

Investigating the simultaneous influence of intrinsic and extrinsic cues: An examination of the interaction between country of origin, price and selected sensory variables

By

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A thesis submitted in fulfillment of

the requirements for the degree of

Doctor of Philosophy

(Commerce)

July 2007

Abstract

The research was undertaken to quantify the power of selected extrinsic (price and country of origin) and intrinsic cues (acid in chardonnay and fat in brie) on consumer evaluations of both experienced and expected product quality, and further, to measure the respective influences of objective knowledge, subjective knowledge and self-confidence on these quality assessments. The study also seeks to determine if a survey conducted measuring expectations of quality would yield comparable results with quality assessments based on actual product experience. The study was comprised of sensory experiments using full profile conjoint analysis experimental design to measure quality perception, followed by a survey where only product description profiles were provided. The analysis from both stages show findings that are remarkably similar in most respects.

Results of the sensory experiment for chardonnay show both extrinsic cues tested to be more important than acid levels, while results for the survey show price maintained the strongest influence, with comparable expectations regarding the importance of country of origin and acid. For brie (both stages) consumer opinions were consistent; with price found the most influential; and while country of origin was considered relatively important, fat levels were more influential for both groups. Whilst for chardonnay (both stages) respondents held consistent beliefs regarding each acid level tested, for brie respondents experiencing the highest level of fat held an opposite view to respondents assessing quality based on their expected liking for this type of product. The influence of knowledge (objective and subjective) and self-confidence was found to be sporadic and weak, likely due to respondents' general lack of objective knowledge in both stages of the survey. In the case of self-confidence, results are surprising given that respondents in both studies exhibited reasonably healthy degrees of self-confidence. The research provides important information to marketers seeking to exploit the most attractive aspects of their products and platform for a number of subsequent studies.

Acknowledgements

There are many people that must be acknowledged as important contributors to the completion of this study. Firstly, I would like to thank my primary supervisor Professor Pascale Quester. She was my honors supervisor and told me 'I think you can do it', and if she thought so, then I imagined that I could. In the 3 years that have passed since we had that meeting she has also become a valued friend in addition to supervisor and mentor. My co-supervisor, Dr Amal Karunaratna, has also been a great source of knowledge, encouragement and ideas. He was particularly instrumental in the development of the conjoint analysis design and initial data testing. We spent more than a few hours working through some difficult and challenging issues. We were helped with this by Dr Hume Winzor, whose expertise in the use of conjoint analysis was invaluable. Another source of invaluable expertise was Professor Jordan Louviere, who took the time to meet with me to discuss my research and offered much needed advice regarding the methodology employed. This research would not have been possible without the guidance and support of industry product experts, many thanks to Jim Smith, Michael Ross and Louise Elder. I would also like to acknowledge my work colleagues in 2 locations. Firstly, the TAFESA City Campus where I received ongoing encouragement and support from my direct reports Dr. Rodger Thomas and Matt Stanton backed up by my fellow lecturers and executive management. Secondly, my work mates at the School of Commerce (University of Adelaide) who provided advice and friendship. I would also like to thank specifically, Professor Lee Parker and Associate Professor Barry Burgan for helping me whenever they could and providing the environment I needed to just 'get it done'. Finally, I would like to thank my good friend and tireless research assistant, Emma Parker, for numbering all those glasses and pouring all those samples (in addition to about 100 other things).

This research was made possible by funding by the

Wine and Grape Research Development Board.

Australian Government

Grape and Wine Research and Development Corporation

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1 Introduction

1.1 Background to the research

Products and services are comprised of both intrinsic and extrinsic cues used by consumers to shape their opinions of expected or experienced product quality. An intrinsic cue can be described as any product attribute inherent to the product itself, such as engine capacity for a car or flavor for a soft drink. An extrinsic cue is a product attribute (or closely associated attribute) that is not a fundamental part of the product itself, for example, price, brand, place of purchase or country of origin. Consumers are not always able to accurately evaluate these cues prior to purchase or judge quality in a post-purchase evaluation (Alba 2000; Kardes, Kim et al. 2001). Reasons for this include: lack of understanding, lack of self-confidence, misinterpretation or inaccessibility to information (Roper 1969; Olson 1972; Szbillo and Jacoby 1974; Monroe 1976; Rao and Olson 1990; Northen 2000; Teas and Agarwal 2000; Wansink, Park et al. 2000; Siu and Wong 2002; Kardes, Cronley et al. 2004). Managers should understand the respective influence of extrinsic cues in the product quality assessment process to ensure that marketing efforts are focused towards enhancing those attributes most likely to favorably influence consumers' opinions regarding quality.

As an extrinsic cue, Country of Origin (COO) has been studied extensively since the 1960s for its effect on consumers' product evaluation (Bilkey and Nes 1982). COO is generally described as the 'source country' for a product or service provider, which may be different from the country of brand or country of assembly or design. Country Image (CI) is one aspect of this complex construct. CI profiles are akin to a 'brand profile' for individual countries and are used by consumers as extrinsic cues for forming product quality expectations (Badri, Davis et al. 1995; Nebanzahl and Jaffe 1996; Kotler and Gertner 2002; Papadopoulos and Heslop 2002; Srikatanyoo and Gnoth 2002). While

these stereotypical country images are considered specific for a product (or product category) these values are generally not transferable to different categories of products, some common effects have emerged. These common findings include a more significant reliance on COO (and other extrinsic cues) by consumers when there is little specific and reliable information available for consideration, when they are evaluating a high cost/high involvement product, when they have limited personal objective knowledge to rely on or when the COO and product category are highly congruent, for example, French perfume or Chinese silk (Eroglu and Machleit 1988; Han 1989; Papadopoulos and Heslop 1989; Han 1990; Papadopoulos and Heslop 1993; Eriksson and Hadjikhani 2000; Piron 2000; Srikatanyoo and Gnoth 2002). The influence of price as an extrinsic cue on consumer perceptions of product quality has also been studied extensively, with research confirming that consumers often use price as an extrinsic cue to predict quality across a wide range of products (Sullivan and Burger 1987; Pechmann and Ratneshwar 1992; Jover, Montes et al. 2004). This price/quality relationship, described in the literature as the 'price-reliance schema' reflects consumers' strongly held view that 'you get what you pay for' (Lee and Lou 1996: p24).

The focus of this research is to investigate the respective influence of COO and price as extrinsic cues when product intrinsic cues are experienced through sensory perception. This will be achieved through the analysis of data collected by taste testing experiments. Previous studies have assessed the influence of price (among selected other extrinsic cues) by numerous means of sensory evaluation including taste tests and visual impressions (Pechmann and Ratneshwar 1992; Wansink, Park et al. 2000; Hurling and Shepherd 2003). However, research testing the specific influence of COO on consumer opinions using taste testing methodology is limited, representing an opportunity to expand our understanding of their value to consumers when all intrinsic cues are available for evaluation (Roper 1969; Pechmann and Ratneshwar 1992;

Aaron, Mela et al. 1994; Imram 1999; Acebron and Dopico 2000; Hoffmann 2000; Becker 2000a; Koch and Koch 2003; Zellner and Durlach 2003).

Another important and unique aspect of the research is the opportunity to compare findings between sensory evaluation experiments measuring respondent assessment of experienced quality and a paper based survey measuring consumer product preferences based on pre-use judgments of 'expected' product quality as determined through assessment of product descriptions incorporating intrinsic and extrinsic cues. Hence a secondary objective of the study is to assess any differences that may exist between respondents' expectation of quality versus perceived quality, as determined through product consumption and immediate appraisal.

1.2 Research Justification

Marketing practitioners need to understand which product attributes are used by consumers when forming opinions regarding product quality as this determination is often a significant precursor to a buying decision (Olson 1972; Szbillo and Jacoby 1974; Parasuraman, Berry et al. 1993; Sweeney, Soutar et al. 1999; Northen 2000). This intelligence reduces the risk of emphasizing product attributes that are not considered important, may not be noticed and may not even be understood. Research has shown that generally consumers rely more heavily on intrinsic cues than extrinsic cues to predict quality, however, this reliance has been found to be moderated by a number of factors (Speece, Kawahara et al. 1994; Hoffmann 2000; Skuras and Vakrou 2002). For example, product cue usage can be 'situational' with consumers relying on extrinsic cues when they are under time pressure to make a decision, when they are making a high involvement purchase or when buying gifts for others (Lee and Lou 1996; Quester and Smart 1998; Piron 2000) Therefore, in many instances a consumer's evaluation of quality, or expectation of quality, may not even involve the evaluation of intrinsic cues

with extrinsic cues taking precedence. Further, market specific variables such as consumer knowledge and self-confidence have also been found to influence the use and understanding of both intrinsic and extrinsic cues alike, suggesting that the potential power of cues such as price or COO may often be undervalued (Aaron, Mela et al. 1994; Andreassen and Lindestad 1998; Alba and Hutchinson 2000; Alba 2000). Whilst these types of consumer characteristics have been found influential, results are often ambiguous and conflicting due to a lack of consistency in construct definitions and measures employed (Park, Mothersbaugh et al. 1994; Flynn and Goldsmith 1999). This research provides a vehicle to measure each distinctively and quantify their respective influences on consumer product quality assessment. Also, as a result of this process, new and validated measurement instruments will be confirmed for further development and/or use in later studies.

The risk for marketers is that scarce resources may be wasted, emphasizing product attributes misunderstood or of little importance to buyers. Rather, marketers could exploit an important opportunity provided by this understanding to develop a hierarchy of the product attributes (under various situations) that consumers use to determine quality evaluations and drive their buying decisions. The study aims to address some aspects of these gaps in the current literature and provide a background of understanding that can be used in industry to develop effective, appropriate and specific marketing strategies. Lastly, the study provides insight into the ability of research using consumer assessments based on product descriptions to predict opinions based on respondent experience, thus evaluating the efficiency and accuracy of data gathered using paper based survey methodology alone.

1.3 Objectives and contribution of research

The research provides a framework illustrating consumer assessment of product quality based on their simultaneous evaluation of intrinsic and extrinsic cues, with knowledge (type and level) and personal self-confidence levels as variables moderating their use. Further, the study identifies the differences between what consumers would expect in terms of product quality, and their actual determining of product quality through the comparison of results from a conjoint analysis survey and taste testing experiments. The resulting framework will be a useful tool for practitioners to assist them in the development of marketing strategies that emphasize the most powerful and influential product cues.

The research objectives are:

1. To investigate the ability of extrinsic cues to override sensory perceptions.
2. To measure the levels and types of consumer knowledge and their moderating influence on the use of extrinsic versus intrinsic cues.
3. To measure the levels of consumer self-confidence and its moderating effect on cue reliance.
4. To determine the difference between expected quality and perceived quality determinations.

1.4 Thesis outline

This thesis consists of 10 chapters. In each subsequent chapter a brief introduction outlines the content to follow.

Chapter 1

Chapter 1 provides a background to the study, justifying the contribution to industry practitioners and the literature. The purpose of this first chapter is to introduce the topic and outline the importance and objectives of the research as well as the structure of the thesis itself.

Chapter 2

Chapter 2 provides a comprehensive review of existing literature pertinent to the research, including the identification of gaps in the current body of knowledge specific to consumer use of intrinsic and extrinsic cues and the consumer characteristics of knowledge and self-confidence. The chapter concludes with the illustration of a conceptual framework providing the basis of the investigation into the ability of extrinsic cues to influence consumer quality judgment, both in terms of product expectation and experience and quantifying the degree to which specified consumer characteristics alter the reliance on these cues.

Chapter 3

Chapter 3 is devoted to the development of a causal model and the formalization of hypotheses to be tested. From this theoretical foundation, the rationalization for the adopted research design and adopted stages are provided. This chapter also includes the methodology and the results of stage 1 of the research (largely qualitative data).

Chapter 4

Chapter 4 details the methodology and findings of stage 1 of the research, the exploratory component which is comprised largely of qualitative data analysis. The purpose of this stage of the study was to confirm the choice of product attributes and stimuli for use in the quantitative components of the research.

Chapter 5

This chapter details the conjoint analysis methodology and measures of knowledge and self-confidence used for the 3 quantitative aspects of the study. Chapter 5 also contains the findings from a pilot study and their contributions to the subsequent stages of the research.

Chapter 6

An overview of the rationale underpinning the methodology used to conduct the sensory experiments and results of data validation tests are provided in this chapter.

Chapter 7

Chapter 7 provides the results of the sensory experiment data analysis and a discussion of their implications.

Chapter 8

Chapter 8 is comprised of an overview of the methodology used to conduct the conjoint analysis by survey and subsequent data analysis results specific to chardonnay. Also provided is a comparison of the survey data analysis with the sensory data analysis for chardonnay. The chapter concludes with a presentation of hypotheses testing outcomes.

Chapter 9

Chapter 9 is comprised of the respective results for brie as illustrated for chardonnay in chapter 8.

Chapter 10

This last chapter provides a discussion of the overall conclusions reached from conducting the research and includes suggested implications for theory in this area of study and for marketing practitioners. Identified limitations of the research follow and recommendations for future results close the chapter.

1.5 Summary

This chapter presents the background, objectives and contribution of the study, and an outline of the thesis is provided. The principal contribution of the research is a theoretical framework illustrating consumer assessment of product quality based on their evaluation of intrinsic and extrinsic cues incorporating the impact of potentially moderating variables: consumer knowledge and self-confidence. The research will investigate the ability of methodology measuring consumer expectations of quality determined using product descriptions to predict respondent quality opinions based on sensory experience thus providing insight in the differences between expected quality levels and actual perceptions. This information will be of critical importance to practitioners designing new products and developing marketing strategy.

2 Literature Review

2.1 Consumer use of intrinsic and extrinsic cues

It is established that consumers consider both types of cues when forming their overall evaluation of quality; consequently it must be accepted that consumers are not always totally objective when forming their opinions and perceptions of quality levels (Bredahl 2003). Olson (1972) conceptualized the formation of quality perception as a 2 stage process. In Olson's model the importance of a cue to a consumer depends on its predictive value, its confidence value, and whether or not the cue is intrinsic or extrinsic to the product. 'Predictive Value' is defined as the extent to which the customer perceives or believes that the cue is related to, or indicative of, product quality. 'Confidence Value' is the degree to which a consumer is confident in his ability to accurately perceive and then judge the cue. Literature shows that, overall, intrinsic cues are given more credence; however, this will not be the case when intrinsic cues are insufficiently predictive in the minds of consumers or when they have low confidence in their ability to evaluate and assess them (Agrawal and Kamakura 1999; Srinivasan, Jain et al. 2004). Extrinsic cues which are also believed to be strong predictors of value (or offering high levels of emotional appeal) are brand name, price, retail outlet and COO (Dodds 1991; Lin and Sternquist 1994; Lee and Lou 1996; Gluckman 2001; Kardes, Cronley et al. 2004). For example, Vranesevic and Stancec (2003) found that respondents evaluating branded tins of pâté stated that they believed a more prominent brand to be better quality than a non-branded offering, however, in a blind taste test the premium brand of pâté was not actually preferred.

Consumers with low levels of knowledge relevant to the product (or product category) assessed attribute greater credence to extrinsic cues. For these individuals, intrinsic cues are sometimes ignored because they are confusing and poorly understood; in contrast, a category 'expert' has the ability to correctly interpret and evaluate them (Maheswaran 1994; Maheswaran, Sternthal et al. 1996; Kuusela, Spence et al. 1998; Kardes, Kim et al. 2001; Siu and Wong 2002). In his study investigating the influence of expertise on assessment of personal computers, Mareswaran (1994) found that consumers with sound levels of knowledge were less likely to be influenced by extrinsic cues than others when cues were clear, unambiguous and highly diagnostic in nature. Dependence on extrinsic cues can also be situational, such as when intrinsic cues are unavailable or when purchasing products associated with self-image or status (Maheswaran 1994; Quester and Smart 1998; Piron 2000; Kardes, Cronley et al. 2004). Wilson and Brekke (1994) found that when consumers are short of time or suffering some other form of stress they will use the cognitive shortcut that an extrinsic cue represents as they are not able to evaluate intrinsic cues appropriately. Consumers also vary in their need for cognition and degree of ambivalence (or non-attitude) towards product evaluation. Individuals with lower needs for cognition and/or higher levels of ambivalence tend to make more use of the cognitive shortcuts afforded by extrinsic cues because they are not motivated to understand intrinsic cues and are seeking to make the easiest and quickest decision (Zhang 1996; Olsen 1999; Bredahl 2003).

Alba (2000) provides other important insights into consumer behavior relating to the purchase decision. For example he suggests that one half of any given population of a market is below average in intelligence and therefore not as capable of assessing intrinsic product attributes, at least not with the same rates of success. Also, there may not be the desire, or the will, to make wholly rational or logical decisions even by consumers with high levels of intelligence. Alba (2000) uses the term 'mental

contamination' to represent all environmental factors that contribute to distracting consumers from applying logic in their decision making (p125).

2.1.1 Extrinsic cues and sensory perceptions

As discussed, the literature demonstrates that intrinsic cues are usually relied upon more heavily in predicting and/or evaluating product quality. However, in some situations, inherent product attributes are discounted by consumers in favor of extrinsic cues they believe to be more reliable (Wilson and Brekke 1994; Hamilton, Knox et al. 2000; Wansink, Park et al. 2000; Vranesevic and Stancec 2003; Zellner and Durlach 2003). Studies have also demonstrated that extrinsic cues can be powerful enough to overcome sensory perceptions. For example, Pechmann (1992) found in her study involving consumer assessment of orange juice quality that respondents would favor a lower quality juice if the price were relatively high, over a juice of lower quality if the price were correspondingly low, provided they did not have the opportunity to assess all juice samples simultaneously. Judgments of quality can also be influenced by characteristics implied through labeling or simply only assumed by the consumer to exist. Wansink (2000) found in her experiment testing the influence of labeling that some respondents reported differences in the taste and texture of breakfast bars when they believed the product contained soy. In fact, all products tested by these respondents were identical and did not contain any soy-based ingredients. Visual clues are also significant in consumer quality evaluations (Imram 1999). Data from studies of consumer preferences in beef products indicate that consumers prefer the appearance of very lean and red steak, believing that these attributes contribute to a better tasting product. However, under blind taste testing conditions these respondents prefer the taste and texture of meat that is darker in color (aged longer and more tender) and more marbled (higher fat content means the meat is juicier) (Glitsch 2000; Bredahl 2003; Hurling and Shepherd 2003). In their experiment testing the influence of visual

cues, Hurling and Shepherd (2003) found that respondents tasting crumbed fish reported patties with tidy golden crumbs well adhered to the fish tasted better than those with pale crumbs or torn crumbing. Visual cues can also affect perceptions of odors. Blackwell (1995) found that some respondents had difficulty identifying well-known scents when the sample color did not match expectations, e.g. a green sample scented with orange. Research has confirmed that sensory perceptions are not always accurate and are vulnerable to expectations and beliefs. These findings mean that marketers cannot assume that intrinsic product attributes will be weighted and interpreted accurately when evaluated by consumers.

2.2 COO as an extrinsic cue

2.2.1 Introduction to the COO construct

COO has been defined in many ways in the marketing literature, but it is generally considered to be the source country of a product. Country Image (CI) can be described as the general perceptions, or stereotypical images that consumers from one country (or region) form about another country or region (Han 1989; Han 1990; Papadopoulos and Heslop 1993). COO effects describe the degree to which CI (or country of brand or country of assembly) influences consumers' evaluations of products from a specific country. Initial research studies commencing in the 1960s concentrated on the impact of a single cue, the 'Made in…' label. However the impact of CI tended to be overstated when the COO cue was used in isolation and other factors likely to influence consumer perception and buying behavior were not acknowledged (Bilkey and Nes 1982; Chao and Rajendran 1993; Al-Sulaiti and Baker 1998).

The scope of research studies has expanded and evolved over the years and COO is now recognized as a complex multi-dimensional construct that involves consumer

perceptions of source countries, recognizing the influence of other considerations such as marketing mix variables and the specific characteristics of each target audience (Ahmed, Johnson et al. 2002). Research has established that CI perceptions form the basis of beliefs that consumers use as part of their product evaluation process, although its importance will vary depending on market and product specific circumstances (Han 1989; Han 1990; Agarwal and Sikri 1996; Quester, Marr et al. 1996; Ger 1999; Srikatanyoo and Gnoth 2002). For example, CI has been found to be more critical when consumers are evaluating high involvement, high status or highly specialized items such as designer clothing or prestige motorcars and less important in the evaluation of low involvement, low priced items such as toothpaste or tee shirts (Manrai, Lascu et al. 1998; Piron 2000; Srikatanyoo and Gnoth 2002; Ahmed and d'Astous 2004; Ahmed, Johnson et al. 2004). The research results from Piron (2000) are an example of the product/category specific nature of COO effect: COO had a stronger influence on perceptions of the quality/desirability of a luxury item (sports car) than of a necessity item (toothpaste). This suggests that consumers are looking for a more extensive set of elements to evaluate before making a decision on high involvement items and also that CI may make a status/ego enhancement contribution that makes the product more attractive. The more recent research of Ahmed, Johnson et. al. (2004) supports Piron (2000) regarding the influence of CI on low involvement products. In their study of consumer evaluations of bread and coffee, they found that while COO influenced expectations of quality, respondents considered price and brand to be more predictive. While in this case CI was considered a weak determinant overall, it is interesting in terms of cue usage as reliance was placed on other extrinsic cues over intrinsic cues.

The globalization of manufacturing has made it more difficult to determine the actual impact of CI for many products (Han and Terpstra 1988; Choi 1992; Chao 2001; He 2003). The 'source country' for a product may now be different from its country-of-brand or country-of-assembly or country-of-design. Studies have found that COO

effects vary in relation to these variables according to many characteristics such as product brand strength, product type, level of competition and stage in the product life cycle, thus adding to the complexity of understanding the influence of CI (Chen and Pereira 1999; Chao 2001). These hybrid products, and product combinations, represent new challenges for international marketers as multiple 'countries of origin' may require distinct marketing strategies across various market segments (Okechuku 1994; Kotler and Gertner 2002).

COO effect is a multidimensional construct, but there is no consensus on the number and type of dimensions that have been used to measure it, making direct comparisons of research results difficult, risky and confusing (Agarwal, Teas et al. 1997; Bhuian 1997; Quester, Dzever et al. 2000; Olsen and Olsson 2002). In their study of university students in the US and New Zealand, Ford et al. (1999) reported that one of the significant limitations of their study was the difficulty in transferring country and product attribute statements across countries and cultures for interpretation purposes. Different researchers questioning the validity of rating scales and respondent biases, evident from questionnaire design and question order, have also raised other methodological issues (Malhotra, Agarwal et al. 1996). An example is the controversy between studies that ask respondents to give countries an overall country 'rating' without product associations, or those that ask for products to be rated according to where they are sourced (Papadopoulos and Heslop 1993). Olsen and Olsson (2002) found that different countries were rated differently when the order of scaling attributes was changed, with the most consistent results evident when an 'attribute' questionnaire design was adopted over an 'entity' based approach. Nevertheless, attributes such as industrialization, areas of specialization (what the country is 'famous for' in a product sense) and technological advancement are accepted as valid examples of measurement dimensions.

In spite of the body of knowledge available on this topic, and acknowledged methodological issues, research into COO effect continues for many reasons. The world is a global market place and few businesses are immune to the influence of imported products into home markets. Moreover, businesses around the world actively seek export opportunities for their products and services, in developing countries representing new consumer markets with enhanced purchasing ability (Kaynak, Kucukemiroglu et al. 2000; Bandyopadhyay 2001). Being able to predict the acceptance of, or bias against, their products in new markets can be critical to success (Badri, Davis et al. 1995; he 2003). Identifying and exploiting competitive advantages represents significant challenges to local and international marketers alike.

2.2.2 How country images are developed

The CI is the result of the combination of history, geography, political systems, famous citizens, economic status and culture. In general, countries enjoy a favorable CI if they are highly industrialized, economically strong; governed by democratically elected governments and where citizens are well educated and enjoy a high standard of living (Nagashima 1970). CI or product country image (PCI) profiles are akin to a 'brand image' for individual countries (Nebanzahl and Jaffe 1996; Kotler and Gertner 2002; Papadopoulos and Heslop 2002; Srikatanyoo and Gnoth 2002). These images allow consumers to apply a consistent standard of quality to product categories without personal experience with them because of the reputation that has been established; examples include ‘Dutch Chocolate’, French Perfume' and ‘Persian Rugs’.

Countries that are new to exporting products may not have an established CI, positive or negative, in the minds of targeted consumers overseas. Marketing strategists can take advantage of this by creating and establishing a CI that benefits their product. For example, the CI of Columbia was literally created in the American market in the 1970s

in order to sell coffee. A fictional character called 'Juan Valdez" was featured in a commercial aired in America for years. The brand values communicated in the coffee commercials came to represent the Columbian CI to the American market. This strategy was successful because of the lack of an existing strong CI for Columbia in American consumers' minds at that time. Whilst beneficial for similar products or product extensions this CI could represent barriers to the acceptance of non-agricultural goods in the United States (Eroglu and Machleit 1988; Kotler and Gertner 2002; Srikatanyoo and Gnoth 2002). For example, it is difficult to imagine CI used effectively to promote German perfume as numerous studies have shown Germany to be perceived as a country famous for engineering, while France is positively associated with fashion and perfume products. Therefore, a German perfume manufacturer would distance their product from Germany due to CI, whereas a French perfume manufacturer would exploit it. Some country images are so well accepted world-wide that foreign manufacturers are 'borrowing origins' in order to reap the benefits of these established stereotypes (Papadopoulos and Heslop 1993).

In spite of the enduring strength of established country images, countries are not automatically locked into producing only one product category successfully. Countries such as Japan and the United States enjoy a positive reputation around the world for manufacturing and technology, resulting in a positive bias across a wide range of products (Lin and Sternquist 1994; Leonidou, Hadjimarcou et al. 1998; Mohamad, Ahmed et al. 2000; Chao 2001). Accordingly, even though a product and CI may not be congruent, consumers will connect them and a shift in one will result in a simultaneous shift in the other. An example is provided by Papadopoulos and Heslop (2002): "One may think more highly of French than of Japanese fashion - but the higher one thinks of Japan, the higher one thinks of its fashion products" (p296). This overall reputation built over time for producing quality at a high level is a very valuable commercial asset described as 'country equity' (Papadopoulos and Heslop 2002).

2.2.3 Building country equity through international brands

CI can influence perceptions of brands from different countries and the reverse can also be true, with global brands contributing to the establishment of, or change in, CI. Expanding on the previous example of Japan's CI, consider the globally established brands of Sony, Honda and Nikon. These brands are known around the world to be Japanese; therefore, a sound relationship is established in the minds of consumers between these brands and Japan. Consumers appear likely to take that relationship to the next step and assume that all Japanese goods may be similarly high in quality (Lampert and Jaffe 1997). Likewise, Samsung and Hyundai are examples of brands effectively 'repositioning' Korea in the minds of western consumers (Srikatanyoo and Gnoth 2002). This interaction contributes to increased awareness and strength for both the COO of brand (or design) and the source country (Phau and Prendergast 2000; Kleppe, Iversen et al. 2001; Insch and McBride 2004; Srinivasan, Jain et al. 2004; Phau and Suntornnond 2006).

International marketers have exploited the concept of country branding by using the attributes associated with eminent products or brands from a particular country and incorporating them into products of their own. For example, advertising developed for the Volkswagen Fox car manufactured in Brazil promoted 'German Engineering' in order to take advantage of the high quality benchmarks established by famous brands such as BMW in Germany (Thakor and Kohli 1996). However, in evaluating product country brand equity many marketing strategists fail to consider the contribution of CI to overall brand values until such time as it starts to cause marketing problems. Research conducted in the late 1990s, for example, led to a significant change in communications strategy for the manufacturers of 'Jaguar' motorcars. The 'Jaguar' was always considered a classic British product and marketing communications promoted the

strong link between the product and its COO, believing the relationship to be beneficial. However, research revealed that CI and the desired product brand image were not congruent. In order to establish a high-tech, high performance image in overseas markets, links between 'Jaguar' and England should be avoided, not endorsed, as the well-established CI of England embodying tradition and conservatism was in direct conflict with the desired product image (Kaynak, Kucukemiroglu et al. 1999).

Manufacturers reap significant benefits from country equity such as the opportunity for product differentiation and the ability to demand higher prices (Kotler and Gertner 2002). Governments too, have identified and exploited opportunities to improve CI and positioning. This is often accomplished through global events such as the Olympics, Grand Prix Racing or other international sporting or entertainment activities. Similarly, country equity can be quickly eroded by negative events such as wars or political upheaval (Papadopoulos and Heslop 2002). Consider the current American perception of Columbia; it would now incorporate the influence of drug cartels and civil unrest as opposed to the single reference to a genteel coffee grower.

2.2.4 Consumer bias against products from developing countries

Generally studies have shown that products from developed, industrialized nations are preferred over products from newly developing nations, by consumers from both developed and less developed countries alike (Chao 1992). Over time these countries have accumulated 'country equity' and their perceived product quality is expected to be superior, embodying better reliability and product performance (Nagashima 1970; Bilkey and Nes 1982; Lin and Sternquist 1994; Kaynak, Kucukemiroglu et al. 1999; Mohamad, Ahmed et al. 2000; Chao 2001; Hui and Zhou 2003; Jo, Nakamoto et al. 2003). For example, Smith (1993) found that products (cloth and a wine glass) were perceived to

be of lower quality when sourced from developing nations in Central America versus Asia. Support for Smith's findings is provided by Lawrence, Marr et al. (1992) in their study in New Zealand of consumer perceptions of imported cars, and Quester, Dzever et al. (2000) in their study of purchasing agents' perceptions of machine tools and component parts. In his study of consumers in Canada, Germany, the U.S. and the Netherlands measuring their perceptions of products (TV sets and car radios), Okechuku (1994) found that while there were differences in preferences between the consumers in different countries in terms of their first choices (home country, the U.S. or Japan), Mexico and Korea were consistently least favorably evaluated. These empirical results are evidence that countries such as Japan and Germany were seen to possess superior expertise in the areas of technology and design (even over other developed countries such as Britain), leading to an assumption of higher quality for a variety manufactured products.

The growing purchasing power of consumers in developing nations such as India and Mexico have motivated researchers to study the influence of CI in these important new markets (Leonidou, Hadjimarcou et al. 1998; Bandyopadhyay 2001; Bandyopadhyay and Banjeree 2002; Delong, Bao et al. 2004). An extensive study of consumer perceptions in India found that products sourced from Japan and Germany were ranked higher in expected product quality and product image than products from Korea or Britain, with Indian products ranked lowest (Bandyopadhyay 2001; Bandyopadhyay and Banjeree 2002). This was based on respondent perceptions of educational levels, economic development and technological expertise in those countries, with consumers making a strong link between those country attributes and expectations of quality and reliability. Data also indicates that the positive bias is even more pronounced in developing nations because of the enhanced status that owning these products often provides. These products often represent symbols of modernity, quality, advancement and success to consumers in these markets (Papadopoulos and Heslop 1989; Zain and

Y. 1997; Kaynak, Kucukemiroglu et al. 2000; Kotler and Gertner 2002). The following quote from a qualitative study undertaken by Ger (1999), illustrates the feeling of a 26-year-old Turkish male in relation to products from the North America when compared to products made in Turkey.

"If the name is English it is good, what comes from abroad is good." (p66)

Research of Bangladeshi consumer product preferences conducted by Kaynak, Kucukemiroglu et al. (1999) found that products from Japan, Sweden, Italy, England, the U.S. and Germany were considered superior to locally made goods or products manufactured in India; with only the rank order of these countries changing according to product category. Similarly, Mohamad, Ahmed et al. (2000) found in their study of Malaysian consumer product preferences that imports from Japan, the United States and European countries were favored over local goods or goods imported from newly industrialized Asian countries such as Singapore, Taiwan and Indonesia in all categories except clothing. In this category, Malaysian products were only considered superior to products from Singapore and Thailand. Zain and Yasin (1997) studied the effect of CI on consumer perceptions in Uzbekistan, and found that products from industrialized nations such as Japan and the USA were considered significantly better in quality across all product categories (clothing, white goods, cars and electronics) compared to local goods and products from Russia, Turkey, China and India. The argument supporting the link between the level of industrialization, development and product category specialization and perceived product quality has been conclusively made across most, if not all, product categories including those that would not be considered 'hi-tech' such as simple cloth and wine glasses. As a consequence, marketers in 1st world countries can use this 'halo' of positive bias to enhance product positioning world-wide.

However, research also indicates that in some cases the impact of CI is product type and market specific as well as generally less important when consumers are evaluating low involvement products (Chao and Gupta 1995; Piron 2000). This provides newly industrialized countries with the opportunity to produce low priced, fast moving consumer goods without prejudice. Empirical evidence also exists that may be used as the basis for the development of strategies to overcome negative bias towards products from such countries. For example, Niss (1996) surveyed the managers and owners of 100 Danish export firms and found that while it is useful at the introduction stage of the product life-cycle to have a positive link between a product and CI, the impact of associated imagery diminishes over time. Similarly, research conducted by Chen & Pereira (1999) indicates that an unfavorable CI is less important to consumers evaluating mature products or enjoying an extensive choice of competitive product offerings. This suggests that manufacturers likely to suffer a negative COO bias may mitigate the impact by taking a market follower approach to market entry, at a time when consumers are already familiar with products in the category and are less likely to rely on the CO cue.

2.2.5 The challenge of marketing 'hybrid' products

The globalization of manufacturing and assembly has made it increasing difficult to easily attribute the origin of products to any individual country. In order to take advantage of economic benefits such as low wages and lower taxation rates, corporations are increasingly moving their factories 'off shore' to less developed nations (Phau and Prendergast 2000). There are risks is such strategies as well as obvious benefits because it has been established that perceived lower levels of technological development leads to a negative CI bias against products from these developing countries. While Japan and Korea are proof that it is possible to reverse detrimental

perceptions, it should be remembered that this was accomplished over an extended time frame (Choi 1992; Hui and Zhou 2003).

Many products manufactured globally are designed in one country and manufactured in another, often with components sourced from many different countries around the world. The 'multiple countries of origin' often make it difficult for consumers to accurately identify the actual COO of a given product (Chao 1993). Hybrid or 'multi-national' products represent a new challenge for marketers because of the dissonance in perceptions of quality that consumers (particularly in developed nations) may experience. Consumers in some markets may feel comfortable and confident with a well-known product brand, but at the same time, feel a degree of anxiety and increased risk because of a negative country bias toward the country of manufacture of that product (Choi 1992; Chao and Rajendran 1993). For example, in their study surveying Thai and American students, Amine and Shin (2002) identified that products made in different countries were perceived differently in terms of quality depending on the COO of consumers. Their results suggested that Thai students considered a Sony Walkman made in China to be lower in quality than one made in Japan, illustrating that even a strong international brand such as Sony could not overcome a negative CI bias induced by country of manufacture. In contrast, the American students perceived little difference in the products, showing that each product and market combination may be unique and stressing the potential risk in generalizing across market segments. Examples of negative CI bias in the car industry include Israeli consumers refusing to buy Volkswagens made in Brazil and car dealers in the US tearing identification stickers off cars made in Mexico. Nebanzahl and Jaffe (1996) go on to show in their own study that consumer perceptions of the quality of Sony and GE products deteriorated when a proposed country of manufacture (Poland) scored lower on CI dimensions than the country of brand (Japan and the U.S.). A critical symptom of the brand erosion was consumer expectation of lower prices for products made in Poland. Chao (2001)

supported this with a similar outcome in his experimental study of American students and their evaluation of TV sets and stereo systems. Results suggested that when country of production and country of assembly was a less developed country (Mexico) than the country of brand (U.S.), respondents expected product quality, and therefore price, to be lower. These results alert marketers to the risk of cost savings in manufacturing being offset by lower prices and increased distribution and transport costs.

Brand strength appears to be critical in mitigating the negative effects of CI bias. Strong international brands, such as Sony, have been found to be more resilient to the impact of a negative CI of manufacture than 'non-branded' or lesser-known brands (Haubl 1996; Jo, Nakamoto et al. 2003). A solution for managers of lesser-known brands may be found in the research conducted by Li, Murray et al. (2000) who proposed that it is possible to overcome consumer fears of lower product quality by providing superior warranties and guarantees. This research supports the earlier studies undertaken by Chao (1989 a & b) who found that CI effect can also be moderated by price and choice of retail distribution outlet. In his later study, Chao (1992) reported that consumers may make an important distinction in product quality according to the country of design and pricing cues. Respondents considered a TV set to be superior in quality to alternatives when designed in Japan even when the country of assembly was Taiwan (industrially developed, but not associated with strong, international brands). Conversely, a TV set designed in the U.S. or Taiwan relied on higher pricing to enhance expectations of quality. Results from these studies suggest that choosing a country of design that is strongly congruent with the product concerned and then supporting this high quality position with appropriate pricing and distribution strategies could be an effective strategy to overcome a negative CI bias.

While some powerful global brands have weathered consumer resistance to products manufactured outside the country of brand and some market segments seem unconcerned, the potential harmful effects of 'hybrid' products should not be ignored in spite of identified strategies for addressing the impact. These considerations may be particularly important for organizations with lesser-known brands or those entering new markets (Kleppe, Iversen et al. 2001). Target audiences may not possess enough knowledge (correct or incorrect) to conceptualize a CI and may struggle to form positive country image and product associations (Beverland and Lindgreen 2002). For nations lacking a strong and positive CI, leveraging the country of brand and/or design may initiate the building of country equity critical for small or developing countries in international markets. Over time, as in the case of Korea, strong home country international brands may evolve to improve the CI for these less developed nations (Papadopoulos and Heslop 2002). Until this occurs, however, marketing communications will need to reassure customers that country of brand product values will be maintained no matter where a product is manufactured, and the actual country of production should be downplayed or omitted (Thakor and Kohli 1996; Delong, Bao et al. 2004). An alternative strategy put forward by Smith (1993) involves the use of regional labeling rather than identifying specific countries.

2.2.6 Effect of market specific attributes on use of CI

The CI can vary in different market segments because of personal characteristics of consumers such as religion, education, gender, age and other demographics (Kleppe, Iversen et al. 2001; Amine and Shin 2002; Balabanis, Mueller et al. 2002; Kotler and Gertner 2002; Insch and McBride 2004). In one of the earliest studies into consumer profiles and the influence of CI, Schooler (1971) examined U.S. consumer perceptions of products from India and Western Europe and found that older respondents rated foreign products lower in quality than younger respondents, females rated imported

products more highly than males and respondents with higher levels of education rated foreign products more favorably than those with limited education. Beaudoin, Moore et al. (1998) investigated the impact of CI on perceptions of foreign apparel among young female shoppers in the U.S. Those surveyed amongst the group considered to be 'fashion leaders' were significantly influenced by COO, while those considered to be 'followers' were not, highlighting the potential for differing levels of influence amongst segments according to social position.

A study completed by Huang and Tai (2003) also found significant differences in product preferences between female purchasers of cosmetics from four different Asian countries due to cultural and economic differences while Insch and McBride (2004) reported that age impacted on acceptance of foreign products. Cultural subgroups, historical events, political forces, family authority and ethnocentrism also contribute to the image of a country formed in the minds of consumers (Nebanzahl and Jaffe 1996; Knight and Calatone 2000; Balabanis, Mueller et al. 2002; Huang and Tai 2003). For example, the literature suggests that consumers show a preference for products from a country culturally similar to their own (Harrison-Walker 1995; Watson and Wright 1999; Balabanis and Diamantopoulos 2004). Balabanis, Mueller et al. (2002) took an innovative approach to assessing cultural influences by using the dimensions of the "Schwartz Value System (SVS)" (p 588) in their study. They hypothesized that cultures with collectivist values would view foreign products less favorably than cultures with individualist values; however in this instance the results were inconclusive. Heslop et al. (1998) found that English-Canadian consumers showed a clear positive bias towards products from Ontario and a negative bias against products from Quebec, reflecting the historic cultural conflict between the English and French-Canadian subcultures. Interestingly, in the same study a positive bias towards products from similar cultures was not reported when the products were sourced from less developed countries,

suggesting the affinity felt towards a similar culture was not strong enough to overcome the perceived risk that products from less developed countries may be lower in quality.

Consumers in some markets can harbor feelings of animosity towards people in different countries, and because of these strong feelings of 'ill will' customers may boycott products. This is a different perspective of COO effect, because the image of the source country does not act positively or negatively on perceptions of product quality, but instigates a very negative reaction to the country itself resulting in a refusal by consumers to buy. In this case, the CI is established because of major, negative events, or due to entrenched perceptions of said events. A famous example of consumer animosity was revealed by Klein (2002) who found that the citizens of Nanjing, China (the site of a 1937 Japanese invasion that resulted in the death of 300,000 Chinese citizens) still felt such high degrees of hostility towards Japan that they refused to buy imported Japanese products, in spite of considering them to be high quality. Consumer backlash against French products after France commenced nuclear testing in the Pacific in the 1990s is a more recent example in the Australian marketplace (Herche 1994; Klein 2002). In order to overcome these negative feelings by consumers (Clarke, Owens et al. 2000) recommends using a 3rd 'neutral' country as a distribution or assembly point, and to mark products as sourced from that neutral country. However, this strategy could be considered unethical as it sets out to mislead consumers. Alternatively, Smith (1993) suggests diffusing the negative perception of an individual country through the use of regional labeling.

Consumers may also exhibit negative biases towards imports due to heightened levels of ethnocentricity. Ethnocentric consumers feel obligated to purchase local (or home country) products in preference to imports because they feel it is morally right to do so. Ethnocentric behavior stems from feelings of national pride and/or perceptions of threat by foreign imports to the local economy and employment levels (Klein 2002; Balabanis

and Diamantopoulos 2004). For example, in their study of New Zealand respondents, Watson and Wright (1999) found that even those with low levels of ethnocentric values were willing to buy a local refrigerator in preference to a technically superior refrigerator from Germany even when prices were similar. Loyalty towards domestic products also differs among ethnic groups. For example, African-American consumers are an important growth segment in the U.S. car market accounting for approximately 12% of new car sales. Ede and Panigrahi (2000) investigated the attitudes of this important buying group towards cars imported from Japan and found that in spite of believing Japanese cars to be equal or superior in quality to locally produced cars, African-Americans believed that purchasing an import was unpatriotic because buyers of Japanese cars were unconcerned about the U.S. economy. In these situations, opportunities exist for marketers to reduce the advertising emphasis on intrinsic product attributes (where the local product may actually be inferior) and exploit an extrinsic cue that no foreign competitor can match or counteract.

However, whether or not consumers' degree of ethnocentricity will consistently influence their purchase behavior remains uncertain. For example, surveys of Australian consumer sentiment suggest that a positive purchasing bias exists towards products made in Australia. This has led to big investments in 'cuing' domestic shoppers to "buy Australian". Quester et al. (1996) investigated whether shoppers actually buy Australian products in preference to imports by analyzing the sales of fast moving consumer goods. In an experiment conducted in an Adelaide supermarket, labeling 'cues' were provided to shoppers to indicate which product was made in Australia. This study determined that it could not be proved that people were more likely to buy an Australian made product over an imported product, even when 'cued' to this fact. Thus, doubt was cast on the likely positive impact of a campaign based on products being made in Australia. Again, while these results may not be generalizable across various markets, they demonstrate the difference between what people suggest

they will do and how they actually behave. This is an important consideration as many of the studies into COO effect have also provided respondents with the opportunity to rate home country offers. Domestic products have been favored in some studies over imports, although these results appear highly dependent on numerous variables such as market attributes, price differences, product category and the source countries of alternative products (Watson and Wright 1999; Chao 2005).

These market specific variables highlight the multifaceted nature of the CI and how it is formed by consumers in specific markets. Marketers, therefore, need to be well versed in the demographic, historical, political and economic situations of the countries targeted for market expansion. This is necessary in order to develop strategies to counter negative bias or take advantage of positive bias.

2.2.7 Effect of CI on commercial customers

CI has also been found to influence the purchasing behavior of industrial consumers, either confirming or disputing beliefs that commercial decisions are less 'emotional' and more rational in orientation (Quester, Dzever et al. 2000). Results of research undertaken by White and Cundiff (1978) and Crawford and Lamb (1981) found that purchasing agents appear to use CI similarly to respondents in consumer studies. Examples of similarities include a preference for products from industrialized nations over products from less developed countries, and a stronger transference of CI to product image when purchasers had little knowledge or experience (use of CI as a 'halo'). However, the number of 'business to business' studies conducted is low overall and the range of products and services tested remains very limited representing another significant gap in our understanding of potential CI influences (Andersen and Chao 2003).

2.2.8 Effect of consumer knowledge on use of CI

When consumers have limited knowledge or personal experience of products from a country, the CI appears to serve as a ‘halo’ that forms the basis of consumers’ opinions of products from a specific country (Han 1989; Han 1990). In this way, the CI serves the purpose of a cognitive 'shortcut', allowing consumers to make a quick evaluation of a product without having to search out an extensive set of elements (intrinsic and other extrinsic cues) to consider (Maheswaran 1994). For example, if a consumer in Australia has little knowledge of, or experience with, products from Mexico; these consumers are likely to form their opinions of Mexican products based solely upon their CI of Mexico. This is understandable because these images are all they can call upon when making a judgment (Han 1989; Han 1990; Lee and Ganesh 1999; Kotler and Gertner 2002; Srikatanyoo and Gnoth 2002). In these circumstances, the CI serves as the basis of knowledge to fill the gap of the unknown.

Brand familiarity is a particularly important aspect of consumer knowledge with CI and brand image linked in the minds of consumers (Phau and Prendergast 2000; Phau and Suntornnond 2006). In her study of consumer perceptions of European beers from different countries Schaefer (1997) tested the use of CI in product evaluation whilst measuring respondent knowledge and brand familiarity. Results suggested that intrinsic cues and brand familiarity have a significant effect on the use of the CI cue by consumers. When brand names were unfamiliar, respondents showed a higher reliance on CI than when they were known and the provision of intrinsic cues did not diminish the use of CI in product evaluation. This is in contrast to Han (1990), who found in his study of consumer evaluations of TV sets from the U.S. and Japan, that CI plays a more important role in the evaluation of familiar rather than unfamiliar brands, suggesting that a wider set of elements may be considered when consumers evaluate a higher involvement product from 2 industrialized nations. The data from these 2 studies

may reflect consumers' willingness to use a cognitive shortcut (CI) more readily when evaluating a lower cost, lower involvement product such as beer.

When consumers are familiar with products and brands from different countries, CI alone is less significant in product evaluation because the consumer has a more robust basis of knowledge to rely on: their own experience. In this case, CI (relative to products used) is established in the mind of the consumer as a result of this knowledge. Han (1989) summarizes this alternative use of CI, "country image becomes a construct or 'file' of information, which summarizes consumers' beliefs about product attributes and directly affects their brand attitude" (p 228). However, brand and CI are both extrinsic cues and less likely to be influential if a consumer is provided with predictive intrinsic cues and has the knowledge to properly assess them (Okechuku 1994; Nebanzahl and Jaffe 1996; Thakor and Lavack 2003). Therefore, consumer knowledge (type and depth) has a direct impact on the role played by CI in driving the actual purchase decision, but it will be product and market specific (Chao and Gupta 1995). A more detailed discussion of this significant moderating variable to consumer cue usage is provided later in this chapter.

2.2.9 COO summary

The research examined in this review was conducted in numerous countries around the world, examining the COO effects on a broad range of products and product categories. However, in spite of the diverse nature of the respondents surveyed, the research methodologies used or the types of products researched, there are strong threads of consistency throughout the results. Research has established that COO bias does exist (in both a positive and negative way) and that it does influence consumer perceptions of product quality (Lawrence, Marr et al. 1992; Bhuian 1997; Piron 2000).

However, the application of the CI cue and the degree of its influence ultimately depends on the product type and usage being assessed, the number and type of other cues available for assessment (intrinsic and extrinsic), specific customer characteristics such as demographics, attitudes, beliefs (about product category and source country) and level and type of knowledge (Han 1990; Maheswaran 1994; Papadopoulos and Heslop 2002). Numerous studies conducted around the world have also established that consumers evaluate products based primarily on intrinsic cues such as craftsmanship, styling and performance, but also make use of extrinsic cues such as price, prestige or endorsement. Other types of extrinsic cues such as retailer reputation, promotional messages, guarantees and warranties are also used by consumers because they reduce the risk of making a bad purchase decision, especially when tangible intrinsic cues are difficult to evaluate. COO is considered one such extrinsic cue and has generally been found to be more influential when intrinsic product cues are unavailable or difficult to obtain (Szbillo and Jacoby 1974; Han and Terpstra 1988; Herche 1994; Lee and Lou 1996; Acebron and Dopico 2000; Bredahl 2003; Jover, Montes et al. 2004).

Further, consumers generally profess a preference for home products, although this may not always translate into their actual purchasing behavior. Expected product quality and perceived degree of industrial development are positively correlated. The application of the COO cue and the degree of its influence is ultimately dependent on the product type and usage being assessed, the number and type of other cues available for assessment (intrinsic and extrinsic), specific consumer characteristics such as demographics, level of product knowledge and experience and attitudes and beliefs (about product category and source country). Competitive pressure means that marketers today need to exploit every opportunity for competitive advantage and must prepare strategies to deal with potential threats.

Different countries have become known for their specific areas of specialization and in doing so, have accumulated country brand value or country 'equity' that can be transferred and applied to products and product extensions in that product category from that country. Examples include some Asian countries for miniaturization, Germany for high quality engineering, and the U.S. or European countries for product styling (Smith 1993; de Wet, Pothas et al. 2001). In general, highly industrialized and economically developed nations such as Japan and Germany benefit from a positive COO bias in both domestic and international markets in terms of product quality perception, especially in categories requiring advanced forms of manufacturing. Logically, this bias has been found to be less prevalent when consumers are assessing everyday items or fast moving consumer goods. Likewise, consumers feel less risk when purchasing high involvement or status products from industrialized countries and may even pay a price premium for this reassurance. The opposite is also true, with studies indicating that while some consumers may be willing to buy products from less developed countries, there is a feeling that they should be able to buy them for less. Consumers in both developed and less developed countries share this view fairly consistently across the research reviewed. Brand manufacturers have the opportunity to exploit this positive COO effect against competition from manufacturers from less developed nations in both existing and new markets.

Consumers in less developed countries represent significant growth opportunities for manufacturers around the world. At the same time, marketers in less developed nations find themselves at a distinct disadvantage in both local and global markets. Suggested strategies to combat a negative CI include the use of regional labeling rather than a ‘made in’ cue to overcome a negative individual CI. Local manufacturers may also be able to improve perceptions of local product quality and break into new markets through the implementation and promotion of internationally recognized quality standards or the provision of enhanced warranties and guarantees. Another strategy

could be the use of ‘origin borrowing’ through the use of western style branding. Penetration pricing is another option that could be adopted to gain entry and establish a customer base. An opportunity may also exist for business people in developing nations to actually exploit strong CI and product associations in overseas markets by specializing in those products unique to their country and expertise, in spite of a generally negative CI. For example, artisans in Iran and Iraq possess distinctive abilities in the production of silk carpets while the Cubans are famous for their fine cigars (Kaynak, Kucukemiroglu et al. 1999).

Korea has demonstrated that countries can 'reposition' themselves over time by establishing one or two strong international brands or by exploiting international events such as the Seoul Olympics. In the shorter term, this could be accelerated by the trend of global brand manufacturers such as Sony and HP producing products in these countries. Research indicates that by making products in developing countries, brands may actually be damaged in terms of product quality perceptions and perceived value (price point); but this may only have short-term impact and some international brands may be strong enough to withstand this influence. However, it sets up an interesting potential conflict between host country and global brand manufacturers. A strategy for these manufacturers would be to emphasize established product brand values, reassuring consumers that these remain intact no matter where a product is made, or alternatively omit or downplay in their communication any mention of country of manufacture (Phau and Prendergast 2000).

Not all country images, even those that appear well established and positive, can be used to enhance product positioning. For instance, New Zealand could be said to have a positive CI in terms of agricultural products, but that CI could work against manufacturers of high-tech products attempting to break into overseas markets against competitors from Japan and the U.S. In this instance, CI needs to be de-emphasized

and individual brand attributes championed. Marketers also need to understand that a positive connection between CI and a product category can erode over time. The need for a major strategy shift in marketing communications for 'Jaguar' motorcars illustrated this point. Previously marketed as a prestige British car, the product is now distanced from its COO in order to escape the stereotypical CI of English conservatism and tradition.

Market specific variables that affect the use of the COO cue such as demographics, ethnic background and culture are beyond the influence of marketers and changes occur over extended periods of time. Similarly, consumer attitudes such as ethnocentricity are difficult to influence in the short to medium term. In general, COO bias appears to be stronger when the consumer has little other knowledge to evaluate alternatives: the greater their level of product knowledge, the lower their reliance on COO for product evaluation (Han 1989; Han 1990). Consumers have also been found to put more weight on intrinsic cues (or tangible attributes) of the product being evaluated than on extrinsic cues such as CI. However, empirical evidence also exists to demonstrate that even experts, or individuals with relatively high levels of knowledge, may consider COO to be an accurate predictor of product quality (Schaefer 1997). Therefore, marketers entering new markets need to research the characteristics of potential customers in order to develop strategies to overcome or exploit potential biases.

In summary, while COO has been established as an influence on consumer product evaluations the significance of the CI appears to vary according to individual marketing situations. This means that CI should be used to provide additional marketing leverage to enhance product acceptance, or considered as a negative bias to be countered with sound marketing strategy.

2.3 Price as an extrinsic cue

2.3.1 The role of price in consumer buying decision making

The role of price in consumer evaluation of product alternatives and their ultimate buying decision is a multi-dimensional one (Monroe 1982; Erickson and Johansson 1985). Consumers consistently use price as a predictor of quality, particularly when they have limited knowledge of product category offerings (Monroe 1976; Dickson and Sawyer 1990; Manrai, Lascu et al. 1998; Glitsch 2000; Bredahl 2003; Jover, Montes et al. 2004; Kardes, Cronley et al. 2004). Consumers have been found to believe that there is a 'natural' ordering of products according to a price scale, where the higher quality products are more expensive and products of lesser quality are cheaper. This bias in consumer beliefs can result in 2 negative outcomes for marketers. In the first instance, consumers may deduce (often incorrectly) that a 'high quality' product is more expensive that it actually is, leading to a constraint on their likely purchase or a 'value' pricing strategy can lead to consumer assumptions of lower than actual quality (Erickson and Johansson 1985). Therefore, this belief can also provide an opportunity to 'underpin' a quality proposition for their product, as a higher price is likely to lead to assumptions of higher quality even if unwarranted. This subjective view of price leads to its additional role in the buying decision process as specifying a conditional 'trade off'. If consumers believe that price and quality are tied in, then paying a lower price means they must accept lower quality. Conversely, to gain better quality, a monetary sacrifice must be made, perhaps beyond that which is desirable to the payer (Rao and Monroe 1988; Rao and Olson 1990; Kardes, Cronley et al. 2004). As suggested, for many consumers with limited financial resources, price may act as a constraint reducing the number product or service alternatives that can be considered (Snoj, Pisnik et al. 2004).

Price can also be considered a means for reducing risks; these may include increased search endeavors, additional waiting time (if a cheaper product is not currently available) or loss of social status or embarrassment (Snoj, Pisnik et al. 2004). For example, Quester and Smart (1998) investigated how situation and usage affected purchases of red wines and found that consumers tended to be more price sensitive when buying wine for their own consumption than if they were buying for a special occasion or an important gift. In these instances, a premium wine is more likely to be chosen in order to match the standing of the occasion, mitigating the risk of buying a product of poor quality and exploiting the personal status value of an expensive and well-known brand. In these situations, a higher price is justified in the minds of consumers due to the increased value of the product and the security that is felt as a result. Finding an acceptable balance in the sacrifice that will be made and the value received clearly represents an important challenge for many consumers.

Price is not always proven to be strongly linked to perceptions of product quality; other considerations such as retail store image and point of purchase information have been found to diminish or override price point differences (Erickson and Johansson 1985; Dodds 1991; Wakefield and Inman 1993). This means that the influence of price as a product cue is usually more powerful when little else is known about the product, and is reduced when consumers have more extensive information on which to base a decision. Further, Dickson and Sawyer (1990) found that consumer recall of prices was largely over-assessed. In their research of respondents' recall of prices paid for supermarket goods, they found that immediately post-purchase almost half could not remember what they paid for an item purchased or remember if it was purchased 'on special'. This suggests that price is not usually retained in long-term memory, but only considered when making a purchase decision, then purged. This data supports early work by Zeithaml (1988) and Conover (1986) signifying that consumers have low levels of current and accurate knowledge regarding many consumer goods. Brand positioning

is powerful in this context as it will trigger an expectation of price, hence quality, in the minds of consumers (Monroe 1976; Dodds 1991; Bredahl 2003). Prices may also be a reflection of availability of supply (intended or otherwise), where a product may command a significantly higher price if it is more difficult to obtain (Horowitz and Lockshin 2002). Indeed the power of price is linked to the additional information available for consumers to consider, making price a powerful tool to support other provided product cues to strengthen positioning strategies.

2.3.2 Effect of consumer knowledge on use of price

Considered a reliable predictor of quality for most consumers, price has been found to be one of the most strongly weighted extrinsic cues, particularly when intrinsic cues are not available, or when they are not understood (Kardes, Cronley et al. 2004). Therefore when consumers are unfamiliar with a product category and lack objective knowledge, price will be very significant in determining their expectations of quality. In some instances it will even overcome experienced intrinsic cues (Pechmann and Ratneshwar 1992). Consumers with low levels of knowledge find it particularly difficult to assess quality if intrinsic cues are complex, leading consumers to become 'intimidated' by price, according to Jover, Montes et al. (2004) in their study measuring the impact of extrinsic variables on consumer expectation and evaluation of wine quality. Thus, as with CI, consumers with sound levels of knowledge will usually use price when it is legitimate to do so (e.g. there is a strong relationship between price and intrinsic product quality), and/or when intrinsic product information is limited.

2.3.3 Price summary

The degree to which price influences product quality perceptions is dependent upon the product type, usage, situation and the type and number of other cues available for

evaluation. Consumer attributes, such as knowledge, will moderate the evaluation of extrinsic cues and buyers with an accurate understanding of sufficient intrinsic cues should use them as the primary basis of any decision. Conversely, if intrinsic attributes are not available or are not understood due to ambiguity or a lack of knowledge, then price is likely to be used as the primary surrogate indicator of quality.

2.4 Consumer expertise and self-confidence

2.4.1 Two dimensions of knowledge

Consumer expertise is comprised of two dimensions, objective knowledge and self-assessed or subjective knowledge. Objective knowledge is accurate and current information stored by an individual in their long-term memory. This type of knowledge is based largely on cognitive type learning and experience with the product category via instrumental learning (Alba and Hutchinson 1987). Subjective knowledge is the consumer's perceived level of expertise or 'self-assessed' level of knowledge, more accurately described as product class familiarity. This is usually based on personal experience, exposure to marketing information and recommendations (Monroe 1976; Brucks 1985; Park, Mothersbaugh et al. 1994; Wirtz and Mattila 2003). Consumers will naturally have differing levels of knowledge about different categories of products, and their levels of knowledge, both objective and subjective, may vary over time. For instance, an individual can develop a high level of objective knowledge in relation to cars due to a personal interest or because of research conducted prior to a purchase decision, but if not constantly maintained with current information, this knowledge will not remain current or reliable. Therefore, expertise developed as a result of objective knowledge should not be confused with product familiarity or past experience alone when assessing knowledge levels. This leads to consumers consistently over-assessing their levels of expertise, creating a gap between their own perception of what

they believe to be true regarding product offerings and an accurate judgment. Empirical evidence has established that consumers, generally, do not possess the level or quality of objective knowledge they believe they do (Alba and Hutchinson 1987; Heimbach, Johansson et al. 1989; Alba and Hutchinson 2000; Alba 2000).

Consumers with differing types and levels of knowledge adopt differing approaches and intensity to information search and processing. Consumers with high levels of objective knowledge will seek limited information regarding a specific product or category because they already have a credible source of information readily available in their own memory. As a result, they will only seek to update and confirm what they already know. Consumers with low levels of objective knowledge are also likely to restrict their search; but in their case it is because they believe they know enough already or are comfortable using one or more sources to make a decision. Consumers with moderate levels of objective knowledge undertake the most extensive search because they recognize the gaps in their understanding and seek to address them in order to make a good decision and buy with confidence (Bettman and Park 1980; Park and Lessig 1981; Rao and Olson 1990). The resulting differences in search behavior results in an 'inverted U' pattern when illustrated graphically, where low levels searched are conducted by consumers with low and high levels of objective knowledge (representing opposite ends of the spectrum), and a more extended search behavior undertaken by those with moderate levels (Park, Mothersbaugh et al. 1994). Considering these differing behaviors and patterns, it is not surprising that many consumers often misjudge product quality through limited searches and erroneous interpretation of both intrinsic and extrinsic cues.

While there is a considerable body of knowledge in this area, research concerning how consumers use knowledge has generated conflicting and ambiguous results. This is due to inconsistencies in methodologies and definitions of what knowledge is. For

example some researchers measure only familiarity or self-assessed knowledge and deem this objective knowledge for the purpose of the study (Spence and Brucks 1997; Alba and Hutchinson 2000). Since consumer knowledge (type and level) is an important dimension in understanding consumer buying behavior, there is clearly a need to understand how different types and levels of knowledge impact on consumer search patterns and information gathering and processing relevant to extrinsic and intrinsic cues.

2.4.1.1 Objective knowledge

Consumers with high levels of objective knowledge have been found to distinguish more easily and more precisely between important product and service attributes, disregarding those product characteristics that are less critical to making a sound buying decision. They have developed the ability to efficiently search out and accurately filter new pieces of information, be they intrinsic or extrinsic cues, due to enhanced diagnostic skills. These are then efficiently coded and compared against the information about previous alternatives already stored in long-term memory. As a result, consumers with high levels of objective knowledge use a large and detailed pool of information when assessing products (Brucks 1985; Park, Mothersbaugh et al. 1994; Mason and Bequette 1998; Kardes, Kim et al. 2001; Wirtz and Mattila 2003). A product 'expert' drawing upon this accumulated knowledge is less likely to seek advice from others; they are also less likely to place much credence on advertised product 'benefits' when gathering information. Instead, they seek to understand critical attributes, making their own judgments regarding any resulting benefits (Kuusela, Spence et al. 1998). This allows them to match particular product brands and models to specific usages. This was demonstrated by Maheswaran, Sternthal et al. (1996) in their study investigating the application of knowledge to the correct choice of a sewing machine and it was determined that respondents with high levels of objective knowledge were

much more successful in correctly choosing the right sewing machine for the job to be done than those with either low levels of objective knowledge or high levels or subjective knowledge. Further, these women could name a more extensive range of brands and models, identifying and describing the expected extra features to be found on a more expensive, high quality brand as opposed to a budget model. While the literature highlights the importance of objective knowledge in the accurate assessment of products, this discussion does not preclude the inclusion of familiarly and experience in the development of consumer expertise. Cowley (1994) suggests that a true 'expert' has knowledge based on extensive personal experience, category familiarity and objective knowledge. The critical addition to the determination of 'expert' is a high level of objective knowledge as it tempers and moderates the effect of the information gained through the other 2 learning methods.

Knowledge at this level leads to superior confidence in the final purchase decision, resulting in lower levels of brand loyalty amongst experts. The literature suggests that this is because they are more likely to seek out up to date product information and then more likely to use it 'objectively' in evaluating product alternatives. As their base of knowledge comprises external information as well as product experience, the decision making process involves more comprehensive information and the consideration of a broader range of alternatives (Alba and Hutchinson 2000; Wirtz and Mattila 2003). The logical application of information relevant to product performance results in a bias towards intrinsic cues. Brand, like price or CI, is an extrinsic cue and may thus be discounted in favor of a better product, even if the alternative brand is new or not as highly positioned in the market place. Extrinsic cues, however, are not discounted if they are truly predictive of quality (Heimbach, Johansson et al. 1989; Rao and Olson 1990; Andreassen and Lindestad 1998). Alba and Hutchinson (1987) found in their early research that even true 'experts' can still be influenced by 'biases' if those biases are felt strongly enough, leading to improper weighting of both intrinsic and extrinsic

cues. Chiou (2003), in his recent study of the impact of CI on perceptions of product quality, found that respondents with high levels of pre-trial objective knowledge favored digital cameras from Japan over those from Taiwan and cloth from Italy over that from Taiwan. However, in post-trial product evaluations, these experts favored the superior product over the inferior product regardless of country of origin. Interestingly, when comparing the superior product ratings between cells, when the better product was sourced from Japan and Italy the products rated better overall than when the (identical) superior product was believed to be sourced from Taiwan. Therefore, even though the better product was chosen by the experts it still suffered some bias in comparative terms. While this supports the emphasis on intrinsic cues in actual product evaluation, it also highlights the power of a predictive extrinsic cue in influencing expectation pre and post-trial.

2.4.1.2 Subjective knowledge

In contrast to consumers with high levels of objective knowledge, those relying on subjective knowledge lack an extensive collection of pertinent information upon which to draw. They can usually only recall a few brand names and models, and perhaps only 1 or 2 specific attributes about each (Mitchell and Dacin 1996). Consumers with high levels of self-assessed knowledge have been found to use their own experiences (however limited) as the basis for their expertise and who limit their external search for up-to-date information, believing they already 'know enough' ('inverted U' pattern discussed previously). However, the empirical evidence strongly suggests they usually know much less about products than they believe (Alba and Hutchinson 2000).

Some consumers acknowledge their low objective knowledge levels, but because they have a low need for cognition and/or they are quite ambivalent towards the purchase decision, they exhibit no desire to learn more (Zhang 1996; Olsen 1999). For them, a

limited information search will be restricted to seeking opinions from others or using readily recalled marketing messages that highlight product benefits (Maheswaran, Sternthal et al. 1996; Till and Busler 1998). For this group, therefore, the cognitive shortcut provided by extrinsic cues, such as price and CI, is especially attractive. Consequently, unlike experts, these types of consumers find it much more difficult to correctly match the correct brand or model with a specific usage situation (Brucks 1985; Park, Mothersbaugh et al. 1994; Wirtz and Mattila 2003).

A large body of evidence supports the influence of extrinsic cues when objective knowledge is low, or not considered necessary by consumers (Monroe 1976; Brucks 1985; Sullivan and Burger 1987; Harrison-Walker 1995). For example, in his study of consumers assessing financial institutions Devlin (2002) found that those with high levels of objective knowledge put emphasis on intrinsic attributes such as interest rates and fees, whereas high subjective knowledge respondents were more concerned with testimonials and retail location. Maheswaran (1994) in his study measuring the impact of CI on consumer preferences for personal computers, reported that while all respondents were relatively 'familiar' with personal computers through experience, only those with strong objective knowledge (IT students) could properly assess the significance of described intrinsic attributes. Respondents using subjective knowledge placed a significantly stronger reliance on the CI cue in their assessment of expected quality. It appears that individuals relying on subjective knowledge are not able to filter out the attributes which are unimportant to performance. Instead, they filter out those they do not understand, and use extrinsic cues such as brand, price or CI to fill any gaps (Cordell 1992; Schaefer 1997). Customers in this situation tend to be more brand loyal than experts. This is because product switching requires a renewed information search and subsequent evaluation of alternatives, unattractive to these individuals due to their lack of motivation and/or ability to correctly evaluate cues. Given that there are relatively few true 'experts' in most consumer markets, the importance and weight given

to extrinsic cues cannot be underestimated (Alba and Hutchinson 1987; Alba and Hutchinson 2000; Alba 2000).

2.4.2 Consumer self-confidence

Consumer self-confidence levels have been found to affect the interpretation and use of both intrinsic and extrinsic cues (Wilson and Brekke 1994; Wansink, Park et al. 2000; Bearden, Hardesty et al. 2001; Jover, Montes et al. 2004). Individuals with low levels of self-confidence may lack self-belief to the point, where if faced with a strong opposing opinion or predictive extrinsic cues, they will allow their better judgment to be overridden. This may even occur when an individual is a true product expert in a specified category. Alternatively, consumers with high levels of self-confidence possess strong product attitudes that are very difficult to change due strong self-belief (Olsen 1999). This strength of conviction leads them to hold on to their beliefs irrespective of support by others or legitimacy (Rao and Olson 1990). Therefore, although these individuals believe themselves to be 'experts', it is more likely their knowledge is only subjective. As this variable has not been measured concurrently with objective and subjective knowledge in previous studies, it may be another contributing factor to inconsistent and conflicting results (Bell 1967; Fazio and Zanna 1978; Bearden, Hardesty et al. 2001).

An early study by Bell (1967) illustrates some of these points. In his research, he investigated consumer confidence levels in relation to new car purchases. His work revealed that individuals with higher self-confidence levels used the opinions of friends less, as they had a stronger belief in their own ability to decide. Those with less confidence, on the other hand, used the opinions of friends and adopted buying 'teams' to make purchasing decisions. Bell (1967) also found that the ability to be persuaded had nothing to do with intelligence, as 'smart' people were as easily persuaded as less

intelligent respondents, however, self-confidence was found to be highly correlated with high self-belief, often leading to stubbornness. Interestingly, people with low self-confidence could become stubborn also, but it was because they became defensive under the pressure of decision making, not because they necessarily believed they were right (Bell 1967). People with moderate levels were the most easily influenced as they were neither defensive nor overly confident, but adopted a more balanced approach.

Therefore, the literature suggests that the particular combination of knowledge (type and level) in conjunction with self-confidence levels significantly moderates credence in extrinsic cues. If a highly confident person also has high levels of objective knowledge and is presented with relevant intrinsic product cues, it would be expected that extrinsic cues would be discounted in quality assessment. However, if knowledge is primarily subjective resulting in an inability to correctly interpret the intrinsic cues, they may be ignored or misjudged. For the low confidence person, high levels of objective knowledge should enhance and support their judgment, but as discussed, this may not be the case. For the low confidence consumer with low objective knowledge levels, extrinsic cues may well represent the principal basis for many product comparisons.

2.4.3 Consumer knowledge and self-confidence summary

Consumer knowledge and self-confidence are established as important moderating factors in how consumers use intrinsic and extrinsic cues to form opinions about products both pre and post-trial (Maheswaran 1994; Schaefer 1997; Chiou 2003; Jover, Montes et al. 2004). Consumers may feel confident that they can accurately assess or predict quality, but this assumption is often based primarily on product experience or category familiarity. Indeed, research shows that the majority of consumers are not true 'experts' in terms of objective product knowledge, making accurate quality

determinations difficult. Given that high levels of objective knowledge are not evident amongst the majority of consumers, and that high levels of self-confidence cannot be assumed, the importance of understanding the power of extrinsic cues in actual product evaluation, and on the formation of product quality expectations, cannot be underestimated (Bell 1967; Fazio and Zanna 1978; Alba and Hutchinson 1987; Alba 2000; Bearden, Hardesty et al. 2001; Moorman 2001).

2.5 Gaps in the existing literature

It is established that consumers use both intrinsic and extrinsic cues to form opinions about expected and experienced product quality (Lee and Lou 1996: Quester and Smart 1998: Piron 2000). Two extrinsic cues found to be used consistently in this process are CI and price (Han 1989: Han 1990; Zeithaml 1988). However, the ability of CI and price to override sensory perceptions of quality has not been specifically tested. Moreover, while consumer knowledge and self-confidence are known to moderate reliance on extrinsic cues, results of previous studies are sometimes ambiguous and conflicting due to inconsistencies in definitions and measurement (Park and Mothersbaugh et al. 1994). Often studies measure subjective and/or self-assessed knowledge, and levels of objective knowledge are not established. Or alternatively, consumer self-confidence has not been measured in combination with these 2 variables, despite its importance as a moderating variable, given its effects on peoples' beliefs in their ability to make an independent and sound decision. Consumers lacking self-confidence are less likely to support their own opinions if they contradict those of others or predictive extrinsic cues (Bell 1967; Alba and Hutchinson 1987; Aaron, Mela et al. 1994; Alba 2000). While empirical evidence exists regarding aspects of these specific variables, these gaps in the literature remain.

2.5.1 Towards a conceptual framework

This discussion provides the basis for a conceptual framework articulating the possible relationships between intrinsic and extrinsic cues and consumer judgments of product quality (either experienced or expected). Product attributes are represented in the model (Figure 2.1) by intrinsic and extrinsic cues. The degree of reliance placed upon the attributes (intrinsic or extrinsic) in determining product quality is moderated by consumer specific characteristics, such as expertise and self-confidence, although to what degree, is unclear.

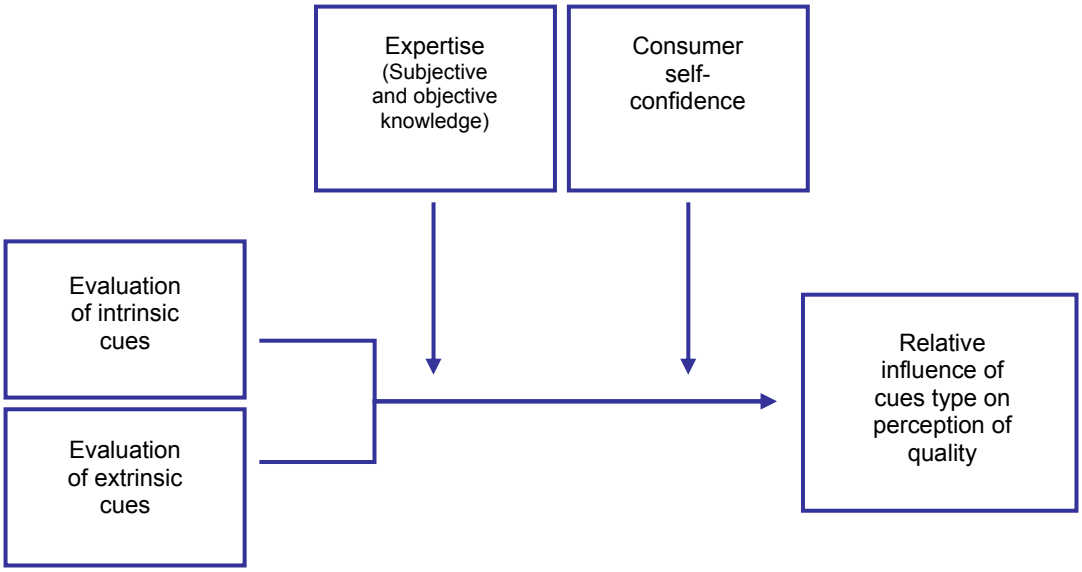


Figure 2.1 Conceptual framework - effect of consumer characteristics on assessment of product quality

The figure provides the framework of investigation into the ability of extrinsic cues to influence consumer quality judgment, both in terms of product expectation and experience; and further, to quantify the degree to which specified consumer characteristics alter the reliance on these cues.

2.6 Summary

Chapter 2 summarized key aspects of the literature in areas relevant to the research: consumer use of intrinsic and extrinsic cues (price and CI) and the moderating effects of consumer expertise and self-confidence. This review illustrates that extrinsic cues can be very powerful in consumer assessment of both expected and experienced quality. Figure 2.1 provides a conceptual model articulating the expected relationships between these variables and consumer determination of product quality, with identified gaps in the literature providing support for further investigation.

3 Causal model and hypothesis development

3.1 Introduction

Chapter two provided a review of the literature relevant to the respective contributions of intrinsic and extrinsic cues to consumer product quality evaluation, and discussed how the moderating variables of knowledge and self-confidence can influence the use of and reliance upon these cues. From this, a conceptual model articulating possible relationships between the variables was provided. In chapter 3, the tested hypotheses are formalized and summarized. Evolving from this theoretical foundation, the rationalization for the research design and adopted stages are provided. The next sections provide an overview of methodology and the results of stage 1 of the research (qualitative data).

3.2 Research framework

Prior to finalizing hypotheses and determining methodology, it is useful to summarize the key theoretical aspects and state, in broad terms, the overriding research questions.

3.2.1 Testing the power of extrinsic cues

It is established that consumers use both intrinsic and extrinsic cues in forming opinions about product quality, both expected and experienced, and that COO and price are two types of extrinsic cues influencing these consumer determinations (Brucks 1985; Acebron and Dopico 2000; Bernues, Olaizola et al. 2003; Bredahl 2003). As an extrinsic cue, COO has been studied intensively for its effect on consumers' product evaluation since the 1960s. COO is generally described as the 'source country' for a product or service provider, which may be different from the country of brand or country

of assembly or design. The literature also shows consistent support for the view that consumers believe in price as an accurate 'predictor' of quality across a wide range of products, even when experienced product quality has been contrary to pricing level indicators (Sullivan and Burger 1987; Pechmann and Ratneshwar 1992; Jover, Montes et al. 2004).

3.2.2 Testing the influence of consumer characteristics

Consumers are not always able to accurately evaluate cues before making a buying decision. Research has also shown that consumers are not always successful in judging quality accurately even in a post-purchase evaluation (Alba 2000; Kardes, Kim et al. 2001). There are a number of reasons this may occur, including lack of understanding, lack of self-confidence, information misinterpretation or inaccessibility (Roper 1969; Olson 1972; Szbillo and Jacoby 1974; Monroe 1976; Rao and Olson 1990; Northen 2000; Teas and Agarwal 2000; Wansink, Park et al. 2000; Siu and Wong 2002; Kardes, Cronley et al. 2004). Specifically, consumer knowledge (subjective and objective) is known to moderate the use of, and reliance upon, extrinsic cues. Consumer self-confidence is also an important moderating variable as it will affect an individual's belief in relation to their ability to make a sound decision independently. Consumers lacking self-confidence are less likely to support their own opinions if they contradict those of others or strong extrinsic cues (Bell 1967). Specifically, the study will seek to answer the following research question:

1. What are the relative influences of the extrinsic cues of CI and price on product quality judgments, experienced and expected?
    a. Are these influences moderated by consumer knowledge (type and level)?

b. Are these influences moderated by consumer self-confidence?

3.2.3 Use of sensory experiments

The objective of the research is to quantify the influence of COO and price on consumer opinions of quality when product intrinsic cues are actually experienced, not merely described, to determine if experienced quality can be overwhelmed. This was accomplished by analyzing data collected through an experimental design involving taste testing. Previous studies have been conducted to assess the influence of price (among selected other extrinsic cues such as labeling) by means of sensory evaluations such as taste tests and visual impressions (Pechmann and Ratneshwar 1992; Wansink, Park et al. 2000; Hurling and Shepherd 2003). However, the influence of COO as an extrinsic cue does not appear to have been examined previously using conjoint analysis and taste testing methodology (Roper 1969; Pechmann and Ratneshwar 1992; Aaron, Mela et al. 1994; Imram 1999; Acebron and Dopico 2000; Hoffmann 2000; Becker 2000a; Koch and Koch 2003; Zellner and Durlach 2003). Further, the moderating ability of consumer knowledge (type and level) and consumer self-confidence have also not been investigated specifically in studies testing these extrinsic cues in conjunction with sensory perceptions. Choice of this methodology represented another significant opportunity to add to the current knowledge in this area (Wilson and Brekke 1994; Schaefer 1997; Wirtz and Mattila 2003).

3.2.4 Suitability of conjoint analysis experimental design

Conjoint analysis is a well established multivariate technique, used extensively in both psychology and marketing research, for determining the importance consumers place on product attributes (Green and Srinivasan 1978; Green and Srinivasan 1990; Okechuku 1994; Hair, Anderson et al. 1995; Lee and Lou 1996). As the name implies,

this method involves the measurement of respondents' psychological judgments of perceived similarities or differences between different product profiles by studying the 'joint effects' of these attributes on consumer evaluation or product preference (Hair, Anderson et al. 1995). The technique estimates the structure of consumers' assessment of product alternatives comprised from a set of pre-specified levels of a range of attributes (product cues). It is based on the simple premise that consumers evaluate a product overall in a holistic manner by combining the separate amounts of utility (value or attractiveness) provided by each attribute level (Jaeger, Hedderley et al. 2000).

A high degree of flexibility in conjoint analysis design permits respondents to consider a wide range of attribute combinations (product profiles) thus affording a high degree of market 'realism' within a controlled experimental design (Hair, Anderson et al. 1995; SPSS-Inc 1997). Respondent self-report bias and carry-over effect is minimized by presenting respondents with a set of choices without making explicit the fundamental attributes under study (Henderson and Reibstein 1985). Further, there are few constraints in terms of attribute types that can be tested, allowing for metric, non metric and categorical variables, all at various levels (eg. differing product price points, colors, or distribution options). As long ago as the 1970s, thorough testing by McCollough and Best (1979) concluded that conjoint estimates of consumer purchase behavior are both structurally and temporarily reliable. Based on this foundation of research and experience, conjoint analysis design was used in the study.

3.2.4.1 Formulating a conjoint analysis design

Conjoint analysis design requires the researcher to determine a set of product attributes important to consumer product evaluations and then choose differing levels to test within each attribute. The selection of credible product attributes and levels is critical to

market realism and the subsequent external validity of results (Hair, Anderson et al. 1995). Individual product profiles are formulated from a rotation of the attributes and levels. That is, determining a profile that reflects every possible combination of varying attribute levels.

The task for respondents is to assess the resulting profiles according to the specific requirements of a given study. They may rate each profile individually, or rank them or choose from a specified set of two or more. The allocated score or ranking is a reflection of a process where evaluations are determined by 'trading off' some product features in order to satisfy a desire to gain (or retain) others, thus giving higher scores to those profiles that include the most desirable attributes at the most preferred level. Conversely, those product profiles given low scores, or rankings, will be comprised of attribute levels considered to be of little value or undesirable (SPSS-Inc 1997; Kupiec and Revell 2001; Dean 2004). Analysis allows each respondent's preferences to be measured, yielding the 'importance' for each attribute, and the 'part-worth' or utility 'value' for each level. Consolidation of these results reveals which attributes are making the strongest contribution to opinions and which attribute levels are most and least preferred (Hair, Anderson et al. 1995; SPSS-Inc 1997; Dean 2004). Conjoint analysis assumes that any product or service can be 'decomposed' into its component attributes, and therefore, the value of this product to consumers is a sum of the utilities derived for the specific combination of attributes (SPSS-Inc 1997).

In order to closely mimic the purchasing process, the hypothetical products presented must include attributes that are important to their evaluation and decision process. Whilst the inclusion of all potentially influential attributes would describe a product more comprehensively, anything in excess of five or six attributes is argued to diminish the reliability of conjoint output (Green and Srinivasan 1990). Green and Srinivasan (1990) also claim that the relative importance of an attribute is biased upwards as the number

of levels on which it is defined increases. Accordingly, a maximum of four or five attributes, over three levels each, is suggested to provide an adequate description of the product and still maintain a manageable number of stimuli for respondents (Hair, Anderson et al. 1995).

3.2.5 Expected quality vs perceived quality

Previous studies have investigated the influence of extrinsic cues using an experimental design where respondents experience various product offerings and provide opinions regarding their quality or attributes (McIlveen and Buchanan 2001). Conjoint analysis has also been used where respondents choose their preferred product option from a number of described product profiles or rank them according to preference (Lee and Lou 1996). However, the influence of extrinsic cues had not been tested previously using both types of methodology to determine if any significant differences exist between experienced quality gained through sensory perceptions and expected quality as determined through mere description. This enabled assessment of differences that may exist between respondents' expectation of quality and experienced quality, providing the opportunity to answer a second research question.

2. Is conjoint analysis a reliable predictor of actual consumer opinions?

3.2.6 Development of causal model and hypotheses

3.2.6.1 Causal model and hypotheses

The dependent variable shown in the conceptual model (Figure 2.1) as 'Quality' is derived from assessment of intrinsic and extrinsic cues, with their use moderated by the consumer characteristics of knowledge and self-confidence. Quality has been defined in many different ways, and there are many different conceptual approaches to its

measurement. A scientific approach to an objective quality definition and measurement relies on determining quality according to an exact technical specification, and provides an objective assessment without the direct involvement of consumers (Ophuis and Trijp 1995; Grunert 1997). In area of food assessment, the International Organization of Standardization (IOS) provides a definition reliant on features and characteristics of a product or service, that affect its actual ability to satisfy stated or implied needs (Becker 2000a).

The general philosophy in social research regarding quality definitions involves the provision of product characteristics that are perceived by consumers to meet their needs (Ophuis and Trijp 1995; Acebron and Dopico 2000; Becker 2000a). The conceptual framework adopts this form of consumer oriented definition of quality assessment as one based on consumer perceptions of overall quality, or product superiority, in comparison to alternative offers. This perceived quality approach results in a determination that is purely the result of a subjective judgment on the part of respondents (Northen 2000).

The objective quality definition is appropriate when describing the manipulation of intrinsic product attributes that occurs as part of the experimental design in the research. This is due to the need to control and measure changes in actual product quality accurately (Gatchalian 1999). Having established that the research would involve experimental methods incorporating taste testing and conjoint analysis of data, the next step is to develop a causal model providing rationalization for testable hypotheses leading to analysis addressing the research questions.

Conjoint analysis uses an evaluation of quality (as defined) to determine the relative importance of each variable contributing to this assessment. In doing so, the variable ‘quality’ is transformed into utility values representing each product attribute (and level)

tested. As a result, the respective influences of individual product attributes can be quantified and each product profile tested can obtain a comparable value (quality) score.

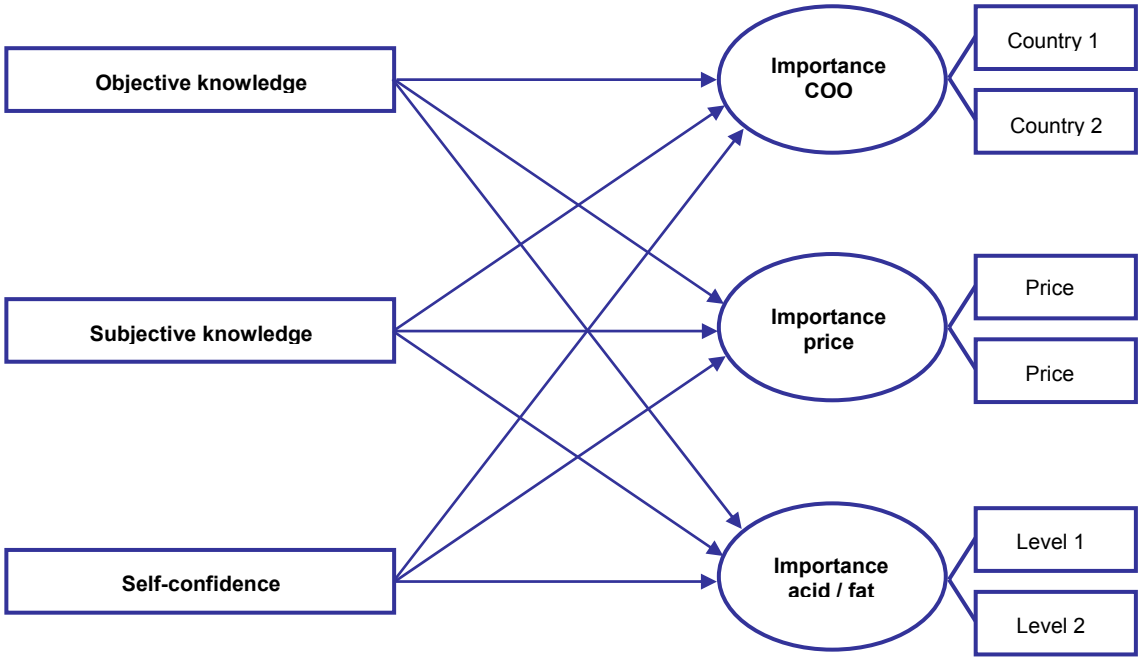


Figure 3.1 Causal model - moderating effects of consumer characteristics on product cue usage

Figure 3.1 illustrates the associations formalized in the stated hypotheses that will test the associations between the independent variables of COO, price and acid/fat on product quality assessment and the potential moderating influence of knowledge (objective/subjective) and self-confidence.

3.2.6.2 Hypotheses

A broad base of objective knowledge enables experts to quickly and accurately determine which intrinsic cues are critical to quality and review them correctly and efficiently; only relying on an extrinsic cue as a 'cognitive shortcut' when it is truly predictive of quality (Eroglu and Machleit 1988; Bhuian 1997; Kuusela, Spence et al. 1998; Acebron and Dopico 2000). Therefore:

H_1 Objective knowledge is positively associated with the relative contribution of intrinsic cues to an individual's assessment of product quality.

H_2 Objective knowledge is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of product quality.

Conversely, those with low levels of objective knowledge tend to rely on limited personal knowledge or product familiarity instead. These consumers are also more likely to misinterpret any intrinsic cues considered due to the inability to assess them accurately, subsequently increasing the risk of misjudging their value. This behavior leads to a heavier reliance on extrinsic cues to form the basis of product quality expectations (Rao and Monroe 1988; Rao and Olson 1990). Therefore:

H_3 Subjective knowledge is positively associated with the relative contribution of intrinsic cues to an individual's assessment of product quality.

H_4 Subjective knowledge is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of product quality.

The literature shows that self-confident people display more strength and conviction in their attitudes towards products than those less self-secure (Fazio and Zanna 1978; Bearden, Hardesty et al. 2001; Moorman 2001). Given that they are less likely to find even predictive extrinsic cues intimidating, it is expected they will strongly support sensory evaluation (intrinsic cues) when objective product quality varies. Therefore:

H_5 Self-confidence is positively associated with the relative contribution of intrinsic cues to an individual's assessment of quality.

H_6 Self-confidence is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of quality.

As conjoint analysis is a reliable means for measuring both expected and experienced product quality, the ability of this methodology to predict actual consumer reactions to a simulated product offer can be assumed.

H_7 The paper based conjoint analysis method will be predictive of the sensory based test in terms of the relative average importance of the tested product attributes (intrinsic and extrinsic)

3.2.7 Research paradigm

The purposes of the research are to investigate the ability of extrinsic cues to override sensory perceptions and quantify threshold levels by testing empirically the conceptual model shown in chapter 2 (Figure 2.1). The study clearly delineates between the two types documented forms of consumer knowledge and self-confidence levels. As these moderating variables are expected to be used as 'filters' through which product cues will be evaluated, and in some cases ignored, this delineation clarifies their contribution to the product quality assessment process. The model will go beyond currently existing

literature involving CI and price studies and may also make a contribution in general to consumer behavior research relating to consumer use of extrinsic cues.

Quantitative measurement will test the theoretical model (Figure 3.1) described, indicating that the research is undertaken largely in the tradition of objectivism and positivism (Mangan, Lalwani et al. 2004). However, the study design also includes a qualitative component, recognizing the benefits derived through the inclusion of appropriate qualitative techniques, even when research is undertaken in a predominantly positivist vein. Incorporating aspects of both interpretist and positivist paradigms is an accepted method of triangulating data to enhance validity (Hussey and Hussey 1997; Naslund 2002). Therefore, while a component of the study is qualitative and interpretist in nature, reliance is ultimately based on operationalizing concepts through the testing of quantifiable variables. This approach is consistent with positivist beliefs; assuming the existence of an objective physical and social world where the researcher is an independent observer gathering empirically testable data (Mangan, Lalwani et al. 2004). This functionalist view is employed in the hope of providing rational explanations that can be used by practitioners in marketing strategy development or as the basis of further research.

3.2.8 Justification for the model

When Hunt (1991) describes the normative criteria used to validate the explanatory adequacy of a model, he specifies, (i) the phenomenon to be explained should be expected to occur and (ii) the model should be pragmatic, intersubjectively certifiable, and have empirical content (p51). The literature has established that consumers consider both intrinsic and extrinsic cues when forming opinions about expected and experienced product quality. Chapter 2 provides empirical evidence to support price and COO as two extrinsic cues that can be expected to contribute to overall quality

appraisals. Further, consumer knowledge and self-confidence have been found in previous research to moderate the use of both types of cues. The gaps in existing knowledge relate to the specific measurement of self-confidence and differing types and levels of knowledge and their specific influence on the use of, and reliance on, extrinsic cues. The proposed model is pragmatic and contains empirical content tested in the experiment design methodology employed to objectively measure these independent and moderating variables and quantify their respective influences on judgments of product quality.

3.2.9 Stimuli used

The model was tested using two food categories, wine and cheese. In line with the recommendation from Hair, Anderson et. al. (1995), the conjoint analysis design developed was based on two extrinsic cues (price and COO) and one intrinsic cue each varied over three levels. The rationale for choosing these stimuli and stipulated levels for testing is provided in this section.

3.2.9.1 Wine and cheese

A significant body of empirical evidence exists using food products to research the influence of extrinsic cues on consumer assessment of product quality; examples of types tested include beef, chicken, pork, eggs, wine, cheese and orange juice (Pechmann and Ratneshwar 1992; Grunert 1997; Al-Sulaiti and Baker 1998; Becker, Benner et al. 2000b; Bernues, Olaizola et al. 2003; Bredahl 2003; Jover, Montes et al. 2004; Kardes, Cronley et al. 2004). A review of these studies also revealed a wide and varied range of methodologies including conjoint analysis, taste test experiments, pre and post purchase surveys, and in-store surveys, each supporting the suitability of food products for the proposed methodology. In order to use a general population sample

for the quantitative stages of the research, it was necessary to pick food products that are routinely consumed by members of the adult Australian population, and wine and cheese were identified as examples of these types of products (ScanTrack-Liquor 2005; www.Dairy-Australia.com.au 2007).

Interviews with product experts Jim Smith (wine maker and industry consultant) and Louise Elder (cheese maker and wholesaler) were conducted to select specific wine and cheese varieties that are readily available, commonly consumed by Australian shoppers and suitable for objective quality manipulation. Unwooded chardonnay was suggested as a suitable wine due to its familiarity to consumers, and a single intrinsic cue (acid), can easily and accurately be manipulated to produce significant differences in objective product quality. Increasing the acid level in chardonnay wine produces sour wines (termed 'green') that are sharp and unpleasant on the palate (Baldy 1993). For cheese, a soft variety such camembert or brie was suggested as they are readily available, commonly purchased and are available with differing levels of fat content. With camembert and brie, as with many other cheese varieties, fat is an important intrinsic cue affecting objective product quality. Generally, higher fat levels result in a creamier texture (termed 'enhanced mouth feel') and a better taste (Aaron, Mela et al. 1994; Hamilton, Knox et al. 2000). Based on this information, unwooded chardonnay (wine) and camembert or brie (cheese) were chosen as test products; with acid and fat being manipulated to provide measurable and controllable changes to objective product quality.

3.2.9.2 COO and price

COO has been found to influence consumer perceptions of both wine and cheese products (Keown and Casey 1995; Manrai, Lascu et al. 1998; Gluckman 2001; Jover, Montes et al. 2004). For example, France is famous for producing a wide variety of

high quality wines and is strongly and positively associated with this product; therefore, France is expected to be considered by respondents to be a producer of high quality chardonnay (Keown and Casey 1995; Jover, Montes et al. 2004). Conversely, countries such as Chile, South Africa and Canada are far less famous for producing high quality wines and are unlikely to be associated positively with chardonnay for Australian consumers. To select suitable countries for the 3 levels needed for each product in the conjoint analysis design, alternative country/product alternatives were explored in the qualitative component of the methodology.

3.2.9.3 Hypotheses summary

As the stimuli to represent the dependent variables are established, it is now possible to incorporate these into specific hypotheses testing the relationships indicated in Figure 3.1 and summarized in table 3.1 that follows.

Table 3.1 Hypotheses tested

H_1	**Objective knowledge is positively associated with the relative contribution of intrinsic cues to an individual's assessment of product quality.**
H_{1a}	Objective knowledge is positively associated with the relative contribution of an intrinsic cue (acid) to an individual's assessment of product quality (wine).
H_{1b}	Objective knowledge is positively associated with the relative contribution of an intrinsic cue (fat) to an individual's assessment of product quality (cheese).
H_2	**Objective knowledge is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of product quality.**
H_{2a}	Objective knowledge is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).
H_{2b}	Objective knowledge is negatively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).
H_3	**Subjective knowledge is positively associated with the relative contribution of intrinsic cues to an individual's assessment of product quality.**
H_{3a}	Subjective knowledge is positively associated with the relative contribution of an intrinsic cue (acid) to an individual's assessment of product quality (wine).
H_{3b}	Subjective knowledge is positively associated with the relative contribution of an intrinsic cue (fat) to an individual's assessment of product quality (cheese).
H_4	**Subjective knowledge is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of product quality.**
H_{4a}	Subjective knowledge is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).
H_{4b}	Subjective knowledge is negatively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).
H_5	**Self confidence is positively associated with the relative contribution of intrinsic cues to an individual's assessment of quality.**
H_{5a}	Self confidence is positively associated with the relative contribution of an intrinsic cue (acid) to an individual's assessment of product quality (wine).
H_{5b}	Self confidence is positively associated with the relative contribution of an intrinsic cue (fat) to an individual's assessment of product quality (cheese).
H_6	**Self confidence is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of quality.**
H_{6a}	Self confidence is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).
H_{6b}	Self confidence is positively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).
H_7	**There will be no significant differences in attribute utilities, or average importance, between data collected via sensory experiment and paper based survey.**

3.3 Overview of research design

The research is largely hypothetico-deductive, in that the underlying hypotheses come from the literature, and refined with insight derived from qualitative data and tested through an established experimental approach called conjoint analysis (implemented in 2 different ways to compare results).

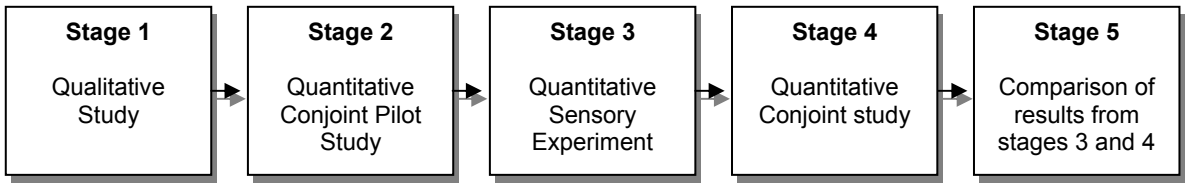


Figure 3.2 Stages of the research

The study is comprised of 5 stages (Figure 3.2). The first stage, the qualitative component, consists of 2 focus groups. The subsequent sections of this chapter outline the research methodology used to conduct these groups, including the sampling plan, data collection instruments and data analysis procedures. The remaining parts of this stage are quantitative in nature, and this methodology is outlined in Chapter 5.

Stage 2 consists of a pilot survey in the form of a self-administered questionnaire. Respondents are required to rate described product profiles where objective product quality is varied (via manipulated intrinsic cues), often in conflict with the extrinsic cues provided (via manipulated price levels and COO). Objective knowledge, subjective knowledge and self-confidence are also measured in this pilot study, using instruments to be described in chapter 4. The primary objectives of the pilot survey are to validate measurement instruments, products, product cue types (chosen as stimuli) and attribute levels. It is hoped that by conducting the pilot survey, any underlying weaknesses or errors in the planned methodology will be identified and remedied prior to conducting

stage 3, given its experimental nature and the associated time and resource restrictions.

Stage 3 consists of sensory experiments (taste tests) where respondents will taste and evaluate product samples manipulated to replicate the same product profiles described in the final conjoint analysis study. Analysis of the resulting data will investigate empirically the ability of extrinsic cues (price and COO) to overwhelm 'experienced' intrinsic cues and also to gauge the degree to which knowledge (type and level) and self-confidence can moderate these opinions.

Using the questionnaire which will be developed and refined after conducting the pilot study and taste test experiment, stage 4 consists of a survey where the respective influence of described intrinsic and extrinsic cues is measured employing the established conjoint analysis design. Identical product profiles employed in the previous stages are to be replicated for this aspect of the research. As in the pilot, intrinsic cues will be described rather than experienced, resulting in a determination of quality based on expectation rather than sensory experience.

In stage 5, comparisons will be made between expected product quality as measured by the conjoint analysis survey data and perceived quality as determined by analysis of the sensory evaluation data. Quantifying any significant differences between quality expectations derived by appraisal of product descriptions and actual sensory evaluation for each tested intrinsic and extrinsic cue combination will provide insight into the ability of conjoint analysis to predict of consumer opinions.

3.4 Stage 1 – Qualitative study

Focus groups were conducted to confirm that Australian consumers believe that COO and price are important and predictive extrinsic cues influencing product quality for the selected food products tested in the following stages. It was also necessary to confirm which countries would be positively and negatively associated with these products given that COO effect has been found to be product, country and market specific (Hastak and Hong 1991; Al-Sulaiti and Baker 1998; Kuusela, Spence et al. 1998; Insch and McBride 2004).

Group interviewing enables interaction amongst participants allowing the researcher to easily and quickly gain valuable insight into consumer opinions regarding topics of specific interest (Malhotra, Hall et al. 2002). Focus groups are also useful to triangulate information from other sources and may also reveal new and unexpected findings for further investigation (Hussey and Hussey 1997; Naslund 2002). A substantial body of literature exists, indicating countries that are likely to generate applicable images and/or associations with wine and cheese; however, these could not be assumed. As discussed in chapter two, COO effects are often market, product and country specific (Chao 1989 b; Cordell 1992; Chao and Rajendran 1993; Al-Sulaiti and Baker 1998; ScanTrack-Liquor 2005). Therefore, it is necessary to identify countries that would generate varying expectations of quality for Australian consumers specific to assessment of wine and cheese. Furthermore, it is considered important to verify important practical aspects of employing wine and cheese in the research.

3.4.1 Sampling

A judgment sample of part-time night students (TAFESA City Campus) was recruited to participate in 2 groups of 4 and 5 participants each respectively. While a small

judgment sample has limitations, in particular that the views of such a limited number participants will not be generalizable, this sampling method can be justified for use in qualitative, exploratory research (Malhotra, Hall et al. 2002). Prior to final selection all group members were screened to ensure they purchased and consumed wine and cheese at least once per fortnight. The demographics of group members are provided below in Table 3.2.

Table 3.2 Demographic profile of focus group participants

Demographics	Group 1	Group 2
Age range	30 to 52 years	24 to 38 years
Gender	2 females, 2 males	2 females, 3 males

3.4.2 Data collection

Respondents were video-taped and responses to questions regarding country and product preferences were recorded on individual score sheets and butcher's paper. A buying scenario was provided to group members in order to stimulate their thinking in terms of product attributes and their respective levels of importance to the purchasing decision. They were asked to consider purchasing a bottle of chardonnay as a gift for someone special/significant or to be taken to an important dinner party. Respondents were advised that no Australian wines were available to consider and they must make a purchase before they leave the wine shop. The group members were asked to list product attributes (extrinsic and intrinsic) they considered when buying wine, and to score them according to overall importance when making a choice. A rating scale of 0 (not at all important) to 10 (very important) was provided. Respondents then listed countries they thought would produce high, low and average quality chardonnay. Identical methodology was repeated for cheese. No prompting or suggestions were given in relation to possible countries or attributes for either product.

3.4.3 Results

Attributes considered important by group members when evaluating wine and cheese are illustrated in tables 3.3 and 3.4. Data from the focus groups relating to the types of extrinsic cues and their considered importance to the purchasing decision are largely consistent with the literature regarding price and COO cited, thus supporting their choice as products for stages 2 and 3 of the study (Schifferstein 1996; Siu and Wong 2002; Jover, Montes et al. 2004). Groups were alike in opinion of the importance of price when considering both wine and cheese; however, there was strong contrast in their views relating to the importance of COO between the two products. While respondents in both groups believed COO is highly important when considering the quality of a wine, most in group 1 did not think it was likely to make much difference to the quality of cheese. The literature supports that the COO effect being diminished may be attributed to limitations imposed from the small sample size, or that the purchase of cheese is considered a much lower 'involvement' purchase (Piron 2000; Ahmed, Johnson et al. 2004). Based on these results, further testing of price and COO as extrinsic cues affecting expected product quality is justified and cheese and wine have been found suitable as products for testing this influence.

Table 3.3 Important product attributes for wine

Scale items scored 0 – 10 Where '0' is not at all important and '10' is very important

Attributes listed	Ratings Group 1	Ratings Group 2
Brand	6	9
COO	8	8
Description on label	3	Not given
Label (artwork)	Not given	9
Price	9	8
Purpose (situation)	8	7
Rarity	Not given	3
Region	4	Not given
Taste	10	3

Table 3.4 important product attributes for cheese

Scale items scored 0 – 10 Where '0' is not at all important and '10' is very important		
Attributes listed	**Ratings Group 1**	**Ratings Group 2**
Purpose (situation)	5	Not given
Price	9	8
Taste	10	6
Texture	10	9
Brand	3	3
COO	2	10
Appearance	9	Not given
Packaging	Not given	9
Rarity	Not given	8

Participants were then asked to list the countries they believed would produce the highest, lowest and average levels of quality respectively in terms of the products being discussed. Again these were unprompted responses. The countries listed and their expected influence on product quality is illustrated below in Table 3.5.

Table 3.5 Countries suggested by participants as indicators of quality for wine and cheese

Countries	Wine	Cheese
Highest quality	France, Germany, U.S.	UK, France, Holland, Denmark, NZ
Average quality	Chile, Italy, Spain, South Africa	NZ, U.S. Canada, UK,
Lowest quality	Canada, South Africa, UK, China, Argentina	Argentina, China, Greece, Chile

This segment of the group discussions were the liveliest and elicited the most varied and polarized results. Initially it was difficult to motivate respondents to discuss foreign products, particularly wine. Group members consistently remarked that they purchased only Australian wines and usually Australian cheeses. Consequently, they had little knowledge or experience to drive their expectations for either product if sourced elsewhere. However, when pressed for a response France was cited as a likely source country (by both groups) for the highest quality wine and cheese and was not associated with average or low quality levels. This result is not surprising given France's reputation for producing fine wines and gourmet cuisine and illustrates a strong reliance on the COO cue. There was considerable debate and disagreement amongst respondents deliberating where average and low quality products may be

produced. Countries not known for producing dairy products were listed as sources of poor quality cheese, e.g. China. Respondents found it hard to even a compose a strong country image for South American countries such as Chile and Argentina and used what very little knowledge they possessed form an opinion of hypothetical products sourced from these locations (Han 1989). As many believed these countries to be very poor (3rd world), they seemed to make a link between extensive poverty and low quality in all things including cheese and wine (Chao 1993). However, countering these opinions were individuals believing Chile and Argentina would produce good wines, as they had 'read about them and heard they were good'. This increased level of knowledge supported a higher expectation for this wine, but not for cheese. It was generally accepted that European countries made good cheese and any tropical or Asian countries would make poor cheese and poor wine. The opinions relating to Canada and the U.S. ranged from an expectation that anything they produced would be at least 'average' due to their industrialized status (Chao 2001), through to an expectation that quality would be very low because everything they make is 'massed produced' and while that is acceptable for manufactured goods, they believed it would have a negative impact on food and wine products. There also seemed to be a reasonable level of concern regarding pollution and pesticide levels affecting expected quality and product safety (Tse 1999; Siu and Wong 2002). It is useful to review selected comments from group members as they provide an insight into their perceptions regarding the importance of price and COO.

Comments from focus group participants

Price:

- You only get what you pay for
- When you can't take a risk, pay more
- I think you can still buy some good wines that are reasonable, price is not always that reliable
- I wouldn't take something cheap to a party; it may not be good enough and people would think I'm cheap
- Price is the most important – if I couldn't buy Australian wine I would only look at price
- I don't even buy cheap wine for home – what's the point?
- I don't know a lot about wine, so I'd be afraid to buy a cheap one

COO:

- All Europeans make good cheese, don't they?
- Asians don't make cheese do they – no cows!
- The Kiwis make good cheese; at least it would be safe
- I don't think they would make good cheese in South America, it's too hot isn't it?
- I've never drunk French wine, but you'd have to expect it would be good
- I think the South Americans would make good wine, but not the Canadians
- Anything from France at least would make you look like you spent money
- Isn't everything genetically modified in the States? That can't be good
- I don't know anything about South America except they're all poor
- They make lots of wine in Chile, it must be OK. I've been reading about it

The data indicates that France is generally expected to product high quality for both wine and cheese. However, results are mixed and somewhat contradictory in relation to source countries associated with average and low quality products. This problem was resolved by conducting a short and simple survey of part-time marketing students (n = 33) at TAFESA (City Campus) where respondents were asked to rank the 5 countries under consideration from 1 to 5, where 1 was considered to be the source country of the highest quality wine/cheese and 5 was believed to produce the lowest

quality wine/cheese compared to the other countries listed for consideration. The results are shown later in this chapter.

3.4.3.1 Taste testing

Following the discussion of important product attributes and wine/cheese producing countries, participants were asked to sample chardonnay from four different countries. All of the wines purchased were of almost equal value (approximately $10 AUS); however, the actual variance in their objective quality was unknown. In the case of cheese, four different Australian 'Tasty Cheese' brands were purchased at random (approximately $5 AUS), where again, objective product quality was not predetermined. The actual objective product quality was not deemed important for this aspect of the study, as the objectives of these informal taste tests were to explore the influence of price and COO on sensory perceptions by seeing if respondents would be consistent in their rating of the samples provided across both tests rather than to measure their ability to accurately judge objective product quality.

When the initial samples were tasted, the COO and an assigned price were revealed to the respondents, and they were asked to rate the sample from '0' to '10' (0 = poor quality and 10 = excellent quality). Respondents then tasted the same products again, but the samples were presented in a different order and the COO and price were not revealed. Results for these taste tests are shown below in Table 3.6 and Table 3.7.

Table 3.6 Taste tests - wine

Countries	Mean score COO/price revealed	Mean score COO/price hidden	Variance in mean scores
Chile - $7	6.333	6.111	- 0.222
France - $53	3.667	2.889	- 0.778
NZ - $12	5.111	5.889	0.778
USA - $22	3.222	4.444	1.222

Table 3.7 Taste tests - cheese

Countries	Mean score COO/price revealed	Mean score COO/price hidden	Variance in mean scores
Poland - $3	8.556	8.222	-0.333
England - $8	5.111	5.000	-0.111
NZ - $5	5.556	4.889	-0.667

As stated, it was not the intention of the taste tests to provide empirical evidence, but rather to explore the stated areas of this stage of the research. For this purpose the data is very useful; participants reported a marked difference in their perceptions of quality between the samples tested (both products) indicating provided extrinsic cues had influenced their perceptions. The results for the cheese as compared to the wine suggest that these cues were less important in appraising a lower value/status product. This outcome is consistent with expectations and the literature (Quester and Smart 1998; Piron 2000; Ahmed, Johnson et al. 2004).

3.4.3.2 Country rankings (survey of students)

In order to make a final choice of source countries associated with differing product quality expectations (chardonnay and camembert) a short survey was conducted. A sample of 33 part-time evening students of marketing at TAFESA (City Campus) completed a short self-administered questionnaire; lecturers from two evening marketing classes agreed to distribute the questionnaires prior to the commencement of classes and participation by students was voluntary.

The questionnaire listed countries cited by the members of the focus groups and respondents were to review the respective countries given and consider each as a possible source country for a bottle of high quality chardonnay wine. They were then asked to rank them from 1 to 5, where 1 would be the country they expected to make

the best quality of chardonnay and where 5 would be expected to produce the poorest quality. The respective list for cheese and identical instruction was repeated for camembert cheese. Analysis of the results is seen below in Table 3.8 and Table 3.9.

Table 3.8 Country rankings for chardonnay

	Chile	Canada	France	USA	NZ
Mean	4.09	3.82	1.79	3.12	2.18
Std. error of mean	0.19	0.19	0.16	0.19	0.23
Median	4.00	4.00	2.00	3.00	2.00
Mode	5.00	5.00	1.00	2.00	1.00
Std. dev. (SD)	1.07	1.07	0.93	1.11	1.33
Range	1.00	3.00	3.00	3.00	4.00
Minimum	1.00	2.00	1.00	2.00	1.00
Maximum	5.00	5.00	4.00	5.00	5.00

The data plainly confirms France is more closely associated with the highest quality chardonnay than other countries listed with a mean score of 1.79 and Chile is the likely source of the lowest quality with a rating of 4.09. The choice country for the 'average' or mid-range quality wine was less clear. The U.S. was determined as the most appropriate option for a number of reasons. The literature indicates that the stronger the perceived cultural and/or geographical 'links' between a market and a source country, the more favorable the response to products from those countries is likely to be. Conversely, products from countries considered 'distant' are viewed less favorably (Heslop, Papadopoulos et al. 1998; Watson and Wright 1999). Using the notable research of Hofestede (1991) as a basis, New Zealand would be considered 'close' to Australia in both geographical and cultural terms. During the group discussions, it became obvious that these Australian consumers had very little knowledge or experience with foreign wines or cheeses, with comments commonly reflecting their strong loyalty to Australian wine in particular. The risk is that if provided with a product sourced from New Zealand, respondents will use it as a 'proxy' for an Australian offering when evaluating the product profiles provided in later stages of the research (Hofestede 1991). Therefore, the U.S. was chosen instead of New Zealand in order to eliminate

this possibility. Using the same principles, Argentina, Canada and France were selected as sources of varying quality of cheese.

Table 3.9 Country rankings for camembert

	NZ	Argentina	U.S.	Canada	France
Mean	2.12	3.88	3.88	3.54	1.58
Std. error of mean	0.19	0.21	0.17	0.15	0.18
Median	2.00	4.00	4.00	4.00	1.00
Mode	2.00	5.00	5.00	4.00	1.00
Std. Dev. (SD)	1.11	1.19	1.00.	0.87	1.06
Range	4.00	3.00	3.00	3.00	4.00
Minimum	1.00	2.00	2.00	2.00	1.00
Maximum	5.00	5.00	5.00	5.00	5.00

3.4.4 Qualitative data analysis summary

Analysis of data provided by focus group participants supports the influence of COO and price on expectation of product quality for the products proposed for testing. As a result of the data (both qualitative and quantitative), France, the U.S. and Chile will be employed as source countries for high, average and low quality chardonnay respectively. For cheese, France, Canada and Argentina will represent high, average and low quality levels respectively. While the focus group and survey respondents represent the views of relatively few individuals the results are consistent with existing literature and supportive of the conceptual framework and propositions. Chapter 5 provides a detailed description of the methodology used in the quantitative aspects of the research.

3.5 Summary

Chapter 2 provided an illustration and justification of the conceptual model (Figure 2.1) articulating the contribution of intrinsic and extrinsic cues to product quality evaluation and discussing how the moderating variables of knowledge and self-confidence can influence consumer use and reliance on these cues. Evolving from this theoretical foundation, a causal model (Figure 3.1) articulating the relationships between the dependent product variables (extrinsic/intrinsic cues) and independent consumer variables (knowledge and self-confidence) was proposed and defended in Chapter 3. Based on these proposed relationships and effects, hypotheses were developed and summarized in Table 3.1. The next section of the chapter discussed the research design, including a brief description of the 5 stages included in the study. This was followed by the methodology used in stage 1 (the qualitative component) and the findings of subsequent analysis of results, including their applications relevant to later stages of the research. Chapter 4 is devoted to the discussion and explanation of the adopted research methodology specific to the quantitative aspects of the research, including the measures used and the development of data collection instruments.

4 Quantitative methodology

4.1 Introduction

Chapter 3 provided, firstly, an illustration and justification of the causal model and resulting hypotheses to test the relationships suggested. The remaining sections provided an overview of the research design, including a brief description of each of the 5 stages. This was followed by a description of the methodology used for stage 1 (the qualitative component) and the results of subsequent data analysis. The knowledge gained from that stage of the study was used to develop the conjoint analysis design and data collection instruments described in chapter 4. Also included here are descriptions of the measure used to quantify consumer knowledge (both types) and self-confidence and a brief overview of employed data analysis tools.

4.2 Sampling methods

Non-probability, convenience sampling was employed with respondents recruited in Adelaide (South Australia) using a variety of communications and incentive methods, determined according to the requirements of the particular stage of the study. Samples were comprised of members of the general public and the student (evening classes only) and staff populations at campuses of TAFESA South.

It is acknowledged that student samples can contribute to the limitations in results as they have been found to be unrepresentative of the general population due to the limited nature of the demographic profiles: e.g. a very high proportion of students are under the age of 25 years (Peterson 2001). However, research has demonstrated that the effect of this limitation can be minimized by using mature age students enrolled in evening classes. Due to the diverse demographics typical of these students they are

more likely to be representative of the general population (James and Sonner 2001). Participation was restricted to those over the age of 18 years.

4.3 Data collection instruments

The questionnaires used in each stage of the research were based upon the initial version using the measures described in chapters 3 and 4. Respondent demographics such as gender, age, income, education and occupation were also captured in order to compare the profile of each respective sample with that of the general population of Australia (over the age of 18 years). Data analysis results and feedback derived from respondents participating in the pilot study were used to make any required improvements in subsequent versions of the instrument. In the relevant sections of this chapter, each version of the questionnaire is described in detail, including identified limitations and improvements implemented, and copies can be found in the cited appendices.

4.3.1 Use of full profile conjoint analysis

Full profile analysis remains one of the most commonly used forms of conjoint analysis and has an important advantage in that each profile is assessed individually allowing respondents to focus their attention on only one profile at a time; however, the associated risk is increased respondent fatigue if the number of profiles to be assessed is too high (Rao and Hauser 2004). Using this approach, it is typical for a respondent to review an array of approximately 15 product profiles, each evaluated on a metric scale (SPSS-Inc 1997). This centers the attention of the respondents on the acceptability levels of attributes as opposed to comparing attributes between alternative offers, with the usual outcome being a dominance in the rating decision by a small number of attributes (Huber, Wittink et al. 1991). However, this was not considered a limitation in

this study as the design is restricted to only 3 attributes in total. Further, the objectives of the research do not include identifying which product profile, from amongst a selection of offers, is considered the most desirable by respondents. Rather, the aim is to investigate the power of communicated extrinsic cues to influence respondent expectations of product quality and to measure their impact on experienced product quality through sensory experiments. Therefore, a survey design using a full profile conjoint approach was deemed to be most appropriate for this research (Hair, Anderson et al. 1995; Huber 1997).

4.3.2 Orthogonal fractional factorial design

While anywhere up to 15 product profiles has been found feasible when respondents are assessing profiles only by description, sampling 15 wines and 15 cheeses in one tasting session would be too onerous for participants for the sensory stage of the research. This is because it is difficult for participants to remain susceptible to the sensory differences in each sample due to potential desensitization of their palates; also, they may experience fatigue due to the extended time involved in the tasks (Gatchalian 1999). To reduce their burden, an orthogonal fractional factorial design reduces the number of profiles overall, whilst ensuring that an adequate representation of each attribute level is maintained to estimate a parameter of main effect of each attribute and level (SPSS-Inc 1997; Kupiec and Revell 2001; Rao and Hauser 2004). The full factorial design based on a 3 country x 3 price level x 3 acid/fat specification results in 27 possible product profiles for each product. By adopting an SPSS fractional factorial design this number was reduced to a subset of 9 attribute combinations for each product, from which it is possible to test the part worth contribution of each respective attribute level (Hair, Anderson et al. 1995; SPSS-Inc 1997).

4.3.3 Training respondents

As profiles are not assessed concurrently, participants will not get an immediate feeling for the range of possible product characteristics and their respective variances until they have assessed several profiles. In order to overcome this limitation, 2 'warm up' profiles are recommended for respondents to gain a sense of attribute numbers and possible levels; thereby stabilizing ratings and increasing accuracy (Curry 1996). This advice is countered to some degree by Jaeger, Hedderly and MacFie (2000) who suggested that when product categories are familiar and regular purchases are commonly made, a consumer's market knowledge and experience are likely to provide adequate attribute referencing. However, they caution that when product profiles are only described (either verbally or through print) unaccompanied by samples or realistic pictorial representation, some respondent training or attribute familiarization is recommended (Jaeger, Hedderley et al. 2000). Based on this, two 'hold out' or practice profiles were incorporated into the design for respondent training and to enhance the internal validity. While the ratings given to 'hold outs' is not included in the determination of attribute part worths, they are analyzed as a test of internal validity. The part worth statistics for attributes in the 'hold out' profiles are compared to those in the fractional factorial design to check for consistency of respective attribute and level influence (Hair, Anderson et al. 1995; SPSS-Inc 1997). This inclusion resulted in a final design comprised of 11 profiles for wine and 11 for cheese.

4.4 Measures used for consumer characteristics

4.4.1 Subjective knowledge

Subjective knowledge is the consumer's perceived level of expertise or 'self-assessed' level of product knowledge (Monroe 1976; Brucks 1985; Park, Mothersbaugh et al. 1994; Wirtz and Mattila 2003). The most common way that subjective knowledge has

been measured in the past is by a single self-report item; other methods include semantic differential scales and ad hoc multi item scales developed specifically for the pertinent study (Flynn and Goldsmith 1999) The outcome has been a wide range of approaches with few methodologies validated through testing or use in other studies (Flynn and Goldsmith 1999). The 8 item scale used in this research was used by Goldsmith, d'Hauteville et al. (1997) and validated by testing across 8 different product categories (including 2 wine products) in 3 separate studies by Flynn and Goldsmith (1999). The items comprising this scale are seen in table 4.1.

Table 4.1 Subjective knowledge scale items

Response format: 9 = strongly agree; 1 = strongly disagree

1.	I know pretty much about wine/cheese
2.	I know how to judge the quality of wine/cheese
3.	I do not feel very knowledgeable about wine/cheese (r)
4.	Among my circle of friends, I'm one of the 'experts' on wine/cheese
5.	Compared to most other people, I know less about wine/cheese (r)
6.	I have heard of most of the wines/cheeses around.
7.	When it comes to wine/cheese, I really don't know a lot (r)
8.	I can tell if a wine/cheese is worth the price or not.

4.4.2 Objective knowledge

There have been inconsistencies in terms of definitions of objective knowledge type and the instruments employed in measurement, making comparisons between studies difficult and risky (Alba and Hutchinson 1987; Rao and Olson 1990). Objective knowledge is product information stored in long-term memory based on experience and cognitive learning, with consumers maintaining high levels of objective knowledge by seeking out up to date product information (Alba and Hutchinson 1987). True expertise is a combination of high levels of objective knowledge and consumer product familiarity (Alba and Hutchinson 1987; Heimbach, Johansson et al. 1989; Cowley 1994; Alba 2000). It is not realistic to expect any significant segment of the consumer market to

possess levels of expertise consistent with a professional person working in a field aligned with the product or product category. For example, one would not expect consumers in the wine market to have the same knowledge as a wine maker or vineyard owner. Nor would consumers of cheese realistically be expected to be as knowledgeable as a cheese maker or retailer. Therefore, it was critical to develop questions that measure objective knowledge in terms of what consumers could reasonably be expected to know, rather than individuals in either industry.

In her study Brucks, (1985:p13) provides an insight into the appropriate measures of consumer objective knowledge and suggests that suitable testing should include the following types of items:

1. Terminology
    a. product terms to be matched with correct definitions
    b. 'decoys' (terms not associated with the products tested)
2. Available attributes
    a. critical intrinsic attributes
    b. common attributes (usually present but not critical)
    c. 'decoys' (attributes not associated with the products tested)
    d. criteria for evaluating attributes
3. Product usage situations
    a. product examples to be matched with given situations
4. Attribute covariation
    a. the relationship between an attribute and price
    b. 'decoys' (relationships between attributes that don't exist)

Product experts were consulted and relevant literature was examined to develop a set of questions for each product in order to measure respondent objective product knowledge (Baldy 1993; Goldsmith, d'Hauteville et al. 1997) It was considered critical to encompass as many of the areas described by Brucks (1985) as achievable, whilst ensuring that the assessment is relatively short and easy to complete. A multiple choice format was used, where each question offered 3 possible answers and the option of 'don't know' if respondents were unable to choose an answer they believed to be correct (Goldsmith, d'Hauteville et al. 1997). The scope of the questions was not confined strictly to the specific wine and cheese variety being tested, but also included general knowledge questions related to the broader product category. The final test developed consists of 14 questions per product; these are shown in tables 3.3 and 3.4 in the following sections.

Objective knowledge test – wine:

Table 4.2 illustrates the questions used to measure objective product knowledge for wine. These questions were put together using information from the literature and input from Jim Smith, wine maker and consultant (Baldy 1993; Smith 2004). The correct answers are shown in italics.

Table 4.2 Objective knowledge questions wine/chardonnay

1. Letting a wine 'breathe': Is to remove the cork for a time, prior to drinking □ 1 *Means aerating it so it can react with the oxygen* □ 2 Always improves the flavour of wine □ 3 Don't know □ 4	**2. Cellaring of wine is done (basically) to help:** Wine mature quickly □ 1 *Wine mature slowly* □ 2 Keep pests away from wine □ 3 Don't know □ 4
3. Which one of the following white varietals is most likely to be aged in oak? Riesling □ 1 *Chardonnay* □ 2 Sauvignon Blanc □ 3 Don't know □ 4	**4. Which one of the following white varietals is most likely to improve with aging?** Sauvignon Blanc □ 1 Chenin Blanc □ 2 *Chardonnay* □ 3 Don't know □ 4
5. Tannin gives wine: Bitterness □ 1 Tartness □ 2 *Astringency* □ 3 Don't know □ 4	**6. Chardonnay grapes are:** *Among the finest grown for white wine* □ 1 Not usually used in sparkling wine □ 2 Often used to make sweet wines □ 3 Don't know □ 4
7. Chardonnay, typically has an aging potential of: 2 or 3 years □ 1 3 or 4 years □ 2 *5 or 6 years or longer* □ 3 Don't know □ 4	**8. Terms often linked with the taste of Chardonnay are:** *Apple, peach, citrus* □ 1 Plum, spice, mint □ 2 Floral, honey, lychee □ 3 Don't know □ 4
9. What percentage (%) of the wine in the bottle must be made from grapes harvested and crushed in the year named, if a 'Vintage' date is given? *85%* □ 1 95% □ 2 100% □ 3 Don't know □ 4	**10. When thinking about matching foods with wines, trying to achieve the most complimentary combinations, it is important to remember that:** Very sweet food will counter the acid in the wine □ 1 Very salty foods counter acid in the wine □ 2 *Very acid foods will bring out the acid in the wine* □ 3 Don't know □ 4
11. An oak aged Chardonnay will, typically, be: Less full bodied than many other white wines □ 1 *More full bodied than many other white wines* □ 2 Comparable in body to many other white wines □ 3 Don't know □ 4	**12. Champagne is an excellent choice to accompany:** Smoked salmon □ 1 *Chinese food* □ 2 Most foods □ 3 Don't know □ 4
13. The term 'green' is often used to describe a wine's: Colour □ 1 *Acidity* □ 2 Age □ 3 Don't know □ 4	**14. Chilling wine (even red wine) will often:** *Improve the taste of a poor wine* □ 1 Make tannins less noticeable □ 2 Make no real difference to perceived quality □ 3 Don't know □ 4

Objective knowledge test – cheese:

Table 4.3 illustrates the questions used to measure objective product knowledge for cheese. These questions and answers were comprised by industry expert Louise Elder, cheese maker and wholesaler. The correct answers are shown in italics.

Table 4.3 Objective knowledge questions cheese/camembert

1. White mould is:	**2. Coagulation is:**
Fresh curds aged in warm temperatures □ 1	The conversion of milk solids to curd and whey □ 1
Fresh curds ripened by introducing surface mould □ 2	The basis of cheese making □ 2
Never found in quality cheeses □ 3	*Both of the abov.* □ 3
Don't know □ 4	Don't know □ 4
3. Rennet is:	**4. Camembert:**
A form of yeast used to make cheese □ 1	*Is eaten younger than brie* □ 1
An enzyme extracted from stomach linings □ 2	Is eaten older than brie □ 2
Neither of the above □ 3	Matures in the same time as brie □ 3
Don't know □ 4	Don't know □ 4
5. Rind is:	**6. Cheese is nicest if made from milk produced in:**
An important influence on flavor development □ 1	*The spring and autumn* □ 1
Not found on Camembert □ 2	The winter and summer □ 2
Never washed in making quality cheeses □ 3	Particularly wet summers □ 3
Don't know □ 4	Don't know □ 4
7. Camembert:	**8. Camembert:**
Never smells of mushrooms and yeast □ 1	*Has slightly thicker mould than brie* □ 1
Usually smells of mushrooms and yeast □ 2	Has slightly thinner mould than brie □ 2
Can sometimes smell like old socks □ 3	Has identical mould to brie □ 3
Don't know □ 4	Don't know □ 4
9. 'Triple Cream' cheese:	**10. Camembert rind is usually:**
Feels greasy with you eat it □ 1	*Comprised of soft white mould* □ 1
Is made from milk with extra cream added later □ 2	Comprised of grey mould □ 2
Doesn't exist as a product □ 3	Orange □ 3
Don't know □ 4	Don't know □ 4
11. When choosing wine to drink with Camembert:	**12. Camembert cheese is a:**
It's critical to make sure it's well chilled □ 1	*Product where price usually influences quality* □ 1
A chardonnay will suit, but never a red □ 2	Product where price is no indication of quality □ 2
A full bodied, earthy red is a sound choice □ 3	Product where all brands cost pretty the same □ 3
Don't know □ 4	Don't know □ 4
13. The inside of a Camembert that is ready to eat is:	**14. When pressed, the rind of a Camembert should:**
Creamy, buttery and smooth □ 1	Feel soft, but your finger leaves no mark or indent □ 1
Rubbery, buttery and soft □ 2	*Feel soft to the touch, your finger leaving an indent* □ 2
A little chalky □ 3	Feel quite firm □ 3
Don't know □ 4	Don't know □ 4

4.4.3 Self-confidence

High levels of self-confidence are thought to empower consumers to act on their personal beliefs, regardless of their basis or accuracy (Rao and Olson 1990). Traditional measures of consumer self-confidence are based on instruments investigating personal self-esteem; evidence suggests links between self-esteem and confidence in their own personal judgment (Bearden, Hardesty et al. 2001). Other contributing factors to self-confidence include perceived locus of control, dominance and previous experiences (Langer 1983; Obermiller and Spangenbert 1988; Lorr 1991). Bearden et al. (2001:p122) summarizes consumer self-confidence as "two higher order factors" describing "the individual's perceived ability (1) to make effective consumer decisions, including the ability to acquire and use information; and (2) to protect himself or herself from being misled, deceived, or treated unfairly." These factors encompass 6 dimensions represented by a 31 item scale (Bearden, Hardesty et al. 2001). A review of the 31 scale items revealed that many of them suggest a reflection of subjective knowledge of a specified product category, making the scale more of a combined instrument to self-confidence and purchase confidence rather than personal self-confidence alone. A scale determining self-image was also reviewed and considered, but rejected on the same premise (Malhotra 1981).

An objective of this study is to clearly isolate respondent subjective knowledge, objective knowledge and personal self-confidence and measure each independently. Bell (1967) suggests that the early studies investigating the influence of self-confidence on consumer buying behavior were likely to rely on versions of a 10 item set developed by Day and Hamblin (1964), designed to gauge generalized self-confidence specifically, rather than confidence combined with (or reliant on) category familiarity. Given the stated objectives, the items developed by Day and Hamblin (1964) were adopted for this research with minor modifications updating terms and phrases. In earlier studies

using this scale, a highly self-confident person was defined as any respondent who 'agrees' with statements 1, 2, 3, 8 and 10; and 'disagrees' with statements 4, 5, 6, 7 and 9 with no validation of these items as a scale undertaken (Day and Hamblin 1964; Bell 1967). However data analysis in this study incorporates testing these items for internal and external validity to confirm the scale as an appropriate measure of self-confidence.

Table 4.4 Self-confidence scale items

Response format: 9 = strongly agree; 1 = strongly disagree

1.	I feel capable of handling myself in most social situations.
2.	I seldom fear my actions will cause others to have a low opinion of me.
3.	It doesn't bother me to have to enter a room where other people have already gathered and are talking.
4.	In group discussions, I usually feel my opinions are inferior. (r)
5.	I don't make a very favorable first impression on people. (r)
6.	When confronted by a group of strangers, my first reaction is always one of shyness and inferiority. (r)
7.	It is extremely uncomfortable to accidentally go to a party wearing the wrong thing. (r)
8.	I don't spend much time worrying about what people think of me.
9.	When in a group, I very rarely express an opinion for fear of being laughed at. (r)
10.	I am never at a loss for words when I am introduced to someone I don't know.

4.5 Survey data analysis

The model will be tested by investigating the nature and existence of relationships between consumer knowledge and self-confidence and the utility levels determined for each product attribute level determined from the conjoint analysis procedure. In addition to examining these relationships, any differences in knowledge and self-confidence levels between groups will be analyzed to identify patterns of response.

4.5.1 Correlations and factor analysis

Correlation is a measure of the relationship between 2 or more variables, with coefficients ranging between +1.00, representing a perfect positive relationship, and -1.00, representing a perfect negative relationship (Malhotra, Hall et al. 2002). When there is a significant relationship between 2 variables (<0.05) and the coefficient is close to +1.00 or -1.00 a strong linear relationship between them is indicated. Pearson's r is a measure that assumes normality. When required, the non-parametric measure, Spearman's r, was used. Correlations were used to test for relationships between the independent variables of knowledge (subjective and objective) and self-confidence and the contribution of the dependent variables of COO, price and acid/fat. Principal factor analysis (which is based on correlation) was used to confirm that a latent variable is being measured from a set of items (Malhotra, Hall et al. 2002). This procedure was completed for the scales used (at each stage) to measure subjective knowledge and self-confidence. Following transformation of reverse coded items and validity checks, a mean score for each respondent reflecting their subjective knowledge and self-confidence levels was calculated.

4.5.2 Objective knowledge

Scores for objective knowledge (each product) can be determined according the number of correct answers to the multiple choice tests (Goldsmith, d'Hauteville et al. 1997). In order to compare objective knowledge and subjective knowledge levels a standardized score for objective knowledge was computed.

4.5.3 Conjoint analysis

The analysis of product preferences and levels of expected product quality from the conjoint analysis study was completed using SPSS Conjoint Analysis Statistical Software. The analysis revealed which product attributes (cues) made the most important contribution to the score given to each profile. Independent analysis was completed at each stage of the research; firstly for the sample overall and then for segments according to knowledge levels (per type) and self-confidence levels. From this, correlation testing and comparison of means testing were done to test the stated hypotheses.

4.6 Determining attribute importance

The objective of conjoint analysis is to produce a set of additive part worth utilities that use ratings given to product profiles to derive attribute utility scores (SPSS-Inc 1997). These are basically index numbers, corresponding to regression coefficients, measuring how valuable or desirable a particular feature is to the respondent (SPSS-Inc 1997; Dean 2004). The Ordinary Least Squares Regression (OLS) approach to ratings based conjoint analysis is commonly used for this analysis as it offers a straightforward, yet robust method of deriving the different utility values (used to compute attribute part worths) for each respondent (Hair, Anderson et al. 1995; SPSS-Inc 1997). The OLS model computes utilities using a dummy matrix of independent variables where each indicates the presence or absence of an attribute level.

The dependent variable is the respondent's score representing their assessment of the profile as described (Kupiec and Revell 2001); the model is expressed as:

$$Zi = f(y_{i1\ i2\ldots im}) = B_{1i1}(x_{1i1}) + B2i2(x_{2i2}) + ,\ldots, + B_{mim}(x_{mim})$$

Where:

B = the beta weights estimated in the regression
x = the matrix of dummy values identifying the levels of the factorial design, and
y = the ranking or rating evaluations of the respondent

Part worth statistics (utility values) will be both positive and negative, expressed on a common scale summing to zero for each attribute; whilst utility values within an attribute may be compared, they may not be compared across attributes (SPSS-Inc 1997; Dean 2004). Therefore, the most meaningful way to interpret the part worths is to analyze the 'gaps' between utility levels within each attribute (Hair, Anderson et al. 1995). A high range value (gap) between utility levels within an attribute indicates that the participants believe that change within that particular feature has significant impact on their overall assessment of that offer. Hence attributes with greater ranges are those used most by respondents to differentiate between profiles and have higher levels of relative importance in the rating (Hair, Anderson et al. 1995; Kupiec and Revell 2001). In order to compare the relative average importance of attributes, importance scores (I) are calculated. This is done by taking the range between the lowest and highest utility value for an attribute (i) and dividing it by the sum of all the utility ranges (SPSS-Inc 1997).

Therefore, importance is computed as:

$$Ii = \frac{(Maxu\ i - Minu\ i)}{\sum(Maxu\ i - Minu\ i)}$$

In summary, 'average importance' values reveal the comparative importance (in percentage terms) of each attribute to the respondent's decision and the utility values (part worths) illustrate which attribute levels are preferred and those that are avoided (Hair, Anderson et al. 1995; Kupiec and Revell 2001). Furthermore, a score or perceived 'worth' can be computed for each hypothetical product to determine which ones comprise the most important attributes at the most attractive levels. This can be shown as:

Total Worth for Product $_{ij..n}$ = Part worth of level$_i$ for factor$_1$ +
part worth of level$_j$ for factor$_2$ + … +
part worth of level$_n$ for factor$_m$

Hair et. al. (1995:p 561)

4.6.1 Non-parametric tests

The comparison of means requires a non-categorical measure. These tests can be used in the analysis of scores and utility values determined in this study. In this research, comparisons of means both within groups and independent of groups was done, and relationships between variables were investigated. Where variables failed to meet assumptions for normality, and the equivalent parametric test is not assumed robust to abnormality, non-parametric tests were used (Malhotra, Hall et al. 2002). Assumptions for normality and results of normality test procedures can be seen in appendices specified in the relevant chapters.

The non-parametric test used for comparison of means in paired samples is the Wilcoxon Sign Rank test. This test analyzes ranking data rather than comparison of means, however, it presents a significant value similar to t-tests (Malhotra, Hall et al. 2002). The non-parametric test for independent samples used is the Kruskall-Wallis H-test and the non-parametric correlation measurement employed is Spearman's r.

4.7 Validity of instruments

Due to the complexity in methodology caused by the multi-stage research design, generally only the summarized results of validity testing are provided in the relevant sections for each stage, with detailed analysis being provided in appendices.

4.7.1 Normality testing

Results of normality testing of variables are found in appendix 3 (tables A 3 to A 5). As discussed, where testing indicated that variables fail to satisfy required assumptions for the use of parametric data analysis tools, non-parametric equivalents were used.

4.7.2 Subjective knowledge and self-confidence scale

Measurement of Cronbach Alpha coefficient scores was used to evaluate scale reliability. Scores range in value from 0 to 1 and the higher the score the more reliable the scale is considered to be. Generally, a score of 0.7 or higher is deemed to be acceptable (Malhotra, Hall et al. 2002). Cronbach Alpha coefficients for each application of scales used are illustrated in the pertinent section of this chapter along with results of respective tests of construct validity. Divergent and convergent reliability test results are provided in the appendices.

4.7.3 Objective knowledge questions

The multiple choice questions used to measure objective knowledge were compiled according to recommendations found in the literature and confirmed with industry experts (Baldy 1993; Park, Mothersbaugh et al. 1994). Prior to use the tests were independently reviewed for comment by external experts in their respective fields and, in their professional opinions, found to be appropriate for the purpose (Ross 2004; Smith 2004).

4.7.4 Conjoint analysis

Conjoint analysis requires checks for internal and external validity (Hair, Anderson et al. 1995). Internal validation was done by testing for 'goodness of fit' of the estimated model with the values of r^2 and Kendall's tau statistics illustrated for each data sample. These statistics (between 0 and 1) illustrate the relationships between the observed and estimated preferences and should always be high (the closer to 1 the better); models with poor fit are considered suspect (Malhotra, Hall et al. 2002). A further internal validity check is provided by the comparison of utilities derived from profiles incorporated in the fractional factorial design with those from 'hold out' profiles (SPSS-Inc 1997; Malhotra, Hall et al. 2002). External validation is based upon the degree to which respondent samples represent the populations investigated and whether or not the attributes and levels that were selected reflect credible hypothetical products (Hair, Anderson et al. 1995). Comparisons of respondent sample profiles with the general Australian population are provided and discussed for each stage of the research. Attributes and levels were selected as a result of an extensive literature review, analysis of qualitative data, consultation with industry experts, and a review of products available in the relevant South Australian consumer markets.

4.8 Summary

Chapter 4 provided details of the quantitative methodology in respect to sampling methods and the development of the data collection instruments. This included a pertinent discussion and justification of measures used, validation procedures and data analysis methods. Chapter 5 is devoted to the methodology, data analysis and results specific to stage 2 of the research: the conjoint pilot study.

5 Quantitative conjoint pilot study

5.1 Introduction

Chapter 4 provided an overview of the research design for all stages of the study; the common methodology employed in the quantitative aspects and the results of the qualitative component of the research. This chapter will detail the methodology used for the second stage of the study, the conjoint analysis pilot study, subsequent findings of the data analysis and their implications on subsequent stages of the research.

5.2 Conjoint analysis survey (pilot)

The first quantitative component was a pilot study where the product profiles determined by the experimental design were assessed via a self completed questionnaire. The pilot study was conducted in order to ensure the appropriateness of the conjoint analysis methodology, products, attributes/levels and measures of knowledge and self-confidence. Gathering data and subsequent analysis revealed a number of unforeseen and significant issues relating to respondent perceptions of the products and cues used. This resulted in the need to re-evaluate aspects of the questionnaire design and information and instructions to respondents. This aspect of the study provided an invaluable opportunity in terms of rectifying these potentially disastrous problems, whilst still validating the measures used.

5.2.1 Sample (pilot)

A convenience sample of 267 respondents agreed to participate, recruited from the population of part-time students taking evening classes at the City Campus of TAFESA. In order to encourage participation, those completing the questionnaire were given the opportunity to enter their name in a 'lottery' to win $250 in cash. Students participated on a voluntary basis and completed the questionnaire during allocated class time.

5.2.2 Data collection instrument (pilot questionnaire)

The initial self administered questionnaire consisted of 4 parts described below; a copy of the questionnaire can be seen in Appendix 2. In this version, all chardonnay profiles were illustrated in part 1, followed by the subjective knowledge items for chardonnay and questions relating to consumption habits. This layout and order was replicated for the camembert profiles and subjective knowledge scales etc. The wine and cheese objective knowledge tests followed and finally the scale determining self-confidence. The objective knowledge questions were completed after the assessment of all product profiles and subjective knowledge questions to ensure that reported levels of self-assessed knowledge were not diminished as a result of an inability to confidently answer the objective knowledge questions. Self-confidence items were answered last followed by collection of demographic details. Figure 5.1 below provides a detailed format.

Figure 5.1 Pilot study questionnaire format

1. **Front Cover** Survey information and contact details
2. **Part 1.** a) Wine product profiles (for rating)
   b) Subjective knowledge scale (wine)
   c) Product consumption habits and purchasing patterns (wine)
3. **Part 2.** a) Cheese product profiles (for rating)
   b) Subjective knowledge scale (cheese)
   c) Product consumption habits and purchasing patterns (camembert)
4. **Part 3.** a) Objective knowledge questions (chardonnay)
   b) Objective knowledge questions (camembert)
5. **Part 4.** a) Self-confidence scale
   b) Demographics
6. **Back Page** Registration form to enter the draw for a $250 cash prize

5.2.3 Intrinsic and extrinsic cues - wine

In order to diminish objective quality, the intrinsic description was altered to reflect increased levels of acidity resulting in wines that would be increasingly 'green' or sour in taste. As chardonnay wine of good quality does not contain unusually high levels of acidity, average, above average and high signified the 3 levels. To determine realistic price levels for a hypothetically high, mid and low priced chardonnay, industry and wine retail sources were consulted. Countries chosen to represent the various levels of quality were determined from the qualitative study. Table 5.1 illustrates the selected attributes and levels and table 5.2 illustrates the SPSS fractional factorial design.

Table 5.1 Specification of chardonnay attributes and levels

Attribute	Cue type	Levels
COO	extrinsic	France U.S. Chile
Price per 700ml bottle	extrinsic	$39.50 $14.00 $ 6.00
Acid level	intrinsic	Average for chardonnay Above average High

Table 5.2 Fractional factorial design chardonnay

Profile	COO	Price	Acid level	Status
1	France	$14.00	Average	Holdout
2	U.S.	$ 6.00	Average	Holdout
3	Chile	$14.00	High	Design
4	France	$ 6.00	High	Design
5	U.S.	$14.00	Average	Design
6	Chile	$39.00	Above average	Design
7	U.S.	$ 6.00	Above average	Design
8	France	$39.00	Average	Design
9	Chile	$ 6.00	Average	Design
10	France	$14.00	Above average	Design
11	U.S.	$39.00	High	Design

5.2.4 Intrinsic and extrinsic cues - cheese

Fat has been found in previous research to be an important intrinsic attribute affecting the superiority of cheese, with high fat (creamy textured) cheeses preferred (Hamilton, Knox et al. 2000). Therefore a hypothetical 'triple fat' camembert is the highest quality intrinsically, with objective quality diminishing with reduced fat content. The countries chosen to represent different levels of quality were established from the qualitative component of the study. Current market prices (per 500 gram piece) for camembert in Adelaide were used to set realistic price levels for cheeses of high, mid and low prices respectively. Table 5.3 illustrates the attributes and levels and table 5.4 illustrates the SPSS generated fractional factorial design.

Individual product profiles were numbered from 1 to 11 for chardonnay and camembert respectively, with 3 to 4 profiles placed on each page (A 4) in order to keep the number of pages used to a minimum. The respondent's task is to consider the information provided for each hypothetical product and rate each according to a metric scale from 1 to 10. The literature reveals that conjoint analysis metric rating scales have often been 'anchored' with 'likelihood of purchase' extremes; however, this was not considered appropriate in this case as the objective was not to measure purchase intension (Sagar and Scofield 1982; Hair, Anderson et al. 1995; SPSS-Inc 1997). Whilst perception of quality and likelihood of purchase are often linked, they are not automatically synonymous (Zeithaml 1988). Consumers may consider a product to be of high quality, but would not consider buying. This can be for a number of reasons: the cost may be too high, they may feel a negative bias against the COO of the product, or they may not believe that the product provides enough value for money (Zeithaml 1988; Dodds 1991; Lee and Lou 1996). Similarly, consumers may not consider a product to be high quality, but may purchase it nonetheless. This may be because there are few alternatives to

choose from, they cannot (or do not wish to) pay more for better quality or superior product quality is simply not required (Dodds 1991; Lee and Lou 1996).

Table 5.3 Specification of camembert attributes and levels

Attribute	Cue type	Levels
COO	extrinsic	France Canada Argentina
Price (per 500 gram piece)	extrinsic	$8.00 $5.00 $3.00
Fat	intrinsic	Triple Full 50% reduced

Table 5.4 Fractional factorial design camembert

Profile	COO	Price	Fat Level	Status
1	France	$3.00	50% Reduced fat	Holdout
2	Argentina	$3.00	Triple cream	Holdout
3	Canada	$8.00	50% Reduced fat	Design
4	Canada	$3.00	Full cream	Design
5	France	$5.00	50% Reduced fat	Design
6	Argentina	$8.00	Triple cream	Design
7	France	$3.00	Triple cream	Design
8	Argentina	$3.00	50% Reduced fat	Design
9	France	$8.00	Full cream	Design
10	Canada	$5.00	Triple cream	Design
11	Argentina	$5.00	Full cream	Design

Other studies using a conjoint analysis design have utilized a wide range of alternative descriptors to represent the lowest and highest possible rating scores. These include: ‘worst possible’ versus ‘best possible’, ‘unlikely to pay’ versus ‘very likely to pay’, ‘dislike extremely’ vs. ‘like extremely’, ‘very undesirable’ vs. ‘very desirable’ (Tan 1999; Murphy, Cowan et al. 2000; Katoshevski and Timmermans 2001; Moy and Lam 2003; Pelsmacker, Driesen et al. 2005). After reviewing tested alternatives, respondents in the pilot study were asked to rate each profile from 1 to 10, where 1 represented ‘very

undesirable' and 10 represented 'very desirable' (Moy and Lam 2003). These descriptors were chosen because it was believed that respondents could provide an opinion of the product that was clearly positive or negative, without linking this assessment directly to personal liking or purchase intention. To collect a simple measure of likelihood of purchase, after rating each profile participants were asked whether or not they would consider purchasing the product as described by choosing either 'yes' or 'no'. Figures 5.1 and 5.2 show examples of how the product attributes and levels were presented to respondents.

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Figure 5.2 Example of wine product profile (pilot)

Chardonnay 1	
Acidity	Average for chardonnay
Produced in	France
Retail Price	$14.00
Highly Undesirable	**Highly Desirable**
1 2 3 4 5 6 7 8 9 10	
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	
Would you consider buying this product? Yes ☐ No ☐	

Figure 5.3 Example of cheese product profile (pilot)

Camembert 1	
Made with	50% Reduced Fat
Produced in	France
Retail Price	$3.00
Highly Undesirable	**Highly Desirable**
1 2 3 4 5 6 7 8 9 10	
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	
Would you consider buying this product? Yes ☐ No ☐	

5.2.5 Questionnaire pre-test

A pre-test of the questionnaire was undertaken using part-time evening (N=24) students attending lectures at TAFESA City Campus. This class of students was then eliminated from participation in any other component of the study. The class was chosen at random, controlling only for gender balance. An important objective of the pre-test was to determine the time taken to complete the questionnaire, in order to inform lecturers volunteering class time. The pre-test also provided an insight into the likely validity of the scales and objective knowledge tests used to measure independent variables. Also, respondent reactions to the profile assessment tasks and an examination of the preliminary data from the conjoint experimental design were possible.

Table 5.5 Total variance explained (pre-test)

	Cum % eigenvalues > 1	Factors
Subjective knowledge wine	65.726	2
Subjective knowledge cheese	74.922	2
Self-confidence	74.383	3
N of Cases = 24		

Table 5.6 Reliability coefficients of scales (pre-test)

Reliability coefficients		
Subjective knowledge wine	N of items = 8	Alpha = 0.836
Subjective knowledge cheese	N of items = 8	Alpha = 0.874
Self-confidence	N of items = 10	Alpha = 0.861
N of Cases = 24		

Cronbach Alpha scores for each scale are in excess of 0.7, with a high percentage of variance explained for factors with eigenvalues greater than 1.00, indicating that the instruments are suitable for the application (Malhotra, Hall et al. 2002) (Tables 5.5 and 5.6). The pre-test results for attribute utilities (chardonnay and camembert) are consistent with the literature, indicating that both price and COO make contributions to

consumer opinions, albeit price was far less influential for camembert than for wine according to this group (Tables 5.7 and 5.8).

Given the small sample size, these results could not be considered necessarily indicative of future outcomes. The purpose was to ascertain whether respondents perceived clear differentiation between the profiles resulting in wide score variances across the set. The disparity between average importance values, for each product, confirms that this is the case. Statistics for Kendall's tau and Pearson's r statistics are moderate to high indicating that the model fit is within acceptable parameters (SPSS-Inc 1997) (Table 5.9). While the sample used in the pre-test was too small to allow for more in depth analysis, these results were very encouraging in terms of participant response to the tasks and the suitability of chosen measures. Based on this, the pilot study was undertaken without alteration to the questionnaire format or content.

Table 5.7 Summary of part worths for chardonnay (pre-test)

Ave imp	Utility	Level	Attribute
29.082	-0.287	Chile	**COO**
	-0.218	U.S.	
	0.505	France	
43.878	-0.690	$ 6.00	**Price**
	0.505	$14.00	
	0.185	$39.00	
27.041	0.338	Average	**Acid**
	0.060	Above average	
	-0.398	High	
100%			N = 24

Table 5.8 Summary of part worths for camembert (pre-test)

Ave imp	Utility	Level	Attribute
33.333	-0.269	Argentina	**COO**
	-0.046	Canada	
	0.315	France	
7.143	-0.074	$ 3.00	**Price**
	0.023	$ 5.00	
	0.051	$ 8.00	
59.524	-0.505	50% Reduced fat	**Fat**
	0.537	Full Cream	
	-0.032	Triple Cream	
100%			N = 24

Table 5.9 Conjoint analysis internal validity tests (pre-test)

	Chardonnay	Sig.	Camembert	Sig.
Kendall's tau (design)	1.000	.000	1.000	.000
Kendall's tau (hold outs)	.667	.006	1.000	.000
Pearson's r	0.935	.0000	0.991	.000
R^2	0.874	.000	0.982	.000
N of cases = 217				

5.3 Validation of research instruments (pilot)

5.3.1 Subjective knowledge and self-confidence scales

While the items measuring subjective knowledge had been validated as a reliable scale in previous research, the items used to measure self-confidence had not undergone this procedure before (Day and Hamblin 1964; Bell 1967; Flynn and Goldsmith 1999). Previously, the items were used simply as a set of statements where agreement with some items and disagreement with others resulted in the determination of whether a respondent was deemed 'confident'. The initial step in the validation process is to test for internal reliability through determination of the Cronbach Alpha coefficient for each

measure; these are illustrated in table 5.10 for both applications of the scale with coefficients ranging from 0.728 to 0.869 indicating sound reliability.

Table 5.10 Reliability coefficients of scales (pilot)

Reliability coefficients		
Subjective knowledge chardonnay	N of items = 8	Alpha = 0.866
Subjective knowledge camembert	N of items = 8	Alpha = 0.869
Self-confidence	N of items = 10	Alpha = 0.728
N of cases = 238		

*See appendix 4 – tables A 6 through A 31 for results of construct, convergent and divergent validity testing – all treatments.

Construct validity is related to generalizing and testing is undertaken to ensure that scale items measure the intended construct in a consistent manner and that they account for a high “percentage of variance explained” in a small number of solutions or factors (Malhotra, Hall et al. 2002). Therefore, outcomes from testing should confirm the meaning represented by the resulting variable matches the commonly held meaning of the construct used in the area of study being undertaken.

Table 5.11 Construct reliability for subjective knowledge and self-confidence

Scale	Cum % of variance explained	No of factors with eigenvalues >1
Subjective knowledge chardonnay	69.6	2
Subjective knowledge camembert	70.4	2
Self-confidence	47.3	2
N of cases = 238		

The percentages of variances explained (factors with eigenvalues > 1) are 47.3% (self-confidence), 69.6% (subjective knowledge chardonnay) and 70.4% (subjective knowledge camembert) as seen in Table 5.11. In their studies validating this scale,

Flynn and Goldsmith (1999) ultimately removed 3 items in order to produce a 1 factor solution that accounted for approximately 60% of the cumulative variance explained. However, scrutiny of the factors generated for both chardonnay and camembert subjective knowledge in this research, showed the second factor consisted of the 3 reverse coded items, not those removed by Flynn and Goldsmith (1999), suggesting a coding effect rather than these items reflecting a different factor. Their removal did not increase the Cronbach Alpha coefficient or result in a 1 factor solution. Further, their deletion represented a significant loss of data. On balance, the decision was made to accept a 2 factor solution for validation purposes (at this stage), given the high level of cumulative variance explained. This choice is supported by Malhotra et al. (1996) who suggest that if 60% or more of cumulative variance explained is accomplished in a small number of interpretable factors, there is little benefit in losing data for what may be little gain and a 'tidier' solution. The rotated component matrices for both scales are shown in table 5.12 and 5.13. However, the items constituting self-confidence required further analysis to determine their suitability or otherwise as a valid scale measure of self-confidence.

Table 5.12 Subjective knowledge chardonnay (pilot)

Rotated component matrix –chardonnay (pilot)		Component	
		1	2
1.	I know pretty much about chardonnay	**.769**	
2.	I know how to judge the quality of chardonnay	**.746**	
4.	Among my circle of friends, I'm one of the 'experts' on chardonnay	**.767**	
6.	I have heard of most of the chardonnays around	**.722**	
8.	I can tell if a chardonnay is worth the price or not	**.776**	
3.	I do not feel very knowledgeable about chardonnay		**.806**
5.	Compared to most other people, I know less about chardonnay		**.848**
7.	When it comes to chardonnay, I really don't know a lot		**.840**
Principal Component Analysis. Varimax rotations with Kaiser normalization (rotation in 3 iterations)			

Table 5.13 Subjective knowledge camembert (pilot)

Rotated component matrix – camembert (pilot)		Component	
		1	2
1.	I know pretty much about camembert	**.702**	
2.	I know how to judge the quality of camembert	**.756**	
4.	Among my circle of friends, I'm one of the 'experts' on camembert	**.770**	
6.	I have heard of most of the camemberts around	**.787**	
8.	I can tell if a camembert is worth the price or not	**.791**	
3.	I do not feel very knowledgeable about camembert		**.817**
5.	Compared to most other people, I know less about camembert		**.847**
7.	When it comes to camembert, I really don't know a lot		**.847**
Principal Component Analysis. Varimax rotations with Kaiser normalization (rotation in 3 iterations)			

The self-confidence scale is comprised of 5 statements related to an individual's concern regarding how others view them (or their actions) in various social situations, and 5 statements that are similar but negatively phrased as a check against responses to the positive items. The 2 factor solution (rotated) shows that the first factor includes only the positively worded statements and the second factor the negatively worded ones (table 5.14). Again as with the subjective knowledge scales a coding effect is indicated. Testing was done to determine if the 5 positively worded items alone or the 5 negatively worded items would result in a higher total variance explained and acceptable Cronbach Alpha coefficients and Bartlett's and KMO statistics. Testing found this was not the case, although, as expected, each set of 5 items produced a 1 factor solution with high and significant correlations between items. The next step was to investigate removing items that were 'cross loading' between both factors in order to strengthen results. This was tested by removing (both singly and in combinations), items 1, 2, 4 and 7; however the total variance explained was not significantly improved and Cronbach Alpha coefficients were lowered.

Table 5.14 Self confidence factors (pilot)

Rotated component matrix – self confidence (pilot)		Component	
		1	2
4.	In group discussions, I usually feel my opinions are inferior	**.670**	
5.	I don't make a very favourable first impression on people	**.715**	
6.	When confronted by strangers, my first reaction is shyness and inferiority.	**.769**	
7.	It is extremely uncomfortable to go to a party wearing the wrong thing.	**.550**	
9.	When in a group I rarely express my opinion for fear of being laughed at.	**.655**	
1.	I feel capable of handling myself in most social situations.		**.748**
2.	I seldom fear my actions will cause others to have a low opinion of me		**.592**
3.	It doesn't bother to enter a room where others already talking.		**.714**
8.	I don't spend much time worrying about what people think of me.		**.599**
10.	I am never at a loss for words when I am introduced to someone I don't know.		**.658**
Principal Component Analysis. Varimax rotations with Kaiser normalization (rotation in 3 iterations)			

Self-confidence was measured in previous studies using these items by deeming those respondents that 'agreed' with statements 1, 2, 3, 8 and 10 while 'disagreeing' with statements 4, 5, 6, 7 and 9 to be 'self-confident'. These responses indicate the individual has little concern with managing their 'image' as perceived by others, and therefore feel no anxiety concerning self-presentation in social situations (Day and Hamblin 1964). For example, for most items responses were quite polarized indicating a relatively healthy level of ego amongst the sample; however, the items regarding going 'to a party wearing the wrong thing', and being 'never at a loss for words' when meeting someone they don't know averaged the lower scores compared to the other items. This suggests that, indeed, many people would be concerned about how others perceive them in those situations but not others considered less daunting. Therefore, these items may serve to discriminate between individuals with differing confidence levels.

Accordingly, the next check was to determine if the participants responded in the same way to both groups of items; if so, then a consistency in response would be evident. Reverse coded items were transformed and a paired comparison of means test was performed. The results of the Wilcoxon Signed Ranks Test (table 5.16), shows that there is no significant difference between means scores for the 2 groups of items tested demonstrating that respondents were consistent in their answers to all items supporting the applications used previously.

Table 5.15 Wilcoxon Signed Ranks Test – Self-confidence

Test Statistics - Wilcoxon Signed Ranks Test (pilot)[b]

	Self Confidence - Disagree with 4, 5, 6, 7, 9 Self Confidence - Agree with 1, 2, 3, 8, 10
Z	-1.589[a]
Asymp. Sig. (2-tailed)	.112

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

An important consideration when using factor analysis is the application of 'common sense' and logic in interpreting results and considering useful and pragmatic applications. While the total variance explained by these items is only 47%, the Cronbach Alpha coefficient is higher than 0.7 and the results of Bartlett's and the KMO tests are more than acceptable (See Appendix 4 table A15). The objective of the measurement is to discriminate between respondents that possess higher levels of self-confidence and those that have lower levels. This can be achieved by computing an average score across all items (transforming those that are reverse coded) and segmenting samples accordingly. Therefore, in conjunction with evidence of acceptable results for tests of discriminate and convergent validity, the 10 items, as tested, were maintained as a measure of self-confidence for subsequent stages of the study. Further, due to satisfactory test results for the scales items measuring subjective knowledge, these were also maintained unchanged. However, the decision to maintain all items in both scales was taken on balance. This was only a pilot, and the results

would not be used in hypothesis testing. The scales consisted of a low number of items and didn't contribute significantly to the length of the questionnaire and the opportunity would exist to remove any items, if appropriate, to improve clarity, validity and reliability in the analysis of scale data in subsequent stages.

In order to compute new variables representing these constructs for each respondent, the following computations were made. First, negatively coded items were transformed, and then an average was calculated from the sum of scores given to each item in the respective scales. Therefore, the score could range from 1 to 9 for each variable with a higher value corresponding to higher levels of subjective knowledge or self-confidence.

5.3.2 Objective knowledge tests (pilot)

Respondent feedback was positive in relation to these tests. The comments received by the researcher indicated that those providing usable questionnaires found the tests quite interesting and easy to complete; with some respondents asking for an 'answer sheet' to determine how well they had scored. In line with the literature, participants generally found that their objective knowledge was lower than expected. However, there were no suggestions that any of the questions were unreasonable or unrealistic (Park, Mothersbaugh et al. 1994; Alba and Hutchinson 2000; Alba 2000). The feedback provided no indication that respondents had not answered honestly and scrutiny of the usable questionnaires did not signify that the questions had been misunderstood or ignored; therefore, there was no evidence to believe that the internal or external validity had been compromised.

5.3.3 Conjoint analysis fractional factorial design (pilot)

Table 5.16 illustrates the results of tests of internal validity for computed part worths and attributes average importance for the chardonnay and camembert profiles assessed. High values for Pearson's r (and resulting r^2) and Kendall's tau statistics indicate sound internal validity. Significant changes were made to the cheese attribute, and to price levels for both products to improve external validity as a result of the pilot survey results and respondent feedback (Hair, Anderson et al. 1995). These are discussed in the relevant section of this chapter.

5.4 Results and discussion (pilot)

5.4.1 Sample (pilot)

Table 5.16 Conjoint analysis internal validity tests (pilot)

	Chardonnay	Sig.	Camembert	Sig.
Kendall's tau (design)	1.000	.0000	0.889	.0004
Kendall's tau (hold outs)	1.000	.0001	1.000	.0000
Pearson's r	0.996	.0000	0.990	.0000
R^2	0.992	.0000	0.9801	.0000
N of cases = 217				

Initially 267 questionnaires were returned for analysis. Of these, 238 could be used to measure knowledge and self-confidence and validate these instruments in subsequent stages of the study. In all, 29 questionnaires were eliminated from scale and knowledge analysis because only the first or second pages were completed or entire sections of the questionnaire were ignored. From this group, a further 21 questionnaires were eliminated prior to testing the conjoint designs, leaving 217 that could be used for test of the conjoint analysis designs for wine and cheese.

Questionnaires were rejected as a result of the second screening for 1 or more of the following reasons.

1. All product profiles (chardonnay and/or camembert) were rated '1' and the box for 'No' was ticked, signifying they would not consider purchase of the product as described. This was a clear message that the profiles had not been assessed according to the cues provided, with all profiles being rejected by way of the lowest possible rating and purchase not being considered.

2. Only the first few profiles for one or both products were completed, indicating fatigue, annoyance or lack of interest.

3. Strong notations made on the questionnaire signifying the respondent's vehement disapproval of the absence of Australian wine/cheese profiles to consider. Comments such as "I only buy Aussie!!", and "Why aren't there any Australian wines??" were typical amongst this group. This was supported by similar comments made by some respondents returning questionnaires to the researcher personally.

A significant proportion of the original sample (18.7%) failed to return usable questionnaires due to a lack of interest and/or a hostile response to the design components being tested. These comments were, to some degree, foreshadowed in the focus groups wherein 1 or 2 respondents made comments during the taste tests such as "I feel disloyal even trying foreign wine" and "I have no experience with any wines that aren't Australian". Clearly, these negative and/or ambivalent reactions required strategies to engage the respondent in the research methodology and overcome their ethnocentric responses.

Table 5.17 shows the demographic composition of respondents and equivalent demographics in the general population as sourced from the Australian Bureau of Statistics (2001 Census).

Table 5.17 Sample demographic profile

Gender	%	ABS %	Age	%	ABS %
Male	45	49.8	18 yrs to 25 yrs	21.0	11.5
Female	55	50.2	26 yrs to 35 yrs	32.0	14.2
			36 yrs to 45 yrs	27.9	15.0
			46 yrs to 55 yrs	12.8	13.5
			Over 55 yrs	6.4	21.9
Household income	**%**	**ABS %**	**Level of Education**	**%**	**ABS %**
Less than $25, 000	17.8	27.7	High school certificate	35.6	30.0
$25,000 to $45,000	24.7	26.5	Diploma / trade	42.9	21.8
$46,000 to $65,000	25.6	16.8	Bachelor's degree	16.4	9.7
Over $65,000	31.5	29.0	Post graduate degree	5.0	3.2

Source: (ABS 2003 - 04) Household Characteristics (No. 65230)

In comparison with demographics describing the general population of Australia, the sample is found to exhibit a female skew of 5% and significant variations from the general population in terms of age. However, given the convenience nature of the methodology employed, such biases are expected and rather less severe than in other types of convenience samples (James and Sonner 2001; Peterson 2001). Further, in consideration of the products tested, the age and demographic skew is likely to provide a more representative sample of consumers in these markets. Also, whilst a student sample was employed only students studying evening classes were eligible for participation, with previous research demonstrating that samples determined using this methodology (due to the diverse demographics typical of these students) they are more likely to constitute a group representative of the general population than traditional student samples (James and Sonner 2001; Peterson 2001).

5.4.2 Conjoint analysis results (pilot)

Tables 5.18 and 5.19 show the individual utilities of each attribute at the specified levels with an averaged importance for the attribute overall, illustrating its contribution towards the final expectation of quality. The results illustrate that for chardonnay, COO was found to be more influential in affecting quality expectations than described acidity. While correctly assessing which levels of acidity are less desirable, the intrinsic cue was not believed by respondents to be as important as the extrinsic cue of COO in determining expected quality. Further, while price was considered less important than acidity the difference in the degree of influence between them is only 2% illustrating a similar level of influence in the rating decision. France was clearly believed to provide the most desirable chardonnay, but interestingly, little difference in opinion exists between wine from the U.S. and Chile. This result is surprising given that the U.S., as an industrialized nation, should have been believed to produce higher quality (Chao 1992). This outcome may be a reflection of concern voiced in the focus groups regarding perception of high pesticide levels and genetic modifications associated with food products from the U.S. The low esteem placed on the Chilean product, on the other hand, is in line with expectations given the responses recorded in the focus groups towards products from South America. The results relating to the wine price levels are in line with the literature, in that a particularly low price is likely to be associated with correspondingly low quality (Zeithaml 1988; Jover, Montes et al. 2004). The relatively low score for the highest price given may be an indication of unwillingness to pay this amount for a bottle of chardonnay (particularly from the U.S. or Chile), irrespective of expected quality, resulting in the mid-priced option being deemed the most attractive by respondents. The other potential reason for this result is the use of 'Highly Undesirable' and 'Highly Desirable' as anchor points. These were used as expected surrogates for the term quality; however, it is possible to believe something to

be of high quality yet not desirable particularly if there is an ethnocentric influence on participants as was apparent with this group (Herche 1994).

Table 5.18 Summary of part worths for chardonnay (pilot)

Ave imp	Utility	Level	Attribute
38.42	-0.3404	Chile	**COO**
	-0.2354	U.S.	
	0.5758	France	
30.31	-0.4744	$ 6.00	**Price**
	0.2486	$14.00	
	0.2258	$39.00	
31.27	0.3521	Average	**Acid**
	0.0416	Above average	
	-0.3937	High	
100%			N = 217

Table 5.19 Summary of part worths for camembert (pilot)

Ave imp	Utility	Level	Attribute
60.55	-0.3564	Argentina	**COO**
	-0.0615	Canada	
	0.4179	France	
13.96	-0.1101	$ 3.00	**Price**
	0.0418	$ 5.00	
	0.0683	$ 8.00	
25.49	0.0418	50% Reduced fat	**Fat**
	0.1412	Full Cream	
	-0.1839	Triple Cream	
100%			N = 217

As with wine, COO was considered the most important attribute when assessing camembert quality; however, respondents acknowledged fat as more important than price in forming their opinions (Table 5.19). In line with previous research relating to desirable food attributes, respondents considered the highest fat content to be the least desired. This is despite the fact that higher fat levels result in cheeses that are creamier in texture (enhanced mouth feel) and generally better flavored than low fat cheeses. This suggests a social desirability bias where high levels of fat in any food may be considered undesirable regardless of its actual positive association with greater overall

quality in terms of taste (Hamilton, Knox et al. 2000). In this test, the importance given to price is relatively low; perhaps because respondents perceived little difference in financial sacrifice between the levels described thus diminishing the influence of price overall (Hair, Anderson et al. 1995).

5.4.3 Results knowledge and self-confidence (pilot)

The reliance on extrinsic cues is not surprising given that the general level of objective knowledge amongst the group was very low. Our data shows that respondents achieved a mean score of only 3.05 correct answers of the 14 asked in the objective knowledge test for wine, with 98% of respondents scoring 7 correct answers or less. Results from the objective knowledge test for cheese were similar, with an average of only 3.42 correct answers in that test and 91% of respondents scoring 7 correct answers or less.

Table 5.20 Equivalent mean scores for knowledge and self-confidence

Where 0 equals the lowest score and 9 equals the highest score attained.

	Mean	SD
Subjective knowledge chardonnay	4.17	1.69
Objective knowledge chardonnay (standardized)	1.96	1.36
Subjective knowledge camembert	4.16	1.76
Objective knowledge camembert (standardized)	2.20	1.82
Self-confidence	6.10	1.14
N = 238		

The scores for subjective knowledge (Table 5.20) suggest that while respondents clearly did not see themselves as product 'experts' in most cases (for either product), the corresponding scores for objective product knowledge are considerably lower than even the rather modest self-assessed levels. These low levels of knowledge (both objective and subjective) are likely to be important contributing factors to the demonstrated reliance on extrinsic cues and subsequent discounting of intrinsic cues,

irrespective of their impact on objective product quality. In contrast, self-confidence scores indicate that, generally, respondents exhibited a reasonably high level of self-confidence. Hence, the extrinsic cues provided are less likely to have been found intimidating or lead to a diminished belief in personal opinions in subsequent testing.

5.5 Pilot study results summary

Analysis shows that the focus group findings are remarkably consistent with conjoint analysis results and that that the direction and magnitude of the influence of the main attributes are predicted by the literature cited. The results of the conjoint analysis, therefore, confirm the qualitative research findings. The results also show that the objective knowledge of respondents, in particular, is much lower than anticipated. This suggests that respondents may not be able to evaluate intrinsic cues based on high levels of objective knowledge and therefore must resort to extrinsic cues requiring less specific knowledge, such as price and COO as indicators of quality. Moreover, comparatively high levels of self-confidence would indicate that opinions of quality, however they may be derived, are likely to be defended. However, the information or knowledge used to form this opinion or expectation may be flawed and lead to an inaccurate assessment.

5.5.1 Needed changes to questionnaire (pilot)

All measures used in the questionnaire satisfied tests for internal and external validity, confirming their application in subsequent stages of the research. Instruments measuring knowledge and self-confidence remained unaltered, as did the conjoint analysis fractional factorial design comprised of 9 design and 2 hold outs profiles (per product) testing a 3 attribute (COO, price and fat/acid) by 3 level configurations. However, significant changes were made to the next version of the questionnaire in terms of layout and the order of the various parts. Enhancements were also made to

the appearance and presentation of the questionnaire in order to address respondent boredom and communicate a sense or importance to the tasks. The redesign of the questionnaire was supported by a comprehensive respondent briefing explaining the absence of local products in the design. Future participants needed to be reassured that assessing foreign sourced goods does not suggest that the researcher or respondent 'support' them over Australian wines and cheeses. This was scripted for inclusion in the methodology used in the sensory experiments. Further, it was obvious that a comprehensive briefing be held with each group participating in the taste test experiments to overcome potential resistance and hostility towards foreign sourced products. These changes and improvements are discussed in the next section.

6 Sensory experiment methodology

6.1 Introduction

Chapter 5 provided an overview of methodological aspects common to all quantitative data components of the study as well as the results of the conjoint analysis pilot survey. An overview of the rationale underpinning the methodology used to conduct the sensory experiments is provided in this chapter.

6.2 Sample (sensory)

The tasting experiments were conducted at the sensory laboratory (Waite Campus) at the University of Adelaide during the months of April and May 2006. Participants were recruited from students undertaking evening classes at TAFESA City Campus, excluding those that had participated in the pilot study (Appendix 5 – Information pack and registration form). In addition, members of the South Australian Canine Association and members of the general public were also invited to take part during a 3 day dog show held at the Wayville Showgrounds, Adelaide, South Australia in March 2006. The third strategy used to increase participation was a broadcast email invitation and electronic registration form (identical to the printed version), sent to all staff members of the TAFESA Southern Region.

The 'info pack' provided contained some background information about the study and a registration form. The registration form showed a schedule of tasting times and people were asked to submit two different times to attend tasting 'sessions', nominating first and second preferences. This allowed for some flexibility in scheduling if a first choice was not available. The next step was to return the registration form (by mail via the reply paid envelope supplied or electronically via email). During the month of March 2006, registrations were recorded and respondents allocated and confirmed to a

specific tasting time (Appendix 6 – Tasting registration spreadsheet and respondent confirmation notice). Due to the need for respondents to travel to the sensory laboratory and the extended time that would be required to take part in the experiment, a cash incentive of $30 per person was offered. The payment was made to each individual upon completion of the self-administration of a questionnaire measuring knowledge and self-confidence and the taste testing experiment. In total 263 respondents participated across 43 taste testing sessions conducted in April and May of 2006. The sensory laboratory consisted of 9 individual tasting booths, with the capacity to accommodate 1 or 2 additional respondents in the preparation area if required. Each session lasted approximately 2 hours and included between 4 and 11 respondents.

6.3 Data collection instrument (sensory)

Upon review of the data and respondent feedback obtained from the pilot study, further meetings were held with industry experts to review and improve the questionnaire content and design. The fractional factorial orthogonal design developed for the pilot study was used again in this stage of the research, but changes were made to some attributes and levels. For example, the price levels for both products were altered to better reflect current consumer market characteristics. Brie was used in the taste testing experiments rather than camembert to take advantage of products that were more cost effective, easily available and of 3 distinct and progressive levels of objective quality. Also, a number of changes were made to the questionnaire layout and appearance to address issues identified as problematic in the pilot study. These included potential respondent ill will, boredom and fatigue. Amendments were also made to facilitate the experimental procedures. These modifications are discussed in detail in this chapter.

6.3.1 Intrinsic and extrinsic cues – wine

Wine price levels were revisited following discussions with Mr. Jim Smith (wine expert) and a perusal of current wine prices at retail outlets. Consequently, the decision was made to maintain the lowest price of $6.00 per bottle, to increase the mid-priced option slightly to $16.00 and to increase the premium price above the threshold of $50.00 to $53.00 (all for 750ml). The countries chosen to represent the various levels of quality were unchanged from the pilot study questionnaire. In order to diminish objective quality, the Chapel Hill unwooded chardonnay was treated with tartaric acid. To represent 'above average' acidity, 0.5 grams of tartaric acid was added to each liter of chardonnay and 1.0 grams was added for 'high acid' (Baldy 1993). Table 6.1 illustrates the selected attributes and levels and Table 6.2 illustrates the modified SPSS fractional factorial design. In order to confirm that consumers could, first, discriminate between the unaltered, acidic and very acidic wine and second, rank the quality levels appropriately, further validation tests were done.

6.3.2 Triangle and paired sample tests

Research shows that consumers differ in their ability to accurately and reliably discriminate between product samples that differ in quality (Roper 1969; Buchanan, Givon et al. 1987). As a result, testing methodologies such as the 'triangle test' and 'paired sample test' have been developed to differentiate between participants according to their taste sensitivity, product assessment reliability and to establish consumer sensitivity thresholds (Roper 1969; Puisais and Chabanon 1974; Buchanan, Givon et al. 1987; Seaman, Hughes et al. 1993; Gatchalian 1999). Taste panel training has also been used to enhance consumer objective product knowledge and increase respondent accuracy in evaluation of intrinsic product quality (Seaman, Hughes et al. 1993).

However, in this research, respondents have not been coached, or trained, to enhance their knowledge of wine or cheese. Nor have they been tested to establish their natural abilities to differentiate between product samples. These potential respondent limitations are not relevant in this study as the researcher is not attempting to quantify consumer sensitivity levels or identify, specifically, which product profile is considered superior in direct comparison to any other. Rather, the purpose of the study is to test the relationships identified between the variables shown in Figure 3.1. Furthermore, typical consumers in the market place do not receive formal training or undergo sensitivity tests prior to passing judgments on the products they buy. This experiment seeks to investigate the opinions of 'ordinary shoppers' and to quantify the respective influence of extrinsic cues on assessed product quality as determined through their sensory evaluation. Therefore, product training, sensitivity and reliability tests are not formally incorporated into the methodology for the taste test experiments. However, it was critical to ensure that consumers could differentiate between the acid levels and could rank the treated and untreated wines in the correct order of objective quality; therefore, triangle and paired sample tests were conducted for these purposes.

In the first of these tests, a convenience sample of 6 volunteers participated in triangle taste testing (Buchanan, Givon et al. 1987). This was used to confirm that the different manipulations in taste were above usual sensitivity thresholds. Participants were given 3 samples of wine whereby 2 treatments were the same and 1 was different. Respondents were not asked for judgments regarding the quality of the samples, but merely to identify the 'odd' one that didn't taste like the other 2. A rotation of samples containing all 3 levels of acid was done to ensure that all combinations were tested, with participants cleansing their palates with water and dry biscuits between tasting. In each case, respondents had little difficulty identifying the one sample in 3 that was different.

In the second test, a sample of 9 volunteers was recruited by convenience to undergo the 'paired sample' testing procedure. The 3 levels of wine were in plain glass receptacles marked Wine 127 (untreated – good quality), Wine 263 (0.5 grams acid – average quality) and Wine 438 (1.0 grams acid – poor quality); random coding was used to label the wine so that no order or rank was implied for any particular sample. Respondents were each given 2 samples of 30ml of wine, and asked to report which was their 'preferred' sample of the pair (Roper 1969; Buchanan, Givon et al. 1987). Respondents were permitted to taste across the samples if they wished, but were not permitted to discuss their opinions with others. Again, the tasting panel was instructed to cleanse their palates with water and a dry biscuit before repeating the test a second and a third time with different pairs of samples. A rotation of combinations amongst the group meant that each person tasted each combination. Analysis of results showed that respondents considered the unaltered wine to be 'most preferred' as compared to the other 2, with the wine containing 0.5 grams of acid preferred over the higher acid treatment. Feedback from the panel showed that only the unaltered wine was found consistently to 'taste good', although some respondents 'didn't mind' the wine where 0.5 grams of acid had been added, indicating either a higher sensitivity threshold to acid or a liking for sharper and sourer tasting products. However, descriptors given for the samples containing 1.0 grams of acid included 'Sour!' 'Vinegar', 'Salad Dressing' and 'Foul!'. These results confirmed the acid levels chosen to be relatively easy for consumers to distinguish from each other and to effectively represent 3 differing and progressive levels of objective wine quality. Tables 6.1and 6.2 illustrate updated attribute levels and fractional factorial design. In order to eliminate any inference of rank or order, random numbers were also assigned to all sample profiles.

Table 6.1 Specification of chardonnay attributes and levels

Attribute	Cue type	Levels
COO	extrinsic	France U.S. Chile
Price per 700ml bottle	extrinsic	$53.00 $16.00 $ 6.00
Acid level	intrinsic	Untreated + 0.5 gram tartaric acid per liter + 1.0 gram tartaric acid per liter

Table 6.2 Fractional factorial design chardonnay

Profile	COO	Price	Acid level	Status
253	France	$16.00	Untreated	Holdout
582	U.S.	$ 6.00	Untreated	Holdout
481	Chile	$16.00	+ 1.0 gram	Design
696	France	$ 6.00	+ 1.0 gram	Design
595	U.S.	$16.00	Untreated	Design
924	Chile	$53.00	+ 0.5 gram	Design
152	U.S.	$ 6.00	+ 0.5 gram	Design
823	France	$53.00	Untreated	Design
494	Chile	$ 6.00	Untreated	Design
950	France	$16.00	+ 0.5 gram	Design
279	U.S.	$53.00	+ 1.0 gram	Design

6.3.3 Intrinsic and extrinsic cues - cheese

When sourcing cheese products for the experiment, it was discovered that brie cheese (a soft cheese with a mould rind very similar to camembert) could be purchased in 3 equally discriminate fat levels; full cream, double cream and triple cream. By using these products, a repeat of the 'halo' effect seen in the pilot data towards the 50% reduced fat cheese could be avoided (Hamilton, Knox et al. 2000). Advice from the supplier confirmed the full cream brie as a very economical 'no brand' product of the lowest quality available in bulk. The double cream brie put forward was reasonable

quality product imported from France and the triple cream brie was of excellent quality and produced in the Margaret River region of Western Australia. Further to discussions with the cheese wholesaler, it seemed logical to change the price levels accordingly and use the actual recommended retail prices per kilo charged for these particular cheeses as external validity is improved when market conditions are replicated in the experimental design (Hair, Anderson et al. 1995). The countries used in the pilot to represent varying quality levels were maintained unchanged. Table 6.3 illustrates the attributes and levels and Table 6.4 illustrates the fractional factorial design; as with the chardonnay product profiles random numbers were assigned to all brie samples.

Table 6.3 Specification of brie attributes and levels

Attribute	Cue type	Levels
COO	extrinsic	France Canada Argentina
Price (per kilo)	extrinsic	$69.95 $49.95 $28.95
Fat	intrinsic	Triple cream Double cream Full cream

Table 6.4 Fractional factorial design brie

Profile	COO	Price	Fat level	Status
810	France	$28.95	Full cream	Holdout
139	Argentina	$28.95	Triple cream	Holdout
367	Canada	$69.95	Full cream	Design
266	Canada	$28.95	Double cream	Design
709	France	$49.95	Full cream	Design
380	Argentina	$69.95	Triple cream	Design
735	France	$28.95	Triple cream	Design
393	Argentina	$28.95	Full cream	Design
621	France	$69.95	Double cream	Design
178	Canada	$49.95	Triple cream	Design
507	Argentina	$49.95	Double cream	Design

6.3.4 Change of rating scale 'anchors'

Review of the questionnaire design also included re-examination of the 'anchor points' for the metric scale used by respondents to rate quality. This included an exploration of possible alternative descriptors of quality, as defined for this research. In the pilot study, 'highly desirable' versus 'highly undesirable' were used and while consumers may 'desire' high quality and thereby establish a link between the two terms, pilot data results indicated this could not be assumed. In fact, many respondents seemed to experience conflict when considering the term 'desirable' in association with foreign products. For them, finding a foreign product 'desirable' is akin to showing disloyalty to Australian producers. As cited in chapter 5, this reaction was foreshadowed in the focus groups where some individuals voiced 'feeling guilty' even tasting foreign wines and others indicated they had never before sampled non-Australian wines or cheeses and had no intention of doing so. In light of this, it is understandable that some Australian consumers would not find foreign wines or cheeses of any quality 'desirable', hence the required link between 'quality' and 'desirability' cannot be assumed. For these consumers, the rating given with these anchor points is a reflection of personal values rather than an assessment of objective quality. In this research, it was critical that respondents rate profiles according to objective 'quality' criteria: as an impersonal judgment; where the term only describes product superiority or excellence, devoid of moral considerations or behavioral assumptions, rather than a direct indication of buying intention (Zeithaml 1988). Therefore it was deemed necessary to change the anchor points to 'low quality' versus 'high quality' in the sensory experiment questionnaire. Figures 6.1 and 6.2 show examples of chardonnay and brie sample profiles respectively.

Figure 6.1 Example of wine product profile (sensory)

Chardonnay 253									
Produced in	France								
Retail Price	$16.00								
Low Quality									**High Quality**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Figure 6.2 Example of cheese product profile (sensory)

Brie 810									
Produced in	France								
Retail Price	28.95 per kilo								
Low Quality									**High Quality**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

6.3.5 Knowledge and self-confidence

The scales used to measure subjective knowledge and self-confidence remained unchanged. The objective knowledge test for wine was also unaltered; however, with the change from camembert to brie, slight changes to the cheese test were made to reflect the different product. As these soft mould cheese varieties share many common attributes and characteristics, the alterations were minimal involving some modifications in terminology and swapping the variety name ‘camembert’ to ‘brie’ where necessary.

6.3.6 Changes to questionnaire layout and format

It was considered important to communicate to participants that their opinions had real value and that by taking part in the experiment they were making an important contribution to the study. This strategy was used to encourage honest responses and prolonged, focused attention to the tasks. It was apparent from participant feedback that, by receiving payment, many felt they had 'taken on a job' and, as a result, were taking the experiment quite seriously.

The questionnaire used for the sensory experiment incorporated extensive instructions for respondents, supported by a detailed and scripted briefing to each group. Completion of various parts of the questionnaire was separated by changes in location providing needed breaks in concentration. A 'booklet' on A5 paper (landscape) was printed in color, spiral bound and decorated with wine, grape and cheese graphics to make it more attractive and interesting. The layout allowed each profile to be presented on its own page, consistent with the provision of individual samples for tasting. Using this format reduced the risk of respondent exposure to descriptions of samples not yet assessed, reducing carryover effects. In order to minimize fatigue and desensitization of the palate, wine and cheese samples were presented in a mixed order (Schifferstein 1996). This methodology, in addition to random numbering of profiles, makes it more difficult for respondents to anticipate the attributes of the next sample or accurately assess how many tasks they have already completed. Participants were also provided with fresh water and dry biscuits and instructed to cleanse their palate between samples.

6.3.7 Group briefings

Prior to commencing the experiment, a strict protocol of briefing and discussion took place. Each group was assembled in a meeting room where the researcher provided

introductions and background information on the study. The group was told about the format of the questionnaire booklet and the type and number of products they would taste. As each section of the questionnaire was described, information regarding when respondents were to stop and wait for further instructions was provided. During this briefing, a scripted outline describing the sensory laboratory environment was communicated and questions from the group were encouraged. While the setting was somewhat formal, due to the small number of participants in each group the atmosphere was kept friendly and a relaxed tone was encouraged.

A critical aspect of the briefing involved communicating the rationale behind the absence of Australian products in the experiment. It was confirmed with respondents that Australian wine (in particular) is certainly what most Australians consumers prefer and that is was for this reason that local wines couldn't be used. Australian consumers will naturally have specific local wine and cheese brands they buy and prefer and this extensive product knowledge results in a bias detrimental to achieving objective responses. Therefore, it was desirable to use foreign products unfamiliar to Australian consumers in order to prevent this from happening. Respondents were assured that the research was not being conducted to gain market intelligence that would assist in bringing foreign products to Australia and was not, in any way, a reflection of support for foreign products over Australian goods.

Following this discussion, questions were taken and participants were given their booklets and required to sign the release/consent form. They then completed the self-confidence and subjective knowledge scales while still in the meeting room. When everyone had answered these sections, they moved through to the individual sensory booths to complete the tasting component. As individuals finished tasting their samples (each person working at their own pace), they returned to the meeting room and completed the objective knowledge tests and provided their demographic details. At

this time the researcher met with respondents again, asked for feedback, distributed the cash incentive, answered questions and thanked each person individually for taking part. The sections of the amended questionnaire are described in Figure 6.3 below and a copy of the questionnaire is provided in Appendix 7.

Figure 6.3 Amended questionnaire structure:

1. **Front Cover** Survey information, date, time and session number
2. **Research information and participant release/consent form**
3. **Part 1.** a) Self-confidence scale
   b) Subjective knowledge chardonnay and purchasing patterns
   c) Subjective knowledge brie and purchasing patterns
   d) Instruction to close their booklet and wait to go into the sensory lab
4. **Part 2.** a) Information and instructions regarding tasting samples
   b) Chardonnay and brie samples
5. **Part 3.** a) Objective knowledge questions (chardonnay)
   b) Objective knowledge questions (cheese)
   c) Demographics

6.3.8 Conducting the experiment

In a typical testing day (comprised of 3 sessions each, scheduled 3 hours apart) on average over 275 samples each of chardonnay and brie were prepared. In order to ensure that product quality was consistent, trays of chardonnay samples were poured less than 1 hour before tasting and each glass was covered with a plastic 'lid' and stored in a refrigerated room. In order to maintain consistency in cheese samples cheeses were picked up daily from the supplier, with each cheese examined for consistent ripeness each time. Brie samples were cut approximately 2 cm square, with the mould crust only on one side. Samples were stored in sealed containers in the

refrigerator until a few minutes before each tasting session. Once on the individual sample trays, the brie was covered loosely by moisture proof paper to ensure the cheese did not become dry. Each respondent sat in an individual tasting booth and signaled their readiness for a sample by using a switch inside the booth. The switch illuminated a light in the kitchen preparation area specific to that tasting booth and by sliding a small door open at counter height, a new sample was swapped for the empty plate or glass that held the previous sample. A tasting schedule posted over each booth ensured that samples were presented in the correct order. The following selection of photos provides illustrations of product sample preparation and experimental procedures. Figures 6.4 through 6.11 provide illustrations of sample preparation and procedures.

Figure 6.4 Numbering wine glasses



Figure 6.5 Pouring wine samples



Figure 6.6 Treated and untreated chardonnay



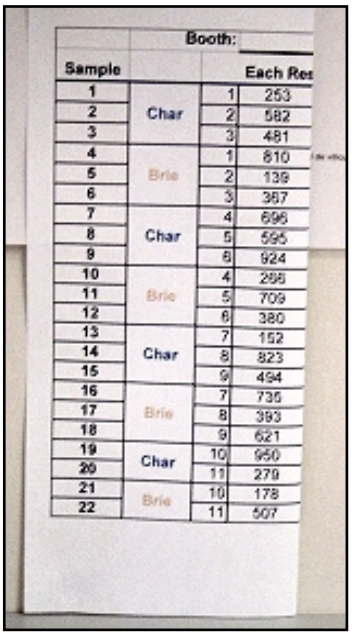
Figure 6.7 Preparing brie samples



Figure 6.8 Preparing trays for a tasting session



Figure 6.9 Sample order



Booth:			
Sample			Each Res
1	Char	1	253
2		2	582
3		3	481
4	Brie	1	810
5		2	139
6		3	367
7	Char	4	696
8		5	595
9		6	924
10	Brie	4	266
11		5	709
12		6	380
13	Char	7	152
14		8	823
15		9	494
16	Brie	7	736
17		8	393
18		9	621
19	Char	10	950
20		11	279
21	Brie	10	178
22		11	507

Figure 6.10 Tray with samples



Figure 6.11 Experiment in progress



6.4 Validation of research instruments (sensory)

6.4.1 Subjective knowledge and self-confidence scales

The initial step in the validation process was to test for internal reliability through determination of the Cronbach Alpha coefficients for each measure. These are shown in Table 6.5 with coefficients ranging from 0.718 to 0.909 indicating sound reliability.

Table 6.5 Reliability coefficients of scales (sensory)

Reliability coefficients		
Subjective knowledge chardonnay	N of items = 8	Alpha = 0.909
Subjective knowledge brie	N of items = 8	Alpha = 0.899
Self-confidence	N of items = 10	Alpha = 0.718
N of cases = 263		

The respective percentages of variances explained (for all factors with eigenvalues > 1) are 55.9% (self-confidence), 61.7% (subjective knowledge chardonnay) and 63.4% (subjective knowledge brie). For subjective knowledge (both products) a 1 factor solution was achieved with a relatively high percentage of total variance explained, consistent with results from previous studies (Flynn and Goldsmith 1999; Malhotra, Hall et al. 2002). A higher overall percentage of variance explained for the self-confidence scale items was found for this sample of respondents compared with the pilot study data, after a 3 factor rotated solution (Table 6.6).

Table 6.6 Construct reliability for scales (sensory)

Scale	Cum % of variance explained	No of factors with eigenvalues >1
Subjective knowledge chardonnay	61.7	1
Subjective knowledge brie	63.4	1
Self-confidence	55.7	3
N of cases = 263		

Table 6.7 Self-confidence factors (sensory)

Rotated component matrix – self-confidence		Component % of total variance explained		
		1 29.94%	2 15.86%	3 10.12%
4.	In group discussions, I usually feel my opinions are inferior	**.771**		
5.	I don't make a very favorable first impression on people	**.712**		
6.	When confronted by strangers, my first reaction is shyness and inferiority	**.652**		
7.	It is extremely uncomfortable to go to a party wearing the wrong thing	**.514**		
9.	When in a group I rarely express my opinion for fear of being laughed at	**.712**		
1.	I feel capable of handling myself in most social situations		**.653**	
2.	I seldom fear my actions will cause others to have a low opinion of me		**.802**	
3.	It doesn't bother to enter a room where others already talking		**.716**	
8.	I don't spend much time worrying about what people think of me			**.702**
10.	I am never at a loss for words when I am introduced to someone I don't know			**.737**
Principal Component Analysis. Varimax rotations with Kaiser normalization (rotation in 4 iterations)				

As with the pilot group, the factors in the self-confidence scale appear to be linked to coding in that the first factor comprised all the reverse coded items. The second and third factors comprised the remaining 5 statements. Successive testing was undertaken, whereby items in the first factor were tested in isolation, followed by only items in factor 2, and lastly, with the combined items from factors 2 and 3. In each case, a 1 factor solution was achieved; with varying levels of total variance explained and reliability (see Table 6.8). The solution comprised of all positively coded items accounted only for 42% of total variance explained and while the scale comprised of items 1 – 3 provided a stronger result with 58.6%, the Cronbach Alpha coefficients in both cases were below the acceptable reliability threshold.

Table 6.8 Reliability tests of self-confidence items (sensory)

Items	% of variance explained	Cronbach Alpha
4, 5, 6, 7, 9	47.8	0.716
1, 2, 3	58.6	0.620
1, 2, 3, 8, 10	42.3	0.620
N of cases = 263		

As discussed in the section detailing the pilot study results, these scale items explore an individuals' reaction to potentially stressful social situations and investigate their degree of anxiety in terms of managing their personal impressions on others. Once again, the lowest scoring items (on average) in the scale were item 7 (related to wearing the wrong thing to a party) and number 10 (regarding never being at a loss for words when meeting a stranger). Standard deviations for items 7 and 10 were also high in comparison to the statistics for other statements, indicating a wider spread in the data. It appears that, typically, individuals are quite confident in most of the social circumstances described; however, these two particular situations are perceived as intimidating for some (Table 6.9). If so, scores for these statements may contribute significantly to discriminating between respondents with high and low levels of self-confidence. Ideally then, the scores for one or both items should be retained in the final determination of items used to measure self-confidence. The next sequence of test involved combining each of the remaining 8 items in conjunction with items 7 and 10 to determine if a robust, interpretable and reliable outcome could be achieved. Resulting solutions commonly showed low percentages of total variance explained (under 47%) and correspondingly low (< 0.7) Cronbach Alpha coefficients.

Table 6.9 Descriptive statistics self-confidence items (sensory)

Item	Mean	SD
1	7.69	1.149
2	6.56	1.174
3	6.89	1.742
4	6.97	1.927
5	6.78	1.936
6	6.41	2.158
7	4.94	2.273
8	6.10	2.017
9	6.61	2.257
10	5.77	2.231
N = 263		

The purpose of determining self-confidence levels was to investigate the influence of self-confidence on product cue usage, and this required respondents to be segmented according to high and low self-confidence levels. Therefore, a comparison was made between mean scores of positively coded items, negatively coded items and all items together to investigate differences in mean scores between these groupings (Table 6.11). The average score for negatively coded items was slightly lower than for the other item groupings; however, further testing showed the difference not to be significant (Table 6.10). However, looking at the minimum and maximum scores, responses to the negatively coded items clearly represented a wider range in the data.

Table 6.10 Comparison of item groupings (sensory)

Items	Mean	SD	Min	Max
Negative	6.341	1.450	2.60	9
Positive	6.602	1.141	3.40	9
All	6.472	1.047	3.30	9
N = 263				

Table 6.11 Significance testing of average item scores

Test Statistics Self confidence items (grouped) [a]

N	263
Chi-Square	1.357
df	2
Asymp. Sig.	.507

a. Friedman Test

Interpreting factor analysis results requires the application of commonsense and a pragmatic approach (Malhotra et.al. 2002). The scales employed must be interpretable and meet or exceed validity testing requirements. The solution provided by retaining all 10 items meets required thresholds for Cronbach Alpha coefficients and KMO and Bartlett's tests, and also accounted for a relatively high cumulative percentage of variance explained. However, overall the intercorrelation coefficients between all items were relatively low and sometimes insignificant (See Appendix 4 – tables A 22, A 23). Moreover, the 3 factors produced were not easily interpreted as separate dimensions of the self-confidence construct. Conversely, using only the negatively coded items produced a 1 factor solution (47.2% of variance explained) with a stronger intercorrelation matrix where all coefficients were significant. Further, there was no significant cross loading across items with the subjective knowledge scales, demonstrating divergent reliability. Additionally, results of KMO and Barlett's tests met or exceeded acceptable reliability thresholds (See Appendix 4). Based on these results, the decision was made to delete all positively coded items and to compute the mean of the negatively coded items as the single measure of respondent self-confidence. This allowed the retention of item 7 and represented a reasonable compromise in terms of overall loss of data.

6.4.2 Objective knowledge tests

As with the pilot, respondent feedback was again positive in relation to these tests, with no evidence to suggest that internal or external validity had been compromised. The completion of these tests was done under supervision, with the researcher available if help or clarification was needed. Due to the opportunity to debrief respondents at the completion of the questionnaires, the researcher found that many participants had become quite involved and were very interested to know how they had scored. Consistent with the pilot study figures, levels of objective knowledge were generally lower than anticipated.

6.4.3 Conjoint analysis fractional factorial design

Table 6.12 illustrates the results of tests of internal validity for computed part worths and attribute average importance for the chardonnay and brie profiles assessed. High values for Pearson's r (and resulting r^2) and Kendall's tau statistics indicate that the data is a good fit for the application.

Table 6.12 Conjoint analysis internal validity tests (sensory)

	Chardonnay	Sig.	Brie	Sig.
Kendall's tau (design)	1.000	.0001	0.833	.0009
Kendall's tau (hold outs)	1.000	.0000	1.000	.0000
Pearson's r	0.998	.0000	0.956	.0000
R^2	0.996	.0000	0.913	.0000
N = 263				

6.5 Summary

This chapter has provided a detailed account of the methodology employed in conducting the sensory experiments, including results of relevant validation tests conducted on measurement and analytical instruments. Next, chapter 7 provides the results of the analysis specific to the data collected from these experimental procedures.

7 Sensory data analysis results

7.1 Introduction

The previous chapter provided a detailed description of the methodology used to conduct the sensory experiment and results of validation tests pertinent to the measurement instruments used. This chapter provides the results of subsequent data analysis and a discussion of their implications.

7.2 Sample profile

A sample of 263 respondents took part in the sensory experiment, each providing a usable questionnaire. The sample profile, as compared to demographics describing the general population of Australia, is shown in Table 7.1. The sample is found to correspond with the population in terms of gender balance, but to exhibit some variations in comparison to corresponding age classifications. As with the pilot sample, the age skew is not expected to limit results.

Table 7.1 Profile demographic profile (sensory)

Gender	%	ABS %	Age	%	ABS %
Male	49.0	49.8	18 yrs to 25 yrs	13.7%	11.5
Female	51.0	50.2	26 yrs to 35 yrs	19.0%	14.2
			36 yrs to 45 yrs	18.3%	15.0
			46 yrs to 55 yrs	22.4%	13.5
			Over 55 yrs	26.6%	21.9
Household income	**%**	**ABS %**	**Level of Education**	**%**	**ABS %**
Less than $25, 000	16.3%	27.7	High school certificate	27.4%	30.0
$25,000 to $45,000	16.3%	26.5	Diploma / trade	27.0%	21.8
$46,000 to $65,000	22.8%	16.8	Bachelor's degree	24.3%	9.7
Over $65,000	44.5%	29.0	Post graduate degree	21.3%	3.2

Source: (ABS 2003 - 04) Household Characteristics (No. 65230)

7.3 Conjoint analysis results (sensory)

7.3.1 Chardonnay

Table 7.2 shows the average importance of chardonnay attributes tested and the individual utilities for each attribute level. As found in the pilot, respondents were able to discriminate between levels of objective quality and to rank the intrinsic cue levels appropriately. While both price and COO were found to be more influential in affecting quality perceptions than experienced acidity, the average importance of price to respondents renders other product cues somewhat extraneous comparatively. France was believed to provide the highest quality chardonnay, and again, little difference was found between opinions of the U.S. and Chile. The results relating to wine price levels are consistent with the literature, showing that a particularly low price is likely to be associated with correspondingly low quality, and conversely, a high price with higher quality (Zeithaml 1988; Jover, Montes et al. 2004). The positive utility given the highest price differs from the pilot survey analysis where the highest price was deemed 'undesirable'. It appears respondents in this stage of the study have assessed the profiles according to perceived quality rather than a personal preference or 'desire', validating the change of anchor points used in the questionnaire.

Table 7.2 Summary of part worths and utilities chardonnay (sensory)

Ave imp	Utility	Level	Attribute
15.08	-0.1383	Chile	**COO**
	-0.1014	U.S.	
	0.2396	France	
71.81	-0.8831	$ 6.00	**Price**
	-0.0365	$16.00	
	0.9177	$53.00	
13.10	0.1187	Average	**Acid**
	0.0908	Above average	
	-0.2095	High	
100%			N = 263

Table 7.3 illustrates the minimum, maximum and average total utility values of each profile tested, sorted from the highest total average value to the lowest. Those profiles combining the most favored attribute levels achieve higher average utility scores. The powerful influence of price on perceptions of taste is clear with profiles ranked first by price, then by the combination of price and COO/taste.

Table 7.3 Average values per profile chardonnay (sensory)

Profile	Attribute levels			Min	Max	Mean	SD
823	France	$53.00	Average	1.22	10.89	7.09	1.98
924	Chile	$53.00	Above average	0.89	10.89	6.69	1.93
279	U.S.	$53.00	High	0.00	10.56	6.49	1.92
253	France	$16.00	Average	0.89	10.33	6.07	1.76
950	France	$16.00	Above average	0.22	10.44	5.96	1.91
595	U.S.	$16.00	Average	0.89	9.67	5.79	1.77
481	Chile	$16.00	High	0.33	9.11	5.43	1.71
582	U.S.	$ 6.00	Average	-1.00	11.00	5.02	1.97
494	Chile	$ 6.00	Average	0.00	11.11	4.98	1.97
696	France	$ 6.00	High	-0.22	10.11	4.96	1.90
152	U.S.	$ 6.00	Above average	-0.11	10.78	4.92	2.08

N = 263

7.3.1.1 Chardonnay profiles and likelihood of purchase

Table 7.4 shows the average utility value for each profile segmented by those that would consider buying the product tasted and those that would not. This analysis was done to investigate the connection between opinions of quality and likelihood of purchase. With the exception of the first profile, there are significant differences between the mean scores according to purchase intention, suggesting that the assessment of quality is positively linked to likelihood of purchase. Those subjects who considered the samples to be of higher quality were more likely to consider buying the product than those who did not. These finding are consistent with the literature and expectations (Zeithaml 1988). Given that the extrinsic cues described largely overpowered taste, this exploratory analysis has significant potential implications for the marketing of wine products.

Table 7.4 Average chardonnay profile values by purchase intentions

Profile	Yes		No		Mann Whitney U	Z	Sig.
	Mean	SD	Mean	SD			
253	6.08	1.17	6.03	1.11	7866.00	-0.06	.947
582	5.36	1.75	4.80	2.08	6893.00	-2.14	.032
481	6.52	1.32	4.69	1.55	3103.00	-8.89	.000
696	6.20	1.47	3.79	1.47	2116.00	-10.53	.000
595	6.88	1.19	4.74	1.55	2301.00	-10.19	.000
924	7.85	1.07	6.15	1.99	3596.00	-6.78	.000
152	6.42	1.42	3.54	1.56	1533.50	-11.48	.000
823	8.12	1.29	6.49	2.02	4139.50	-6.67	.000
494	6.16	1.63	3.81	1.54	2470.00	-9.91	.000
950	7.06	1.39	4.70	1.61	2180.00	-10.26	.000
279	7.50	1.27	6.09	1.94	4143.50	-5.60	.000

N = 263

7.3.1.2 Knowledge and self-confidence levels

Consistent with our pilot study results, the level of objective knowledge amongst this group was generally found to be low. The data shows respondents achieving a mean score of only 4.71 correct answers out of the 14 multiple choice questions asked in the objective knowledge test, with 91% of respondents scoring 7 correct answers or less. Scores for subjective knowledge imply that these respondents do not see themselves as chardonnay 'experts' but have still overestimated their expertise considerably (Table 7.5).

Table 7.5 Mean scores for knowledge and self-confidence (sensory)

	Mean	SD
Subjective knowledge chardonnay	4.55	1.72
Objective knowledge chardonnay (standardized)	2.93	1.46
Self-confidence (not product specific)	6.34	1.45
N = 263		

7.3.1.3 Influence of knowledge and self-confidence

The respective influence of knowledge and self-confidence on cue usage was investigated further using a staged approach. First, correlation coefficients were calculated to quantify any significant relationships between the dependent variables of objective knowledge, subjective knowledge and self-confidence and the independent variables of average importance placed on COO, price and acid. Following this, correlation coefficients were computed for the independent variables and attribute level utility values to reveal any significant relationships specific to each. Tables 7.6 and 7.7 provide the results of the analysis using the sample as a whole. As many variables failed tests for normality, non parametric methods were used (See Appendix 3 – Table A 2).

Table 7.6 Spearman's rho – Average importance chardonnay

		Objective knowledge Chardonnay	Subjective knowledge Chardonnay	Self confidence	Ave Importance COO	Ave Importance Price
Objective knowledge Chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge Chardonnay	Correlation Coefficient	.516	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.077	.138	1.000		
	Sig. (2-tailed)	.213	.025	.		
Ave Importance COO	Correlation Coefficient	.004	.065	-.052	1.000	
	Sig. (2-tailed)	.948	.291	.404	.	
Ave Importance Price	Correlation Coefficient	.071	.051	-.033	-.573	1.000
	Sig. (2-tailed)	.250	.413	.593	.000	.
Ave Importance Acid	Correlation Coefficient	-.050	-.103	.082	-.228	-.599
	Sig. (2-tailed)	.423	.096	.184	.000	.000

N = 263

There are no significant relationships between knowledge (either type) or self-confidence and the average importance placed on COO, price or acid. A significant relationship does, however, exist between objective and subjective knowledge (0.516). This is not surprising as individuals would have some cognition of their own levels of knowledge, even if they are not entirely accurate. Further, product 'experts' are individuals that possess both types of knowledge at high levels, therefore the

development of objective knowledge and subjective knowledge would occur simultaneously. There is also a weak (0.138) but significant relationship between subjective knowledge and self-confidence. This is also expected, as subjective knowledge is self-assessed, and those individuals who are highly self-confident would also be more likely to consider themselves 'knowledgeable'. The relationships between price, COO and acid are a reflection of the relative attribute and level 'trade-offs' made by consumers when scoring the product profiles. Hence, the effect of favoring one aspect (e.g. price) is to diminish the importance of another.

Table 7.7 Spearman's rho - Utilities chardonnay

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Objective knowledge Chardonnay	Correlation Coefficient	-.030	.043	-.028	.032	-.069	.036	-.012	.064	-.028
	Sig. (2-tailed)	.630	.489	.646	.604	.261	.563	.851	.300	.652
Subjective knowledge Chardonnay	Correlation Coefficient	-.101	.128	-.006	.012	.077	-.028	-.032	.066	.037
	Sig. (2-tailed)	.102	.038	.923	.849	.211	.655	.610	.289	.551
Self confidence	Correlation Coefficient	.038	.091	-.120	.107	-.024	-.104	.013	.017	-.012
	Sig. (2-tailed)	.542	.141	.051	.084	.696	.094	.832	.781	.850
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.519	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.562	-.337	1.000						
	Sig. (2-tailed)	.000	.000	.						
$6.00	Correlation Coefficient	-.160	.070	.136	1.000					
	Sig. (2-tailed)	.009	.257	.027	.					
$16.00	Correlation Coefficient	.116	-.112	-.030	-.383	1.000				
	Sig. (2-tailed)	.060	.071	.633	.000	.				
$53.00	Correlation Coefficient	.031	.018	-.069	-.688	-.344	1.000			
	Sig. (2-tailed)	.618	.777	.264	.000	.000	.			
Average	Correlation Coefficient	.136	-.075	-.117	-.030	-.093	.052	1.000		
	Sig. (2-tailed)	.028	.225	.058	.627	.132	.405	.		
Above Average	Correlation Coefficient	-.214	.166	.110	-.014	.072	-.020	-.436	1.000	
	Sig. (2-tailed)	.000	.007	.075	.818	.246	.748	.000	.	
High	Correlation Coefficient	.025	-.029	.016	.043	-.008	-.010	-.523	-.458	1.000
	Sig. (2-tailed)	.690	.635	.793	.487	.891	.868	.000	.000	.

N = 263

Table 7.7 shows the correlation matrix for the independent variables and the utility values for each attribute level. Only 1 significant correlation coefficient (0.128) was revealed, between subjective knowledge and wine from the U.S. This correlation must be considered somewhat cautiously given its isolated occurrence and its marginal significance. The significant inter-correlations found between the various levels of each

attribute are a reflection of the utility scores derived for each. For example, the $6.00 wine was not considered high quality whereas the $53.00 wine was; therefore, a relatively strong negative correlation (-0.7) existed between these two variables. Similarly, the untreated wine was considered better quality than the high acid wine and the moderate (-0.5) correlation coefficient is the outcome of this opinion.

Knowledge (both subjective and objective) may not exercise a strong influence on cue usage because the levels of subjective and objective knowledge are quite low overall. While low levels of knowledge can be expected to induce greater reliance on extrinsic cues when products are merely described, the analysis of the test results shows that the influence of extrinsic cues was not diminished even when low quality products were actually experienced. The apparently neutral effect of self-confidence is also unexpected given the healthy levels amongst the group and the greatly reduced objective product quality experienced when tasting some samples (e.g. high acid chardonnay). However, this may well illustrate consumer 'stubbornness' driven by ego as discussed in the literature, where a belief regarding an extrinsic cue (however misleading) will be supported regardless of actual experience (Bell 1967; Owens 1993). This 'stubbornness' is not only confined to those with high self-confidence. Indeed, Bell (1967) described low self-confidence individuals who relied on their beliefs regarding extrinsic cues as a form of 'security', when put under pressure for a decision.

To investigate this issue further, the sample was segmented between those with high and low levels of knowledge (objective/subjective) and self-confidence. Contrasting levels of reliance on cue types may be more obvious amongst those with more extreme scores specific to these characteristics. Discrimination between respondents was calculated according to quartile range values for each variable (Table 7.8). Respondents achieving scores in the lower 25% of the data distribution were deemed to be 'low' in knowledge (objective/subjective) and self-confidence while respondents

scoring in the highest 25% were considered to possess high levels. Those scoring in the mid range of the data array were eliminated from further testing. High and low segments per variable are obviously mutually exclusive; a respondent cannot possess high and low levels of the same characteristic. However, a respondent may be high in subjective knowledge and objective knowledge and even self-confidence, or low in all, or possess any combination of levels possible according to the rotation of characteristics and levels. Hence, the segmentation process did not exclude a respondent from being represented in both segments for the purposes of correlation testing. Preliminary cluster analysis was completed to determine if sufficiently homogenous segments existed within the sample where groups possessing similar levels across all 3 independent variables could be identified. However, testing with these clusters was not useful, as the influence of the respective individual characteristics was obscured in the results. Therefore, to gauge the degree of commonality across consumer characteristics, correlations for all 3 independent variables are included in each matrix (by segment) in order to quantify the degree of variable intercorrelation without losing the opportunity to measure the specific influence of each.

The average importance for each product attribute, and attribute level utilities, were calculated by 'high' and 'low' segment to allow comparison of results (correlation matrices for all segments can be seen in Appendix 8 – Tables A 34 through A 45). Summaries of the comparison of part worths for each segment are illustrated in this chapter along with results of independent sample testing (comparing average utility values by segment) to determine if significant differences existed between the groups.

Table 7.8 Quartile values for knowledge and self-confidence (chardonnay)

Percentiles	Subjective knowledge	Objective knowledge	Self-confidence
25th	3.13	3.00	5.20
50th	4.50	5.00	6.60
75th	5.88	6.00	7.40
N = 263			

7.3.1.4 Objective knowledge segments (chardonnay)

Table 7.9 Comparison of part worths and utilities objective knowledge

Attribute and level	High objective knowledge	Low objective knowledge
Ave Imp COO	**9.79**	**8.86**
Chile	-0.0151	-0.0274
U.S.	-0.0072	-0.0850
France	0.1123	0.1125
Ave Imp Price	**75.20**	**76.75**
$ 6.00	-0.8043	-0.8999
$16.00	-0.6162	0.0878
$53.00	0.8659	0.8121
Ave Imp Acid	**15.01**	**14.39**
Average	0.1268	0.1536
Above average	0.0797	0.0137
High	-0.2065	0.1674
	N = 70	N = 67
Pearson's r	0.994 sig. .000	0.997 sig. .000
Kendall's tau	0.944 sig. .000	1.000 sig. .001

Table 7.10 Utility comparison between high and low objective knowledge groups

Test Statistics - Respondents with High and Low Objective Knowledge Chardonnay (lab[a])

	Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Mann-Whitney U	3529.500	3542.000	3677.500	3602.000	3340.000	3547.000	3681.000	3508.500	3575.500
Wilcoxon W	7807.500	6863.000	7955.500	6923.000	7618.000	6868.000	7002.000	6829.500	7853.500
Z	-.599	-.561	-.148	-.378	-1.176	-.545	-.137	-.663	-.458
Asymp. Sig. (2-tailed)	.549	.575	.883	.706	.240	.586	.891	.507	.647

a. Grouping Variable: Grouped Objective Knowledge Chardonnay (sensory)

Results of correlation testing between the average importance of COO, price and acid and the independent variables according to high and low objective knowledge clusters revealed no significant relationships. Correlation analysis between attribute level utility values and knowledge and self-confidence for the low objective knowledge cluster revealed a significant and low (0.224) relationship between objective knowledge and the utility value for $53.00 and a low and negative (-0.228) between subjective knowledge and the utility value for U.S. For the high objective knowledge group, only 1 significant correlation was identified; a low and negative (-0.274) relationship between self-confidence and France (See Appendix 8 – Tables A 32 – A 35). While these weak relationships were revealed, the analysis failed to uncover a pattern of significant correlations with knowledge or self-confidence, only a repetition of the inter-knowledge and inter-attribute/level correlations found previously in testing the sample as a whole. Table 7.9 illustrates a comparison of summary of part worths for each group, showing slight variations in outcomes. However, a comparison of average utility values between the low and high knowledge groups shown in Table 7.10 demonstrates that there are no significant differences between values placed on the chardonnay product attributes, or their respective levels, between these groups.

7.3.1.5 Subjective knowledge segments (chardonnay)

Correlation matrices found illustrating the resulting coefficients between product attributes and consumer characteristics segmented according to high and low subjective knowledge show no significant relationships for either group. Again, results of testing with attribute level utility values found no pattern of significant relationships. However, for the high subjective knowledge group, 2 significant correlations were found between self-confidence and specific level utilities. The first is a moderate (0.363) and significant relationship with the U.S. and a low (0.241) and significant coefficient for the $6.00 utility. This indicates that higher subjective knowledge, supported by self-

confidence, can result in willingness to support a lower price and a CI which is less congruent with quality wine. However, the absence of any significant relationships with acid levels indicates that high subjective knowledge levels (alone or in conjunction with objective knowledge and self-confidence) do not significantly contribute to consumers' assessment of objective quality. The correlation matrix for the low subjective knowledge group also revealed 2 significant relationships. These are between subjective knowledge and the utility values for Chile (-0.334) and France (0.302) indicating a typical 'halo' COO effect in favor of France (CI highly congruent with quality wine) and against the South American country, as indeed would be expected from a group with little category knowledge (Han 1989) (See Appendix 8 – Tables A 36 – A 39).

Table 7.11 Comparison of part worths and utilities subjective knowledge

Attribute and level	High subjective knowledge	Low subjective knowledge
Ave imp COO	**11.11**	**17.67**
Chile	-0.1776	-0.0365
U.S.	0.0698	-0.2454
France	0.1079	0.2819
Ave imp price	**73.52**	**63.17**
$ 6.00	-0.9873	-0.8823
$16.00	0.0841	-0.1211
$53.00	0.9032	1.0033
Ave imp acid	**15.37**	**19.17**
Average	0.1558	0.2819
Above average	0.0841	0.0083
High	-0.2397	-0.2902
	N = 70	N = 67
Pearson's r	0.996 sig. .000	0.995 sig. .000
Kendall's tau	0.889 sig. .004	1.000 sig. .002

Table 7.11 shows the summaries of part worths for the high and low subjective knowledge groups. Whilst there is some variation between average utility values, subsequent testing showed these not to be significant (Table 7.12). These variations do, however, reveal that for those with low subjective knowledge, there is a wider range of opinions across attribute levels. Thus, this segment has been somewhat more

reactive to taste differences and more influenced by differing country images than the higher subjective knowledge group.

Table 7.12 Utility comparison between high and low subjective knowledge groups

Test Statistics - Respondents with High and Low Subjective Knowledge Chardonnay (lab)[a]

	Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Mann-Whitney U	2108.000	1786.000	2108.500	2307.000	2001.000	2265.500	2172.000	2009.000	2184.500
Wilcoxon W	4593.000	4064.000	4593.500	4792.000	4279.000	4750.500	4657.000	4287.000	4462.500
Z	-1.022	-2.411	-1.020	-.164	-1.483	-.343	-.746	-1.450	-.692
Asymp. Sig. (2-tailed)	.307	.016	.308	.870	.138	.732	.456	.147	.489

a. Grouping Variable: Grouped Subjective Knowledge Chardonnay (lab)

7.3.1.6 Self-confidence segments (chardonnay)

Correlation matrices illustrating the coefficients between the average importance for each product attribute and self-confidence levels showed no significant relationships between the dependent and independent variables for either the high or low self-confidence groups (See Appendix 8 – Tables A 40 – A 43).

For the high self-confidence group, two significant correlations emerged between subjective knowledge and the country utilities for Chile (-0.246) and the U.S. (0.371), similar to the analysis of the subjective knowledge segments. These correlations are consistent with the focus group results and the literature, whereby consumers are less likely to believe products from Chile to be high quality as compared to products from the U.S. or France. In the low self-confidence group, 2 isolated but significant correlations emerged between self-confidence and the COO utilities for Chile (0.285) and France (-0.354); representing an opposite opinion to those correlations discussed above. Whilst this cluster possesses the lowest levels of self-confidence, it appears that as levels increase amongst this group the probability of supporting Chilean (less congruent CI) wine increased, and support for French wine diminished. This result is more in line with expectations for the high self-confidence segment as opposed to this cluster. However,

it must be remembered that all the significant correlations reported here are relatively low, isolated, and that no readily interpretable pattern is apparent. For example, while correlation testing suggests that this group may fail to support French wine, the average utility value for France for this segment suggests the opposite (0.3397) (See Tables A 42 – A 45). Whereas the average utility value for France for the high self-confidence segment suggests a propensity towards a negative prejudice. Table 7.13 shows the utility comparison between segments and, indeed, the average utility for France between groups is the only significant result. The comparison of part worths and utilities generated results more in line with our expectations. The wide range of opinions produces divergent results between the groups for COO and acid. Those with high self-confidence correctly rated the high acid wine harshly, and paid the least attention to COO. Whereas the low self-confidence group relied much more heavily on COO, rated French wines particularly well and backed this up with strong reliance on the highest price when forming their opinions. Further, this was the only group to incorrectly believe the untreated wine was the poorest quality. However, irrespective of these varying opinions regarding acid and COO, for both groups price was the major contributing factor to quality assessment. These conjoint findings are tempered by the results of the Mann Whitney test for comparison of averages seen in Table 7.14, where only one utility comparison between groups was found to be significant and samples sizes are relatively small.

Table 7.13 Comparison of part worths and utilities self-confidence

Attribute and level	High self-confidence	Low self-confidence
Ave imp COO	**4.34**	**19.44**
Chile	-0.0422	-0.1984
U.S.	0.0578	-0.1413
France	-0.0156	0.3397
Ave imp price	**74.28**	**70.83**
$ 6.00	-0.8222	-0.9698
$16.00	-0.0689	-0.0984
$53.00	0.8911	1.0683
Ave imp acid	**21.39**	**9.72**
Average	0.2378	-0.2222
Above average	0.0178	0.1511
High	-0.2556	-0.1289
	N = 78	N = 58
Pearson's r	0.963 sig. .000	0.990 sig. .000
Kendall's tau	0.817 sig. .002	0.833 sig. .001

Table 7.14 Utility comparison between high and low self-confidence groups

Test Statistics - Respondents with high and low self confidence (sensory)[a]

	Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Mann-Whitney U	2099.500	1838.500	1792.000	1849.500	2108.500	1956.500	2125.000	2224.000	2174.500
Wilcoxon W	3810.500	3549.500	4873.000	3560.500	5189.500	5037.500	3836.000	5305.000	5255.500
Z	-.716	-1.867	-2.071	-1.817	-.676	-1.346	-.604	-.167	-.386
Asymp. Sig. (2-tailed)	.474	.062	.038	.069	.499	.178	.546	.867	.700

a. Grouping Variable: Grouped Self Confidence

7.3.1.7 Chardonnay summary

Results from the sensory experiment demonstrate the ability of COO and price to influence perceptions of quality, even in some instances, overwhelming sensory experiences. Surprisingly, whilst isolated significant correlation coefficients were found between the independent and dependent variables tested, no reliable pattern of strong relationships was found to exist. Comparison of attribute average importance and utility values between groups shows general differences in the range of opinions due to segmentation criteria. However, further testing found only 1 average utility value to be significantly different between high and low clusters. These outcomes are particularly

unexpected given the controlled nature of the experiment, where the usual distractions accompanying consumption were absent, minimizing respondents' distraction from the sensory experience.

7.3.2 Brie

As with wine, price was clearly considered the most important attribute contributing to perception of brie quality; however, these respondents acknowledged fat as more important than COO in forming their opinions (Table 7.15). Overall for the group the lowest quality brie (full cream) was found better than the triple cream brie; a result inconsistent with the literature or expectations (Hamilton, Knox et al. 2000). Where the wine sampled differed in taste only, the cheese samples also varied in texture due to differing fat levels, and consequently, afforded a more complex and powerful sensory experience. Feedback from participants during debriefing indicated the triple cream brie was found by some to be extremely 'rich' and somewhat overpowering. For them, the sensory experience would be negative; hence, the triple cream brie samples would be considered lower quality and rated accordingly. The double cream brie achieved a high and positive utility, indicating that this product seems to strike the right balance in terms of taste and texture for many people. As with wine, regardless of sensory perceptions price was found to be the most influential product cue when determining quality. The increased influence of price is attributable in some part to the higher prices used and the wider variance in price levels (Rao and Hauser 2004). Nonetheless, considering the complexity of the sensory experience, once again, the overwhelming influence of price is surprising.

Table 7.15 Summary of part worths and utilities brie (sensory)

Ave imp	Utility	Level	Attribute
25.07	-0.1841	Argentina	COO
	0.0208	Canada	
	0.1633	France	
43.99	-0.3405	$28.95	Price
	0.2689	$49.00	
	0.0717	$69.95	
30.95	-0.0148	Full Cream	Fat
	0.2218	Double Cream	
	-0.2070	Triple Cream	

100% N = 263

Table 7.16 Average values per profile brie (sensory)

Profile	Attribute levels			Min	Max	Mean	SD
810	France	$69.95	Double cream	0.78	10.89	7.29	1.73
709	France	$49.95	Full cream	1.11	11.22	7.24	1.88
507	Argentina	$49.95	Double cream	1.11	11.67	7.13	1.87
367	Canada	$69.95	Full cream	1.11	11.11	6.91	1.91
178	Canada	$49.95	Triple cream	0.44	11.22	6.90	2.33
266	Canada	$28.95	Double cream	1.44	11.22	6.73	1.84
810	France	$28.95	Full cream	0.11	11.67	6.64	1.97
380	Argentina	$69.95	Triple cream	0.33	10.22	6.51	2.36
735	France	$28.95	Triple cream	0.56	11.44	6.45	2.23
393	Argentina	$28.95	Full cream	1.11	10.33	6.29	1.85
139	Argentina	$28.95	Triple cream	0.11	10.78	6.10	2.12

N = 263

Table 7.16 Illustrates the average value attributed to each profile as derived from the specific combination of utilities involved. The comparison for brie demonstrates the strong conviction held by respondents that a lower price is linked to lower quality and even negative perceptions of taste can be overcome by a combination of higher price supported by congruent country of origin.

7.3.2.1 Brie profiles and the likelihood of purchase

Table 7.17 Average brie profile values by purchase intentions

Profile	Yes		No		Mann Whitney U	Z	Sig.
	Mean	SD	Mean	SD			
810	6.87	1.90	5.84	1.99	3898.00	-3.05	.002
139	6.72	1.93	5.34	2.10	5294.50	-5.17	.000
367	7.73	1.56	6.24	1.89	4586.00	-6.40	.000
266	7.44	1.34	4.65	1.41	2867.50	-10.13	.000
709	7.76	1.31	5.99	1.98	3307.50	-7.47	.000
380	8.23	1.10	5.47	2.28	2461.00	-9.49	.000
735	7.83	1.35	4.47	1.63	1000.50	-12.00	.000
393	7.13	1.45	4.79	1.42	1937.50	-9.89	.000
621	7.90	1.30	6.72	1.81	5171.50	-5.46	.000
178	8.26	1.39	5.42	2.20	2322.50	-10.04	.000
507	7.86	1.40	6.05	1.82	3497.00	-7.48	.000

N = 263

Table 7.17 shows the average total utility value for each brie sample grouped by consideration of purchase. As with chardonnay, the mean values are significantly higher for those that would consider purchasing as compared to those that would not, linking the perception of quality with purchase intention.

7.3.2.2 Knowledge levels brie

In relation to cheese, the general level of objective knowledge amongst this group was found to be quite low. Results from the objective knowledge test found that respondents achieved an average of 4.59 correct answers and that 90% of them scored 7 correct answers or less. Scores for subjective knowledge imply that these respondents did not see themselves as product 'experts' for cheese either but as with wine, have overestimated their expertise (Table 7.18). As self-confidence is not product specific, the score determined previously will be used for analysis respective of brie also.

Table 7.18 Mean scores for knowledge (brie)

	Mean	SD
Subjective knowledge brie	4.59	0.80
Objective knowledge brie (standardized)	2.95	0.51
Self-confidence (not product specific)	6.34	1.45
N = 263		

7.3.2.3 Influence of knowledge and self-confidence (brie)

Tables 7.19 and 7.20 illustrate the correlation coefficients calculated to investigate significant relationships between knowledge and self-confidence and product cues contributing to perceptions of quality specific to brie for the sample as a whole. As expected, there was significant inter-correlation (0.443) between subjective and objective knowledge. As previously discussed, it is not possible to develop objective knowledge and be unaware of it and expertise is also strongly linked to category familiarity (Alba and Hutchinson 1987; Park, Mothersbaugh et al. 1994; Alba 2000). Also, consistent with the outcomes determined for chardonnay, significant correlations were found between levels within an attribute as well as between the attributes themselves. These represent the degree of relative 'trade off' occurring between the attributes/levels as part of the conjoint analysis utility calculations.

Table 7.19 Spearman's rho – Average importance brie

		Objective Knowledge Brie	Subjective Knowledge Brie	Self confidence	Average Importance COO	Average Importance Price
Objective Knowledge Brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective Knowledge Brie	Correlation Coefficient	.443	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.031	.040	1.000		
	Sig. (2-tailed)	.614	.514	.		
Average Importance COO	Correlation Coefficient	.080	.053	.039	1.000	
	Sig. (2-tailed)	.198	.388	.530	.	
Average Importance Price	Correlation Coefficient	-.023	-.087	-.068	-.058	1.000
	Sig. (2-tailed)	.709	.160	.275	.351	.
Average Importance Fat	Correlation Coefficient	-.027	.042	.006	-.588	-.722
	Sig. (2-tailed)	.664	.502	.919	.000	.000

N = 263

Table 7.20 Spearman's rho – Utilities brie

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective Knowledge Brie	Correlation Coefficient	.038	-.040	.036	.054	-.056	-.019	-.143	-.091	.173
	Sig. (2-tailed)	.539	.515	.560	.384	.364	.761	.020	.142	.005
Subjective Knowledge Brie	Correlation Coefficient	-.022	-.038	.095	.050	-.018	-.041	-.220	-.028	.188
	Sig. (2-tailed)	.720	.537	.123	.416	.774	.505	.000	.654	.002
Self confidence	Correlation Coefficient	-.009	-.034	.070	.179	-.108	-.042	.006	-.046	.016
	Sig. (2-tailed)	.880	.580	.258	.004	.081	.501	.921	.460	.790
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.485	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.530	-.408	1.000						
	Sig. (2-tailed)	.000	.000	.						
$28.95 per kilo	Correlation Coefficient	-.206	-.070	.272	1.000					
	Sig. (2-tailed)	.001	.256	.000	.					
$49.00 per kilo	Correlation Coefficient	-.028	.076	.004	-.491	1.000				
	Sig. (2-tailed)	.656	.221	.946	.000	.				
$69.95 per kilo	Correlation Coefficient	.225	.015	-.280	-.493	-.445	1.000			
	Sig. (2-tailed)	.000	.806	.000	.000	.000	.			
Full Cream	Correlation Coefficient	.017	-.090	.038	.054	-.021	.007	1.000		
	Sig. (2-tailed)	.780	.145	.539	.386	.731	.912	.		
Double Cream	Correlation Coefficient	.027	-.016	.025	.011	-.041	-.013	.092	1.000	
	Sig. (2-tailed)	.664	.802	.688	.856	.503	.837	.136	.	
Triple Cream	Correlation Coefficient	-.020	.073	-.043	-.036	.028	.002	-.759	-.666	1.000
	Sig. (2-tailed)	.746	.237	.484	.561	.653	.975	.000	.000	.

N = 263

The correlation matrix for utilities shows 2 weak but significant relationships between objective knowledge and fat levels. A negative relationship (-0.142) for full cream and a positive coefficient (0.173) for triple cream indicated that those that know more about cheese favored the higher fat content brie, an outcome consistent with the literature and

expectations (Hamilton, Knox et al. 2000). However, the relationships were weak, and represented little overall influence in the quality assessments made. A similarly weak (0.179) but significant relationship existed between self-confidence and the $28.95 utility, suggesting that higher confidence levels allow for the lowest priced product to be seen more favorably. Once again, however, the correlation coefficients were very low and, therefore, represented weak associations.

The next step was to segment the sample and to cluster those individuals possessing the most extreme levels of knowledge and self-confidence in order to see if more robust relationships between the dependent and independent variables could be found. Identical methodology to that used in the analysis of chardonnay data was used to cluster respondents with high and low levels of knowledge and self-confidence specific to brie. Again, those respondents with scores in the lowest 25% were considered to be low in objective/subjective knowledge and those in the highest 25% were deemed to possess high levels, with all other respondents ignored. Table 7.21 illustrates the quartile values used to segment the sample and, as self-confidence is not product specific, the existing segments were used. (See Appendix 9 – Tables A 56 to A 67 for correlation matrices)

Table 7.21 Quartile values for knowledge and self-confidence (brie)

Percentiles	Subjective knowledge	Objective knowledge
25th	3.13	3.00
50th	4.38	4.00
75th	5.63	6.00
N = 263		

7.3.2.4 Objective knowledge segments (brie)

There were no significant relationships between levels of objective knowledge and the average importance of the attributes tested. For those in the high objective knowledge segment, there is a low (-0.284) and significant relationship between subjective knowledge and price, suggesting that those more modest in their self-assessment of knowledge considered price more indicative of quality than others (Lee and Lou 1996; Acebron and Dopico 2000; Teas and Agarwal 2000). A similar association (-0.266) existed for the low objective knowledge group between self-confidence and price. This is consistent with the literature, whereby those who do not possess high levels of objective knowledge, and also lack self-confidence, use extrinsic cues as welcome cognitive shortcuts (Bell 1967). Once again, however, the coefficients are low indicating that reliable predictions regarding the degree of influence on quality perceptions exerted by the dependent variables are not possible (See Appendix 9 – Tables A 56 – A 59).

The correlation matrix specific to utility values and the low objective knowledge cluster revealed no significant correlations. For the high objective knowledge segment, 2 significant associations were found. The first (-0.370) is between subjective knowledge and the full cream level, consistent with that determined for the sample as a whole. As levels of subjective knowledge increased, utility value for the lowest quality product diminished (-0.370) and value for the 'triple cream' product increased (0.302). Since higher levels of subjective knowledge, in conjunction with sound objective knowledge, contributed to true expertise, this outcome is consistent with the literature and expectations (Park, Mothersbaugh et al. 1994). The other (0.274) is between self-confidence and the utility value for $28.95 reflecting the willingness of higher self-confidence individuals to support a lower price.

Table 7.22 provides a comparison of part worths and utility values between the high and low objective knowledge groups. The average importance of price is comparable, but opinions regarding the average importance of COO and fat varied greatly for each segment. Analysis of data from the high objective knowledge group revealed that these respondents reported a wide range of variance in opinions across different country levels, whereas the low objective knowledge group perceived all countries as similar. This provides an average importance of COO for one group (high objective knowledge) of 35.86% but only 9.69% for the other (low objective knowledge). In the case of fat levels, both groups perceived the specific levels to be different; however, in comparison, the range of opinions was extreme for the low objective knowledge group. With an average importance of 53.27% for fat, the low objective knowledge segment strongly favored the double fat cheese, returning a positive utility for the full fat brie and punishing the triple fat with a strongly negative utility. The high group also agreed that the double fat was the best level, but it returned a positive utility for the triple cream and disfavored the full fat level. The differences in opinion regarding the 'full fat' and 'triple fat' brie are significant, as shown in Table 7.23. This outcome suggests that those with high levels of objective knowledge may possess a more sophisticated palate and appreciate the creamier texture and richer flavor of the triple cream cheese while those with less experience find it somewhat unpleasant.

The credence given to the COO cues by the high knowledge group is likely to be another indication of their knowledge and experience in relation to the product category. Experts are known to make use of extrinsic cues when these are legitimate indications of likely quality; hence the high utility value for France and the respectively low utility value for Argentina (Alba and Hutchinson 1987; Alba 2000). In this case, the group with the lowest level of knowledge applied higher credence to the intrinsic cues than those with better product understanding, suggesting that knowledge may 'blind' some consumers to objective product quality because they believe in what should be the case

rather than assess the product more objectively. Conversely, the low knowledge group had no 'expectations' in relation to products or cheese attributes and hence relied more heavily on what their own senses were conveying to them. While using price in their assessments, taste for them, was more important and COO relatively meaningless.

Table 7.22 Comparison of part worths and utilities brie – objective knowledge

Attribute and level	High objective knowledge	Low objective knowledge
Ave imp COO	**35.63**	**9.69**
Argentina	-0.2495	-0.1250
Canada	-0.0448	0.0119
France	0.2943	0.1131
Ave imp price	**39.46**	**37.05**
$28.95	-0.3372	-0.5179
$49.00	0.2651	0.3929
$69.95	0.0721	0.1250
Ave imp fat	**24.90**	**53.27**
Full cream	-0.2144	0.3452
Double cream	0.1657	0.4821
Triple cream	0.0487	-0.8274
	N = 57	N = 56
Pearson's r	0.979 sig. .000	0.994 sig. .000
Kendall's tau	0.944 sig. .000	0.944 sig. .002

Table 7.23 Utility comparison between high and low objective knowledge groups

Test Statistics - Respondents with High and Low Objective Knowledge Brie (sensory)[a]

	Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Mann-Whitney U	1580.500	1490.000	1373.000	1427.000	1410.500	1549.000	1087.00	1328.500	1042.500
Wilcoxon W	3176.500	3143.000	2969.000	3023.000	3063.500	3202.000	2740.00	2981.500	2638.500
Z	-.089	-.610	-1.283	-.972	-1.067	-.270	-2.926	-1.538	-3.180
Asymp. Sig. (2-tailed)	.929	.542	.200	.331	.286	.787	.003	.124	.001

a. Grouping Variable: Grouped Objective Knowledge Brie

7.3.2.5 Brie subjective knowledge segments

There are no significant correlations for any of the independent variables and attribute average importance for the high and low subjective knowledge segments. There was 1 significant correlation (0.248) found for the high subjective knowledge group between self-confidence and the utility value for $28.95, reflecting previous findings. For the low subjective knowledge group, 2 significant relationships emerged for subjective knowledge and the COO utilities for Canada (0.260) and France (-0.246). These correlations are likely to be a reflection of their (self confessed) lack of category knowledge where the congruent CI such as that provided by France over a country such as Canada is ignored. Also, this group believed COO to be comparatively unimportant to their quality assessments and may be reflecting opinions of CI alone (favoring Canada over France) rather than making a country and product association. In addition, 3 significant relationships were found between objective knowledge and $28.95 (0.310), double cream (-0.295) and triple cream (0.262) (See Appendix 9 – Tables A60 – A 63). The influence of objective knowledge is a reflection of results found earlier. Also, whilst these relationships are significant, they are weak, for example a correlation of 0.262 represents an influence of only 7% on the dependent variable. This is borne out when considering comparison of the conjoint analysis results.

Table 7.24 illustrates the comparison of part worths and utility values for the high and low subjective knowledge clusters. While the average importance of fat was similar for both groups, 2 significant and opposite opinions were observed. Those with low subjective knowledge supported the full cream brie and rejected the triple cream, whereas the reverse was true for the other group. As with the objective knowledge cluster, the appreciation of a cheese with a higher fat content is likely to indicate a more experienced palate. Also, since the objective and subjective segments were not mutually exclusive and there is a moderate correlation between these 2 groups, some

respondents were represented in both the high objective and high subjective knowledge segments. The higher range of values for price for the low subjective knowledge group indicates that they used price as a surrogate indicator of quality as they believed they knew little about the product or category (Monroe 1976; Liefeld, Heslop et al. 1996; Kardes, Cronley et al. 2004).

Table 7.24 Comparison of part worths and utilities brie – subjective knowledge

Attribute and level	High subjective knowledge	Low subjective knowledge
Ave imp COO	**28.37**	**11.38**
Argentina	-0.1732	-0.0415
Canada	-0.0458	-0.0614
France	0.2190	0.1028
Ave imp price	**29.43**	**44.48**
$28.95	-0.2222	-0.6847
$49.00	0.1846	0.2570
$69.95	0.0376	0.1277
Ave imp fat	**42.20**	**44.14**
Full cream	-0.3350	0.2322
Double cream	0.0866	0.1725
Triple cream	0.2484	-0.4046
	N = 68	N = 67
Pearson's r	0.915 sig. .000	0.949 sig. .000
Kendall's tau	0.556 sig. .019	1.000 sig. .000

Table 7.25 Utility comparison between high and low subjective knowledge groups

Test Statistics - Respondents with High and Low Subjective Knowledge Brie (sensory)

	Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Mann-Whitney U	2187.500	2231.500	1980.000	2176.000	2270.500	2192.500	1588.000	2192.500	1664.500
Wilcoxon W	4533.500	4577.500	4258.000	4454.000	4616.500	4538.500	3934.000	4538.500	3942.500
Z	-.399	-.205	-1.314	-.449	-.033	-.377	-3.039	-.377	-2.701
Asymp. Sig. (2-tailed)	.690	.838	.189	.653	.974	.706	.002	.707	.007

a. Grouping Variable: Grouped Subjective Knowledge Brie

7.3.2.6 Brie self-confidence segments (sensory)

The correlations between knowledge and self-confidence and average attribute importance for the high and low self-confidence groups confirm that there are no significant relationships between these variables regardless of self-confidence levels. Further, the correlations between the independent variables and attribute utility values presented similarities with those previously found to exist between objective/subjective knowledge and fat levels (high self-confidence). One correlation was found in analysis between $69.95 (0.265) and objective knowledge for the low self-confidence group and another between objective knowledge and double cream (-0.423) for the high self-confidence cluster (See Appendix 9 – Tables A64 – A 67). Analysis reveals no significant correlations between self-confidence and utility values for either group, confirming that self-confidence has no direct bearing on respondents' opinions of brie quality.

Comparison of average importance and average utility values between the 2 groups showed 1 significant difference in opinions regarding attribute levels; this is specific to views of brie at $28.95 per kilo (Table 7.27). Those with low self-confidence judged this pricing point unfavorable and took it into account in their product ratings. Heavy reliance on price to indicate quality (43.33%) was expected from this group. More surprisingly, however, they showed wider ranges of opinions in relation to actual sensory feedback than the high self-confidence group (Table 7.26). While both groups reported a negative utility value for the triple cream brie, the low confidence group reported a wider range of values, although the difference in average utilities was not significant. The high self-confidence group, on the other hand, considered COO almost comparable to taste in influence.

Table 7.26 Comparison of part worths and utilities brie - self-confidence

Attribute and level	High self-confidence	Low self-confidence
Ave imp COO	**34.21**	**15.28**
Argentina	-0.2151	-0.1871
Canada	-0.0142	0.1345
France	0.2293	0.0526
Ave imp price	**27.63**	**43.33**
$28.95	-0.1980	-0.5673
$49.00	0.1610	0.3450
$69.95	0.3700	0.2222
Ave imp fat	**38.16**	**41.39**
Full Cream	0.0883	0.1345
Double Cream	0.2037	0.3684
Triple Cream	-0.2920	-0.5029
	N = 78	N = 58
Pearson's r	0.981 sig. .000	0.981 sig. .000
Kendall's tau	0.889 sig. .004	0.889 sig. .000

Table 7.27 Utility comparison between high and low self-confidence groups

Test Statistics - Respondents with High and Low Self Confidence Brie (sensory)[a]

	Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Mann-Whitney U	2241.500	1969.000	1925.500	1731.500	2044.500	2036.000	2238.500	2043.000	2094.000
Wilcoxon W	3952.500	5050.000	3636.500	3442.500	5125.500	5117.000	5319.500	5124.000	3805.000
Z	-.090	-1.291	-1.483	-2.337	-.958	-.996	-.103	-.965	-.740
Asymp. Sig. (2-tailed)	.928	.197	.138	.019	.338	.319	.918	.335	.460

a. Grouping Variable: Grouped Self Confidence

7.3.2.7 Summary of test results Brie

As with chardonnay, the results of the sensory experiment specific to brie also demonstrated the ability of COO and price to influence perceptions of quality over taste. In the analysis, instances of significant correlation coefficients between the independent and dependent variables tested were found, but no strong and reliable pattern of relationships were revealed. Comparison of attribute average importance and utility values according to 'high and low' segments showed general variances in the range of opinions between segments but only 4 significant differences were found between

average utility values. Given the rich sensory experience afforded by the brie products tasted and the controlled nature of the experiment, these results are inconsistent with the general body of literature, suggesting that the power of extrinsic cues to influence product quality may be even stronger than previously believed.

7.4 Sensory analysis summary

Data analysis for both products yields similar results. While isolated instances of significant relationships were found to exist between knowledge (objective and subjective) and self-confidence and the product attributes tested, there does not appear to be any evidence that these consumer characteristics exert a strong, clear and significant influence on the determination of objective product quality. Generally, objective knowledge levels were found to be much lower than expected, and if knowledge is not there, it cannot exert any influence. Moreover, testing between those who do possess sound levels of knowledge and those who do not, revealed few significant differences between the 2 groups in their ability to accurately assess quality. Indeed, often the extrinsic cues of price and COO were more influential amongst the higher level groups than those possessing prospectively lower levels of knowledge and self-confidence. The segment possessing high subjective knowledge (for brie) reported the highest utility value to the triple cream brie and the lowest to the full cream brie, with an overall average importance for fat of 42.20%, 29.30% for price and 28.37% for COO. This group, with high self-assessed product category familiarity, was the most accurate in their product assessments. Yet, the relationships found between their personal consumer characteristics and respective product utility values were not significant. Therefore, an empirically proven link has not been established. Investigation of the influence of self-confidence found little to suggest that high levels of this characteristic provides an effective shield against the influence of potentially misleading and irrelevant extrinsic cues. In fact, a strong belief held in relation to price and COO was upheld

even when product quality diminished. The analysis overwhelmingly validated price as the most consistently influential product cue amongst those tested in these experiments, with COO also found to be extremely influential with many respondents.

8 Conjoint analysis survey and results for Chardonnay

8.1 Introduction

Chapter 7 provided results of conjoint analysis using data gathered from participants in the sensory experiment and quantified the influence of knowledge (objective and subjective) and self-confidence on respondents' use of intrinsic and extrinsic cues. An overview of the methodology used to conduct the conjoint analysis by survey and subsequent data analysis results specific to chardonnay are provided in this chapter. In addition, a comparison of the survey data analysis with the sensory data analysis for chardonnay is provided. The chapter concludes with a presentation of hypotheses testing outcomes. The respective results for brie follow in chapter 9.

8.2 Methodology

8.2.1 Sample (conjoint survey)

A convenience sample of 274 students enrolled in evening classes at TAFESA City Campus was recruited to participate in the final stage of research. Only students recently enrolled were considered for inclusion to ensure that respondents had not been sensitized by previous participation in other aspects of this study. Classes of new students in marketing, finance, small business and justice studies were selected for sampling. Experience gained from the completion of previous stages of the research indicated that participants would find the questionnaire time consuming, complex and challenging, and that it required at least 15 minutes to complete accurately. Hence, it was not feasible to expect lecturers or students to sacrifice class time in order to take part. Therefore, to encourage participation and minimize respondent fatigue and error it was considered necessary to offer an attractive incentive and allow participants to take

the questionnaire home to complete (See Appendix 10 – Invitations to participate in the survey).

A 2-step strategy for questionnaire distribution and return was implemented. First, booklets were distributed in October and November 2006 by a number of selected lecturers to their students during their evening classes. Students were advised that they would receive a free bottle of 'Scarpantoni School Block' red wine for each completed questionnaire returned. As this was a general population sample (over the age of 18 years) those volunteering to take a questionnaire were also permitted to take booklets for partners, friends, work associates et cetera, but each person was clearly instructed to complete their questionnaires in isolation and not to discuss or share answers with others. This directive was reinforced in the written instructions provided in the booklet. A wine pick-up and questionnaire return point was established and attended over four evenings during the first and third weeks of November 2006 at the TAFESA City Campus, allowing respondents to drop off completed booklets and collect their wine.

As experienced in the original pilot conjoint study, respondent fatigue and lack of attention to instructions proved to be a limitation here also. This is in spite of the attractive incentive offered and the unlimited time provided to complete the task. From over 375 survey booklets distributed to apparently 'willing' respondents, only 274 usable questionnaires were returned. Of those returned, in many cases entire sections of the booklet were not completed and, again, the suggestions of an ethnocentric reaction to the hypothetic products were apparent. Examples include where respondents rated each wine profile as '1' or '5', with 'no' consistently answered in response to the question regarding consideration of purchase. In order to directly compare results from the sensory experiment with this survey, it was necessary to replicate the data collection instrument. However, this meant that the briefing in relation to Australian

wines was not possible and this affected the result of the paper-based survey. Without the benefit of personal briefings, supervision and support, respondent error and fatigue appear to have impacted on participation rates and data accuracy.

8.2.2 Data collection instrument (conjoint survey)

As there was no opportunity to brief participants personally, a written summary of the information presented to groups involved in the sensory experiment was incorporated into the beginning of the questionnaire booklet. With this exception, the layout, format and content of this questionnaire were identical to that used in the sensory experiment (See Appendix 11 – Conjoint survey questionnaire). As with the pilot study questionnaire, the intrinsic cues of acid and fat were described in order to communicate changing levels; figures 8.1 and 8.2 illustrate examples of chardonnay and brie profiles.

Figure 8.1 Example of wine product profile (survey)

Chardonnay 253	
Produced in	France
Retail Price	$16.00
Acid	Average

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Figure 8.2 Example of cheese product profile (survey)

Brie 810	
Produced in	France
Retail Price	$28.95 per kilo
Fat	Full cream
Low Quality	**High Quality**
1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9 □ 10 □	

Would you consider buying this product? Yes □ No □

8.3 Validation of research instruments (survey)

8.3.1 Subjective knowledge and self-confidence scales

As the decision had been taken previously to only use the negatively phrased items in the self-confidence scale, the same methodology was repeated in this phase of the study, prior to the validation of the self-confidence scale and computation of a measure of self-confidence. Therefore, reported statistics for self-confidence in this chapter reflect the use of the previously retained scale items. For measures of subjective knowledge (chardonnay and brie) all 8 items were retained as per the analysis of sensory data. All scales were tested for internal reliability through determination of the Cronbach Alpha coefficient for each measure; these are illustrated in Table 8.1 with coefficients ranging from 0.753 to 0.903, indicating sound reliability.

Table 8.1 Reliability coefficients of scales (survey)

Reliability coefficients		
Subjective knowledge chardonnay	N of items = 8	Alpha = 0.903
Subjective knowledge brie	N of items = 8	Alpha = 0.932
Self-confidence	N of items = 5	Alpha = 0.753

N of Cases = 274

Table 8.2 Construct reliability for scales (survey)

Scale	Cum % of variance explained	No of factors with eigenvalues >1
Subjective knowledge chardonnay	59.2	1
Subjective knowledge brie	68.6	1
Self-confidence	51.4	1

N = 274

The respective percentages of cumulative variances explained (factors with eigenvalues > 1) are 51.4% for self-confidence, 59.2% for subjective knowledge chardonnay and 68.6% for subjective knowledge brie (Table 8.2). For subjective knowledge (both products) and self-confidence, a 1-factor solution was achieved with a relatively high percentage of total variance explained thus confirming construct reliability (Flynn and Goldsmith 1999; Malhotra, Hall et al. 2002). Results of convergent and divergent reliability testing can be seen in Appendix 4.

8.3.2 Objective knowledge tests

As found with the previous stages of the study, respondent feedback was positive in relation to these measures with no evidence to suggest that internal or external validity had been compromised. Respondents continued to show interest in the 'tests' with some querying answers when returning their booklets. Review of usable questionnaires prior to data entry did not reveal instances of missing data or evidence of respondent fatigue, intentional error or omission for this aspect of the questionnaire booklet. Scoring showed results consistent with the pilot study and data from the sensory experiment: levels of objective knowledge were generally found to be low.

8.3.3 Conjoint analysis fractional factorial design

Table 8.3 illustrates the results of tests of internal validity for computed part worths and the average importance of attributes for the chardonnay and brie profiles assessed. The high values for Pearson's r (and subsequent r^2) and Kendall's tau statistics indicate sound validity.

Table 8.3 Conjoint analysis internal validity tests (survey)

	Chardonnay	Sig.	Brie	Sig.
Kendall's tau (design)	1.000	.0001	0.944	.0002
Kendall's tau (hold outs)	1.000	.0000	1.000	.0000
Pearson's r	0.998	.0000	0.999	.0000
R^2	0.996	.0000	0.998	.0000

N = 274

8.4 Conjoint survey data analysis results

8.4.1 Sample profile

A sample of 274 usable questionnaires was used for analysis. The sample profile, as compared to the general population of Australia is shown in Table 8.4.

Table 8.4 Profile demographic profile (survey)

Gender	%	ABS %	Age	%	ABS %
Male	51.1	49.8	18 yrs to 25 yrs	19.0	11.5
Female	48.9	50.2	26 yrs to 35 yrs	20.1	14.2
			36 yrs to 45 yrs	21.9	15.0
			46 yrs to 55 yrs	20.1	13.5
			Over 55 yrs	18.6	21.9
Household income	**%**	**ABS %**	**Level of Education**	**%**	**ABS %**
Less than $25, 000	11.9	27.7	High school certificate	21.2	30.0
$25,000 to $45,000	22.7	26.5	Diploma / trade	36.1	21.8
$46,000 to $65,000	16.4	16.8	Bachelor's degree	20.8	9.7
Over $65,000	48.9	29.0	Post graduate degree	21.9	3.2

Source: (ABS 2003 - 04) Household Characteristics (No. 65230)

As with the sample used for the sensory experiment, gender balance essentially matches the Australian general population but there is variance in terms of age classifications. However, the age skew is not expected to critically limit results.

8.4.2 Chardonnay conjoint analysis results

Table 8.5 shows the average importance of chardonnay attributes tested and the individual utilities for each attribute level. For comparison purposes, the table also shows the corresponding results from the sensory experiment data. The utility values specific to the levels of acid described confirm that respondents were once again able to differentiate between the levels and to rank them correctly in terms of better versus diminishing objective quality. However, the acid levels are overcome by price and virtually matched by the power of CI in terms of influencing expectations of quality. France was believed to provide the highest quality chardonnay and, surprisingly, Chile was deemed more attractive than the U.S. Although for this group it is a matter of one country being perceived to be somewhat 'worse' than the other, as neither were favored. The results relating to wine price levels are, again, consistent with the literature and show that a particularly low price is likely to be associated with correspondingly low quality, and conversely, a high price with higher quality (Zeithaml 1988; Jover, Montes et al. 2004).

As previously explained, average importance is calculated using extreme utility range values. Whilst the order of preference for attribute levels is found to be the same for both the sensory data and the survey data, the quality evaluations based on expectations (survey) show wider ranges amongst attribute levels for price and acid, and hence, some variance in relation to the determined average importance of these attributes. Surprisingly, the influence of acid was more profound in the survey data

results (reflecting expectations) than in the sensory evaluation data (reflecting actual experience).

Table 8.5 Summary of part worths and utilities chardonnay

Attribute and level	Research stage	
	Sensory	Survey
Ave imp COO	**15.08**	**12.27**
Chile	-0.1383	-0.1604
U.S.	-0.1014	-0.2019
France	0.2396	0.3622
Ave imp price	**71.81**	**73.68**
$ 6.00	-0.8831	-0.7379
$16.00	-0.0365	0.0887
$53.00	0.9177	1.6492
Ave imp acid	**13.10**	**14.05**
Average	0.1187	0.3061
Above average	0.0908	0.0338
High	-0.2095	-0.3398
	N = 263	N = 274

Table 8.6 illustrates the minimum, maximum and average total utility value for each profile tested ranked from the highest total average value to the lowest. Those profiles combining the most favored attribute levels achieve higher average utility scores. Profile scores from the sensory experiment are included for comparative purposes.

The dominant influence of price on quality expectations appears clearly, with the 3 wine profiles priced at $53.00 achieving the highest utility values in spite of differences in acid levels. The prevalence of price over acid is demonstrated by the ranking of remaining wine profiles, since other wines with 'average' acid levels were downgraded against lower quality products when associated with lower prices. The parity found between the sensory and survey results demonstrate the consistent ability, under vastly different circumstances, of the survey method to predict that extrinsic cues influence quality evaluations, in support of Hypothesis 7. Indeed, the rankings for all 11 profiles

are identical with the exception of a reversal of rankings for wine profiles '494' and '582' due to the difference in opinion regarding the U.S. and Chile between the samples.

Table 8.6 Comparative average values per profile chardonnay

Profile	Attribute levels			Min		Max		Mean		SD	
				sens	sur.	sens	sur.	sens	sur.	sens	sur.
823	France	$53.00	Average	1.22	**2.78**	10.89	**11.33**	7.09	**7.76**	1.98	**1.51**
924	Chile	$53.00	Above average	0.89	**-0.89**	10.89	**11.11**	6.68	**6.97**	1.93	**2.02**
279	U.S.	$53.00	High	0.00	**1.44**	10.56	**10.78**	6.49	**6.55**	1.92	**1.96**
253	France	$16.00	Average	0.89	**1.67**	10.33	**10.22**	6.07	**6.20**	1.76	**1.50**
950	France	$16.00	Above average	0.22	**1.33**	10.44	**10.00**	5.96	**5.93**	1.91	**1.56**
595	U.S.	$16.00	Average	0.89	**1.11**	0.67	**10.00**	5.79	**5.64**	1.77	**1.49**
481	Chile	$16.00	High	0.33	**0.22**	9.11	**11.44**	5.43	**5.03**	1.71	**1.96**
494	Chile	$6.00	Average	0.00	**-1.56**	11.11	**8.11**	4.98	**3.85**	1.97	**1.67**
582	U.S.	$6.00	Average	-1.00	**-1.22**	11.00	**10.00**	5.02	**3.81**	1.97	**1.76**
696	France	$6.00	High	-0.22	**-0.44**	10.11	**10.00**	4.96	**3.73**	1.90	**1.86**
152	U.S.	$6.00	Average	-0.11	**0.00**	10.78	**10.00**	4.91	**3.54**	2.08	**1.80**

N = 263 (sens.) N = 274 (sur.)

8.4.3 Chardonnay profiles and likelihood of purchase

Table 8.7 shows the average utility value for each profile segmented by those that would consider buying the product described, against those that would not. Comparing these results with those from the sensory experiment illustrates consistency in response; those profiles rating more highly were also more likely to be considered for purchase.

Table 8.7 illustrates that only one profile (823) was not found to be significantly different between these 2 groups. This wine was believed to be the best quality (on average) by both groups and was considered to be comprised of the most attractive attribute levels. However, it still may not be considered for purchase in spite of quality expectations due to its high price and foreign source of production. For the remaining profiles, there are significant differences between the mean scores according to purchase intention, suggesting that the assessment of quality is positively linked to likelihood of purchase.

Consistent with results from the sensory experiment, those believing the product to be of higher quality are generally more likely to consider buying it. Price has now been shown to influence likelihood of purchase both for expectations of quality and perception of quality, suggesting that for wine at least, it would be very difficult to convince consumers that a good quality wine is available at a low price. Conversely, it appears possible to position a wine significantly above its intrinsic quality by simply pricing it more expensively and leveraging an attractive CI or other attractive extrinsic cues.

Table 8.7 Average chardonnay profile values by purchase intentions

Profile	Yes		No		Mann Whitney U	Z	Sig.
	Mean	SD	Mean	SD			
253	6.54	1.50	5.73	1.40	6442.50	-0.08	.000
582	4.85	1.92	3.61	1.66	3198.00	-3.99	.000
481	6.52	1.64	4.30	1.66	2924.00	-8.71	.000
696	5.34	1.93	3.19	1.48	2565.50	-7.89	.000
595	6.41	1.29	5.04	1.34	4279.50	-7.55	.000
924	7.63	1.38	6.84	2.10	4155.00	-2.02	.044
152	4.81	1.89	3.30	1.70	2668.50	-4.79	.000
823	7.94	1.38	7.68	1.56	7671.00	-0.611	.541
494	4.91	1.50	3.39	1.53	3709.50	-6.96	.000
950	6.50	1.44	5.26	1.43	4967.00	-6.58	.000
279	7.80	1.47	6.35	1.95	2663.50	-3.99	.000

N = 274

8.4.4 Knowledge and self-confidence levels

Consistent with results from the pilot and sensory experiment, the level of objective knowledge amongst this group was also low. Data shows respondents achieving a mean score of only 4.07 correct answers out of the 14 multiple choice questions asked in the objective knowledge test, with 89% of respondents scoring 7 correct answers or less. Again, respondents did not believe themselves to be wine 'experts' but still believe their knowledge to be significantly better than suggested by their test scores (Table 8.8). On average, these respondents also exhibited reasonably robust levels of

self-confidence. Comparison of means tests showed the difference in average subjective knowledge to be small but significant; the variance in standard deviations highlights a greater comparative range of objective and subjective knowledge levels for the survey respondents (Table 8.9).

Table 8.8 Mean scores for knowledge and self-confidence (sensory and survey)

	Mean		SD	
	sens.	**surv.**	sens.	**surv.**
Subjective knowledge chardonnay	4.55	**4.07**	1.72	**1.72**
Objective knowledge chardonnay (standardized)	2.93	**2.92**	1.46	**1.51**
Self-confidence (not product specific)	6.34	**6.21**	1.45	**1.51**
N = 263 (sens.) N = 274 (surv.)				

Table 8.9 Mann-Whitney U test for comparison of knowledge and self-confidence

	Objective knowledge chardonnay	Subjective knowledge chardonnay	Self confidence
Mann-Whitney U	34594.000	28920.000	33714.000
Wilcoxon W	71995.000	66321.000	71115.000
Z	-.734	-3.897	-1.220
Asymp. Sig. (2-tailed)	.463	.000	.222

8.4.4.1 Influence of knowledge and self-confidence

The respective influence of knowledge and self-confidence quality determinations was tested by the same methods used in the analysis of sensory data. First, correlation coefficients were calculated to quantify any significant relationships between the dependent variables of objective knowledge, subjective knowledge and self-confidence and the independent variables of average importance COO, price and acid. Following this, correlation coefficients were computed for the independent variables and attribute level utility values to reveal any significant relationships specific to each. Tables 8.9 and 8.10 provide the results of the analysis, testing the sample as a whole. As the majority of variables failed the tests for normality, non-parametric alternative methods were used (See Appendix 3 – Table A 3)

Table 8.10 Spearman's rho - Average importance chardonnay

		Objective Knowledge chardonnay	Subjective knowledge chardonnay	Self confidence	Average Importance COO	Average Importance Price
Objective knowledge chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge chardonnay	Correlation Coefficient	.478	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.155	.170	1.000		
	Sig. (2-tailed)	.010	.005	.		
Average Importance COO	Correlation Coefficient	-.003	.020	-.066	1.000	
	Sig. (2-tailed)	.963	.738	.277	.	
Average Importance Price	Correlation Coefficient	-.005	-.035	.026	-.736	1.000
	Sig. (2-tailed)	.929	.567	.667	.000	.
Average Importance Acid	Correlation Coefficient	-.005	.012	-.020	.159	-.738
	Sig. (2-tailed)	.929	.848	.747	.009	.000

N = 274

As found in the analysis of the sensory data, there were no significant relationships for the sample between knowledge (either type) or self-confidence and the average importance placed on COO, price or acid. Reflecting previous results, a significant relationship was found between objective and subjective knowledge (0.478) providing further evidence of the positive link between real and perceived knowledge. Similarly, there are significant, weak relationships between self-confidence and both objective knowledge and subjective knowledge (0.155 and 0.170 respectively). These findings are within expectations given previous results and the existing body of literature. However, the relationships between knowledge (both types) and self-confidence are very weak and therefore we cannot assume that self-confidence exerts a strong influence on perceived knowledge or that high levels of knowledge underpin self-confidence. The pattern of significant inter-correlations found between attributes and utility values is similar to that found in the sensory experiment data analysis, and are again, a reflection of the relative attribute and utility level 'trade-offs' made by consumers when scoring the product profiles. The favoring of one attribute involves rating another more negatively (in comparison); hence a number of significant negative correlations were found between utility values. However, only 1 significant relationship

was found between knowledge and self-confidence and product attribute utility values (A correlation coefficient of 0.178 was found between subjective knowledge and the utility value for $16.00). However, no noteworthy pattern signifying an effect of knowledge or self-confidence on utility values was revealed. These results are consistent with the results of sensory data analysis where, similarly, only 1 significant relationship (0.128) was found between subjective knowledge and the utility value for the U.S.

Table 8.11 Spearman's rho - Utilities chardonnay

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average
Objective knowledge chardonnay	Correlation Coefficient	-.022	.035	.001	-.060	.101	.005	.102	-.152
	Sig. (2-tailed)	.714	.564	.988	.324	.097	.940	.094	.012
Subjective knowledge chardonnay	Correlation Coefficient	.001	.012	.026	-.056	.178	-.044	.022	-.081
	Sig. (2-tailed)	.990	.848	.667	.353	.003	.473	.720	.181
Self confidence	Correlation Coefficient	.079	-.009	-.065	-.014	-.054	-.001	-.005	-.035
	Sig. (2-tailed)	.194	.887	.283	.818	.370	.980	.934	.570
Chile	Correlation Coefficient	1.000							
	Sig. (2-tailed)	.							
United States	Correlation Coefficient	-.492	1.000						
	Sig. (2-tailed)	.000	.						
France	Correlation Coefficient	-.624	-.274	1.000					
	Sig. (2-tailed)	.000	.000	.					
$6.00	Correlation Coefficient	-.190	.025	.170	1.000				
	Sig. (2-tailed)	.002	.679	.005	.				
$16.00	Correlation Coefficient	.071	-.113	.047	-.229	1.000			
	Sig. (2-tailed)	.245	.062	.438	.000	.			
$53.00	Correlation Coefficient	.142	.028	-.192	-.853	-.266	1.000		
	Sig. (2-tailed)	.019	.643	.001	.000	.000	.		
Average	Correlation Coefficient	-.206	.077	.128	.103	-.061	-.082	1.000	
	Sig. (2-tailed)	.001	.207	.034	.089	.315	.176	.	
Above average	Correlation Coefficient	.092	-.054	-.050	-.011	-.083	.037	-.317	1.000
	Sig. (2-tailed)	.128	.371	.411	.857	.169	.543	.000	.
High	Correlation Coefficient	.139	-.015	-.120	-.122	.102	.100	-.679	-.406
	Sig. (2-tailed)	.021	.808	.047	.043	.092	.098	.000	.000

N = 274

The inability of knowledge to influence cue usage may again be due to the relatively low scores achieved by respondents on this characteristic. Additionally, the lack of influence exerted by self-confidence amongst this group suggests this variable may be less influential than indicated by previous studies (for this product at least). The next step undertaken in the analysis was to segment the sample, in order to cluster respondents with extreme levels of knowledge and self-confidence. Determination of segments was achieved by replicating the methodology used in the analysis of data for

the sensory experiment: using quartile scores. Those achieving scores in the lowest 25% the data distribution were deemed to be 'low' in knowledge (objective/subjective) and self-confidence while respondents scoring in the highest 25% were considered to possess high levels. Those scoring in the mid-range of the data array were eliminated from further testing (Table 8.12).

The average importance for each product attribute, and attribute level utilities, were calculated by 'high' and 'low' segment to allow comparison of results. Summaries of the comparison of part worths for each segment are illustrated in this chapter along with results of independent sample testing (comparing average utility values by segment) to determine if significant differences existed between the groups.

Table 8.12 Quartile values for knowledge and self-confidence (chardonnay)

Percentiles	Subjective knowledge	Objective knowledge	Self-confidence
25th	2.62	3.00	5.20
50th	4.13	5.00	6.20
75th	5.25	6.00	7.20

N = 274

8.4.5 Objective knowledge segments (chardonnay)

Table 8.13 provides an illustration of attribute average importance and utility values for the high and low objective knowledge segments. For comparative purposes, the results of the sensory data analysis are also included. Findings indicate little difference in attribute average importance between the high and low objective knowledge segments for COO. However, the more knowledgeable respondents showed a wider variance in opinion regarding acid, strongly favoring the 'average' level and punishing the 'high', whereas, those with lower levels of objective knowledge reflected more polarized opinions regarding price. However, as found in the analysis of the sensory data, in

spite of these variances in utility ranges, no significant differences in average utility values were apparent (Table 8.14).

Table 8.13 Comparison of part worths and utilities objective knowledge chardonnay

Attribute and level	High objective knowledge				Low objective knowledge			
	Sensory		Survey		Sensory		Survey	
Ave imp COO	**9.79**		**12.85**		**8.86**		**12.25**	
Chile	-0.0151		-0.1695		-0.0274		-0.0913	
U.S.	-0.0072		-0.2147		-0.0850		-0.2103	
France	0.1123		0.3842		0.1125		0.3016	
Ave imp price	**75.20**		**71.88**		**76.75**		**76.50**	
$ 6.00	-0.8043		-1.7514		-0.8999		-1.5853	
$16.00	-0.6162		0.1525		0.0878		-0.0258	
$53.00	0.8659		1.5989		0.8121		1.6111	
Ave imp acid	**15.01**		**15.27**		**14.39**		**11.25**	
Average	0.1268		0.4068		0.1536		0.1944	
Above average	0.0797		-0.1017		0.0137		0.0813	
High	-0.2065		-0.3051		0.1674		-0.2758	
	N = 70		N = 59		N = 67		N = 56	
Pearson's r	0.994	sig. .000	0.998	sig. .000	0.997	sig. .000	1.000	sig. .000
Kendall's tau	0.944	sig. .000	1.000	sig. .000	1.000	sig. .001	1.000	sig. .001

Table 8.14 Utility comparison between high and low objective knowledge groups

Test Statistics - Respondents with High and Low Objective Knowledge Chardonnay (survey)

	Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average	High
Mann-Whitney U	4002.500	4088.500	4093.000	3971.500	3902.500	4333.000	3959.500	4383.500	4047.000
Wilcoxon W	16563.500	5684.500	5689.000	16532.500	5498.500	5929.000	5555.500	5979.500	16608.000
Z	-1.060	-.845	-.833	-1.137	-1.312	-.229	-1.169	-.102	-.949
Asymp. Sig. (2-tailed)	.289	.398	.405	.255	.189	.819	.242	.919	.343

a. Grouping Variable: Grouped objective knowledge chardonnay

As found in the sensory data analysis, results of correlation testing between the average importance of COO, price and acid and the independent variables according to high and low objective knowledge clusters revealed no significant relationships. For the high objective knowledge segment, 4 significant and moderate correlations were revealed between specific utility levels and the consumer characteristics tested. For objective knowledge, a moderate, negative (-0.341) correlation was found with the $6.00 utility and a moderate, positive (0.422) relationship was apparent with the $53.00 utility. While a moderate and positive (0.329) relationship was found between the utility for $16.00 and subjective knowledge. Lastly, a moderate and positive (0.322)

correlation was seen between self-confidence and the utility for the U.S. No other significant relationships were revealed in the matrix Therefore, whilst it may appear that a high level of objective knowledge has some minimal and sporadic influence in cue usage, it must be noted that these relationships are with the extrinsic cue of price, with no effect of objective knowledge evident in consideration of acid levels; the cue effecting objective product quality. In comparison, only 1 significant relationship was found (-0.274) in the analysis of sensory data: that between self-confidence and the utility value for France. No correlations were found between utility values and objective knowledge. (See Appendix 8 – Tables A 44 – A – 47). For the low objective knowledge cluster in the survey, a single significant relationship was found between self-confidence and the utility value for Chile (0.303), whereas in the sensory analysis 1 significant correlation was found between objective knowledge and the utility for $53.00 and subjective knowledge and U.S. Table 8.15 shows a comparative summary of significant correlations between objective knowledge and attribute utilities for the high and low knowledge segments (sensory experiment and conjoint survey) and demonstrates an absence of any pattern of significant correlations for either stage of the research.

Table 8.15 Objective knowledge summary comparison of significant correlations

Survey	Chile	U.S.	France	$6.00	$16.00	$53.00	Ave	Above ave	High
High objective knowledge				**-0.341**		**0.422**			
Subjective knowledge					0.329				
Self-confidence		0.322							
Low objective knowledge									
Subjective knowledge									
Self-confidence	0.303								
Sensory									
High objective knowledge									
Subjective knowledge									
Self-confidence			-0.274						
Low objective knowledge						**0.224**			
Subjective knowledge		0.228							
Self-confidence									

8.4.6 Subjective knowledge segments (chardonnay)

Table 8.16 illustrates the results of conjoint analysis for the high and low subjective knowledge segments. The impact of COO is consistent across the segments and reliance on price is similarly high. Whilst both groups recognized the average acid level as the most favorable and the high acid level as the worst option, those with higher levels of category knowledge were more favorable and respectively intolerant in their assessments in relation to this variable. The result is the range is wider range between the highest and lowest average utility value, and subsequently, a higher average importance for acid than in the lower subjective knowledge group. Regardless of this variance, price was the most influential attribute in their assessment of quality expectations.

Table 8.16 Comparison of part worths and utilities subjective knowledge

Attribute and level	High subjective knowledge		Low subjective knowledge	
	Sensory	Survey	Sensory	Survey
Ave imp COO	**11.11**	**12.37**	**17.67**	**10.89**
Chile	-0.1776	-0.1730	-0.0365	-0.1127
U.S.	-0.0698	-0.1968	-0.2454	-0.1925
France	0.1079	0.3698	0.2819	0.3052
Ave imp price	**73.52**	**72.14**	**63.17**	**76.88**
$ 6.00	-0.9873	-1.7921	-0.8823	-1.7230
$16.00	-0.0841	0.2794	0.1211	-0.0657
$53.00	0.9032	1.5127	1.0033	1.7887
Ave imp acid	**15.37**	**15.49**	**19.17**	**12.23**
Average	0.1558	0.3698	0.2819	0.2441
Above average	0.0841	-0.0302	0.0083	0.0704
High	-0.2397	-0.3397	-0.2902	-0.3146
	N = 70	N = 70	N = 67	N = 71
Pearson's r	0.996 sig .000	0.993 sig. .000	0.995 sig. .000	1.000 sig. .000
Kendall's tau	0.889 sig .004	0.889 sig. .004	1.000 sig. .002	1.000 sig. .001

Table 8.17 Utility comparison between high and low subjective knowledge groups

Test Statistics - Respondents with High and Low Subjective Knowledge Chardonnay (survey)

	Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average	High
Mann-Whitney U	2392.500	2461.500	2258.500	2479.000	1759.000	2114.000	2318.000	2203.500	2394.500
Wilcoxon W	4877.500	4946.500	4814.500	4964.000	4315.000	4599.000	4874.000	4688.500	4879.500
Z	-.382	-.097	-.936	-.025	-3.000	-1.531	-.690	-1.163	-.374
Asymp. Sig. (2-tailed)	.702	.923	.349	.980	.003	.126	.490	.245	.709

a. Grouping Variable: Grouped subjective knowledge chardonnay

Results of testing for the high and low subjective knowledge groups are comparable with the findings from the sensory data with a noteworthy exception. In the experiment, the low subjective knowledge group was more sensitive to the variance in acid levels than the high subjective knowledge group. As discussed in chapter 7, their greater responsiveness to changing acid levels in comparison to the high subjective knowledge cluster may be due to a lack of bias based on pre-conceived beliefs regarding price overcoming their attendance to taste.

The correlation matrix illustrating relationships between attribute average importance and subjective knowledge for the low subjective knowledge segment revealed 2 significant relationships (See Appendix 8 – Tables A 48 – A 51). A weak and positive correlation (0.339) was found between subjective knowledge and price and a low and negative correlation (-0.273) was found between subjective knowledge and acid. The correlation between the average importance of price and subjective knowledge for this group was supported by the 2 significant relationships found in the utilities correlation matrix. A negative correlation (-0.363) was found between subjective knowledge and the utility for $6.00 and a positive (0.320) for the utility for France. These results indicate that increases in subjective knowledge (amongst an overall low knowledge group) led to an even greater reliance on the extrinsic cues, rather than intrinsic ones, to determine quality.

Similar to the results found for the objective knowledge segments, for the high subjective knowledge groups, low but significant relationships existed between objective knowledge and the utility values for $6.00 (-0.235) and $53.00 (0.291). These were supported by a weak and positive relationship (0.262) between subjective knowledge and the utility for $53.00. Importantly, once again, no significant relationships were found between subjective knowledge and acid utilities, indicating that increased category familiarity leads to higher reliance on a belief in the price/value schema.

In comparison, results from analysis of the sensory data (Table 8.16) showed more reliance on the other communicated extrinsic cue, COO, with no relationships evident with acid levels. As these relationships with COO utilities were amongst the low subjective knowledge group, a lower level of category familiarity (and retail wine prices) in their case may have led to an emphasis on CI rather than on expectations regarding a price influence.

Table 8.18 Subjective knowledge summary comparison of significant correlations

Survey	Chile	U.S.	France	$6.00	$16.00	$53.00	Ave	Above ave	High
Objective knowledge				-0.235		0.291			
High subjective knowledge						**0.262**			
Self-confidence									
Objective knowledge									
Low subjective knowledge				**-0.363**		**0.320**			
Self-confidence									
Sensory									
Objective knowledge									
High subjective knowledge									
Self-confidence		0.363		0.241					
Objective knowledge									
Low subjective knowledge	**-0.334**		**0.302**						
Self-confidence									

8.4.7 Self-confidence segments (chardonnay)

Table 8.19 shows the computed average attribute importance and individual average utility values for each level, according to the high and low self-confidence clusters. There was minimal difference in opinion regarding attributes or levels between those with higher and lower levels of self-confidence. For both segments the extrinsic cues were more powerful than the cited intrinsic cue, with price again dominating the quality ratings. Results of testing (Table 8.20) show that there were no significant differences in average utility values according to self-confidence clusters. Comparison of results with the sensory experiment revealed some influence of self-confidence when the products were being experienced; those with high self-confidence rated the importance of acid much higher than any other segment analyzed. Interestingly, the utility value of the high acid level was much lower for those surveyed than for respondents who tasted the low quality product.

Table 8.19 Comparison of part worths and utilities self-confidence

Attribute and level	High self-confidence		Low self-confidence	
	Sensory	Survey	Sensory	Survey
Ave imp COO	**4.34**	**15.66**	**19.44**	**16.88**
Chile	-0.0422	-0.1310	-0.1984	-0.2864
U.S.	-0.0578	-0.2902	-0.1413	-0.1878
France	0.0156	0.4212	0.3397	0.4742
Ave imp price	**74.28**	**71.19**	**70.83**	**69.38**
$ 6.00	-0.8222	-1.6683	-0.9698	-1.6385
$16.00	-0.0689	0.1028	0.0984	0.1502
$53.00	0.8911	1.5655	1.0683	1.4883
Ave imp acid	**21.39**	**13.14**	**9.72**	**13.75**
Average	0.2378	0.2919	0.2222	0.2629
Above average	0.0178	-0.0133	0.1511	0.0939
High	-0.2556	-0.3051	-0.1289	-0.3568
	N = 78	N = 70	N = 58	N = 71
Pearson's r	0.963 sig .000	1.000 sig. .000	0.990 sig. .000	0.997 sig. .000
Kendall's tau	0.817 sig .002	1.000 sig. .001	0.833 sig. .001	0.889 sig. .004

Table 8.20 Utility comparison between high and low self-confidence groups

Test Statistics - Respondents with high and low self confidence Chardonnay (survey)[a]

	Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average	High
Mann-Whitney U	2054.000	2111.500	2330.500	2259.000	2234.500	2312.500	2296.000	2179.500	2227.500
Wilcoxon W	4610.000	4389.500	4608.500	4537.000	4512.500	4868.500	4574.000	4457.500	4783.500
Z	-1.385	-1.140	-.205	-.510	-.615	-.281	-.352	-.851	-.644
Asymp. Sig. (2-tailed)	.166	.254	.838	.610	.539	.778	.725	.395	.519

a. Grouping Variable: Grouped self confidence

Table 8.21 Self-confidence summary comparison of significant correlations

Survey	Chile	U.S.	France	$6.00	$16.00	$53.00	Ave	Above ave	High
Objective knowledge				-0.235					
Subjective knowledge				-0.286		0.262			
High self-confidence									
Objective knowledge									
Subjective knowledge	0.248								
Low self-confidence						**-0.251**			
Sensory									
Objective knowledge									
subjective knowledge	-0.246	0.371							
High Self-confidence									
Objective knowledge									
Subjective knowledge									
Low self-confidence	**0.285**		**-0.354**						

Analysis of correlations between the consumer characteristics and attribute average importance for the high self-confidence group revealed 2 significant relationships. A weak and positive (0.240) correlation was found between subjective knowledge and the average importance of price, and a low and negative (-0.303) correlation existed between subjective knowledge and acid. For the low self-confidence group, 1 significant relationship was found between self-confidence and the average importance of acid (0.261) (See Appendix 8 – Tables A 52 – A 55). The correlations with subjective knowledge closely replicate those found in the analysis of the subjective knowledge segments. As discussed in chapter 7, the segments are not mutually exclusive respective to all segments. While the same respondent cannot possess high and low

levels of a specific attribute, they may be represented in more than one segment; therefore, some replication of results is likely to occur.

Scrutiny of the correlation matrixes for the high self-confidence segments and attribute utilities reveal 3 significant relationships, and 2 emerged from testing undertaken in the low self-confidence group (Table 8.21). All of the relationships found were weak and only 1 involved self-confidence. This is seen in the analysis for the low self-confidence group, with a weak and negative (-0.251) relationship between self-confidence and the utility value for $53.00. In comparison, the data from the sensory experiments revealed no relationships between self-confidence and price, confirming earlier findings in relation to subjective knowledge and COO utilities.

8.5 Chardonnay summary

Results of analysis of the survey data generally support the findings of the sensory data, both demonstrating the power of extrinsic cues to dominate consumer quality perceptions, and also the ability of the survey conjoint analysis method to predict these results. The sample was clustered to isolate those respondents with respectively high and low levels of knowledge (both types) and self-confidence and each segment was tested to quantify the number and of nature of any significant relationships between these consumer characteristics and cue usage. While a number of significant correlations were found between the independent and dependant variables tested in the survey data (consistent with analysis of the sensory data) they were few in number, only weak to moderate in magnitude and confined exclusively to the extrinsic cues of price and COO. Comparison of utility values between high and low level clusters showed general differences between groups tested, but only 1 instance of a significant difference was found. Therefore, no consistent pattern of strong relationships between

knowledge and self-confidence and cue usage was found to exist in this stage of the study

In terms of comparison between the analysis of results for sensory data and the survey data, the opportunity to taste the wine and experience the effect of higher levels of acid can be seen in the comparison of average importance and utility levels for that attribute, particularly for the high and low self-confidence and subjective knowledge groups. However, even though these respondents experiencing sour wine showed a degree of reaction to it, the credence they placed on price remained stronger. Given the vastly different circumstances of participation for the survey respondents and compared to the strictly controlled environment experienced by the sensory participants the consistency in outcomes is significant. However, scrutiny of test results for both aspects of the research show no significant correlations were found in either aspect of the study between the independent variables and any of the 3 utility levels for acid. Hence no empirical link between the consumer characteristics of knowledge (both types) and self-confidence and the use of intrinsic cues to assess quality has been established using either methodology. Rather, the review shows 14 significant relationships between the tested independent variables and price utilities. In the main, these reflect a universal consumer belief in the price/value schema as similar relationships emerged for clusters regardless of knowledge or self-confidence levels. A further 12 significant relationships were revealed between knowledge and self-confidence and the utility values for COO. These tended to illustrate a preference for France as a source country over the Chile and the U.S., confirming both groups are influenced in their quality judgments by a positive CI congruent with the product evaluated. Based on the findings across both studies, only 1 of the proposed hypotheses was supported in the testing specific to chardonnay (Table 8.22).

Table 8.22 Hypotheses testing outcomes (chardonnay)

H_1	**Objective knowledge is positively associated with the relative contribution of intrinsic cues to an individual's assessment of product quality.**	**Not Supported**
H_{1a}	Objective knowledge is positively associated with the relative contribution of an intrinsic cue (acid) to an individual's assessment of product quality (wine).	Not Supported
H_2	**Objective knowledge is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of product quality.**	**Not Supported**
H_{2a}	Objective knowledge is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_{2b}	Objective knowledge is negatively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_3	**Subjective knowledge is positively associated with the relative contribution of intrinsic cues to an individual's assessment of product quality.**	**Not Supported**
H_{3a}	Subjective knowledge is positively associated with the relative contribution of an intrinsic cue (acid) to an individual's assessment of product quality (wine).	Not Supported
H_4	**Subjective knowledge is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of product quality.**	**Not Supported**
H_{4a}	Subjective knowledge is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_{4b}	Subjective knowledge is negatively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_5	**Self-confidence is positively associated with the relative contribution of intrinsic cues to an individual's assessment of quality.**	**Not Supported**
H_{5a}	Self-confidence is positively associated with the relative contribution of an intrinsic cue (acid) to an individual's assessment of product quality (wine).	Not Supported
H_6	**Self-confidence is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of quality.**	**Not Supported**
H_{6a}	Self-confidence is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_{6b}	Self-confidence is negatively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_7	**The paper based conjoint analysis method will be predictive of the sensory based test in terms of the relative average importance of tested product attributes (intrinsic and extrinsic)**	**Supported**

9 Conjoint analysis survey results for brie

9.1 Introduction

Chapter 8 provided an overview of the methodology used to conduct the conjoint analysis by survey and subsequent data analysis results specific to chardonnay; the chapter also included a comparison of the survey data analysis with the sensory data analysis for chardonnay. The chapter concluded with a presentation of hypotheses testing outcomes. Chapter 9 illustrates the results of survey data analysis and comparative discussion respective to brie, concluding with a presentation of hypotheses testing outcomes.

9.2 Brie conjoint analysis results

As found with chardonnay, price was considered the most important attribute contributing to perception of brie quality; however, these respondents considered fat as important as COO in forming their opinions (Table 9.1). Further, while price was still considered the most important, the view appears more balanced across the attributes with COO at 24% as compared to 40% for price, and fat only approximately 5% less influential than price at 35%. Results of the conjoint analysis showed remarkable consistency between the opinions of respondents in both stages of the research in relation to which attributes were most important to rating quality. However, in contrast to the findings from the sensory experiment, the full fat brie was considered very undesirable for the survey group with a utility value of -0.5337, with both higher fat cheeses receiving favorable values. Overall, the triple cream was believed to be the best option, in line with the literature and expectations, but in stark contrast to the taste testing data. Many respondents who tasted the triple cream brie said they found it ‘too rich’ and somewhat sickening, and rated these cheeses according to this negative perception. In the survey situation, respondents were left to imagine (or ‘remember’ if

they had product experience) what the product would taste like. Clearly, they imagined (or remembered) the experience favorably and rated the products accordingly. Table 9.1 illustrates the average utility value for each profile and shows that the combination of higher price and desirable fat levels result in higher utility values. However, the third ranked brie illustrates the more 'balanced' view across the attributes where a low price is accepted when the fat level and the COO are the most favored. Due to this reversal of beliefs compared to the sensory data, profile rankings for brie are considerably different for each of the two stages of the study (Table 9.2).

Table 9.1 Summary of part worths and utilities brie

Attribute and level	Research stage	
	SENSORY	SURVEY
Ave imp COO	25.07	24.33
Argentina	**-0.1841**	**-0.2320**
Canada	**0.0208**	**-0.1200**
France	**0.1633**	**0.3520**
Ave imp price	43.99	40.60
$28.95	**-0.3405**	**-0.4692**
$49.00	**0.2689**	**-0.0361**
$69.95	**0.0717**	**0.5053**
Fat	30.95	35.07
Full cream	**-0.0148**	**-0.5337**
uble cream	**0.2218**	**0.2255**
Triple cream	**-0.2070**	**0.3082**
	N = 263	**N = 274**

Table 9.2 Comparative average values per profile brie (sensory and survey)

Profile	Attribute levels			Min		Max		Mean		SD	
				sens	sur.	sens	sur.	sens	sur.	sens	sur.
621	France	$69.95	Double cream	0.78	**3.33**	10.89	**11.00**	7.29	**8.16**	1.73	**1.31**
380	Argentina	$69.95	Triple cream	0.33	**2.78**	10.22	**10.44**	6.51	**7.66**	2.36	**1.59**
735	France	$28.95	Triple cream	0.56	**1.78**	11.44	**11.56**	6.45	**7.27**	2.23	**1.58**
178	Canada	$49.95	Triple cream	0.44	**1.89**	11.22	**10.33**	6.90	**7.23**	2.33	**1.46**
507	Argentina	$49.95	Double cream	1.11	**1.56**	11.67	**9.78**	7.13	**7.03**	1.87	**1.52**
367	Canada	$69.95	Full cream	1.11	**1.22**	11.11	**20.78**	6.91	**6.93**	1.91	**2.39**
709	France	$49.95	Full cream	1.11	**1.44**	11.22	**10.22**	7.24	**6.86**	1.88	**1.85**
266	Canada	$28.95	Double cream	1.44	**0.89**	11.22	**10.22**	6.73	**6.71**	1.84	**1.54**
139	Argentina	$28.95	Triple cream	0.11	**0.11**	10.78	**12.11**	6.10	**6.68**	2.12	**1.67**
810	France	$28.95	Full cream	0.78	**1.11**	10.89	**10.89**	7.29	**6.43**	1.73	**1.79**
393	Argentina	$28.95	Full cream	1.11	**0.78**	10.33	**10.00**	6.29	**5.84**	1.85	**1.78**

N = 263 (sensory) N = 274 (survey)

9.2.1 Brie profiles and likelihood of purchase

Table 9.3 Average brie profile values by purchase intentions (survey)

Profile	Yes		No		Mann Whitney U	Z	Sig.
	Mean	SD	Mean	SD			
810	6.46	1.81	6.32	1.74	6750.00	-0.39	.696
139	7.30	1.47	6.09	1.55	5257.00	-6.04	.000
367	7.83	1.51	6.62	2.57	5075.00	-3.81	.000
266	7.24	1.29	5.90	1.56	4414.50	-7.07	.000
709	7.46	1.33	6.54	2.01	6361.00	-3.55	.000
380	8.29	1.23	7.45	1.67	5069.50	-3.62	.000
735	7.75	1.33	6.27	1.59	3928.00	-6.95	.000
393	6.80	1.37	5.25	1.75	4361.50	-7.11	.000
621	8.21	1.21	8.14	1.37	8626.00	-0.23	.818
178	7.61	1.12	7.01	1.60	7052.00	-2.76	.006
507	7.56	1.03	6.80	1.64	6060.50	-3.40	.001

N = 274

Table 9.3 shows the average total utility value for each brie sample grouped by consideration of purchase. As with chardonnay, the mean values are generally significantly higher for those products respondents considered purchasing as compared to those they would not, linking the perception of quality positively with purchase intention.

9.2.2 Knowledge levels brie

Consistent with previous results, the general level of objective knowledge amongst this group was found to be quite low. Results from the objective knowledge test found that respondents achieved an average of 4.47 correct answers out of a possible 14 and 83% scored 7 correct answers or less. Respondents have consistently overestimated their expertise in relation to this product even in comparison to relatively modest levels of self-assessed knowledge (Table 9.4). As self-confidence is not product specific, the score determined previously will be used for the analysis of brie also. Table 9.5 shows

the results of testing for significant differences between the samples in terms of knowledge. As found with chardonnay, there is no significant difference in average objective knowledge levels; but there is one for subjective knowledge. Whilst the difference is significant, the degree of difference is minimal.

Table 9.4 Mean scores for knowledge (sensory and survey)

	Mean		SD	
	sens.	surv.	sens.	surv.
Subjective knowledge brie	4.59	4.01	0.80	1.94
Objective knowledge brie (standardized)	2.95	2.88	0.51	1.80
Self-confidence (not product specific)	6.34	6.21	1.54	1.51
N = 263 (sensory) N = 274 (survey.)				

Table 9.5 Mann-Whittney U test for comparison of knowledge between groups

	Objective knowledge brie	Subjective knowledge brie
Mann-Whitney U	35359.000	32274.000
Wilcoxon W	70075.000	66990.000
Z	-.376	-2.091
Asymp. Sig. (2-tailed)	.707	.037

9.2.2.1 Influence of knowledge and self-confidence (brie)

Tables 9.6 and 9.7 illustrate the correlation coefficients calculated to investigate significant relationships between knowledge and self-confidence and tested product cues. As found previously with chardonnay (sensory and survey), there was significant inter-correlation (0.548) between subjective and objective knowledge due to the simultaneous attainment of both (Alba and Hutchinson 1987; Park, Mothersbaugh et al. 1994; Alba 2000). Also, consistent with previous analysis (both products: survey and sensory), significant correlations were found between levels within an attribute as well as between the attributes themselves, representing the relative degree of relative 'trade

off' occurring between the attributes/levels as part of the conjoint analysis utility calculations. However, unlike the results of previous analysis, for this group 4 significant correlations emerged between consumer characteristics and the average importance of 2 product attributes. There was a weak and negative relationship (-0.208) between objective knowledge and price, and a correspondingly weak and positive (0.215) relationship between objective knowledge and fat. These relationships are replicated with subjective knowledge. Whilst these correlations are weak, they provide the first suggestion that knowledge type and levels may influence consumer use of cues.

Table 9.6 Spearman's rho – Average attribute importance brie

		Objective knowledge brie	Subjective knowledge brie	Self confidence	Average importance COO	Average importance price
Objective knowledge brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge brie	Correlation Coefficient	.548	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.078	.184	1.000		
	Sig. (2-tailed)	.200	.002	.		
Average importance COO	Correlation Coefficient	-.041	.083	-.013	1.000	
	Sig. (2-tailed)	.497	.173	.828	.	
Average importance price	Correlation Coefficient	-.208	-.230	.000	-.394	1.000
	Sig. (2-tailed)	.001	.000	.997	.000	.
Average importance fat	Correlation Coefficient	.215	.160	.004	-.317	-.623
	Sig. (2-tailed)	.000	.008	.949	.000	.000

N = 274

Table 9.7 reveals the basis of these correlations in relationships found between the tested consumer characteristics and the attribute utility values from the conjoint analysis. Weak but positive and significant correlations were found between objective knowledge and double cream (0.186) and triple cream (0.303) and a correspondingly weak and negative correlation (-0.289) with full cream. There is also an indication that higher levels of objective knowledge led to a lesser reliance on price to assure quality. Similar relationships were found between these utilities and subjective knowledge. COO did not appear to effect opinions in a significant way, with the exception of 1 low

and negative (-0.137) between subjective knowledge and the utility for Canada. For self-confidence, no significant relationships emerged.

Table 9.7 Spearman's rho – Utilities brie

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective knowledge brie	Correlation Coefficient	-.004	-.116	.113	.126	.020	-.127	-.289	.186	.303
	Sig. (2-tailed)	.948	.055	.061	.037	.745	.036	.000	.002	.000
Subjective knowledge brie	Correlation Coefficient	.028	-.137	.089	.215	-.056	-.165	-.215	.076	.298
	Sig. (2-tailed)	.643	.023	.143	.000	.359	.006	.000	.212	.000
Self confidence	Correlation Coefficient	-.020	.003	-.021	-.043	-.076	.067	.019	-.096	.054
	Sig. (2-tailed)	.742	.955	.727	.475	.211	.272	.751	.112	.377
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.552	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.551	-.268	1.000						
	Sig. (2-tailed)	.000	.000	.						
$28.95 per kilo	Correlation Coefficient	.018	-.143	.170	1.000					
	Sig. (2-tailed)	.767	.018	.005	.					
$49.00 per kilo	Correlation Coefficient	.003	-.045	.054	-.352	1.000				
	Sig. (2-tailed)	.958	.454	.375	.000	.				
$69.95 per kilo	Correlation Coefficient	-.039	.203	-.192	-.742	-.277	1.000			
	Sig. (2-tailed)	.520	.001	.001	.000	.000	.			
Full Cream	Correlation Coefficient	-.102	.192	-.089	-.264	-.056	.341	1.000		
	Sig. (2-tailed)	.091	.001	.142	.000	.356	.000	.		
Double Cream	Correlation Coefficient	.091	-.151	.046	.172	.158	-.280	-.749	1.000	
	Sig. (2-tailed)	.134	.013	.449	.004	.009	.000	.000	.	
Triple Cream	Correlation Coefficient	.112	-.191	.089	.254	-.053	-.266	-.774	.245	1.000
	Sig. (2-tailed)	.065	.002	.143	.000	.379	.000	.000	.000	.

N = 274

As with previous components of study, the next step was to segment the sample and cluster those individuals with the most extreme levels of knowledge and self-confidence. The methodology for segmentation was identical to that used previously: according to quartile score values where the lowest 25% would be deemed to possess low levels of the characteristic and those in the highest 25% of the data array would be deemed to have high levels with all other respondents ignored. Table 9.8 illustrates the quartile values used for segmentation purposes; the previously computed segments for self-confidence used for testing respective of brie. Correlation matrices for all segments are seen in Appendix 9 – Tables A68 through A 78.

Table 9.8 Quartile values for knowledge and self-confidence (chardonnay)

Percentiles	Subjective knowledge	Objective knowledge	Self-confidence
25th	2.38	2.00	5.20
50th	4.00	4.00	6.20
75th	5.50	7.00	7.20

N = 274

9.2.3 Objective knowledge segments (brie)

Table 9.9 Comparison of part worths and utilities objective knowledge

Attribute and level	High objective knowledge		Low objective knowledge	
	Sensory	Survey	Sensory	Survey
Ave imp COO	**35.63**	**24.85**	**9.69**	**26.61**
Argentina	-0.2495	-0.3040	-0.1250	-0.2397
Canada	-0.0448	-0.1698	-0.0119	0.0079
France	0.2943	0.4738	0.1131	0.2317
Ave imp price	**39.46**	**25.89**	**35.05**	**67.74**
$28.95	-0.3372	-0.3827	-0.5179	-0.5730
$49.00	-0.2651	-0.0448	0.3929	-0.0540
$69.95	0.0721	0.4275	0.1250	0.6270
Ave imp fat	**24.90**	**49.26**	**53.27**	**5.65**
Full cream	-0.2144	-0.9799	0.3452	-0.0587
Double cream	0.1657	0.4182	0.4821	0.0413
Triple cream	-0.0487	0.5617	-0.8274	0.0175
	N = 57	N = 72	N = 56	N = 70
Pearson's r	0.979 sig .000	0.995 sig .000	0.994 sig .000	0.990 sig .000
Kendall's tau	0.944 sig .000	0.986 sig .000	0.944 sig .001	1.000 sig .000

Table 9.9 illustrates the comparison of part worths and utilities for the objective knowledge segments and also provides the comparison of results from the analysis of sensory data. The average importance given to COO is comparable for both segments, with identical ranking of countries. However, for price, the low objective knowledge group placed far more importance on price than did those with high objective knowledge, due to their somewhat indifferent response to varying fat levels. Conversely, those with better understanding of the implications of fat level variances

paid more credence to that cue than to price. Results from the sensory experiment provide insight into the potential power of experience over expectations. When tasting, the lower knowledge group graded products more strictly according to their sensory experiences whilst those participating in the survey with low knowledge could only base their quality ratings on expectations. Without objective knowledge to draw on, the low objective knowledge survey segment reacted more to differences in price, and to a lesser degree, COO. However, comparison of mean utility values between groups (Table 9.10) show these differences to only reflect the degree of extremities in scores as none of the averages are found to be significant.

Table 9.10 Utility comparison between high and low objective knowledge groups

Test Statistics - Respondents with High and Low Objective Knowledge Brie (survey)[a]

	Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Mann-Whitney U	368.000	336.000	304.000	300.000	358.500	338.500	276.000	284.500	270.500
Wilcoxon W	1071.000	1039.000	535.000	531.000	1061.500	1041.500	979.000	515.500	501.500
Z	-.333	-.852	-1.374	-1.437	-.488	-.811	-1.824	-1.691	-1.916
Asymp. Sig. (2-tailed)	.739	.394	.169	.151	.626	.417	.068	.091	.055

a. Grouping Variable: Objective knowledge brie

Examination of the correlation matrix for attribute average importance and consumer characteristics (high objective knowledge) revealed 1 weak and negative relationship (-0.242) between price and subjective knowledge. There was also 1 weak and negative (-0.310) correlation between subjective knowledge and the utility value for $49.00 (See Appendix 9 – Tables A 68 – A 71). The correlation matrix for attribute average importance and consumer characteristics (low objective knowledge) showed 3 significant correlations. The first was a weak and positive (0.257) relationship between subjective knowledge and COO, the other 2 were between objective knowledge and price (-0.251) and fat (0.265), suggesting weak links between knowledge and the influence of respective cues for this group. For the low objective knowledge cluster, the correlation matrix illustrating consumer characteristics and utility values revealed 5 significant correlations, with 4 relationships involving objective knowledge. A summary

of these significant relationships, and those found from analysis of the sensory data, is shown in Table 9.11. Whilst none of the relationships could be considered strong (the highest is 0.377) there is evidence for this cluster, that knowledge is linked to cue usage. Amongst the low knowledge group, those with better product understanding paid less attention to the extrinsic cues, favoring the intrinsic indicators of quality instead.

Table 9.11 Objective knowledge summary comparison of significant correlations (brie)

Survey	Argentina	Canada	France	$28.95	$49.00	$69.95	Full cream	Double cream	Triple cream
High objective knowledge					**0.310**				
Subjective knowledge									
Self-confidence									
Low objective knowledge				**0.295**	**-0.271**		**-0.285**		**0.377**
Subjective knowledge						0.260			
Self-confidence									
Sensory									
High objective knowledge									
Subjective Knowledge							-0.370		
Self-confidence				0.274					
Low objective knowledge									
Subjective Knowledge									
Self-confidence									

9.2.4 Subjective knowledge segments (brie)

Comparison of part worths and utilities for the high and low subjective knowledge groups (Table 9.12) illustrated the respective differences in category experience between the 2 groups and the impact this had on their opinions regarding fat in relation to quality ratings. Average importance of attributes for the high subjective knowledge group is comparable to those for the high objective group, with an identical ranking of utility values for each. For those with low levels of subjective knowledge, price overwhelmed the influence of COO and fat level again. This group assessed their own knowledge as low; therefore, their heavy reliance on price, moderate use of COO and disregard for fat levels are not surprising. Comparison with the results from the sensory data shows similar results as those discussed for the high and low objective knowledge

groups. Not bound by assumptions based on category experience, this group went along with an expectation that a higher price means higher quality. Conversely, respondents who were able to taste the different products rated according to their taste preferences. Comparison of means testing shows, however, that average utility values were not significantly different in spite of the variance in utility values (Table 9.13).

Table 9.12 Comparison of part worths and utilities subjective knowledge

Attribute and level	High subjective knowledge		Low subjective knowledge	
	Sensory	Survey	Sensory	Survey
Ave imp COO	**28.37**	**26.53**	**11.38**	**26.00**
Argentina	-0.1732	-0.2029	-0.0415	-0.3094
Canada	-0.0458	-0.2850	-0.0614	-0.0171
France	0.2190	0.4879	0.1028	0.3265
Ave imp price	**29.43**	**21.89**	**44.48**	**58.28**
$28.95	-0.2222	-0.2705	-0.3847	-0.2274
$49.00	0.1846	-0.0966	0.2570	-0.0376
$69.95	0.0376	0.3671	0.1277	0.7316
Ave imp fat	**42.20**	**51.58**	**44.14**	**15.72**
Full cream	-0.3350	-0.8986	0.2322	-0.2274
Double cream	0.0866	0.2947	0.1725	0.1573
Triple cream	0.2484	0.6039	-0.4046	0.0701
	N = 68	N = 69	N = 67	N = 65
Pearson's r	0.915 sig .000	0.993 sig .000	0.949 sig .000	1.000 sig .000
Kendall's tau	0.556 sig .019	1.000 sig .001	1.000 sig .000	1.000 sig .000

Table 9.13 Comparison between high and low subjective knowledge groups

Test Statistics - Respondents with High and Low Subjective Knowledge Brie (survey)[b]

	Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Mann-Whitney U	19.000	2.000	13.000	10.500	17.500	11.500	8.500	16.500	7.000
Wilcoxon W	22.000	5.000	203.000	200.500	20.500	14.500	11.500	206.500	197.000
Z	.000	-2.051	-.720	-1.022	-.181	-.902	-1.261	-.301	-1.443
Asymp. Sig. (2-tailed)	1.000	.040	.472	.307	.857	.367	.207	.763	.149
Exact Sig. [2*(1-tailed Sig.)]	1.000[a]	.038[a]	.533[a]	.343[a]	.857[a]	.400[a]	.238[a]	.771[a]	.190[a]

a. Not corrected for ties.

b. Grouping Variable: Subjective knowledge brie

As with the sensory data analysis, no significant relationships were found to exist in the survey data and for either cluster between knowledge, self-confidence and the attribute average importance (See Appendix 9 – Tables A 72 – A 75). Table 9.14 illustrates the significant correlations found between utility values for the respective groups and also illustrates a comparison with those found in the analysis of the sensory data. For the high subjective knowledge segment, only 1 significant correlation (0.279) was found and that is between objective knowledge and the utility for double cream. For the low level cluster there were 2; the first was a weak and negative relationship (-0.302) between objective knowledge and the utility for full cream, and the other was a weak and positive correlation between self-confidence and the utility for Canada. The relationship between the utility value and self-confidence was similar in nature to instances identified in other components of the data analysis (both sensory and survey). Those with higher levels of self-confidence were less likely to 'punish' a CI not congruent with the particular product being assessed (e.g. Canada and cheese). The relationship between objective knowledge and the utility for full cream is a reflection of a better understanding of the impact of fat levels on quality. However, as found previously, the relationships were weak and indicate that knowledge and self-confidence exerted very little influence overall. Importantly, no significant correlations were found between subjective knowledge (high or low) and any of the utility values. In comparison, 2 significant correlations were found to exist between the tested consumer characteristics and utility values in the analysis of the sensory data; although these also indicated little overall influence.

Table 9.14 Subjective knowledge summary comparison of significant correlations (brie)

Survey	Argentina	Canada	France	$28.95	$49.00	$69.95	Full cream	Double cream	Triple cream
Objective knowledge								0.279	
High subjective knowledge									
Self-confidence									
Objective knowledge							0.302		
Low subjective knowledge									
Self-confidence		0.271							
Sensory									
Objective knowledge									
High subjective knowledge									
Self-confidence				0.248					
Objective knowledge				0.310				0.295	0.262
Low subjective knowledge		**0.260**	**0.246**						
Self-confidence									

9.2.5 Self-confidence segments (brie)

Table 9.15 shows the comparison of part worths and utilities for the high and low self-confidence segments. Results indicate little difference in opinions between the groups in the survey in relation to attribute average importance or utility values. This is confirmed in table 9.16 showing there were no significant differences between average utility values for the clusters. Both segments in the survey sample showed a higher regard for price than fat, with COO also very influential with these segments exhibiting the highest reliance on extrinsic cues compared to the intrinsic cue described. This may have been a reflection of stubbornness, supported by their confidence, related to strongly held beliefs regarding price or COO. Reviewing the correlation matrices for these segments suggests that the influence of self-confidence on cue usage was negligible. Consistent with the findings for knowledge segments, those actually tasting the triple cream brie often found it unpleasant, in the case of anticipated liking, this level of fat is expected to be more desirable than the lower levels. Interestingly, those with low levels of self-confidence in the sensory experiment placed the highest credence on taste in comparison to all other segments across both studies. This is surprising, as

these respondents would be expected to rely most heavily on the extrinsic cues provided. In contrast, those with higher levels were more responsive to COO attribute levels than others indicating a strong reluctance to abandon beliefs regarding country associations. Respondents in the survey, basing opinions on expectations alone showed little variation in their expectations based on self-confidence levels.

Table 9.15 Self-confidence summary comparison of significant correlations (brie)

Attribute and level	High self-confidence		Low self-confidence	
	Sensory	Survey	Sensory	Survey
Ave imp COO	**34.21**	**27.73**	**15.28**	**29.66**
Argentina	-0.2151	-0.2570	-0.1871	-0.2254
Canada	-0.0142	-0.1426	0.1345	-0.1549
France	0.2293	0.3997	0.0526	0.3803
Ave imp price	**27.63**	**41.60**	**43.33**	**37.01**
$28.95	-0.1980	-0.44.61	-0.5673	-0.3474
$49.00	0.1610	-0.0929	0.3450	-0.0610
$69.95	0.3700	0.5390	0.2222	0.4085
Ave imp fat	**38.16**	**30.67**	**41.39**	**33.33**
Full cream	0.0880	-0.4113	0.1345	-0.4366
Double cream	0.2037	0.0962	0.3684	0.2441
Triple cream	-0.2920	0.3151	-0.5029	0.1925
	N = 78	N = 67	N = 71	N = 65
Pearson's r	0.981 sig .000	0.999 sig .000	0.981 sig .000	0.990 sig .000
Kendall's tau	0.889 sig .004	1.000 sig .000	0.889 sig .000	0.889 sig .004

Scrutiny of the correlation matrices showing relationships between attribute average importance and knowledge and self-confidence for the high and low self-confidence clusters revealed only 1 significant correlation (See Appendix 9 – Tables A 76 – A 78). For the high self-confidence group, an isolated relationship (0.277) between objective knowledge and fat was found, reflecting earlier findings. This outcome is consistent with the findings from the sensory data, where no significant relationships were found. Table 9.16 shows a summary of comparisons of significant relationships between consumer characteristics and utility values (by segment). The significant correlations revealed in the analysis of sensory data for the same segments are also shown. Whilst there were no significant relationships noted for self-confidence in the sensory data, 1 weak and negative (-0.254) correlation was found for France amongst the high self-

confidence cluster (survey respondents). This, once again, demonstrates (albeit weakly) that high levels of self-confidence can lessen the influence of a strong CI. However, in examining the results for both segments, in both stages of research, there was no pattern of strong influence found that can be specifically attributed to self-confidence levels.

Table 9.16 Self-confidence summary comparison of significant correlations (brie)

Survey	Argentina	Canada	France	$28.95	$49.00	$69.95	Full cream	Double cream	Triple cream
Objective knowledge		0.327					0.250		
Subjective knowledge		0.312					0.249		
High self-confidence			**-0.254**						
Objective knowledge									
Subjective knowledge							0.293		
Low self-confidence									
Sensory									
Objective knowledge								0.243	
Subjective knowledge									
High self-confidence									
Objective knowledge						0.265			
Subjective knowledge									
Low self-confidence									

Table 9.17 Utility comparison between high and low self-confidence groups

Test Statistics - Respondents with High and Low Self Confidence Brie (survey)[a]

	Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Mann-Whitney U	2306.500	2370.000	2376.000	2277.500	2098.500	2212.000	2316.500	2115.000	2012.500
Wilcoxon W	4584.500	4648.000	4932.000	4555.500	4376.500	4768.000	4594.500	4393.000	4568.500
Z	-.307	-.036	-.011	-.431	-1.198	-.711	-.264	-1.126	-1.563
Asymp. Sig. (2-tailed)	.759	.971	.991	.667	.231	.477	.791	.260	.118

a. Grouping Variable: Grouped self confidence

9.3 Brie summary

The power of price and COO to influence expectations of quality was illustrated again in the analysis of results for Brie. Price was found to be the most important influence on product expectations for the sample (as whole) and for all segments except those possessing high levels of objective and subjective knowledge. For these consumers, the intrinsic cue was the most influential. Fat levels also exceeded the importance placed on COO for the group, and for all segments with the exception of the low self-confidence cluster. Overall, COO levels contributed approximately 25% to the overall quality ratings, and therefore, should not be discounted.

In the survey, respondents were assessing products according to their expectations rather than sensory experience and this critical difference is clearly seen in the utility values computed for the various levels of fat. Many participating in the taste tests found the triple cream brie unpleasant; conversely, most completing the survey favored the description of higher cream levels in expectation of better taste (a reaction in line with expectations and congruent with the literature). Whilst those with high levels of objective and subjective knowledge correctly placed the greatest importance on fat levels over price and COO, these outcomes were not supported with a strong pattern of significant correlations between utility values and knowledge (either type), although several weak and isolated examples were found. Conversely, for the low objective knowledge group, 4 instances (albeit weak) of significant correlations were found between objective knowledge and 2 fat and 2 price utility values. Corresponding relationships were also found in the analysis of the low subjective knowledge and self-confidence segments. As explained previously, the emergence of repeated or similar correlations across different segments is to be expected as some respondents may be present in more than 1 cluster since segments were only mutually exclusive according to the specific consumer characteristic under investigation. These relationships provide

the first credible evidence of a moderating effect of these consumer characteristics and product cue usage. However, the lack of significant differences between utility values between respective groups means we must be cautious in interpreting these correlations, given the generally weak relationships they represented.

Overall, the conjoint analysis findings and correlation testing results for the survey are comparable to those found in the analysis of the sensory data in terms of the attitudes towards intrinsic and extrinsic cues. One important difference in opinions identified between the sensory experiment and survey results is those completing the survey generally associated higher cream levels with better quality brie. Conversely, in the sensory experiment, only those with high levels of category and self-assessed knowledge favored the triple cream level, with a number of respondents preferring the double or full cream variety. This highlights the critical nature of the 'terms' used in product descriptions, as the reality for many consumers may not be as expected. Also, the survey findings provide the first empirical evidence linking knowledge to cue usage, although interpretations must be tempered, with the acknowledgement that the influence is quite weak and appears isolated to lower knowledge segments. In summary, the findings show that for brie the influence of the intrinsic cue is more powerful than the extrinsic cues investigated, although price and COO were not totally discounted in forming respondent opinions. Generally, knowledge and self-confidence were not found significantly influential in forming respondent opinions of quality. In the case of the sensory experiments, taste overwhelmed expectations and underpinned quality ratings while anticipation of taste (participants expecting the 'creamier' the better) drove quality ratings in the survey. Table 9.18 provides a summary of results in terms of hypotheses tested.

Table 9.18 Hypotheses testing outcomes (brie)

H_1	**Objective knowledge is positively associated with the relative contribution of intrinsic cues to an individual's assessment of product quality.**	**Partially Supported**
H_{1a}	Objective knowledge is positively associated with the relative contribution of an intrinsic cue (fat) to an individual's assessment of product quality (cheese).	Partially Supported
H_2	**Objective knowledge is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of product quality.**	**Not Supported**
H_{2a}	Objective knowledge is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_{2b}	Objective knowledge is negatively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_3	**Subjective knowledge is positively associated with the relative contribution of intrinsic cues to an individual's assessment of product quality.**	**Partially Supported**
H_{3a}	Subjective knowledge is positively associated with the relative contribution of an intrinsic cue (fat) to an individual's assessment of product quality (cheese).	Partially Supported
H_4	**Subjective knowledge is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of product quality.**	**Not Supported**
H_{4a}	Subjective knowledge is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_{4b}	Subjective knowledge is negatively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_5	**Self-confidence is positively associated with the relative contribution of intrinsic cues to an individual's assessment of quality.**	**Not Supported**
H_{5a}	Self-confidence is positively associated with the relative contribution of an intrinsic cue (fat) to an individual's assessment of product quality (cheese).	Not Supported
H_6	**Self-confidence is negatively associated with the relative contribution of extrinsic cues to an individual's assessment of quality.**	**Not Supported**
H_{6a}	Self-confidence is negatively associated with the relative contribution of an extrinsic cue (COO) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_{6b}	Self-confidence is negatively associated with the relative contribution of an extrinsic cue (price) to an individual's assessment of product quality (wine / cheese).	Not Supported
H_7	**The paper based conjoint analysis method will be predictive of the sensory based test in terms of the relative average importance of tested product attributes (intrinsic and extrinsic)**	**Partially Supported**

10 Conclusions, limitations and implications

10.1 Introduction

This final chapter summarizes the thesis. A review of research is provided in addition to a summary of key findings and their implications for marketing managers. Limitations to the research are discussed and suggestions for future research are put forward.

10.2 Overview of the research and findings

Chapter 2 provides a précis of the substantial body of literature examining the influence of intrinsic and extrinsic cues (COO and price specifically) on consumer evaluation of expected and experienced product quality. The likely moderating effect of the consumer characteristics of knowledge and self-confidence are also explored. However, in reviewing the existing research in these areas, several gaps in our current understanding of the interactions between these variables were identified. Moreover, this research offered an opportunity to test the ability of conjoint analysis as a credible tool to predict actual consumer opinions regarding product attribute preferences.

Therefore, this research was undertaken to quantify the power of selected extrinsic and intrinsic cues of consumer evaluations of both experienced and expected product quality, and further, to measure the respective influences of objective knowledge, subjective knowledge and self-confidence on these quality assessments. Another intention was to determine if a survey conducted measuring expectations of quality would yield comparable results with quality assessments based on actual product experience. The investigation involved a series of sensory experiments where respondents tasted samples of wine and cheese and was followed by a second study administered by survey, where only product description profiles were provided. The

analysis of results from both the sensory experiment and the conjoint analysis survey show findings that are remarkably similar in most respects.

For chardonnay, price was consistently found to exert the most powerful influence on consumer quality assessments with an average attribute importance of 71.81% for the sensory experiment, and 73.68% for the survey (Table 8.5). Surprisingly, those participating in the sensory experiments thought COO was more persuasive than experienced acid levels with an average importance of 15.08% for COO and 13.10% for acid. This is in spite of experiencing wines of considerably diminished quality, described as 'sour', 'like vinegar' and 'foul' by volunteers in earlier aspects of the study. In the survey, respondents considered COO to be marginally less important than acid with respective attribute average importance scores of 12.27% for COO and 14.05% for acid. Scrutiny of average profile utility values across both stages of the research confirms the overall parity of opinion between the two groups. The rank order of wine profiles from the highest utility value profile to the lowest were identical in both stages, with the exception of a reverse order for the profiles ranking 8th and 9th respectively, with profiles also sharing similar average scores (Table 8.6). COO and price did not affect objective quality; however, even when experienced quality was diminished, their influence was not substantially reduced.

The influence of knowledge (objective and subjective) and self-confidence was found to be sporadic and weak. In the case of knowledge, this is likely to be due to respondents' general lack of objective knowledge in both stages of the survey. In the case of self-confidence, results are surprising given that respondents in both studies exhibited reasonably healthy degrees of self-confidence. Whilst significant relationships emerged between these consumer characteristics and attribute utility levels, no interpretable pattern emerged and correlation coefficients were generally weak. Further, testing

revealed that few significant differences existed between average utility values and the high and low level knowledge and self-confidence clusters.

For brie, the results were similar but with one noteworthy difference in opinion between the respondents participating in the sensory experiment and the survey. Whilst price was again the most important attribute influencing quality (experienced and expected) with an average attribute importance of 43.99% for the sensory results and 40.60% for the survey, fat levels were found to be more important than COO for both groups with an average attribute importance of 30.95% in the experiment and 35.07% in the survey (Table 8.22). The average importance of COO for both groups was consistent at 25.07% in the sensory experiment, and 24.33% in the survey. Utility values for the various levels revealed a wider range of opinion generated from those assessing product descriptions only. For example, while both samples believed that Argentina would provide the worst quality brie and France the best, the utility value for Argentina was -0.1841 (sensory) and -0.2320 (survey), and 0.1633 (sensory) and 0.3520 (survey) for France. Whilst both groups considered fat a major contributor to quality, many in the sensory experiment found the triple cream unpleasant and rated those profiles accordingly, whereas (working on expectations alone) those in the survey strongly favored this fat level. Opinions on the double cream were very similar, with differences noted also on judgments of the full cream variety. Those who tasted the full cream brie found the cheese marginally less appealing, whereas those completing the survey 'punished' this level with harsh ratings. The strong 'halo' over the triple cream brie may be to some extent due to pleasant associations with the term 'cream' for many consumers. For them, if double cream is expected to be 'good', then triple cream must be even 'better'. Analysis of results for this product provides the first indications of the influence of knowledge, both subjective and objective, on cue usage. Hence, those respondents with higher levels of knowledge considered fat to be considerably more important that those with lower levels, with correspondingly diminished importance for

price. For example, the average importance of fat for high objective knowledge group (survey) is 49.26% as opposed to 5.65% for the low level cluster. Correspondingly, those with high subjective knowledge (survey) determined its average importance as 51.58% compared to 15.72% for the low level segment. These findings are supported by the correlations matrix illustrating attribute average importance for fat and price and knowledge (both types) for the survey data where significant relationships were found to exist between these variables. However, these outcomes must be tempered by examination of the correlation matrixes between groups for knowledge (both types) and self-confidence and attribute utility values where, as with the sensory data, all significant correlations revealed signified weak relationships. Moreover, no reliable and interpretable pattern was found between the variables tested and few differences in average utility values were significant.

Overall, the results of the data analysis for brie, for both stages of the study, show consistent opinions in regard to the relative average importance for the attributes tested. Price was found for both groups to be the most influential, but fat levels and COO were both also major contributors to the quality evaluation. The major noteworthy difference in the findings from the sensory experiments and survey is the opposite response to the experienced assessment of triple cream brie versus the expected liking of respondents for this product. For brie, conjoint analysis has fairly accurately identified the respective contribution of the product attributes tested, but the importance of meaningful product descriptions must be highlighted. Whilst both sample groups were consistent in their determination of fat average importance (30.95% for the sensory group and 35.07% for the survey sample), there was considerable divergence in their opinions regarding the most desirable levels. The survey respondents were attracted to the brie with the highest ‘cream’ content, expecting the taste to be very good. However, in reality, consuming brie containing that much fat actually results in a very negative the sensory experience for many. These consistent findings across 2 different product categories

indicates that conjoint analysis by survey is a valid and appropriate method for measuring expected consumer liking for hypothetical product attributes, with the proviso that the product descriptors used must be accurately interpreted by respondents both pre and post-product experience.

In summary, for chardonnay only H_7 is supported, as there is no robust empirical evidence to support that high levels of knowledge or self-confidence lead to a heavier reliance on intrinsic rather than extrinsic cues. Rather, significant correlations between the independent and dependent variables tested tend to illustrate that heightened knowledge and self-confidence may result in strong support for stereotypical country images and the need to pay more to acquire better quality wine. For brie, credible evidence was found supporting a link between knowledge levels and consideration of the intrinsic cue and its varying levels. Thus demonstrating that for this product category, experience and an objective understanding of a critical product attribute can result in increased consideration of that attribute when assessing quality, both expected and experienced. Therefore, for brie H_1, H_{1a}, H_3, H_{3a} and H_7 are found to be partially supported. However, these results are tempered by the lack of support for the remaining hypotheses, demonstrating the power of extrinsic cues to overcome the credence placed on intrinsic cues, knowledge levels notwithstanding.

10.3 Contribution to the literature

Previous research has shown that consumers vary in their reliance on both intrinsic and extrinsic cues as well as in their ability to accurately assess product cues accurately (Alba 2000; Kardes, Kim et al. 2001). Two extrinsic cues found by researchers to be used consistently in this process are COO and price (Zeithaml 1988; Dodds 1991; Chao and Rajendran 1993; Al-Sulaiti and Baker 1998). However, the degree to which COO and price have the power to override sensory perceptions of quality has not previously

been tested to this extent. Moreover, while consumer knowledge and self-confidence have been found previously to moderate consumers' reliance on extrinsic cues, results are ambiguous often as a result of inconsistencies in definitions and measurement (Alba and Hutchinson 1987; Alba and Hutchinson 2000). While empirical evidence exists in relation to various aspects of these specific variables, several gaps remain in the literature in relation to their combined effects on product quality determination. Further, many studies have investigated the influence of extrinsic cues using experimental designs, where respondents experience various product offerings, or quasi-experiments through conjoint analysis, where respondents rate products or choose their preferred product option from a number of described product profiles. The influence of extrinsic cues, however, has never been tested using different types of methodology in the same study. Firstly, in a confirmatory sense using experienced quality as evaluated through sensory perceptions and, secondly, using expected quality as determined through product description. This research has examined and quantified differences in both outcomes and explored the ability of conjoint analysis to predict 'actual' quality evaluations. Further, the research has also provided invaluable incite into the consumer knowledge construct, both in terms of quantification and potential impact on quality assessment (pre and post trial). The study has also provided a validated scale for the measurement of consumer personal self confidence, as distinct from purchasing confidence, and quantified its influence on product cue usage. This information provides marketing managers with an invaluable tool for developing effective marketing strategies rather than risking allocations of valuable resources promoting product characteristics that consumers do not understand or value.

10.3.1 Consumer reliance on extrinsic cues: COO and price

Consumers have been found more reliant on extrinsic cues such as price and COO when there is little other specific and reliable information available for consumers to

consider, or when consumers are evaluating high cost/high involvement products (Chao 1989 b; Han 1990; Chao 1992; Chao and Rajendran 1993; Piron 2000). In the case of the sensory experiments, reliance on the extrinsic cues tested was found to remain extremely robust even when all intrinsic cues (through sensory experience) were available for respondent evaluation. In the case of the conjoint survey, results which confirmed expectations of quality were also highly reliant on the extrinsic cues communicated. Whilst the influence of extrinsic cues was expected to be stronger in the case of wine as compared to cheese (Quester and Smart 1998; Piron 2000), in both instances price was considered more important than the intrinsic cue described and experienced, demonstrating that even when evaluating a relatively low involvement product, consumer belief in the price value schema dominates quality assessment. This research has significantly advanced the understanding of the consumer use of extrinsic cues (price and COO specifically), and their respective influence in their determination of both expected and experienced quality.

10.3.2 Knowledge and self-confidence

This study goes further than the existing literature by clearly delineating between objective knowledge, subjective knowledge and self-confidence and quantifying specific levels for each. The study also provides a template for testing objective knowledge by developing, employing and validating the measure used (pilot, sensory, survey). While subjective knowledge and objective knowledge are linked, they are 2 distinct constructs reflecting differing understanding of product characteristics; therefore, future studies measuring consumer knowledge should specify which characteristic is being investigated and ensure that an appropriate instrument is used. The scale used for measuring self-confidence was determined through the testing and validation using a set of 10 statements originally developed by Day and Hamblin (1964) and used by Bell (1967). Whilst used in earlier research, the items had not been previously reduced and

validated as a measurement scale; hence, this research has provided a legitimate tool for future researchers wishing to measure this characteristic.

Empirical evidence has established that consumers, in the main, do not possess the level or quality of objective knowledge they believe they do (Alba and Hutchinson 1987; Heimbach, Johansson et al. 1989; Alba and Hutchinson 2000; Alba 2000). Given this, it is not surprising that many consumers often misjudge product quality through erroneous interpretation of both intrinsic and extrinsic cues. Therefore, whilst there was an anticipation of low consumer knowledge in this study, actual levels were still well below expectations. This suggests that for these products also, the majority of consumers are basing decisions largely on preconceived ideas regarding price and the moderate influence of COO. Given that the tests and scales were completed by over 800 respondents in total during the course of study, the results are beyond doubt. Given this, it is not surprising that the influence of knowledge on consumer quality expectations was found to be limited or nonexistent. Previous studies have found that 'experts' use intrinsic cues more accurately and consistently than those with low levels of knowledge (Brucks 1985; Park, Mothersbaugh et al. 1994; Mason and Bequette 1998; Kardes, Kim et al. 2001; Wirtz and Mattila 2003). However, testing of respondents in this study suggest that true product experts are few and, for the products tested, still very likely to give strong credence to extrinsic cues over intrinsic ones – even when the intrinsic cues are experienced. These finding add significantly to the existing body of knowledge in relation to the implications of consumer knowledge on product quality expectations and assessment.

Previous studies have found that levels of self-confidence can have an important influence on product cue usage (Wilson and Brekke 1994; Wansink, Park et al. 2000; Bearden, Hardesty et al. 2001; Jover, Montes et al. 2004). However, in this study little was found to support these previous findings. Unlike determined knowledge levels, in

general, respondents in all stages of the research possessed quite healthy levels of self-confidence. However, even those in the extreme clusters of this attribute showed no significant differences in testing suggesting the influence may somewhat overestimated in previous studies or perhaps linked to other personality traits. Therefore, the findings of this study show firstly, that Australians are found (by the measure used) to be generally self-confident in their approach, and secondly, levels have little effect on cue usage for the products tested.

10.4 Implications for marketers

It is critical that marketing managers understand the respective influence of extrinsic cues in consumers' quality assessment processes to ensure that marketing efforts are focused towards enhancing those attributes most likely to influence consumers' opinions regarding quality. Given that there are relatively few true 'experts' in most consumer markets, the credence given to extrinsic cues by these consumers cannot be underestimated.

Consumers have been found to consistently rely on the extrinsic cues provided as surrogate indicators of quality; in the case of the respondents in the sensory experiment for chardonnay, the influence of price was found to even overwhelm the taste of poor wine. These results were determined even though the range of acidity in the wines tasted was considerably wider than the likely available range in the market. Hence, the conclusions are irrefutable, given that even with such extreme acidity taste was not nearly as influential as price and similar in influence to COO. Therefore, in the market place where the objective quality between products is often comparable, the influence of extrinsic cues may be critical to consumer quality assessment. Further, testing of respondents for knowledge and self-confidence confirmed that objective knowledge is generally low indicating a very limited understanding of intrinsic product attributes and a

likely misinterpretation of those considered. This means that marketers must not assume that knowledge is present at high levels and must ensure that marketing communications (including packaging and labeling) is designed in such a way as to facilitate clear understanding of the implications of any intrinsic cues communicated. For example, in the case of brie the use of 'cream' in the product descriptions is accurate and describes a critical intrinsic attribute to the taste experience. However, most respondents reading the descriptions expected that as the level of cream increased, their liking would increase correspondingly. However, many of those experiencing the 'triple' cream brie found this level of fat distasteful. Only those participants with experience and knowledge (and therefore more sophisticated palates) enjoyed the extremely rich taste and mouth feel of this brie. Conversely, those evaluating the chardonnay essentially discounted the impact of the acid, in both the experience and the expectation from the descriptions. Testing revealed that very few respondents understood the implications of acid on taste and so were not able to understand the implications of high acid on quality, or believed that a high price wine (particularly from France) would be good in spite of any stipulated acid amounts. Those actually tasting the wine were often overcome by their beliefs in price over taste, perhaps believing their own palates to be at fault. Given that wine labels provide acid levels in grams per bottle, rather than a prescribed description, accurate understanding of the repercussions of this important intrinsic cue by the majority of consumers is even less likely.

These outcomes lead to threats and opportunities alike. Marketers working with a base level product in the wine or cheese category, for example, could leverage up the relative position of their product in the minds of consumers through the use of a prestige pricing strategy supported by other congruent extrinsic cues such as COO (if possible), selective distribution and quality oriented packaging and communications. Further, aside from the legal requirements specific to the product in relation to labeling and

packaging, intrinsic cues that are not conducive to the product position desired could be played down or not disclosed. Given that consumers may possess a low level of objective knowledge regarding the product category and are likely to give credence to extrinsic cues provided, desired brand values and product quality expectations could be established based purely on essentially non-intrinsic product characteristics. Conversely, for those wishing to differentiate on intrinsic product attributes unforeseen challenges may await. Consumers may not be able to appreciate the intrinsic difference offered and may not value it in any case. Further, descriptions or specifications may not be precisely understood. For marketers in this situation, consumer education (based on research to gain an accurate understanding of consumer knowledge levels and perceptions) through marketing communications is likely to be needed. This approach will still require the support of congruent extrinsic cues to underpin the strategy, as even experts have been found to rely on extrinsic cues to make decisions. For example, it would be extremely difficult to convince consumers that high quality can be obtained at a bargain price. Results of self-confidence testing in the research show that, in the main, Australians enjoy a relatively high level of self-confidence. This means they are likely to be somewhat stubborn in their beliefs regarding product attributes irrespective of accuracy. Therefore, marketers may find 're-educating' consumers in this situation challenging.

Whilst the effect of consumer belief in the price value schema is quite straightforward, the implications of COO are less clear cut. The findings of the pilot study revealed an example of ethnocentric backlash against foreign wines and cheeses and serve as a reminder that consumers may be sensitive to some foreign sourced products even when the product and the country are congruent (e.g. wine from France). Whilst overall products tested were more highly favored when associated with a more attractive CI, interestingly, the similar utility values for the U.S. and Chile in the chardonnay testing show that views do change over time and as a result of marketing efforts. It was

expected that respondents would strongly favour the U.S. over Chile; however, results show that the value placed on both countries was variable highlighting the need to investigate consumer perceptions of source countries rather than assume a positive or negative COO effect.

The research has also provided evidence that the conjoint analysis by survey is a credible means of identifying attributes that are most highly valued and determining those levels deemed most and least attractive. This assertion is made with the proviso that thorough research is undertaken prior to deciding on which attributes to investigate and that realistic levels for each attribute are set. By using this type of methodology, marketers will possess powerful information for use in developing a meaningful and effective marketing strategy, prior to the introduction of a new product, or making significant changes to an existing marketing mix.

10.5 Limitations

A number of limitations are evident in this study. First, the use of convenience samples can limit the ability to generalize results. However, care was taken to source respondents exclusively from evening classes across a number of faculties and from various sources in the general community in order to derive the closest possible matches to the relevant demographics of the Australian population. While some minor biases are reported, overall these are not expected to severely limit results. While total sample sizes of 263 (sensory) and 274 (survey) were achieved, clusters used for testing those with extreme levels of knowledge and self-confidence were relatively small. A sample size in excess of 30 is considered statistically acceptable for measuring correlations, however, a small sample size does contribute to error due to non-representation of the total population (Malhotra, Hall et al. 2002). Statistical results must therefore be considered in light of this limitation.

Scales employed to measure the subjective knowledge and self-confidence resulted in acceptable total variances explained for each variable, however, the percentages of variance left 'unexplained' by each scale used must be considered a limitation to the results (Malhotra, Hall et al. 2002).

There are limitations inherent in the use of conjoint analysis methodology. In reality, products and services are comprised of a combination of hundreds (perhaps thousands) of intrinsic and extrinsic cues and the methodology only allows the researcher to test a few. The generalizability is therefore dependent upon choosing those attributes and levels that are most critical to the quality evaluation and/or the buying decision (Jaeger, Hedderley et al. 2000). Whilst careful scrutiny of the existing literature, plus analysis of the data derived from the focus groups and the results of the pilot study were all employed to ensure that appropriate choices were made to minimize these limitations, they still must be considered a risk. Further, the use of rating scales is a possible limitation due to consumer fatigue and disinterest, seen where each profile is 'rated' consistently low, high or average resulting in little discrimination between the profiles (Cohen 2003).

The use of a laboratory environment can enhance accuracy and also result in limitations. Respondents in the lab are more likely to concentrate fully on the task at hand leading to a heightened examination of products tested, beyond what would be provided by them in 'real life'. Further, the provision of a large number of samples may lead to fatigue, resulting disinterest or diminished sensitivity. Steps discussed in the methodology sections of the thesis were taken to minimize these potential sources of error, however, they must be acknowledged (Schifferstein 1996).

An important objective of the research was to determine the degree to which knowledge moderates consumer use of intrinsic and extrinsic cues. However, test results clearly show that objective knowledge in relation to the 2 products tested was consistently low. Therefore, even the 'high' knowledge segments could not be considered true product experts. This means that the impact of high levels of objective knowledge on product cues has been limited; however, it also shows that the majority of consumers for these products are unlikely to be knowledgeable and results are an accurate reflection of consumer ability in this regard.

10.6 Directions for future research

The research provides a platform for a number of subsequent studies. The limitation of low consumer knowledge discussed previously suggests that the results of the study could be extended and enhanced by collecting data exclusively from sourced and qualified product experts, thus furthering the body of literature in relation to the moderating effect of objective knowledge. Following from this, the development of a measure of consumer 'expertise' is required. This research, and others, demonstrates that there is a link between objective and subjective knowledge, in which an individual possessing high levels of both, is deemed to be an expert (Alba and Hutchinson 1987; Alba and Hutchinson 2000; Alba 2000). What is required is a validated measure of 'expertise' incorporating both aspects of the construct, and from this, further research can be undertaken in relation to cue usage.

The study also revealed the potential for consumers to misunderstand the implications of commonly used descriptive terms, confirming the risk to marketers developing communications and labeling strategies. Further studies investigating the expectations consumers develop as a result of their interpretations of terms regularly used in

conjunction with wine and/or food products would provide managers with valuable insight into consumer understanding of communicated messages.

The use of rating scales in conjoint analysis has identified limitations that have been, very recently, addressed in research through the use of maximum difference rating methodology known as 'Best' versus 'Worst' (Cohen 2003). Using this approach, consumers are asked to consider a number of selected attributes/levels and instead of rating the overall profile, they are simply asked to identify the 'best' attribute/level and the 'worst' attribute/level. This eliminates the risk of consumers rating each profile similarly irrespective of its components, as they must evaluate each element provided in the individual profile and identify the most and least attractive element. In addition to eliminating that potential limitation from the conjoint analysis method, analysis of the elements most often considered the 'best and worst' and those ranked after is a comparatively simple computation. There is the potential to test this application in a sensory experiment, thus providing the opportunity to extend the development of this technique.

10.7 Summary

This chapter has provided a review of the findings of the research, the respective contributions to the literature and marketing professionals. Limitations and suggestions for future research close the thesis. In summary, the findings demonstrate the importance to consumers of cues that are irrelevant to objective product quality, reminding marketers that consumers buy more than just the actual product, they purchase a 'bundle' of attributes, the value of which is determined largely by their perceptions, experiences and preconceived beliefs. Further, while consumers may be familiar with products and product categories as a result of marketing efforts and

purchases, this cannot be confused with objective product knowledge and accurate understanding of product attributes, be they intrinsic or extrinsic.

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12 Appendices

1 Focus group discussion guide

Focus group discussion guide
March 22 / 23, 2005

1. WINE (1):

1. What types of wine do you like to drink?
    a. What kinds of wine do you usually buy?
    b. Do you tend to buy different wines for different occasions?
2. When thinking about the wine you drink / buy, what kinds of things do you consider when making your decisions? (list).
3. Let's rate these things in terms of importance – summated scale.
4. When thinking about wine, say a chardonnay, where would you expect the best ones to come from? What countries come to mind? (list)
5. Let's try some wines! (Hand out the form for wine)
    a. On your form, please put your name, and allocate each wine a score out of 10, where 10 is 'excellent' – really good and 0 is 'terrible'.
    b. Also indicate if you would buy this wine based on taste.
6. Between each taste test, please have a drink of water and cracker.

2. CHEESE (1):

7. What types of cheeses do you like to eat?
    a. What kinds of cheeses do you usually buy?
8. When thinking about the cheese you eat / buy what kinds of things do you consider when making your decisions? (list).
9. Let's rate these things in terms of importance – summated scale.
10. When thinking about cheese, say cheddar, where would you expect the best ones to come from? What countries come to mind? (list)
11. Let's try some cheese! (Hand out the form for cheese)
    a. On your form, please put your name, and allocate each cheese a score out of 10, where 10 is 'excellent' – really good and 0 is 'terrible'.
    b. Also indicate if you would buy this cheese based on taste.
12. Between each taste test, please have a drink of water and cracker.

3. WINE (2):

13. This time, we're going to try some wines again.

    a. But, you won't know where they are from.
    b. Don't assume they are all the same as the first 4
    c. Please again give each a score out of 10.
    d. Indicate whether or not you would buy it based on taste.
    e. Between each taste test, please have a drink of water and cracker.

4. CHEESE (2):

14. This time, we're going to try some cheeses again – this time 4.

    a. But, this time you won't know where they are from.
    b. Don't assume they are all the same as the first 3
    c. Please again give each a score out of 10.
    d. Indicate whether or not you would buy it based on taste.
    e. Between each taste test, please have a drink of water and cracker.

Appendix

2 Pilot study questionnaire



School of Commerce
Research Project – Food Product Preferences

Hello!

I am a student at the University of Adelaide, working on a research project about preferences for wine and cheese products. This questionnaire should take between 10 to 15 minutes to complete. Thank you very much for participating in this study.

Why is the research being conducted?

We're doing some basic research on people's evaluation and decision processes.

What you will be asked to do

In the following pages are descriptions of chardonnay and camembert. Please give a score for each to show how much, or how little, you like them. Then, let us know whether or not you would consider buying them.

The expected benefits of the research

While this study is pretty simple, it will help us to develop statistical tools with applications as diverse as market share forecasting, political votes or environmental policy.

Risks to you

None. (Except for perhaps, a mild risk of wine or cheese cravings!)
Your confidentiality
We don't need to identify you, so this study is entirely confidential.

Distribution and return

When you have completed the questions, please hand back this questionnaire to the person who gave it to you.

Questions / further information

Regardless of your participation, we'd be delighted to give you further information about this project or to give you copies of our results. Contact Roberta Veale on Roberta.Veale@tafesasouth.org, or Professor Pascale Quester on pascale.quester@adelaide.edu.au.

Consent

By completing and returning the questionnaire, you have consented to participation in this research. Please detach this sheet and retain it for your later reference.

Chardonnay Questions
Part 1 (a)

Your task:
The following pages include 11 descriptions of Chardonnay wine. Look over the descriptions and give each Chardonnay a rating on the scale where **1 = Highly undesirable and 10 = Highly desirable**. While you may not be a regular 'Chardonnay Drinker' (or even like Chardonnay personally) assess each profile in light of the need to make a possible purchase. All Wine options are 2005 vintage.

We're interested in your first impressions, so work quickly and steadily.
There are no 'right or wrong' answers, we are only interested in your opinion!

Chardonnay No. 1									
Acidity	Average for chardonnay								
Produced in	France								
Retail Price	$14.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 2									
Acidity	Average for chardonnay								
Produced in	United States								
Retail Price	$6.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 3									
Acidity	High								
Produced in	Chile								
Retail Price	$14.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 4	
Acidity	High
Produced in	France
Retail Price	$6.00

Highly undesirable									Highly desirable
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 5	
Acidity	Average for chardonnay
Produced in	United States
Retail Price	$14.00

Highly undesirable									Highly desirable
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 6	
Acidity	Pronounced
Produced in	Chile
Retail Price	$39.00

Highly undesirable									Highly desirable
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 7	
Acidity	Pronounced
Produced in	United States
Retail Price	$6.00

Highly undesirable									Highly desirable
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 8									
Acidity	Average for chardonnay								
Produced in	France								
Retail Price	$39.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 9									
Acidity	Average for chardonnay								
Produced in	Chile								
Retail Price	$6.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 10									
Acidity	Pronounced								
Produced in	France								
Retail Price	$14.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay No. 11									
Acidity	High								
Produced in	United States								
Retail Price	$39.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

This completes the assessment of the different Chardonnay wines,
please continue the questionnaire by turning the page.

Part 1 (b)
In this part of the questionnaire, we would like to ask you some questions about yourself and your general knowledge and experiences with purchasing Chardonnay. **Please (✓) the box that best reflects your knowledge and experience.**

		Strongly Disagree								Strongly Agree
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	I feel confident about my knowledge of chardonnay.	□	□	□	□	□	□	□	□	□
2.	I feel that I know how to judge the quality of chardonnay.	□	□	□	□	□	□	□	□	□
3.	I do not feel very knowledgeable about chardonnay.	□	□	□	□	□	□	□	□	□
4.	Among my circle of friends, I'm one of the 'experts' on chardonnay.	□	□	□	□	□	□	□	□	□
5.	Compared to most buyers, I know less about chardonnay.	□	□	□	□	□	□	□	□	□
6.	I know of most of the chardonnays around in shops.	□	□	□	□	□	□	□	□	□
7.	When it comes to chardonnay, I really don't know a lot.	□	□	□	□	□	□	□	□	□
8.	I can tell if a chardonnay is worth the price or not.	□	□	□	□	□	□	□	□	□

9.	**How often would you purchase bottle of Chardonnay for yourself or others? (on average)**	**10.**	**If you have a 'favourite' brand of Chardonnay, please list it below.**
	Less than once per month □ 1 1 to 2 times per month □ 2 3 to 4 times per month □ 3 5 or more times per month □ 4		

<u>Camembert Questions</u>
Part 2 (a)

Your task:
The following pages include 11 descriptions of camembert cheese. Look over each of the descriptions and give each camembert a rating on the scale where **1 = Highly undesirable and 10 = Highly desirable.** While you may not be a regular 'Camembert consumer' (or even like Camembert personally) assess each profile in light of the need to make a possible purchase. All cheeses are 250 gram packs.

We're interested in your first impressions, so work quickly and steadily.
There are no 'right or wrong' answers, we are only interested in your opinion!

Camembert No. 1									
Made with:	50% reduced fat								
Produced in	France								
Retail Price	$3.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes □ No □

Camembert No. 2									
Made with:	Triple cream								
Produced in	Argentina								
Retail Price	$3.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 3									
Made with:	50% reduced fat								
Produced in	Canada								
Retail Price	$8.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 4									
Made with:	Full cream								
Produced in	Canada								
Retail Price	$3.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 5									
Made with:	50% reduced fat								
Produced in	France								
Retail Price	$5.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 6	
Made with:	Triple cream
Produced in	Argentina
Retail Price	$8.00

Highly undesirable									Highly desirable
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 7	
Made with:	Triple cream
Produced in	France
Retail Price	$3.00

Highly undesirable									Highly desirable
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 8	
Made with:	50% reduced fat
Produced in	Argentina
Retail Price	$3.00

Highly undesirable									Highly desirable
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 9	
Made with:	Full cream
Produced in	France
Retail Price	$8.00

Highly undesirable									Highly desirable
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 10									
Made with:	Triple cream								
Produced in	Canada								
Retail Price	$5.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Camembert No. 11									
Made with:	Full cream								
Produced in	Argentina								
Retail Price	$5.00								
Highly undesirable									**Highly desirable**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Part 2 (b)

In this part of the survey, we would like to ask you some questions about your general knowledge and experiences with purchasing camembert. **Please (✓) the box that best reflects your knowledge and experience about camembert.**

		Strongly Disagree								**Strongly Agree**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	I feel confident about my knowledge of camembert.	□	□	□	□	□	□	□	□	□
2.	I feel that I know how to judge the quality of camembert.	□	□	□	□	□	□	□	□	□
3.	I do not feel very knowledgeable about camembert.	□	□	□	□	□	□	□	□	□
4.	Among my circle of friends, I'm one of the 'experts' on camembert.	□	□	□	□	□	□	□	□	□
5.	Compared to most buyers, I know less about camembert.	□	□	□	□	□	□	□	□	□
6.	I know of most of the camembert cheeses in the shops.	□	□	□	□	□	□	□	□	□
7.	When it comes to camembert, I really don't know a lot.	□	□	□	□	□	□	□	□	□
8.	I can tell if a camembert is worth the price or not.	□	□	□	□	□	□	□	□	□

9.	**How often would you purchase Camembert for yourself or others? (on average)** Less than once per month □ 1 1 to 2 times per month □ 2 3 to 4 times per month □3 5 or more times per month □ 4	**10.**	**If you have a 'favourite' brand of Camembert, please list it below.**

Part 3 (a) Chardonnay

In this part of the survey, we would like to ask you some questions relating to your general knowledge about wine. **Please (✓) the box that best reflects your knowledge and experience. If you're unsure about the answer to any particular question, that's no problem just (✓) the box indicating this.**

1. Letting a wine 'breathe":	**2. Cellaring of wine is done (basically) to help:**
Is to remove the cork for a time, prior to drinking. □ 1	Wine mature quickly. □ 1
Means aerating it so it can react with the oxygen. □ 2	Wine mature slowly □ 2
Always improves the flavour of wine. □ 3	Keep pests away from wine □ 3
Don't know □ 4	Don't know □ 4

3. Which one of the following white varietals is most likely to be aged in oak?	**4. Which one of the following white varietals is most likely to improve with aging?**
Riesling □ 1	Sauvignon Blanc □ 1
Chardonnay □ 2	Chenin Blanc □ 2
Sauvignon Blanc □ 3	Chardonnay □ 3
Don't know □ 4	Don't know □ 4

5. Tannin gives wine:	**6. Chardonnay grapes are:**
Bitterness. □ 1	Among the finest grown for white wine. □ 1
Tartness. □ 2	Not usually used in sparkling wine. □ 2
Astringency. □ 3	Often used to make sweet wines. □ 3
Don't know □ 4	Don't know □ 4

7. Chardonnay, typically has an aging potential of:	**8. Terms often linked with the taste of Chardonnay are:**
2 or 3 years. □ 1	Apple, peach, citrus □ 1
3 or 4 years. □ 2	Plum, spice, mint □ 2
5 or 6 years or longer □ 3	Floral, honey, lychee □ 3
Don't know □ 4	Don't know □ 4

9. What percentage (%) of the wine in the bottle must be made from grapes harvested and crushed in the year named, if a 'Vintage' date is given?	**10. When thinking about matching foods with wines, trying to achieve the most complimentary combinations, it is important to remember that:**
85% □ 1	Very sweet food with counter the acid in the wine. □ 1
95% □ 2	Very salty foods counter acid in the wine. □ 2
100% □ 3	Very acid foods will bring out the acid in the wine. □ 3
Don't know □ 4	Don't know □ 4

11. An oak aged Chardonnay will, typically, be:	**12. Champagne is an excellent choice to accompany:**
Less full bodied than many other white wines □ 1	Smoked salmon. □ 1
More full bodied than other many other white wines □ 2	Chinese food. □ 2
Comparable in body to many other white wines □ 3	Most foods. □ 3
Don't know □ 4	Don't know □ 4

13. The term 'green' is often used to describe a wine's:	**14. Chilling wine (even red wine) will often:**
Colour □ 1	Improve the taste of a poor wine. □ 1
Acidity □ 2	Make tannins less noticeable. □ 2
Age □ 3	Make no real difference to perceived quality. □ 3
Don't know □ 4	Don't know □ 4

Part 3 (b) Camembert

In this part of the survey, we would like to ask you some questions relating to your general knowledge about cheese. **Please (✓) the box that best reflects your knowledge and experience. If you're unsure about the answer to any particular question, that's no problem just (✓) the box indicating this.**

1. White mould is:		**2. Coagulation is:**	
Fresh curds aged in warm temperatures.	□ 1	The conversion of milk solids to curd and whey.	□ 1
Fresh curds ripened by introducing surface mould.	□ 2	The basis of cheese making.	□ 2
Never found in quality cheeses.	□ 3	Both of the above.	□ 3
Don't know	□ 4	Don't know	□ 4

3. Rennet is:		**4. Camembert:**	
A form of yeast used to make cheese.	□ 1	Is eaten younger than Brie.	□ 1
An enzyme extracted from stomach linings.	□ 2	Is eaten older than Brie.	□ 2
Neither of the above.	□ 3	Matures in the same time as Brie.	□ 3
Don't know	□ 4	Don't know	□ 4

5. Rind is:		**6. Camembert:**	
An important influence on flavour development.	□ 1	Has a slightly thicker mould than Brie.	□ 1
Not found on Camembert.	□ 2	Has a slightly thinner mould than Brie.	□ 2
Never washed in making quality cheeses.	□ 3	Has identical mould to Brie.	□ 3
Don't know	□ 4	Don't know	□ 4

7. Camembert:		**8. Camembert is nicest when made from milk**	
Never smells of mushrooms and yeast.	□ 1	Produced in spring and autumn.	□ 1
Usually smells of mushrooms and yeast.	□ 2	Produced in the winter and summer	□ 2
Can sometimes smell like old socks.	□ 3	Produced in particularly wet summers	□ 3
Don't know	□ 4	Don't know	□ 4

9. 'Triple Cream' Camembert:		**10. Camembert rind is:**	
Feels greasy with you eat it.	□ 1	Comprised of soft white mould.	□ 1
Is made from milk with extra cream added later.	□ 2	Comprised of grey or white mould.	□ 2
Doesn't exist as a product.	□ 3	Sometimes orange.	□ 3
Don't know	□ 4	Don't know	□ 4

11. When choosing wine to drink with Camembert:		**12. Camembert cheese:**	
It's Highly desirable to make sure it's well chilled.	□ 1	Is a product where price usually influences quality.	□ 1
A chardonnay will suit, but never a red.	□ 2	Is a product where price is no indication of quality.	□ 2
A full bodied, earthy red is a sound choice.	□ 3	Is a product where all brands cost pretty much the same, no matter where the cheese comes from.	□ 3
Don't know	□ 4	Don't know	□ 4

13. The inside of a Camembert that is ready to eat is:		**14. When you press the rind of a Camembert it should:**	
Creamy, buttery and smooth.	□ 1	Feel soft, but your finger leaves no mark or indent.	□ 1
Rubbery, buttery and soft.	□ 2	Feel soft to the touch, your finger leaving an indent	□ 2
A little runny, but nice and smooth.	□ 3	Feel quite firm.	□ 3
Don't know	□ 4	Don't know	□ 4

Part 4

For the purpose of analysis, we would be grateful if you would provide some personal information about yourself. We do not need your name or address, only information that will help us analyse your responses for this research. Your anonymity is fully guaranteed. Your answers will only appear in aggregate and average number and cannot be associated with any one respondent.

Please (✓) the box that best reflects your agreement with the following statements.

		Strongly Disagree								Strongly Agree
		1	2	3	4	5	6	7	8	9
1.	I feel capable of handling myself in most social situations.	□	□	□	□	□	□	□	□	□
2.	I seldom fear my actions will cause others to have a low opinion of me.	□	□	□	□	□	□	□	□	□
3.	It doesn't bother me to have to enter a room where other people have already gathered and are talking.	□	□	□	□	□	□	□	□	□
4.	In group discussions, I usually feel my opinions are inferior.	□	□	□	□	□	□	□	□	□
5.	I don't make a very favorable first impression on people.	□	□	□	□	□	□	□	□	□
6.	When confronted by a group of strangers, my first reaction is always one of shyness and inferiority.	□	□	□	□	□	□	□	□	□
7.	It is extremely uncomfortable to accidentally go to a party wearing the wrong thing.	□	□	□	□	□	□	□	□	□
8.	I don't spend much time worrying about what people think of me.	□	□	□	□	□	□	□	□	□
9.	When in a group, I very rarely express an opinion for fear of being laughed at.	□	□	□	□	□	□	□	□	□
10.	I am never at a loss for words when I am introduced to someone I don't know.	□	□	□	□	□	□	□	□	□

11. Please indicate your gender:

Male □ 1
Female □ 2

13. What is your occupation?

12. Please indicate your age category:

18 yrs to 25 yrs □ 1
26 yrs to 35 yrs □ 2
36 yrs to 45 yrs □ 3
46 yrs to 55 yrs □ 4
Over 55 yrs □ 5

14. Please indicate your household income (gross)

Less than $25, 000 □ 1
$25,000 to $45,000 □ 2
$46,000 to $65,000 □ 3
Over $65,000 □ 4

15. Please indicate highest level of education completed:

High School Certificate □ 1
Diploma / Trade Qualification □ 2
Bachelor's Degree □ 3
Post Graduate Degree □ 4

Thank you, once again, for completing this survey!
Please turn the page and complete the form to enter
the draw to win $250 in cash!

Appendix

3 Normality assumptions and testing

3.1 Assumptions for normality

Parametric test results are not reliable unless variables are normally distributed. The normal distribution of a population is a bell shaped, symmetrical curve with 68% of the population lying within 1 standard deviation of the mean and 95% of the distribution within 2 standard deviations of the mean and 99% within 3 (Malhotra, Hall et al. 2002).

Normality can be confirmed through tests for skewness (height and width of curve) and Kurtosis (deviation from symmetry). Scores for each test range from 0 to 2, with a score of 0 in either test signifying perfect normality. Curves with scores clearly different to 0 indicate distributions that are not normal and a non-parametric text should be used. The third procedure commonly used is the Kolmogorov-Smirnov test. A low significance (<0.05) indicates that the distribution of variables is not normal with 95% confidence.

Normality test results for all quantitative stages of the research are illustrated in specified tables in the following sections.

3.2 Pilot study data

Table A 1 Normality tests (pilot)

		Skewness		Kurtosis		Kolmogorov Smirnov	
	Mean	Statistic	Std. Error	Statistic	Std Error	Statistic	Sig
Objective chardonnay	3.119	0.300	0.164	-0.491	0.327	1.808	0.003
Subjective chardonnay	4.244	0.071	0.164	-0.150	0.327	0.960	0.315
Self confidence	6.094	-0.397	0.164	0.657	0.327	0.814	0.522
Utility France	-0.332	0.155	0.164	1.337	0.327	1.1186	0.120
Utility United States	-0.240	-0.650	0.164	1.530	0.327	1.709	0.006
Utility Chile	0.572	0.430	0.164	1.693	0.327	1.372	0.046
Utility $39.00	-0.463	0.345	0.164	1.585	0.327	1.283	0.074
Utility $14.00	0.247	0.195	0.164	0.115	0.327	0.972	0.301
Utility $6.00	0.216	-0.102	0.164	0.400	0.327	1.062	0.209
Utility average	0.355	0.822	0.164	2.135	0.327	1.482	0.025
Utility above average	0.038	-0.156	0.164	1.517	0.327	1.602	0.012
Utility high	-0.393	-0.202	0.164	1.477	0.327	1.003	0.267
Objective camembert	3.425	0.477	0.164	-0.622	0.327	1.791	0.003
Subjective camembert	4.223	-0.095	0.164	-0.500	0.327	1.127	0.158
Utility France	0.420	0.983	0.164	1.457	0.327	1.728	0.005
Utility Canada	-0.059	-0.099	0.164	0.190	0.327	1.007	0.263
Utility Argentina	-0.361	-1.170	0.164	2.154	0.327	1.882	0.002
Utility $8.00	0.079	-0.200	0.164	2.022	0.327	1.684	0.007
Utility $5.00	0.037	-0.106	0.164	1.987	0.327	1.422	0.035
Utility $3.00	-0.116	0.132	0.164	2.181	0.327	1.274	0.078
Utility 50% reduced	0.032	-0.169	0.164	1.001	0.327	1.211	0.106
Utility full	0.152	0.041	0.164	3.768	0.327	1.548	0.017
Utility triple	-0.184	-0.205	0.164	1.121	0.327	0.981	0.291
N = 217							

3.3 Sensory experiment data

Table A 2 Normality tests (sensory)

		Skewness		Kurtosis		Kolmogorov Smirnov	
	Mean	Statistic	Std. Error	Statistic	Std Error	Statistic	Sig
Objective chardonnay	4.71	0.223	0.150	-0.049	0.299	1.579	0.014
Subjective chardonnay	4.502	0.081	0.150	-0.701	0.299	0.892	0.040
Self confidence	6.341	-0.489	0.150	-0.343	0.299	1.425	0.035
Ave importance COO	0.291	0.740	0.150	0.684	0.299	1.480	0.025
Ave importance price	0.425	0.097	0.150	-0.436	0.299	0.977	0.295
Ave importance acid	0.284	0.339	0.150	-0.390	0.299	1.139	0.049
Utility France	0.194	-0.335	0.150	0.464	0.299	1.243	0.091
Utility United States	-0.079	-0.005	0.150	0.661	0.299	0.886	0.413
Utility Chile	-0.115	-0.081	0.150	0.788	0.299	1.045	0.225
Utility $53.00	0.943	-0.159	0.150	0.136	0.299	0.958	0.018
Utility $16.00	-0.0845	0.150	0.150	-0.099	0.299	1.238	0.003
Utility $6.00	-0.859	-0.325	0.150	0.527	0.299	0.835	0.488
Utility average	0.943	0.147	0.150	0.296	0.299	0.715	0.686
Utility above average	0.145	-0.110	0.150	1.068	0.299	1.191	0.117
Utility high	0.042	-0.192	0.150	0.709	0.299	1.192	0.117
Objective brie	4.57	0.348	0.150	0.061	0.299	1.874	0.002
Subjective brie	4.453	0.143	0.150	-0.515	0.299	0.637	0.813
Ave importance COO	0.284	0.460	0.150	-0.277	0.299	1.127	0.158
Ave importance price	0.315	0.699	0.150	0.093	0.299	1.328	0.059
Ave importance fat	0.400	0.143	0.150	-0.825	0.299	0.939	0.341
Utility France	0.166	0.038	0.150	0.510	0.299	0.782	0.573
Utility Canada	0.019	0.017	0.150	0.359	0.299	0.839	0.482
Utility Argentina	-0.185	-0.576	0.150	1.155	0.299	1.656	0.008
Utility $69.95	0.075	0.074	0.150	0.576	0.299	0.698	0.714
Utility $49.00	0.262	-0.153	0.150	0.777	0.299	1.123	0.160
Utility $28.95.00	-0.337	-0.235	0.150	0.032	0.299	0.952	0.325
Utility full	-0.013	-0.201	0.150	-0.174	0.299	1.048	0.222
Utility double	0.221	-0.106	0.150	0.181	0.299	0.810	0.528
Utility triple	-0.208	-0.275	0.150	-0.334	0.299	1.464	0.028
N = 263							

3.4 Conjoint survey data

Table A 3 Normality tests (survey)

		Skewness		Kurtosis		Kolmogorov Smirnov	
	Mean	Statistic	Std. Error	Statistic	Std Error	Statistic	Sig
Objective chardonnay	0.455	0.076	0.147	-0.635	0.294	1.471	0.026
Subjective chardonnay	4.077	0.227	0.147	-0.531	0.294	1.134	0.152
Self confidence	6.206	-0.397	0.147	0.071	0.294	0.791	0.558
Ave importance COO	0.227	1.169	0.147	3.148	0.294	1.643	0.009
Ave importance price	0.553	-0.280	0.147	-0.786	0.294	1.472	0.026
Ave importance acid	0.220	0.972	0.147	0.785	0.294	1.789	0.003
Utility France	0.362	0.419	0.147	1.165	0.294	1.226	0.009
Utility United States	-0.202	-0.552	0.147	0.979	0.294	2.046	0.000
Utility Chile	-0.160	-0.149	0.147	0.785	0.294	1.196	0.114
Utility $53.00	1.649	-0.054	0.147	-0.141	0.294	1.280	0.075
Utility $16.00	0.089	0.180	0.147	1.172	0.294	1.429	0.034
Utility $6.00	-0.738	-0.098	0.147	-0.182	0.294	1.009	0.261
Utility average	0.306	1.117	0.147	2.325	0.294	2.182	0.000
Utility above average	0.034	-0.282	0.147	0.230	0.294	1.191	0.117
Utility high	-0.340	-0.241	0.147	-0.093	0.294	1.306	0.066
Objective brie	4.47	0.129	0.147	-0.840	0.293	1.508	0.021
Subjective brie	4.006	0.224	0.147	-0.767	0.293	1.293	0.071
Ave importance COO	0.294	1.006	0.147	1.844	0.293	1.964	0.001
Ave importance price	0.372	0.492	0.147	-0.254	0.293	1.462	0.028
Ave importance fat	0.334	0.636	0.147	-0.228	0.293	1.833	0.002
Utility France	0.352	1.447	0.147	6.016	0.293	2.323	0.000
Utility Canada	-0.120	0.719	0.147	10.302	0.293	1.854	0.002
Utility Argentina	-0.232	-0.992	0.147	3.022	0.293	2.086	0.000
Utility $69.95	0.505	0.499	0.147	1.938	0.293	1.373	0.046
Utility $49.00	-0.036	-0.354	0.147	2.111	0.293	1.649	0.009
Utility $28.95.00	-0.469	-0.235	0.147	0.654	0.293	0.976	0.296
Utility full	-0.534	-0.854	0.147	2.250	0.293	2.188	0.000
Utility double	0.226	0.660	0.147	2.194	0.293	2.027	0.001
Utility triple	0.308	0.564	0.147	0.891	0.293	1.929	0.001
N = 274							

Appendix

4 Scale reliability and validity

4.5 Reliability analysis for all scales

Scales are a set of correlated items that are designed to work together to measure an underlying or latent variable. Reliability relates to the consistency with which these items can be used to measure the same latent variable. Cronbach's Alpha, a numerical coefficient of reliability, is used as a means of measuring scale reliability. Calculation of the alpha is based on the degree of inter-correlation between scale items; as inter-item correlation increases, alpha scores increase accordingly. Scores range from 0 to 1, with a score of 0.7 the minimum reliability level acceptable in social research (Malhotra et. al. 2002). Table A.6 illustrates scale Cronbach Alpha scores are all in excess of 0.7 indicating sound reliability of all scales used for each sample tested.

Table A 4 Reliability Coefficients of Scales

Reliability Coefficients – all stage				
Scale	**N of items**	**Stage of research**	**N of cases**	**Cronbach's Alpha**
Subjective knowledge chardonnay	**8**	Pilot survey	238	0.866
		Sensory experiment	263	0.909
		Conjoint survey	274	0.903
Subjective knowledge camembert/brie	**8**	Pilot survey	238	0.869
		Sensory experiment	238	0.895
		Conjoint survey	274	0.932
Self Confidence	**10 (pilot only) 5**	Pilot survey	238	0.728
		Sensory experiment	263	0.716
		Conjoint survey	274	0.753

4.6 Construct validity

Factor analysis examines the relationships between a set of variables in order to reveal the existence of an underlying, or latent, variable. One of the primary uses of factor analysis is to reduce the total number of variables needed to measure a construct through the identification of the important dimensions, or 'factors' that comprise it.

Eigenvalues (also called 'characteristic roots') are illustrated for 'factor' measure produced in the analysis. This value measures the variance in all the items that are accounted for in that factor. If a factor has a low Eigenvalue, then it is contributing little to the explanation of variances in the items. Factors with Eigenvalues of less than 1 are discounted. Data rotation methods, such as Varimax, are employed in the factor analysis process. The goal of rotation is to achieve a simpler factor solution by maximizing variances between items and 'encouraging' them to cluster together in a manner that facilitates the interpretation (Malhotra et. al 2002). Through this process any non-contributing items are identified and a broad understanding of the ability of the items to measure the construct under investigation is achieved. Factor analysis is a 'non-dependent' procedure in that it does not assume that a dependent variable is specified. Factor analysis results include a number of important statistics including a correlation matrix, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, Bartlett's test of sphericity and the analyzed factor loadings. KMO is a statistic that indicates the proportion of variance in scale items that is common to all,thus indicating a latent variable. High values (close to 1.0) support the use of factor analysis. Bartlett's test of sphericity indicates whether your correlation matrix is an identity matrix, which would indicate that your variables are unrelated. The significance level gives the result of the test. Very small values (less than 0.05)

indicate that there are probably significant relationships among your variables (Coakes, Steed et al. 2006).

A summary of cumulative percentages of variance explained by factors with Eigenvalues greater than 1 for each application of the scales employed is illustrated below in table A.7.

Table A 5 Construct validity summary for all scales

Cum % of variance explained – all stage			
Scale	**Stage of research**	**Cum % of variance explained**	**No. factors Eigenvalues > 1**
Subjective knowledge chardonnay	Pilot survey	69.6	2
	Sensory experiment	61.7	1
	Conjoint survey	59.2	1
Subjective knowledge camembert/brie	Pilot survey	70.4	2
	Sensory experiment	63.4	1
	Conjoint survey	68.6	1
Self Confidence	Pilot survey	47.2	2
	Sensory experiment	47.8	1
	Conjoint survey	51.4	1

4.6.1 Assumptions

Normality:

Normality is preferred but not essential; however, if distribution is found to be normal the validity of the solution is improved (Coakes, Steed et al. 2006). Normality testing has revealed that the data collected is not normal in all instances and results must be considered with this potential limitation.

Sample size:

A minimum of 5 respondents per variable is required, with sample in excess of 100 preferred; this is satisfied with every sample analyzed in this research (Coakes, Steed et al. 2006).

Outliers:

Factor analysis solutions are sensitive to outliers (Coakes, Steed et al. 2006). At each stage of the research, outliers in cases were evaluated, and where appropriate deleted. However, outliers were not common and only removed where a suggestion of respondent error resulted in an atypical response (Malhotra, Hall et al. 2002).

Multicollinearity and singularity:

This assumption is not relevant for principal component extraction (Coakes, Steed et al. 2006).

Linearity:

Factor analysis solutions are based on correlation; therefore linearity is important when assessing solutions (Coakes, Steed et al. 2006). This assumption is satisfied due to the significant correlations existing between the majorities of scale items.

Selection bias:

Social researchers often use factor analysis to explore data in order to reveal previously undetermined structures and underlying variables. Including items only known to be relevant and eliminating items that don't 'load cleanly' on specific factors in order to reduce factors and achieve a tidier solution can result in interpretation error. Factor analysis solutions require the application of common sense and compromise in interpretation; an acknowledged challenge and limitation in using this tool (Malhotra, Hall et al. 2002). In this research, the scales used were tested in previous studies and are based on established research methodology and application. Further each scale was used 3 times, each involving samples in excess of 200 respondents, with assumption testing and validation completed each time. Based on this, the assumption for selection bias has been met.

Factorability of the correlation matrix:

To be appropriate for factor analysis, the correlation matrices will have many sizable and significant correlations (in excess of 0.3). Items found to have weak or insignificant correlations will result in a high number of factors making small contributions to the overall variance explained (Malhotra, Hall et al. 2002; Coakes, Steed et al. 2006). These results provide little or no insight in the measurement (or existence) of an underlying variable. However, intercorrelations that are extremely high between all items can suggest a multicollinearity problem requiring the combination or elimination of some items (Coakes, Steed et al. 2006), Correlations between scale items were measured using the non-parametric measurement Spearman's r. Bartlett's tes of sphericity and the KMO measure of sampling adequacy are used to determine the overall factorability of the matrix; where if the Barltett's test statistic is large and significant, and the KMO measure is greater than 0.6 then factorability is assumed (Coakes, Steed et al. 2006)

Results confirm that significant (<0.05), and therefore satisfactory, levels of correlation exist between the majority of items. The results of the correlation analysis for each scale, at each stage, and associated Bartlett's tests of sphericity and the KMO measure of sampling adequacy, are illustrated in the tables that follow.

4.6.2 Subjective knowledge scale test results (Chardonnay)

Pilot study:

Table A 7 (Correlation matrix) shows that all items tested as a scale to measure self confidence correlate positively, with all significant with 95% confidence or higher. Significant correlations range from 0.260 (positive but weak) to 0.838 (positive and strong). These high correlations, supported with a significant KMO statistic of 0.855 (Table A 6), demonstrate the data is factorable.

Table A 6 Factorability of subjective knowledge scale chardonnay (pilot)

KMO and Bartlett's Test -Subjective knowledge chardonnay (pilot)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.855
Bartlett's Test of Sphericity	Approx. Chi-Square	914
	df	28
	Sig.	.000

Table A 7 Spearman's r correlation coefficients Subjective knowledge scale chardonnay (pilot)

Correlation Matrix - Subjective knowledge chardonnay (pilot)

		Know about Wine	Judge quality of Chardonnay	Knowledgeable about Chardonnay	Expert on Chardonnay	Know less about Wine	Know most Chardonnay in shops	Don't know alot about Chardonnay
	1. Know about Wine	1.000						
	2. Judge quality of Chardonnay	.838	1.000					
	3. Knowledgeable about Chardonnay	.575	.541	1.000				
	4. Expert on Chardonnay	.486	.465	.275	1.000			
	5. Know less about Wine	.358	.339	.575	.139	1.000		
	6. Know most Chardonnay in shops	.589	.509	.329	.418	.210	1.000	
	7. Don't know alot about Chardonnay	.568	.550	.669	.211	.610	.392	1.000
	8. Can tell price of Chardonnay	.591	.590	.347	.486	.260	.484	.320
Sig.	2. Judge quality of Chardonnay	.000						
	3. Knowledgeable about Chardonnay	.000	.000					
	4. Expert on Chardonnay	.000	.000	.000				
	5. Know less about Wine	.000	.000	.000	.020			
	6. Know most Chardonnay in shops	.000	.000	.000	.000	.001		
	7. Don't know alot about Chardonnay	.000	.000	.000	.001	.000	.000	
	8. Can tell price of Chardonnay	.000	.000	.000	.000	.000	.000	.000

Sensory experiment:

Table A 9 (Correlation matrix) shows that all items tested as a scale to measure self confidence correlate positively, with all significant with 95% confidence or higher. Significant correlations range from 0.402 (positive and moderate) to 0.800 (positive and strong). These high correlations, supported with a significant KMO statistic of 0.912 (Table A 8), demonstrate the data is factorable.

Table A 8 Factorability of subjective knowledge scale chardonnay (sensory)

KMO and Bartlett's Test - Subjective Knowledge Chardonnay (lab)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.912
Bartlett's Test of Sphericity	Approx. Chi-Square	1261.124
	df	28
	Sig.	.000

Table A 9 Spearman's r correlation coefficients Subjective knowledge scale chardonnay (sensory)

Correlation Matrix - Subjective Knowledge Chardonnay (lab)

		Variables						
		Know about Wine	Judge quality of Chardonnay	Knowledgeable about Chardonnay	Expert on Chardonnay	Know less about Wine	Know most Chardonnay in shops	Don't know alot about Chardonnay
	1. Know about Wine	1.000						
	2. Judge quality of Chardonnay	.800	1.000					
	3. Knowledgeable about Chardonnay	.665	.561	1.000				
	4. Expert on Chardonnay	.677	.584	.537	1.000			
	5. Know less about Wine	.522	.472	.559	.460	1.000		
	6. Know most Chardonnay in shops	.591	.524	.433	.566	.413	1.000	
	7. Don't know alot about Chardonnay	.748	.637	.698	.610	.615	.572	1.000
	8. Can tell price of Chardonnay	.571	.610	.402	.433	.386	.447	.496
Sig.	2. Judge quality of Chardonnay	.000						
	3. Knowledgeable about Chardonnay	.000	.000					
	4. Expert on Chardonnay	.000	.000	.000				
	5. Know less about Wine	.000	.000	.000	.000			
	6. Know most Chardonnay in shops	.000	.000	.000	.000	.000		
	7. Don't know alot about Chardonnay	.000	.000	.000	.000	.000	.000	
	8. Can tell price of Chardonnay	.000	.000	.000	.000	.000	.000	.000

Conjoint survey:

Table A.11 (Correlation matrix) shows that all items tested as a scale to measure self confidence correlate positively, with all significant with 95% confidence or higher. Significant correlations range from 0.397 (positive and moderate) to 0.790 (positive and strong). These high correlations, supported with a significant KMO statistic of 0.903 (Table A 10), demonstrate the data is factorable.

Table A 10 Factorability of subjective knowledge scale chardonnay (survey)

KMO and Bartlett's Test - Subjective Knowledge Chardonnay (survey)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.903
Bartlett's Test of Sphericity	Approx. Chi-Square	1186.551
	df	28
	Sig.	.000

Table A 11 Spearman's r correlation coefficients – Subjective knowledge scale chardonnay (survey)

Correlation Matrix - Subjective knowledge chardonnay (survey)

	Know about Wine	Judge quality of Chardonnay	Knowledgeable about Chardonnay	Expert on Chardonnay	Know less about Wine	Know most Chardonnay in shops	Don't know alot about Chardonnay
1. Know about Wine	1.000						
2. Judge quality of Chardonnay	.790	1.000					
3. Knowledgeable about Chardonnay	.704	.685	1.000				
4. Expert on Chardonnay	.622	.598	.554	1.000			
5. Know less about Wine	.482	.469	.472	.375	1.000		
6. Know most Chardonnay in shops	.499	.529	.444	.539	.380	1.000	
7. Don't know alot about Chardonnay	.647	.604	.679	.516	.565	.537	1.000
8. Can tell price of Chardonnay	.459	.537	.397	.416	.307	.486	.440
2. Judge quality of Chardonnay	.000						
3. Knowledgeable about Chardonnay	.000	.000					
4. Expert on Chardonnay	.000	.000	.000				
5. Know less about Wine	.000	.000	.000	.000			
6. Know most Chardonnay in shops	.000	.000	.000	.000	.000		
7. Don't know alot about Chardonnay	.000	.000	.000	.000	.000	.000	
8. Can tell price of Chardonnay	.000	.000	.000	.000	.000	.000	.000

4.6.3 Subjective knowledge scale test results (camembert/brie)

Pilot Study:

Table A 13 (Correlation matrix) shows that all items tested as a scale to measure self confidence correlate positively, with all significant with 95% confidence or higher. Significant correlations range from 0.175 (positive but weak) to 0.827 (positive and strong). These high correlations, supported with a KMO statistic of 0.849 (Table A 12), demonstrate the data is factorable.

Table A 12 Factorability of Subjective knowledge scale camembert (pilot)

KMO and Bartlett's Test - Subjective knowledge camembert (pilot)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.849
Bartlett's Test of Sphericity	Approx. Chi-Square	925.45
	df	28
	Sig.	.000

Table A 13 Spearman's r correlation coefficients – Subjective knowledge scale brie (survey)

Correlation Matrix - Subjective knowledge camembert (pilot)

		Know about Cheese	Judge quality of Camembert	Know about Camembert	Expert on Camembert	Know less about Camembert	Know most Camembert in shops	Don't know alot about Camembert
	1. Know about Cheese	1.000						
	2.Judge quality of Camembert	.827	1.000					
	3. Knowledgeable about Camembert	.533	.524	1.000				
	4, Expert on Camembert	.514	.538	.273	1.000			
	5. Know less about Camembert	.418	.457	.556	.201	1.000		
	6. Know most Camembert in shops	.500	.550	.232	.504	.175	1.000	
	7. Don't know alot about Camembert	.520	.541	.649	.242	.625	.354	1.000
	8. Can tell price of Camembert	.562	.669	.327	.473	.216	.525	.326
Sig.	2.Judge quality of Camembert	.000						
	3. Knowledgeable about Camembert	.000	.000					
	4, Expert on Camembert	.000	.000	.000				
	5. Know less about Camembert	.000	.000	.000	.001			
	6. Know most Camembert in shops	.000	.000	.000	.000	.005		
	7. Don't know alot about Camembert	.000	.000	.000	.000	.000	.000	
	8. Can tell price of Camembert	.000	.000	.000	.000	.001	.000	.000

Sensory experiment:

Table A 15 (Correlation matrix) shows that all items tested as a scale to measure self confidence correlate positively, with all significant with 95% confidence or higher. Significant correlations range from 0.342 (positive but weak) to 0.846 (positive and strong). These high correlations, supported with a KMO statistic of 0.899 (Table A 14), demonstrate the data is factorable.

Table A 14 Factorability of Subjective knowledge scale brie (sensory)

KMO and Bartlett's Test - Subjective Knowledge Brie (lab)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.899
Bartlett's Test of Sphericity	Approx. Chi-Square	1376.112
	df	28
	Sig.	.000

Table A 15 Spearman's r correlation coefficients – Subjective knowledge scale brie (sensory)

Correlation Matrix - Subjective Knowledge Brie (lab)

		Know about Cheese	Judge quality of Brie	Knowledge able about Brie	Expert on Brie	Know less about Brie	Know most Bries in shops	Don't know alot about Brie
	1. Know about Cheese	1.000						
	2. Judge quality of Brie	.846	1.000					
	3. Knowledgeable about Brie	.660	.656	1.000				
	4. Expert on Brie	.675	.665	.605	1.000			
	5. Know less about Brie	.545	.518	.592	.492	1.000		
	6. Know most Bries in shops	.655	.660	.543	.660	.435	1.000	
	7. Don't know alot about Brie	.595	.563	.694	.566	.591	.563	1.000
	8. Can tell price of Brie	.537	.620	.399	.501	.439	.541	.342
	2. Judge quality of Brie	.000						
	3. Knowledgeable about Brie	.000	.000					
	4. Expert on Brie	.000	.000	.000				
Sig.	5. Know less about Brie	.000	.000	.000	.000			
	6. Know most Bries in shops	.000	.000	.000	.000	.000		
	7. Don't know alot about Brie	.000	.000	.000	.000	.000	.000	
	8. Can tell price of Brie	.000	.000	.000	.000	.000	.000	.000

Conjoint survey:

Table A 17 (Correlation matrix) shows that all items tested as a scale to measure self confidence correlate positively, with all significant with 95% confidence or higher. Significant correlations range from 0.435 (positive and moderate) to 0.889 (positive and strong). These high correlations, supported with a KMO statistic of 0.926. (Table A 16), demonstrate the data is factorable.

Table A 16 Factorability of Subjective knowledge scale brie (survey)

KMO and Bartlett's Test - Subjective Knowledge Brie (survey)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.926
Bartlett's Test of Sphericity	Approx. Chi-Square	1706.157
	df	28
	Sig.	.000

Table A 17 Spearman's r correlation coefficients – Subjective knowledge scale brie (survey)

Correlation Matrix - Subjective knowledge brie (survey)

	Know about Cheese	Judge quality of brie	Knowledge about brie	Expert on brie	Know less about brie	Know most of the brie in shops	Don't know alot about brie
1. Know about Cheese	1.000						
2. Judge quality of brie	.889	1.000					
3. Knowledgeable about brie	.714	.704	1.000				
4. Expert on brie	.682	.697	.607	1.000			
5. Know less about brie	.577	.552	.510	.445	1.000		
6. Know most of the brie in shops	.641	.670	.572	.581	.435	1.000	
7. Don't know alot about brie	.729	.723	.747	.580	.548	.658	1.000
8. Can tell price of brie	.746	.776	.608	.648	.499	.649	.609
2. Judge quality of brie	.000						
3. Knowledgeable about brie	.000	.000					
4. Expert on brie	.000	.000	.000				
5. Know less about brie	.000	.000	.000	.000			
6. Know most of the brie in shops	.000	.000	.000	.000	.000		
7. Don't know alot about brie	.000	.000	.000	.000	.000	.000	
8. Can tell price of brie	.000	.000	.000	.000	.000	.000	.000

4.6.4 Self-confidence scale

Pilot study:

Table A 19 shows that the majority of items tested as a scale to measure self confidence correlate positively, with the majority significant with 95% confidence or higher. Significant correlations range from 0.114 (positive but weak) to 0.573 (positive and moderate). These correlations although low to moderate, supported with a KMO statistic of 0.748 (Table A 18) demonstrate the data is factorable.

Table A 18 Factorability of self-confidence scale (pilot)

KMO and Bartlett's Test - Self confidence (pilot)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.748
Bartlett's Test of Sphericity	Approx. Chi-Square	474.786
	df	45
	Sig.	.000

Table A 19 Spearman's r correlation coefficients – Self-confidence scale (pilot)

Correlation Matrix - Self confidence (pilot)

		Handling myself socially	Low opinion	Enter a room	Opinions are inferior	Favourable first impression	Shyness and inferiority	Wear the wrong thing	What people think of me	Laughed at
	1. Handling myself socially	1.000								
	2. Low opinion	.351	1.000							
	3. Enter a room	.573	.314	1.000						
	4. Opinions are inferior (rev)	.256	.102	.291	1.000					
	5. Favourable first impression (rev)	.200	.012	.164	.389	1.000				
	6. Shyness and inferiority (rev)	.216	.114	.193	.391	.496	1.000			
	7. Wear the wrong thing (rev)	.117	.032	.221	.327	.174	.400	1.000		
	8. What people think of me	.318	.159	.253	.160	.125	.145	.123	1.000	
	9. Laughed at (rev)	.143	-.033	.071	.305	.295	.336	.179	-.099	1.000
	10. Loss for words	.353	.200	.310	.201	.017	.142	.120	.334	-.029
Sig.	2. Low opinion	.000								
	3. Enter a room	.000	.000							
	4. Opinions are inferior (rev)	.000	.059	.000						
	5. Favourable first impression (rev)	.001	.426	.006	.000					
	6. Shyness and inferiority (rev)	.000	.040	.001	.000	.000				
	7. Wear the wrong thing (rev)	.036	.311	.000	.000	.004	.000			
	8. What people think of me	.000	.007	.000	.007	.027	.013	.029		
	9. Laughed at (rev)	.014	.308	.137	.000	.000	.000	.003	.064	
	10. Loss for words	.000	.001	.000	.001	.398	.014	.032	.000	.327

Sensory experiment:

Table A 21 shows that many of items tested as a scale to measure self confidence correlate positively, with the most significant with 95% confidence or higher. Significant correlations range from 0.120 (positive but weak) to 0.489 (positive and moderate). These correlations were found to be low to moderate, however, supported with a significant KMO statistic of 0.752 (Table A 20) demonstrates the data is factorable. Whilst these results are satisfactory, the decision was taken (discussion in chapter 5) to eliminate the 5 positively phrased items and retain the negatively phrased items (Tables A 22 and A 23).

Table A 20 Factorability of self-confidence scale (sensory)

KMO and Bartlett's Test - Self Confidence (lab)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.752
Bartlett's Test of Sphericity	Approx. Chi-Square	482.519
	df	45
	Sig.	.000

Table A 21 Spearman's r correlation coefficients – Self-confidence scale (sensory)

Correlation Matrix - Self Confidence (lab)

		Handling myself socially	Low opinion	Enter a room	Opinions are inferior	Favourable first impression	Shyness and inferiority	Wear the wrong thing	What people think of me	Laughed at
	1. Handling myself socially	1.000								
	2. Low opinion	.299	1.000							
	3. Enter a room	.489	.327	1.000						
	4. Opinions are inferior	.177	.054	.173	1.000					
	5. Favourable first impression	.233	.085	.108	.446	1.000				
	6. Shyness and inferiority	.263	.135	.400	.390	.417	1.000			
	7. Wear the wrong thing	.102	.096	.197	.321	.146	.324	1.000		
	8. What people think of me	.292	.099	.270	.168	.118	.186	.132	1.000	
	9. Laughed at	.102	.131	.120	.385	.377	.330	.233	.005	1.000
	10. Loss for words	.230	.173	.241	.094	.184	.278	.083	.266	-.066
	2. Low opinion	.000								
	3. Enter a room	.000	.000							
	4. Opinions are inferior	.002	.194	.003						
	5. Favourable first impression	.000	.088	.041	.000					
Sig.	6. Shyness and inferiority	.000	.015	.000	.000	.000				
	7. Wear the wrong thing	.051	.062	.001	.000	.009	.000			
	8. What people think of me	.000	.057	.000	.003	.029	.001	.017		
	9. Laughed at	.051	.018	.027	.000	.000	.000	.000	.468	
	10. Loss for words	.000	.003	.000	.067	.001	.000	.093	.000	.146

Test results with only 5 negatively phrased items produced a 1 factor solution with all intercorrelations significant, ranging from 0.157 (low and positive) to 0.451 (moderate and positive) as seen in table A 23. These finding are supported with a significant KMO statistic of 0.763 (Table A 22) demonstrating the data is factorable.

Table A 22 Factorability of reduced self confidence scale (sensory)

KMO and Bartlett's Test - Self confidence negative items only (lab)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.763
Bartlett's Test of Sphericity	Approx. Chi-Square	236.910
	df	10
	Sig.	.000

Table A 23 Spearman's r correlation coefficients – Reduced self-confidence scale (sensory)

Correlation Matrix - Self confidence negative items only (lab)

		Opinions are inferior	Favourable first impression	Shyness and inferiority	Wear the wrong thing
	4. Opinions are inferior	1.000			
	5. Favourable first impression	.451	1.000		
	6. Shyness and inferiority	.400	.425	1.000	
	7. Wear the wrong thing	.329	.157	.330	1.000
	9. Laughed at	.389	.373	.333	.240
Sig.	5. Favourable first impression	.000			
	6. Shyness and inferiority	.000	.000		
	7. Wear the wrong thing	.000	.006	.000	
	9. Laughed at	.000	.000	.000	.000

Conjoint survey:

Table A 25 (Correlation matrix) shows that all items tested as a scale to measure self confidence correlate positively, with all significant with 95% confidence or higher. Significant correlations range from 0.213 (positive and low) to 0.541 (positive and moderate). These high correlations, supported with a KMO statistic of 0.795. (Table A 24), demonstrate the data is factorable.

Table A 24 Factorability of reduced self confidence scale (survey)

KMO and Bartlett's Test - Self confidence negative items only (conjoint survey)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.795
Bartlett's Test of Sphericity	Approx. Chi-Square	314.046
	df	10
	Sig.	.000

Table A 25 Spearman's r correlation coefficients – Reduced self-confidence scale (survey)

Correlation matrix - Self confidence negative items only (survey)

	Opinions are inferior	Favourable first impression	Shyness and inferiority	Wear the wrong thing
4. Opinions are inferior	1.000			
5. Favourable first impression	.491	1.000		
6. Shyness and inferiority	.541	.479	1.000	
7. Wear the wrong thing	.255	.213	.378	1.000
9. Laughed at	.377	.379	.451	.277
5. Favourable first impression	.000			
6. Shyness and inferiority	.000	.000		
7. Wear the wrong thing	.000	.000	.000	
9. Laughed at	.000	.000	.000	.000

4.6.5 Discriminant validity

Discriminant validity is necessary to confirm that the scales used are measuring different constructs and not simply duplicating the measurement of the same variable. Convergent validity is the degree to which each item in a scale is related to all others in the same scale. To test for discriminant validity, factor analysis was used to test the combined items of the subjective knowledge (for both products) and self confidence scales for each stage of the research.

Discriminant validity (pilot):

Results confirmed no significant and interpretable relationships between any items of the subjective knowledge and self confidence items in spite of a degree of cross loading across scale item sets. The outcome is not surprising given that, for this sample, the sample each scale produced a 2 factor rotated solution. However, the results were deemed acceptable on balance, for the purposes of the pilot analysis.

Table A 26 Discriminant validity chardonnay and self confidence (pilot)

Rotated Component Matrix Subjective knowledge chardonnay and self confidence (pilot) [a]

	Component				
	1	2	3	4	5
Handling myself socially	.057	.192	.037	.783	.234
Low opinion	.058	-.045	.073	.725	.023
Enter a room	.115	.193	-.012	.721	.238
Opinions are inferior	.040	.678	.138	.113	.185
Favourable first impression	-.016	.707	-.010	.051	-.018
Shyness and inferiority	.066	.775	.110	.088	.061
Wear the wrong thing	-.008	.575	-.048	-.015	.168
What people think of me	-.067	.084	-.016	.183	.744
Laughed at	-.036	.617	.008	.128	-.399
Loss for words	.029	.119	-.024	.263	.718
Know about Wine	.782	-.008	.406	.185	-.033
Judge quality of Chardonnay	.759	.040	.397	.130	-.025
Knowledgeable about Chardonnay	.335	.053	.788	.037	.020
Expert on Chardonnay	.767	.181	-.012	-.175	.246
Know less about Wine	.088	.066	.841	.017	-.028
Know most Chardonnay in shops	.725	-.113	.164	.076	-.033
Don't know alot about Chardonnay	.306	.048	.826	.046	-.033
Can tell price of Chardonnay	.788	.007	.111	.114	-.133

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table A 27 Discriminant validity brie and self confidence (pilot)

Rotated Component Matrix Subjective knowledge camembert and self confidence (pilot) [a]

	Component				
	1	2	3	4	5
Handling myself socially	.058	.035	.184	.796	.234
Low opinion	.075	-.039	-.032	.740	-.001
Enter a room	.003	.101	.175	.706	.277
Opinions are inferior	.002	.119	.667	.130	.191
Favourable first impression	-.007	-.115	.716	.087	-.043
Shyness and inferiority	-.024	.087	.777	.096	.079
Wear the wrong thing	-.005	.063	.564	-.081	.262
What people think of me	.027	-.125	.077	.168	.743
Laughed at	.016	.041	.635	.084	-.341
Loss for words	.002	.071	.089	.253	.732
Know about Cheese	.717	.467	.051	.082	-.075
Judge quality of Camembert	.774	.459	.073	.055	.008
Knowledgeable about Camembert	.251	.803	.053	.011	-.054
Expert on Camembert	.777	.071	-.030	-.105	.172
Know less about Camembert	.108	.841	.063	-.004	.011
Know most Camembert in shops	.787	.075	-.081	.022	-.024
Don't know alot about Camembert	.274	.813	.027	.058	-.001
Can tell price of Camembert	.788	.135	.018	.185	-.065

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Discriminant validity (sensory):

Following the decision to use the illustrated 5 reverse coded items as a measure of self confidence, no significant cross loading across scale item sets is noted.

Table A 28 Discriminant validity chardonnay and self confidence (sensory)

Rotated Component Matrix Subjective knowlede chardonnay and self confidence (sensory) [a]

	Component	
	1	2
In group discussions usually feel my opinions are inferior	-.007	.762
I don't make a very favourable first impression	-.068	.719
When confronted by strangers, my first reaction is shyness and inferiority	-.210	.710
It's extremely uncomfortable to go to a party wearing the wrong thing	-.055	.536
When in a group, I rarely express an opinion for fear of being laughed at	.097	.692
Know about Wine	.897	-.056
Judge quality of Chardonnay	.826	-.122
Knowledgeable about Chardonnay (rev)	.776	.021
Expert on Chardonnay	.786	.024
Know less about Wine (rev)	.690	.117
Know most Chardonnay in shops	.720	-.012
Don't know alot about Chardonnay (rev)	.875	-.015
Can tell price of Chardonnay	.674	-.110

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table A 29 Discriminant validity brie and self confidence (sensory)

Rotated Component Matrix Subjective knowledge brie and self confidence (sensory)[a]

	Component	
	1	2
In group discussions usually feel my opinions are inferior	.001	.760
I don't make a very favourable first impression	.063	.718
When confronted by strangers, my first reaction is shyness and inferiority	-.121	.724
It's extremely uncomfortable to go to a party wearing the wrong thing	-.053	.556
When in a group, I rarely express an opinion for fear of being laughed at	.037	.680
Know about Cheese	.877	-.035
Judge quality of Camembert	.876	-.034
Knowledgeable about Camembert (rev)	.816	-.020
Expert on Camembert	.818	.017
Know less about Camembert (rev)	.715	.025
Know most Camembert in shops	.796	.020
Don't know alot about Camembert (rev)	.776	.017
Can tell price of Camembert	.672	-.078

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Discriminant validity (survey):

No significant cross loading across scale item sets is noted.

Table A 30 Discriminant validity chardonnay and self confidence (survey)

Rotated Component Matrix Subjective knowledge chardonnay and self confidence (survey)[a]

	Component	
	1	2
In group discussions usually feel my opinions are inferior	.069	.763
I don't make a very favourable first impression	.054	.726
When confronted by strangers, my first reaction is shyness and inferiority	.070	.816
It's extremely uncomfortable to go to a party wearing the wrong thing	.063	.540
When in a group, I rarely express an opinion for fear of being laughed at	.053	.688
Know about Wine	.843	.218
Judge quality of Chardonnay	.850	.142
Knowledgeable about Chardonnay (rev)	.805	.128
Expert on Chardonnay	.776	-.096
Know less about Wine (rev)	.638	.103
Know most Chardonnay in shops	.725	-.055
Don't know alot about Chardonnay (rev)	.807	.129
Can tell price of Chardonnay	.643	.038

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table A 31 Discriminant validity brie and self confidence (survey)

Rotated Component Matrix Subjective knowledge brie and self confidence (survey)[a]

	Component	
	1	2
In group discussions usually feel my opinions are inferior	.089	.767
I don't make a very favourable first impression	.122	.721
When confronted by strangers, my first reaction is shyness and inferiority	.078	.814
It's extremely uncomfortable to go to a party wearing the wrong thing	.101	.530
When in a group, I rarely express an opinion for fear of being laughed at	-.039	.705
Know about Cheese	.906	.092
Judge quality of Camembert	.919	.024
Knowledgeable about Camembert (rev)	.820	.129
Expert on Camembert	.794	.042
Know less about Camembert (rev)	.676	.051
Know most Camembert in shops	.775	.145
Don't know alot about Camembert (rev)	.841	.109
Can tell price of Camembert	.842	.072

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Appendix 5 Information pack and registration form

THE UNIVERSITY OF ADELAIDE
AUSTRALIA

School of Commerce - Research Project
Food Product Preferences

Hello!

I am a student at the University of Adelaide, working on a research project about preferences for wine and cheese products and I would like to invite you to come and taste some Wine and Cheese!



During the months of April and May I will be inviting consumers to visit our tasting rooms and offer their opinions regarding provided samples of both wine and cheese. For participating in this research project, you will be provided with a $30 cash payment as a 'Thank You' for giving us your valuable time.

You certainly don't need to be a wine expert to come along; anyone that enjoy a glass of wine or a bite of cheese is encouraged to register. There is no 'right or wrong' in these taste tests, we are only interested in your genuine opinions about the products you will try. All wine and cheese samples are provided for tasting at no cost to you, and the tasting will take about two and a half hours in total.



Why is the research being conducted?

We're doing some basic research to gain a better understanding of consumer wine and cheese preferences. While this study is pretty simple, ultimately it's hoped that the information you provide will be used to produce better products for the market place.

Risks to you?

None. (Except for perhaps, a mild risk of wine or cheese cravings!)

Your confidentiality?



Your confidentiality is assured. We only use information for statistical analysis and we only keep your details to schedule the visits for tasting. We do not pass information on to any other parties and once the study is completed this information will be deposed of.

How do you participate in the tastings and receive my $30?

Please complete the form on the back of this letter and return it to me in the reply paid envelope provided. Please make sure to indicate you first and second preferences in terms of times and dates illustrated. The tastings will be conducted at the University of Adelaide, Waite Campus, Waite Rd, Urrbrae. There is plenty of free parking and you'll be given clear directions to the facilities.

Questions / further information

Contact Roberta Veale on 0404833924 or Roberta.Veale@tafesasouth.org, or Professor Pascale Quester on pascale.quester@adelaide.edu.au to receive further information about this project. Participation in this study is open only to individuals over the age of 18 years.

This project is funded by a research grant from the Wine and Grape Research and Development Corporation.

Tasting Registration Form

Thank you very much for registering to come along to taste the wines and cheeses!

Please complete the form below, providing contact details and ticking (✓) the box that indicates two times that would best suit you, and then please (✓) to indicate if this is your first or second preference. Return the form by post using the enclosed reply paid envelope. Once registered, I will contact you by post or email, confirming your attendance time and providing you with a map of the Waite Campus and directions to get there. It's just off Cross Road, Urrbrae and is very easy to find and access.

There are four possible dates available in April 2006, with three sessions per day. In May, there are five as there is one Saturday included with an extra session commencing at noon available on that day. Participation in this study is only open to individuals over the age of 18 years.

Name:	Contact Phone	Email
Postal Address:		Post Code

Please choose times that best suit you. You will be registered for only one of your choices; your first choice will be given whenever possible.

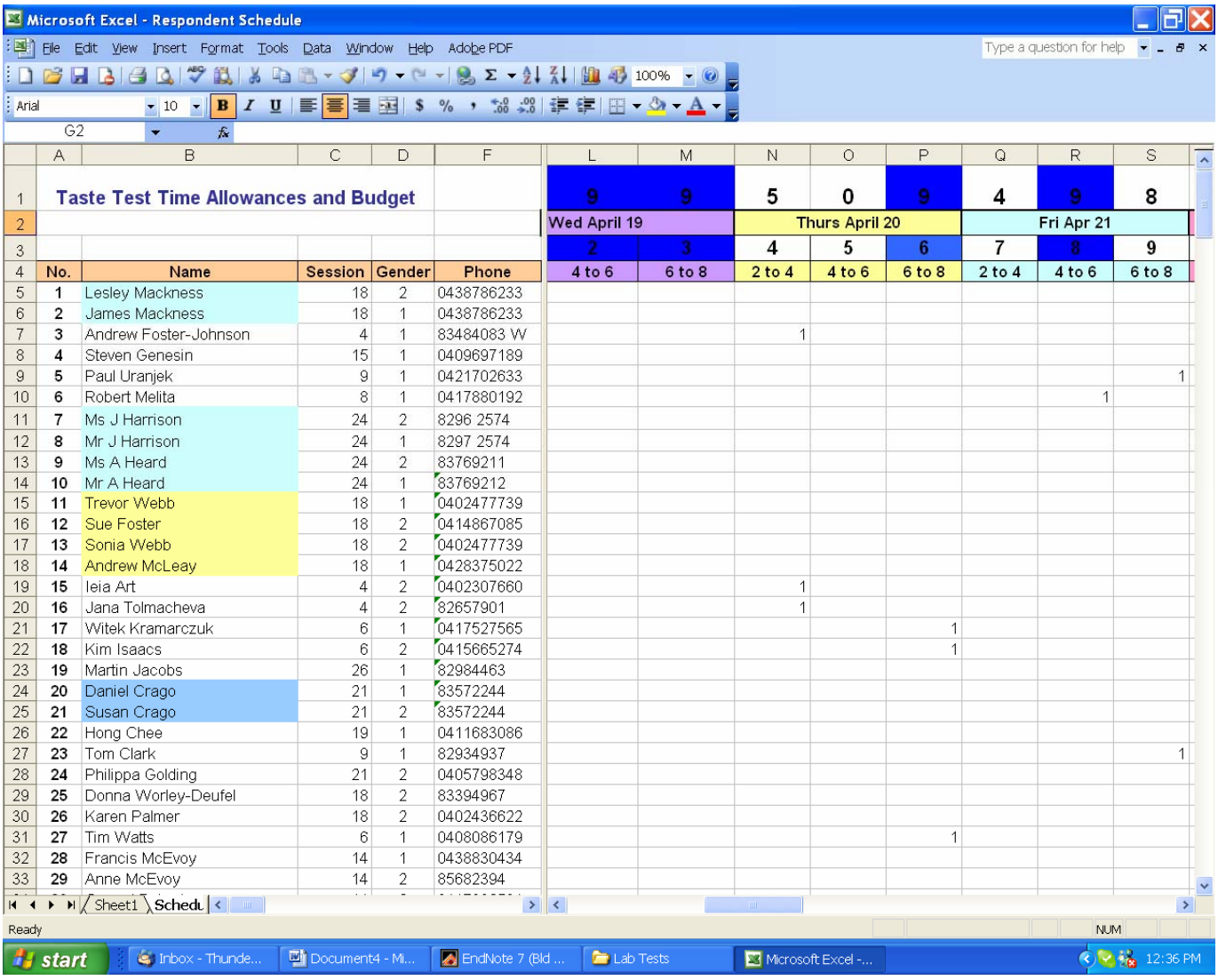
April 2006				1st Choice	2nd Choice
Thursday 20th	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□
Friday 21st	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□
Thursday 27th	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□
Friday 28th	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□
May 2006				**1st Choice**	**2nd Choice**
Thursday 4th	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□
Friday 5th	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□
Saturday 6th 12 - 2 pm □	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□
Thursday 11th	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□
Friday 12th	2 - 4 pm □	4 - 6 pm □	6 - 8 pm □	□	□

Appendix

6 Tasting registration spreadsheet and respondent confirmation notice

6.1 Spreadsheet for registrations

Figure A 1 Session registrations and time table



6.2 Confirmation notice

Name: _____



School of Commerce - Research Project
Food Product Preferences

This is to confirm your scheduled tasting session at the Waite Campus of the University of Adelaide on the

12th of May from 2 to 4 pm.

Thank you for registering to participate in my research!

I have attached a copy of a PDF file showing the Waite Campus and parking facilities. You can access the campus taking Waite Road from Cross Road, Urrbrae. When you open the PDF file, you'll see I've made some notes for you to help you find us, and 'highlighted' the map reference of D5 on the index page – showing the reference for Wine and Horticulture Reception (Building 30).

Once on Waite Road veer left at the roundabout taking Hartley Grove Road, on your right you will see Paratoo Road Carpark (feel free to park here). The gate leading to the facility is gate 2b (see notes). There is some limited parking on this entrance – you may find a spot, or they may all be in use. Any queries or questions, please feel free to email me or call me on 0404833924. An incentive payment of $30 is paid to all participants.

See you then!

Regards, Roberta

If for any reason you cannot come –
please ring me on 0404833924!

Appendix

7 Sensory experiment questionnaire

THE UNIVERSITY OF ADELAIDE
AUSTRALIA

School of Commerce
Research Project – Food Product Preferences

Welcome to this Tasting Session

Judge No: _____



Date: _____

Time: _____

Important Information about participation in this study

- Your participation in this research is entirely voluntary and you may withdraw at any time.
- The first is a briefing regarding the procedures for the session and information regarding the products that you will be trying and assessing.
- During the course of the next 2 to 2.5 hours you will be presented with 11 samples of wine and 11 samples of cheese to taste.
- You are required to smell and taste each wine sample, then importantly, you are instructed to expectorate (spit) the sample into the sink provided in the tasting booths.
- The cheese samples may be consumed if you wish, or disposed of using the tissues and receptacles provided in the tasting booths.
- Prior to the commencement of the tasting session you will be asked to complete a short questionnaire, and post tasting you will be asked to complete another. These should not take more than 10 to 15 minutes to complete in total.
- At no time should you 'go back' and review and change judgements made or answers given. It's critically important to keep moving forward throughout the session.

Consent Form
For participants in a research project

I…….(please print name) consent to take part in the research project described.

I have read the information provided on page 1 of this booklet.

I have had the project, so far as it affects me, fully explained to my satisfaction by the research worker and my consent to participate is given freely.

I understand that I am free to withdraw from the project at any time.

Signed: ……. Date: ……..

Witness

I have described to ……..(name of participant) the nature of the procedures to be carried out. In my opinion he/she understood my explanation.

Status in Project: PhD Student Name: Roberta Veale

Signed:……..

Part 1 (a)

For the purpose of analysis, we would be grateful if you would provide some personal information about yourself. Your answers will only appear in aggregate and average numbers.

Please (✓) the box that best reflects your agreement with the following statements.		**Strongly Disagree**								**Strongly Agree**
1.	I feel capable of handling myself in most social situations.	**1** □	**2** □	**3** □	**4** □	**5** □	**6** □	**7** □	**8** □	**9** □
2.	I seldom fear my actions will cause others to have a low opinion of me.	□	□	□	□	□	□	□	□	□
3.	It doesn't bother me to have to enter a room where other people have already gathered and are talking.	□	□	□	□	□	□	□	□	□
4.	In group discussions, I usually feel my opinions are inferior.	□	□	□	□	□	□	□	□	□
5.	I don't make a very favourable first impression on people.	□	□	□	□	□	□	□	□	□
6.	When confronted by a group of strangers, my first reaction is always one of shyness and inferiority.	□	□	□	□	□	□	□	□	□
7.	It is extremely uncomfortable to accidentally go to a party wearing the wrong thing.	□	□	□	□	□	□	□	□	□
8.	I don't spend much time worrying about what people think of me.	□	□	□	□	□	□	□	□	□
9.	When in a group, I very rarely express an opinion for fear of being laughed at.	□	□	□	□	□	□	□	□	□
10.	I am never at a loss for words when I am introduced to someone I don't know.	□	□	□	□	□	□	□	□	□

Please turn the page and continue with Part 1 (b)

Part 1 (b)
In this part of the questionnaire, we would like to ask you some questions about your general knowledge and experiences with purchasing Chardonnay.

Please (✓) the box that best reflects your knowledge and experience.		**Strongly Disagree**								**Strongly Agree**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	I feel confident about my knowledge of chardonnay.	□	□	□	□	□	□	□	□	□
2.	I feel that I know how to judge the quality of chardonnay.	□	□	□	□	□	□	□	□	□
3.	I do not feel very knowledgeable about chardonnay.	□	□	□	□	□	□	□	□	□
4.	Among my circle of friends, I'm one of the 'experts' on chardonnay.	□	□	□	□	□	□	□	□	□
5.	Compared to most buyers, I know less about chardonnay.	□	□	□	□	□	□	□	□	□
6.	I know of most of the chardonnays around in shops.	□	□	□	□	□	□	□	□	□
7.	When it comes to chardonnay, I really don't know a lot.	□	□	□	□	□	□	□	□	□
8.	I can tell if a chardonnay is worth the price or not.	□	□	□	□	□	□	□	□	□

9.	**How often would you purchase bottle of Chardonnay for yourself or others? (on average)** Less than once per month □ 1 1 to 2 times per month □ 2 3 to 4 times per month □ 3 5 or more times per month □ 4	**10.**	**If you have a 'favourite' brand of Chardonnay, please list it below.**

Please turn the page and continue with Part 1 (c)

Part 1 (c)
In this part of the survey, we would like to ask you some questions about your general knowledge and experiences with purchasing Brie.

Please (✓) the box that best reflects your knowledge and experience about Brie.		**Strongly Disagree**								**Strongly Agree**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	I feel confident about my knowledge of Brie.	□	□	□	□	□	□	□	□	□
2.	I feel that I know how to judge the quality of Brie.	□	□	□	□	□	□	□	□	□
3.	I do not feel very knowledgeable about Brie.	□	□	□	□	□	□	□	□	□
4.	Among my circle of friends, I'm one of the 'experts' on Brie.	□	□	□	□	□	□	□	□	□
5.	Compared to most buyers, I know less about Brie.	□	□	□	□	□	□	□	□	□
6.	I know of most of the Brie cheeses in the shops.	□	□	□	□	□	□	□	□	□
7.	When it comes to Brie, I really don't know a lot.	□	□	□	□	□	□	□	□	□
8.	I can tell if a Brie is worth the price or not.	□	□	□	□	□	□	□	□	□

9.	**How often would you purchase Brie for yourself or others? (on average)** Less than once per month □ 1 1 to 2 times per month □ 2 3 to 4 times per month □ 3 5 or more times per month □ 4	**10.**	**If you have a 'favourite' brand of Brie, please list it below.**

This is the end of part 1 – Please do not turn the page until instructed to do so (thanks!)

Part 2

Chardonnay and Cheese Samples

- You will be given 11 samples of chardonnay and 11 samples of brie to taste.
- These will be given to you 1 sample at a time, in a mixed order.
- Each sample profile and rating scale is on a separate page of this booklet – each with a unique and specific identifying number. Check to see the sample number matches the number in your booklet.
- Give each sample a rating on the scale where **1 = Low Quality and 10 = High Quality**. Then please indicate whether or not you would consider buying this product.
- Rate each sample individually as you receive them. While you may not be a regular 'Chardonnay drinker' or 'Brie' fancier (or even particularly like Chardonnay or Brie) assess each profile in light of the need to make a possible purchase. All Wine options are 2005 vintage.
- Between each sample, be sure to cleanse your palate with water and/or a bite of water biscuit.
- Remember to expectorate the wine sample in the sink provided.
- DON'T GO BACK! Once you have assessed a sample, use the indicator switch in the booth to request your next sample and then turn to the page to rate the next corresponding sample number.

We're interested in your first impressions, so work quickly and steadily.
There are no 'right or wrong' answers, we are only interested in your opinion!

Chardonnay 253									
Produced in	France								
Retail Price	$16.00								
Low Quality									**High Quality**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 582	
Produced in	United States
Retail Price	$6.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 481	
Produced in	Chile
Retail Price	$16.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 810	
Produced in	France
Retail Price	28.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 139	
Produced in	Argentina
Retail Price	28.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 367	
Produced in	Canada
Retail Price	$69.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 696	
Produced in	France
Retail Price	$6.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 595	
Produced in	United States
Retail Price	$16.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 924	
Produced in	Chile
Retail Price	$53.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 266	
Produced in	Canada
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 709	
Produced in	France
Retail Price	$49.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 380	
Produced in	Argentina
Retail Price	$69.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 152	
Produced in	United States
Retail Price	$6.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 823	
Produced in	France
Retail Price	$53.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 494	
Produced in	Chile
Retail Price	$6.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 735	
Produced in	France
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 393	
Produced in	Argentina
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 621	
Produced in	France
Retail Price	$69.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 950	
Produced in	France
Retail Price	$16.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 279	
Produced in	United States
Retail Price	$53.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 178	
Produced in	Canada
Retail Price	$49.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 507	
Produced in	Argentina
Retail Price	$49.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

That concludes the taste testing.
Please close your booklet at this time.

Part 3 (a) Chardonnay

In this part of the survey, we would like to ask you some questions relating to your general knowledge about wine. Please (✓) the box that best reflects your knowledge and experience. If you're unsure about the answer to any particular question, that's no problem just (✓) the box indicating this.

1. **Letting a wine 'breathe":**		2. **Cellaring of wine is done (basically) to help:**	
Is to remove the cork for a time, prior to drinking	□ 1	Wine mature quickly	□ 1
Means aerating it so it can react with the oxygen	□ 2	Wine mature slowly	□ 2
Always improves the flavour of wine	□ 3	Keep pests away from wine	□ 3
Don't know	□ 4	Don't know	□ 4

3. **Which one of the following white varietals is most likely to be aged in oak?**		4. **Which one of the following white varietals is most likely to improve with aging?**	
Riesling	□ 1	Sauvignon Blanc	□ 1
Chardonnay	□ 2	Chenin Blanc	□ 2
Sauvignon Blanc	□ 3	Chardonnay	□ 3
Don't know	□ 4	Don't know	□ 4

5. **Tannin gives wine:**		6. **Chardonnay grapes are:**	
Bitterness	□ 1	Among the finest grown for white wine	□ 1
Tartness	□ 2	Not usually used in sparkling wine	□ 2
Astringency	□ 3	Often used to make sweet wines	□ 3
Don't know	□ 4	Don't know	□ 4

Please turn the page and continue

Part 3 (a) Chardonnay cont.

7. Chardonnay, typically has an aging potential of:		8. Terms often linked with the taste of Chardonnay are:	
2 or 3 years	□ 1	Apple, peach, citrus	□ 1
3 or 4 years	□ 2	Plum, spice, mint	□ 2
5 or 6 years or longer	□ 3	Floral, honey, lychee	□ 3
Don't know	□ 4	Don't know	□ 4

9. What percentage (%) of the wine in the bottle must be made from grapes harvested and crushed in the year named, if a 'Vintage' date is given?		10. When thinking about matching foods with wines, trying to achieve the most complimentary combinations, it is important to remember that:	
85%	□ 1	Very sweet food will counter the acid in the wine	□ 1
95%	□ 2	Very salty foods counter acid in the wine	□ 2
100%	□ 3	Very acid foods will bring out the acid in the wine	□ 3
Don't know	□ 4	Don't know	□ 4

11. An oak aged Chardonnay will, typically, be:		12. Champagne is an excellent choice to accompany:	
Less full bodied than many other white wines	□ 1	Smoked salmon	□ 1
More full bodied than many other white wines	□ 2	Chinese food	□ 2
Comparable in body to many other white wines	□ 3	Most foods	□ 3
Don't know	□ 4	Don't know	□ 4

Please turn the page and continue

Part 3 (a) Chardonnay cont.

13. The term 'green' is often used to describe a wine's:		14. Chilling wine (even red wine) will often:	
Color	□ 1	Improve the taste of a poor wine	□ 1
Acidity	□ 2	Make tannins less noticeable	□ 2
Age	□ 3	Make no real difference to perceived quality	□ 3
Don't know	□ 4	Don't know	□ 4

Part 3 (b) Brie

Please (✓) the box that best reflects your knowledge and experience with Brie. If you're unsure about the answer to any particular question, that's no problem just (✓) the box indicating this.

1. White mould is:		2. Coagulation is:	
Fresh curds aged in warm temperatures.	□ 1	The conversion of milk solids to curd and whey.	□ 1
Fresh curds ripened by introducing surface mould.	□ 2	The basis of cheese making.	□ 2
Never found in quality cheeses.	□ 3	**Both** of the above.	□ 3
Don't know	□ 4	Don't know	□ 4

3. Rennet is:		4. Brie:	
A form of yeast used to make cheese.	□ 1	Is eaten younger than Camembert	□ 1
An enzyme extracted from stomach linings.	□ 2	Is eaten older than Camembert	□ 2
Neither of the above.	□ 3	Matures in the same time as Camembert	□ 3
Don't know	□ 4	Don't know	□ 4

Please turn the page and continue

Part 3 (b) Brie cont.

5.	**Rind is:**		6.	**Brie is nicest when made from milk produced:**	
	An important influence on flavor development	□ 1		In the spring and autumn	□ 1
	Not found on Brie	□ 2		In the winter and summer	□ 2
	Never washed in making quality cheeses	□ 3		In particularly wet summers	□ 3
	Don't know	□ 4		Don't know	□ 4

7.	**Brie:**		8.	**Brie:**	
	Never smells of mushrooms and yeast	□ 1		Has slightly thicker mould than Camembert	□ 1
	Usually smells of mushrooms and yeast	□ 2		Has slightly thinner mould than Camembert	□ 2
	Can sometimes smell like old socks	□ 3		Has identical mould to Camembert	□ 3
	Don't know	□ 4		Don't know	□ 4

9.	**'Triple Cream' Brie:**		10.	**Brie rind is:**	
	Feels greasy with you eat it	□ 1		Comprised of soft white mould	□ 1
	Is made from milk with extra cream added later	□ 2		Comprised of grey or white mould	□ 2
	Doesn't exist as a product	□ 3		Sometimes orange	□ 3
	Don't know	□ 4		Don't know	□ 4

Please turn the page and continue

Part 3 (b) Brie cont.

11.	**When choosing wine to drink with Brie:**		12.	**Brie cheese:**	
	It's critical to make sure it's well chilled	□ 1		Is a product where price usually influences quality	□ 1
	A chardonnay will suit, but never a red	□ 2		Is a product where price is no indication of quality	□ 2
	A full bodied, earthy red is a sound choice	□ 3		Is a product where all brands cost pretty much the same, no matter where the cheese comes from	□ 3
	Don't know	□ 4		Don't know	□ 4

13.	**The inside of a Brie that is ready to eat is:**		14.	**When you press the rind of a Brie it should:**	
	Creamy, buttery and smooth	□ 1		Feel soft, but your finger leaves no mark or indent	□ 1
	Rubbery, buttery and soft	□ 2		Feel soft to the touch, your finger leaving an indent	□ 2
	A little chalky	□ 3		Feel quite firm	□ 3
	Don't know	□ 4		Don't know	□ 4

Please turn the page and continue

Part 4

For the purpose of analysis, we would be grateful if you would provide some personal information about yourself. Your anonymity is guaranteed, this data is only used for statistical purposes.

1. Please indicate your gender: Male □ 1 Female □ 2	**2. Please indicate your age category:** 18 yrs to 25 yrs □ 1 26 yrs to 35 yrs □ 2 36 yrs to 45 yrs □ 3 46 yrs to 55 yrs □ 4 Over 55 yrs □ 5
3. What is your occupation?	

4. Please indicate your household income (gross) Less than $25, 000 □ 1 $25,000 to $45,000 □ 2 $46,000 to $65,000 □ 3 Over $65,000 □ 4	**5. Please indicate highest level of education completed:** High School Certificate □ 1 Diploma / Trade Qualification □ 2 Bachelor's Degree □ 3 Post Graduate Degree □ 4

Thank you very much!

Appendix

8 Correlation matrices (chardonnay)

8.1 Sensory experiment

Table A 32 High objective knowledge and average importance chardonnay

		Objective knowledge Chardonnay	Subjective knowledge Chardonnay	Self confidence	Ave Importance COO	Ave Importance Price
Objective knowledge Chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge Chardonnay	Correlation Coefficient	.380	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.136	.188	1.000		
	Sig. (2-tailed)	.197	.073	.		
Ave Importance COO	Correlation Coefficient	-.080	-.076	.057	1.000	
	Sig. (2-tailed)	.447	.470	.589	.	
Ave Importance Price	Correlation Coefficient	.116	.109	.037	-.545	1.000
	Sig. (2-tailed)	.269	.299	.724	.000	.
Ave Importance Acid	Correlation Coefficient	-.081	-.039	-.054	-.250	-.607
	Sig. (2-tailed)	.440	.713	.608	.016	.000

N = 92

Table A 33 High objective knowledge and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Objective knowledge Chardonnay	Correlation Coefficient	-.036	.038	-.001	.146	-.147	.016	.051	-.045	.036
	Sig. (2-tailed)	.732	.721	.990	.165	.161	.877	.631	.672	.733
Subjective knowledge Chardonnay	Correlation Coefficient	-.162	.136	.067	-.029	.151	-.023	.034	.076	-.007
	Sig. (2-tailed)	.122	.197	.526	.783	.152	.827	.744	.474	.947
Self confidence	Correlation Coefficient	.130	.147	-.274	.072	.046	-.135	.200	-.100	-.088
	Sig. (2-tailed)	.217	.162	.008	.495	.666	.200	.055	.342	.403
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.422	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.642	-.370	1.000						
	Sig. (2-tailed)	.000	.000	.						
$6.00	Correlation Coefficient	-.281	.258	.025	1.000					
	Sig. (2-tailed)	.007	.013	.814	.					
$16.00	Correlation Coefficient	.010	-.129	.110	-.301	1.000				
	Sig. (2-tailed)	.927	.219	.296	.004	.				
$53.00	Correlation Coefficient	.187	-.188	-.022	-.718	-.371	1.000			
	Sig. (2-tailed)	.074	.073	.832	.000	.000	.			
Average	Correlation Coefficient	.274	-.046	-.258	-.072	-.142	.154	1.000		
	Sig. (2-tailed)	.008	.660	.013	.494	.176	.142	.		
Above Average	Correlation Coefficient	-.357	.341	.102	.009	.102	-.063	-.483	1.000	
	Sig. (2-tailed)	.000	.001	.333	.936	.334	.550	.000	.	
High	Correlation Coefficient	-.027	-.140	.134	.145	-.015	-.130	-.514	-.393	1.000
	Sig. (2-tailed)	.795	.184	.201	.168	.891	.215	.000	.000	.

N = 92

Table A 34 Low objective knowledge and average importance chardonnay

		Objective knowledge Chardonnay	Subjective knowledge Chardonnay	Self confidence	Ave Importance COO	Ave Importance Price
Objective knowledge Chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge Chardonnay	Correlation Coefficient	.197	1.000			
	Sig. (2-tailed)	.078	.			
Self confidence	Correlation Coefficient	.074	.092	1.000		
	Sig. (2-tailed)	.511	.415	.		
Ave Importance COO	Correlation Coefficient	-.090	-.032	-.187	1.000	
	Sig. (2-tailed)	.424	.775	.095	.	
Ave Importance Price	Correlation Coefficient	.138	.039	-.043	-.515	1.000
	Sig. (2-tailed)	.220	.729	.706	.000	.
Ave Importance Acid	Correlation Coefficient	-.026	-.048	.174	-.304	-.550
	Sig. (2-tailed)	.820	.668	.121	.006	.000

N = 81

Table A 35 Low objective knowledge and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Objective knowledge Chardonnay	Correlation Coefficient	.069	.043	-.089	-.208	.065	.224	-.041	.080	-.078
	Sig. (2-tailed)	.542	.706	.429	.062	.566	.044	.717	.476	.488
Subjective knowledge Chardonnay	Correlation Coefficient	-.072	.228	-.153	.051	.080	-.054	-.085	-.052	.152
	Sig. (2-tailed)	.525	.041	.172	.648	.477	.634	.453	.643	.175
Self confidence	Correlation Coefficient	-.113	.068	.045	.063	-.151	.060	-.024	-.018	.014
	Sig. (2-tailed)	.313	.549	.690	.576	.177	.594	.835	.877	.905
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.431	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.519	-.460	1.000						
	Sig. (2-tailed)	.000	.000	.						
$6.00	Correlation Coefficient	-.002	-.216	.258	1.000					
	Sig. (2-tailed)	.984	.053	.020	.					
$16.00	Correlation Coefficient	.048	.011	-.065	-.456	1.000				
	Sig. (2-tailed)	.670	.924	.564	.000	.				
$53.00	Correlation Coefficient	-.080	.271	-.215	-.681	-.284	1.000			
	Sig. (2-tailed)	.476	.014	.054	.000	.010	.			
Average	Correlation Coefficient	.084	-.145	.063	.085	-.073	-.087	1.000		
	Sig. (2-tailed)	.458	.196	.574	.452	.516	.440	.		
Above Average	Correlation Coefficient	-.272	.182	.123	-.103	.061	.088	-.426	1.000	
	Sig. (2-tailed)	.014	.103	.272	.361	.588	.436	.000	.	
High	Correlation Coefficient	.171	.005	-.207	-.037	-.005	.048	-.536	-.475	1.000
	Sig. (2-tailed)	.128	.964	.064	.740	.967	.672	.000	.000	.

N = 81

Table A 36 High subjective knowledge and average importance chardonnay

		Objective knowledge Chardonnay	Subjective knowledge Chardonnay	Self confidence	Ave Importance COO	Ave Importance Price
Objective knowledge Chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge Chardonnay	Correlation Coefficient	.435	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.196	.168	1.000		
	Sig. (2-tailed)	.104	.166	.		
Ave Importance COO	Correlation Coefficient	-.096	-.069	.028	1.000	
	Sig. (2-tailed)	.428	.572	.816	.	
Ave Importance Price	Correlation Coefficient	.025	.113	-.031	-.677	1.000
	Sig. (2-tailed)	.840	.351	.797	.000	.
Ave Importance Acid	Correlation Coefficient	.164	.074	.060	-.173	-.526
	Sig. (2-tailed)	.174	.542	.621	.153	.000

N = 70

Table A 37 High subjective knowledge and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Objective knowledge Chardonnay	Correlation Coefficient	-.047	.094	-.083	.213	-.062	-.212	-.012	.060	-.014
	Sig. (2-tailed)	.698	.438	.493	.077	.612	.078	.924	.621	.907
Subjective knowledge Chardonnay	Correlation Coefficient	-.123	-.078	.175	.068	-.090	-.033	.094	.050	-.074
	Sig. (2-tailed)	.311	.520	.148	.575	.459	.785	.441	.683	.543
Self confidence	Correlation Coefficient	-.113	.363	-.196	.241	-.186	-.127	.093	.056	-.074
	Sig. (2-tailed)	.352	.002	.104	.044	.123	.297	.442	.645	.545
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.475	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.549	-.400	1.000						
	Sig. (2-tailed)	.000	.001	.						
$6.00	Correlation Coefficient	-.206	.231	.001	1.000					
	Sig. (2-tailed)	.088	.055	.995	.					
$16.00	Correlation Coefficient	.080	-.138	-.034	-.414	1.000				
	Sig. (2-tailed)	.510	.256	.783	.000	.				
$53.00	Correlation Coefficient	.103	-.125	.058	-.783	-.173	1.000			
	Sig. (2-tailed)	.395	.304	.631	.000	.151	.			
Average	Correlation Coefficient	.142	.116	-.298	-.156	-.164	.267	1.000		
	Sig. (2-tailed)	.240	.338	.012	.198	.175	.025	.		
Above Average	Correlation Coefficient	-.285	.193	.233	-.057	-.026	.081	-.346	1.000	
	Sig. (2-tailed)	.017	.110	.052	.638	.833	.503	.003	.	
High	Correlation Coefficient	.023	-.202	.122	.231	.135	-.355	-.574	-.437	1.000
	Sig. (2-tailed)	.847	.093	.314	.055	.267	.003	.000	.000	.

N = 70

Table A 38 Low subjective knowledge and average importance chardonnay

		Objective knowledge Chardonnay	Subjective knowledge Chardonnay	Self confidence	Ave Importance COO	Ave Importance Price
Objective knowledge Chardonnay	Correlation Coefficient	1.000				
	Sig. (1-tailed)	.				
Subjective knowledge Chardonnay	Correlation Coefficient	.184	1.000			
	Sig. (1-tailed)	.068	.			
Self confidence	Correlation Coefficient	-.159	-.071	1.000		
	Sig. (1-tailed)	.099	.285	.		
Ave Importance COO	Correlation Coefficient	-.213	.014	-.079	1.000	
	Sig. (1-tailed)	.042	.456	.262	.	
Ave Importance Price	Correlation Coefficient	.138	.062	-.073	-.529	1.000
	Sig. (1-tailed)	.133	.310	.280	.000	.
Ave Importance Acid	Correlation Coefficient	.131	-.015	.087	-.427	-.458
	Sig. (1-tailed)	.145	.453	.241	.000	.000

N = 67

Table A 39 Low subjective knowledge and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Objective knowledge Chardonnay	Correlation Coefficient	.135	-.012	-.166	-.046	-.184	.222	-.027	.018	-.096
	Sig. (2-tailed)	.277	.921	.179	.709	.136	.071	.830	.887	.438
Subjective knowledge Chardonnay	Correlation Coefficient	-.334	.065	.302	.136	.022	-.144	-.057	-.078	.076
	Sig. (2-tailed)	.006	.599	.013	.271	.862	.245	.645	.529	.542
Self confidence	Correlation Coefficient	.217	-.161	-.024	.156	-.114	-.110	.048	.159	-.142
	Sig. (2-tailed)	.077	.192	.849	.209	.359	.374	.701	.200	.251
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.557	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.578	-.265	1.000						
	Sig. (2-tailed)	.000	.030	.						
$6.00	Correlation Coefficient	-.118	-.037	.312	1.000					
	Sig. (2-tailed)	.342	.768	.010	.					
$16.00	Correlation Coefficient	.015	-.034	-.058	-.350	1.000				
	Sig. (2-tailed)	.905	.785	.640	.004	.				
$53.00	Correlation Coefficient	.017	.108	-.198	-.599	-.468	1.000			
	Sig. (2-tailed)	.889	.382	.109	.000	.000	.			
Average	Correlation Coefficient	.212	-.269	.012	-.054	.111	-.093	1.000		
	Sig. (2-tailed)	.086	.028	.922	.661	.373	.452	.		
Above Average	Correlation Coefficient	-.245	.186	.051	-.027	.049	.036	-.497	1.000	
	Sig. (2-tailed)	.045	.133	.682	.829	.694	.771	.000	.	
High	Correlation Coefficient	.023	.118	-.114	.084	-.152	.062	-.487	-.419	1.000
	Sig. (2-tailed)	.851	.340	.357	.498	.218	.616	.000	.000	.

N = 67

Table A 40 High self-confidence and average importance chardonnay

		Objective knowledge Chardonnay	Subjective knowledge Chardonnay	Self confidence	Ave Importance COO	Ave Importance Price
Objective knowledge Chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge Chardonnay	Correlation Coefficient	.580	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.001	.039	1.000		
	Sig. (2-tailed)	.990	.735	.		
Ave Importance COO	Correlation Coefficient	.062	.086	-.077	1.000	
	Sig. (2-tailed)	.587	.454	.505	.	
Ave Importance Price	Correlation Coefficient	.209	.161	-.095	-.423	1.000
	Sig. (2-tailed)	.067	.158	.408	.000	.
Ave Importance Acid	Correlation Coefficient	-.178	-.186	.113	-.354	-.612
	Sig. (2-tailed)	.118	.104	.323	.001	.000

N = 78

Table A 41 High self-confidence and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Objective knowledge Chardonnay	Correlation Coefficient	.046	.172	-.205	-.067	.056	-.008	.168	.056	-.171
	Sig. (2-tailed)	.687	.132	.072	.562	.625	.944	.142	.627	.136
Subjective knowledge Chardonnay	Correlation Coefficient	-.246	.371	-.034	-.013	.126	-.051	.081	.050	-.031
	Sig. (2-tailed)	.030	.001	.766	.907	.271	.655	.480	.666	.786
Self confidence	Correlation Coefficient	-.023	.000	-.041	-.012	.129	-.116	.021	.063	-.083
	Sig. (2-tailed)	.842	.997	.720	.916	.261	.314	.852	.584	.471
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.496	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.704	-.183	1.000						
	Sig. (2-tailed)	.000	.108	.						
$6.00	Correlation Coefficient	-.253	.140	.187	1.000					
	Sig. (2-tailed)	.026	.220	.102	.					
$16.00	Correlation Coefficient	.255	-.199	-.068	-.372	1.000				
	Sig. (2-tailed)	.024	.080	.557	.001	.				
$53.00	Correlation Coefficient	.054	.005	-.130	-.643	-.389	1.000			
	Sig. (2-tailed)	.637	.967	.255	.000	.000	.			
Average	Correlation Coefficient	.157	-.075	-.109	.002	-.085	.028	1.000		
	Sig. (2-tailed)	.169	.517	.343	.986	.457	.805	.		
Above Average	Correlation Coefficient	-.261	.121	.191	-.116	-.093	.181	-.455	1.000	
	Sig. (2-tailed)	.021	.290	.093	.311	.420	.112	.000	.	
High	Correlation Coefficient	-.027	.138	-.073	.132	.067	-.162	-.543	-.397	1.000
	Sig. (2-tailed)	.812	.227	.524	.251	.561	.156	.000	.000	.

N = 78

Table A 42 Low self-confidence and average importance chardonnay

		Objective knowledge Chardonnay	Subjective knowledge Chardonnay	Self confidence (sensory)	Ave Importance COO	Ave Importance Price
Objective knowledge Chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge Chardonnay	Correlation Coefficient	.455	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence (sensory)	Correlation Coefficient	.000	.094	1.000		
	Sig. (2-tailed)	.992	.481	.		
Ave Importance COO	Correlation Coefficient	-.240	-.105	-.068	1.000	
	Sig. (2-tailed)	.070	.433	.609	.	
Ave Importance Price	Correlation Coefficient	.051	.061	-.155	-.703	1.000
	Sig. (2-tailed)	.704	.650	.245	.000	.
Ave Importance Acid	Correlation Coefficient	.205	.047	.221	-.018	-.613
	Sig. (2-tailed)	.123	.729	.095	.894	.000

N = 58

Table A 43 Low self-confidence and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Objective knowledge Chardonnay	Correlation Coefficient	-.048	.082	-.024	-.028	-.146	.183	-.050	.045	.029
	Sig. (2-tailed)	.718	.541	.859	.834	.273	.168	.708	.736	.830
Subjective knowledge Chardonnay	Correlation Coefficient	.147	-.112	-.055	-.096	.122	.032	-.004	.035	.031
	Sig. (2-tailed)	.270	.402	.683	.472	.362	.812	.975	.793	.816
Self confidence	Correlation Coefficient	.285	-.037	-.354	.056	.020	-.131	-.067	-.219	.246
	Sig. (2-tailed)	.030	.782	.006	.674	.879	.326	.618	.098	.062
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.603	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.418	-.391	1.000						
	Sig. (2-tailed)	.001	.002	.						
$6.00	Correlation Coefficient	-.153	-.004	.195	1.000					
	Sig. (2-tailed)	.251	.979	.143	.					
$16.00	Correlation Coefficient	.165	-.166	-.020	-.603	1.000				
	Sig. (2-tailed)	.216	.213	.879	.000	.				
$53.00	Correlation Coefficient	-.056	.136	-.113	-.701	-.082	1.000			
	Sig. (2-tailed)	.677	.307	.397	.000	.541	.			
Average	Correlation Coefficient	-.141	-.036	.205	-.040	-.052	.066	1.000		
	Sig. (2-tailed)	.291	.786	.123	.768	.697	.622	.		
Above Average	Correlation Coefficient	-.283	.164	.172	.087	.079	-.119	-.386	1.000	
	Sig. (2-tailed)	.032	.220	.198	.514	.553	.372	.003	.	
High	Correlation Coefficient	.372	-.096	-.342	-.019	-.041	.059	-.575	-.441	1.000
	Sig. (2-tailed)	.004	.473	.009	.888	.762	.662	.000	.001	.

N = 58

8.2 Conjoint survey (chardonnay)

Table A 44 High objective knowledge and average importance chardonnay

		Objective knowledge chardonnay	Subjective knowledge chardonnay	Self confidence	Average Importance COO	Average Importance Price
Objective knowledge chardonnay	Correlation Coefficie	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge chardonnay	Correlation Coefficie	.153	1.000			
	Sig. (2-tailed)	.247	.			
Self confidence	Correlation Coefficie	.059	.319	1.000		
	Sig. (2-tailed)	.654	.014	.		
Average Importance COO	Correlation Coefficie	.066	.011	-.008	1.000	
	Sig. (2-tailed)	.622	.935	.952	.	
Average Importance Price	Correlation Coefficie	.200	-.008	.044	-.634	1.000
	Sig. (2-tailed)	.130	.952	.743	.000	.
Average Importance Acid	Correlation Coefficie	-.206	-.076	-.156	-.039	-.651
	Sig. (2-tailed)	.118	.570	.238	.772	.000

N = 59

Table A 45 High objective knowledge and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average	High
Objective knowledge chardonnay	Correlation Coefficient	-.032	.088	-.060	-.341	-.116	.422	.073	.040	-.032
	Sig. (2-tailed)	.810	.508	.652	.008	.383	.001	.585	.761	.813
Subjective knowledge chardonnay	Correlation Coefficient	-.170	.050	.184	-.181	.329	.028	.042	-.158	.053
	Sig. (2-tailed)	.198	.704	.162	.169	.011	.832	.751	.232	.689
Self confidence	Correlation Coefficient	-.148	.322	-.101	.050	-.130	-.007	-.094	-.087	.128
	Sig. (2-tailed)	.264	.013	.448	.706	.325	.959	.478	.510	.335
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.480	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.556	-.368	1.000						
	Sig. (2-tailed)	.000	.004	.						
$6.00	Correlation Coefficient	-.196	-.029	.255	1.000					
	Sig. (2-tailed)	.136	.829	.052	.					
$16.00	Correlation Coefficient	.087	-.144	.042	-.305	1.000				
	Sig. (2-tailed)	.510	.276	.750	.019	.				
$53.00	Correlation Coefficient	.167	.123	-.310	-.878	-.149	1.000			
	Sig. (2-tailed)	.205	.353	.017	.000	.261	.			
Average	Correlation Coefficient	-.417	.206	.161	.125	-.208	-.012	1.000		
	Sig. (2-tailed)	.001	.117	.224	.345	.114	.930	.		
Above average	Correlation Coefficient	.131	-.095	-.027	-.097	-.038	.081	-.365	1.000	
	Sig. (2-tailed)	.324	.474	.837	.465	.775	.541	.004	.	
High	Correlation Coefficient	.362	-.116	-.174	-.157	.267	.032	-.799	-.181	1.000
	Sig. (2-tailed)	.005	.381	.186	.234	.041	.810	.000	.170	.

N = 59

Table A 46 Low objective knowledge and average importance chardonnay

		Objective knowledge chardonnay	Subjective knowledge chardonnay	Self confidence	Average Importance COO	Average Importance Price
Objective knowledge chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge chardonnay	Correlation Coefficient	.332	1.000			
	Sig. (2-tailed)	.012	.			
Self confidence	Correlation Coefficient	.110	-.071	1.000		
	Sig. (2-tailed)	.421	.602	.		
Average Importance COO	Correlation Coefficient	-.164	-.109	-.188	1.000	
	Sig. (2-tailed)	.227	.422	.164	.	
Average Importance Price	Correlation Coefficient	.151	.104	-.019	-.701	1.000
	Sig. (2-tailed)	.267	.445	.891	.000	.
Average Importance Acid	Correlation Coefficient	-.104	-.064	.101	.238	-.801
	Sig. (2-tailed)	.446	.642	.457	.077	.000

N = 56

Table A 47 Low objective knowledge and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average	High
Objective knowledge chardonnay	Correlation Coefficient	-.052	.059	.012	-.180	.056	.098	-.025	-.187	.168
	Sig. (2-tailed)	.703	.666	.928	.185	.684	.473	.855	.166	.215
Subjective knowledge chardonnay	Correlation Coefficient	.017	-.068	.002	-.054	.099	-.020	-.192	.028	.111
	Sig. (2-tailed)	.900	.620	.986	.693	.467	.881	.156	.840	.417
Self confidence	Correlation Coefficient	.303	-.159	-.248	.009	.071	-.077	-.131	-.084	.140
	Sig. (2-tailed)	.023	.242	.066	.949	.601	.572	.335	.539	.303
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.474	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.743	-.136	1.000						
	Sig. (2-tailed)	.000	.317	.						
$6.00	Correlation Coefficient	.041	.027	-.121	1.000					
	Sig. (2-tailed)	.764	.845	.373	.					
$16.00	Correlation Coefficient	-.117	-.046	.220	-.244	1.000				
	Sig. (2-tailed)	.392	.738	.104	.069	.				
$53.00	Correlation Coefficient	-.003	.006	-.009	-.833	-.292	1.000			
	Sig. (2-tailed)	.981	.965	.945	.000	.029	.			
Average	Correlation Coefficient	-.083	.022	.139	.082	-.152	.023	1.000		
	Sig. (2-tailed)	.543	.872	.307	.549	.264	.867	.		
Above average	Correlation Coefficient	.128	.152	-.208	.222	-.297	-.108	-.333	1.000	
	Sig. (2-tailed)	.346	.264	.124	.101	.026	.430	.012	.	
High	Correlation Coefficient	-.054	-.166	.065	-.259	.354	.119	-.406	-.662	1.000
	Sig. (2-tailed)	.691	.220	.637	.054	.007	.384	.002	.000	.

N = 56

Table A 48 High subjective knowledge and average importance chardonnay

		Objective knowledge chardonnay	Subjective knowledge chardonnay	Self confidence	Average Importance COO	Average Importance Price
Objective knowledge chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge chardonnay	Correlation Coefficient	.322	1.000			
	Sig. (2-tailed)	.007	.			
Self confidence	Correlation Coefficient	.211	.141	1.000		
	Sig. (2-tailed)	.080	.243	.		
Average Importance COO	Correlation Coefficient	-.041	-.109	.064	1.000	
	Sig. (2-tailed)	.736	.368	.600	.	
Average Importance Price	Correlation Coefficient	.196	.240	.004	-.650	1.000
	Sig. (2-tailed)	.104	.045	.972	.000	.
Average Importance Acid	Correlation Coefficient	-.244	-.303	-.104	.120	-.727
	Sig. (2-tailed)	.041	.011	.393	.323	.000

N = 70

Table A 49 High subjective knowledge and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average	High
Objective knowledge chardonnay	Correlation Coefficient	-.106	.077	.034	-.235	-.010	.291	.053	-.168	.066
	Sig. (2-tailed)	.381	.528	.783	.050	.932	.015	.666	.163	.585
Subjective knowledge chardonnay	Correlation Coefficient	-.115	-.072	.129	-.286	.188	.262	-.005	-.098	.040
	Sig. (2-tailed)	.343	.555	.289	.017	.119	.029	.968	.420	.743
Self confidence	Correlation Coefficient	-.178	.092	.105	.025	-.131	-.012	.131	-.115	-.042
	Sig. (2-tailed)	.140	.450	.385	.835	.278	.919	.280	.345	.731
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.518	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.573	-.283	1.000						
	Sig. (2-tailed)	.000	.018	.						
$6.00	Correlation Coefficient	-.214	.023	.239	1.000					
	Sig. (2-tailed)	.075	.847	.046	.					
$16.00	Correlation Coefficient	.178	-.111	-.018	-.454	1.000				
	Sig. (2-tailed)	.141	.361	.881	.000	.				
$53.00	Correlation Coefficient	.121	.017	-.247	-.875	.008	1.000			
	Sig. (2-tailed)	.318	.890	.040	.000	.944	.			
Average	Correlation Coefficient	-.360	.167	.172	.022	.009	-.020	1.000		
	Sig. (2-tailed)	.002	.167	.155	.857	.944	.867	.		
Above average	Correlation Coefficient	.193	-.137	-.029	.082	-.073	-.070	-.374	1.000	
	Sig. (2-tailed)	.110	.256	.809	.500	.550	.566	.001	.	
High	Correlation Coefficient	.315	-.054	-.242	-.132	.029	.125	-.790	-.209	1.000
	Sig. (2-tailed)	.008	.657	.044	.274	.809	.301	.000	.082	.

N = 70

Table A 50 Low subjective knowledge and average importance chardonnay

		Objective knowledge chardonnay	Subjective knowledge chardonnay	Self confidence	Average Importance COO	Average Importance Price
Objective knowledge chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge chardonnay	Correlation Coefficient	.440	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.043	.080	1.000		
	Sig. (2-tailed)	.720	.510	.		
Average Importance COO	Correlation Coefficient	-.012	-.208	-.049	1.000	
	Sig. (2-tailed)	.922	.082	.683	.	
Average Importance Price	Correlation Coefficient	.098	.339	.002	-.688	1.000
	Sig. (2-tailed)	.416	.004	.984	.000	.
Average Importance Acid	Correlation Coefficient	-.085	-.273	.057	.049	-.702
	Sig. (2-tailed)	.482	.021	.639	.685	.000

N = 71

Table A 51 Low subjective knowledge and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above Average	High
Objective knowledge chardonnay	Correlation Coefficient	.073	-.059	-.093	-.141	.019	.083	.096	-.100	.018
	Sig. (2-tailed)	.544	.623	.439	.241	.877	.491	.426	.405	.880
Subjective knowledge chardonnay	Correlation Coefficient	.182	-.036	-.183	-.363	-.013	.320	-.098	-.132	.229
	Sig. (2-tailed)	.128	.764	.128	.002	.917	.007	.418	.272	.055
Self confidence	Correlation Coefficient	.197	-.076	-.193	.068	-.028	-.115	-.011	-.023	-.034
	Sig. (2-tailed)	.099	.531	.106	.575	.819	.340	.930	.846	.778
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.413	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.705	-.264	1.000						
	Sig. (2-tailed)	.000	.026	.						
$6.00	Correlation Coefficient	-.212	.097	.172	1.000					
	Sig. (2-tailed)	.076	.420	.152	.					
$16.00	Correlation Coefficient	.163	-.206	.014	-.167	1.000				
	Sig. (2-tailed)	.175	.085	.907	.165	.				
$53.00	Correlation Coefficient	.066	.031	-.149	-.795	-.421	1.000			
	Sig. (2-tailed)	.584	.797	.216	.000	.000	.			
Average	Correlation Coefficient	-.073	.129	-.006	.079	-.154	.030	1.000		
	Sig. (2-tailed)	.548	.283	.957	.510	.199	.803	.		
Above average	Correlation Coefficient	.097	-.032	-.027	.128	.016	-.156	-.336	1.000	
	Sig. (2-tailed)	.419	.790	.822	.288	.894	.195	.004	.	
High	Correlation Coefficient	-.011	-.036	-.039	-.224	.054	.210	-.458	-.604	1.000
	Sig. (2-tailed)	.928	.767	.744	.060	.654	.078	.000	.000	.

N = 71

Table A 52 High self-confidence and average importance chardonnay

		Objective knowledge chardonnay	Subjective knowledge chardonnay	Self confidence	Average Importance COO	Average Importance Price
Objective knowledge chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge chardonnay	Correlation Coefficient	.322	1.000			
	Sig. (2-tailed)	.007	.			
Self confidence	Correlation Coefficient	.211	.141	1.000		
	Sig. (2-tailed)	.080	.243	.		
Average Importance COO	Correlation Coefficient	-.041	-.109	.064	1.000	
	Sig. (2-tailed)	.736	.368	.600	.	
Average Importance Price	Correlation Coefficient	.196	.240	.004	-.650	1.000
	Sig. (2-tailed)	.104	.045	.972	.000	.
Average Importance Acid	Correlation Coefficient	-.244	-.303	-.104	.120	-.727
	Sig. (2-tailed)	.041	.011	.393	.323	.000

N = 70

Table A 53 High self-confidence and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average	High
Objective knowledge chardonnay	Correlation Coefficient	-.106	.077	.034	-.235	-.010	.291	.053	-.168	.066
	Sig. (2-tailed)	.381	.528	.783	.050	.932	.015	.666	.163	.585
Subjective knowledge chardonnay	Correlation Coefficient	-.115	-.072	.129	-.286	.188	.262	-.005	-.098	.040
	Sig. (2-tailed)	.343	.555	.289	.017	.119	.029	.968	.420	.743
Self confidence	Correlation Coefficient	-.178	.092	.105	.025	-.131	-.012	.131	-.115	-.042
	Sig. (2-tailed)	.140	.450	.385	.835	.278	.919	.280	.345	.731
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.518	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.573	-.283	1.000						
	Sig. (2-tailed)	.000	.018	.						
$6.00	Correlation Coefficient	-.214	.023	.239	1.000					
	Sig. (2-tailed)	.075	.847	.046	.					
$16.00	Correlation Coefficient	.178	-.111	-.018	-.454	1.000				
	Sig. (2-tailed)	.141	.361	.881	.000	.				
$53.00	Correlation Coefficient	.121	.017	-.247	-.875	.008	1.000			
	Sig. (2-tailed)	.318	.890	.040	.000	.944	.			
Average	Correlation Coefficient	-.360	.167	.172	.022	.009	-.020	1.000		
	Sig. (2-tailed)	.002	.167	.155	.857	.944	.867	.		
Above average	Correlation Coefficient	.193	-.137	-.029	.082	-.073	-.070	-.374	1.000	
	Sig. (2-tailed)	.110	.256	.809	.500	.550	.566	.001	.	
High	Correlation Coefficient	.315	-.054	-.242	-.132	.029	.125	-.790	-.209	1.000
	Sig. (2-tailed)	.008	.657	.044	.274	.809	.301	.000	.082	.

N = 70

Table A 54 Low self-confidence and average importance chardonnay

		Objective knowledge chardonnay	Subjective knowledge chardonnay	Self confidence	Average Importance COO	Average Importance Price
Objective knowledge chardonnay	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge chardonnay	Correlation Coefficient	.344	1.000			
	Sig. (2-tailed)	.003	.			
Self confidence	Correlation Coefficient	-.022	.192	1.000		
	Sig. (2-tailed)	.856	.108	.		
Average Importance COO	Correlation Coefficient	-.055	.035	.012	1.000	
	Sig. (2-tailed)	.647	.774	.920	.	
Average Importance Price	Correlation Coefficient	.055	-.020	-.192	-.715	1.000
	Sig. (2-tailed)	.650	.869	.109	.000	.
Average Importance Acid	Correlation Coefficient	-.003	.018	.261	.168	-.773
	Sig. (2-tailed)	.981	.881	.028	.161	.000

N = 71

Table A 55 Low self-confidence and utility values

		Chile	United States	France	$6.00	$16.00	$53.00	Average	Above average	High
Objective knowledge chardonnay	Correlation Coefficient	.158	-.131	.000	-.105	.152	.038	.026	-.085	.059
	Sig. (2-tailed)	.188	.275	.998	.385	.205	.755	.830	.479	.625
Subjective knowledge chardonnay	Correlation Coefficient	.248	.007	-.106	-.029	-.007	.008	-.157	.054	.063
	Sig. (2-tailed)	.037	.955	.381	.808	.951	.945	.192	.653	.604
Self confidence	Correlation Coefficient	.092	.169	-.154	.199	.132	-.251	.098	.073	-.155
	Sig. (2-tailed)	.446	.159	.199	.097	.271	.035	.416	.547	.197
Chile	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
United States	Correlation Coefficient	-.462	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.588	-.329	1.000						
	Sig. (2-tailed)	.000	.005	.						
$6.00	Correlation Coefficient	.076	-.027	-.119	1.000					
	Sig. (2-tailed)	.528	.824	.324	.					
$16.00	Correlation Coefficient	.098	-.049	.011	-.180	1.000				
	Sig. (2-tailed)	.415	.683	.926	.133	.				
$53.00	Correlation Coefficient	-.074	.010	.092	-.845	-.323	1.000			
	Sig. (2-tailed)	.542	.931	.447	.000	.006	.			
Average	Correlation Coefficient	-.326	.002	.251	.151	-.030	-.133	1.000		
	Sig. (2-tailed)	.006	.990	.035	.209	.802	.267	.		
Above average	Correlation Coefficient	.163	-.109	-.055	.034	-.243	.087	-.228	1.000	
	Sig. (2-tailed)	.174	.363	.647	.777	.041	.472	.056	.	
High	Correlation Coefficient	.156	.079	-.177	-.152	.134	.111	-.790	-.335	1.000
	Sig. (2-tailed)	.195	.513	.139	.205	.264	.357	.000	.004	.

N = 71

Appendix

9 Correlation matrices (brie)

9.1 Sensory experiment

Table A 56 High objective knowledge and average importance brie

		Objective Knowledge Brie	Subjective Knowledge Brie	Self confidence	Average Importance COO	Average Importance Price
Objective Knowledge Brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective Knowledge Brie	Correlation Coefficient	.239	1.000			
	Sig. (2-tailed)	.074	.			
Self confidence	Correlation Coefficient	.199	.043	1.000		
	Sig. (2-tailed)	.138	.751	.		
Average Importance COO	Correlation Coefficient	-.041	.204	.055	1.000	
	Sig. (2-tailed)	.764	.129	.687	.	
Average Importance Price	Correlation Coefficient	-.108	-.284	.068	-.303	1.000
	Sig. (2-tailed)	.425	.032	.614	.022	.
Average Importance Fat	Correlation Coefficient	.130	.130	-.069	-.452	-.640
	Sig. (2-tailed)	.335	.336	.608	.000	.000

N = 57

Table A 57 High objective knowledge and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective Knowledge Brie	Correlation Coefficient	-.018	-.001	.014	.086	-.026	-.034	-.211	.090	.121
	Sig. (2-tailed)	.893	.993	.915	.526	.846	.803	.114	.506	.369
Subjective Knowledge Brie	Correlation Coefficient	.106	-.035	-.006	.051	.164	-.220	-.370	-.066	.302
	Sig. (2-tailed)	.434	.799	.964	.708	.223	.100	.005	.624	.023
Self confidence	Correlation Coefficient	.051	-.173	.135	.274	-.004	-.163	.192	-.096	-.081
	Sig. (2-tailed)	.707	.197	.316	.039	.978	.227	.152	.476	.548
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.671	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.470	-.219	1.000						
	Sig. (2-tailed)	.000	.102	.						
$28.95 per kilo	Correlation Coefficient	-.111	.025	.237	1.000					
	Sig. (2-tailed)	.413	.853	.076	.					
$49.00 per kilo	Correlation Coefficient	-.066	-.056	.154	-.179	1.000				
	Sig. (2-tailed)	.627	.677	.253	.183	.				
$69.95 per kilo	Correlation Coefficient	.092	.107	-.321	-.619	-.605	1.000			
	Sig. (2-tailed)	.494	.430	.015	.000	.000	.			
Full Cream	Correlation Coefficient	-.136	.193	-.106	.098	.155	-.111	1.000		
	Sig. (2-tailed)	.315	.150	.434	.469	.250	.410	.		
Double Cream	Correlation Coefficient	-.018	.033	.013	.078	-.191	.056	.093	1.000	
	Sig. (2-tailed)	.894	.810	.925	.564	.156	.678	.491	.	
Triple Cream	Correlation Coefficient	.071	-.104	.056	-.108	.117	-.050	-.691	-.707	1.000
	Sig. (2-tailed)	.599	.440	.679	.425	.384	.714	.000	.000	.

N = 57

Table A 58 Low objective knowledge and average importance brie

		Objective Knowledge Brie	Subjective Knowledge Brie	Self confidence	Average Importance COO	Average Importance Price
Objective Knowledge Brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective Knowledge Brie	Correlation Coefficient	-.080	1.000			
	Sig. (2-tailed)	.559	.			
Self confidence	Correlation Coefficient	.142	-.034	1.000		
	Sig. (2-tailed)	.296	.805	.		
Average Importance COO	Correlation Coefficient	-.028	-.017	.011	1.000	
	Sig. (2-tailed)	.835	.902	.938	.	
Average Importance Price	Correlation Coefficient	.069	-.079	-.266	.075	1.000
	Sig. (2-tailed)	.614	.564	.048	.582	.
Average Importance Fat	Correlation Coefficient	-.024	.033	.167	-.682	-.749
	Sig. (2-tailed)	.861	.810	.218	.000	.000

N = 56

Table A 59 Low objective knowledge and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective Knowledge Brie	Correlation Coefficient	-.025	-.038	-.020	-.178	.121	.106	.016	-.129	.050
	Sig. (2-tailed)	.853	.780	.886	.190	.374	.437	.909	.342	.713
Subjective Knowledge Brie	Correlation Coefficient	-.035	.158	-.161	.069	-.052	-.063	-.066	-.016	.049
	Sig. (2-tailed)	.797	.245	.235	.613	.704	.642	.628	.906	.719
Self confidence	Correlation Coefficient	-.002	.007	-.066	.125	-.201	.042	.198	.083	-.190
	Sig. (2-tailed)	.989	.958	.629	.361	.136	.758	.144	.544	.161
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.436	1.000							
	Sig. (2-tailed)	.001	.							
France	Correlation Coefficient	-.417	-.548	1.000						
	Sig. (2-tailed)	.001	.000	.						
$28.95 per kilo	Correlation Coefficient	-.304	-.080	.286	1.000					
	Sig. (2-tailed)	.023	.557	.032	.					
$49.00 per kilo	Correlation Coefficient	-.245	.303	-.012	-.380	1.000				
	Sig. (2-tailed)	.069	.023	.931	.004	.				
$69.95 per kilo	Correlation Coefficient	.494	-.140	-.285	-.585	-.452	1.000			
	Sig. (2-tailed)	.000	.303	.033	.000	.000	.			
Full Cream	Correlation Coefficient	.027	-.103	.097	.124	-.005	-.060	1.000		
	Sig. (2-tailed)	.842	.448	.477	.363	.971	.663	.		
Double Cream	Correlation Coefficient	.018	-.042	.041	-.095	.202	-.102	.123	1.000	
	Sig. (2-tailed)	.897	.757	.763	.485	.135	.454	.365	.	
Triple Cream	Correlation Coefficient	.006	.103	-.125	-.043	-.148	.135	-.802	-.637	1.000
	Sig. (2-tailed)	.966	.448	.358	.753	.275	.321	.000	.000	.

N = 56

Table A 60 High subjective knowledge and average importance brie

		Objective Knowledge Brie	Subjective Knowledge Brie	Self confidence	Average Importance COO	Average Importance Price
Objective Knowledge Brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective Knowledge Brie	Correlation Coefficient	.027	1.000			
	Sig. (2-tailed)	.824	.			
Self confidence	Correlation Coefficient	.065	.085	1.000		
	Sig. (2-tailed)	.598	.488	.		
Average Importance COO	Correlation Coefficient	.153	-.017	-.038	1.000	
	Sig. (2-tailed)	.214	.889	.759	.	
Average Importance Price	Correlation Coefficient	-.078	-.145	.127	-.201	1.000
	Sig. (2-tailed)	.529	.237	.302	.100	.
Average Importance Fat	Correlation Coefficient	.001	.167	-.128	-.625	-.560
	Sig. (2-tailed)	.995	.172	.297	.000	.000

N = 68

Table A 61 High subjective knowledge and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective Knowledge Brie	Correlation Coefficient	.019	-.071	.090	-.031	.155	-.183	-.118	-.039	.158
	Sig. (2-tailed)	.879	.565	.463	.799	.208	.136	.339	.752	.198
Subjective Knowledge Brie	Correlation Coefficient	.037	.044	-.049	.125	-.031	-.144	-.160	-.092	.179
	Sig. (2-tailed)	.762	.723	.694	.310	.799	.242	.193	.458	.144
Self confidence	Correlation Coefficient	.111	-.233	.101	.248	-.232	.059	-.050	-.001	-.014
	Sig. (2-tailed)	.365	.056	.414	.041	.057	.634	.685	.991	.909
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.386	1.000							
	Sig. (2-tailed)	.001	.							
France	Correlation Coefficient	-.551	-.489	1.000						
	Sig. (2-tailed)	.000	.000	.						
$28.95 per kilo	Correlation Coefficient	-.241	-.043	.285	1.000					
	Sig. (2-tailed)	.047	.728	.018	.					
$49.00 per kilo	Correlation Coefficient	-.010	-.031	.122	-.458	1.000				
	Sig. (2-tailed)	.937	.800	.320	.000	.				
$69.95 per kilo	Correlation Coefficient	.195	.115	-.354	-.453	-.507	1.000			
	Sig. (2-tailed)	.111	.352	.003	.000	.000	.			
Full Cream	Correlation Coefficient	-.045	.037	-.006	.063	-.160	.079	1.000		
	Sig. (2-tailed)	.715	.761	.962	.608	.191	.521	.		
Double Cream	Correlation Coefficient	.013	.039	-.038	.238	-.300	.057	.009	1.000	
	Sig. (2-tailed)	.914	.753	.757	.051	.013	.644	.943	.	
Triple Cream	Correlation Coefficient	.027	-.021	.000	-.191	.327	-.133	-.655	-.687	1.000
	Sig. (2-tailed)	.830	.864	.998	.118	.006	.278	.000	.000	.

N = 68

Table A 62 Low subjective knowledge and average importance brie

		Objective Knowledge Brie	Subjective Knowledge Brie	Self confidence	Average Importance COO	Average Importance Price
Objective Knowledge Brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective Knowledge Brie	Correlation Coefficient	.319	1.000			
	Sig. (2-tailed)	.009	.			
Self confidence	Correlation Coefficient	-.060	.193	1.000		
	Sig. (2-tailed)	.627	.119	.		
Average Importance COO	Correlation Coefficient	-.055	-.198	-.012	1.000	
	Sig. (2-tailed)	.657	.109	.923	.	
Average Importance Price	Correlation Coefficient	-.105	-.101	-.082	.111	1.000
	Sig. (2-tailed)	.396	.415	.509	.372	.
Average Importance Fat	Correlation Coefficient	.064	.190	.002	-.683	-.763
	Sig. (2-tailed)	.608	.125	.985	.000	.000

N = 67

Table A 63 Low subjective knowledge and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective Knowledge Brie	Correlation Coefficient	-.051	.175	-.177	.310	-.213	-.113	-.140	-.295	.262
	Sig. (2-tailed)	.684	.158	.151	.011	.084	.362	.258	.015	.032
Subjective Knowledge Brie	Correlation Coefficient	-.016	.260	-.246	.104	-.065	-.058	-.156	-.070	.142
	Sig. (2-tailed)	.896	.033	.045	.404	.600	.641	.207	.575	.252
Self confidence	Correlation Coefficient	-.029	.119	-.066	.041	-.092	.103	-.127	-.129	.130
	Sig. (2-tailed)	.815	.337	.595	.742	.459	.406	.306	.298	.294
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.608	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.402	-.382	1.000						
	Sig. (2-tailed)	.001	.001	.						
$28.95 per kilo	Correlation Coefficient	-.260	.144	.103	1.000					
	Sig. (2-tailed)	.033	.244	.408	.					
$49.00 per kilo	Correlation Coefficient	.157	-.087	-.025	-.649	1.000				
	Sig. (2-tailed)	.203	.484	.840	.000	.				
$69.95 per kilo	Correlation Coefficient	.197	-.097	-.127	-.472	-.312	1.000			
	Sig. (2-tailed)	.109	.437	.307	.000	.010	.			
Full Cream	Correlation Coefficient	.185	-.228	.092	-.052	.077	-.005	1.000		
	Sig. (2-tailed)	.134	.063	.457	.678	.535	.967	.		
Double Cream	Correlation Coefficient	.198	-.194	.030	-.034	.091	-.135	.109	1.000	
	Sig. (2-tailed)	.108	.115	.808	.782	.463	.276	.381	.	
Triple Cream	Correlation Coefficient	-.261	.286	-.057	.078	-.149	.115	-.724	-.710	1.000
	Sig. (2-tailed)	.033	.019	.649	.531	.228	.355	.000	.000	.

N = 67

Table A 64 High self-confidence and average importance brie

		Objective Knowledge Brie	Subjective Knowledge Brie	Self confidence	Average Importance COO	Average Importance Price
Objective Knowledge Brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective Knowledge Brie	Correlation Coefficient	.401	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.012	-.009	1.000		
	Sig. (2-tailed)	.918	.940	.		
Average Importance COO	Correlation Coefficient	.081	-.056	.022	1.000	
	Sig. (2-tailed)	.483	.628	.850	.	
Average Importance Price	Correlation Coefficient	.172	.051	.094	-.086	1.000
	Sig. (2-tailed)	.132	.658	.412	.452	.
Average Importance Fat	Correlation Coefficient	-.154	.052	-.135	-.563	-.719
	Sig. (2-tailed)	.177	.652	.237	.000	.000

N = 78

Table A 65 High self-confidence and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective Knowledge Brie	Correlation Coefficient	.059	-.069	.033	.211	-.063	-.127	-.202	-.243	.307
	Sig. (2-tailed)	.611	.550	.775	.063	.586	.267	.077	.032	.006
Subjective Knowledge Brie	Correlation Coefficient	.075	-.220	.154	.164	-.184	.029	-.249	-.021	.198
	Sig. (2-tailed)	.512	.052	.178	.150	.107	.803	.028	.854	.083
Self confidence	Correlation Coefficient	-.091	.083	.035	-.039	.088	-.004	.114	.191	-.185
	Sig. (2-tailed)	.429	.469	.759	.737	.441	.971	.321	.094	.105
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.553	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.538	-.319	1.000						
	Sig. (2-tailed)	.000	.004	.						
$28.95 per kilo	Correlation Coefficient	-.116	-.204	.265	1.000					
	Sig. (2-tailed)	.314	.073	.019	.					
$49.00 per kilo	Correlation Coefficient	-.028	.117	-.051	-.496	1.000				
	Sig. (2-tailed)	.808	.308	.658	.000	.				
$69.95 per kilo	Correlation Coefficient	.170	.108	-.250	-.413	-.484	1.000			
	Sig. (2-tailed)	.138	.345	.027	.000	.000	.			
Full Cream	Correlation Coefficient	-.087	.076	-.010	.081	.046	-.108	1.000		
	Sig. (2-tailed)	.448	.509	.931	.483	.688	.346	.		
Double Cream	Correlation Coefficient	-.084	-.060	.125	.063	-.024	-.127	.077	1.000	
	Sig. (2-tailed)	.465	.600	.274	.585	.835	.268	.502	.	
Triple Cream	Correlation Coefficient	.159	-.049	-.047	-.094	-.042	.161	-.686	-.699	1.000
	Sig. (2-tailed)	.163	.668	.686	.416	.716	.158	.000	.000	.

N = 78

Table A 66 Low self-confidence and average importance brie

		Objective Knowledge Brie	Subjective Knowledge Brie	Self confidence	Average Importance COO	Average Importance Price
Objective Knowledge Brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective Knowledge Brie	Correlation Coefficient	.374	1.000			
	Sig. (2-tailed)	.004	.			
Self confidence	Correlation Coefficient	.286	-.002	1.000		
	Sig. (2-tailed)	.030	.991	.		
Average Importance COO	Correlation Coefficient	-.038	.224	-.168	1.000	
	Sig. (2-tailed)	.775	.092	.208	.	
Average Importance Price	Correlation Coefficient	.067	-.180	-.063	-.006	1.000
	Sig. (2-tailed)	.616	.178	.638	.965	.
Average Importance Fat	Correlation Coefficient	-.048	.041	.143	-.487	-.830
	Sig. (2-tailed)	.721	.759	.283	.000	.000

N = 58

Table A 67 Low self-confidence and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective Knowledge Brie	Correlation Coefficient	.089	.049	-.158	-.177	-.140	.265	-.143	-.132	.190
	Sig. (2-tailed)	.504	.716	.236	.183	.295	.044	.286	.323	.154
Subjective Knowledge Brie	Correlation Coefficient	-.003	.050	-.066	.078	-.060	.020	-.204	.122	.075
	Sig. (2-tailed)	.985	.712	.621	.560	.653	.880	.125	.360	.577
Self confidence	Correlation Coefficient	.055	-.035	-.024	.155	-.230	.065	-.014	-.106	.055
	Sig. (2-tailed)	.682	.797	.858	.246	.082	.628	.917	.428	.682
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.458	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.454	-.498	1.000						
	Sig. (2-tailed)	.000	.000	.						
$28.95 per kilo	Correlation Coefficient	-.493	.150	.281	1.000					
	Sig. (2-tailed)	.000	.261	.032	.					
$49.00 per kilo	Correlation Coefficient	.364	-.206	-.040	-.409	1.000				
	Sig. (2-tailed)	.005	.121	.764	.001	.				
$69.95 per kilo	Correlation Coefficient	.124	.048	-.235	-.487	-.527	1.000			
	Sig. (2-tailed)	.352	.719	.076	.000	.000	.			
Full Cream	Correlation Coefficient	.144	-.249	.178	.062	.124	-.089	1.000		
	Sig. (2-tailed)	.282	.059	.181	.644	.353	.508	.		
Double Cream	Correlation Coefficient	.028	.039	.023	.126	-.034	-.062	-.016	1.000	
	Sig. (2-tailed)	.834	.774	.864	.346	.802	.644	.904	.	
Triple Cream	Correlation Coefficient	-.141	.216	-.172	-.103	-.107	.116	-.820	-.515	1.000
	Sig. (2-tailed)	.292	.103	.198	.442	.422	.387	.000	.000	.

N = 58

9.2 Conjoint survey (brie)

Table A 68 High objective knowledge and average importance brie

		Objective knowledge brie	Subjective knowledge brie	Self confidence	Average importance COO	Average importance price
Objective knowledge brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge brie	Correlation Coefficient	.099	1.000			
	Sig. (2-tailed)	.410				
Self confidence	Correlation Coefficient	-.014		1.000		
	Sig. (2-tailed)	.910	.134	.		
Average importance COO	Correlation Coefficient	-.167	.186	-.170	1.000	
	Sig. (2-tailed)	.161	.118	.153	.	
Average importance price	Correlation Coefficient	-.105	-.242	.064	-.089	1.000
	Sig. (2-tailed)	.379	.040	.594	.458	.
Average importance fat	Correlation Coefficient	.198	.084	.099	-.516	-.670
	Sig. (2-tailed)	.095	.484	.407	.000	.000

N = 72

Table A 69 High objective knowledge and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective knowledge brie	Correlation Coefficient	.056	-.036	-.018	.034	.049	-.048	-.116	.002	.159
	Sig. (2-tailed)	.640	.763	.882	.775	.685	.690	.330	.988	.182
Subjective knowledge brie	Correlation Coefficient	-.113	-.128	.203	.172	-.310	.051	-.117	-.014	.191
	Sig. (2-tailed)	.346	.283	.088	.148	.008	.669	.328	.907	.108
Self confidence	Correlation Coefficient	.134	-.089	-.188	-.077	-.119	.077	.020	-.211	.110
	Sig. (2-tailed)	.263	.455	.115	.522	.319	.521	.868	.075	.359
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.484	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.704	-.175	1.000						
	Sig. (2-tailed)	.000	.142	.						
$28.95 per kilo	Correlation Coefficient	-.067	-.070	.219	1.000					
	Sig. (2-tailed)	.575	.557	.064	.					
$49.00 per kilo	Correlation Coefficient	.032	-.062	.034	-.424	1.000				
	Sig. (2-tailed)	.789	.602	.778	.000	.				
$69.95 per kilo	Correlation Coefficient	.054	.131	-.252	-.654	-.305	1.000			
	Sig. (2-tailed)	.654	.271	.033	.000	.009	.			
Full Cream	Correlation Coefficient	-.084	.067	.064	-.231	.030	.313	1.000		
	Sig. (2-tailed)	.485	.575	.594	.051	.805	.007	.		
Double Cream	Correlation Coefficient	.075	-.038	-.008	.254	.103	-.368	-.735	1.000	.351
	Sig. (2-tailed)	.530	.750	.947	.032	.388	.001	.000	.	.002
Triple Cream	Correlation Coefficient	.114	-.072	-.126	.118	-.110	-.148	-.861	.351	1.000
	Sig. (2-tailed)	.340	.547	.290	.323	.357	.215	.000	.002	.

N = 72

Table A 70 Low objective knowledge and average importance brie

		Objective Knowledge brie	Subjective knowledge brie	Self confidence	Average importance COO	Average importance price
Objective Knowledge brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge brie	Correlation Coefficient	.326	1.000			
	Sig. (2-tailed)	.006	.			
Self confidence	Correlation Coefficient	.046	-.062	1.000		
	Sig. (2-tailed)	.705	.611	.		
Average importance COO	Correlation Coefficient	-.007	.257	.089	1.000	
	Sig. (2-tailed)	.953	.032	.465	.	
Average importance price	Correlation Coefficient	-.251	-.158	-.020	-.626	1.000
	Sig. (2-tailed)	.036	.191	.871	.000	.
Average importance fat	Correlation Coefficient	.265	-.022	-.008	-.122	-.550
	Sig. (2-tailed)	.026	.860	.950	.316	.000

N = 70

Table A 71 Low objective knowledge and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective Knowledge brie	Correlation Coefficient	.100	-.203	.035	.295	-.271	-.148	-.285	.123	.377
	Sig. (2-tailed)	.410	.092	.772	.013	.023	.221	.017	.311	.001
Subjective knowledge brie	Correlation Coefficient	.006	-.039	.090	.227	.018	-.260	.041	-.124	.125
	Sig. (2-tailed)	.958	.748	.460	.059	.884	.030	.737	.307	.301
Self confidence	Correlation Coefficient	-.103	.201	-.066	-.041	-.181	.161	.094	-.068	-.055
	Sig. (2-tailed)	.397	.095	.590	.735	.135	.183	.437	.573	.654
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.623	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.418	-.311	1.000						
	Sig. (2-tailed)	.000	.009	.						
$28.95 per kilo	Correlation Coefficient	.112	-.172	.047	1.000					
	Sig. (2-tailed)	.355	.155	.701	.					
$49.00 per kilo	Correlation Coefficient	.062	-.089	.080	-.433	1.000				
	Sig. (2-tailed)	.607	.466	.508	.000	.				
$69.95 per kilo	Correlation Coefficient	-.160	.267	-.132	-.748	-.163	1.000			
	Sig. (2-tailed)	.185	.025	.274	.000	.177	.			
Full Cream	Correlation Coefficient	-.091	.232	-.232	-.148	-.033	.270	1.000		
	Sig. (2-tailed)	.452	.053	.053	.223	.785	.024	.		
Double Cream	Correlation Coefficient	.178	-.165	.020	.020	.149	-.131	-.729	1.000	.012
	Sig. (2-tailed)	.139	.172	.870	.867	.219	.278	.000	.	.924
Triple Cream	Correlation Coefficient	-.043	-.150	.289	.203	-.048	-.278	-.617	.012	1.000
	Sig. (2-tailed)	.722	.215	.015	.092	.692	.020	.000	.924	.

N = 70

Table A 72 High subjective knowledge and average importance brie

		Objective knowledge brie	Subjective knowledge brie	Self confidence	Average importance COO	Average importance price
Objective knowledge brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge brie	Correlation Coefficient	.382	1.000			
	Sig. (2-tailed)	.001	.			
Self confidence	Correlation Coefficient	.028	.180	1.000		
	Sig. (2-tailed)	.820	.140	.		
Average importance COO	Correlation Coefficient	.016	-.067	.026	1.000	
	Sig. (2-tailed)	.896	.583	.834	.	
Average importance price	Correlation Coefficient	-.189	-.149	.053	-.362	1.000
	Sig. (2-tailed)	.120	.221	.664	.002	.
Average importance fat	Correlation Coefficient	.141	.059	-.071	-.538	-.384
	Sig. (2-tailed)	.248	.629	.560	.000	.001

N = 69

Table A 73 High subjective knowledge and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective knowledge brie	Correlation Coefficient	-.184	-.050	.209	-.043	-.114	.172	-.183	.279	.078
	Sig. (2-tailed)	.130	.685	.085	.725	.350	.157	.132	.020	.526
Subjective knowledge brie	Correlation Coefficient	-.180	.009	.194	.050	-.157	.082	-.114	.113	.131
	Sig. (2-tailed)	.140	.944	.111	.683	.197	.503	.351	.353	.285
Self confidence	Correlation Coefficient	-.106	.012	.030	-.071	-.032	.022	.200	-.232	-.182
	Sig. (2-tailed)	.386	.923	.804	.562	.794	.857	.099	.055	.134
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.481	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.658	-.204	1.000						
	Sig. (2-tailed)	.000	.092	.						
$28.95 per kilo	Correlation Coefficient	-.013	-.064	.110	1.000					
	Sig. (2-tailed)	.917	.600	.370	.					
$49.00 per kilo	Correlation Coefficient	.016	-.174	.126	-.455	1.000				
	Sig. (2-tailed)	.899	.152	.301	.000	.				
$69.95 per kilo	Correlation Coefficient	.013	.196	-.208	-.687	-.235	1.000			
	Sig. (2-tailed)	.914	.107	.086	.000	.051	.			
Full Cream	Correlation Coefficient	-.297	.255	.113	-.050	-.174	.250	1.000		
	Sig. (2-tailed)	.013	.034	.357	.682	.154	.038	.		
Double Cream	Correlation Coefficient	.179	-.253	.034	.075	.186	-.245	-.786	1.000	
	Sig. (2-tailed)	.142	.036	.781	.540	.127	.042	.000	.	
Triple Cream	Correlation Coefficient	.346	-.209	-.217	.055	.051	-.141	-.835	.374	1.000
	Sig. (2-tailed)	.004	.085	.074	.651	.676	.249	.000	.002	.

N = 69

Table A 74 Low subjective knowledge and average importance brie

		Objective knowledge brie	Subjective knowledge brie	Self confidence	Average importance COO	Average importance price
Objective knowledge brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge brie	Correlation Coefficient	.304	1.000			
	Sig. (2-tailed)	.014	.			
Self confidence	Correlation Coefficient	-.163	-.147	1.000		
	Sig. (2-tailed)	.195	.242	.		
Average importance COO	Correlation Coefficient	.198	.180	-.117	1.000	
	Sig. (2-tailed)	.115	.152	.353	.	
Average importance price	Correlation Coefficient	-.199	-.015	.095	-.563	1.000
	Sig. (2-tailed)	.112	.906	.454	.000	.
Average importance fat	Correlation Coefficient	.064	-.161	.035	-.120	-.649
	Sig. (2-tailed)	.613	.201	.781	.340	.000

N = 65

Table A 75 Low subjective knowledge and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective knowledge brie	Correlation Coefficient	.088	-.207	.132	.163	.100	-.202	-.302	.218	.272
	Sig. (2-tailed)	.487	.097	.295	.194	.426	.106	.014	.081	.028
Subjective knowledge brie	Correlation Coefficient	-.110	-.134	.229	.132	.013	-.045	-.015	-.024	.145
	Sig. (2-tailed)	.381	.288	.067	.294	.915	.722	.907	.848	.248
Self confidence	Correlation Coefficient	-.116	.271	-.186	-.062	-.251	.157	.100	-.115	-.039
	Sig. (2-tailed)	.359	.029	.139	.621	.044	.211	.429	.360	.760
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.472	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.574	-.318	1.000						
	Sig. (2-tailed)	.000	.010	.						
$28.95 per kilo	Correlation Coefficient	.004	-.217	.269	1.000					
	Sig. (2-tailed)	.972	.083	.030	.					
$49.00 per kilo	Correlation Coefficient	.227	-.288	-.032	-.317	1.000				
	Sig. (2-tailed)	.069	.020	.800	.010	.				
$69.95 per kilo	Correlation Coefficient	-.120	.404	-.247	-.751	-.308	1.000			
	Sig. (2-tailed)	.342	.001	.047	.000	.012	.			
Full Cream	Correlation Coefficient	.012	.129	-.152	-.328	-.095	.402	1.000		
	Sig. (2-tailed)	.925	.306	.226	.008	.452	.001	.		
Double Cream	Correlation Coefficient	.175	-.053	-.095	.074	.254	-.239	-.792	1.000	
	Sig. (2-tailed)	.162	.676	.453	.560	.041	.056	.000	.	
Triple Cream	Correlation Coefficient	-.204	-.213	.413	.423	-.026	-.419	-.553	.023	1.000
	Sig. (2-tailed)	.103	.089	.001	.000	.835	.001	.000	.856	.

N = 65

Table A 76 High self-confidence and average importance brie

		Objective knowledge brie	Subjective knowledge brie	Self confidence	Average importance COO	Average importance price
Objective knowledge brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge brie	Correlation Coefficient	.653	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.138	.176	1.000		
	Sig. (2-tailed)	.266	.154	.		
Average importance COO	Correlation Coefficient	-.047	-.004	-.168	1.000	
	Sig. (2-tailed)	.704	.976	.174	.	
Average importance price	Correlation Coefficient	-.224	-.239	.114	-.452	1.000
	Sig. (2-tailed)	.069	.052	.358	.000	.
Average importance fat	Correlation Coefficient	.277	.200	.082	-.352	-.551
	Sig. (2-tailed)	.023	.105	.508	.003	.000

N = 67

Table A 77 High self-confidence and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective knowledge brie	Correlation Coefficient	.078	-.327	.159	.164	-.051	-.168	-.250	.063	.356
	Sig. (2-tailed)	.533	.007	.199	.184	.684	.175	.041	.614	.003
Subjective knowledge brie	Correlation Coefficient	.021	-.312	.173	.112	.075	-.188	-.249	.109	.285
	Sig. (2-tailed)	.868	.010	.161	.368	.546	.128	.042	.379	.019
Self confidence	Correlation Coefficient	.040	.035	-.254	-.019	-.084	.044	.155	-.191	-.078
	Sig. (2-tailed)	.750	.777	.038	.880	.501	.721	.209	.121	.528
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.487	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.578	-.266	1.000						
	Sig. (2-tailed)	.000	.029	.						
$28.95 per kilo	Correlation Coefficient	.186	-.263	.086	1.000					
	Sig. (2-tailed)	.131	.031	.488	.					
$49.00 per kilo	Correlation Coefficient	-.164	.045	.083	-.393	1.000				
	Sig. (2-tailed)	.185	.718	.502	.001	.				
$69.95 per kilo	Correlation Coefficient	-.073	.307	-.129	-.819	-.109	1.000			
	Sig. (2-tailed)	.556	.012	.297	.000	.381	.			
Full Cream	Correlation Coefficient	-.135	.224	-.022	-.145	.016	.183	1.000		
	Sig. (2-tailed)	.277	.068	.861	.242	.898	.139	.		
Double Cream	Correlation Coefficient	.096	-.121	-.014	.157	.081	-.228	-.762	1.000	
	Sig. (2-tailed)	.440	.331	.910	.206	.515	.064	.000	.	
Triple Cream	Correlation Coefficient	.150	-.246	.081	.119	-.150	-.057	-.768	.253	1.000
	Sig. (2-tailed)	.227	.045	.513	.339	.226	.649	.000	.039	.

N = 67

Table A 78 Low self-confidence and average importance brie

		Objective knowledge brie	Subjective knowledge brie	Self confidence	Average importance COO	Average importance price
Objective knowledge brie	Correlation Coefficient	1.000				
	Sig. (2-tailed)	.				
Subjective knowledge brie	Correlation Coefficient	.454	1.000			
	Sig. (2-tailed)	.000	.			
Self confidence	Correlation Coefficient	.089	.014	1.000		
	Sig. (2-tailed)	.463	.911	.		
Average importance COO	Correlation Coefficient	.163	.105	-.051	1.000	
	Sig. (2-tailed)	.173	.383	.675	.	
Average importance price	Correlation Coefficient	-.046	-.100	.039	-.516	1.000
	Sig. (2-tailed)	.700	.405	.749	.000	.
Average importance fat	Correlation Coefficient	.028	.099	.016	-.306	-.548
	Sig. (2-tailed)	.814	.412	.895	.009	.000

N = 71

Table A 79 Low self-confidence and utility values

		Argentina	Canada	France	$28.95 per kilo	$49.00 per kilo	$69.95 per kilo	Full Cream	Double Cream	Triple Cream
Objective knowledge brie	Correlation Coefficient	-.122	.067	.172	.016	.111	-.047	-.224	.219	.128
	Sig. (2-tailed)	.310	.577	.152	.896	.358	.700	.060	.067	.288
Subjective knowledge brie	Correlation Coefficient	-.010	-.002	.015	.146	-.069	-.115	-.293	.232	.251
	Sig. (2-tailed)	.933	.988	.898	.226	.570	.339	.013	.052	.035
Self confidence	Correlation Coefficient	-.119	.164	.043	.115	-.134	.000	.081	-.104	-.004
	Sig. (2-tailed)	.323	.171	.720	.340	.265	.999	.503	.386	.975
Argentina	Correlation Coefficient	1.000								
	Sig. (2-tailed)	.								
Canada	Correlation Coefficient	-.572	1.000							
	Sig. (2-tailed)	.000	.							
France	Correlation Coefficient	-.565	-.241	1.000						
	Sig. (2-tailed)	.000	.043	.						
$28.95 per kilo	Correlation Coefficient	-.009	-.134	.208	1.000					
	Sig. (2-tailed)	.939	.265	.082	.					
$49.00 per kilo	Correlation Coefficient	-.018	.064	.076	-.365	1.000				
	Sig. (2-tailed)	.884	.597	.530	.002	.				
$69.95 per kilo	Correlation Coefficient	-.053	.148	-.184	-.762	-.223	1.000			
	Sig. (2-tailed)	.661	.218	.124	.000	.062	.			
Full Cream	Correlation Coefficient	-.170	.345	-.194	-.296	-.090	.414	1.000		
	Sig. (2-tailed)	.157	.003	.104	.012	.455	.000	.		
Double Cream	Correlation Coefficient	.162	-.289	.170	.265	.058	-.321	-.789	1.000	
	Sig. (2-tailed)	.177	.014	.156	.025	.633	.006	.000	.	
Triple Cream	Correlation Coefficient	.135	-.290	.118	.204	.081	-.314	-.726	.209	1.000
	Sig. (2-tailed)	.262	.014	.328	.088	.502	.008	.000	.080	.

N = 71

Appendix

10 Invitations to participate in survey

10.1 Electronic invitation to participate

Hello all!

It's Roberta Veale here from Business Studies (marketing) on the 2nd floor of the City Campus. I'm working on the final stage of my PhD study and invite anyone over the age of 18 years to complete my survey booklet and, for helping out, you receive a free bottle of wine.

The survey only takes about 15 minutes! If you'd like to get one for yourself (and if you take one for a friend or partner you'll get 2 bottles!) drop me an email. I really appreciate anybody taking the time to participate – but please only take a booklet if you absolutely intend to return it…. (Thanks)

More info about my study below:

THE UNIVERSITY OF ADELAIDE AUSTRALIA

School of Commerce
Research Project – Food Product Preferences

When you return the questionnaire you will receive a **free bottle** of Scarpantoni 'School Block' red wine

Why is the research being conducted?
We're doing some basic research to gain an understanding of how people make purchasing decisions.



Your confidentiality
We don't need to identify you, so this study is entirely confidential.

Questions / further information
Contact Roberta Veale on Roberta.Veale@tafesasouth.org or Professor Pascale Quester on pascale.quester@adelaide.edu.au to receive further information about this project.

Consent
By completing and returning the questionnaire, you have consented to participating in this research.

How do I get a questionnaire?
Just reply to this email and I'll get one to you. This invitation is extended **only** to those over 18 years.

Info about the wine and how to get it…

(electronic invitation cont)

'School Block'

"Produced from a blend of Shiraz, Cabernet and Merlot, with each variety individually processed and aged in oak for 12 months, the *'School Block'* is soft and supple, with rich fruit and hints of toasty oak. Enjoy with tomato based pasta sauces, succulent veal and lamb dishes or sipping casually with cheese and crackers. Ideal drinking now or cellaring for up to 8 years."

Gold-International Wine Challenge **Silver**-McLaren Vale Wine Show **Silver**-Royal Perth Wine Show **Silver**-Royal Hobart Wine Show **Bronze**-Royal Adelaide Wine Show **Bronze**-Royal Melbourne Wine Show **Bronze**-New Zealand International Wine Show



Valued at $15 per bottle!

How do I get my wine when I've finished completing the survey?

You simply need to stop by the collection point on the second floor of the TAFESA City Campus. This desk will be located on your right as you reach the top of stairs leading up from the Atrium on the ground floor. Look towards the 'Eastern' section of the building and you'll see an area clearly signposted to receive your completed survey booklet and distribute your free wine to you.

The wine will be available for pick up between the hours of **5:30 pm and 7:30 pm** on the following dates:

Monday 30th October
Tuesday 31st October
Wednesday 1st November
Thursday 2nd November

Or by prior arrangement by contacting **Roberta Veale on 0404833924**

Cheers!

Roberta

SCARPANTONI
WINES OF McLAREN VALE

10.2 Class room invitation to participate (transparency shown by lecturers)

THE UNIVERSITY OF ADELAIDE AUSTRALIA

School of Commerce

PhD Research Project - Food Preferences

Complete the research questionnaire and…

You will receive a free bottle of Scarpantoni 'School Block' red wine'!

Why is the research being conducted

It's hoped the info may lead to production of better products in the market place



Valued at $15 per bottle!

How long does it take?

Only about 15 minutes, and, you are not identified, so your answers remain totally confidential

Do I need to be a wine expert?

Absolutely not! We are interested in the opinions of a general cross section of the community.

Your level of expertise is not important

How do I participate and receive my free wine?

Just complete the survey and when you return it to the drop off point at the City Campus and you will be given your wine. **Easy!**

Information about 'where and when' is provided in the survey booklet.

Can I take a questionnaire for a friend?

Certainly, the more the merrier! One bottle per questionnaire returned (BUT, all participants must be over the age of 18)

And, please only take a questionnaire if you absolutely intend to complete it… the data is a critical aspect of the PhD research.

SCARPANTONI
WINES OF McLAREN VALE

Appendix

11 Conjoint survey questionnaire

THE UNIVERSITY OF ADELAIDE AUSTRALIA

School of Commerce
Research Project – Food Product Preferences

We would like to invite you to participate in this survey
(approx 15 min to complete)

When you return this questionnaire you will receive a **free bottle** of Scarpantoni 'School Block' red wine

Why is the research being conducted?
We're doing some basic research to gain an understanding of how people make purchasing decisions.

Your confidentiality
We don't need to identify you, so this study is entirely confidential.

Questions / further information
Contact Roberta Veale on Roberta.Veale@tafesasouth.org or Professor Pascale Quester pascale.quester@adelaide.edu.au to receive further information about this project.



on

Consent
By completing and returning the questionnaire, you have consented to participating in this research.
Please detach this sheet and retain it for your later reference. This invitation is extended **only** to those over 18 years.

Let's get started!

Please turn the page and read the instructions carefully

Australian Government
Grape and Wine Research and Development Corporation

Instructions for Completing the Questionnaire

Please work quickly and steadily, ensuring that you complete ALL questions in each section before moving to the next. It's very important that you keep moving forward through the questionnaire, finish each part, then move to the next – **don't go back!** Also, please don't partially complete any section, stop for a time, and return to complete it later. Once you commence the survey, please ensure you can continue until all questions are answered. You can expect to spend about 15 minutes to complete the entire questionnaire.

It's also critically important that you keep this questionnaire, and your answers, confidential, do not show anyone else the questions or seek advice in providing answers. We're only interested in your own personal responses.

This Questionnaire is comprised of 3 parts:

Part 1

This includes 4 sections; the first (a) asks you to state your level of agreement, or disagreement, with a number of statements involving common social situations. Please remember that there are no 'right or wrong' answers here! Please try to answer honestly, with your answers reflecting what is (or would be) true for you in these circumstances.

Sections (b) and (c) communicates your general experience and knowledge in relation to the two food products being investigated, namely Brie cheese and Chardonnay wine. The last section (d) records demographic details such as gender, age and so on.

Part 2

This part is comprised of 11 different descriptions of chardonnay wine and 11 different descriptions of brie cheese, presented in a mixed order. Please consider each product example and 'grade it' for quality. Then please indicate whether or not you would consider buying the example as described if you were shopping for this type of product.

These products come from different countries and you'll notice there are no Australian examples included. Whilst we realise that most Australians would prefer Aussie wine and cheese, sometimes it may not be possible for you to buy Australian. So, we'd like you to imagine a shopping situation where Australian products are not available, for example when travelling overseas or when in a specialty store dealing exclusively with imported products.

Also, we realise that you may not be particularly fond of chardonnay or brie; in fact, personally you may not like these products at all! But the task is to assess each example and provide an opinion of quality and this can be done even if the product is not for you. We often find ourselves in a situation where we need to buy something (or we are asked to buy something) that is not our 'favourite' type of product or even for our own use. For example, you may have people coming over and want to provide a variety wines and cheeses for them, or your partner or some other person has asked you to make a purchase for them. So please just imagine that you're on a 'shopping mission' and base your assessment on being in that kind of situation.

Remember, we want your first impressions so work quickly and steadily. There are no 'right or wrong' answers, we are only interested in your personal opinions. Again, please remember that you need to keep moving forward - Do not go back and change answers!

Part 3

This part asks you some general knowledge questions about wine and cheese. The format of the questions is 'multiple choice', allowing you to choose from the answers provided.

Please go to the next page and begin!

Part 1 (a)

For the purpose of analysis, we would be grateful if you would provide some personal information about yourself. Your answers will only appear in aggregate and average numbers.

Please (✓) the box that best reflects your agreement with the following statements.		**Strongly Disagree**								**Strongly Agree**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	I feel capable of handling myself in most social situations.	□	□	□	□	□	□	□	□	□
2.	I seldom fear my actions will cause others to have a low opinion of me.	□	□	□	□	□	□	□	□	□
3.	It doesn't bother me to have to enter a room where other people have already gathered and are talking.	□	□	□	□	□	□	□	□	□
4.	In group discussions, I usually feel my opinions are inferior.	□	□	□	□	□	□	□	□	□
5.	I don't make a very favourable first impression on people.	□	□	□	□	□	□	□	□	□
6.	When confronted by a group of strangers, my first reaction is always one of shyness and inferiority.	□	□	□	□	□	□	□	□	□
7.	It is extremely uncomfortable to accidentally go to a party wearing the wrong thing.	□	□	□	□	□	□	□	□	□
8.	I don't spend much time worrying about what people think of me.	□	□	□	□	□	□	□	□	□
9.	When in a group, I very rarely express an opinion for fear of being laughed at.	□	□	□	□	□	□	□	□	□
10.	I am never at a loss for words when I am introduced to someone I don't know.	□	□	□	□	□	□	□	□	□

Please turn the page and continue with Part 1 (b)

Part 1 (b)

In this part of the questionnaire, we would like to ask you some questions about your general knowledge and experiences with purchasing Chardonnay.

Please (✓) the box that best reflects your knowledge and experience.		**Strongly Disagree**								**Strongly Agree**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	I feel confident about my knowledge of chardonnay.	□	□	□	□	□	□	□	□	□
2.	I feel that I know how to judge the quality of chardonnay.	□	□	□	□	□	□	□	□	□
3.	I do not feel very knowledgeable about chardonnay.	□	□	□	□	□	□	□	□	□
4.	Among my circle of friends, I'm one of the 'experts' on chardonnay.	□	□	□	□	□	□	□	□	□
5.	Compared to most buyers, I know less about chardonnay.	□	□	□	□	□	□	□	□	□
6.	I know of most of the chardonnays around in shops.	□	□	□	□	□	□	□	□	□
7.	When it comes to chardonnay, I really don't know a lot.	□	□	□	□	□	□	□	□	□
8.	I can tell if a chardonnay is worth the price or not.	□	□	□	□	□	□	□	□	□

9.	**How often would you purchase bottle of Chardonnay for yourself or others? (on average)** Less than once per month □ 1 1 to 2 times per month □ 2 3 to 4 times per month □ 3 5 or more times per month □ 4	**10.** **If you have a 'favourite' brand of Chardonnay, please list it below.**

Please turn the page and continue with Part 1 (c)

Part 1 (c)

In this part of the survey, we would like to ask you some questions about your general knowledge and experiences with purchasing Brie.

Please (✓) the box that best reflects your knowledge and experience about Brie.		**Strongly Disagree**								**Strongly Agree**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	I feel confident about my knowledge of Brie.	□	□	□	□	□	□	□	□	□
2.	I feel that I know how to judge the quality of Brie.	□	□	□	□	□	□	□	□	□
3.	I do not feel very knowledgeable about Brie.	□	□	□	□	□	□	□	□	□
4.	Among my circle of friends, I'm one of the 'experts' on Brie.	□	□	□	□	□	□	□	□	□
5.	Compared to most buyers, I know less about Brie.	□	□	□	□	□	□	□	□	□
6.	I know of most of the Brie cheeses in the shops.	□	□	□	□	□	□	□	□	□
7.	When it comes to Brie, I really don't know a lot.	□	□	□	□	□	□	□	□	□
8.	I can tell if a Brie is worth the price or not.	□	□	□	□	□	□	□	□	□

9.	**How often would you purchase Brie for yourself or others? (on average)** Less than once per month □ 1 1 to 2 times per month □ 2 3 to 4 times per month □ 3 5 or more times per month □ 4	**10.** **If you have a 'favourite' brand of Brie, please list it below.**

Please turn the page and continue with Part 1 (d)

Part 1 (d)
For the purpose of analysis, we would be grateful if you would provide some personal information about yourself. Your anonymity is guaranteed, this data is only used for statistical purposes.

1. Please indicate your gender: Male □ 1 Female □ 2	**2. Please indicate your age category:** 18 yrs to 25 yrs □ 1 26 yrs to 35 yrs □ 2 36 yrs to 45 yrs □ 3 46 yrs to 55 yrs □ 4 Over 55 yrs □ 5
3. What is your occupation?	

4. Please indicate your household income (gross) Less than $25, 000 □ 1 $25,000 to $45,000 □ 2 $46,000 to $65,000 □ 3 Over $65,000 □ 4	**5. Please indicate highest level of education completed:** High School Certificate □ 1 Diploma / Trade Qualification □ 2 Bachelor's Degree □ 3 Post Graduate Degree □ 4

Please turn the page and begin the assessment of wine and cheese product examples



All Wine options are 2005 vintage and packaged in 750 ml bottles.
All Cheese prices are per kilo as would be seen in a deli or specialty cheese shop.



Part 2 - Chardonnay and Brie Products (11 descriptions of Chardonnay and 11 of Brie Cheese)

Consider these products and rate each on the scale where **1 = Low Quality and 10 = High Quality**. Please also indicate whether or not you would consider purchasing each product, in a shopping situation.

We're interested in your first impressions, so work quickly and steadily.
There are no 'right or wrong' answers, we are only interested in your opinion of likely quality.
Assess each product individually, do not go back and change answers!

Chardonnay 253	
Acidity	Average for chardonnay
Produced in	France
Retail Price	$16.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 582	
Acidity	Average for chardonnay
Produced in	United States
Retail Price	$6.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 481	
Acidity	High
Produced in	Chile
Retail Price	$16.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 810	
Made with	Full cream
Produced in	France
Retail Price	28.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 139	
Made with	Triple cream
Produced in	Argentina
Retail Price	28.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 367	
Made with	Full cream
Produced in	Canada
Retail Price	$69.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 696	
Acidity	High
Produced in	France
Retail Price	$6.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 595	
Acidity	Average for chardonnay
Produced in	United States
Retail Price	$16.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 924	
Acidity	Above average
Produced in	Chile
Retail Price	$53.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 266	
Made with	Double cream
Produced in	Canada
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 709	
Made with	Full cream
Produced in	France
Retail Price	$49.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 380	
Made with	Triple cream
Produced in	Argentina
Retail Price	$69.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 152	
Acidity	Above average
Produced in	United States
Retail Price	$6.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 823	
Acidity	Average for chardonnay
Produced in	France
Retail Price	$53.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 494	
Acidity	Average for chardonnay
Produced in	Chile
Retail Price	$6.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 735	
Made with	Triple cream
Produced in	France
Retail Price	28.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 393	
Made with	Full cream
Produced in	Argentina
Retail Price	28.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 621	
Made with	Double
Produced in	France
Retail Price	$69.95 per kilo

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 950	
Acidity	Above average
Produced in	France
Retail Price	$16.00

Low Quality									High Quality
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 279	
Acidity	High
Produced in	United States
Retail Price	$53.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 178	
Made with	Triple cream
Produced in	Canada
Retail Price	$49.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 507	
Made with	Double cream
Produced in	Argentina
Retail Price	$49.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

That concludes this part of the questionnaire
Please turn the page and begin the last part comprised of general knowledge questions.

Part 3 (a) Chardonnay

In this part of the survey, we would like to ask you some questions relating to your general knowledge about wine. Please (✓) the box that best reflects your knowledge and experience. If you're unsure about the answer to any particular question, that's no problem just (✓) the box indicating this.

1. Letting a wine 'breathe":

Is to remove the cork for a time, prior to drinking	□ 1
Means aerating it so it can react with the oxygen	□ 2
Always improves the flavour of wine	□ 3
Don't know	□ 4

2. Cellaring of wine is done (basically) to help:

Wine mature quickly	□ 1
Wine mature slowly	□ 2
Keep pests away from wine	□ 3
Don't know	□ 4

3. Which one of the following white varietals is most likely to be aged in oak?

Riesling	□ 1
Chardonnay	□ 2
Sauvignon Blanc	□ 3
Don't know	□ 4

4. Which one of the following white varietals is most likely to improve with aging?

Sauvignon Blanc	□ 1
Chenin Blanc	□ 2
Chardonnay	□ 3
Don't know	□ 4

5. Tannin gives wine:

Bitterness	□ 1
Tartness	□ 2
Astringency	□ 3
Don't know	□ 4

6. Chardonnay grapes are:

Among the finest grown for white wine	□ 1
Not usually used in sparkling wine	□ 2
Often used to make sweet wines	□ 3
Don't know	□ 4

Please turn the page and continue

Part 3 (a) Chardonnay cont.

7. Chardonnay, typically has an aging potential of: 2 or 3 years □ 1 3 or 4 years □ 2 5 or 6 years or longer □ 3 Don't know □ 4	**8. Terms often linked with the taste of Chardonnay are:** Apple, peach, citrus □ 1 Plum, spice, mint □ 2 Floral, honey, lychee □ 3 Don't know □ 4
9. What percentage (%) of the wine in the bottle must be made from grapes harvested and crushed in the year named, if a 'Vintage' date is given? 85% □ 1 95% □ 2 100% □ 3 Don't know □ 4	**10. When thinking about matching foods with wines, trying to achieve the most complimentary combinations, it is important to remember that:** Very sweet food will counter the acid in the wine □ 1 Very salty foods counter acid in the wine □ 2 Very acid foods will bring out the acid in the wine □ 3 Don't know □ 4
11. An oak aged Chardonnay will, typically, be: Less full bodied than many other white wines □ 1 More full bodied than many other white wines □ 2 Comparable in body to many other white wines □ 3 Don't know □ 4	**12. Champagne is an excellent choice to accompany:** Smoked salmon □ 1 Chinese food □ 2 Most foods □ 3 Don't know □ 4
13. The term 'green' is often used to describe a wine's: Colour □ 1 Acidity □ 2 Age □ 3 Don't know □ 4	**14. Chilling wine (even red wine) will often:** Improve the taste of a poor wine □ 1 Make tannins less noticeable □ 2 Make no real difference to perceived quality □ 3 Don't know □ 4

Please turn the page and continue with Part 3 (b)

Part 3 (b) Brie

Please (✓) the box that best reflects your knowledge and experience with Brie. If you're unsure about the answer to any particular question, that's no problem just (✓) the box indicating this.

1. White mould is: Fresh curds aged in warm temperatures. □ 1 Fresh curds ripened by introducing surface mould. □ 2 Never found in quality cheeses. □ 3 Don't know □ 4	**2. Coagulation is:** The conversion of milk solids to curd and whey. □ 1 The basis of cheese making. □ 2 **Both** of the above. □ 3 Don't know □ 4
3. Rennet is: A form of yeast used to make cheese. □ 1 An enzyme extracted from stomach linings. □ 2 Neither of the above. □ 3 Don't know □ 4	**4. Brie:** Is eaten younger than Camembert □ 1 Is eaten older than Camembert □ 2 Matures in the same time as Camembert □ 3 Don't know □ 4
5. Rind is: An important influence on flavour development □ 1 Not found on Brie □ 2 Never washed in making quality cheeses □ 3 Don't know □ 4	**6. Brie is nicest when made from milk produced:** In the spring and autumn □ 1 In the winter and summer □ 2 In particularly wet summers □ 3 Don't know □ 4
7. Brie: Never smells of mushrooms and yeast □ 1 Usually smells of mushrooms and yeast □ 2 Can sometimes smell like old socks □ 3 Don't know □ 4	**8. Brie:** Has slightly thicker mould than Camembert □ 1 Has slightly thinner mould than Camembert □ 2 Has identical mould to Camembert □ 3 Don't know □ 4

Please turn the page and continue

Part 3 (b) Brie (cont)

9. 'Triple Cream' Brie:		10. Brie rind is:	
Feels greasy with you eat it	□ 1	Comprised of soft white mould	□ 1
Is made from milk with extra cream added later	□ 2	Comprised of grey or white mould	□ 2
Doesn't exist as a product	□ 3	Sometimes orange	□ 3
Don't know	□ 4	Don't know	□ 4

11. When choosing wine to drink with Brie:		12. Brie cheese:	
It's critical to make sure it's well chilled	□ 1	Is a product where price usually influences quality	□ 1
A chardonnay will suit, but never a red	□ 2	Is a product where price is no indication of quality	□ 2
A full bodied, earthy red is a sound choice	□ 3	Is a product where all brands cost pretty much the same, no matter where the cheese comes from	□ 3
Don't know	□ 4	Don't know	□ 4

13. The inside of a Brie that is ready to eat is:		14. When you press the rind of a Brie it should:	
Creamy, buttery and smooth	□ 1	Feel soft, but your finger leaves no mark or indent	□ 1
Rubbery, buttery and soft	□ 2	Feel soft to the touch, your finger leaving an indent	□ 2
A little chalky	□ 3	Feel quite firm	□ 3
Don't know	□ 4	Don't know	□ 4

That completes the questionnaire, thank you very much for your help!

Please see over for information about your free bottle of wine and how to receive it!

'School Block'

"Produced from a blend of Shiraz, Cabernet and Merlot, with each variety individually processed and aged in oak for 12 months, the '*School Block*' is soft and supple, with rich fruit and hints of toasty oak. Enjoy with tomato based pasta sauces, succulent veal and lamb dishes or sipping casually with cheese and crackers. Ideal drinking now or cellaring for up to 8 years."

Gold-International Wine Challenge **Silver**-McLaren Vale Wine Show
Silver-Royal Perth Wine Show **Silver**-Royal Hobart Wine Show **Bronze**-Royal Adelaide Wine Show
Bronze-Royal Melbourne Wine Show **Bronze**-New Zealand International Wine Show

How do I get my wine when I've finished completing the survey?
You simply need to stop by the collection point on the second floor of the TAFESA City Campus. This desk will be located on your right as you reach the top of stairs leading up from the atrium on the ground floor. Look towards the 'Eastern' section of the building and you'll see an area clearly signposted to receive your completed survey booklet and distribute your free wine to you.

The wine will be available for pick up between the hours of **5:30 pm and 7:30 pm** on the following dates:

Monday 13th of November
Wednesday 15th of November
Thursday 16th of November

Or by prior arrangement by contacting **Roberta Veale** on **0404833924**

SCARPANTONI
WINES OF McLAREN VALE



Valued at over $15!

Appendix 1

THE UNIVERSITY OF ADELAIDE
AUSTRALIA

School of Commerce - Research Project
Food Product Preferences

Hello!

I am a student at the University of Adelaide, working on a research project about preferences for wine and cheese products and I would like to invite you to come and taste some Wine and Cheese!



During the months of April and May I am inviting consumers to visit our tasting room to offer their opinions regarding provided samples of both wine and cheese. For participating in this research project, you will be provided with a $30 cash payment as a 'Thank You' for giving us some of your valuable time.

You certainly don't need to be a wine expert to come along; anyone that enjoys wine and cheese is encouraged to register. There is no 'right or wrong' in these taste tests, we are only interested in your genuine opinions about the products you will try. All wine and cheese samples are provided for tasting at no cost to you, and the tasting will take about two and a half hours in total.



Why is the research being conducted?

We're doing some basic research to gain a better understanding of consumer wine and cheese preferences. While this study is pretty simple, ultimately it's hoped that the information you provide will be used to produce better products for the market place.

Risks to you?

None. (Except for perhaps, a mild risk of wine or cheese cravings!)

Your confidentiality?

Your confidentiality is assured. We only use information for statistical analysis and we only keep your details to schedule the visits for tasting. We do not pass information on to any other parties and once the study is completed this information will be disposed of.

How do you participate in the tastings and receive $30?

Just complete the form on the back of this letter and return it in the reply paid envelope provided. Please make sure to indicate your first and second preferences in terms of times and dates illustrated. The tastings will be conducted at the University of Adelaide, Waite Campus, Waite Rd, Urrbrae. There is plenty of free parking and you'll be given clear directions to the facilities.

Questions / further information

Contact Roberta Veale on 0404 833 924 or roberta.veale@tafesasouth.org, or Professor Pascale Quester on pascale.quester@adelaide.edu.au to receive further information about this project. Participation in this study is open only to individuals over the age of 18 years.



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Australian Government
Grape and Wine Research and Development Corporation

Tasting Registration Form

Thank you very much for registering to come along to taste the wines and cheeses!

Please complete the form below, providing contact details and ticking (✓) the box that indicates two times that would suit you best, and then please (✓) to indicate if this is your first or second preference. Return the form by post using the enclosed reply paid envelope. Once registered, I will contact you, by post or email, confirming your attendance time and providing you with a map of the Waite Campus and directions to get there (it's just off Cross Road, Urrbrae and is very easy to find and access).

There are six possible dates available in April, with three sessions per day. In May, there are five, including one Saturday with an extra session available commencing at noon on that day. Participation in this study is only open to individuals over the age of 18 years.

Please return this form prior to April 10th 2006

Name:	Contact Phone:	Email:
Postal Address:		Post Code:
Gender: Male ☐ Female ☐		Date of Birth:

Please choose two times that suit you best. You will be registered for only one of your choices; your first choice will be given whenever possible.

April 2006				1st Choice	2nd Choice
Wednesday 19th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Thursday 20th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Friday 21st	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Wednesday 26th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Thursday 27th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Friday 28th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
May 2006				**1st Choice**	**2nd Choice**
Thursday 4th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Friday 5th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Saturday 6th 12 - 2 pm ☐	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Thursday 11th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐
Friday 12th	2 - 4 pm ☐	4 - 6 pm ☐	6 - 8 pm ☐	☐	☐

Australian Government
Grape and Wine Research and Development Corporation

Appendix 2

THE UNIVERSITY OF ADELAIDE
AUSTRALIA

School of Commerce - Research Project
Food Product Preferences

This is to confirm your scheduled tasting session at the Waite Campus of the University of Adelaide on the 12th of May from 2 to 4 pm.

Thank you for registering to participate in my research!

I have attached a copy of a PDF file showing the Waite Campus and parking facilities. You can access the campus taking Waite Road from Cross Road, Urrbrae. When you open the PDF file, you'll see I've made some notes for you to help you find us, and 'highlighted' the map reference of D5 on the index page – showing the reference for Wine and Horticulture Reception (Building 30).

Once on Waite Road veer left at the roundabout taking Hartley Grove Road, on your right you will see Paratoo Road Carpark (feel free to park here). The gate leading to the facility is gate 2b (see notes). There is some limited parking on this entrance – you may find a spot, or they may all be in use. Any queries or questions, please feel free to email me or call me on 0404833924. An incentive payment of $30 is paid to all participants.

See you then!

Regards, Roberta

If for any reason you cannot come – please ring me on 0404833924!

Taste Test Time Allowances and Budget

No. of Respondents	Samples	Min per	Time Samples p/per	Min Quest	Briefing	Total Min	Hours	Notes
1	22	3	66	15	10	91	2	29 minutes allowed per sitting to allow for contingency and 10 minute break for respondents 1/2 way through taste tests

Sample	Sittings	Hours	Hours Samples	Set / Clean Up	Total
34 sittings	34	2	68	11	79

10 days of 3 sittings	Sat of 9 hours	$	150.00
1 day of 4 sittings	10 days 7 hours	$	1,500.00

Time/Day	No of Days	Daily $150	Hours a/h	a/h $35 p/h	Total	Notes
Sat	1	$ 150.00	9	$ 315.00	$ 465.00	1 Saturday (9 hours) - 4 sittings at 2 hrs each + 1 hour set up/clean up (Saturday to allow for people who can't come during the week)
Week days	10	$ 1,500.00	3.5	$ 1,225.00	$ 2,725.00	10 week days (7 hours) - 3 sittings at 2 hrs each + 1 hour set up/clean up (1 sitting a/hrs for working people)
Total Cost Lab Time					**$ 3,190.00**	

Scheduling	Set Up	Sitting 1	Sitting 2	Sitting 3	Sitting 4	Clean Up
Weekdays	1:30 to 2:00 pm	2:00 to 4:00 pm	4:00 pm to 6:00 pm	6:00 to 8:00 pm		8:00 to 8:30 pm
Saturday	11:30 to 12:00 noon	12:00 to 2:00 pm	2:00 to 4:00 pm	4:00 to 6:00 pm	6:00 to 8:00 pm	8:00 to 8:30 pm

Proposed Dates	Days	April	May	No Days
Week 1	Wed/Thurs/Fri	19, 20, 21		3
Week 2	Wed/Thurs/Fri	26, 27, 28		3
Week 3	Thurs/Fri/**Sat**		4, 5, **6**	3
Week 4	Thurs/Fri		11, 12	2
Total Days				**11**

THE UNIVERSITY OF ADELAIDE
AUSTRALIA

School of Commerce
Research Project – Food Product Preferences
Welcome to this Tasting Session



Judge No: _____

Date: _____

Time: _____

Australian Government
Grape and Wine Research and Development Corporation

Important Information about participation in this study

- Your participation in this research is entirely voluntary and you may withdraw at any time.
- The first part is a briefing regarding the procedures for the session and information regarding the products that you will be trying and assessing.
- During the course of the next 2 to 2.5 hours you will be presented with 11 samples of wine and 11 samples of cheese to taste.
- You are required to smell and taste each wine sample, then importantly, you are instructed to expectorate (spit) the sample into the sink provided in the tasting booths.
- The cheese samples may be consumed if you wish, or disposed of using the tissues and receptacles provided in the tasting booths.
- Prior to the commencement of the tasting session you will be asked to complete a short questionnaire, and post tasting you will be asked to complete another. These should not take more than 10 to 15 minutes to complete in total.
- At no time should you 'go back' and review and change judgements made or answers given. It's critically important to keep moving forward throughout the session.

Consent Form
For participants in a research project

1. I…….(please print name) consent to take part in the described research project.

2. I have read the information provided on page 1 of this booklet.

3. I have had the project, so far as it affects me, fully explained to my satisfaction by the research worker and my consent to participate is given freely.

4. I understand that I am free to withdraw from the project at any time.

Signed: ……. Date: ……..

Witness

I have described to ……..(name of participant) the nature of the procedures to be carried out. In my opinion he/she understood my explanation.

Status in Project: PhD Student Name: Roberta Veale

Signed:……..

Part 1 (a)

For the purpose of analysis, we would be grateful if you would provide some personal information about yourself. Your answers will only appear in aggregate and average numbers.

Please (✓) the box that best reflects your agreement with the following statements.		**Strongly Disagree**								**Strongly Agree**
1.	I feel capable of handling myself in most social situations.	**1** ☐	**2** ☐	**3** ☐	**4** ☐	**5** ☐	**6** ☐	**7** ☐	**8** ☐	**9** ☐
2.	I seldom fear my actions will cause others to have a low opinion of me.	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	It doesn't bother me to have to enter a room where other people have already gathered and are talking.	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	In group discussions, I usually feel my opinions are inferior.	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	I don't make a very favourable first impression on people.	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	When confronted by a group of strangers, my first reaction is always one of shyness and inferiority.	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	It is extremely uncomfortable to accidentally go to a party wearing the wrong thing.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8.	I don't spend much time worrying about what people think of me.	☐	☐	☐	☐	☐	☐	☐	☐	☐
9.	When in a group, I very rarely express an opinion for fear of being laughed at.	☐	☐	☐	☐	☐	☐	☐	☐	☐
10.	I am never at a loss for words when I am introduced to someone I don't know.	☐	☐	☐	☐	☐	☐	☐	☐	☐

Please turn the page and continue with Part 1 (b)

Part 1 (b)

In this part of the questionnaire, we would like to ask you some questions about your general knowledge and experiences with purchasing Chardonnay.

Please (✓) the box that best reflects your knowledge and experience.		**Strongly Disagree**								**Strongly Agree**
1.	I feel confident about my knowledge of chardonnay.	**1** ☐	**2** ☐	**3** ☐	**4** ☐	**5** ☐	**6** ☐	**7** ☐	**8** ☐	**9** ☐
2.	I feel that I know how to judge the quality of chardonnay.	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	I do not feel very knowledgeable about chardonnay.	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	Among my circle of friends, I'm one of the 'experts' on chardonnay.	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	Compared to most buyers, I know less about chardonnay.	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	I know of most of the chardonnays around in shops.	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	When it comes to chardonnay, I really don't know a lot.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8.	I can tell if a chardonnay is worth the price or not.	☐	☐	☐	☐	☐	☐	☐	☐	☐

9. How often would you purchase bottle of Chardonnay for yourself or others? (on average)

Less than once per month ☐ 1
1 to 2 times per month ☐ 2
3 to 4 times per month ☐ 3
5 or more times per month ☐ 4

10. If you have a 'favourite' brand of Chardonnay, please list it below.

Please turn the page and continue with Part 1 (c)

Part 1 (c)

In this part of the survey, we would like to ask you some questions about your general knowledge and experiences with purchasing Brie.

	Please (✓) the box that best reflects your knowledge and experience about Brie.	**Strongly Disagree**								**Strongly Agree**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.	I feel confident about my knowledge of Brie.	☐	☐	☐	☐	☐	☐	☐	☐	☐
2.	I feel that I know how to judge the quality of Brie.	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	I do not feel very knowledgeable about Brie.	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	Among my circle of friends, I'm one of the 'experts' on Brie.	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	Compared to most buyers, I know less about Brie.	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	I know of most of the Brie cheeses in the shops.	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	When it comes to Brie, I really don't know a lot.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8.	I can tell if a Brie is worth the price or not.	☐	☐	☐	☐	☐	☐	☐	☐	☐

9. **How often would you purchase Brie for yourself or others? (on average)**

Less than once per month ☐ 1
1 to 2 times per month ☐ 2
3 to 4 times per month ☐ 3
5 or more times per month ☐ 4

10. **If you have a 'favourite' brand of Brie, please list it below.**

This is the end of part 1 – Please do not turn the page until instructed to do so (thanks!)

Part 2

Chardonnay and Cheese Samples

- You will be given 11 samples of chardonnay and 11 samples of brie to taste.
- These will be given to you 1 sample at a time, in a mixed order.
- Each sample profile and rating scale is on a separate page of this booklet – each with a unique and specific identifying number. Check to see the sample number matches the number in your booklet.
- Give each sample a rating on the scale where **1 = Low Quality and 10 = High Quality**. Then please indicate whether or not you would consider buying this product.
- Rate each sample individually as you receive them. While you may not be a regular 'Chardonnay drinker' or 'Brie' fancier (or even particularly like Chardonnay or Brie) assess each profile in light of the need to make a possible purchase. All Wine options are 2005 vintage.
- Between each sample, be sure to cleanse your palate with water and/or a bite of water biscuit.
- Remember to expectorate the wine sample in the sink provided.
- DON'T GO BACK! Once you have assessed a sample, use the indicator switch in the booth to request your next sample and then turn to the page to rate the next corresponding sample number.

We're interested in your first impressions, so work quickly and steadily.

There are no 'right or wrong' answers, we are only interested in your opinion!

Chardonnay 253	
Produced in	France
Retail Price	$16.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Chardonnay 582	
Produced in	United States
Retail Price	$6.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 481	
Produced in	Chile
Retail Price	$16.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 810	
Produced in	France
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 139	
Produced in	Argentina
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 367	
Produced in	Canada
Retail Price	$69.95

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Chardonnay 696	
Produced in	France
Retail Price	$6.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Chardonnay 595	
Produced in	United States
Retail Price	$16.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Chardonnay 924	
Produced in	Chile
Retail Price	$53.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 266	
Produced in	Canada
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 709	
Produced in	France
Retail Price	$49.95

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

Brie 380	
Produced in	Argentina
Retail Price	$69.95

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Chardonnay 152	
Produced in	United States
Retail Price	$6.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Chardonnay 823	
Produced in	France
Retail Price	$53.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Chardonnay 494	
Produced in	Chile
Retail Price	$6.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 735	
Produced in	France
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 393	
Produced in	Argentina
Retail Price	28.95 per kilo

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 621	
Produced in	France
Retail Price	$69.95

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Chardonnay 950	
Produced in	France
Retail Price	$16.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Chardonnay 279	
Produced in	United States
Retail Price	$53.00

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 178	
Produced in	Canada
Retail Price	$49.95

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
□	□	□	□	□	□	□	□	□	□

Would you consider buying this product? Yes □ No □

Brie 507	
Produced in	Argentina
Retail Price	$49.95

Low Quality **High Quality**

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Would you consider buying this product? Yes ☐ No ☐

That concludes the taste testing.

Please close your booklet at this time.

Part 3 (a) Chardonnay

In this part of the survey, we would like to ask you some questions relating to your general knowledge about wine. Please (✓) the box that best reflects your knowledge and experience. If you're unsure about the answer to any particular question, that's no problem just (✓) the box indicating this.

1. **Letting a wine 'breathe":**		2. **Cellaring of wine is done (basically) to help:**	
Is to remove the cork for a time, prior to drinking	☐ 1	Wine mature quickly	☐ 1
Means aerating it so it can react with the oxygen	☐ 2	Wine mature slowly	☐ 2
Always improves the flavour of wine	☐ 3	Keep pests away from wine	☐ 3
Don't know	☐ 4	Don't know	☐ 4

3. **Which one of the following white varietals is most likely to be aged in oak?**		4. **Which one of the following white varietals is most likely to improve with aging?**	
Riesling	☐ 1	Sauvignon Blanc	☐ 1
Chardonnay	☐ 2	Chenin Blanc	☐ 2
Sauvignon Blanc	☐ 3	Chardonnay	☐ 3
Don't know	☐ 4	Don't know	☐ 4

5. **Tannin gives wine:**		6. **Chardonnay grapes are:**	
Bitterness	☐ 1	Among the finest grown for white wine	☐ 1
Tartness	☐ 2	Not usually used in sparkling wine	☐ 2
Astringency	☐ 3	Often used to make sweet wines	☐ 3
Don't know	☐ 4	Don't know	☐ 4

Please turn the page and continue

Part 3 (a) Chardonnay cont.

7. Chardonnay, typically has an aging potential of:		8. Terms often linked with the taste of Chardonnay are:	
2 or 3 years	□ 1	Apple, peach, citrus	□ 1
3 or 4 years	□ 2	Plum, spice, mint	□ 2
5 or 6 years or longer	□ 3	Floral, honey, lychee	□ 3
Don't know	□ 4	Don't know	□ 4

9. What percentage (%) of the wine in the bottle must be made from grapes harvested and crushed in the year named, if a 'Vintage' date is given?		10. When thinking about matching foods with wines, trying to achieve the most complimentary combinations, it is important to remember that:	
90%	□ 1	Very sweet food will counter the acid in the wine	□ 1
95%	□ 2	Very salty foods counter acid in the wine	□ 2
100%	□ 3	Very acid foods will bring out the acid in the wine	□ 3
Don't know	□ 4	Don't know	□ 4

11. An oak aged Chardonnay will, typically, be:		12. Champagne is an excellent choice to accompany:	
Less full bodied than many other white wines	□ 1	Smoked salmon	□ 1
More full bodied than many other white wines	□ 2	Chinese food	□ 2
Comparable in body to many other white wines	□ 3	Most foods	□ 3
Don't know	□ 4	Don't know	□ 4

Please turn the page and continue

Part 3 (a) Chardonnay cont.

13. The term 'green' is often used to describe a wine's:		14. Chilling wine (even red wine) will often:	
Colour	□ 1	Improve the taste of a poor wine	□ 1
Acidity	□ 2	Make tannins less noticeable	□ 2
Age	□ 3	Make no real difference to perceived quality	□ 3
Don't know	□ 4	Don't know	□ 4

Part 3 (b) Brie

Please (✓) the box that best reflects your knowledge and experience with Brie. If you're unsure about the answer to any particular question, that's no problem just (✓) the box indicating this.

1. White mould is:		2. Coagulation is:	
Fresh curds aged in warm temperatures.	□ 1	The conversion of milk solids to curd and whey.	□ 1
Fresh curds ripened by introducing surface mould.	□ 2	The basis of cheese making.	□ 2
Never found in quality cheeses.	□ 3	**Both** of the above.	□ 3
Don't know	□ 4	Don't know	□ 4

3. Rennet is:		4. Brie:	
A form of yeast used to make cheese.	□ 1	Is eaten younger than Camembert	□ 1
An enzyme extracted from stomach linings.	□ 2	Is eaten older than Camembert	□ 2
Neither of the above.	□ 3	Matures in the same time as Camembert	□ 3
Don't know	□ 4	Don't know	□ 4

Please turn the page and continue

Part 3 (b) Brie cont.

5. Rind is:		6. Brie is nicest when made from milk produced in:	
An important influence on flavour development	□ 1	the spring and autumn	□ 1
Not found on Brie	□ 2	the winter and summer	□ 2
Never washed in making quality cheeses	□ 3	particularly wet summers	□ 3
Don't know	□ 4	Don't know	□ 4

7. Brie:		8. Brie has:	
Never smells of mushrooms and yeast	□ 1	slightly thicker mould than Camembert	□ 1
Usually smells of mushrooms and yeast	□ 2	slightly thinner mould than Camembert	□ 2
Can sometimes smell like old socks	□ 3	identical mould to Camembert	□ 3
Don't know	□ 4	Don't know	□ 4

9. 'Triple Cream' Brie:		10. Brie rind is:	
Feels greasy with you eat it	□ 1	Comprised of soft white mould	□ 1
Is made from milk with extra cream added later	□ 2	Comprised of grey or white mould	□ 2
Doesn't exist as a product	□ 3	Sometimes orange	□ 3
Don't know	□ 4	Don't know	□ 4

Please turn the page and continue

Part 3 (b) Brie cont.

11. When choosing wine to drink with Brie:		12. Brie cheese is a product where:	
It's critical to make sure it's well chilled	□ 1	price usually influences quality	□ 1
A chardonnay will suit, but never a red	□ 2	price is no indication of quality	□ 2
A full bodied, earthy red is a sound choice	□ 3	all brands cost pretty much the same, no matter where the cheese comes from	□ 3
Don't know	□ 4	Don't know	□ 4

13. The inside of a Brie that is ready to eat is:		14. When you press the rind of a Brie it should:	
Creamy, buttery and smooth	□ 1	Feel soft, but your finger leaves no mark or indent	□ 1
Rubbery, buttery and soft	□ 2	Feel soft to the touch, your finger leaving an indent	□ 2
A little chalky	□ 3	Feel quite firm	□ 3
Don't know	□ 4	Don't know	□ 4

Please turn the page and continue

Part 4

For the purpose of analysis, we would be grateful if you would provide some personal information about yourself. Your anonymity is guaranteed, this data is only used for statistical purposes.

1. Please indicate your gender:	**2. Please indicate your age category:**
Male ☐ 1	18 yrs to 25 yrs ☐ 1
Female ☐ 2	26 yrs to 35 yrs ☐ 2
3. What is your occupation?	36 yrs to 45 yrs ☐ 3
	46 yrs to 55 yrs ☐ 4
	Over 55 yrs ☐ 5

4. Please indicate your household income (gross)	**5. Please indicate highest level of education completed:**
Less than $25, 000 ☐ 1	High School Certificate ☐ 1
$25,000 to $45,000 ☐ 2	Diploma / Trade Qualification ☐ 2
$46,000 to $65,000 ☐ 3	Bachelor's Degree ☐ 3
Over $65,000 ☐ 4	Post Graduate Degree ☐ 4

Thank you very much!

Appendix 5

Laboratory Photos

These photos were taken at the sensory laboratory situated at the Waite Campus (The University of Adelaide). Thirty four taste testing sessions were conducted over a 4 week period.



Numbering Glasses for tasting sessions



Treated and untreated bottles of wine



Pouring wine for tasting session



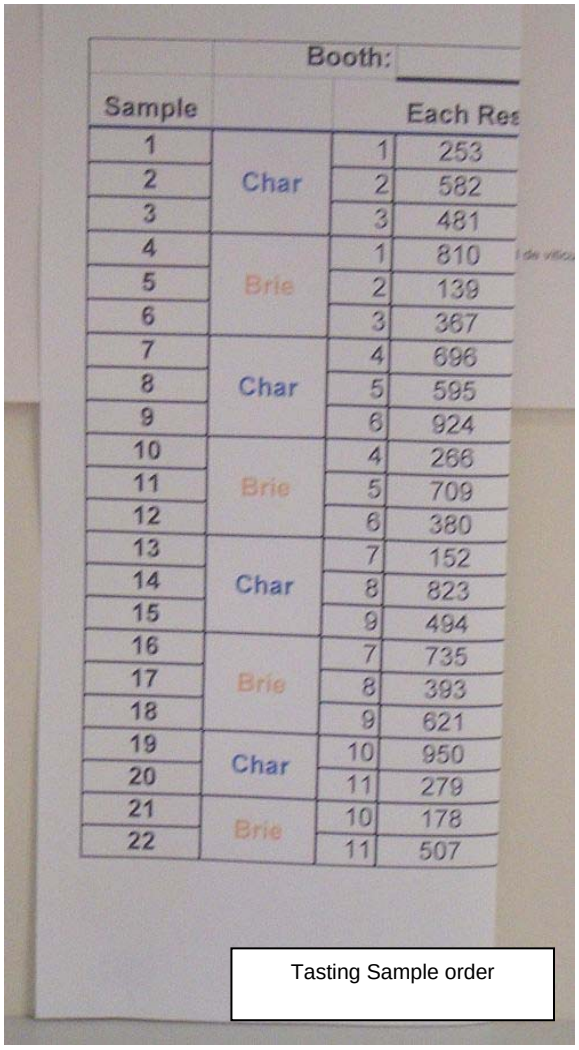
Preparing brie (double fat shown)



Preparing trays for session



Tray with wine and cheese samples



Booth:

Sample			Each Res
1	Char	1	253
2		2	582
3		3	481
4	Brie	1	810
5		2	139
6		3	367
7	Char	4	696
8		5	595
9		6	924
10	Brie	4	266
11		5	709
12		6	380
13	Char	7	152
14		8	823
15		9	494
16	Brie	7	735
17		8	393
18		9	621
19	Char	10	950
20		11	279
21	Brie	10	178
22		11	507

Tasting Sample order



Providing samples to respondent in booth

Appendix 6

THE UNIVERSITY OF ADELAIDE
AUSTRALIA

The role of intrinsic (sensory) cues and the extrinsic cues of country of origin and price on food product evaluation

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Abstract

Consumers use both intrinsic and extrinsic cues when forming opinions regarding product quality. Research has shown that consumers are often unable to assess these cues accurately and may ignore product attributes that significantly influence product quality in favor of others that contribute little. Country-of-origin and price have been found to be examples of extrinsic cues repeatedly used by consumer to form product quality opinions, both before and after purchase. Furthermore, objective and subjective consumer knowledge and self-confidence have been shown to moderate consumer reliance on both extrinsic and intrinsic cues, although these variables have not been examined in terms of their potential moderating effects on product quality evaluations. The results of exploratory qualitative research and a pilot scale conjoint analysis suggest that country of origin and price influence quality expectations in the case of chardonnay and cheese. In the case of cheese, the intrinsic cue (fat content) also contributed significantly to quality expectations, with the lowest fat level deemed the most desirable. This is despite the fact that increasing levels of fat in cheese results in creamier texture and better flavor compared to the low fat products. Measures of objective knowledge were also found to be much lower than expected for consumers of these commonly purchased products, suggesting respondents' inability to accurately assess intrinsic cues. The study points to a number of future research directions.

1. Introduction

Products and services are bundles of attributes used as 'cues' by consumers to shape opinions of expected or experienced product quality. An intrinsic product cue can be any product characteristic inherent in the product itself, such as engine capacity for a car or flavour for a soft drink, while an extrinsic cue is a product characteristic not fundamental to the product itself but externally attributed to the good or service, for example, price, brand, place of purchase, or country of origin (Lee & Lou, 1996; Teas & Agarwal, 2000). Previous research has shown that consumers vary in their reliance on both intrinsic and extrinsic cues as well as in their ability to accurately assess product cues accurately (Alba, 2000; Kardes, Kim, & Lim, 2001). Thus, marketing practitioners need to understand the respective influence of extrinsic cues in consumers' quality assessment process to ensure that marketing efforts are focused towards enhancing those attributes most likely to influence consumers' opinions regarding quality.

Two extrinsic cues found by researchers to be used consistently in this process are country-of-origin (COO) and price (Al-Sulaiti & Baker, 1998; Dodds, 1991). However, whether COO and price have the power to over-ride sensory perceptions of quality is not known. Moreover, while consumer knowledge and self-confidence have been shown to moderate consumers' reliance on extrinsic cues, results of previous studies are ambiguous, often as a result of inconsistencies in definitions and measurement (Alba & Hutchinson, 2000; Alba & Hutchinson, 1987). Studies have often measured subjective and/or self assessed knowledge and paid less attention to levels of objective knowledge, and consumer self-confidence does not appear to have been measured at all in combination with these variables. This is despite its potential role as a moderating variable since it reflects an individual's belief in his or her ability to make an independent and sound decision. For example, consumers lacking self-confidence are less likely to hold opinions that contradict others' or some predictive extrinsic cues (Aaron, Mela, & Evans, 1994; Alba & Hutchinson, 1987; Alba, 2000; Bell, 1967). While empirical evidence exists in relation to various aspects of these specific variables, several gaps remain in the literature in relation to their combined effects on product quality determination.

Many studies have investigated the influence of extrinsic cues using experimental designs (where respondents experience various product offerings) or quasi-experiments often through conjoint analysis (where respondents rate products or choose their preferred product option from a number of described product profiles). The influence of extrinsic cues, however, has never been tested using both types of methodology in a confirmatory sense which will test and compare the effectiveness of both methodologies. Examining and quantifying differences (and establishing the ability of conjoint analysis to predict 'actual' evaluation) is essential for marketing practioners who may well be allocating resources to the promotion of attributes that are neither not understood or not considered in the purchase decision.

The broader focus of this research is therefore to investigate the respective influence of country of origin and price as extrinsic cues when product intrinsic cues are experienced through sensory perception. This paper, however, only reports empirical evidence concerning consumers' perceptions of both types of cues, as well as the result of a pilot conjoint analysis examining two specific extrinsic cues (COO and price) simultaneously with one intrinsic sensory cue (acidity and fat content) for two specific product categories. Previous studies have been conducted to assess the influence of price (among selected other extrinsic cues such as labeling) by means of sensory evaluations such as taste tests and visual impressions (Hurling & Shepherd, 2003; Pechmann & Ratneshwar, 1992; Wansink, Park, Sonka, & Morganosky, 2000). Surprisingly, the influence of country of origin as an extrinsic cue appears to have been neglected in previous research using this type of methodology (Aaron et al., 1994; Acebron & Dopico, 2000; Hoffmann, 2000; Koch & Koch, 2003; Pechmann & Ratneshwar, 1992). Moreover, the moderating roles of consumer knowledge and self-confidence have not been investigated empirically in studies testing these extrinsic cues in conjunction with sensory perceptions. This represents another opportunity to add to the current knowledge in this area (Schaefer, 1997; Wilson & Brekke, 1994; Wirtz & Mattila, 2003).

The research seeks to develop a framework illustrating consumer assessment of product quality based on their simultaneous evaluation of intrinsic and extrinsic cues (country of origin and price), with knowledge and personal self-confidence as moderating variables. Fundamental to this framework is the identification of anticipated threshold levels where the extrinsic cues cease to override sensory perceptions. Ultimately, this research aims to identify differences between what consumers would expect in terms of product quality, and their actual determination of product quality through the comparison of results from a conjoint analysis survey and sensory experience. This will be useful for practitioners developing marketing strategies that emphasize the most relevant product cues.

2. Consumer use of intrinsic and extrinsic cues

Research has shown that consumers are not always able to accurately evaluate intrinsic and extrinsic cues before making a buying decision, and in some cases even in a post purchase evaluation (Alba, 2000; Kardes et al., 2001). There are a number of reasons why this may occur, including lack of understanding, lack of self-confidence, information misinterpretation or inaccessibility. In some situations, actual product attributes are discounted in favor of extrinsic cues believed by consumers to be more reliable than their own opinions (Kardes, Cronley, Kellaris, & Posavac, 2004; Monroe, 1976; Olson, 1972; Rao & Olson, 1990; 1969; Teas & Agarwal, 2000; Wansink et al., 2000). Quality judgments can also be influenced by visual clues or by characteristics implied through labeling or merely assumed by the consumer to exist. For example, Wansink, Park et al. (2000) found that some respondents reported differences in the taste and texture of breakfast bars they believed to contain soy, when all

products tested by these respondents were identical and none contained any soy-based ingredients. Therefore research has confirmed that even sensory perceptions are not always accurate but rather, are vulnerable to expectations and beliefs. These findings further confirm that marketers cannot assume that intrinsic product attributes will be weighted and interpreted accurately by consumers.

3. Objective vs. subjective knowledge

Consumer expertise comprises two dimensions, objective and subjective knowledge. Objective knowledge is current, accurate information stored by an individual in their long-term memory. This type of knowledge is based largely on cognitive type learning and credible experience with many offerings and brands within a product category (instrumental learning) (Alba & Hutchinson, 1987). Conversely, subjective knowledge is the consumer's perceived level of expertise or 'self-assessed' level of knowledge, more accurately described as product class familiarity. Therefore, expertise developed as a result of objective knowledge should not be confused with product familiarity or past experience alone when assessing knowledge levels. This misunderstanding leads to consumers consistently over-assessing their levels of expertise, creating a gap between their own perception of what they believe to be true regarding product offerings and an accurate judgment. Empirical evidence has established that consumers, in the main, do not possess the level or quality of objective knowledge they believe they do (Alba & Hutchinson, 1987; Alba & Hutchinson, 2000; Alba, 2000). Given this, it is not surprising that many consumers often misjudge product quality through limited searches and erroneous interpretation of both intrinsic and extrinsic cues.

3.1 Objective knowledge and cue usage

Consumers with high levels of objective knowledge have been found to distinguish more easily and more precisely between important product and service attributes, disregarding those product characteristics that are less critical to making a sound buying decision (Brucks, 1985; Kardes et al., 2001; Mason & Bequette, 1998; Park, Mothersbaugh, & Feick, 1994; Wirtz & Mattila, 2003). A legitimate product 'expert' is less likely to seek advice from others and is also less likely to place much credence on 'brand' or advertised product 'benefits' when gathering information. Instead, expert consumers seek to understand critical attributes, making their own judgments regarding any consequent benefit (Kuusela, Spence, & Kanto, 1998). This allows them to correctly match particular product brands and models with specific usages. For such expert consumers, the logical application of information relevant to product performance results in a bias towards intrinsic cues. Extrinsic cues, however, are not discounted if they are truly predictive of quality (Rao & Olson, 1990). However, Alba and Hutchinson (1987) found in their early research that even true 'experts' can still be influenced by 'biases' if they are felt strongly enough and these can result in improper weighting of both intrinsic and extrinsic cues.

3.2 Subjective knowledge and cue usage

In contrast to consumers with high levels of objective knowledge, those relying on subjective knowledge lack an extensive collection of credible information to call upon when making a purchase decision. These consumers can usually recall only a few brand names, makes and models, and then perhaps only one or two specific attributes about each (Mitchell & Dacin, 1996). Consumers with high levels of self-assessed knowledge have been found to use their own experiences (however limited) as the basis for their expertise. While believing their knowledge to be adequate to make a sound decision, empirical evidence suggests they usually know much less about products than they believe, often leading to poor assessment of likely quality or product performance (Alba & Hutchinson, 2000). Those relying on subjective

knowledge are seemingly not able to filter out the attributes irrelevant to performance, often ignoring important intrinsic cues due to a lack of understanding (Schaefer, 1997). For this group, the cognitive shortcut provided by extrinsic cues is especially welcome. Consequently, and unlike experts, this type of consumer finds it much more difficult to correctly match the correct brand or model with a specific usage situation (Brucks, 1985; Park et al., 1994; Wirtz & Mattila, 2003). Given that there are relatively few true 'experts' in most consumer markets, the credence given to extrinsic cues by these consumers cannot be underestimated.

3.3 Consumer self-confidence and cue usage

Consumer self-confidence levels have been found to influence the interpretation and use of both intrinsic and extrinsic cues (Bearden, Hardesty, & Rose, 2001; Jover, Montes, & Fuentes, 2004; Wansink et al., 2000; Wilson & Brekke, 1994). Individuals with low levels of self-confidence may lack self belief to the point where, if faced with a strong opposing opinion or predictive extrinsic cues, they will allow their better judgment to be over ridden. This can occur even if an individual is a true product 'expert' in a specified product category. Alternatively, consumers with high levels of self confidence develop strong attitudes towards specific products that are very difficult to change due to strong self belief. This strength of conviction leads them to hold on to their beliefs irrespective or regardless of support by others or its legitimacy (Rao & Olson, 1990). Therefore, while these individuals may believe themselves to be 'experts', it is more likely their knowledge is basically subjective in nature. Interestingly, people with low self-confidence can become stubborn also, but this is because they became defensive under the pressure of decision making, not because they necessarily believe they are right (Bell, 1967).

Overall, the literature suggests that the particular combination of knowledge (type and level) with self-confidence levels significantly moderates the credence given to extrinsic cues. If a highly confident person also holds high levels of objective knowledge and is presented with relevant intrinsic product cues, extrinsic cues would be likely to be discounted in their assessment of both 'expected' and 'experienced' product quality. However, if knowledge is primarily subjective, resulting in an inability to correctly interpret the intrinsic cues, these cues may be misjudged or ignored. For the consumer with low self-confidence, high levels of objective knowledge should support an opinion based predominantly on intrinsic cues but this may not be the case when presented with strong and contradictory extrinsic cues. For the consumer with low self confidence compounded with low objective knowledge levels, extrinsic cues may well form the principal basis for most product evaluations.

4. Country of origin as extrinsic cue

Country-of-Origin (COO) has been defined in many ways in the marketing literature, but it is generally considered to be the source country of a product. COO effects describe the degree to which country image (or country of brand or assembly) influences consumers' evaluations of products from that specific country (Han, 1990). Country Image (CI) involves the general perceptions, or stereotypical images (akin to a brand image) that consumers from one country (or region) form about another country or region. Research has now established that CI perceptions form the basis of beliefs that consumers use as part of the product evaluation process, although its importance will vary depending on market and product specific circumstances (Han, 1989, 1990; Quester, Marr, & Yeoh, 1996).

While the influence of CI is often specific for a product (or product category) and the values are not generally transferable to different categories of products, some common effects have emerged. These include a more significant reliance on CI (and other extrinsic cues) by

consumers when there is little specific and reliable information available for consumers to consider consumers are evaluating a high cost/high involvement product or when the CI and product category are highly congruent (e.g. French perfume or Chinese silk) (Han, 1989, 1990, 1993; Piron, 2000). CI is also likely to be more influential when consumers have limited knowledge or personal experience relevant to products from a country. Here country image appears to serve as a 'halo' that forms the basis of consumers' opinion of products from a specific country (Han 1989). In this way, country image serves the purpose of a useful cognitive 'shortcut' allowing consumers to make a quick evaluation of a product without having to search out and consider an extensive set of attributes (intrinsic and/or other extrinsic cues). For example, if a consumer in Australia has little knowledge of, or experience with, products from Mexico, he or she is likely to form opinions of Mexican products based solely on a country image of Mexico. That is understandable because these images are all they can call upon when making a judgment. In these circumstances, the country image serves as the basis of knowledge to fill the gap of the unknown.

5. Price as an extrinsic cue

Consumers tend to believe there is a 'natural' ordering of products according to a price scale where higher quality products are more expensive and products of lesser quality are cheaper (Bredahl, 2003; Dickson & Sawyer, 1990; Glitsch, 2000; Jover et al., 2004; Kardes et al., 2004; Monroe, 1976). This price / quality relationship, described in the literature as the 'price-reliance schema', reflects consumers' strongly held view that 'you get what you pay for' (M. Lee & Lou, 1996: p24). Indeed, this belief can sometimes be strong enough to overcome experienced product quality (Jover et al., 2004; Pechmann & Ratneshwar, 1992). For example Pechmann and Ratneshwar (1992) found, in their study involving consumer assessment of orange juice quality, that respondents would favour a lower quality juice if the price were relatively high, over a juice of lower quality if the price were correspondingly low, provided they did not have the opportunity to assess all juice samples simultaneously. Therefore, consideration of price leads consumers to accept conditional 'trade offs' when making a buying decision. If consumers believe that price and quality are tied then paying a lower price means accepting lower quality. Conversely, to gain better quality a monetary sacrifice must be made, perhaps beyond what is desirable to the payer. Finding a satisfactory balance in outcomes represents an important challenge for many consumers and means that price plays an important and unique role in the buying decision (Kardes et al., 2004; Rao & Olson, 1990).

Consumers rely even more heavily on price when they possess limited knowledge of product category offerings. Further, consumers find it particularly difficult to assess quality if intrinsic cues are complex, leading them to sometimes be intimidated by price as found by (Jover et al., 2004) in their study measuring the impact of extrinsic variables on expectations and evaluation of wine quality. Thus as with CI, consumers with sound levels of objective knowledge will generally use price as an indicator of quality only when this is legitimate (e.g. there is a strong relationship between price and intrinsic product quality), and/or when other intrinsic product information is limited.

6. Towards a conceptual framework

It is established that consumers use both intrinsic and extrinsic cues in forming opinions about product quality. Extrinsic cues in the model are represented by the independent variables of price and country of origin. Intrinsic cues are represented by independent variables consisting of physical product attributes such as those contributing to taste for food or drink products. The degree of reliance placed upon individual product attributes (intrinsic or extrinsic) is

moderated by the consumer specific characteristics of knowledge and self-confidence. The suggested relationships between these independent and moderating variables are illustrated in Figure 1. This framework clearly delineates between self-confidence levels and the various types of consumer knowledge, thus clarifying the parts they play in product quality assessment. These moderating variables are expected to act as 'filters' through which product cues are evaluated, and in some cases ignored. This framework goes beyond current existing literature involving country image and price studies and may also make a contribution to consumer behaviour research relating to consumer use of extrinsic cues.

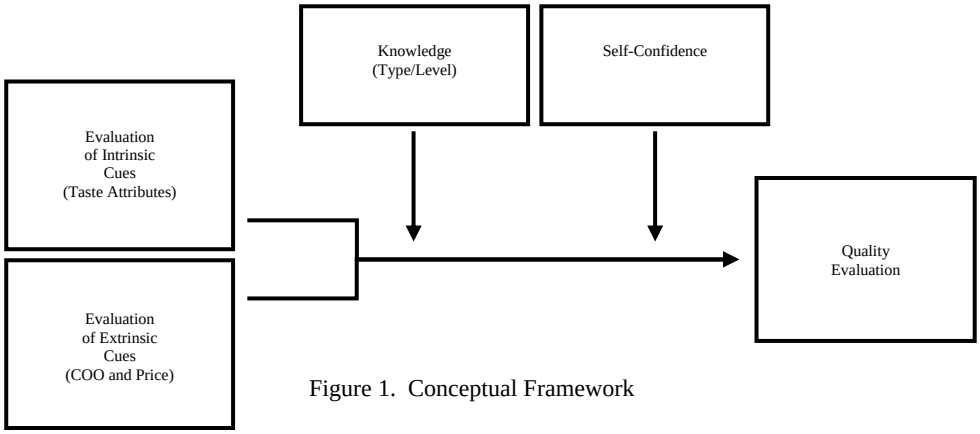


Figure 1. Conceptual Framework

7. Research Design and Methodology

This exploratory phase of the research project comprised two preliminary stages. First, a qualitative stage involved 2 focus groups, conducted to confirm Australian consumers' belief that country of origin and price are strongly predictive extrinsic cues influencing product quality for the selected food products to be tested in the following stages of the research. Also, it was necessary to identify the countries more likely to be positively or negatively associated with these products by local consumers, given that the COO effect has been found to be product, country and market specific (Al-Sulaiti & Baker, 1998; Insch & McBride, 2004; Kuusela et al., 1998).

The following stage of the study used conjoint analysis to measure the respective influence of communicated product cues on expectations of product quality, via self-administered questionnaire. Respondents rated individual alternative product profiles where objective product quality was manipulated as intrinsic cues, often in conflict with the extrinsic cues provided (manipulated price levels and COO), to identify the cues that are most valued and which product attributes consumers were willing to trade off to attain them. In order to quantify subjective knowledge and self-confidence, respondents completed a questionnaire using measurement scales based on previous studies (Alba & Hutchinson, 1987; Bearden et al., 2001; Flynn & Goldsmith, 1999). In order to measure levels of objective knowledge, respondents completed a test, developed with the assistance of industry experts, for both product categories included in the study (wine and cheese) and consisted of fourteen multiple choice questions for each category.

7.1 Selection of Products

A significant body of empirical evidence exists using food products to research the influence of extrinsic cues of consumer assessment of product quality. Examples of products tested include beef, chicken, pork, eggs, wine, cheese and orange juice (Al-Sulaiti & Baker, 1998;

Bernues, Olaizola, & Corcoran, 2003; Bredahl, 2003; Grunert, 1997; Jover et al., 2004; Kardes et al., 2004; Pechmann & Ratneshwar, 1992). A review of these studies also revealed a wide and varied range of methodologies including conjoint analysis, taste test experiments, pre- and post-purchase surveys and in-store surveys, supporting the suitability of food products for the proposed methodology. In order to use a general population sample for the quantitative stages of the research it was necessary to pick food products routinely consumed by members of the adult Australian population, leading to the selection of wine and cheese as the products used in the study.

Interviews with product experts were undertaken to select specific wine and cheese products readily available, commonly consumed by Australian shoppers and suitable for objective quality manipulation. In these discussions, for wine, unwooded chardonnay was suggested because of its familiarity to Australian consumers and the intrinsic cue of acidity significantly impacting on objective product quality. For cheese, camembert was suggested as it is readily available, commonly consumed by Australian consumers and available with differing levels of fat. With camembert, as with many other cheese varieties, fat is an important intrinsic cue affecting objective product quality. Generally higher fat levels result in a creamier texture (enhanced mouth feel) and better taste (Aaron et al., 1994; Hamilton, Knox, Hill, & Parr, 2000). Based on this information, unwooded chardonnay and camembert were chosen as test products; with acidity for wine and fat for cheese manipulated to three levels providing measurable and controllable changes to objective product quality.

7.2 Qualitative Findings

The focus groups were conducted in order to confirm that price and country-of-origin were considered important extrinsic cues by Australian consumers shopping for these products. If so, then three countries needed to be identified as likely source countries for three contrasting levels of expected product quality. A judgment sample of part-time adult students undertaking evening courses was recruited to participate in the two groups of four and five participants each respectively. Prior to inclusion, group members were screened to ensure they purchased and consumed wine and cheese at least once per fortnight. Both group discussions provided consistent feedback and results.

Initial discussions focused around attributes (both intrinsic and extrinsic) respondents considered important when making a purchase in the two product categories. A list of unprompted attributes shows that price and country of origin were identified as amongst the most highly rated cues in terms of their importance. A summary of attributes based on group consensus is provided in Tables 1 and 2. Data from the focus groups relevant to the types of extrinsic cues and their importance to the purchase decision are largely consistent with the literature. Price and country of origin were consistently cited, supporting their choice as extrinsic cues for the two products selected (Jover et al., 2004; Schifferstein, 1996). Groups were similar in their opinion of the importance of price when considering both wine and cheese. However, there was strong contrast in their views relating to the importance of country of origin between the two products. While respondents in both groups believed country of origin to be highly important when considering a chardonnay, few in group one thought it was likely to make much difference to the quality of cheese. These contradictory results may be due to limitations imposed from the small sample size, or it may be that buying cheese is considered a much lower involvement purchase, since the literature shows that COO effect can be diminished in these circumstances (Piron, 2000). Based on these results, further testing of price and COO as extrinsic cues affecting expected product quality was justified and cheese and chardonnay can be seen as suitable as products for exploring this influence.

Table 1 Important product attributes for chardonnay
(scores reached by group consensus)
Items scored 0 – 10 Where '0' is not at all important and '10' is very important

Attributes listed	Ratings Group 1	Ratings Group 2
Brand	6	9
Country of origin	8	8
Product information on label	3	Not given
Label (artwork)	Not given	9
Price	9	8
Purpose of purchase (situation)	8	7
Rarity	Not given	3
Region	4	Not given
Taste	10	3

Table 2 Important product attributes for cheese
(scores reached by group consensus)
Items scored 0 – 10 Where '0' is not at all important and '10' is very important

Attributes listed	Ratings Group 1	Ratings Group 2
Purpose (situation)	5	Not given
Price	9	8
Taste	10	6
Texture	10	9
Brand	3	3
Country of Origin	2	10
Appearance	9	Not given
Packaging	Not given	9
Rarity	Not given	8

Having established country of origin as an important consideration, dialogue then progressed to potential source countries. Motivating respondents to discuss foreign products in these categories was initially difficult, with marked evidence of consumer ethnocentrism in relation to purchases of foreign wines. Participants voiced very strong support for local wine and local wine producers in particular. Consumers consistently remarked that they purchased only Australian wines and usually only Australian cheese, and consequently had little knowledge or experience to drive their expectations for products from other countries. Further, most participants had little desire to enhance their knowledge, with one respondent making the comment that he felt 'disloyal' to Australian producers even considering the purchase of a foreign wine. To overcome this prejudice, respondents were asked to consider a specific shopping scenario where Australian products were not available for purchase and only foreign products could be considered. Once respondents could consider a foreign offering in a 'guilt free' situation, many countries were put forward for discussion (again unprompted). France was cited most consistently as the likely source country for the highest quality chardonnay and cheese. This result is not surprising given France's reputation for producing fine wines and gourmet cuisine. There was considerable debate and disagreement amongst respondents deliberating where average and low quality products may be produced. Countries not known for producing diary products were listed as sources of poor quality cheese, e.g. China. Respondents found it hard to even a conjure an image for South American countries such as Chile and Argentina and used what very little knowledge they possessed to fill the gaps (Han, 1989). As many believed these countries to be very poor (third world) they seemed to make a link between this perception of extensive poverty and low quality in all things (Chao, 2001). However, countering these opinions were individuals believing that Chile would produce good wines, as they had 'read about them and heard they were good'.

This increased level of subjective knowledge supported higher quality expectations for wine, but not for cheese. It was generally believed that European countries made good cheese and assumed that any tropical or Asian country would make poor cheese and wine. Opinions relating to Canada and the USA ranged from an expectation that anything produced in those countries would at least be 'average' in quality due to their industrialized status (Chao, 2001), to an expectation that quality would be very low because everything they make is perceived to be 'mass produced'. While that belief is positive for manufactured goods, it has a negative impact on perceptions of food and wine products. There also seemed to be a reasonable level of concern regarding pollution, pesticide levels and genetic modification of food in these countries and this carried over to diminished expectations of both quality and product safety (Tse, 1999). Countries suggested by respondents, and their belief in respective quality levels for each product, are shown in Table 3. Summarized comments from group members illustrate feelings and perceptions regarding the price and country of origin are shown in Table 4.

Table 3 Countries suggested by participants and their perceived quality

Countries	Chardonnay	Camembert
Highest Quality	France, Germany	UK, France, Holland, Denmark, NZ
Average Quality	Italy, Spain, South Africa, USA	NZ, USA, Canada, UK,
Lowest Quality	Canada, South Africa, UK, China, Chile	Argentina, China, Greece, Argentina

Table 4 Comments regarding price and potential source countries for wine and cheese

Price	Source countries
➢ You only get what you pay for. ➢ When you can't take a risk, pay more, it's better than being embarrassed. ➢ I think you can still buy some good wines that are reasonable; price is not always that reliable. ➢ I wouldn't take something cheap to a party; it might not be any good, plus people would think I'm cheap. ➢ Price is the most important – if I couldn't buy Australian wine I would only look at price. ➢ I don't even buy cheap wine for home – what's the point of drinking bad wine? ➢ I don't know a lot about wine, so I'd be afraid to buy a cheap one. ➢ Sometimes prices are misleading. ➢ I hate being 'ripped off' – sometimes wines just aren't worth the price, I can't taste the difference anyways.	➢ All Europeans make good cheese, don't they? ➢ Asians don't make cheese do they? They don't have any cows! ➢ The Kiwis (New Zealanders) make good cheese; at least you'd know it was safe. ➢ I don't think they would make good cheese in South America, it's too hot isn't it? ➢ I've never had French wine, but you'd have to expect it would be good. ➢ I think the South Americans would make OK wine, but not the Canadians. ➢ I don't know anything about South America except they're all poor. ➢ Anything from France would at least make you look like you spent money. ➢ Isn't everything genetically modified in the States? That can't be good. ➢ They make lots of wine in Chile, it must be OK. I've been reading about it.

Ultimately, France, the United States and Chile were determined by focus group respondents to represent source countries of three distinctly different levels of product quality where France was expected to product the highest quality chardonnay, the United States an average quality product and Chile a poorer quality wine. For camembert, France was again cited as

the most likely to produce high quality, Canada average quality and Argentina poor quality respectively.

Following the discussion of important product attributes and wine/cheese producing countries, participants were asked to sample chardonnay from four different countries. When unmasked samples were tasted, the country of origin and an assigned price were revealed and participants were asked to rate the sample from '0' to '10' (0 = poor quality and 10 = excellent quality). Respondents then tasted the same products a second time, but the samples were presented in a different order and unmarked. The objective of this informal taste test was to explore the influence of price and COO on sensory perceptions and also to determine if respondents would be consistent in their rating of the samples provided across both tests. It was not the intention of the taste tests to provide empirical evidence, but rather to explore the stated areas of this stage of the research. For this purpose the data is very useful; participants reported a marked difference in their perceptions of quality between the samples tested, suggesting that extrinsic cues had influenced their perceptions. All wines purchased were of almost equal value (approximately $10 AUS); however the actual variance in their objective quality is unknown, as the bottles were not opened prior to the tasting.

Table 5 Product ratings from taste tests - Chardonnay

Countries	Mean score COO and price revealed	Mean score tasted blind	Variance in mean scores
Chile - $7	6.3	6.1	-0.2
France - $53	3.7	2.9	-0.8
NZ - $12	5.1	5.9	0.8
USA - $22	3.2	4.4	1.2

7.4 Conjoint analysis pilot study

Using a 3 (COO) x 3 (price) x 3 (fat/acid levels) design, orthoplan procedure, an orthogonal design was developed and translated into a self-administered questionnaire based on nine individual product profiles and the addition of two 'hold out' profiles (for each product) to be completed by respondents first as a 'warm up' exercise as recommended by previous researchers (Louviere, 1988b). Table 6 illustrates the cues and levels used in the full profile conjoint analysis plan. Each profile was assessed by respondents using a 10 point scale anchored with 'highly undesirable' represented by the lowest score and 'highly desirable' represented by the highest score. After rating each profile using this scale, respondents indicated whether or not they would consider purchasing the chardonnay or camembert as described.

Table 6 Specification of product attributes and levels

Attribute	Cue type	Levels wine	Levels camembert
Country of origin	extrinsic	France USA Chile	France Canada Argentina
Price	extrinsic	$39.50 $14.00 $ 6.00	$8.00 $5.00 $3.00
Acid/Fat	intrinsic	Average (6.9 g/L) Above average (7.4 g/L) High (7.9 g/L)	Triple cream Full cream 50% reduced fat

7.5 Measures of knowledge and self-confidence

An eight-item, nine-point Likert scale developed by (Flynn & Goldsmith, 1999) to specifically measure subjective knowledge in a variety of survey applications was adapted for this study. Scale items reflect (as examples) the respondent's self assessed ability to discriminate between different product offerings in a shop, to understand the expected impact of price on quality in relation to the product category being evaluated and their own level of expertise as compared to their friends and peers. To measure objective knowledge, fourteen multiple-choice questions specific to wine and cheese were compiled for both chardonnay and camembert, using the advice of industry experts. If respondents did not know the correct answer for each question, they were provided with the option of responding 'don't know'. Respondent self-confidence was measured using a ten item, nine point Likert scale developed by (Day & Hamblin, 1964). These scale items reflect a respondent's personal feelings concerning, and likely reactions to, potentially stressful social situations and also reflect their level of concern regarding the opinions of others in those situations. An important distinction was made between using a scale that measured personal self-confidence and those that have been developed to measure self-confidence in relation to product choice. As the research was seeking to investigate the impact of self-confidence in terms of its ability to moderate consumers' belief in their own judgment or sensory perceptions, scales oriented towards confidence specifically in relation to purchasing decisions were not considered appropriate. A sample of 238 adult students undertaking evening classes at the city campus of TAFE SA was recruited to participate in the conjoint analysis pilot survey.

8. Pilot study preliminary Results

The results illustrate that for chardonnay, both price and country of origin were found to be more influential in affecting quality expectations than described acidity (Table 7). While correctly assessing which levels of acidity are less desirable, the intrinsic cue was not believed by respondents to be as important as the extrinsic cues provided in determining expected quality. France was clearly believed to provide the most desirable chardonnay, but interestingly, little difference in opinion exists between wine from the USA and Chile. This result is surprising given that the USA, as an industrialized nation, should have been believed to produce higher quality. This outcome may be a reflection of concern voiced in the focus groups regarding perception of high pesticide levels and genetic modifications associated with food products from the USA. The low esteem placed on the Chilean product, on the other hand, is in line with expectations given the responses recorded in the focus groups towards products from South America. The results relating to wine price levels are in line with the literature, in that a particularly low price is likely to be associated with correspondingly low quality. The relatively low score for the highest price given may be an indication of unwillingness to pay this amount for a bottle of chardonnay (particularly from the USA or Chile), irrespective of expected quality, resulting in the mid priced option being deemed the most attractive by respondents.

As with wine, COO was considered the most important attribute when assessing cheese quality; however, respondents acknowledged fat as more important than price in forming their opinions (Table 8). In line with previous research relating to desirable food attributes, respondents considered the highest fat content to be the least desired. This is despite the fact that higher fat results in cheese that is creamier in texture (enhanced mouth feel) and generally better flavored than low fat cheeses. This suggests a social desirability bias where high levels of fat in any food may be considered undesirable regardless of its actual positive association with greater overall quality in terms of taste. In this test the importance given to price is relatively low; perhaps because respondents perceived little difference in financial sacrifice

between the levels described thus diminishing the influence of price overall. Tables 7 and 8 show the individual utilities of each attribute at the specified levels with an averaged importance for the attribute overall illustrating its contribution towards the final expectation of quality.

Table 7 Averaged importance and utilities for chardonnay attributes

COO		Price		Acidity	
Chile	- 0.34	$ 6.00	- 0.54	Average	0.36
USA	- 0.31	$14.00	0.32	Above Average	0.03
France	0.65	$39.00	0.21	High	- 0.39
Averaged Importance	36.29		31.44		27.42
Kendall's tau = 0.855	Sig. = .0001	Pearson's R = 0.982		Sig. = .0000	

Table 8 Averaged importance and utilities for camembert attributes

COO		Price		Fat Level	
Argentina	- 0.36	$ 3.00	- 0.11	50% reduced fat	0.04
Canada	- 0.06	$ 5.00	0.04	Full cream	0.14
France	0.42	$ 8.00	0.07	Triple cream	- 0.18
Averaged Importance	60.55		13.96		25.49
Kendall's tau = 0.855	Sig. = .0001		Pearson's R = 0.985	Sig. = .0000	

The reliance on extrinsic cues is not surprising given that the general level of objective knowledge amongst the group is very low. Our data shows that respondents achieved a mean score of only 3.05 correct answers of the 14 asked in the objective knowledge test for wine, with 98% of respondents scoring 7 correct answers or less. Results from the objective knowledge test for cheese were similar, with an average of only 3.42 correct answers in that test and 91% of respondents scoring 7 correct answers or less. The scores for subjective knowledge (Table 9) suggest that while respondents clearly did not see themselves as product 'experts' in most cases (for either product), the corresponding scores for objective product knowledge are considerably lower than even the rather modest self assessed levels. These low levels of knowledge (both objective and subjective) are likely to be important contributing factors to the demonstrated reliance on extrinsic cues and subsequent discounting of intrinsic cues, irrespective of their impact on objective product quality. In contrast self confidence scores indicate that, generally, respondents exhibited a reasonably high level of self confidence. Hence, the extrinsic cues provided are less likely to have been found intimidating or lead to a diminished belief in personal opinions.

Table 9 Equivalent mean scores for knowledge and self confidence, where 0 equals the lowest score and 9 equals the highest score attained.

	Mean	Std Dev
Subjective knowledge chardonnay	4.17	1.69
Objective knowledge chardonnay	1.96	1.36
Subjective knowledge camembert	4.16	1.76
Objective knowledge camembert	2.20	1.82
Self confidence	6.10	1.14
N = 238		

Scales used for subjective knowledge and self-confidence were tested for reliability and exhibited Cronbach Alphas of 0.7 or higher, thus confirming their suitability for further analysis. The analysis represents preliminary findings only. The primary objective at this stage of the study was to test the suitability of the measures developed to quantify objective and subjective knowledge and self-confidence, and also the ability of the intrinsic and extrinsic attributes selected to influence product quality expectations.

9. Conclusions and directions for future research

These preliminary results show that the focus group findings are remarkably consistent with conjoint analysis results and that that the direction and magnitude of the influence of the main attributes are predicted by the literature cited. The results of the conjoint analysis, therefore, confirm the qualitative research findings. The results also show that objective knowledge of respondents, in particular, is much lower than anticipated. This suggests that respondents may not be able to evaluate intrinsic cues based on high levels of objective knowledge and therefore must resort to extrinsic cues requiring less specific knowledge, such as price and country-of-origin as indicators of quality. Moreover, comparatively high levels of self confidence would indicate that opinions of quality, however they may be derived, are likely to be defended. However, the information or knowledge used to form this opinion or expectation may be flawed and lead to an inaccurate assessment.

To address the questions posed earlier, the next stage of the study will be to conduct taste test experiments where the same product profiles used in the conjoint analysis are used for sensory evaluations. In that phase of the research respondents will provide their assessment of quality as a result of their sensory experiences rather than their expectations. Analysis of this data can then be compared with the results of the conjoint study to determine the ability of this methodology to predict consumer opinions. Further, the respective moderating influences of knowledge and self-confidence can then be determined.

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The role of intrinsic (sensory) cues and the extrinsic cues of price and country of origin on food product evaluations

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Overview

1. Value of understanding how consumers use intrinsic and extrinsic cues to form opinions about products.
2. Moderating effects of knowledge and self confidence on cue usage.
3. Development of a conceptual framework.
4. Research Design.
5. Preliminary findings and direction of future research.

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Car	
Intrinsic	Extrinsic
▪ Engine size ▪ Body style ▪ Tires ▪ Seating	▪ Brand ▪ Price ▪ COO ▪ Warranty

Intrinsic and extrinsic cues

- Consumers consider both intrinsic and extrinsic cues when forming opinions regarding quality.
- Extrinsic cues can be very powerful in determining consumer expectations and opinions of quality.
  - Consumers are not always accurate in judging quality (even post-trial).
- Therefore, the over-riding persuasion of intrinsic cues over extrinsic cues cannot be assumed.

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Consumer Knowledge and self confidence

- Use of cues is moderated by 'knowledge'.
  - Objective knowledge (true expertise) is based on the ability to accurately interpret both types of product cues.
  - Subjective knowledge is founded on product usage rates and category or brand familiarity. (often biased).
- Self-confidence effects an individual's belief in their ability to make an independent decision.
  - Self-confident people display strength and conviction in their attitudes towards products.
  - Consumers lacking self-confidence are more likely to rely on extrinsic cues.
- Issues with generalizing existing data:
  - Studies frequently use both definitions interchangeably.
  - Measurement instruments / methodology often inconsistent.
  - Consumer self-confidence not measured reliably in conjunction with knowledge.

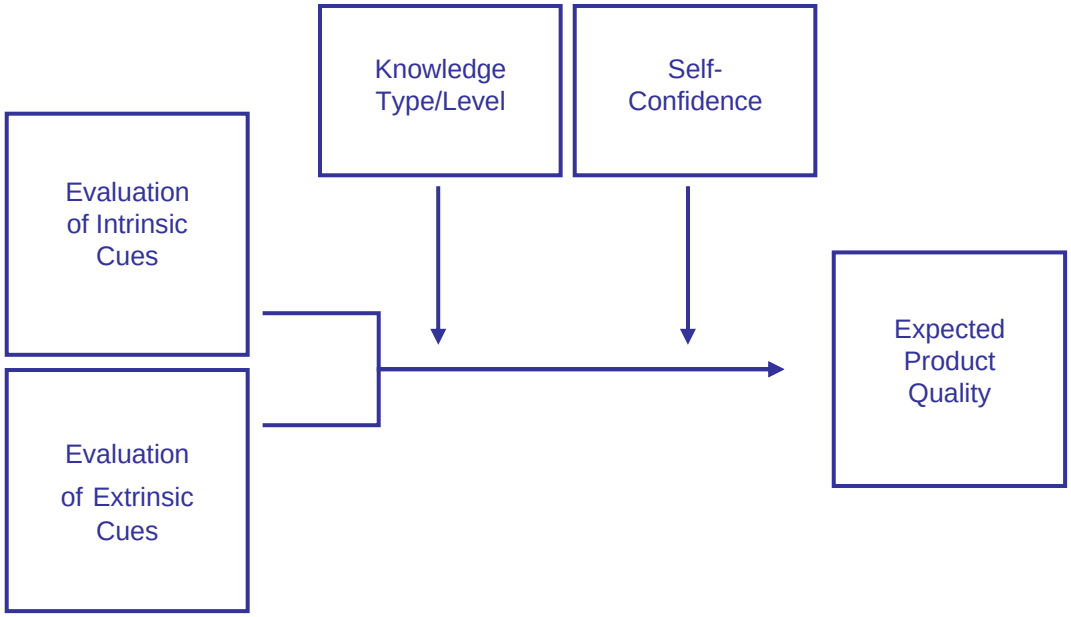
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Extrinsic cues: country of origin and price

- Country image (CI) profiles are akin to a 'brand profile' for individual countries based on the sum of their impressions and associations with that country.
  - Product / country / market specific.
  - Strongest when product and country image are congruent.
- Consumers consider price to be an accurate 'predictor' of quality across a wide range of product categories.
  - Strong belief in a natural ordering of products in terms of quality according to a price scale.

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Towards a conceptual framework



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Research design

- Stage 1: Focus groups used to confirm attributes, products and congruent countries.
  - Two products (wine and cheese)
  - Three countries (representing three quality levels) per product
- Stage 2: Conjoint analysis pilot study.
  - Sample of 238 (night students)
  - Analysis will determine the attribute partworths and trade-offs occurring between given intrinsic and extrinsic variables.
  - Data will quantify product quality expectations for comparison with quality perceptions (stage 3).

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Qualitative findings - attributes

Important product attributes for chardonnay

Items scored 0 – 10

Attributes listed	Ratings Group 1	Ratings Group 2
Brand	6	9
Country of origin	8	8
Information on label	3	Not given
Label (artwork)	Not given	9
Price	9	8
Purpose (situation)	8	7
Rarity	Not given	3
Region	4	Not given
Taste	10	3

Important product attributes for cheese

Items scored 0 – 10

Attributes listed	Ratings Group 1	Ratings Group 2
Brand	3	3
Country of Origin	2	10
Appearance	9	Not given
Packaging	Not given	9
Price	9	8
Purpose (situation)	5	Not given
Rarity	Not given	8
Texture	10	9
Taste	10	6

- All product attributes provided by respondents unprompted.

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Quality perceptions - countries

- All Europeans make good cheese, don't they?
- Asians don't make cheese do they? They don't have any cows!
- The Kiwis (New Zealanders) make good cheese; at least you'd know it was safe.
- I don't think they would make good cheese in South America, it's too hot isn't it?
- I've never had French wine, but you'd have to expect it would be good.
- I think the South Americans would make OK wine, but not the Canadians.
- I don't know anything about South America except they're all poor.
- Anything from France would at least make you look like you spent money.
- Isn't everything genetically modified in the States? That can't be good.
- They make lots of wine in Chile, it must be OK. I've been reading about it.

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Quality perceptions - price

- You only get what you pay for.
- When you can't take a risk, pay more, it's better than being embarrassed.
- I think you can still buy some good wines that are reasonable; price is not always that reliable.
- I wouldn't take something cheap to a party; it might not be any good, plus people would think I'm cheap.
- Price is the most important – if I couldn't buy Australian wine I would only look at price.
- I don't even buy cheap wine for home – what's the point of drinking bad wine?
- I don't know a lot about wine, so I'd be afraid to buy a cheap one.
- I hate being 'ripped off' – sometimes wines just aren't worth the price, I can't taste the difference anyways.

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Conjoint design

Attribute	Cue type	Levels wine	Levels camembert
Country of origin	extrinsic	France USA Chile	France Canada Argentina
Price	extrinsic	$39.50 $14.00 $ 6.00	$8.00 $5.00 $3.00
Acid/Fat	intrinsic	Average (6.9 g/L) Above average (7.4 g/L) High (7.9 g/L)	Triple cream Full cream 50% reduced fat

- Each profile was assessed by respondents using a 10 point scale anchored with 'highly undesirable' (lowest score) and 'highly desirable' (highest score).

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Preliminary results: chardonnay

COO		Price		Acidity	
Chile	- 0.34	$ 6.00	- 0.54	Average	0.36
USA	- 0.31	$14.00	0.32	Above Average	0.03
France	0.65	$39.00	0.21	High	- 0.39
Averaged Importance	36.29		31.44		27.42
Kendall's tau = 0.855		Sig. = .0001		Pearson's R = 0.982 Sig. = .0000	

- For chardonnay, both price and country of origin were found to be more influential in affecting quality expectations than described acidity.

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Preliminary results: camembert

COO		Price		Fat Level	
Argentina	- 0.36	$ 3.00	- 0.11	50% reduced fat	0.04
Canada	- 0.06	$ 5.00	0.04	Full cream	0.14
France	0.42	$ 8.00	0.07	Triple cream	- 0.18
Averaged Importance	60.55		13.96		25.49
Kendall's tau = 0.855		Sig. = .0001		Pearson's R = 0.985	Sig. = .0000

- As with wine, COO was considered the most important attribute when assessing cheese quality; however, respondents acknowledged fat as more important than price in forming their opinions.

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Knowledge and self confidence

Equivalent mean scores for knowledge and self confidence, where 0 equals the lowest score and 0 equals the highest score attained.		
	Mean	Std Dev
Subjective knowledge chardonnay	4.17	1.69
Objective knowledge chardonnay	1.96	1.36
Subjective knowledge camembert	4.16	1.76
Objective knowledge camembert	2.20	1.82
Self confidence	6.10	1.14
N = 238		

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Conclusions and further research

- Preliminary results show the focus group findings are consistent with conjoint analysis results and the literature.
  - With exception of the perceptions of wine sourced from Chile and the USA, where little difference in expected quality is noted.
- Objective knowledge of respondents is much lower than anticipated.
  - Respondents may not be able to evaluate intrinsic cues and resort to extrinsic cues requiring less specific knowledge.
- Comparatively high levels of self confidence suggest that opinions of quality are likely to be defended.
  - However, the knowledge used to form this opinion or expectation may lead to an inaccurate assessment.
- Taste testing experiments will be conducted to compare sensory evaluation with conjoint findings.

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Contribution of research

- Marketing practitioners need to understand which product attributes are relied upon by consumers to form opinions regarding quality.
  - Reduces risk of emphasizing cues not important, noticed or understood.
  - Marketing resources can therefore be used more effectively.
- Tests the ability of conjoint analysis to predict quality assessment.

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