

## Investigating the simultaneous influence of

### intrinsic and extrinsic cues:

## An examination of the interaction between

country of origin, price and selected sensory variables

<sup>By</sup> Roberta Veale

A thesis submitted in fulfillment of

the requirements for the degree of

Doctor of Philosophy

(Commerce)

July 2007

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying, subject to the provisions of the Copyright Act 1968.

#### 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.

i

#### 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

### Table of Contents

| Chapter  |  | page |
|----------|--|------|
| ABSTRACT |  | i    |
|          | AKNOWLEDGEMENTS  | ii   |
|          | TABLE OF CONTENTS  | iii  |
|          | LIST OF TABLES   | xi   |
|          | List OF FIGURES  | xxi  |
| 1        | INTRODUCTION   | 1    |
| 1.1      | BACKGROUND TO THE RESEARCH                               | 1    |
| 1.2      | RESEARCH JUSTIFICATION                                   | 3    |
| 1.3      | OBJECTIVES AND CONTRIBUTION OF RESEARCH                  | 5    |
| 1.4      | THESIS OUTLINE   | 6    |
| 1.5      | SUMMARY  | 8    |
| 2        | LITERATURE REVIEW  | 9    |
| 2.1      | CONSUMER USE OF INTRINSIC AND EXTRINSIC CUES             | 9    |
| 2.1.1    | Extrinsic cues and sensory perceptions                   | 11   |
| 2.2      | COO AS AN EXTRINSIC CUE                                  | 12   |
| 2.2.1    | Introduction to the COO construct                        | 12   |
| 2.2.2    | How country images are developed                         | 15   |
| 2.2.3    | Building country equity through international brands     | 17   |
| 2.2.4    | Consumer bias against products from developing countries | 18   |
| 2.2.5    | The challenge of marketing 'hybrid' products             | 21   |
| 2.2.6    | Effect of market specific attributes on use of CI        | 24   |
| 2.2.7    | Effect of CI on commercial customers                     | 28   |
| 2.2.8    | Effect of consumer knowledge on use of CI                | 29   |

| 2.2.9   | COO summary  | 30 |
|---------|--|----|
| 2.3     | PRICE AS AN EXTRINSIC CUE                            | 35 |
| 2.3.1   | The role of price in consumer buying decision making | 35 |
| 2.3.2   | Effect of consumer knowledge on use of price         | 37 |
| 2.3.3   | Price summary  | 37 |
| 2.4     | CONSUMER EXPERTISE AND SELF-CONFIDENCE               | 38 |
| 2.4.1   | Two dimensions of knowledge                          | 38 |
| 2.4.1.1 | Objective knowledge                                  | 40 |
| 2.4.1.2 | 2 Subjective knowledge                               | 42 |
| 2.4.2   | Consumer self-confidence                             | 44 |
| 2.4.3   | Consumer knowledge and self-confidence summary       | 45 |
| 2.5     | GAPS IN THE EXISTING LITERATURE                      | 46 |
| 2.5.1   | Towards a conceptual framework                       | 47 |
| 2.6     | SUMMARY  | 48 |
| 3       | CAUSAL MODEL AND HYPOTHESIS DEVELOPMENT              | 49 |
| 3.1     | INTRODUCTION   | 49 |
| 3.2     | RESEARCH FRAMEWORK                                   | 49 |
| 3.2.1   | Testing the power of extrinsic cues                  | 49 |
| 3.2.2   | Testing the influence of consumer characteristics    | 50 |
| 3.2.3   | Use of sensory experiments                           | 51 |
| 3.2.4   | Suitability of conjoint analysis experimental design | 51 |
| 3.2.4.1 | Formulating a conjoint analysis design               | 52 |
| 3.2.5   | Expected quality vs perceived quality                | 54 |
| 3.2.6   | Development of causal model and hypotheses           | 54 |
| 3.2.6.1 | Causal model and hypotheses                          | 54 |

| 3.2.6.2 | P. Hypotheses                              | 57 |
|---------|--|----|
| 3.2.7   | Research paradigm                          | 58 |
| 3.2.8   | Justification for the model                | 59 |
| 3.2.9   | Stimuli used                               | 60 |
| 3.2.9.1 | Wine and cheese                            | 60 |
| 3.2.9.2 | COO and price                              | 61 |
| 3.2.9.3 | Hypotheses summary                         | 62 |
| 3.3     | OVERVIEW OF RESEARCH DESIGN                | 64 |
| 3.4     | STAGE 1 – QUALITATIVE STUDY                | 66 |
| 3.4.1   | Sampling                                   | 66 |
| 3.4.2   | Data collection                            | 67 |
| 3.4.3   | Results                                    | 68 |
| 3.4.3.1 | Taste testing                              | 72 |
| 3.4.3.2 | Country rankings (survey of students)      | 73 |
| 3.4.4   | Qualitative data analysis summary          | 75 |
| 3.5     | SUMMARY                                    | 76 |
| 4       | QUANTITATIVE METHODOLOGY                   | 77 |
| 4.1     | INTRODUCTION                               | 77 |
| 4.2     | SAMPLING METHODS                           | 77 |
| 4.3     | DATA COLLECTION INSTRUMENTS                | 78 |
| 4.3.1   | Use of full profile conjoint analysis      | 78 |
| 4.3.2   | Orthogonal fractional factorial design     | 79 |
| 4.3.3   | Training respondents                       | 80 |
| 4.4     | MEASURES USED FOR CONSUMER CHARACTERISTICS | 80 |
| 4.4.1   | Subjective knowledge                       | 80 |

| 4.4.2 | Objective knowledge                              | 81  |
|-------|--|-----|
| 4.4.3 | Self-confidence                                  | 86  |
| 4.5   | SURVEY DATA ANALYSIS                             | 87  |
| 4.5.1 | Correlations and factor analysis                 | 88  |
| 4.5.2 | Objective knowledge                              | 88  |
| 4.5.3 | Conjoint analysis                                | 89  |
| 4.6   | DETERMINING ATTRIBUTE IMPORTANCE                 | 89  |
| 4.6.1 | Non-parametric tests                             | 91  |
| 4.7   | VALIDITY OF INSTRUMENTS                          | 92  |
| 4.7.1 | Normality testing                                | 92  |
| 4.7.2 | Subjective knowledge and self-confidence scale   | 92  |
| 4.7.3 | Objective knowledge questions                    | 93  |
| 4.7.4 | Conjoint analysis                                | 93  |
| 4.8   | SUMMARY  | 94  |
| 5     | QUANTITATIVE CONJOINT PILOT STUDY                | 95  |
| 5.1   | INTRODUCTION                                     | 95  |
| 5.2   | CONJOINT ANALYSIS SURVEY (PILOT)                 | 95  |
| 5.2.1 | Sample (pilot)                                   | 95  |
| 5.2.2 | Data collection instrument (pilot questionnaire) | 96  |
| 5.2.3 | Intrinsic and extrinsic cues - wine              | 97  |
| 5.2.4 | Intrinsic and extrinsic cues - cheese            | 98  |
| 5.2.5 | Questionnaire pre-test                           | 101 |
| 5.3   | VALIDATION OF RESEARCH INSTRUMENTS (PILOT)       | 103 |
| 5.3.1 | Subjective knowledge and self-confidence scales  | 103 |
| 5.3.2 | Objective knowledge tests (pilot)                | 109 |

| 5.3.3 | Conjoint analysis fractional factorial design (pilot) | 110 |
|-------|---|-----|
| 5.4   | RESULTS AND DISCUSSION (PILOT)                        | 110 |
| 5.4.1 | Sample (pilot)  | 110 |
| 5.4.2 | Conjoint analysis results (pilot)                     | 113 |
| 5.4.3 | Results knowledge and self-confidence (pilot)         | 115 |
| 5.5   | PILOT STUDY RESULTS SUMMARY                           | 116 |
| 5.5.1 | Needed changes to questionnaire (pilot)               | 116 |
| 6     | SENSORY EXPERIMENT METHODOLOGY                        | 118 |
| 6.1   | INTRODUCTION  | 118 |
| 6.2   | SAMPLE (SENSORY)                                      | 118 |
| 6.3   | DATA COLLECTION INSTRUMENT (SENSORY)                  | 119 |
| 6.3.1 | Intrinsic and extrinsic cues – wine                   | 120 |
| 6.3.2 | Triangle and paired sample tests                      | 120 |
| 6.3.3 | Intrinsic and extrinsic cues – cheese                 | 123 |
| 6.3.4 | Change of rating scale 'anchors'                      | 125 |
| 6.3.5 | Knowledge and self-confidence                         | 126 |
| 6.3.6 | Changes to questionnaire layout and format            | 127 |
| 6.3.7 | Group briefings                                       | 127 |
| 6.3.8 | Conducting the experiment                             | 129 |
| 6.4   | VALIDATION OF RESEARCH INSTRUMENTS (SENSORY)          | 132 |
| 6.4.1 | Subjective knowledge and self-confidence scales       | 132 |
| 6.4.2 | Objective knowledge tests                             | 137 |
| 6.4.3 | Conjoint analysis fractional factorial design         | 137 |
| 6.5   | SUMMARY   | 138 |
| 7     | SENSORY DATA ANALYSIS RESULTS                         | 139 |

| 7.1     | INTRODUCTION  | 139 |
|---------|---|-----|
| 7.2     | SAMPLE PROFILE                                      | 139 |
| 7.3     | CONJOINT ANALYSIS RESULTS (SENSORY)                 | 140 |
| 7.3.1   | Chardonnay  | 140 |
| 7.3.1.1 | Chardonnay profiles and likelihood of purchase      | 141 |
| 7.3.1.2 | Knowledge and self-confidence levels                | 142 |
| 7.3.1.3 | Influence of knowledge and self-confidence          | 143 |
| 7.3.1.4 | Objective knowledge segments (chardonnay)           | 147 |
| 7.3.1.5 | Subjective knowledge segments (chardonnay)          | 148 |
| 7.3.1.6 | Self-confidence segments (chardonnay)               | 150 |
| 7.3.1.7 | Chardonnay summary                                  | 152 |
| 7.3.2   | Brie  | 153 |
| 7.3.2.1 | Brie profiles and the likelihood of purchase        | 155 |
| 7.3.2.2 | Knowledge levels brie                               | 155 |
| 7.3.2.3 | Influence of knowledge and self-confidence (brie)   | 156 |
| 7.3.2.4 | Objective knowledge segments (brie)                 | 159 |
| 7.3.2.5 | Brie subjective knowledge segments                  | 162 |
| 7.3.2.6 | Brie self-confidence segments (sensory)             | 164 |
| 7.3.2.7 | Summary of test results Brie                        | 165 |
| 7.4     | SENSORY ANALYSIS SUMMARY                            | 166 |
| 8       | CONJOINT ANALYSIS SURVEY AND RESULTS FOR CHARDONNAY | 168 |
| 8.1     | INTRODUCTION  | 168 |
| 8.2     | METHODOLOGY   | 168 |
| 8.2.1   | Sample (conjoint survey)                            | 168 |
| 8.2.2   | Data collection instrument (conjoint survey)        | 170 |

| 10      | CONCLUSIONS, LIMITATIONS AND IMPLICATIONS         | 209 |
|---------|---|-----|
| 9.3     | BRIE SUMMARY                                      | 206 |
| 9.2.5   | Self-confidence segments (brie)                   | 203 |
| 9.2.4   | Subjective knowledge segments (brie)              | 200 |
| 9.2.3   | Objective knowledge segments (brie)               | 198 |
| 9.2.2.1 | Influence of knowledge and self-confidence (brie) | 195 |
| 9.2.2   | Knowledge levels brie                             | 194 |
| 9.2.1   | Brie profiles and likelihood of purchase          | 194 |
| 9.2     | BRIE CONJOINT ANALYSIS RESULTS                    | 192 |
| 9.1     | INTRODUCTION                                      | 192 |
| 9       | CONJOINT ANALYSIS SURVEY RESULTS FOR BRIE         | 192 |
| 8.5     | CHARDONNAY SUMMARY                                | 189 |
| 8.4.7   | Self-confidence segments (chardonnay)             | 187 |
| 8.4.6   | Subjective knowledge segments (chardonnay)        | 184 |
| 8.4.5   | Objective knowledge segments (chardonnay)         | 181 |
| 8.4.4.1 | Influence of knowledge and self-confidence        | 178 |
| 8.4.4   | Knowledge and self-confidence levels              | 177 |
| 8.4.3   | Chardonnay profiles and likelihood of purchase    | 176 |
| 8.4.2   | Chardonnay conjoint analysis results              | 174 |
| 8.4.1   | Sample profile                                    | 173 |
| 8.4     | CONJOINT SURVEY DATA ANALYSIS RESULTS             | 173 |
| 8.3.3   | Conjoint analysis fractional factorial design     | 173 |
| 8.3.2   | Objective knowledge tests                         | 172 |
| 8.3.1   | Subjective knowledge and self-confidence scales   | 171 |
| 8.3     | VALIDATION OF RESEARCH INSTRUMENTS (SURVEY)       | 171 |

| 10.1   | INTRODUCTION   | 209  |
|--|--|--|
| 10.2   | OVERVIEW OF THE RESEARCH AND FINDINGS  | 209  |
| 10.3   | CONTRIBUTION TO THE LITERATURE   | 213  |
| 10.3.1   | Consumer reliance on extrinsic cues: COO and price   | 214  |
| 10.3.2   | Knowledge and self-confidence  | 215  |
| 10.4   | IMPLICATIONS FOR MARKETERS   | 217  |
| 10.5   | LIMITATIONS  | 220  |
| 10.6   | DIRECTIONS FOR FUTURE RESEARCH   | 222  |
| 10.7   | SUMMARY  | 223  |
| 11   | REFERENCES   | 225  |
| 12   | APPENDICES   | 242  |
| 1  | FOCUS GROUP DISCUSSION GUIDE   | 242  |
|  |  |  |
| 2  | PILOT STUDY QUESTIONNAIRE  | 245  |
| 2<br>3   | PILOT STUDY QUESTIONNAIRE<br>NORMALITY ASSUMPTIONS AND TESTING   | 245<br>257   |
|  |  | -  |
| 3  | NORMALITY ASSUMPTIONS AND TESTING  | 257  |
| <b>3</b><br>3.1  | NORMALITY ASSUMPTIONS AND TESTING<br>ASSUMPTIONS FOR NORMALITY   | <b>257</b><br>258  |
| <b>3</b><br>3.1<br>3.2   | NORMALITY ASSUMPTIONS AND TESTING<br>ASSUMPTIONS FOR NORMALITY<br>PILOT STUDY DATA   | <b>257</b><br>258<br>259   |
| <b>3</b><br>3.1<br>3.2<br>3.3  | NORMALITY ASSUMPTIONS AND TESTING<br>ASSUMPTIONS FOR NORMALITY<br>PILOT STUDY DATA<br>SENSORY EXPERIMENT DATA  | <b>257</b><br>258<br>259<br>260  |
| <b>3</b><br>3.1<br>3.2<br>3.3<br>3.4   | NORMALITY ASSUMPTIONS AND TESTING<br>ASSUMPTIONS FOR NORMALITY<br>PILOT STUDY DATA<br>SENSORY EXPERIMENT DATA<br>CONJOINT SURVEY DATA  | <ul><li>257</li><li>258</li><li>259</li><li>260</li><li>261</li></ul>  |
| <ol> <li>3.1</li> <li>3.2</li> <li>3.3</li> <li>3.4</li> <li>4</li> </ol>                | NORMALITY ASSUMPTIONS AND TESTING<br>ASSUMPTIONS FOR NORMALITY<br>PILOT STUDY DATA<br>SENSORY EXPERIMENT DATA<br>CONJOINT SURVEY DATA<br>SCALE RELIABILITY AND VALIDITY  | <ul> <li>257</li> <li>258</li> <li>259</li> <li>260</li> <li>261</li> <li>262</li> </ul>                           |
| <ol> <li>3.1</li> <li>3.2</li> <li>3.3</li> <li>3.4</li> <li>4</li> <li>4.5</li> </ol>   | NORMALITY ASSUMPTIONS AND TESTING<br>ASSUMPTIONS FOR NORMALITY<br>PILOT STUDY DATA<br>SENSORY EXPERIMENT DATA<br>CONJOINT SURVEY DATA<br>SCALE RELIABILITY AND VALIDITY<br>RELIABILITY ANALYSIS FOR ALL SCALES                       | <ul> <li>257</li> <li>258</li> <li>259</li> <li>260</li> <li>261</li> <li>262</li> <li>263</li> </ul>              |
| <ul> <li>3.1</li> <li>3.2</li> <li>3.3</li> <li>3.4</li> <li>4.5</li> <li>4.6</li> </ul> | NORMALITY ASSUMPTIONS AND TESTING<br>ASSUMPTIONS FOR NORMALITY<br>PILOT STUDY DATA<br>SENSORY EXPERIMENT DATA<br>CONJOINT SURVEY DATA<br>SCALE RELIABILITY AND VALIDITY<br>RELIABILITY ANALYSIS FOR ALL SCALES<br>CONSTRUCT VALIDITY | <ul> <li>257</li> <li>258</li> <li>259</li> <li>260</li> <li>261</li> <li>262</li> <li>263</li> <li>264</li> </ul> |

| 4.6.4 | Self-confidence scale                  | 274 |
|-------|--|-----|
| 4.6.5 | Discriminant validity                  | 278 |
| 5     | INFORMATION PACK AND REGISTRATION FORM | 282 |
| 6     | TASTING REGISTRATION SPREADSHEET AND   |     |
|       | RESPONDENT CONFIRMATION NOTICE         | 285 |
| 6.1   | SPREADSHEET FOR REGISTRATIONS          | 286 |
| 6.2   | CONFIRMATION NOTICE                    | 287 |
| 7     | SENSORY EXPERIMENT QUESTIONNAIRE       | 288 |
| 8     | CORRELATION MATRICES (CHARDONNAY)      | 307 |
| 8.1   | SENSORY EXPERIMENT                     | 308 |
| 8.2   | CONJOINT SURVEY (CHARDONNAY)           | 314 |
| 9     | CORRELATION MATRICES (BRIE)            | 320 |
| 9.1   | SENSORY EXPERIMENT                     | 321 |
| 9.2   | CONJOINT SURVEY (BRIE)                 | 327 |
| 10    | INVITATIONS TO PARTICIPATE IN SURVEY   | 333 |
| 10.1  | ELECTRONIC INVITATION TO PARTICIPATE   | 334 |
| 10.2  | CLASS ROOM INVITATION TO PARTICIPATE   |     |
|       | (TRANSPARENCY SHOWN BY LECTURERS)      | 336 |
| 11    | CONJOINT SURVEY QUESTIONNAIRE          | 337 |

### List of Tables

| Table 3.1 Hypotheses tested  | 63  |
|--|-----|
| Table 3.2 Demographic profile of focus group participants                  | 67  |
| Table 3.3 Important product attributes for wine                            | 68  |
| Table 3.4 important product attributes for cheese                          | 69  |
| Table 3.5 Countries suggested by participants as indicators of quality for |     |
| wine and cheese  | 69  |
| Table 3.6 Taste tests - wine   | 72  |
| Table 3.7 Taste tests - cheese   | 73  |
| Table 3.8 Country rankings for chardonnay                                  | 74  |
| Table 3.9 Country rankings for camembert                                   | 75  |
| Table 4.1 Subjective knowledge scale items                                 | 81  |
| Table 4.2 Objective knowledge questions wine/chardonnay                    | 84  |
| Table 4.3 Objective knowledge questions cheese/camembert                   | 85  |
| Table 4.4 Self-confidence scale items                                      | 87  |
| Table 5.1 Specification of chardonnay attributes and levels                | 97  |
| Table 5.2 Fractional factorial design chardonnay                           | 97  |
| Table 5.3 Specification of camembert attributes and levels                 | 99  |
| Table 5.4 Fractional factorial design camembert                            | 99  |
| Table 5.5 Total variance explained (pre-test)                              | 101 |
| Table 5.6 Reliability coefficients of scales (pre-test)                    | 101 |
| Table 5.7 Summary of part worths for chardonnay (pre-test)                 | 102 |
| Table 5.8 Summary of part worths for camembert (pre-test)                  | 103 |
| Table 5.9 Conjoint analysis internal validity tests (pre-test)             | 103 |

| Table 5.10 Reliability coefficients of scales (pilot)                         | 104 |
|---|-----|
| Table 5.11 Construct reliability for subjective knowledge and self-confidence | 104 |
| Table 5.12 Subjective knowledge chardonnay (pilot)                            | 105 |
| Table 5.13 Subjective knowledge camembert (pilot)                             | 106 |
| Table 5.14 Self confidence factors (pilot)                                    | 107 |
| Table 5.15 Wilcoxon Signed Ranks Test – Self-confidence                       | 108 |
| Table 5.16 Conjoint analysis internal validity tests (pilot)                  | 110 |
| Table 5.17 Sample demographic profile   | 112 |
| Table 5.18 Summary of part worths for chardonnay (pilot)                      | 114 |
| Table 5.19 Summary of part worths for camembert (pilot)                       | 114 |
| Table 5.20 Equivalent mean scores for knowledge and self-confidence           | 115 |
| Table 6.1 Specification of chardonnay attributes and levels                   | 123 |
| Table 6.2 Fractional factorial design chardonnay                              | 123 |
| Table 6.3 Specification of brie attributes and levels                         | 124 |
| Table 6.4 Fractional factorial design brie                                    | 124 |
| Table 6.5 Reliability coefficients of scales (sensory)                        | 132 |
| Table 6.6 Construct reliability for scales (sensory)                          | 132 |
| Table 6.7 Self-confidence factors (sensory)                                   | 133 |
| Table 6.8 Reliability tests of self-confidence items (sensory)                | 134 |
| Table 6.9 Descriptive statistics self-confidence items (sensory)              | 135 |
| Table 6.10 Comparison of item groupings (sensory)                             | 135 |
| Table 6.11 Significance testing of average item scores                        | 136 |
| Table 6.12 Conjoint analysis internal validity tests (sensory)                | 137 |
| Table 7.1 Profile demographic profile (sensory)                               | 139 |
| Table 7.2 Summary of part worths and utilities chardonnay (sensory)           | 140 |

| Table 7.3 Average values per profile chardonnay (sensory)                      | 141  |
|--|------|
| Table 7.4 Average chardonnay profile values by purchase intentions             | 142  |
| Table 7.5 Mean scores for knowledge and self-confidence (sensory)              | 142  |
| Table 7.6 Spearman's rho – Average importance chardonnay                       | 143  |
| Table 7.7 Spearman's rho - Utilities chardonnay                                | 144  |
| Table 7.8 Quartile values for knowledge and self-confidence (chardonnay)       | 147  |
| Table 7.9 Comparison of part worths and utilities objective knowledge          | 147  |
| Table 7.10 Utility comparison between high and low objective knowledge groups  | 147  |
| Table 7.11 Comparison of part worths and utilities subjective knowledge        | 149  |
| Table 7.12 Utility comparison between high and low subjective knowledge groups | s150 |
| Table 7.13 Comparison of part worths and utilities self-confidence             | 152  |
| Table 7.14 Utility comparison between high and low self-confidence groups      | 152  |
| Table 7.15 Summary of part worths and utilities brie (sensory)                 | 154  |
| Table 7.16 Average values per profile brie (sensory)                           | 154  |
| Table 7.17 Average brie profile values by purchase intentions                  | 155  |
| Table 7.18 Mean scores for knowledge (brie)                                    | 156  |
| Table 7.19 Spearman's rho – Average importance brie                            | 157  |
| Table 7.20 Spearman's rho – Utilities brie                                     | 157  |
| Table 7.21 Quartile values for knowledge and self-confidence (brie)            | 158  |
| Table 7.22 Comparison of part worths and utilities brie – objective knowledge  | 161  |
| Table 7.23 Utility comparison between high and low objective knowledge groups  | 161  |
| Table 7.24 Comparison of part worths and utilities brie – subjective knowledge | 163  |
| Table 7.25 Utility comparison between high and low subjective knowledge groups | s163 |
| Table 7.26 Comparison of part worths and utilities brie - self-confidence      | 165  |
| Table 7.27 Utility comparison between high and low self-confidence groups      | 165  |

| Table 8.1 Reliability coefficients of scales (survey)                             | 171  |
|---|------|
| Table 8.2 Construct reliability for scales (survey)                               | 172  |
| Table 8.3 Conjoint analysis internal validity tests (survey)                      | 173  |
| Table 8.4 Profile demographic profile (survey)                                    | 173  |
| Table 8.5 Summary of part worths and utilities chardonnay                         | 175  |
| Table 8.6 Comparative average values per profile chardonnay                       | 176  |
| Table 8.7 Average chardonnay profile values by purchase intentions                | 177  |
| Table 8.8 Mean scores for knowledge and self-confidence (sensory and survey)      | 178  |
| Table 8.9 Mann-Whitney U test for comparison of knowledge and self-confidence     | 178  |
| Table 8.10 Spearman's rho - Average importance chardonnay                         | 179  |
| Table 8.11 Spearman's rho - Utilities chardonnay                                  | 180  |
| Table 8.12 Quartile values for knowledge and self-confidence (chardonnay)         | 181  |
| Table 8.13 Comparison of part worths and utilities objective knowledge chardonnay |      |
|   | 182  |
| Table 8.14 Utility comparison between high and low objective knowledge groups     | 182  |
| Table 8.15 Objective knowledge summary comparison of significant correlations     | 183  |
| Table 8.16 Comparison of part worths and utilities subjective knowledge           | 184  |
| Table 8.17 Utility comparison between high and low subjective knowledge groups    | s185 |
| Table 8.18 Subjective knowledge summary comparison of significant correlations    | 186  |
| Table 8.19 Comparison of part worths and utilities self-confidence                | 187  |
| Table 8.20 Utility comparison between high and low self-confidence groups         | 188  |
| Table 8.21 Self-confidence summary comparison of significant correlations         | 188  |
| Table 8.22 Hypotheses testing outcomes (chardonnay)                               | 191  |
| Table 9.1 Summary of part worths and utilities brie                               | 193  |
| Table 9.2 Comparative average values per profile brie (sensory and survey)        | 193  |

| Table 9.3 Average brie profile values by purchase intentions (survey)   | 194  |
|---|--|
| Table 9.4 Mean scores for knowledge (sensory and survey)  | 195  |
| Table 9.5 Mann-Whittney U test for comparison of knowledge between groups   | 195  |
| Table 9.6 Spearman's rho – Average attribute importance brie  | 196  |
| Table 9.7 Spearman's rho – Utilities brie   | 197  |
| Table 9.8 Quartile values for knowledge and self-confidence (chardonnay)  | 198  |
| Table 9.9 Comparison of part worths and utilities objective knowledge   | 198  |
| Table 9.10 Utility comparison between high and low objective knowledge groups   | 199  |
| Table 9.11 Objective knowledge summary comparison of significant correlations   | s (brie)   |
|   | 200  |
| Table 9.12 Comparison of part worths and utilities subjective knowledge   | 201  |
| Table 9.13 Comparison between high and low subjective knowledge groups  | 201  |
| Table 9.14 Subjective knowledge summary comparison of significant correlation   | s (brie)   |
|   |  |
|   | 203  |
| Table 9.15 Self-confidence summary comparison of significant correlations (brie)  |  |
| Table 9.15 Self-confidence summary comparison of significant correlations (brie)<br>Table 9.16 Utility comparison between high and low self-confidence groups   |  |
|   | 204  |
| Table 9.16 Utility comparison between high and low self-confidence groups   | 204<br>205   |
| Table 9.16 Utility comparison between high and low self-confidence groupsTable 9.17 Hypotheses testing outcomes (brie)  | 204<br>205   |
| Table 9.16 Utility comparison between high and low self-confidence groups         Table 9.17 Hypotheses testing outcomes (brie)         TABLES FROM APPENDICES  | 204<br>205<br>205                                    |
| <ul> <li>Table 9.16 Utility comparison between high and low self-confidence groups</li> <li>Table 9.17 Hypotheses testing outcomes (brie)</li> <li>TABLES FROM APPENDICES</li> <li>Table A 1 Normality tests (pilot)</li> </ul>   | 204<br>205<br>205<br>259                             |
| <ul> <li>Table 9.16 Utility comparison between high and low self-confidence groups</li> <li>Table 9.17 Hypotheses testing outcomes (brie)</li> <li>TABLES FROM APPENDICES</li> <li>Table A 1 Normality tests (pilot)</li> <li>Table A 2 Normality tests (sensory)</li> </ul>  | 204<br>205<br>205<br>259<br>260                      |
| <ul> <li>Table 9.16 Utility comparison between high and low self-confidence groups</li> <li>Table 9.17 Hypotheses testing outcomes (brie)</li> <li><b>TABLES FROM APPENDICES</b></li> <li>Table A 1 Normality tests (pilot)</li> <li>Table A 2 Normality tests (sensory)</li> <li>Table A 3 Normality tests (survey)</li> </ul>   | 204<br>205<br>205<br>259<br>260<br>261               |
| <ul> <li>Table 9.16 Utility comparison between high and low self-confidence groups</li> <li>Table 9.17 Hypotheses testing outcomes (brie)</li> <li><b>TABLES FROM APPENDICES</b></li> <li>Table A 1 Normality tests (pilot)</li> <li>Table A 2 Normality tests (sensory)</li> <li>Table A 3 Normality tests (survey)</li> <li>Table A 4 Reliability Coefficients of Scales</li> </ul>   | 204<br>205<br>205<br>259<br>260<br>261<br>263        |
| <ul> <li>Table 9.16 Utility comparison between high and low self-confidence groups</li> <li>Table 9.17 Hypotheses testing outcomes (brie)</li> <li>TABLES FROM APPENDICES</li> <li>Table A 1 Normality tests (pilot)</li> <li>Table A 2 Normality tests (sensory)</li> <li>Table A 3 Normality tests (survey)</li> <li>Table A 4 Reliability Coefficients of Scales</li> <li>Table A 5 Construct validity summary for all scales</li> </ul> | 204<br>205<br>205<br>259<br>260<br>261<br>263<br>265 |

| Table A 8 Factorability of subjective knowledge scale chardonnay (sensory)        | 269 |
|---|-----|
| Table A 9 Spearman's r correlation coefficients - Subjective knowledge scale      |     |
| chardonnay (sensory)  | 269 |
| Table A 10 Factorability of subjective knowledge scale chardonnay (survey)        | 270 |
| Table A 11 Spearman's r correlation coefficients – Subjective knowledge scale     |     |
| chardonnay (survey)   | 270 |
| Table A 12 Factorability of Subjective knowledge scale camembert (pilot)          | 271 |
| Table A 13 Spearman's r correlation coefficients – Subjective knowledge scale     |     |
| brie (survey)   | 271 |
| Table A 14 Factorability of Subjective knowledge scale brie (sensory)             | 272 |
| Table A 15 Spearman's r correlation coefficients – Subjective knowledge scale     |     |
| brie (sensory)  | 272 |
| Table A 16 Factorability of Subjective knowledge scale brie (survey)              | 273 |
| Table A 17 Spearman's r correlation coefficients – Subjective knowledge scale     |     |
| brie (survey)   | 273 |
| Table A 18 Factorability of self-confidence scale (pilot)                         | 274 |
| Table A 19 Spearman's r correlation coefficients – Self-confidence scale (pilot)  | 274 |
| Table A 20 Factorability of self-confidence scale (sensory)                       | 275 |
| Table A 21 Spearman's r correlation coefficients – Self-confidence scale (sensory | y)  |
|   | 275 |
| Table A 22 Factorability of reduced self confidence scale (sensory)               | 276 |
| Table A 23 Spearman's r correlation coefficients – Reduced self-confidence scale  | Э   |
| (sensory)   | 276 |
| Table A 24 Factorability of reduced self confidence scale (survey)                | 277 |
| Table A 25 Spearman's r correlation coefficients – Reduced self-confidence scale  |     |
| (survey)  | 277 |

| Table A 26 Discriminant validity chardonnay and self confidence (pilot)   | 278 |
|---|-----|
| Table A 27 Discriminant validity brie and self confidence (pilot)         | 279 |
| Table A 28 Discriminant validity chardonnay and self confidence (sensory) | 279 |
| Table A 29 Discriminant validity brie and self confidence (sensory)       | 280 |
| Table A 30 Discriminant validity chardonnay and self confidence (survey)  | 280 |
| Table A 31 Discriminant validity brie and self confidence (survey)        | 281 |
| Table A 32 High objective knowledge and average importance chardonnay     | 308 |
| Table A 33 High objective knowledge and utility values                    | 308 |
| Table A 34 Low objective knowledge and average importance chardonnay      | 309 |
| Table A 35 Low objective knowledge and utility values                     | 309 |
| Table A 36 High subjective knowledge and average importance chardonnay    | 310 |
| Table A 37 High subjective knowledge and utility values                   | 310 |
| Table A 38 Low subjective knowledge and average importance chardonnay     | 311 |
| Table A 39 Low subjective knowledge and utility values                    | 311 |
| Table A 40 High self-confidence and average importance chardonnay         | 312 |
| Table A 41 High self-confidence and utility values                        | 312 |
| Table A 42 Low self-confidence and average importance chardonnay          | 313 |
| Table A 43 Low self-confidence and utility values                         | 313 |
| Table A 44 High objective knowledge and average importance chardonnay     | 314 |
| Table A 45 High objective knowledge and utility values                    | 314 |
| Table A 46 Low objective knowledge and average importance chardonnay      | 315 |
| Table A 47 Low objective knowledge and utility values                     | 315 |
| Table A 48 High subjective knowledge and average importance chardonnay    | 316 |
| Table A 49 High subjective knowledge and utility values                   | 316 |
| Table A 50 Low subjective knowledge and average importance chardonnay     | 317 |

| Table A 51 Low subjective knowledge and utility values            | 317 |
|---|-----|
| Table A 52 High self-confidence and average importance chardonnay | 318 |
| Table A 53 High self-confidence and utility values                | 318 |
| Table A 54 Low self-confidence and average importance chardonnay  | 319 |
| Table A 55 Low self-confidence and utility values                 | 319 |
| Table A 56 High objective knowledge and average importance brie   | 321 |
| Table A 57 High objective knowledge and utility values            | 321 |
| Table A 58 Low objective knowledge and average importance brie    | 322 |
| Table A 59 Low objective knowledge and utility values             | 322 |
| Table A 60 High subjective knowledge and average importance brie  | 323 |
| Table A 61 High subjective knowledge and utility values           | 323 |
| Table A 62 Low subjective knowledge and average importance brie   | 324 |
| Table A 63 Low subjective knowledge and utility values            | 324 |
| Table A 64 High self-confidence and average importance brie       | 325 |
| Table A 65 High self-confidence and utility values                | 325 |
| Table A 66 Low self-confidence and average importance brie        | 326 |
| Table A 67 Low self-confidence and utility values                 | 326 |
| Table A 68 High objective knowledge and average importance brie   | 327 |
| Table A 69 High objective knowledge and utility values            | 327 |
| Table A 70 Low objective knowledge and average importance brie    | 328 |
| Table A 71 Low objective knowledge and utility values             | 328 |
| Table A 72 High subjective knowledge and average importance brie  | 329 |
| Table A 73 High subjective knowledge and utility values           | 329 |
| Table A 74 Low subjective knowledge and average importance brie   | 330 |
| Table A 75 Low subjective knowledge and utility values            | 330 |

| Table A 76 High self-confidence and average importance brie | 331 |
|---|-----|
| Table A 77 High self-confidence and utility values          | 331 |
| Table A 78 Low self-confidence and average importance brie  | 332 |
| Table A 79 Low self-confidence and utility values           | 332 |

# List of Figures

| Figure 2.1 Conceptual framework- effect of consumer characteristics on assess  | nent |
|--|------|
| of product quality   | 47   |
| Figure 3.1 Causal model- moderating effects of consumer characteristics on pro | duct |
| cue usage  | 56   |
| Figure 3.2 Stages of the research  | 64   |
| Figure 5.1 Pilot study questionnaire format                                    | 96   |
| Figure 5.2 Example of wine product profile (pilot)                             | 100  |
| Figure 5.3 Example of cheese product profile (pilot)                           | 100  |
| Figure 6.1 Example of wine product profile (sensory)                           | 126  |
| Figure 6.2 Example of cheese product profile (sensory)                         | 126  |
| Figure 6.3 Amended questionnaire structure:                                    | 129  |
| Figure 6.4 Numbering wine glasses  | 130  |
| Figure 6.5 Pouring wine samples  | 130  |
| Figure 6.6 Treated and untreated chardonnay                                    | 130  |
| Figure 6.7 Preparing brie samples  | 130  |
| Figure 6.8 Preparing trays for a tasting session                               | 131  |
| Figure 6.9 Sample order  | 131  |
| Figure 6.10 Tray with samples  | 131  |
| Figure 6.11 Experiment in progress   | 131  |
| Figure 8.1 Example of wine product profile (survey)                            | 170  |
| Figure 8.2 Example of cheese product profile (survey)                          | 171  |