

# **Appendix B**

## **Detailed Methodology**

## DETAILED METHODOLOGY

### Rationale for selection of methodology

The approach, whereby initial exploration is undertaken through both a review of existing international research, and customised qualitative research, followed by quantification of key measures and issues via the final survey, ensures the research program is reflective of and relevant to the population. Initial exploratory research is a crucial step in the overall survey design, in particular ensuring:

- identification of **issues and themes** that are **relevant** both to the research objectives and target audience;
- an understanding of the real-life **context** of consumers in relation to their attitudes to food regulation, labelling, and food safety/hygiene;
- identification of the **language** and **reference points** consumers use in relation to food, so that future survey tools can reflect this;
- identification of the **priorities** of consumers in relation to food, including how important various aspects of food regulation and safety are within their broader behavioural and cognitive framework; and
- identification of any particular **topical** or potentially problematic issues with the administration of the research project going forward.

The exploratory phase therefore provides a reasoned basis on which to develop survey tools in order to quantify measures regarding food regulation and safety. Principally, the qualitative research, desk, research and project scoping with FSANZ stakeholders facilitates design of a questionnaire for quantitative administration which addresses the key issues in a way which is intelligible and relevant to consumers. The quantitative phase subsequently provides rigorous and robust data amongst a representative spread of the Australian and New Zealand population to answer the research objectives.

An online methodology was used to conduct the quantitative phase of the research. The rationale for taking this approach included:

- **efficient and cost-effective**, particularly compared with telephone and face-to-face research. The online methodology allows the capture of data amongst a large number of individuals in a relatively quick timeframe and minimises the amount of data handling needed, such as the need for an interviewer to enter survey responses in a telephone survey;
- **reduced respondent burden** through an attractive, easy to use, more interactive questionnaire, which can be completed in stages and at the respondent's convenience;
- **availability of appropriate sampling frames**, using the TNSSR Online Panel which, given its size (c.350,000) means a sample can be drawn which is representative of the population across both Australia and New Zealand; and

- **greater control over the survey**, with results and field outcomes available as and when respondents complete the survey, the project team can have greater control over field management and monitor outcomes and address any problematical areas immediately.

### Exploratory phase

Following project inception, a number of stages were undertaken to clarify the scope and parameters of the project and confirm the key issues to be addressed in subsequent research. It was crucial at an early stage to consult with FSANZ stakeholders in order to identify their needs from the research and shape the methodology to produce outcomes which satisfied these requirements. Regular liaison took place between the TNSSR and FSANZ project teams with wider stakeholders, including a **scoping workshop** soon after project inception.

Given the goal of the research in establishing benchmarks via the Consumer Attitudes Survey and seeking to track this over time, it was imperative that the research team looked at wider research that had taken place into food regulation and food safety, both within Australia and New Zealand and internationally. Desktop scoping was undertaken by the research team and a **review of available literature** was conducted. This was provided to FSANZ in August 2006.

Following internal consultation and review, the research program included a stage of **qualitative research with consumers**. This effectively took the exploration stage into a real life context, speaking to consumers and hearing their opinions and attitudes in their own language. This was a vital stage in order to identify the key issues and priorities of consumers and develop concepts for subsequent quantitative measurement. The primary objectives of the qualitative research were to:

- **explore** current knowledge, awareness and attitudes towards FSANZ and the environment generally, to understand the salient issues for consumers, and the language consumers use to describe the issues; and
- **identify** the exact questions and flow to enable the questionnaire to be designed to best address consumer issues and FSANZ objectives.

The discussion guide used for the qualitative research is provided in Appendix C.

The qualitative research consisted of eight focus groups, each with approximately 6-8 participants. Four groups were held in Sydney and four in Auckland. Whilst the scale of the research was relatively small, scope was provided to include a range of consumer types, including age and level of health consciousness.

Health consciousness was determined based on answers to a screening question asked during the recruitment process:

Q4 Here are five statements about buying food. Please choose the one which best describes how you feel when buying food for your household.

- I never deliberately choose the healthy or nutritious alternative..... 1 (LOW)
- I rarely deliberately choose the healthy or nutritious alternative.....2 (LOW)
- I sometimes deliberately choose the healthy or nutritious alternative.....3 (MEDIUM)
- I regularly deliberately choose the healthy or nutritious alternative.....4 (MEDIUM)
- I always deliberately choose the healthy or nutritious alternative.....5 (HIGH)

The design of the group structure is outlined in the following table.

**Table 19: Qualitative group structure**

|              | Low Health Consciousness | Medium Health Consciousness | High Health Consciousness | TOTAL (n)       |
|--------------|--------------------------|-----------------------------|---------------------------|-----------------|
| Sydney, Aus  | 18 – 39                  | 40 +                        | 18 – 39 / 40 +            | 4 groups        |
| Auckland, NZ | 40 +                     | 18 – 39                     | 18 – 39 / 40 +            | 4 groups        |
| <b>TOTAL</b> | 2 groups                 | 2 groups                    | 4 groups                  | <b>8 groups</b> |

The groups were conducted by senior members of the TNSSR project team and lasted approximately 90 minutes. Participants were recruited from the general population and received an incentive of AU\$60 or NZ\$70 to take part. The groups took place on the 10<sup>th</sup> and 11<sup>th</sup> July 2006.

Outcomes and findings from the qualitative research were presented to FSANZ at the end of July 2006.

**Design of survey instruments**

An iterative approach to questionnaire development was undertaken between TNSSR and FSANZ, with ongoing liaison and consultation throughout the formulation of the survey instruments. As indicated previously, the questionnaire development drew on a number of resources, including:

- initial scoping of the research priorities and needs through desktop review and consultation with FSANZ stakeholders;
- qualitative consultation undertaken by TNSSR with the target population in Australia and New Zealand;

- review of existing research and questions used in surveys both across Australia and New Zealand and internationally;
- review of previous research undertaken by TNSSR for FSANZ; and
- ongoing feedback from project teams, statistical teams and wider stakeholders within and outside FSANZ.

### ***Concepts and measures framework***

An initial survey framework was developed following the qualitative consultation, which was circulated amongst the project team. The framework consisted of a discussion of methodology including sampling procedures and stratification variables and proposed modules for the questionnaire design. The initial framework was provided to FSANZ in August 2006 and is included in Appendix D. This was subsequently developed and refined through iteration with FSANZ stakeholders before specific questions were drafted.

### ***Nationally and internationally researched questions***

The literature review identified a body of similar research conducted previously in Australia and New Zealand and internationally. This provided a key resource for the development of questions for the Consumer Attitudes Survey, in effect enabling a) the use of questions which had been tested and quantitatively validated and b) the potential for comparability with international surveys. The major sources which were consulted and assisted development of survey questions for the Consumer Attitudes Survey were:

- UK Food Standards Agency – Consumer Attitudes Surveys (2000-2007)
- The New Zealand Food Safety Authority (NZFSA) – A Quantitative Study (2005)
- The Food Safety Authority of Ireland (FSAI) – Consumer Attitudes to Food Safety in Ireland (2003)
- Department of Human Services Victoria – Food Safety Report (2005)
- The European Commission Special Eurobarometer – Risk Issues (2006)
- United States Department of Agriculture – PR/HACCP Rule Evaluation Report (2001)
- Trust in Food – Trust in Food in Europe (2003)

TNSSR also drew on other research studies conducted for FSANZ (such as labelling and health claim surveys), as well as other public sector clients, in developing appropriate and validated questions for measurement in the Consumer Attitudes Survey.

### ***Questionnaire drafting and finalisation***

A draft questionnaire was provided to the FSANZ project team along with supporting documentation in January 2007. Modifications to the questionnaire were undertaken as a result of project team comments and input. Following the pilot survey, no further modifications were considered to be necessary with final approval of the questionnaire provided by FSANZ in April 2007. The final questionnaire used for the survey is provided in Appendix E.

**Fieldwork*****Sampling and quotas***

The target audience for the Consumer Attitudes Survey were Australian and New Zealanders aged 14 years and above. Random sampling was undertaken, with a sample drawn from the TNSSR Online Panel separately for Australia and New Zealand. Given the size of the panel and validation tests undertaken, a random sample was considered to yield a representative spread of respondents.

In order to ensure robust coverage in both Australia and New Zealand a total sample size of n=2000 consumers was targeted, with n=1200 Australian and n=800 New Zealand respondents. Screening questions were included in the questionnaire to ensure the desired quotas of Australian and New Zealand respondents took part and that no-one under the age of 14 was included in the survey. No other quotas were set, however the sample was monitored on an ongoing basis to ensure a broad representation of participants which corresponded to the demographics of the target population. Analysis of the sample was undertaken post-fieldwork to determine whether correctional weighting was required.

**Questionnaire programming and testing**

Once approval was provided by FSANZ for the questionnaire, this was programmed for online facilitation by specialist programmers within the TNSSR Interactive division using SurveyCraft software. The TNSSR research team fully briefed the programmers and conducted an internal Questionnaire Review Committee (QRC) meeting with the programmers and analysts to ensure any anomalies or uncertainty was clarified prior to programming. This is a standard step in the TNSSR online research process. Checks of the scripted questionnaire were made first by the programmer and then the TNSSR team and through a small internal pilot amongst TNSSR employees. A version of the questionnaire was also provided to FSANZ for testing online.

**Pilot survey**

A pilot survey was conducted online with n=103 members of the TNSSR Online Panel between 13<sup>th</sup> and 18<sup>th</sup> April 2007. Forty-nine interviews were completed with Australian residents and fifty-four with New Zealand residents. Other than country of residence, there were no other quotas set for the pilot survey, however analysis of the respondent profile showed the survey was inclusive of a broad range of respondents, as shown in Table 20.

Table 20: Overall profile of respondents to pilot survey

|                          |                             |
|--------------------------|-----------------------------|
| <b>Gender</b>            | 56% male                    |
|                          | 44% female                  |
| <b>Age</b>               | 26% aged 14-29              |
|                          | 40% aged 30-49              |
|                          | 34% aged 50+                |
| <b>Employment status</b> | 39% full time employment    |
|                          | 18% part time employment    |
|                          | 4% unemployed               |
|                          | 30% not in the labour force |
|                          | 9% unknown                  |

The survey length was on average 20 minutes, which was as budgeted. Overall, the survey was felt to have flowed well and feedback from respondents was positive. Analysis of the topline results showed there to be no issues with routing or data capture.

A pilot survey report was provided to FSANZ on 19<sup>th</sup> April 2007; no changes were recommended to the questionnaire.

### **Main survey**

Invitations were sent to a random selection of 7,585 panel members to take part in the survey on 23<sup>rd</sup> April 2007. The fieldwork then took place between 23<sup>rd</sup> and 30<sup>th</sup> April 2007, ensuring respondents had sufficient time to take part (i.e. this period included a weekend and public holiday). During this time, n=2000 members of the panel completed the survey – n=1200 in Australia and n=800 in New Zealand.

The main survey was found to last on average 21 minutes, slightly above the intended length. There were no major issues raised by respondents through feedback mechanisms with many commenting positively about the survey and finding it interesting to complete.

## DATA ANALYSIS

### Response analysis

Overall, n=2000 respondents completed the survey, n=1200 in Australia and n=800 in New Zealand. An analysis of the respondent profile was conducted to verify the representativeness of respondents and establish the need for any post-fieldwork correctional weighting. Key indicators of the sample profile are presented in Table 21.

**Table 21: Respondent profile**

| %  | TOTAL    | Australia | New Zealand |
|--|----------|-----------|-------------|
|  | (n=2000) | (n=1200)  | (n=800)     |
| <b>Base: All respondents</b>                       |          |           |             |
| Male   | 47       | 48        | 47          |
| Female   | 53       | 52        | 53          |
| 14-24  | 13       | 8         | 21          |
| 25-34  | 19       | 13        | 24          |
| 35-44  | 19       | 16        | 24          |
| 45-54  | 21       | 22        | 19          |
| 55-64  | 15       | 19        | 9           |
| 65+  | 13       | 20        | 4           |
| Responsible for all or most of grocery shopping    | 58       | 61        | 54          |
| Responsible for about half of grocery shopping     | 24       | 24        | 25          |
| Responsible for less than half of grocery shopping | 11       | 10        | 13          |
| Not responsible for any grocery shopping           | 6        | 5         | 5           |
| Employed full-time                                 | 40       | 34        | 48          |
| Employed part-time                                 | 17       | 17        | 16          |
| Unemployed   | 4        | 4         | 4           |
| Retired/not in labour force                        | 27       | 33        | 18          |
| Not identifiable/refused                           | 13       | 12        | 14          |

*Totals may not equal 100% due to rounding*

The respondent profile showed a spread of respondents across the total Australian and New Zealand population, inclusive of both young and old residents and those from different employment backgrounds. However, breaking down the response profile by country, it was evident that there was an under reporting of older residents in New Zealand and of younger residents in Australia. Whilst these balanced each other out in terms of the overall population, by individual country there were some discrepancies which meant correctional weighting was required.



### **Response rates**

The breakdown of invitations sent to the survey, screen-outs, and respondent completions is shown in Table 22:

**Table 22: Response data**

|                                 | <b>TOTAL</b> | <b>AUS</b> | <b>NZ</b> |
|---------------------------------|--------------|------------|-----------|
| E-mail invitations sent out     | 7585         | 4375       | 3210      |
| Completed surveys               | 2000         | 1200       | 800       |
| Screened out due to fail quotas | 8            | 3          | 5         |
| Incomplete surveys              | 198          | 108        | 90        |

Overall, 7585 invitations were sent out to participate in the survey resulting in 2000 completions, with a further 8 people who responded being screened out and 198 responding to the survey but not completing it. This represents an overall response rate of 29%, which, although not ideal, is in line with response rates achieved by TNSSR for commercial online surveys such as those completed for major financial institutions and retailers and comparable to other methodologies. Indeed, in comparison to alternate methodologies, this response rate is strong. For example, Computer Assisted Telephone Interviewing has undergone a significant decline in response rates, and rates of below 20% are now the norm.<sup>35</sup> The sample was batched, with a small number of additional invitations sent in a second wave to achieve some sample criteria. In order to improve the response rate in the future, TNSSR recommends a longer field time be scheduled, to allow for the sample to be further batched and additional reminder emails to be sent to potential respondents.

### **Non-response bias**

Maintaining high response rates are a considerable challenge in today's environment for all methodologies, as respondents grow more sophisticated in their decision making, are more mobile and difficult to reach, and generally are less likely to be willing to take part in research. A critical question is the extent to which answers may be different amongst those who respond and those who do not respond to surveys, that is to say, is there a non-response bias?

TNSSR has undertaken considerable work with the Online Panel to investigate the impact of non-response bias, conducting analysis on length of time taken to respond to an invitation to participate (within three days of receiving an invitation and after three days), to a large number of studies conducted for a variety of clients. Results did not reveal any statistically significant differences between the demographic profiles of these two groups nor between the actual item responses. In addition, analysis of respondents and non-respondents (from data collected about panel members) showed few statistically significant differences in the demographic profile of those responding and those not responding in several studies.

<sup>35</sup> Bednall, D.H.B. and Shaw M. (2003) "Changing response rates in Australian market research", *Australasian Journal of Market Research*, 11(1), pp. 31-41

To ensure the impact of non-response bias was negligible to this research, similar analysis of early and late responders from the Consumer Attitudes Survey was undertaken, with the first 100 and last 100 respondents to complete the survey in each country compared in terms of characteristics and attitudes. The analysis shows few significant differences between those who are more likely to respond straight away and those who took longer to respond to the survey (one week after the survey invitation was sent).

In terms of profile (Table 23, below), the only significant difference between early and late responders was in relation to gender amongst Australian consumers, with males more likely to respond to the survey straight away. However, given there were no significant differences in early and late responders in respect of other characteristics it is unlikely this has a significant impact on the results.

**Table 23: Profile of early and late responders to survey in Australia and New Zealand**

| %                                | Australia<br>first<br>respondents<br>(a) | Australia<br>last<br>respondents<br>(b) | New<br>Zealand first<br>respondents<br>(c) | New<br>Zealand last<br>respondents<br>(d) |
|----------------------------------|--|---|--|---|
|                                  | (n=100)                                  | (n=101)                                 | (n=100)                                    | (n=102)                                   |
| <b>Base: All respondents</b>     |  |   |  |   |
| Male                             | 68 <sup>b</sup>                          | 49 <sup>a</sup>                         | 52   | 47  |
| Female                           | 32 <sup>b</sup>                          | 51 <sup>a</sup>                         | 48   | 53  |
|                                  |  |   |  |   |
| 14-24                            | 20                                       | 27                                      | 16   | 13  |
| 25-34                            | 13                                       | 16                                      | 13   | 16  |
| 35-44                            | 20                                       | 16                                      | 16   | 20  |
| 45-54                            | 15                                       | 15                                      | 21   | 19  |
| 55-64                            | 18                                       | 12                                      | 19   | 11  |
| 65+                              | 13                                       | 13                                      | 16   | 21  |
|                                  |  |   |  |   |
| Main grocery buyer               | 85                                       | 80                                      | 79   | 80  |
|                                  |  |   |  |   |
| Very low/low attention to diet   | 8  | 8                                       | 15   | 15  |
| Medium attention to diet         | 52                                       | 46                                      | 47   | 49  |
| High/very high attention to diet | 40                                       | 46                                      | 38   | 36  |
|                                  |  |   |  |   |
| Full-time employment             | 42                                       | 44                                      | 37   | 46  |
| Part-time employment             | 17                                       | 18                                      | 21   | 14  |
| Unemployed                       | 4  | 10                                      | 1  | 2   |
| Retired/not in labour market     | 27                                       | 21                                      | 29   | 24  |

*abcd indicates categories where there is a significant difference between the results in the respective columns for that row (significance at the 95% confidence level)*

This is verified when examining the attitudes of early and late responders, with no significant differences in their attitudes to the food supply (Table 24), food safety concerns at home (Table 25), trust in food labels (Table 26), and confidence in FSANZ (Table 27). Therefore, the impact of non-response bias on the results of this survey is likely to be negligible, assuming non-responses were similar to late responders, with no differences in the attitudes of those more likely and less likely to respond. This method of analysis is standard in the social and market research industry, and is used regularly in other studies undertaken by TNSSR for commercial organisations, who are often adversely affected by very low response rates.

**Table 24: Confidence in food supply**

|                              | Australia<br>first<br>respondents<br>(a) | Australia<br>last<br>respondents<br>(b) | New Zealand<br>first<br>respondents<br>(c) | New Zealand<br>last<br>respondents<br>(d) |
|------------------------------|--|---|--|---|
| <b>Base: All respondents</b> | <b>(n=100)</b>                           | <b>(n=101)</b>                          | <b>(n=100)</b>                             | <b>(n=102)</b>                            |
| Mean                         | 4.80                                     | 4.62                                    | 4.99                                       | 4.76                                      |
| Std Dev                      | 1.23                                     | 1.49                                    | 1.36                                       | 1.49                                      |

*B2. On a scale of 1 to 7, where 1 is "not at all confident", and 7 is "extremely confident", how confident are you that the food supply as a whole, from the farm to your plate, is producing safe food for consumption?*

**Table 25: Level of concern with food safety at home**

|                              | Australia<br>first<br>respondents<br>(a) | Australia<br>last<br>respondents<br>(b) | New Zealand<br>first<br>respondents<br>(c) | New Zealand<br>last<br>respondents<br>(d) |
|------------------------------|--|---|--|---|
| <b>Base: All respondents</b> | <b>(n=100)</b>                           | <b>(n=101)</b>                          | <b>(n=100)</b>                             | <b>(n=102)</b>                            |
| Mean                         | 3.69                                     | 3.70                                    | 3.87                                       | 3.76                                      |
| Std Dev                      | 2.02                                     | 1.87                                    | 2.23                                       | 2.14                                      |

*D4. On a scale of 1 to 7, where 1 is "not at all concerned" and 7 is "extremely concerned", how concerned are you about getting food poisoning from something you or anyone else has **prepared and eaten at home**? (please choose the one number that best applies)*

Table 26: Trust in information provided on food labels

|                              | Australia<br>first<br>respondents<br>(a) | Australia<br>last<br>respondents<br>(b) | New Zealand<br>first<br>respondents<br>(c) | New Zealand<br>last<br>respondents<br>(d) |
|------------------------------|--|---|--|---|
| <b>Base: All respondents</b> | <b>(n=100)</b>                           | <b>(n=101)</b>                          | <b>(n=100)</b>                             | <b>(n=102)</b>                            |
| Mean                         | 4.26                                     | 4.57                                    | 4.60                                       | 4.36                                      |
| Std Dev                      | 1.32                                     | 1.38                                    | 1.40                                       | 1.19                                      |

E6. On a scale of 1 to 7, where 1 is "cannot trust at all", and 7 is "can trust completely", how much do you feel you can trust the information provided on food labels? (please choose the one number that best applies)

Table 27: Confidence in FSANZ

|                              | Australia<br>first<br>respondents<br>(a) | Australia<br>last<br>respondents<br>(b) | New Zealand<br>first<br>respondents<br>(c) | New Zealand<br>last<br>respondents<br>(d) |
|------------------------------|--|---|--|---|
| <b>Base: All respondents</b> | <b>(n=100)</b>                           | <b>(n=101)</b>                          | <b>(n=100)</b>                             | <b>(n=102)</b>                            |
| Mean                         | 4.78                                     | 4.73                                    | 4.51                                       | 4.40                                      |
| Std Dev                      | 1.35                                     | 1.32                                    | 1.64                                       | 1.52                                      |

D14. Overall, on a scale of 1 to 7, where 1 is "not at all confident", and 7 is "extremely confident", how confident are you in the work of Food Standards Australia New Zealand? (please choose the one number that best applies)

## Weighting

The overall sample profile for Australia and New Zealand was broadly in line with population data. However, as outlined in the previous section, further investigation highlighted an under-representation of young adults in Australia and older adults in New Zealand. As a result, the sample for each country was weighted by age within gender using 2006 population estimates from ABS and Statistics New Zealand data. The weighting matrix used is as follows:

Table 28: Weighting matrix

| Target group    | Australia |          |         | New Zealand |          |         |
|-----------------|-----------|----------|---------|-------------|----------|---------|
|                 | Survey %  | Census % | Weights | Survey %    | Census % | Weights |
| Male 14yrs      | 0.2500    | 0.8556   | 3.4223  | 1.0000      | 1.0054   | 1.0054  |
| Male 15-19yrs   | 1.6667    | 4.2293   | 2.5376  | 4.5000      | 4.7290   | 1.0509  |
| Male 20-24yrs   | 2.2500    | 4.3274   | 1.9233  | 3.7500      | 4.1907   | 1.1175  |
| Male 25-29yrs   | 3.6667    | 4.1694   | 1.1371  | 4.0000      | 3.6363   | 0.9091  |
| Male 30-34yrs   | 3.0000    | 4.3802   | 1.4601  | 4.7500      | 4.0603   | 0.8548  |
| Male 35-39yrs   | 3.7500    | 4.4677   | 1.1914  | 6.6250      | 4.4362   | 0.6696  |
| Male 40-44yrs   | 3.5833    | 4.5009   | 1.2561  | 5.0000      | 4.6813   | 0.9363  |
| Male 45-49yrs   | 5.4167    | 4.3994   | 0.8122  | 5.6250      | 4.4378   | 0.7889  |
| Male 50-54yrs   | 4.6667    | 3.9867   | 0.8543  | 4.5000      | 3.8563   | 0.8570  |
| Male 55-59yrs   | 4.9167    | 3.8140   | 0.7757  | 3.0000      | 3.5745   | 1.1915  |
| Male 60-64yrs   | 4.9167    | 2.9594   | 0.6019  | 2.3750      | 2.7404   | 1.1538  |
| Male 65+ yrs    | 9.6667    | 7.3152   | 0.7567  | 1.6250      | 6.8603   | 4.2217  |
| Female 14yrs    | 0.0833    | 0.8159   | 9.7903  | 0.3750      | 0.9528   | 2.5407  |
| Female 15-19    | 0.9167    | 4.0209   | 4.3865  | 4.0000      | 4.5839   | 1.1460  |
| Female 20-24    | 3.0000    | 4.1051   | 1.3684  | 6.8750      | 4.2158   | 0.6132  |
| Female 25-29    | 4.1667    | 4.0529   | 0.9727  | 6.3750      | 3.8847   | 0.6094  |
| Female 30-34    | 4.3333    | 4.4117   | 1.0181  | 9.0000      | 4.5192   | 0.5021  |
| Female 35-39    | 4.8333    | 4.5207   | 0.9353  | 6.1250      | 4.9186   | 0.8030  |
| Female 40-44    | 3.7500    | 4.5414   | 1.2110  | 5.8750      | 5.0504   | 0.8596  |
| Female 45-49    | 6.5000    | 4.4518   | 0.6849  | 5.3750      | 4.6648   | 0.8679  |
| Female 50-54    | 5.7500    | 4.0421   | 0.7030  | 3.5000%     | 3.9839   | 1.1383  |
| Female 55-59    | 4.4167    | 3.8182   | 0.8645  | 2.7500      | 3.6714   | 1.3351  |
| Female 60-64yrs | 4.6667    | 2.9075   | 0.6230  | 1.0000      | 2.8317   | 2.8317  |
| Female 65+ yrs  | 9.8333    | 8.9067   | 0.9058  | 2.0000      | 8.5143   | 4.2572  |

The sample profile was representative of the Australian and New Zealand population relating to other demographic and geographic aspects such as employment status, metro/regional location, income, and education.

## **Data preparation**

### ***Coding of open ended responses***

Upon finalisation of the questionnaire, internal coding teams were fully briefed regarding the requirements for coding of open ended and 'other specify' responses and took part in the Questionnaire Review Committee. Where applicable, coding frames were developed during the questionnaire design stage drawing on responses provided to nationally and internationally developed questions and the consumer language used during the qualitative consultation and pilot survey. For questions in which no initial coding frame was available, coding teams extracted the verbatim responses and developed suitable coding frames in conjunction with the TNSSR project team. All coding was conducted internally and subject to quality procedures including back-checking and back-coding of residual 'other' answers by the project team.

### ***Data cleaning and editing***

When using an online survey methodology the necessity for data cleaning is minimised as routing and questionnaire logic can be controlled through the programmed questionnaire script and responses transfer directly to a data file. The data files were examined to ensure they were clean, including checking of variable and value labels, checking and correcting of any 'out of range' codes, and checking consistency of skip patterns and base sizes for any one question.

## **Analysis**

### ***Univariate analysis***

SurveyCraft (a data analysis program provided by SPSS) was used to produce data tables with full significance testing across subgroups. Initially, unweighted data tables were checked by the researcher and any errors or data anomalies detected were corrected. Once the tables were clean, weighting and significance testing was applied. Separate tables were produced for Australia and New Zealand. In addition to total data, column percentages were provided across the following subgroups:

- location (metro/regional);
- grocery buyer status;
- food/dietary concerns;
- health consciousness;
- physical activity levels;
- education;
- household income;
- household structure;
- employment status;
- gender; and
- age.

Where applicable, the data tables provided mean, standard deviation and standard error to scale questions. The tables are provided in a separate volume.

The detail relating to each of these key subgroups can be found in the 'about the respondents' section of the report (see Section 4 of this report for full definitions). These characteristics were chosen so as to explore the results in the most detail possible, and because demographic and behavioural attributes allow FSANZ to target interventions relating to results at the most appropriate audiences.

### ***Significance testing***

In order to understand the differences between subgroups (e.g. older and younger consumers, Australian and New Zealand consumers) significance testing was conducted between subgroups. To test for significant differences between percentage scores a standard z-test of 2 independent samples was conducted. This is a two-tailed test meaning the null hypothesis that the two proportions are equal is tested. All tests use the 95% confidence level (z score = 1.96).

### ***Multivariate analysis***

In order to explore the relationship between attitudes and behaviour with relation to food hygiene, confidence in the food supply, labelling and food regulation, multiple regression analysis was undertaken by the TNSSR Advanced Methods Group. Multiple regression is used to understand the inter-relationships between a group of independent variables (e.g. performance issues) and a dependent variable (e.g. overall confidence in food safety). The objective of multiple regression is to determine which issues have the most significant and unique impact on overall confidence and which in combination, explain the most about overall confidence.

### ***Comparison to international studies***

Wherever possible throughout the results, an attempt to compare results of the Australian/New Zealand study to international studies has been made. As each study uses different sampling and questioning methodologies, and as the level of detail in available data varies, this is not possible with every question. A full analysis of the international data available was detailed in the initial literature review conducted to aid in developing the questionnaire and is not provided here. Results from comparable international studies are included where applicable in the main body of the report, with further detailed survey data from these studies provided in Appendix G.

