# Consumers' expected quality and intention to purchase high quality pork meat

P. Papanagiotou [a,*], I. Tzimitra-Kalogianni [a], K. Melfou [b]

[a] Department of Agricultural Economics, School of Agriculture, Aristotle University of Thessaloniki, P.O. Box 232, 54124, Thessaloniki, Greece
[b] Department of Agricultural Products Marketing and Quality Control, TEI of Western Macedonia — Florina branch, Terma Kondopoulou, 53100, Florina, Greece

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## ABSTRACT

Expected quality is believed to be one of the most important factors that influence consumers' intention to purchase food. The present study seeks to explore the concept of pork meat expected quality and compare it with self-stated consumer intention to purchase pork meat. The aim is attempted by means of a field research conducted in Greece, following a conjoint analytic procedure. Results show that quality expectations comply with intention to buy pork, in many aspects. However, several differences have been identified. More specifically, country of origin and marbling appear to be more important for respondents' purchase decisions than they are for their quality evaluations, while the opposite appears to be true for price. Finally, socio-demographic factors such as gender, level of education, place of purchase and consumption habits seem to influence perceptions.

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## 1. Introduction

Food quality has been in the forefront for many decades. However, food scandals and scares, public efforts to guarantee food quality, as well as consumers' becoming more demanding and well-informed about quality, have made its study more intensive during the past decade. Quality is a concept with many aspects, and its definition depends on the background of the person that uses this term (Becker, 2000). Nevertheless, it is often acknowledged that it is the consumer's definition of food quality that drives the economy of the global food industry (Cardello, 1995), while this definition is at the same time very complex and dynamic (Troy & Kerry, 2010). Despite the fact that quality is often believed to influence consumers' buying decisions (Fandos & Flavián, 2006; Grunert, 1997; Steenkamp, 1986), there is evidence that consumers do not always purchase quality food products and an example of that is "junk food" (Moskowitz, 1995).

The present study has attempted to investigate expected quality and intention to purchase pork meat, by employing the perceived quality theoretical approach, without, though, incorporating purchase motives. It, actually, attempted to identify similarities and differences between these two concepts. More specifically, the purpose of this research was to apply a conjoint analytic procedure to pork meat in Greece and to identify consumer segments with similar perceptions and intentions.

## 2. Theoretical framework

The perceived quality theoretical framework has drawn much attention over the past three decades, and consequently, a number of relevant definitions and theoretical models have been proposed. However, there is a consensus regarding their basic concepts. Thus, the perceived quality approach explores product quality from the consumer's perspective by making quality a subjective evaluation dependent on the perceptions, needs and goals of the consumer (Northen, 2000; Steenkamp, 1990).

Quality evaluation takes place at two stages, prior and during purchase and after purchase and during consumption. After purchase, consumers evaluate food quality (experienced quality or quality performance) on the basis of the quality attributes they believe that the product possesses. According to Steenkamp (1989), quality attributes are the functional and psychosocial benefits provided by the product, and they represent what the product is perceived as doing or providing to the consumer. Furthermore, quality attributes are distinguished between experience and credence attributes, with the former being ascertained by consumers on the basis of actual experience with the product (e.g. taste), and the latter being difficult to be ascertained even after frequent consumption (e.g. healthiness).

Nevertheless, quality attributes are not known before consumption, and consequently consumers have to rely on some indicators, known as quality cues, to predict food quality (expected quality or quality expectations). Quality cues are defined as any informational stimulus that can be ascertained through the senses prior to consumption (Steenkamp & Van Trijp, 1996), and are either intrinsic or extrinsic. In particular, intrinsic cues cannot be manipulated without changing the nature of the product (e.g. marbling), while extrinsic are related to the product but are not physically part of it (e.g. price) (Bernués, Olaizola, & Corcoran, 2003).

Most of the theoretical models proposed (Acebrón & Dopico, 2000; Becker, 2000; Hoffmann, 2000; Poulsen, Juhl, Kristensen, Bech, & Engelund, 1996; Steenkamp, 1989; Steenkamp & Van Trijp, 1996; Van

* Corresponding author. Tel.: +30 2310998821; fax: +30 2310998809.
E-mail address: ppapanag@agro.auth.gr (P. Papanagiotou).

den Heuvel, Van Trijp, Van Woerkum, Renes, & Gremmen, 2007) adopt the aforementioned key concepts. However, the first model to incorporate intention to purchase in the perceived quality process was the Total Food Quality Model, TFQM (Grunert, Hartvig Larsen, Madsen, & Baadsgaard, 1996), followed by the Model of Bernués et al. (2003). According to the TFQM, expected quality and expected fulfilment of purchase motives are the positive outcomes consumers expect from buying a food product, and are offset against the negative consequences in the form of various costs, while this trade-off determines intention to buy (Grunert, Bredahl, & Brunsø, 2004, p. 261). More specifically, expected quality is believed to be a mediator between cue perception and expected purchase motive fulfilment, which in turn mediates between expected quality and intention to buy. However, there is evidence that expected quality is not the only mediator between quality cues and purchase motives and intention to purchase (Grunert, 1997).

Conjoint Analysis refers to a set of procedures that explore consumers' responses to combinations (profiles) of independent factors or attributes in an attempt to understand the contributions of these factors to the evaluation of the profiles (Moskowitz & Silcher, 2006). More specifically, Conjoint Analysis is based on the assumption that consumers assess the value of a product by combining the separate amounts of value provided by each level of each attribute or factor (Hair, Black, Babin, & Anderson, 2010). As a result, respondents are asked to give an overall rating for each profile, and the researcher is able to estimate the relative importance of the factors and the part-worth utility of each factor level, without having to ask directly the consumer about his or her opinion of either of them (Cardello, Schutz, & Lesher, 2007).

## 3. Materials and methods

The factors (attributes) investigated in the present study were quality cues that were selected after an extensive review of the perceived quality of meat literature. The number of cues was restricted to four so that the number of profiles would be low enough to be easily handled by respondents. Thus, two intrinsic (colour and marbling/intramuscular fat) and two extrinsic (price and country of origin) quality cues (Acebrón & Dopico, 2000; Banović, Grunert, Barreira, & Fontes, 2009, 2010; Becker, Benner, & Glitsch, 2000; Davidson, Schröder, & Bower, 2003; Glitsch, 2000; Grunert, 1997; Issanchou, 1996; Krystallis & Arvanitoyannis, 2006; Krystallis, Chryssochoidis, & Scholderer, 2007; Mannion, Cowan, & Gannon, 2000; Verbeke, Demey, Bosmans, & Viaene, 2005) were included in the study.

The full-profile method was utilised as the means of presentation to respondents and pictures of pork loin chops were computer manipulated, using Adobe Photoshop CS, to attain several levels of the aforementioned factors. This method has been applied for the first time in Greece to assess the quality perception of meat, for, to the best of our knowledge, the only other study using computer manipulated pictures of meat focused on consumer preference (Fortomaris et al., 2006), and was a part of a research project performed in 23 countries (Dransfield, Martin, Miramont, & Ngapo, 2001; Ngapo, Martin, & Dransfield, 2007a, 2007b).

More specifically, levels for colour and marbling were determined based on the National Pork Producer Council (NPPC) standards (Aberle, Forrest, Gerrard, & Mills, 2001). Furthermore, pork chops were labelled as either Greek or imported, while price labels were also added (Table 1).

The combination of all the levels of all the factors resulted in 54 profiles. The orthogonal design procedure in PASW Statistics 18 was employed to reduce the number of profiles to 13, 4 of which were holdout profiles (rated by respondents only to assess validity and reliability of the original estimates). Respondents were asked to evaluate the final group of profiles (Table 2) with regard to quality and intention to purchase, using two 11-point semantic differential scale questions.

**Table 1**
Factors and their levels.

| Factors | Levels of factors | $L^*$ | | $a^*$ | | $b^*$ | |
|---|---|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD | Mean | SD |
| Colour | Light | 61.23 | 0.48 | 19.53 | 0.20 | 20.10 | 0.53 |
| | Medium | 48.10 | 2.13 | 34.03 | 0.92 | 26.00 | 0.67 |
| | Dark | 37.31 | 0.29 | 37.81 | 0.17 | 24.03 | 1.23 |
| Marbling | 0% | | | | | | |
| | 3% | | | | | | |
| | 6% | | | | | | |
| Price | 3.00 €/kg | | | | | | |
| | 5.45 €/kg | | | | | | |
| | 7.90 €/kg | | | | | | |
| Origin | Greek | | | | | | |
| | Imported | | | | | | |

$L^*$ is a factor of brightness (Lightness, black-white axis), $a^*$ defines the content of red or green (magenta-green spectrum), and $b^*$ indicates the content of yellow or blue (yellow-blue spectrum), using the CIE Lab colour space (Du & Sun, 2004; Van Oeckel, Warnants, & Boucqué, 1999).

Finally, an additive mixed model (Green & Srinivasan, 1978, 1990) was adopted, assuming that marbling had an ideal point function, and price and origin a linear function, with utility increasing with the increase of price and when pork chops were labelled as Greek. In addition, colour was assumed to have a discrete function because it was not safe to make an assumption about the relationship between factor levels and data. More details about the methodology followed are given in Papanagiotou, Tzimitra-Kalogianni, and Melfou (2012).

The fact that both relative importance and utility are estimated at the individual level in the context of Conjoint Analysis facilitates the segmentation of respondents into groups with similar preferences (Deliza, MacFie, & Hedderley, 2003; DeSarbo, Ramaswamy, & Cohen, 1995; Green & Krieger, 1991). In this case, respondents were classified according to the relative importance they attached to each factor with regard to perceived quality. More specifically, k-means Cluster Analysis was employed to group participants, while both the number of clusters and the centres of each cluster were decided using a hierarchical method (Ward's method, squared Euclidean distance).

Subsequently, non parametric tests (Kruskal–Wallis and Mann–Whitney), as well as cross tabulation (Pearson's chi-square, $\chi^2$), were used to uncover statistically significant differences among the clusters and describe clusters in terms of socio-demographic variables and pork purchase and consumption habits.

The field research was conducted in the second largest urban area of Greece, Thessaloniki, from May until November 2010. The sample, included 626 pork consumers and was selected by means of a non probability procedure, quota sampling. The population under research consisted of all adult pork consumer inhabitants of the 13 municipalities in the wider urban area of Thessaloniki. Furthermore a screening question was used to identify the sample.

**Table 2**
Final profiles rated by respondents.

| Profile Number | Factors' Level | | | | Profile status |
|---|---|---|---|---|---|
| | Colour | Marbling | Price | Origin | |
| 1 | Light | 3% | 5.45 €/kg | Imported | Design |
| 2 | Medium | 0% | 7.90 €/kg | Imported | Design |
| 3 | Medium | 6% | 5.45 €/kg | Greek | Design |
| 4 | Medium | 3% | 3.00 €/kg | Greek | Design |
| 5 | Dark | 6% | 3.00 €/kg | Imported | Design |
| 6 | Dark | 0% | 5.45 €/kg | Greek | Design |
| 7 | Light | 0% | 3.00 €/kg | Greek | Design |
| 8 | Light | 6% | 7.90 €/kg | Greek | Design |
| 9 | Dark | 3% | 7.90 €/kg | Greek | Design |
| 10 | Light | 0% | 7.90 €/kg | Greek | Holdout |
| 11 | Light | 3% | 7.90 €/kg | Greek | Holdout |
| 12 | Medium | 0% | 7.90 €/kg | Greek | Holdout |
| 13 | Light | 0% | 3.00 €/kg | Imported | Holdout |