

# **Assessment Of Fresh Beef Quality By Australian Consumers At The Point Of Purchase**

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## **Abstract**

Concern at the continuing decline in beef consumption has led to considerable research, particularly in Europe, into the way consumers develop their perceptions of the quality of fresh meat and how these perceptions may influence consumption levels. A number of models have been developed. This study is based on a three-stage model with perceptions formed prior to purchase, at the point of purchase and at the point of consumption, each contributing to the overall perception of quality. The study focuses on the Australian beef consumer at the point of purchase stage (within the shop) as this is where the consumer contemplates, and ultimately makes, the actual purchase decision. At the point of purchase consumers have available what the literature describe as intrinsic cues (observable characteristics of the meat itself such as colour and leanness) and extrinsic cues (such as place of purchase and labels) to assist them to predict the quality of beef. Results emanating from a series of focus groups and a survey found Australian consumers considered intrinsic cues, notably freshness, to be more helpful in predicting quality than extrinsic cues. Furthermore, associations were found between age and gender and the perceived helpfulness of some cues.

Keywords: perception of quality, beef, intrinsic cues, extrinsic cues

## **Introduction**

A consumer's perception of quality of specific goods and services has long been recognised as an important determinant of their buying behaviour. In particular, 'perception of quality' was found to be an important determinant of meat consumption (Issanchou, 1996) and furthermore was influenced by quality attributes associated with product development, convenience, origin of product, animal welfare, safety and health (Gracia and Albisu, 2001; Issanchou, 1996) as well as the eating quality of the meat itself. Following the outbreaks of BSE and additional falls in beef consumption in Europe, a large scale research project compared and contrasted consumer behaviour towards meat purchase and how perceptions of meat quality arose across six European countries (Glitsch, 2000). The study found significant differences across countries. While extensive research has been done in Australia to identify the eating quality desired by the consumer and match it to measurable physical characteristics of beef (Bindon and Jones, 2001; Thompson, 2000) there appears to have been little empirical research done on how Australian consumers form their perceptions of the quality of fresh beef.

A number of models have been developed to describe how consumers develop their perceptions of quality for foods such as beef. These models are based on consumer behaviour theory which postulates that a consumer's perception of quality is based on three types of characteristics: search characteristics (observable before consumption, such as leanness and colour for meat), experience characteristics (determined at point of consumption, such as tenderness and flavour) and credence characteristics (not readily verifiable by the consumer, such as long term health hazards) (Becker, 2000; Hoffman, 2002; Northern, 2002). Furthermore, consumers, in attempting to evaluate the quality of a food item such as beef, look for cues to attributes they value as contributing towards the overall eating quality,

nutritional value and safety of the meat. These cues may be intrinsic i.e. part of the product itself (such as smell and leanness) or extrinsic cues such as packaging, the information/labels or place of purchase (Northern, 2002).

Most models divide the process of developing perceptions of the quality of beef into two stages, 'before purchase' and 'after purchase', identified by Glitsch (2000) as quality in the shop and quality in the home respectively (Grunert, Bredahl and Brunsø, 2004; Glitsch, 2000; Hoffmann, 2000). Mannion, Gowan and Gannon (2000), however, identify three stages: 'prior to purchase', (perceptions formed prior to entering the shop), 'point of purchase' (perceptions formed within the shop) and 'point of consumption' (perceptions formed while consuming the beef).

At the point of purchase the purchaser is generally able to view the meat/beef and assess quality in the shop on the basis of intrinsic cues (colour, leanness, presence of fat/marbling) and extrinsic cues (quality assurance labels, place of purchase, price and country of origin) (Glitsch, 2000). They then may form expectations of eating quality (tenderness, flavour, juiciness) and of health, convenience and the appropriateness of the production process (Glitsch, 2000; Grunert, Bredahl and Brunsø, 2004). This leads to expectations of the degree to which their purchase motive will be fulfilled (Grunert, Bredahl and Brunsø, 2004) and ultimately to a purchase or no purchase decision.

The ultimate level of consumer satisfaction - influencing future purchases - is a function of both the degree to which perceived quality expectations formed in the shop are matched by the eating experience in the home and the degree to which the purchase motive is fulfilled (Grunert, Bredahl and Brunsø, 2004). However the level of satisfaction with the actual eating experience depends on the accuracy of the initial prediction of eating quality as well as the actual physical (sensoric) characteristics of the beef. Consumers do not always correctly interpret the physical/intrinsic cues to eating quality (West *et al.*, 2001; Grunert, Bredahl and Brunsø, 2004; Verbeke, 2000; Issanchou, 1996; Peterson *et al.*, 2001). For example, consumers perceiving fat in beef as detrimental to health may lower their assessment of eating quality, when, in fact, some degree of marbling contributes positively by enhancing flavour, tenderness and juiciness (Grunert, Bredahl and Brunsø, 2004). Hence it may be beneficial to the Australian beef industry to further understand the search cues Australian consumers use at the point of purchase and the perceived helpfulness of these cues for predicting eating quality. Additionally it may be helpful to identify any associations between demographics and the perceived helpfulness of cues that might have implications for marketers.

European consumers considered extrinsic and intrinsic cues equally helpful for determining 'quality in the shop' with colour considered the most helpful intrinsic cue and place of purchase and country of origin the most helpful extrinsic cues; price was considered the least helpful. Countries differed in how they ranked the helpfulness of the cues (Glitsch, 2000). This paper builds upon the research to date by identifying the intrinsic and extrinsic cues utilised by Australian consumers in developing perceptions of eating quality of beef at the point of purchase and ranking them in order of their perceived helpfulness for predicting eating quality.

## Methodology

The methodology for this study was comprised of two phases. Firstly, four focus groups in one regional centre (Toowoomba) and three capital cities (Brisbane, Canberra and Melbourne) were conducted to identify the processes followed, attitudes and concerns of Australian consumers when purchasing beef. The European research of Glitsch (2000) helped construct the framework for the conduct of the focus groups and subsequent survey. Specific to this paper, the focus groups sought to identify the cues used by Australian consumers to assess beef quality at the point of purchase. Secondly, the results of the focus groups, in conjunction with the literature, were used to develop a questionnaire to quantitatively determine the relative importance of intrinsic and extrinsic cues for assessing beef quality at the point of purchase in Australia. Survey data was collected by shopping mall intercepts in a range of socio-economic areas in Brisbane and Toowoomba. Interviewers carried a list of definitions to clarify terms if asked.

Screening questions selected respondents on the basis that they ate beef and were the major purchaser of meat for their household. In the survey respondents were asked

- for demographic information on gender, age, level of employment, size of household, number of children under 16 in the household, household income and education, and
- to rate the helpfulness of search cues (Table 1) for predicting the eating quality of beef in the shop using a scaled response from 1 = 'not at all helpful' to 5 = 'very helpful' as in Glitsch (2000).

Given the non-normality of collected data and differing results for one-sided ANOVA tests and Kruskal Wallis tests for significant differences between variables, a series of Wilcoxon signed ranks tests (Z value) for non-parametric data was used in place of T-tests to examine significant differences between the helpfulness of pairs of cues (Maltby and Day, 2002). Similarly, the non-parametric Mann-Whitney U test and Kruskal Wallis H tests were used to test for significant differences related to demographics and consumer perceptions of the helpfulness of particular cues to eating quality in the shop.

## Results

**Focus groups:** Findings from the focus groups achieved two main outcomes. Firstly, they confirmed that Australian consumers used the intrinsic and extrinsic cues used by European consumers to assess beef quality in the shop, namely, colour, marbling, leanness and quality labels, place of purchase, price and country of origin respectively. Secondly, they identified additional intrinsic and extrinsic cues used by Australian consumers: freshness and use by date, brand, feed (grain or grass), presentation and packaging respectively. Some inaccurate interpretations of cues were noted in respect to content and colour of fat, labels and meat colour.

**Survey:** The 234 respondents (36.5% males, 63.5% females) ranged in age from under 30 to over 60 years. Average household size was 2.8 persons, though 15.4% of respondents live in single households and 34.6% in two person households. Thirty-four percent of households contained children under 16. Close to half the respondents (46.8%) had tertiary education and a similar percent, a secondary education. Annual household incomes ranged from less than \$15,000 to greater than \$50,000.

In relation to the importance of cues in assessing beef quality at point of purchase, respondents were asked to rate the ‘helpfulness for predicting the eating quality of beef in the shop’ of twelve search cues. Four of these were intrinsic to the meat (colour, leanness, freshness, presence of fat/marbling) and eight were extrinsic cues dependent on the place of purchase (price, presentation, packaging and quality assurance labels) or on the production process (brand, country of origin and feed). The cues (Table 1) included those seven identified and tested by Glitsch (2000) plus the extra five identified during the Australian focus groups. Results are summarized in Table 1.

**Table 1. Helpfulness of Cues for Australian Consumers When Assessing the Eating Quality of Beef at the Point of Purchase**

Helpfulness	Cues	Mean	SD	Median	Mode	Z value	Significance#
1 <sup>st</sup> rank	Freshness	4.33	.83	4.00	5	-5.075	Sig.***
2 <sup>nd</sup> rank	Leanness	4.04	.88	4.00	4		
	Colour	3.99	.95	4.00	4		
	Fat/marbling <sup>1</sup>	3.92	1.02	4.00	4		
	Presentation	3.87	1.01	4.00	4		
						-2.483 <sup>11</sup>	Sig.*
3 <sup>rd</sup> rank	Place of purchase <sup>1</sup>	3.73	.98	4.00	4		
	Price	3.72	1.05	4.00	4		
	Quality assurance labels	3.71	1.01	4.00	4		
	Country of origin <sup>2</sup>	3.71	1.18	4.00	5		
	Packaging	3.63	1.14	4.00	4		
						-3.180 <sup>22</sup>	Sig.***
4 <sup>th</sup> rank	Feed <sup>2</sup>	3.46	1.16	4.00	3	-2.315	Sig.*
5 <sup>th</sup> rank	Brand	3.24	1.04	3.00	3		

# Sig.\*\*\* indicates significance at  $p < .001$  level; Sig.\*\* indicates  $p < .01$ ; Sig.\* indicates  $p < .05$ .

Cues within the one rank, as indicated in Table 1, did not differ significantly ( $p > .05$ ) in helpfulness whereas differences between ranks were significant at the  $p < .05$  and  $p < .01$  levels. However, the cut-off between ranks was not always clear; presentation did not differ significantly from either fat/marbling or place of purchase however these differed significantly at the  $p < .05$  level. Z values indicated presentation was closer to fat/marbling in helpfulness. Similarly feed did not differ significantly from packaging but was significantly less helpful than country of origin and the remainder of the third rank.

Freshness (Table 1, first rank) was perceived to be the most helpful indicator of quality in the shop, followed by the remaining intrinsic cues (leanness, colour, fat/marbling) plus presentation (second rank); these, in turn, were seen as significantly more helpful than the extrinsic cues place of purchase, price, quality assurance labels, country of origin and packaging (third rank). Feed and brand were seen as least useful (fourth and fifth ranks).

Associations were found between age and gender and the perceived helpfulness of certain cues for predicting eating quality. While the overall perceived degree of helpfulness of freshness, leanness and fat/marbling did not differ significantly with age, there were significant differences in perceived helpfulness ( $p < .05$ ) of colour, price, presentation, country of origin and feed related to age. Rank means showed the general trend is for people under 30 to find these less helpful; feed was particularly helpful to the over 60's. Furthermore, males and females agreed on the helpfulness of freshness, place of purchase, country of

origin, feed and packaging but females rated colour, leanness, fat/marbling ( $p < .01$ ), labels and presentation ( $p < .05$ ) as significantly more helpful for predicting eating quality than did males. The remaining demographic variables did not reveal significant differences in perceived helpfulness of cues.

### **Discussion and Marketing Implications**

This research has confirmed the usefulness of the European models in providing a theoretical framework for the study of how Australian consumers assess beef quality at the point of purchase. Furthermore, the study has shown that there are some differences between European and Australian consumers in relation to assessment of beef quality at point of purchase. Contrary to Glitsch's (2000) findings for European countries where country of origin and place of purchase are frequently included in the first rank, Australian consumers appear to rely predominantly on intrinsic characteristics and presentation, i.e. on the appearance of the beef itself, to predict the eating quality. As virtually all fresh beef sold for home consumption in Australia is produced within Australia and sold without the producer or a brand being identified it is not surprising that country of origin, brand and feed are considered of lesser helpfulness. Given the importance placed on intrinsic cues, misperceptions influencing the interpretation of cues may impact on both initial purchase behaviour and subsequent satisfaction with the product.

Perceived *freshness* was significantly more helpful than all other characteristics. Given the importance of freshness to the Australian consumer as an indicator of beef quality, future research may be necessary to further explore the concept of freshness as perceived by consumers and to identify the cognitive processes which occur in a consumer's mind before arriving at a measure of freshness for a beef product at point of purchase.

The lack of significant differences associated with age and most other demographics in the perceived helpfulness of first and second ranks of cues suggests demographic differences are not markedly influencing consumers' formation of their perception of quality of beef within the shop. The exception to this is gender; females found colour, leanness, fat/marbling and labels significantly more helpful than did males. This may reflect the increased degree of health consciousness found in females (Kennedy, Stewart-Knox, Mitchell and Thurnham, 2004). Other elements of this research supported females' significantly greater concern with health issues.

The results of this study suggest that marketers of beef in Australia should focus upon eliciting strong positive feelings about the several important intrinsic cues which consumers here use to assess beef quality at point of purchase. In this respect, educational promotions which better inform consumers about the determinants of quality are needed.

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