic” and were based on a study by Reicks et al. (2011). Eating experience and credence quality beliefs were measured with questions of studies from Bredahl (2004) and Verbeke and Vackier (2004) and asked expectations regarding tastiness, tenderness, juiciness, nutritious looking, healthy looking, likely to contain antibiotics, hormones, cholesterol and bacterial contamination.

Consumer trust in point of purchase (p.o.p.) was based on questions concerning consumer trust of Guenzi and Georges (2010) but slightly modified to fit the theme of this questionnaire.

As Guenzi and George stated, consumer trust is constructed of expertise and customer orientation. It was measured with the following questions: This [p.o.p.] has my best interest in mind, this [p.o.p.] is an expert on meat, this [p.o.p.] does not make false claims, this [p.o.p.] seems to be concerned with my needs and finally, this [p.o.p.] is trustworthy.

Then, level of self-confidence was measured by items based on the study of Flynn and Goldsmith (1999). Flynn and Goldsmith provided a short, reliable measure for subjective knowledge, including items of self-confidence. The items varied from: "I know how to measure the quality of steak, I think I know enough about steak to feel pretty confident when I make a purchase, I do not feel very knowledgeable about steak, and finally, When it comes to steak, I really don't know a lot. Finally, anticipated quality was measured with: "Overall, I expect the quality of this steak to be good". In several studies, anticipated quality, perceived quality or expected quality was seen as a sum of quality beliefs (Becker, 2000; Glitsch, 2000; Bredahl, 2004; Verbeke and Vackier, 2004) and it was neglected to measure perceived quality directly. As perceived quality does not per se have to be a sum of quality aspects, perceived quality was asked directly in this study with question one. After this question, the questionnaire proceeded with items regarding evaluation of cues, attributes and beliefs.

In the second section, demographic information (gender, age, nationality, study programme and frequency of beef consumption) was acquired. The study of Verbeke and Vackier (2004) provided these questions. If necessary, demographic influence could be corrected for when in-group variance occurred. All items were measured with a 7-point Likert scale.

3.3 Data analysis

First, several tests were executed to ensure homogeneity of the data and to check the amount of in-group variance. When homogeneity tests failed to comprise one group, data would be divided into multiple groups of homogenous respondents, based on demographics.

To measure the influence of the discrete variable intrinsic quality cue (bright red or natural coloured) an Anova was used. Similarly, the influence of the discrete variable extrinsic quality cue (packaged supermarket of cut-to-order from the in-store butcher) was also measured with an Anova.

Next, a factor analysis was needed to check whether the questions measured the attributes and beliefs as intended. It was expected the questions would account for the colour- and authenticity experience quality attributes and the experience- and the credence quality beliefs. In turn, these factors combined were expected to explain the item for anticipated quality. The strength of the factors as input for anticipated quality was measured with a multiple regression analysis. With the multiple regression analysis, the relative importance of the variables on anticipated quality was measured. In the regression analysis, regression equations were tested measuring one hypothesis at the time. The general equation for anticipated quality was a linear function, with the quality beliefs as independent variables, leaving anticipated quality as dependent variable. Similarly, the relation between quality attributes and quality beliefs was measured with first a regression to measure the quality attributes as independent variables on the dependent variable experience quality beliefs (H3 and H5). After that, a regression was analysed in which the quality attributes were used as independent variables with the credence quality beliefs (H4 and H6) as dependent variables. Lastly, a similar equation was constructed, in which the quality attributes were the independent variables, the moderators were added as variables (H7 and H8) and the quality beliefs were the dependent variables.

4 Results

The data analysis was carried out with IBM SPSS version 20 statistical software. Significance level was set at $\alpha < 0.05$. In total, 157 respondents participated in the questionnaire. However, 15 cases did not finish the questionnaire and therefore were excluded of further analysis. Respondents took part in one scenario, the spread of respondents across scenarios was as followed:

Table 4.1 – Spread across scenarios

| Scenario | N |
|--------------------------------------|------------|
| Supermarket natural coloured | 34 |
| Supermarket bright red coloured | 35 |
| In-store butcher natural coloured | 39 |
| In-store butcher bright red coloured | 34 |
| Total | 142 |

The scenarios were coded, such that when the point of purchase was the supermarket, the point of purchase would get a zero. When the point of purchase was the in-store butcher, the code was a one. Similarly, the bright red coloured scenario's got a zero code, natural coloured received a one.

4.1 Background of respondents

From the 142 respondents, 73.2 % was female and 26.8% was male. The ages of respondents varied from 18 to 75, the average age was 23 years. Most respondents were Dutch (N=114) or North-Western European (N=11). All respondents were from Wageningen University, though respondents had a diverse study background in BSc and MSc studies.

4.2 Normality distribution

Whether the data were normally distributed was analysed with the values of skewness and kurtosis. As table 1.1 in appendix 3 shows, the values of skewness and kurtosis were not perfectly as they vary from -1.183 to 0.261 for skewness and from -1.137 to 0.750 for kurtosis. This could be explained by the relatively large standard deviation of the questions (table 1.1 Appendix 3). As the numbers indicated the distribution was not perfect normally distributed, but still acceptable, no adjustments were made. Further analysis showed potential outliers in item 6. When these potential outliers were deleted, the mean went up from 5.19 to 5.28. The corrected mean showed little differences in the overall dataset. As these potential outliers were only detected in one question and deleting them had no added value, they were kept in further analysis.

4.3 Factors and constructs

The conceptual model consisted of six constructs plus two moderators. In first endeavour, the factors were constructed with reliability analysis as they were defined a priori in 3.2 Experimental procedure – *Measurements*. This resulted in the following:

Table 4.3.1 – First reliability test of factors

| | Factor | Item | Cronbach's alpha | Mean | SD |
|------------------------------|--------|------------------------|------------------|------|-------|
| Colour quality | 1 | 2, 3, 4 | 0.830 | 4.16 | 1.006 |
| Authentic experience quality | 2 | 5, 6, 7 | 0.828 | 3.84 | 1.266 |
| Experience quality beliefs | 3 | 8, 9, 10 | 0.831 | 4.83 | 1.202 |
| Credence quality beliefs | 4 | 11, 12, 13, 14, 15, 16 | 0.501 | 4.51 | 1.125 |
| Consumer trust in p.o.p. | 5 | 17, 18, 19, 20, 21 | 0.851 | 3.97 | 1.107 |
| Level of self-confidence | 6 | 22, 23, 24, 25 | 0.900 | 4.13 | 1.333 |

With the reliability tests, it was shown that the Cronbach's alpha of the colour quality factor would improve if item 2 (fresh) would be deleted. As Becker (2000) stated, the item fresh belongs more to quality beliefs than being an indicator for quality attributes. To test this, a factor analysis was performed in which the items concerning experience quality beliefs and credence quality beliefs were placed together with the item fresh. This resulted in the extraction of the following factors with an eigenvalue greater than 1:

Table 4.3.2 – First component matrix

| | Item | Component 1 | Component 2 | Component 3 |
|-------------------------|------|-------------|-------------|-------------|
| Fresh | 4 | 0.809 | | |
| Tasty | 8 | 0.835 | | |
| Tender | 9 | 0.822 | | |
| Juicy | 10 | 0.837 | | |
| Nutritious | 11 | | | 0.523 |
| Healthy | 12 | | | 0.671 |
| Antibiotics | 13 | | 0.879 | |
| Hormones | 14 | | 0.901 | |
| Cholesterol | 15 | | | -0.559 |
| Bacterial contamination | 16 | | | -0.714 |

As table 4.3.2 shows, the item fresh loaded on the experience quality beliefs factor, confirming that fresh indeed belongs to quality beliefs (Becker, 2000). Component three consisted of four items, of which two were negatively related to that component. The eigenvalue table of SPSS showed another possible factor with an eigenvalue of 0.952, which was not extracted as the restriction of factor extraction with eigenvalues > 1 was given. To gain further insights in component 3, the credence quality beliefs items (11 to 16) were taken apart and analysed in a new factor analysis in which three fixed factors were extracted. The results can be found in table 4.3.3.

Table 4.3.3 – Component matrix credence quality beliefs

| | Item | Component 1 | Component 2 | Component 3 |
|-------------------------|------|-------------|-------------|-------------|
| Nutritious | 11 | 0.917 | | |
| Healthy | 12 | 0.911 | | |
| Antibiotics | 13 | | 0.918 | |
| Hormones | 14 | | 0.903 | |
| Cholesterol | 15 | | | 0.852 |
| Bacterial contamination | 16 | | | 0.765 |

As Table 4.3.3 shows, the credence quality beliefs factor could fall apart in three factors, one regarding healthiness (nutritious, healthy), one regarding artificial safety concerns (antibiotics, hormones) and one regarding natural safety concerns (cholesterol, bacterial contamination). To check if this was the best combination, several reliability tests were run and their results can be found in Appendix 4 – Reliability of credence quality beliefs.

As Appendix 4 shows, the split of three factors from the credence quality beliefs factor was reliable. In table 4.3.4, new reliability tests were run with the split of the credence quality beliefs factor and the allocation of the item fresh towards the experience quality beliefs factor.

Table 4.3.4 – Second reliability test of factors

| | items | Cronbach's alpha | Mean | SD |
|-----------------------------------|------------------------|------------------|------|-------|
| Colour quality | 2,3 | 0.868 | 5.06 | 1.629 |
| Authentic experience quality | 5, 6, 7 | 0.828 | 3.84 | 1.266 |
| Experience quality beliefs | 4, 8, 9, 10 | 0.865 | 4.80 | 1.191 |
| Credence quality beliefs | 11, 12, 13, 14, 15, 16 | 0.501 | | |
| <i>Healthiness beliefs</i> | 11, 12 | 0.804 | 4.53 | 1.177 |
| <i>Artificial safety concerns</i> | 13, 14 | 0.805 | 4.59 | 1.303 |
| <i>Natural safety concerns</i> | 15, 16 | 0.475 | 4.37 | 1.202 |
| Consumer trust in p.o.p. | 17, 18, 19, 20, 21 | 0.851 | 3.97 | 1.107 |
| Level of self-confidence | 22, 23, 24, 25 | 0.900 | 4.13 | 1.333 |

As table 4.3.4 shows, the healthiness beliefs and the artificial safety concerns factors both have a high Cronbach's alpha, the natural safety concerns Cronbach's alpha is rather low. Because of the low exploratory power, it was decided to discard the factor natural safety concerns of further analysis.

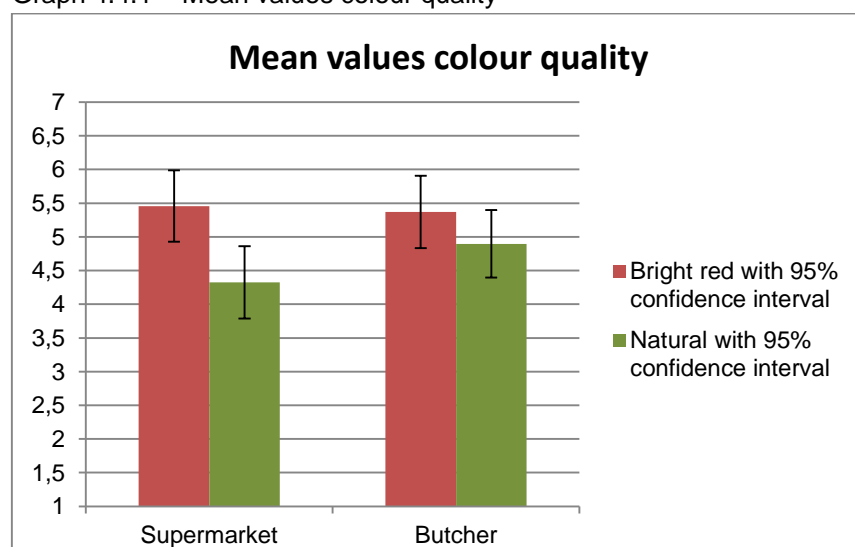
4.4 Hypotheses analysed

H1: Bright red colour leads to higher perceived colour quality

The effect of colour of steaks from the in-store butcher and the supermarket was analysed on the colour quality attribute with a factorial Anova. Colour quality was the dependent variable, the stimuli colour and point of purchase were the independent variables. Levene's test showed equal variance across groups with the value $F(3,138) = 0.032$, $p = 0.81$. Therefore, it can be assumed there is equal variance across the groups. The analysis of hypothesis one showed a significant relation $F(3,138) = 3.695$, $P = 0.013$. This effect could be fully ascribed to the significant value of colour: $F(1,138) = 9.053$, $p = 0.003$. The place of purchase did not show any significant effects with $F(1,138) = 0.826$, $p = 0.365$. This result can be further explained with graph 4.4.1. In both cases, the colour bright red scores higher than natural coloured steaks. Though the means of the in-store butcher as point of purchase do not differ much from the supermarket as point of purchase. The coefficient of the stimuli colour turned out to be $\beta = -0.793$, indicating there is a negative relation between natural coloured steaks and perceived colour quality (As natural coloured was coded into scenario one and bright red coloured scenarios were coded with zero's). Respondents thus saw bright red as more positive than natural coloured in colour quality.

Furthermore, point of purchase turned out to not have a significant interaction effect on colour quality with $F(1,138) = 1.549$, $p = 0.215$. Therefore, it can be assumed there is no interaction effect between the intrinsic and extrinsic quality attributes. The overall variance explained by the model turned out to be low, as it was 5.4%, but hypothesis one can be accepted.

Graph 4.4.1 – Mean values colour quality

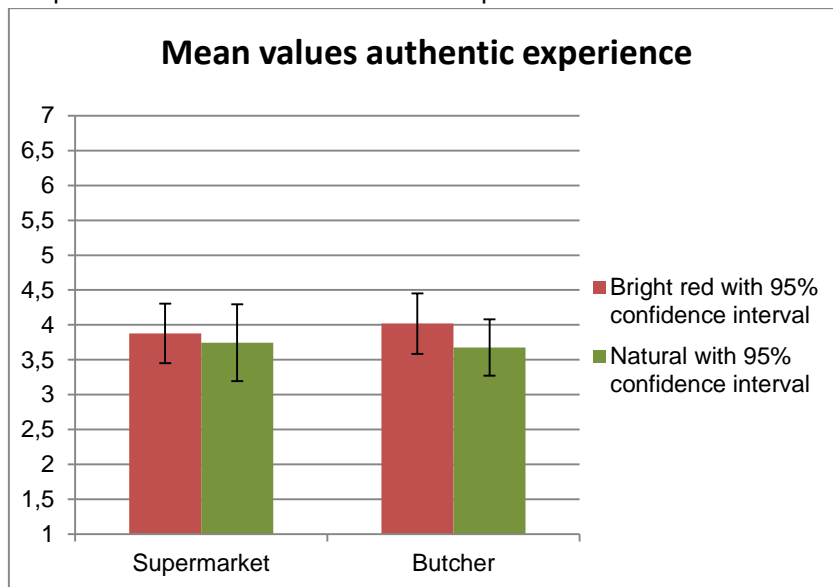


H2: The authentic experience of an in-store butcher cutting steak leads to a higher quality perception than pre-packaged supermarket steak

The effect of an in-store butcher was analysed with the factor authentic experience as dependent variable. Levene's test showed equal variance across groups could be assumed

with $F(3,138) = 1.153$, $p = 0.330$. For the hypothesis, no significant effects were found by the factorial Anova ($F(3,138) = 0.505$, $p = 0.680$) in the overall model. Secondly, no significant effects for the presence of an in-store butcher were found either ($F(1,138) = 0.029$, $p = 0.864$), no effect of colour was found ($F(1,138) = 1.225$, $p = 0.270$) and no interaction effect was found with in-store butcher and colour of the steaks ($F(1,138) = 0.403$, $p = 0.620$). This was supported by looking at the means as displayed in graph 4.4.2. Though the in-store butcher with bright red coloured steaks did have the highest mean, the supermarket bright red coloured had the second highest mean and the in-store butcher with natural coloured steaks the lowest mean. This suggests steaks of an in-store butcher are not automatically perceived as of better quality. Consequently, no evidence supporting hypothesis two could be found.

Graph 4.4.2 – Mean values authentic experience



H3: High colour quality attribute leads to higher experience quality beliefs

H5: High authentic experience attribute leads to higher experience quality beliefs

Both hypotheses were analysed together with a multiple linear regression analysis with colour quality attribute and authentic experience attribute as predictor variables and experience quality beliefs as dependent variable. A significant relation was found for this regression with $F(2,139) = 77.269$, $p = 0.000$. Together, the attributes were able to explain 52.6% of variance. Both variables are of significant value in experience quality beliefs with colour quality attribute ($t = 8.116$, $p = 0.000$) and authentic experience attribute ($t = 5.547$, $p = 0.000$), as displayed in table 4.4.3. Because the β coefficients are both positive, there is evidence for the prediction that high quality attributes leads to high experience quality beliefs. Conclusively, both H3 and H5 are both accepted.

Table 4.4.3 – Coefficients table experience quality beliefs

| Model | β | Std. error | Beta | t | p |
|----------------------|---------|------------|-------|-------|-------|
| Colour quality | 0.377 | 0.046 | 0.514 | 8.116 | 0.000 |
| Authentic experience | 0.330 | 0.060 | 0.351 | 5.547 | 0.000 |

H4: High colour quality attribute leads to higher credence quality beliefs

H6: High authentic experience attribute leads to higher credence quality beliefs

Both hypotheses were analysed together with a multi linear regression analysis with colour quality attribute and authentic experience attribute as predictor variables. Firstly, healthiness beliefs was used as dependent variable. Secondly, the same analysis was run with artificial safety concerns as dependent variable. The outputs can be found in table 4.4.4.

Healthiness beliefs

The model showed a significant relation $F(2,139)= 24.801$, $p= 0.000$ with an exploratory power of 26.3%. Both colour quality attribute ($t= 2.063$, $p=0.041$) and authentic experience attribute ($t= 5.412$, $p=0.000$) had significant predictive value, though authentic experience attribute showed a greater value ($\beta= 0.393$) than colour quality attribute ($\beta= 0.117$). Authentic experience attribute holds more predictive power for healthiness beliefs than colour quality attribute does. Conclusively, H4 and H6 are accepted regarding healthiness beliefs.

Artificial safety concerns

The regression model showed no overall significant effects $F(2,139)= 0.095$ on artificial safety concerns, the exploratory power of the model was 3.3%. The authentic experience attribute did show a significant effect on artificial safety concerns as sole factor ($t= -2.189$, $P=0.030$). As this effect was negative ($\beta= -0.204$) and colour quality attribute showed a slight positive effect ($\beta= 0.065$, $t= 0.887$, $p= 0.377$), the regression overall had no significant effect when items were together. Conclusively, H6 can be accepted, but no evidence for H4 was found.

Table 4.4.4 – Coefficients on credence quality beliefs

| Model | β | Std. error | Beta | t | p |
|-----------------------------------|---------|------------|--------|--------|-------|
| <i>Healthiness beliefs</i> | | | | | |
| Colour quality | 0.117 | 0.057 | 0.163 | 2.063 | 0.041 |
| Authentic experience | 0.393 | 0.073 | 0.427 | 5.412 | 0.000 |
| <i>Artificial safety concerns</i> | | | | | |
| Colour quality | 0.065 | 0.073 | 0.080 | 0.887 | 0.377 |
| Authentic experience | -0.204 | 0.093 | -0.198 | -2.189 | 0.030 |

H7a: Higher level of self-confidence will lead to increased importance of intrinsic quality attributes as input for experience quality beliefs

This hypothesis was measured with a regression analysis in which colour quality attribute represented the intrinsic quality attributes. The moderator was added to the regression and the interaction of the moderator and the colour quality attribute was measured by computing a new variable in which the moderator and the colour quality attribute were multiplied with each other and means were deducted, giving an interaction variable with means centred. To hold on to the model, the authentic experience attribute was added to a factor as well, (as measured in H3 and H5). As a matter of course, a possible interaction between authentic experience attribute and self-confidence needed to be analysed as well. This gave the following regression analysis:

The regression was significant with $F(5,136)= 30.614$, $p= 0.000$ and was able to explain 53% of variance. This could explained by the significant effects of colour quality attribute with

$F(1,136) = 7.890$, $p = 0.000$ and authentic experience attribute with $F(1,136) = 5.230$, $p = 0.000$. There was no significant effect of the moderator itself with $F(1,136) = 0.041$, $p = 0.968$, no interaction effect with colour quality attribute with $F(1,136) = -0.439$, $p = 0.661$ and no interaction effect with authentic experience attribute with $F(1,136) = -0.525$, $p = 0.600$, as table 4.4.5 shows. Conclusively, no supporting evidence for hypothesis 7a was found.

Table 4.4.5 – Coefficients of self-confidence on experience quality beliefs

| Variables | β | Std. error | Beta | t | p |
|--|---------|------------|--------|--------|-------|
| Colour quality | 0.376 | 0.048 | 0.512 | 7.890 | 0.000 |
| Authentic experience | 0.328 | 0.063 | 0.348 | 5.230 | 0.000 |
| Self confidence | 0.002 | 0.055 | 0.002 | 0.041 | 0.968 |
| Self-confidence * colour quality | -0.015 | 0.033 | -0.030 | -0.439 | 0.661 |
| Self-confidence * authentic experience | -0.022 | 0.042 | -0.035 | -0.525 | 0.600 |

H7b: High level of self-confidence will lead to increased importance of intrinsic quality attributes as input for credence quality beliefs

Healthiness beliefs

In this regression analysis, healthiness beliefs was the dependent variable, colour quality attribute and authentic experience attribute were independent variables and self-confidence was the moderator. In both cases, the moderator was also measured with an interaction with both attributes. The regression analysis showed a significant regression $F(5,136) = 11.513$, $p = 0.000$ and was able to explain 29.7% of variance. As table 4.4.6 shows, colour quality attribute had no significant effect with $F(1,136) = 1.858$, $p = 0.065$, but authentic experience attribute did have a significant effect with $F(1,136) = 5.673$, $p = 0.000$ as did the moderator itself, a significant effect with $F(1,136) = -1.998$, $p = 0.048$. Nevertheless, the moderator showed no significant interaction effect with colour quality attribute $F(1,136) = -1.085$, $p = 0.280$ and no significant interaction effect with authentic experience attribute $F(1,136) = -0.833$, $p = 0.406$. Though no interaction effects could be found, the effect of the self-confidence itself on healthiness beliefs is significant, with a negative relation. A higher level of self-confidence does not lead to increased importance of healthiness beliefs. Therefore, no supporting evidence for hypothesis 7b regarding healthiness beliefs was found.

Table 4.4.6 – Coefficients of self-confidence on healthiness beliefs

| Variables | β | Std. error | Beta | t | p |
|--|---------|------------|--------|--------|-------|
| Colour quality | 0.106 | 0.057 | 0.147 | 1.858 | 0.065 |
| Authentic experience | 0.424 | 0.075 | 0.461 | 5.673 | 0.000 |
| Self confidence | -0.131 | 0.065 | -0.149 | -1.998 | 0.048 |
| Self-confidence * colour quality | -0.043 | 0.040 | -0.089 | -1.085 | 0.280 |
| Self-confidence * authentic experience | -0.042 | 0.050 | -0.068 | -0.883 | 0.406 |

Artificial safety concerns

In this analysis, artificial safety concerns was the dependent variable, colour quality attribute and authentic experience attribute were the independent variables and self-confidence the

moderator. The moderator itself and interaction effects with both colour quality attribute and authentic experience attribute were analysed.

The regression was significant $F(5,136) = 4.539$, $p = 0.001$ and was able to explain 14.3% of the variance. While colour quality attribute showed no significant effects $F(1,136) = 1.644$, $p = 0.103$, authentic experience attribute did show significant effects with $F(1,136) = -2.851$, $p = 0.005$. Furthermore, the moderator itself showed no significant effects with $F(1,136) = 0.263$, $p = 0.793$, though the interaction of self-confidence with colour quality attribute did show significant effects with $F(1,136) = 4.032$, $p = 0.000$ and the interaction of self-confidence with authentic experience attribute showed significant effects as well with $F(1,136) = -2.786$, $p = 0.006$. Conclusively, hypothesis 7b regarding artificial safety concerns can be accepted. Furthermore, level of self-confidence also has a significant interaction effect with authentic experience attribute on artificial safety concerns, though this is a negative relation, as table 4.4.7 shows.

Table 4.4.7 – Coefficients of self-confidence on artificial safety concerns

| Variables | β | Std. error | Beta | t | p |
|--|---------|------------|--------|--------|-------|
| Colour quality | 0.116 | 0.070 | 0.144 | 1.644 | 0.103 |
| Authentic experience | -0.264 | 0.093 | -0.256 | -2.851 | 0.005 |
| Self confidence | 0.021 | 0.081 | 0.022 | 0.263 | 0.793 |
| Self-confidence * colour quality | 0.197 | 0.049 | 0.367 | 4.032 | 0.000 |
| Self-confidence * authentic experience | -0.173 | 0.062 | -0.251 | -2.786 | 0.006 |

H8a: High level of consumer trust in authentic experience when point of purchase is the in-store butcher, will lead to increased importance of extrinsic quality attributes as input for experience quality beliefs

The dependent variable was the experience quality beliefs, the independent variables were colour quality attribute, authentic experience attribute and the moderator. Both an interaction effect between consumer trust and authentic experience attribute and consumer trust with colour quality attribute were included in the analysis. Results showed a significant regression $F(5,136) = 30.512$, $p = 0.000$ and an exploratory power of 52.9%. As table 4.4.8 shows, colour quality attribute showed a significant effect with $F(1,136) = 7.956$, $p = 0.000$ and authentic experience attribute was significant with $F(1,136) = 5.483$, $p = 0.000$. The moderator consumer trust showed no significant effect with $F(1,136) = -0.167$, $p = 0.867$, no interaction effects with authentic experience attribute $F(1,136) = -0.775$, $p = 0.440$ and no interaction effect with colour quality attribute with $F(1,136) = 0.309$, $p = 0.757$. As results show, no supporting evidence for hypothesis 8a could be found.

Table 4.4.8 – Coefficients of consumer trust on experience quality beliefs

| Variables | β | Std. error | Beta | t | p |
|---------------------------------------|---------|------------|--------|--------|-------|
| Colour quality | 0.375 | 0.047 | 0.511 | 7.956 | 0.000 |
| Authentic experience | 0.341 | 0.062 | 0.363 | 5.483 | 0.000 |
| Consumer trust | -0.011 | 0.066 | -0.010 | -0.167 | 0.867 |
| Consumer trust * authentic experience | -0.042 | 0.055 | -0.049 | -0.775 | 0.440 |
| Consumer trust * colour quality | 0.013 | 0.042 | 0.019 | 0.309 | 0.757 |

H8b: High level of consumer trust in authentic experience when point of purchase is the in-store butcher, will lead to increased importance of extrinsic quality attributes as input for credence quality beliefs

Healthiness beliefs

With a regression analysis, the interaction effect of consumer trust was measured, with healthiness beliefs as dependent variable. The independent variables were colour quality attribute, authentic experience attribute, the moderator consumer trust and interactions between consumer trust and authentic experience attribute and an interaction with consumer trust and colour quality attribute.

The regression turned out to be significant with $F(5,136) = 10.032$, $p = 0.000$ and an exploratory power of 26.9%. As table 4.4.9 shows, colour quality attribute showed a significant effect with $F(1,136) = 2.143$, $p = 0.034$ and authentic experience was significant with $F(1,136) = 5.222$, $p = 0.000$. The moderator itself had no significant effect on the regression $F(1,136) = -0.812$, $p = 0.418$, no significant interaction effect with authentic experience attribute $F(1,136) = 0.701$, $p = 0.484$ and no significant interaction effect with colour quality attribute $F(1,136) = -0.465$, $p = 0.643$. Conclusively, no evidence supporting hypothesis 8b regarding healthiness beliefs was found.

Table 4.4.9 – Coefficients of consumer trust on healthiness beliefs

| Variables | β | Std. error | Beta | t | p |
|---------------------------------------|---------|------------|--------|--------|-------|
| Colour quality | 0.123 | 0.057 | 0.171 | 2.143 | 0.034 |
| Authentic experience | 0.396 | 0.076 | 0.430 | 5.222 | 0.000 |
| Consumer trust | -0.065 | 0.080 | -0.062 | -0.812 | 0.418 |
| Consumer trust * authentic experience | 0.046 | 0.066 | 0.055 | 0.701 | 0.484 |
| Consumer trust * colour quality | -0.024 | 0.051 | -0.036 | -0.465 | 0.643 |

Artificial safety concerns

With a regression analysis, the interaction effect of consumer trust was measured on artificial safety concerns. Artificial safety concerns was the dependent variable, colour quality attribute, authentic experience attribute, the moderator consumer trust and the interaction between consumer trust and authentic experience attribute and the interaction between consumer trust and colour quality attribute were the independent variables.

The overall model turned out to be not significant $F(5,136) = 1.136$, $p = 0.344$, with an exploratory power of 4%. As table 4.4.10 shows, colour quality attribute was not significant with $F(1,136) = 0.835$, $p = 0.405$, authentic experience attribute was not significant with $F(1,136) = -1.945$, $p = 0.054$, the moderator consumer trust was not significant with $F(1,136) = -0.256$, $p = 0.798$, no interaction effects of the moderator and authentic experience attribute were found $F(1,136) = -0.533$, $p = 0.595$ and no interaction between consumer trust and colour quality attribute were found $F(1,136) = -0.526$, $p = 0.599$. Conclusively, no supporting evidence for hypothesis 8b regarding artificial safety concerns was found.

Table 4.4.10 – Coefficients of consumer trust on artificial safety concerns

| Variables | β | Std. error | Beta | t | p |
|---------------------------------------|---------|------------|--------|--------|-------|
| Colour quality | 0.062 | 0.074 | 0.077 | 0.835 | 0.405 |
| Authentic experience | -0.189 | 0.097 | -0.184 | -1.945 | 0.054 |
| Consumer trust | -0.026 | 0.103 | -0.022 | -0.256 | 0.798 |
| Consumer trust * authentic experience | -0.045 | 0.085 | -0.048 | -0.533 | 0.595 |
| Consumer trust * colour quality | -0.035 | 0.066 | -0.047 | -0.526 | 0.599 |

H9: High experience quality beliefs leads to high anticipated quality

H10: High healthiness beliefs and artificial safety concerns lead to high anticipated quality

With a multi linear regression model, anticipated quality was analysed as a dependent variable, with experience quality beliefs, healthiness and artificial safety concerns as predictors. The model turned out to be significantly well at predicting anticipated quality $F(3,138)= 36.186$, $p= 0.000$. With the regression model, 44% of the variance could be explained by the predictors. Experience quality beliefs was the sole significant predictor $F(1,138)= 8.338$, $p= 0.000$) of the model as table 4.4.11 shows. Healthiness beliefs $F(1,138)= 0.742$, $p= 0.459$) were not significant, nor were artificial safety concerns $F(1,138)= 1.533$, $p= 0.128$). The β scores predicting anticipated quality can be found in table 4.4.11.

Table 4.4.11 – Coefficients of beliefs on anticipated quality

| Model | β | Std. error | Beta | t | p |
|----------------------------|---------|------------|-------|-------|-------|
| Experience quality | 0.711 | 0.85 | 0.620 | 8.338 | 0.000 |
| Healthiness | 0.065 | 0.87 | 0.055 | 0.742 | 0.459 |
| Artificial safety concerns | 0.103 | 0.67 | 0.098 | 1.533 | 0.128 |

Table 4.4.12 gives an overview of the relations and significant relations that have been found by the hypotheses.

Table 4.4.12 – Significant coefficients of regression models

| Dependent variable Independent variable | Colour quality | Experience quality | Healthiness beliefs | Artificial safety concerns | Anticipated quality |
|--|----------------|--------------------|---------------------|----------------------------|---------------------|
| Colour of steaks | -0.793* | | | | |
| Colour quality | | 0.377* | 0.117* | 0.065 | |
| Authentic experience | | 0.330* | 0.393* | -0.204* | |
| Experience quality | | | | | 0.711* |
| Healthiness | | | | | 0.065 |
| Artificial safety concerns | | | | | 0.103 |
| Self-confidence | | 0.002 | -0.131* | 0.021 | |
| Self-confidence * colour quality | | -0.015 | -0.043 | 0.197* | |
| Self-confidence * authentic experience | | -0.022 | -0.042 | -0.173* | |
| Consumer trust | | -0.011 | -0.065 | -0.026 | |
| Consumer trust * colour quality | | 0.013 | -0.024 | -0.035 | |
| Consumer trust * authentic experience | | -0.042 | 0.046 | -0.045 | |

(* indicates a significant relation was found)

4.5 Hierarchical regression

As the hypotheses showed, several factors have a significant effect on the regression model. With multiple linear regression analysis, significant effects of the intrinsic and extrinsic quality attributes on quality beliefs were found. Similarly, quality beliefs were found to have significant effects on anticipated quality. Next, it is investigated whether the stimuli point of purchase and colour and the quality attributes also have a direct effect on anticipated quality. The quality attributes already proved to be mediated through quality beliefs on anticipated quality, nevertheless, it could be that a direct effect still remains. To test this, a hierarchical regression was performed in which the influence of the stimuli and quality attributes was tested on anticipated quality. Firstly, the influence of the stimuli on anticipated quality was measured in step 1. Secondly, the effect of quality attributes on anticipated quality was directly measured in step 2. Thirdly, the effect of quality attributes on quality beliefs was displayed in step 3. Fourthly, the relations between quality beliefs and anticipated quality were displayed in step 4. In step 5, the moderators were added to the model. Finally in step 6, a hierarchical regression to identify remaining direct effects was performed.

Step 1 – Stimuli on anticipated quality

This first analysis was done to analyse whether the stimuli point of purchase and colour of the steaks also had a direct effect on anticipated quality, or if they were being fully mediated by the model. As table 4.5.1 shows, three different models were constructed. In the first, only the stimuli were entered to the regression analysis. Model 1 turned out to be significant with $F(2,139) = 6.401$, $p = 0.002$ and an exploratory power of 8.4%. As table 4.5.1 shows, only colour of steaks was significant with $F(1,139) = 3.340$, $p = 0.001$. Point of purchase had no significant effect on anticipated quality with $F(1,139) = 1.421$, $p = 0.157$. In the second model, the both quality attributes were added to the analysis. The regression was significant with $F(4,137) = 29.014$, $p = 0.000$ and a significant F-change value of $F(2,137) = 47.357$, $p = 0.000$ indicated model 2 was a better fit than model 1. In model 2, point of purchase was not significant with $F(1,137) = 1.215$, $p = 0.226$ but colour of steaks was significant with $F(1,137) = 2.052$, $p = 0.042$, together with the factors colour quality attribute $F(1,137) = 6.427$, $p = 0.000$ and authentic experience attribute $F(1,137) = 4.348$, $p = 0.000$. The exploratory power of model 2 was 45.9%.

Lastly, in model 3 the quality beliefs were added to the regression. The regression of model 3 was significant with $F(7,134) = 21.939$, $p = 0.000$ and had a significant F-change value of $F(3,134) = 7.229$, $p = 0.000$, indicating the third model was a better fit than the second model. With the addition of the quality beliefs, the effect of the stimuli was fully mediated. This is supported by the regression as the point of purchase showed no significant effect anymore with $F(1,134) = 1.314$, $p = 0.191$, just as colour of steaks also showed no significant effect anymore with $F(1,134) = 1.153$, $p = 0.251$. Colour quality attribute was significant with $F(1,134) = 3.796$, $p = 0.000$, authentic experience attribute was significant with $F(1,134) = 2.757$, $p = 0.007$, experience quality beliefs was significant with $F(1,134) = 3.085$, $p = 0.002$, healthiness beliefs was not significant with $F(1,134) = 0.385$, $p = 0.701$ and artificial safety concerns was significant with $F(1,134) = 2.451$, $p = 0.016$. It is interesting that artificial safety concerns did show a significant effect, as in hypotheses 9 and 10 it did not have a significant contribution to the regression model. To give a conclusive answer on the effect of stimuli, the analysis shows the stimuli are being fully mediated by the other factors in the model and have no direct effect on anticipated quality.

Table 4.5.1 – Stimuli on anticipated quality

| | β | Std. error | Beta | t | p |
|---------------------------------|--------------|------------|--------|--------|-------|
| Model 1 | | | | | |
| Point of purchase | 0.316 | 0.222 | 0.115 | 1.421 | 0.157 |
| Colour of steaks | -0.743 | 0.222 | -0.271 | -3.340 | 0.001 |
| <i>R² of model 1</i> | <i>0.084</i> | | | | |
| Model 2 | | | | | |
| Point of purchase | 0.210 | 0.173 | 0.077 | 1.215 | 0.226 |
| Colour of steaks | -0.364 | 0.178 | -0.133 | -2.052 | 0.042 |
| Colour quality | 0.380 | 0.059 | 0.451 | 6.427 | 0.000 |
| Authentic experience | 0.320 | 0.074 | 0.296 | 4.348 | 0.000 |
| <i>R² of model 2</i> | <i>0.459</i> | | | | |
| Model 3 | | | | | |
| Point of purchase | 0.216 | 0.164 | 0.079 | 1.314 | 0.191 |
| Colour of steaks | -0.203 | 0.176 | -0.074 | -1.153 | 0.251 |
| Colour quality | 0.250 | 0.066 | 0.296 | 3.796 | 0.000 |
| Authentic experience | 0.228 | 0.083 | 0.211 | 2.757 | 0.007 |
| Experience quality beliefs | 0.339 | 0.110 | 0.295 | 3.085 | 0.002 |
| Healthiness beliefs | 0.033 | 0.086 | 0.028 | 0.385 | 0.701 |
| Artificial safety concerns | 0.158 | 0.064 | 0.150 | 2.451 | 0.016 |
| <i>R² of model 3</i> | <i>0.534</i> | | | | |

Step 2 - Quality attributes on anticipated quality

This analysis was done to analyse whether the quality attributes also had a direct effect on anticipated quality. Colour quality attribute and authentic experience attribute were the independent variables, anticipated quality was the dependent variable. The analysis showed a significant main effect with $F(2,139) = 54.000$, $P = 0.000$ and was able to explain 43.7% of the variance with two factors. Both factors had a significant effect (colour quality attribute: $F(1,139) = 7.081$, $p = 0.000$, authentic experience attribute $F(1,139) = 4.278$, $p = 0.000$). Though these effects were not analysed with hypotheses, the both quality attributes turned out to have a direct effect on anticipated quality as well. How much variance of the attributes is being mediated by the quality beliefs, is analysed in step six.

Step 3 - Quality attributes on quality beliefs

The effect of the quality attributes on the experience quality beliefs, healthiness beliefs and artificial safety concerns was analysed with hypotheses 3, 4, 5 and 6. As the results show in table 4.4.12, colour quality attribute and authentic experience quality attribute both had a significant effect on experience quality beliefs, together they were able to explain 52.6% of variance ($R^2 = 0.526$). Colour quality attribute and authentic experience attribute together also had a significant effect on healthiness beliefs with an exploratory power of 26.3% ($R^2 = 0.263$). Lastly, artificial safety concerns was the dependent variable with colour quality attribute and authentic experience quality attribute as independent variables. As table 4.4.12 already showed, only authentic experience quality attribute had a significant effect on artificial safety concerns. Its exploratory power was 3.3% ($R^2 = 0.33$).

Step 4 - Quality beliefs on anticipated quality.

The effect of the quality beliefs on anticipated quality was analysed with hypotheses 9 and 10, results were shown in 4.4.11. The variance that could be explained by this regression model was 44%, though only experience quality beliefs had a significant effect on anticipated quality with $F(1,138) = 8.338$, $p = 0.000$ ($\beta = 0.711$). Both healthiness beliefs $F(1,138) = 0.742$, $p = 0.459$ ($\beta = 0.065$) and artificial safety concerns $F(1,138) = 1.533$, $p = 0.128$ ($\beta = 0.103$) showed no significant effects on anticipated quality. Nevertheless, all beliefs will be added to the analysis in step 6, as artificial safety concerns turned out to be of significant effect in step 1.

Step 5 – Moderators on quality beliefs leading to anticipated quality

As the analysis of hypothesis 7 and 8 showed, the moderator consumer trust did not have any significant effects on the model, but level of self-confidence did show significant effects. This can be viewed in table 4.5.2. To investigate whether level of self-confidence holds its significance in the model, a regression analysis is performed in which anticipated quality is the dependent variable, colour quality attribute, authentic experience attribute, self-confidence, self-confidence * colour quality, self-confidence * authentic experience, experience quality beliefs, healthiness beliefs and artificial safety concerns are the dependent variables. The regression turned out to be significant with $F(8,131) = 14.698$, $p = 0.000$ and had an exploratory power of 52.8%. As table 4.5.2 shows, the significant factors in the model are colour quality attribute $F(1,131) = 3.873$, $p = 0.000$, authentic experience attribute, $F(1,131) = 2.687$, $p = 0.008$, experience quality beliefs $F(1,131) = 3.626$, $p = 0.000$ and artificial safety concerns $F(1,131) = 2.165$, $p = 0.032$. The moderator turned out to have no significant effect on anticipated quality with $F(1,131) = -0.718$, $p = 0.385$, self-confidence had no interaction effect with colour quality attribute $F(1,131) = 0.361$, $p = 0.718$ and no interaction effect with authentic experience attribute $F(1,131) = -0.199$, $p = 0.843$. Lastly, healthiness beliefs showed no significant effects with $F(1,131) = -0.103$, $p = 0.918$. Conclusively, the moderator had no effect on anticipated quality directly.

Table 4.5.2 – Coefficients of self-confidence on anticipated quality

| | β | Std. error | Beta | t | p |
|--|---------|------------|--------|--------|-------|
| Constant | 0.737 | 0.557 | | 1.323 | 0.188 |
| Colour quality | 0.259* | 0.067 | 0.307 | 3.873 | 0.000 |
| Authentic experience | 0.237* | 0.088 | 0.219 | 2.687 | 0.008 |
| Self-confidence | -0.056 | 0.065 | -0.045 | -0.718 | 0.385 |
| Self-confidence * colour quality | 0.015 | 0.041 | 0.026 | 0.361 | 0.718 |
| Self-confidence * authentic experience | -0.010 | 0.050 | -0.014 | -0.199 | 0.843 |
| Experience quality beliefs | 0.385* | 0.106 | 0.335 | 3.626 | 0.000 |
| Healthiness beliefs | -0.009 | 0.087 | -0.008 | -0.103 | 0.918 |
| Artificial safety concerns | 0.150* | 0.069 | 0.143 | 2.165 | 0.032 |
| <i>R² of model</i> | 0.528 | | | | |

Step 6 – Quality attributes and beliefs on anticipated quality

Lastly, the quality attributes and quality beliefs were analysed in a regression model. Unintentionally, the quality attributes also showed a direct relation on anticipated quality, mentioned in the second step of the hierarchical regression analysis. To form a decisive answer on which model is the best fit for anticipated quality, several models were analysed. In model 1, the quality beliefs were the independent variables and anticipated quality was the

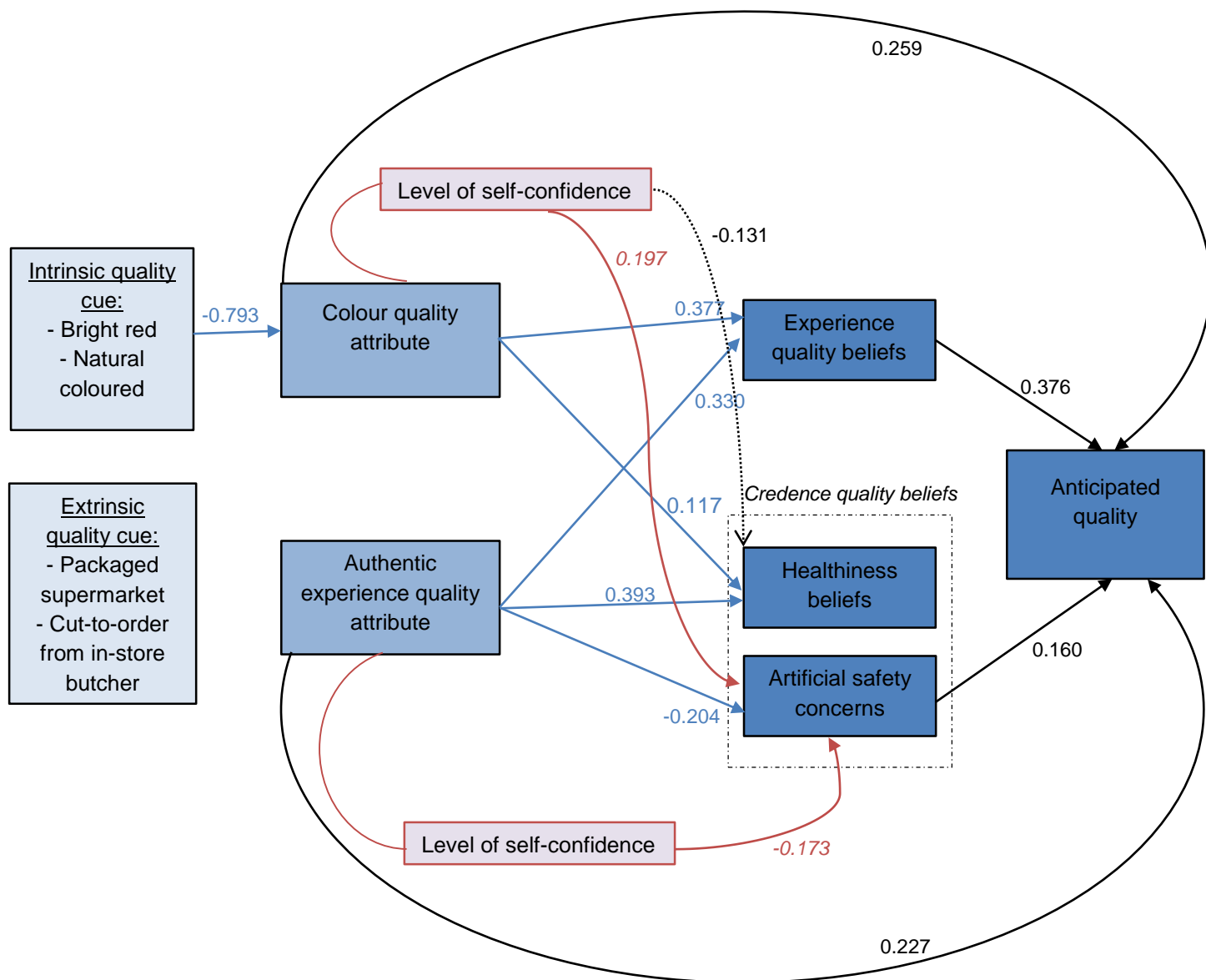
dependent variable. In model 2, the quality attributes were added to the regression, resulting in quality attributes and quality beliefs being the independent variables and anticipated quality the dependent variable. In model three, the stimuli were added to the regression to see whether they could be excluded or had a significant contribution to the model. The several analyses gave the following results:

Table 4.5.3 – Coefficients regression models on anticipated quality

| | β | Std. error | Beta | t | p |
|---------------------------------|---------|------------|--------|--------|-------|
| Model 1 | | | | | |
| Constant | 1.026 | 0.505 | | 2.029 | 0.044 |
| Experience quality beliefs | 0.711* | 0.085 | 0.620 | 8.338 | 0.000 |
| Healthiness beliefs | 0.065 | 0.087 | 0.055 | 0.742 | 0.459 |
| Artificial safety concerns | 0.103 | 0.067 | 0.098 | 1.533 | 0.128 |
| <i>R² of model 1</i> | 0.440 | | | | |
| Model 2 | | | | | |
| Constant | 0.488 | 0.484 | | 1.008 | 0.315 |
| Colour quality | 0.259* | 0.066 | 0.308 | 3.947 | 0.000 |
| Authentic experience | 0.227* | 0.082 | 0.210 | 2.750 | 0.007 |
| Experience quality beliefs | 0.376* | 0.105 | 0.328 | 3.586 | 0.000 |
| Healthiness beliefs | 0.002 | 0.084 | 0.002 | 0.021 | 0.983 |
| Artificial safety concerns | 0.160* | 0.064 | 0.152 | 2.482 | 0.014 |
| <i>R² of model 2</i> | 0.524 | | | | |
| Model 3 | | | | | |
| Constant | 0.568 | 0.515 | | 1.104 | 0.271 |
| Point of purchase | 0.216 | 0.164 | 0.079 | 1.314 | 0.191 |
| Colour of steaks | -0.203 | 0.176 | -0.074 | -1.153 | 0.251 |
| Colour quality | 0.250* | 0.066 | 0.296 | 3.796 | 0.000 |
| Authentic experience | 0.228* | 0.083 | 0.211 | 2.757 | 0.007 |
| Experience quality beliefs | 0.339* | 0.110 | 0.295 | 3.085 | 0.002 |
| Healthiness beliefs | 0.033 | 0.086 | 0.028 | 0.385 | 0.701 |
| Artificial safety concerns | 0.158* | 0.064 | 0.150 | 2.451 | 0.016 |
| <i>R² of model 3</i> | 0.534 | | | | |

Model 1 showed a significant effect of $F(3,138)= 36.186$, $p= 0.000$ and was able to explain 44% of variance. Model 2 had a significant effect of $F(5,136)= 29.953$, $p= 0.000$ and according to R^2 , the model was able to explain 52.4% of variance. F-change value was significant with $F(2,136)= 11.973$, $p= 0.000$, indicating model 2 was significantly better in explaining variance than model 1. Model 3 had a significant effect of $F(7,134)= 21.939$, $p= 0.000$ and was able to explain 53.4% of the variance. However, F-change value indicated model 3 was not significantly better at predicting anticipated quality than model 2, as the F-change value was $F(2,134)= 1.430$, $p= 0.243$.

Finally, with this hierarchical regression analysis performed, model 2 is adopted. According to the results, model 2 has the best fit regarding explained variance of anticipated quality. Consequently, a new model can be constructed in which the relations proven by the hypotheses and the hierarchical regression can be shown. Overall, the model looks the following, the effects of model 2 are adopted and the significant results of hypotheses 1 and 7 are adopted in the model (only significant relations are displayed):



The model explained

As the model above shows, several relations between quality attributes, quality beliefs and anticipated quality exists, though it is not as hierarchical as assumed. It can be seen as a quite dynamic model with several relations leading to anticipated quality. On the far left are the discrete factors, the intrinsic and extrinsic quality cue, which were used to distinguish between scenarios. The bright red colour and the packaged supermarket version were seen as dummy variables. The model thus shows anticipated quality of natural coloured, cut-to-order steaks from the in-store butcher. The extrinsic quality cue showed no significant effect on authentic experience quality attribute, meaning that in this research it could not be proved that point of purchase makes a significant difference in quality perception for the authentic experience. The intrinsic quality cue colour did have a significant effect on the colour quality attribute (-0.793), meaning that natural coloured steaks had a significant negative effect on perceived colour quality. Bright red colour is preferred by respondents for a higher colour quality perception.

Next, the model shows that both colour quality attribute (0.377) and authentic experience quality attribute (0.330) have a significant positive effect on experience quality beliefs. As experience quality beliefs concern expected eating quality, it can be concluded that both colour and authentic experience had a positive contribution to expected eating quality. Colour quality is the largest predictor in experience quality beliefs.

Regarding the credence quality beliefs, the healthiness beliefs factor is positively influenced by both colour quality attribute (0.117), authentic experience quality attribute (0.393) and the moderator level of self-confidence (-0.131). As the numbers in the model show, authentic experience quality attribute had a much greater effect on healthiness beliefs than colour quality attribute. It can be said that the authentic experience has a greater predictive power for healthiness beliefs than the colour quality does. The moderator level of self-confidence had a direct negative effect on healthiness beliefs, without interacting with one of the quality attributes. The negative value indicates that level of self-confidence and healthiness beliefs are negatively related to each other, a higher level of self-confidence results in a lower belief in healthiness.

Subsequently, the model shows a negative relation between authentic experience quality attribute (-0.204) and artificial safety concerns. As artificial safety concerns are negative aspects of meat, the negative value explains that the higher authentic experience quality attribute was, the lower artificial safety concerns were considered to be. Interestingly, the moderator level of self-confidence turned out to have a significant interaction effect with both colour quality attribute (0.197) and authentic experience quality attribute (-0.173) with artificial safety concerns. The positive value of self-confidence * colour quality indicated that natural coloured steaks and a high level of self-confidence gave respondents the idea that artificial safety concerns were more present. Opposite of that, the interaction of self-confidence * authentic experience quality attribute gave respondents the idea that artificial safety concerns were less present, as the negative correlation indicates.

Finally, the model shows the effects of beliefs on anticipated quality. As can be seen in the model, experience quality beliefs (0.376) had the greatest predictive power for anticipated quality. After that, respondents used colour quality attribute (0.259) and authentic experience quality attribute (0.227) as predictors for anticipated quality. As the model shows, the quality attributes were even more important in quality perception than credence quality beliefs. Healthiness beliefs did not contribute significantly to anticipated quality, artificial safety concerns (0.160) had a significant effect on anticipated quality.

5 Discussion and conclusions

This study showed that anticipated quality measured as one item is a reliable measure in analysing the quality perception process of consumers. Specifically, a distinction could be made in which factors had a significant effect in anticipated quality and which factors did not significantly contribute. For example, though several studies defined healthiness beliefs as contributing to perceived quality (Becker, 2000; Glitsch, 2000; Bredahl, 2004; Verbeke and Vackier, 2004), healthiness beliefs turned out to be not significant in this study. This can be explained by the different approach that was adopted in this study. Anticipated quality was measured with one item, instead of being analysed as a result of the quality beliefs.

Significant factors on anticipated quality

When it comes to anticipated quality, experience quality beliefs turned out to be most predictive. This is in line with earlier research, in which experience quality beliefs were found to be most dominant in quality perception. Experience quality beliefs predicts eating experience and are more concrete and tangible pre-consumption than credence quality beliefs (Steenkamp, 1990; Banović et al., 2009). This could be an explanation to why healthiness beliefs was not significant, as healthiness is an abstract belief and its quality is hard to assess, even after consumption (Steenkamp, 1990; Bredahl, 2004; Banović et al., 2009). Next to that, research of Bredahl (2004) and Banović et al. (2009) showed that healthiness is best predicted by the cue 'brand name', instead of colour or authentic experience. Bredahl (2004) also showed that healthiness leads to future purchase intention, while intrinsic quality cues lead to perceived quality. This is supported by Banović et al. (2009), who found that the strong influence of sensory aspects in quality perception can be explained by the fact that tangible aspects are more accessible to the senses, and have more weight on quality evaluation than distant credence quality aspects. Apparently, healthiness does not per se affect anticipated or perceived quality and turns out to be more leading as measure for future purchases. The model of this study confirms that tangible aspects (colour quality, authentic experience and experience quality) have a greater influence on anticipated quality than non-tangible aspects such as healthiness beliefs and artificial safety concerns.

The other credence quality belief, artificial safety concerns, did have a significant effect on anticipated quality. While credence quality beliefs generally are distant and not tangible, the phrasing of questions could have led to making artificial safety concerns tangible, resulting in a significant effect. To illustrate, respondents were asked directly: "How likely do you think it is this steak contains hormones?", accompanied with a picture of the steak. Assessing healthiness of a steak by solely looking at a picture might have been too difficult. Secondly, as the influence of the healthiness beliefs factor decreased in the hierarchical regression, the artificial safety concerns factor increased in effect size. This can be explained by the fact that the two credence beliefs are negatively related to each other. This seems logic, when consumers perceive artificial safety concerns in a steak (antibiotics and hormones), they consider the steak to be less healthy and nutritious. In the end, consumers consider artificial safety concerns to be more leading than healthiness beliefs, as artificial safety concerns showed a significant effect. The potential relation between the two factors is something that should be investigated further.

While it was not expected, authentic experience and colour quality attributes both turned out to have a significant direct effect on anticipated quality too. This can be either explained by the fact that the beliefs in the model were not capable of fully mediating the attributes and another

belief should have been added to the model, like the natural safety concerns, or a new beliefs factor. Both options seem unlikely, because the literature used in this study supports findings that quality consists of experience quality beliefs and credence quality beliefs (Steenkamp, 1990; Becker, 2000; Bredahl, 2004), more beliefs are simply not found to be significantly contributing to quality perception. Furthermore, it is unlikely that the elimination of the natural safety concerns factor would account for the variance from the attributes on anticipated quality, as the addition of the factor to the model was too small. Including the factor would make no significant difference.

Though the stimuli in-store butcher (quality cue) cue did not have a significant effect, the authentic experience did have a significant positive effect on anticipated quality. Though it cannot be assumed that an in-store butcher is perceived more positively than the supermarket itself, it can be concluded that the presence of an in-store butcher leads to a positive authentic experience, which in turn leads to a higher quality evaluation. The fact that the both quality attributes had a significant direct effect on anticipated quality and were not fully mediated by the model, shows that anticipated quality does not have to be a hierarchical sum of beliefs. Anticipated quality should be seen as a non-hierarchical process with direct and indirect relations between attributes, beliefs and anticipated quality. Of course, this should give an opportunity to investigate the relations between attributes, beliefs and quality in a different setting, with different or more quality cues.

Quality attributes

Colour quality attribute had a slightly greater effect on experience quality beliefs and on anticipated quality than the authentic experience attribute, though they both explained almost an equal amount of variance. Hypothesis one showed bright red coloured steaks from the supermarket received the highest quality appreciation, followed by the bright red coloured steaks from the in-store butcher. The both bright red coloured steaks received a higher score than the natural coloured steaks. Secondly, colour quality showed a greater effect than authentic experience on experience quality beliefs, this beliefs factor was the most dominant on anticipated quality. Lastly, colour quality has the greatest direct relation with anticipated quality, compared to authentic experience quality attribute. Though authentic experience is of great value in the model, colour is perceived to be more important.

Authentic experience did turn out to be a good cue for predicting credence beliefs, experience quality beliefs and anticipated quality. This corresponds with findings that extrinsic quality cues are increasingly used in defining quality of products (Grunert, 2006). Specifically, authentic experience was of greater predictive power for healthiness beliefs and artificial safety concerns than colour was. It is not only true that extrinsic cues are increasingly being used in defining quality (Grunert, 2006), they are even used more by respondents than the concrete, dominant intrinsic cue colour in credence quality beliefs formation. This shows extrinsic cues are indeed increasingly being used in defining quality and in some cases.

As previous research indicated, the presence of a butcher significantly contributes to quality perception (McIlveen and Buchanan, 2001). Unfortunately, no evidence supporting this was found in this research, the point of purchase being the in-store butcher did not significantly differ from the supermarket shelf as point of purchase. It could be that too little extrinsic quality cues were investigated to make point of purchase a significant cue, because in other researches, brand name, quality labels and product origin were also included (Bernués et al.,

2003; Grunert, 2006; Bernués et al., 2012). Another explanation could be that authenticity and the butcher were taken together as 'authentic experience', as it was assumed they both would contribute positively to this. In future research, authenticity and the point of purchase should also be analysed as two single cues, instead of one combined variable.

Effect of moderators

While the authentic experience as a whole did prove to be of significant effect on quality beliefs, consumer trust in the point of purchase did not moderate the quality process. It was expected that the presence of an expert, the in-store butcher, would positively interact with the authentic experience attribute, leading to more explainable variance for the quality beliefs. Unfortunately, no significant effects were found. This might be explained by the fact that the measure of consumer trust of the in-store butcher was too hypothetical, as respondents only saw a picture of the point of purchase with the in-store butcher, without any accompanying information or a situational description. As the study of Guenzi and Georges (2010) showed, consumer trust gets evoked by personal contact and is measured with the levels of expertise and customer orientation. It could very well be that level of expertise and degree of customer orientation was hard to predict for respondents by solely seeing a picture. Measuring consumer trust with a qualitative research, in which more specific information on feelings of trust and personal contact can be retrieved, could be a solution in investigating whether consumer trust in a butcher also moderates quality perception in meat products.

The moderator level of self-confidence did show several significant effects, although slightly different than expected. The interaction between colour quality and self-confidence was expected, nevertheless, this turned out to be a significant positive relation only when it regarded artificial safety concerns. Secondly, self-confidence itself had a direct positive effect on healthiness beliefs, without interacting with colour quality. Lastly, self-confidence interacted with authentic experience on artificial safety concerns, showing a negative relation. This relation was not expected and only included in the regression to measure effects correctly. As Bredahl (2004) and Veale (2008) stated, level of self-confidence only interacts with intrinsic quality attributes and the interaction is positive. This interaction leads to a discount in the use of extrinsic quality attributes. Two of their three findings have proven to be wrong, as self-confidence did positively interact with intrinsic quality attribute (colour quality), but it also interacted with extrinsic quality attribute (authentic experience). The interactions did not lead to a discount in the use of extrinsic quality attribute, moreover, authentic experience was used more than colour quality in some aspects. This study did prove that level of self-confidence is positively correlated to intrinsic quality attributes, as the interaction between colour quality and self-confidence was positive. Although results regarding the level of self-confidence are diversified, it does show that self-confidence is an important factor in quality perception. Higher levels of self-confidence lead to a more negative evaluation of healthiness and artificial safety aspects when it concerns natural coloured steaks. On the other hand, it shows that self-confidence and authentic experience with the in-store butcher lead to a lower expectation of artificial safety concerns. Self-confidence is a factor that should not be forgotten in quality perception of meat as it holds specific information regarding importance of attributes and beliefs. This study has proven that self-confidence is a factor that should also be researched in the food domain, just as Bredahl (2004) already suggested.

Theoretical contribution

An attempt was made to analyse what consumers see as important in their quality perception of steak. Nowadays, consumers have become more demanding when it comes to (fresh) food products (Grunert, 2006), they not only long for variation in products, brands and product types, but also with respect to nature, its environment and animal welfare. Nevertheless, consumers expect products to be safe and of high quality (Jaffe and Gertler, 2006). Though the increase of authentic, unprocessed or less processed products seems like a solution in meeting the demand of consumers, this research has shown consumers are still torn between choosing the aesthetically pleasing, bright red coloured steaks and the natural coloured, authentic looking option. Consumers are able to distinguish between colour and authentic experience, but bright red colour is more positively conceived. This study started with investigating quality perception of an authentic product compared to its processed version and showed consumers' thoughts on several quality aspects of both products. It is important to keep investigating how consumers perceive authentic, natural product compared to their processed equivalent as it gives insights into what consumers see as important and what is perceived negative and positive.

Societal and managerial implications

As authentic experience is seen as an important aspect in this research and delivers input for experience quality beliefs and credence quality beliefs, it is suggested that putting more emphasis on the authentic aspect will enhance quality perception. To illustrate, when enhancing the authentic aspect of an in-store butcher with fresh products combined with the use of quality labels, a brand name or product origin (Bernués et al., 2003; Grunert, 2006; Bernués et al., 2012), consumers will have more options to use the authentic experience attribute as input for their beliefs formation, resulting in a higher quality perception. It is important to provide consumers with concrete cues that contribute to quality perception, as consumers still see pre-packaged, bright red coloured steaks as better quality than the more natural coloured option. This is why traditional shops as butchers, cheese shops and greengrocers have lost in market share. With the growing demand of consumers to differentiate in bulk products and speciality products (Grunert, 2006), the addition of an in-store butcher to a supermarket is an option to meet this consumers' demand. The butcher and its authentic experience contributes to quality perception greatly. (Steenkamp, 1990; McIlveen and Buchanan, 2001; Grunert, 2006).

Furthermore, it can be seen as a problem that consumers see aesthetically pleasing, processed options as better quality than its authentic, unprocessed option. As mentioned, with the addition of quality labels and brand names, a distinction can be made between processed and unprocessed food and provide aid for consumers in their quality perception. This is needed, as this study has shown that consumers still see bright red coloured, processed supermarket steak as better quality.

Limitations and future research

One of the limitations of the research is that two different pictures were used to resemble the pre-packaged supermarket shelf steak and the freshly, cut-to-order steak from the in-store butcher. Though analysis did not show variance in perception between the pictures, using the same pictures for the supermarket and the in-store butcher would have given less room for errors. In this case, it was chosen to stick as close to reality as possible, regarding the pictures.

Another limitation is that only colour and place of purchase were used as discrete factors. Other factors such as brand name, quality labels, amount of fat of the meat, cut of the meat or price were left out. Price was explicitly left out as a quality cue because the influence of price seems rather ambiguous. Price can be seen as highly predictive quality cue, sometimes even misleading. Often, it happens that products with a higher price are seen as better quality, while this does not have to be true. Price as a quality cue cannot be taken together with intrinsic and extrinsic cues to form quality perception, as Grunert et al. (1996) define in the total food quality model that price is a measure for buying intention, instead of quality expectation. This is supported by research of Glitsch (2000), in which price turned out to be used the least in quality perception. Banović et al. (2009) found similar results, as price turned out to be used more often as quality cue when consumer motivation was low. Among low-motivated consumers, price was used to discount other cues against (Banović et al., 2009), something that was explicitly avoided in this research. Steaks were especially chosen because a sense of specialty was supposed to be triggered, leading consumers to be motivated to think of the best quality steaks. Nevertheless, in everyday situations, consumers sometimes happen to be low motivated to purchase meat, even when it regards specialty meat. Other discrete factors such as fat and cut of the meat were also explicitly left out of the research, as fat and cut have proven several times to be a bad predictor of meat quality (Grunert, 1997; Grunert, 2005).

Also, the research regarded a questionnaire that was distributed online, in which external factors could not be controlled for nor they could be excluded. As respondents received the invitation by e-mail, they were able to participate in the questionnaire anywhere, anytime. The time of the day or the environment in which the participant was in, remained unclear for the researchers. In future research, it might be a better idea to let respondents fill in the questionnaire in a controlled environment in which the researcher is present. Next to that, it should be researched how consumers evaluate the steak options when they are presented next to each other, in a real-life experience. This makes the perception far more concrete and tangible for consumer, which might result in a more positive or negative evaluation of the quality of the steaks.

Lastly, the credence quality beliefs construct should be defined in a different matter than it was currently. As the factor analysis showed, the credence quality beliefs construct could be divided into three different factors. The naturally present safety concerns factor held such low exploratory power, it was chosen to discard it from further analysis. It could be that respondents not saw cholesterol and bacterial contamination as important in their quality perception, or that these were too abstract matters to be concerned with at the time of participation. As it was chosen to bias respondents as little as possible, no situational text was provided with the questionnaire. It might be that credence quality beliefs such as healthiness, cholesterol and bacterial contamination are topics that get activated when a respondent is situated in a supermarket and has to buy food and is forced to think about aspects of nutrition and its consequences, but are not activated when the respondent is behind a computer taking the questionnaire.

Nevertheless, I am confident that authentic products will continue be more present in the supermarket and consumers will grow comfortable in using quality cues to assess quality accordingly with the product. It will be just a matter of time until consumers are confident in choosing the less aesthetically pleasing and prefer the authentic product.

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Appendices

Appendix 1 – Scenario's



Figure 1 - Point of purchase in-store butcher



Figure 2 – Point of purchase supermarket shelf



Figure 3 - Supermarket steaks natural coloured

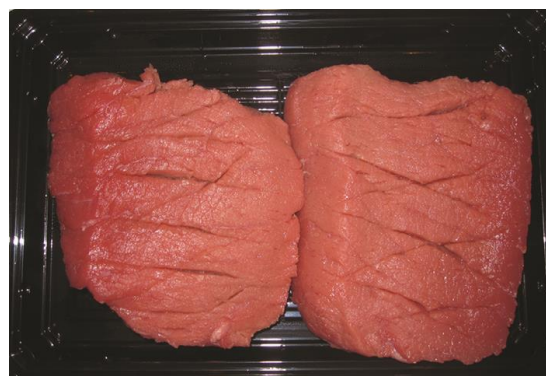


Figure 4 - Supermarket steaks bright red coloured



Figure 5 - In-store butcher steaks natural coloured



Figure 6 - In-store butcher steaks bright red coloured

Appendix 2 – Questionnaire

1. Overall, I expect the quality of this steak to be good
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
2. The colour of the meat is as it should be
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
3. How do you like the colour of the meat?
Absolutely do not like 1 2 3 4 5 6 7 Absolutely like
4. This steak looks fresh
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
5. This steak looks minimally processed
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
6. This steak looks natural
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
7. This steak looks authentic
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
8. I expect this steak to be tasty
Strongly disagree 1 2 3 4 5 6 7 strongly agree
9. I expect this steak to be tender
Strongly disagree 1 2 3 4 5 6 7 strongly agree
10. I expect this steak to be juicy
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
11. I expect this steak to be nutritious
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
12. I expect this steak to be healthy
Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Please indicate how likely you think this steak contains:

- | | | | |
|-----------------------------|---------------|---------------|-------------|
| 13. Antibiotics | Very unlikely | 1 2 3 4 5 6 7 | Very likely |
| 14. Hormones | Very unlikely | 1 2 3 4 5 6 7 | Very likely |
| 15. Cholesterol | Very unlikely | 1 2 3 4 5 6 7 | Very likely |
| 16. Bacterial contamination | Very unlikely | 1 2 3 4 5 6 7 | Very likely |
-
17. I think this [point of purchase] has my best interest in mind
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
 18. This [point of purchase] is not an expert
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
 19. This [point of purchase] does not make false claims
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
 20. This [point of purchase] does not seem to be concerned with your needs
Strongly disagree 1 2 3 4 5 6 7 Strongly agree

21. This [point of purchase] is not trustworthy
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
22. I know how to judge the quality of steak
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
23. I think I know enough about steak to feel pretty confident when I make a purchase
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
24. I do not feel very knowledgeable about steak
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
25. When it comes to steak, I really don't know a lot
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
26. Gender male / female
27. Age
28. Study programme
29. Nationality
30. How often do you eat beef?
Daily
4 – 5 times per week
2 – 3 times per week
Weekly
Once every 2 weeks or less
Never / I don't like meat
31. I prefer purchasing meat from the butcher
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
32. I prefer purchasing meat from the supermarket
Strongly disagree 1 2 3 4 5 6 7 Strongly agree
33. I have a passion for cooking with meat
Yes / No
34. Meat in a meal is important to me
Yes / No
35. I usually purchase meat at the: 1) Butcher
2) In-store butcher
3) Cooling section of the supermarket
4) Frozen section of the supermarket
5) Other, please specify...

Appendix 3 – Normality distribution

Table 1.1 - Outlier analysis

| | Mean | St. dev. | Trimmed mean | Skewness | St. error | Kurtosis | St. error | Outliers |
|-------|------|-------------|-----------------|----------|--------------|----------|--------------|----------|
| Q6 | 5.19 | 1.373 | 5.28 | -1.183 | 0.203 | 0.750 | 0.404 | 8 |
| Q7 | 5.80 | 1.954 | 5.91 | -0.598 | 0.203 | -0.799 | 0.404 | 0 |
| Q8 | 4.22 | 1.483 | 4.25 | -0.264 | “ | -1.107 | “ | 0 |
| Q10_1 | 4.63 | 1.500 | 4.67 | -0.504 | “ | -1.006 | “ | 0 |
| Q10_2 | 3.75 | 1.485 | 3.72 | 0.261 | “ | -1.007 | “ | 0 |
| Q10_3 | 3.80 | 1.460 | 3.80 | 0.141 | “ | -0.080 | “ | 0 |
| Q10_4 | 3.92 | 1.474 | 3.95 | -0.080 | “ | -0.885 | “ | 0 |
| Q11_1 | 4.93 | 1.351 | 5.00 | -0.921 | “ | 0.334 | “ | 0 |
| Q11_2 | 4.80 | 1.349 | 4.88 | -0.813 | “ | -0.069 | “ | 0 |
| Q11_3 | 4.75 | 1.466 | 4.78 | -0.565 | “ | -0.807 | “ | 0 |
| Q11_4 | 4.79 | 1.293 | 4.85 | -0.817 | “ | 0.388 | “ | 0 |
| Q11_5 | 4.30 | 1.265 | 4.35 | -0.490 | “ | -0.169 | “ | 0 |
| Q13_1 | 4.67 | 1.418 | 4.73 | -0.804 | “ | 0.256 | “ | 0 |
| Q13_2 | 4.51 | 1.448 | 4.60 | -0.797 | “ | 0.180 | “ | 0 |
| Q13_3 | 4.92 | 1.296 | 4.97 | -0.673 | “ | -0.008 | “ | 0 |
| Q13_4 | 3.82 | 1.653 | 3.84 | -0.047 | “ | -1.183 | “ | 0 |
| Q15 | 4.19 | 1.434 | 4.20 | -0.164 | “ | -0.972 | “ | 0 |
| Q16 | 3.51 | 1.606 | 3.49 | 0.237 | “ | -1.077 | “ | 0 |
| Q17 | 3.64 | 1.396 | 3.63 | 0.189 | “ | -0.840 | “ | 0 |
| Q18 | 4.19 | 1.288 | 4.23 | -0.442 | “ | -0.741 | “ | 0 |
| Q19 | 4.29 | 1.583 | 4.31 | -0.259 | “ | -0.615 | “ | 0 |
| Q20 | 3.91 | 1.414 | 3.91 | -0.141 | “ | -1.137 | “ | 0 |
| Q21 | 4.07 | 1.495 | 4.11 | -0.199 | “ | -1.081 | “ | 0 |
| Q22 | 4.46 | 1.467 | 4.50 | -0.408 | “ | -1.111 | “ | 0 |
| Q23 | 4.04 | 1.690 | 4.04 | 0.024 | “ | -1.105 | “ | 0 |

Appendix 4 – Reliability of credence quality beliefs

Table 1.2 – Reliability tests of credence quality beliefs factor

| Items | Cronbach's alpha | Suggestion for deleted item | Cronbach's alpha if item deleted | Highest correlated items | Correlation score |
|----------------|------------------|-----------------------------|----------------------------------|--------------------------|-------------------|
| 11, 12, 15, 16 | 0.296 | 15 | 0.367 | 11, 12 | 0.672 |
| 11, 12 | 0.804 | | | | 0.672 |
| 13, 14, 15, 16 | 0.654 | 15 | 0.693 | 13, 14 | 0.674 |
| 13, 14, 16 | 0.693 | 16 | 0.805 | 13, 14 | 0.674 |
| 13, 14 | 0.805 | | | | 0.674 |
| 16, 15 | 0.475 | | | | 0.320 |