

DRAFT

High Value Nutrition:

New Zealand's reputation for high value quality products that are scientifically validated – The baseline

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Research to improve decisions and outcomes in agribusiness, resource, environmental, and social issues.

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Chapter 1

Introduction

Agricultural exports are important for the New Zealand economy accounting for almost 60 per cent of total exports (Statistics New Zealand, 2016). Traditionally, these have been in commodity products to key markets, first to the United Kingdom then more recently into China. Commodity prices however are volatile and tend to fall over the long-term, hence it is important for New Zealand's prosperity that agricultural exports move from low value commodity to high value exports. This higher value can come from market differentiation and build on the attributes of New Zealand products. This can be from taste and quality but also from other attributes such as health and wellbeing enhancing attributes. Therefore, information is needed in order to understand how consumers value these extra benefits in food.

In 2013, the government announced eleven research areas as New Zealand's first National Science Challenges, one of which is *The High-Value Nutrition Challenge (HVN NSC)* that is aimed to use science to add value to New Zealand's primary production and to grow the country's international reputation as a producer of high-quality, safe foods with scientifically validated health benefits (High-Value Nutrition, 2016).

The HVN NSC includes food and beverage products that make validated health claims and that have scientifically validated food health benefits. The broad health targets of the products captured by HVN NSC include (Smart et al., 2015):

- Metabolic health (including obesity, diabetes and heart diseases)
- Gastrointestinal health
- Immune defence
- Foods for improved physical activity and mobility
- Infant nutrition (= 6 months to 3 years post infant formula and not general foods for adults; growth and development, immune function, brain development/ mental function)

The aim of this research is to provide data that can be used to benchmark New Zealand's current international reputation in 2016 as a food producer of high quality food with scientifically validated health claims. Hence, this study assesses New Zealand's international reputation among consumers and experts in overseas markets. A consumer survey was conducted in Australia, Japan and China with 400 consumers in each country. Key informants with experience of consumer behaviour and trends, key customers; and product gatekeepers in different markets were also surveyed in an online questionnaire as they have knowledge on current and future trends on high value nutrition products. Data gained from both surveys will provide a robust method on how to assess New Zealand as producer of high quality foods and beverages with scientifically validated health and wellbeing claims; and this will provide a basis for comparisons in future surveys in 2019, 2022 and 2025.

This report is structured as follows. In the next chapter, the background and methodology of the study is described. In Chapter 3, results on consumer attitudes towards different health and wellbeing claims are presented, followed by a more detailed assessment of product purchases for four specific health and wellbeing claims and whether these are based on scientific testing. This is followed by the results asking respondents how important they considered scientific testing is for a number of health and wellbeing claims as well as the importance of different types of authentication schemes for these claims. Finally, results on consumer's association and trust of selected countries for foods and scientific testing of enhancing health or wellbeing are presented.

In Chapter 4 results from the expert survey are described. These include results on respondents' evaluation of their customer/ consumer demand and importance of products with health and wellbeing enhancing benefits and their scientific testing. This is followed by results of respondents' rating of their customer/consumers' knowledge, perception and trust of health and wellbeing products from New Zealand. In Chapter 5 New Zealand's reputation for foods with health and wellbeing benefits is summarised. Chapter 6 finishes with concluding comments.

Chapter 2

Background & Methodology

This chapter starts with a description of the background to this study. It will then describe the methodology of the study, including sampling strategy, survey development, structure and its implementation.

2.1 Background

There is an increased interest by consumers in food and beverages that provide benefits beyond basic nutrition, e.g. in reducing or minimising risk of certain diseases and enhancing other health conditions (Menrad, 2013; Kaur & Das, 2011; Shimizu, 2012; HKTDC, 2015). Examples of these foods include fruits and vegetables, whole grains and fortified foods and beverages. The demand for these products is growing and these products attract a premium which is especially important for exporting countries like New Zealand that are heavily dependent on food exports.

Three countries were selected for the survey to assess consumer attitudes and preferences for health and wellbeing claims that are scientifically validated in food products, these were China, Australia and Japan as these countries are New Zealand's principal exports markets for agricultural products.

Since 2010, China has been New Zealand's key export market for agricultural commodities, facilitated through the signing of the Free Trade Agreement in 2008. In 2016, agricultural exports to China were valued at NZ\$5.8 billion, with an increase of 10 per cent from the previous year. In the same year, China was New Zealand's largest export market for sheep meat (valued NZ\$625 million) and dairy (valued NZ\$2.78 billion), in addition China was New Zealand's second-largest export market for kiwifruit (valued NZ\$373 million) (Statistics New Zealand, 2016).

Australia was New Zealand's third-largest receiver of agricultural exports by value in 2016 (Year ended June). Agricultural exports to Australia were valued at NZ\$3.3 billion, representing an increase of 13 per cent from the previous year. In the same year, Australia was New Zealand's second-largest export market for cheese and curd products (valued NZ\$276 million), and the third-largest export market for fruit and vegetable products (valued NZ\$439 million) (Statistics New Zealand, 2016).

Finally, Japan was New Zealand's fourth-largest export market for agricultural commodities, worth almost NZ\$2 billion, with an increase of 5 per cent from the previous year. In the same year, Japan was New Zealand's largest export market for beef (fresh and chilled) (valued NZ\$65 million), cheese (valued NZ\$297 million), and kiwifruit (valued NZ\$391 million) (Statistics New Zealand, 2016). Also Japan has a long history of defining and using products with health and wellbeing benefits.

From its research in the *Maximising Export Returns* research programme (Lincoln University, MER, <http://www.lincoln.ac.nz/aeru/mer>), the AERU has learned that different markets place different weights on different concepts such as 'international reputation', 'scientific validity' and 'health benefits'. In their study, the AERU examined consumer attitudes and preferences for different attributes in food in the UK, Japan, China, Indonesia and India. These attributes were *quality, price, animal health, animal welfare, environmental condition, health enhancing foods, food safety, social responsibility, nutritional value, and traditional cultures*. Survey results showed that the *nutritional value* in food products was the third most important of the ten attributes in all countries (after *food safety* and *quality*). For *health enhancing foods*, participants in the developing countries (i.e. China, Indonesia and India) rated this attribute higher in importance than participants from the developed countries (i.e. UK and Japan). When asked about the importance of specific factors they associate with *health enhancing foods*, overall, the factors of *heart and cholesterol health, digestive health, and child health* were the most important factors in relation to health enhancing foods. Cross-country comparisons showed a large variation in preferences for these factors. While Chinese participants placed highest importance on the factors of *digestive health, immune system* and *baby health*, Indian participants rated *child health, baby health* and the *immune system* highly important. Indonesian participants rated *heart and cholesterol health, child health* and *digestive health* as very important. Japanese participants reported *bone health, digestive health, and heart and cholesterol health* were important factors in relation to health enhancing foods while their fellow UK participants rated *heart and cholesterol health, digestive health* and *child health* as most important. *Mobility* as a factor related to health enhancing foods was among the least important factors across all countries. In addition, *weight management* was low in importance for participants from the developing countries while *energy and endurance* was low in importance for participants from the developed countries (Guenther et al, 2015).

Therefore, it is important that New Zealand exporters understand different cultures and preferences for health and wellbeing attributes in food in order to gain a premium for their high value nutrition products which is growing in importance in their export markets.

2.2 Methodology

The method included a structured and self-administered online survey of 400 consumers in each of Australia, Japan and China. The surveys were conducted in November 2016. For the expert survey, initially, semi-structured key informants' interviews were planned. However due to time constraints and the fact that the majority of these key informants are located overseas the AERU researchers and the HVN Management team decided to convert the interview guide into an online survey. Hence, the the expert survey was a self-administered online survey with structured and open-ended questions. Both surveys were administered through Qualtrics™, a web-based survey system.

The results of both surveys were analysed using descriptive statistics to examine consumer attitudes and preferences towards health and wellbeing enhancing attributes that are scientifically validated in food.

2.2.1 Sampling strategy: Consumer survey

In surveys, different ways can be used to obtain a sample of consumers. In probabilistic sampling, theoretically, each person of the target population would be included in the sampling frame. Statistical methods enable then testing the sample representation, if the data of sample population and the total population characteristics exists; hence with that the sampling error can be estimated (Dillman et al. 2009). Common methods to obtain random samples include telephone and/or mail surveys (Dillman et al. 2009); and in recent years also internet surveys have become increasingly popular.

Obtaining a probabilistic sample in internet surveys can be more challenging compared to the traditional survey methods (e.g. mail survey). In internet surveys, online panels¹ are commonly used including general population-, specialty-, proprietary- and election-panels (Callegaro et al. 2014a). These are considered as non-probabilistic/non-random sampling methods, as by definition, not all members of the population have access to the internet; and these panels are also likely to include people who are more regular and more experienced internet users (Callegaro et al. 2014b; Callegaro and Krosnick 2014). A disadvantage of non-probabilistic sampling methods is that they do not satisfy the classic conditions of the probability sampling where one can make statistical inferences of representativeness of the general population (Callegaro et al. 2014a). One solution is to include some auxiliary variables in the survey for which information on the population distribution is available (Callegaro et al. 2014a). These auxiliary variables can be used to adjust the sample if it is not representative of the population (e.g. using post-stratification, raking/rim-weighting or propensity scoring²) (Baker and Göritz 2014; Tourangeau et al. 2013). Another solution is setting up sample quotas. However, the challenge is often to retrieve data for these variables, especially across countries.

The existence of other potential biases in (non-probabilistic) survey samples need to be explored further. First, common in all online samples is a coverage bias. This results from the fact that not everyone has access to the internet, and that online panels are likely to include people who are more regular and skilled internet users (Callegaro et al. 2014b; Callegaro and Krosnick 2014).

¹ In typical survey literature, panel refers to longitudinal data (i.e., many observations from one participant) whereas in online panels the term 'panel' refers to an *access panel* of potential respondents (Callegaro et al. 2014a).

² In post-stratification, each respondent is given a weight that is multiplied by an post-stratified adjustment factor; raking is used to adjust the sample so that, in total, sample is aligned with external population distribution; propensity scoring predicts the probability of a respondent belonging into a demographic group (Tourangeau et al. 2013).

Whether the coverage bias is an issue, depends on the population of interest that the survey results are aimed to be aggregated to. For example, the use of digital technology generally requires language and literacy skills, and adequate socio-economic conditions (Wessels 2013). Thus the “offline population” is likely to include people with lower education or income (Callegaro et al. 2014a).

Another concern in online panels is the “professional”, or more experienced survey respondents and associated concerns about data quality (Hillygus et al. 2014) as these respondents may

- have different attitudes, opinions and/or beliefs compared to the less-experienced survey respondents;
- rush through the survey focusing on receiving the incentive rather than being serious about the topic; and
- answer strategically in order to avoid possible follow-up questions.

On the other hand, experienced respondents may be more consistent in their responses and can be more likely to answer sensitive questions (e.g. on income or race) and therefore improving the validity of the results (Hillygus et al. 2014). Thus, the level of concern including professional respondents is unclear as the evidence of the impact on the results is inconclusive and it can also be difficult to identify these respondents. One way to check the validity of responses is to exclude “too quick” answers (i.e., incentive seekers). Also, constantly selecting “don’t know” options, “straight line” or gibberish in the open-ended questions answers can be an indication of measurement errors (Baker et al. 2010, as cited in Hillygus et al. 2014).

For this study, sampling involved the recruitment of participants from an online panel database of consumers for each country provided by an international market research company. These panels are profiled, broadly recruited and frequently refreshed by the company. The respondents for each survey are recruited by online marketing. The company holds a participation history of each panel member. Each respondent who completes the survey is compensated with a retail voucher.

Hence, the sample of this survey was comprised of a non-random/non-probabilistic survey panel of consumers in the three countries of interest. Potential respondents were recruited by e-mail. The e-mail included a short description of the study, a link to start the online survey and instructions to run the survey.

Sample demographics for each country are presented in Appendix 1.

Also, one screening question was used at the start of the survey. This was whether respondents purchase food or beverage products that offer benefits for enhancing health or wellbeing within their regular food shopping. Respondents were screened out *if they do not go shopping for these type of food*.

In order to ensure data quality, some respondents were removed. Respondents were excluded from the final sample if they had completed the survey in a time that is considered insufficient to allow for adequate consideration of questions (i.e. respondents are just clicking through the survey or only clicking the ‘don’t know’ option in each question). Insufficient timing that excluded respondents from survey was determined on a survey-by-survey basis and included an evaluation of the distribution of completion times by other respondents.

2.2.2 Sampling strategy: Expert survey

For this study, sampling involved the recruitment of participants with experience in their professional roles in markets for high-value nutrition products, and their demand and importance in overseas markets.

Hence, the sample of this survey comprised a non-random/non-probabilistic survey panel of experts in their role as directors and/or managers of marketing, food innovation, research and development, and medical nutrition. The sample population of interest included people from New Zealand and overseas. Participation was entirely voluntary.

The panel size was relatively small. In total 29 key informants completed the survey. For each question total numbers of respondents are shown in Chapter 3. Respondents were recruited by e-mail. The e-mail included a short description of the study, a link to start the online survey and instructions to run the survey.

A list of e-mail contacts was compiled by the research team in collaboration with the HVN Management Team. Another wave of survey invitations were sent via e-mails by a third party assisting with the project. Survey invitations for the email list were sent out between 1 and 15 December 2016.

2.2.3 Survey development

The consumer survey was developed by the research team drawing from a literature review on international consumer trends (Miller et al. 2016; 2014), results from previous surveys examining consumer attitudes towards food attributes (including health enhancing benefits) in overseas markets (Guenther et al. 2015; Guenther & Saunders, 2015; Saunders et al. 2015), and extensive consultation with the HVN Management team and other HVN team members in Auckland and Wellington.

Draft surveys were sent to the HVN team that provided suggestions and advice on its contents. One advice was for example that the final survey included full product list for each of the specific health and/ or wellbeing claims.

Questionnaire for the consumers was approved by the Lincoln University Human Ethics Committee in October 2016.

The original survey was in English. For the Chinese and Japanese survey the questionnaire was translated into the respective language by a professional translation service and cross-checked by other translators. Consultation was undertaken with people in these markets in order to check the interpretation of specific terms of the health and wellbeing claims. This was to assure - as far as possible - that the health and wellbeing claims are understood in a similar way in all countries.

For the expert survey, as mentioned earlier, semi-structured key informants' interviews were initially planned. However due to time constraints and the fact that the majority of these key informants are overseas, AERU researchers and the HVN Management team decided to convert the interview guide into an online survey.

2.2.4 Survey structure and implementation

The final consumer survey comprised a range of questions to assess consumers' attitudes and preferences towards a number of health and wellbeing claims in food. These claims included *energy and endurance, prevent/manage diabetes, improved physical activity/strength, weight management, aid digestion and improved gut comfort, heart health and/or lowering cholesterol, blood pressure control, immunity, reduced risk of cancer, skin health, bone and/or joint health, memory or brain function, eye care, aid for relaxation/sleep, baby or child health/development and anti-aging products*. This was followed by a more detailed assessment of product purchases for four specific health and wellbeing claims and if consumers believe that the claims for these are scientifically validated. Respondents were then asked to rate the importance of scientific testing of a number of health and wellbeing claims and to rate the importance of different types of

authentication schemes for these claims. Finally, the survey included questions on consumer association and trust of selected countries for foods for enhancing health or wellbeing. The questionnaire finished with a set of demographic questions.

Similarly to the consumer survey, the final expert survey was designed in consultation with HVN researchers and comprised a range of questions around informants' evaluation of

- Demand and importance of health-enhancing food, beverages and type of claims in different markets and products;
- Scientific evidence behind the health-enhancing claims in relation to consumers' confidence to pay a premium;
- Consumers' knowledge, perception and trust of New Zealand as a country;
- Changes in New Zealand's reputation, as well as observations on any other trends.

The questions used a four or five point Likert scale format about familiarity, importance and level of association or change. Each question also included an open-ended section for any further comments. Each question was seeking answers from the experts in their role and experience in their position.

The final consumer surveys were completed in all three countries in November 2016 while the expert surveys were completed in February 2017. Both questionnaires are presented in Appendix 2 and 3, respectively.

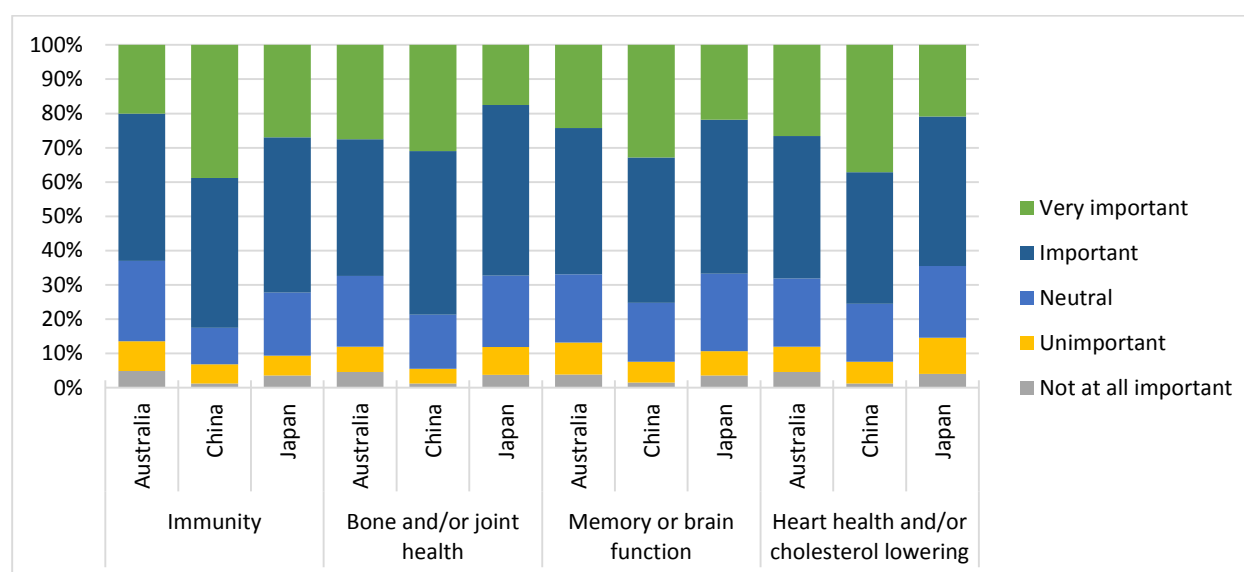
Chapter 3 Results Consumer Survey

This chapter will examine consumer attitudes and preferences towards different health and wellbeing enhancing claims when shopping for food and beverages.

3.1 Importance of health and/ or wellbeing claims in food

Based on a five-point Likert scale, varying from ‘very important’ to ‘not important at all’, participants were asked to rate the importance of 16 health and/or wellbeing claims as a reason for food purchases. The claims included *energy and endurance; prevent/manage diabetes; improved physical activity/strength; weight management; aid digestion and improved gut comfort; heart health and/or lowering cholesterol; blood pressure control; immunity; reduced risk of cancer; skin health, bone and/or joint health; memory or brain function; eye care; aid for relaxation/sleep; baby or child health/development; and anti-aging products*. Results are shown in Figure 3-1 to 3-5; they are from a singular question within the survey.

Figure 3-1 Importance of immunity, bone and/or joint health, memory or brain function and heart health and/or cholesterol lowering control in food purchases



Immunity was rated the most important health claim as shown in Figure 3-1. In particular respondents from China indicated that *immunity* is highly important when purchasing foods with health and wellbeing enhancing benefits with more 80 per cent stating this to be *very important* and *important*, this was followed by Japanese respondents (27 per cent *very important*, 45 per cent *important*), then Australian participants (20 per cent *very important*, 43 per cent *important*). The figure shows further that *bone and /or joint health* in foods was a *very important* health claim across all countries; it was rated highest by Chinese participants (31 per cent *very important*, 48 per cent *important*), with Australian participants rating this marginally higher than Japanese participants. This was followed by foods claiming *heart health/ and or cholesterol lowering*, Chinese participants rated this the highest (37 per cent *very important*, 38 per cent *important*),

followed by Australian (27 per cent *very important*, 42 per cent *important*) and Japanese participants (21 per cent *very important*, 44 per cent *important*).

With regard to the importance of foods with *memory or brain function* benefits, Chinese participants rated this higher (33 per cent *very important*, 42 per cent *important*) than Australian and Japanese participants (24 per cent *very important*, 43 per cent *important* for Australia; and 22 per cent *very important*, 45 per cent *important* for Japan).

Figure 3-2: Importance of reduced risk of cancer, aid digestion and improved gut comfort, weight management and energy and endurance in food purchases

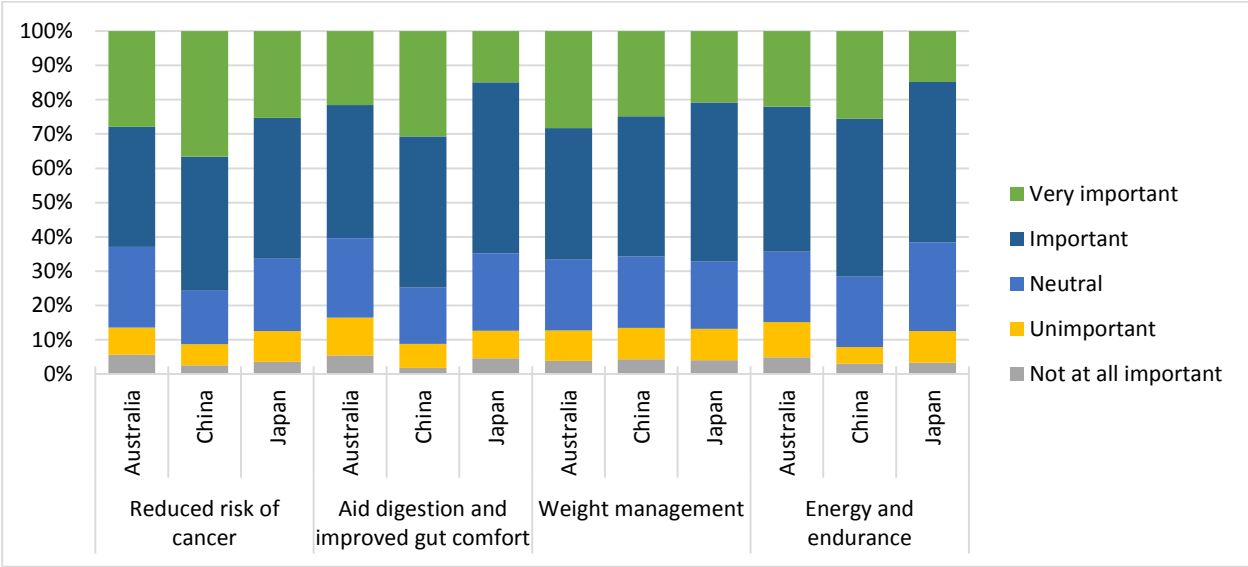


Figure 3-2 shows that the claim for *reduced risk of cancer* in foods was important to participants in all countries. It was rated highest by Chinese respondents (37 per cent *very important*, 39 per cent *important*), followed by Japanese (25 per cent *very important*, 41 per cent *important*) and Australian participants (28 per cent *very important*, 35 per cent *important*).

With regard to the claim of *aiding digestion and improved gut comfort* in food, Chinese participants rated this the highest (31 per cent *very important*, 44 per cent *important*), followed by Japanese (15 per cent *very important*, 50 per cent *important*) and Australian participants (22 per cent *very important*, 39 per cent *important*). In contrast, weight management claims in food were particularly important to Japanese participants (21 per cent *very important*, 47 per cent *important*).

Figure 3-3: Importance of improved physical activity and/or strength, eye care, blood pressure control and skin health in food purchases

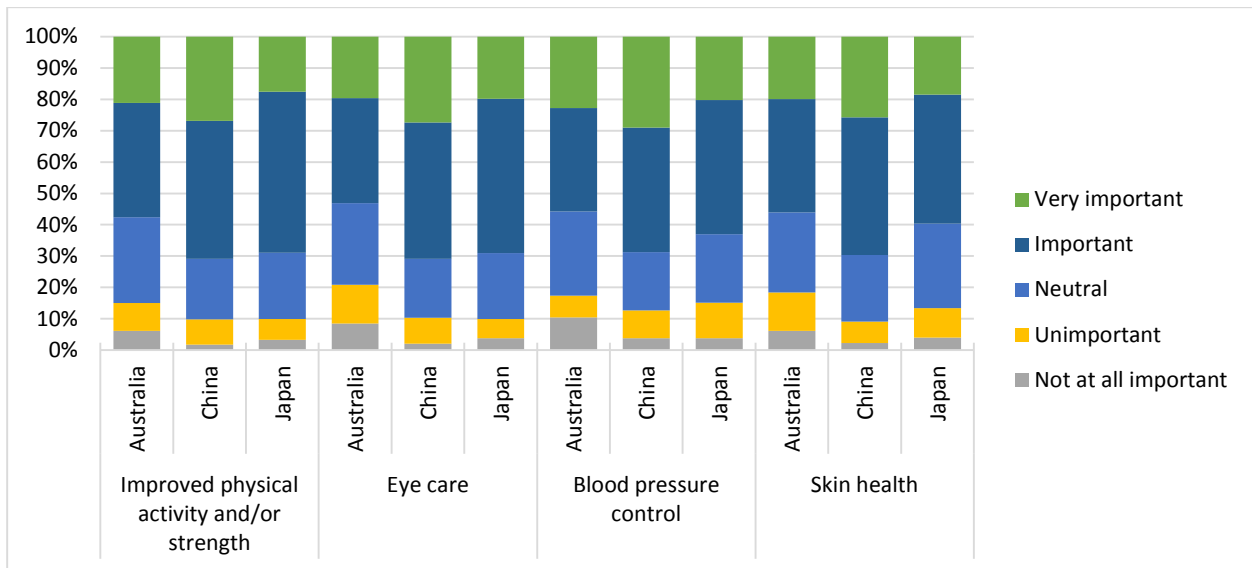


Figure 3-3 shows that the claim of improved *physical activity and/or strength* as a reason for food purchase was rated highly important by Chinese participants (27 per cent *very important*, 44 per cent *important*), followed by Japanese (18 per cent *very important*, 51 per cent *important*) then Australian participants (21 per cent *very important*, 37 per cent *important*). Similarly, for the importance of the claim of *energy and endurance* in foods, Chinese participants rated this the highest (26 per cent *very important*, 46 per cent *important*), followed by Australian (22 per cent *very important*, 42 per cent *important*) and Japanese participants (15 per cent *very important*, 47 per cent *important*).

Interestingly, foods incorporating *eye care* benefits was more important to Japanese respondents with 49 per cent indicating this to be *important*, than to Australians and Chinese with only 33 and 43 per cent stating this is important. In contrast, food products that enhance *skin health* were more important to Chinese participants (26 per cent *very important*, 44 per cent *important*), than to Japanese (19 per cent *very important*, 41 per cent *important*) and Australian participants (20 per cent *very important*, 36 per cent *important*).

The figure shows further that foods for *blood pressure control* was rated the highest by Chinese participants (29 per cent *very important*, 40 per cent *important*), with Japanese participants rating this higher than their Australian counterparts.

Figure 3-4 Importance aiding relaxation/sleep; prevent/ manage diabetes; anti-aging products and baby or child health/development in food purchases

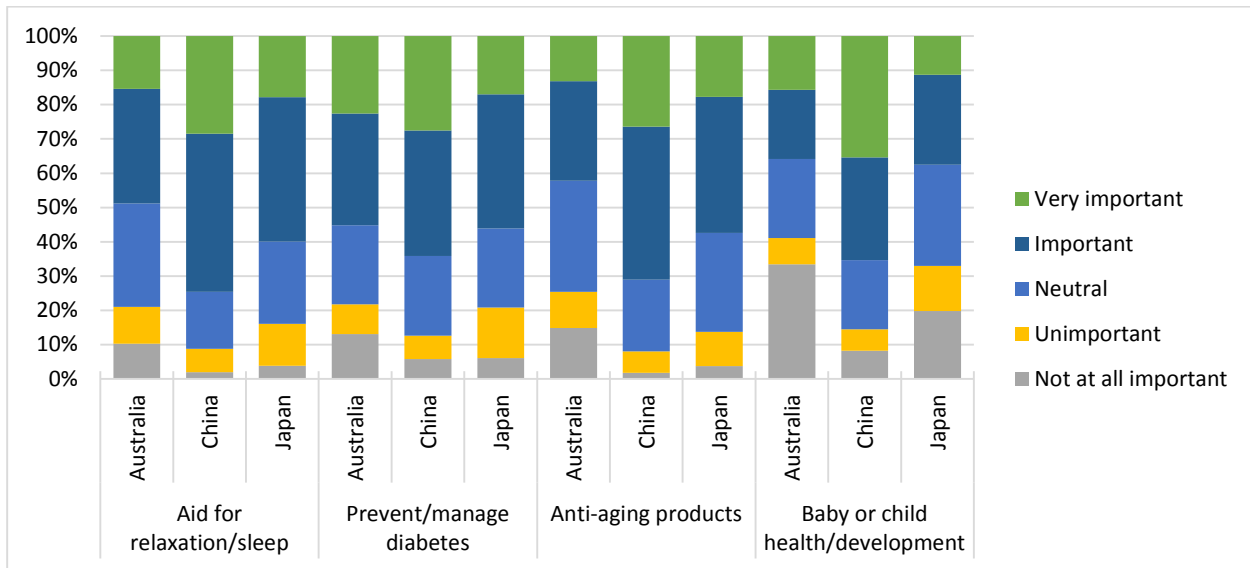


Figure 3-4 shows that the *aid for relaxation/sleep* as a reason for food purchases was important to respondents in the three surveyed countries. Chinese participants rated this the highest (28 per cent *very important*, 46 per cent *important*), followed by Japanese (18 per cent *very important*, 42 per cent *important*) and Australian participants (15 per cent *very important*, 33 per cent *important*).

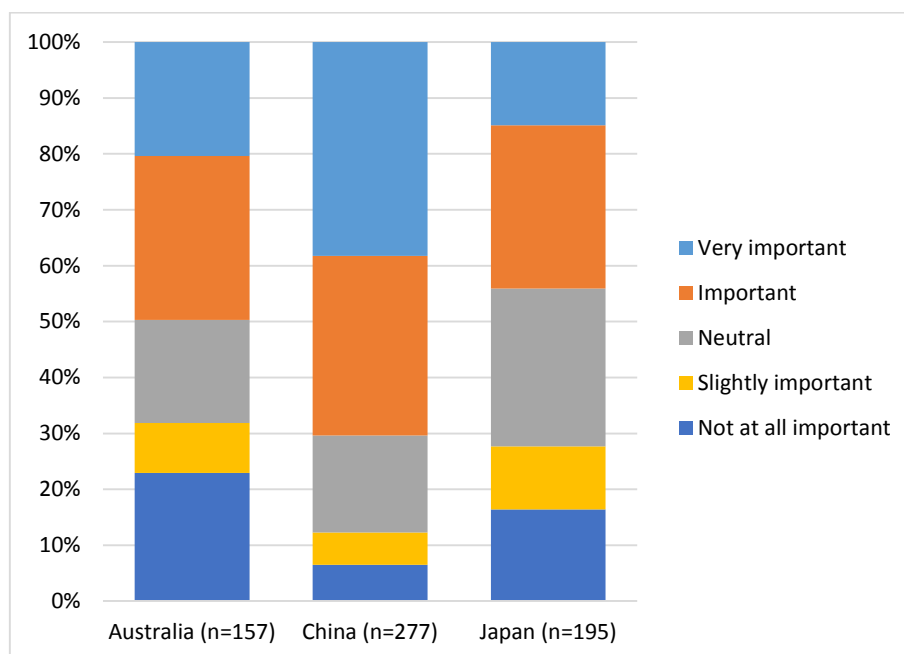
For the *prevention or management of diabetes*, Chinese participants indicated the highest rating of importance (28 per cent *very important*, 37 per cent *important*), followed by Australian (23 per cent *very important*, 33 per cent *important*) and Japanese participants (17 per cent *very important*, 39 per cent *important*).

Similarly, *anti-aging products* were rated most highly by Chinese participants (26 per cent *very important*, 45 per cent *important*), followed by Japanese (18 per cent *very important*, 40 per cent *important*) and Australian participants (13 per cent *very important*, 29 per cent *important*). Of all sixteen health and wellbeing claims this was the least important for Australian survey respondents.

Baby or child health/development in foods was *very important* to a third of Chinese respondents and it was *important* to another 30 per cent. Further, more than a third of Australians and Japanese participants indicated that *baby or child health/development* in foods is *very important* and *important*.

A sub-sample of participants with children was also analysed and showed, not surprisingly, that the importance of *baby or child health/development* in food products was higher than the importance of that attribute in the total sample. However, the comparative difference between the responses of the total sample and sub-sample was not high. Results of this are illustrated in Figure 3-5 which shows that 70 per cent of Chinese participants with children stated that *baby or child health/development* was *very important* and *important* in foods, followed by 49 per cent of Australian participants and 44 per cent of Japanese participants. Interestingly, of those with children, 23 per cent of Australian and 16 per cent of Japanese participants indicated that *baby or child health/development* in relation to food products was *not important at all*.

Figure 3-5: Importance of baby or child health/development in food purchases of participants with children



Overall, of all sixteen health and wellbeing claims *immunity* in food products was rated most important, followed by *bone and/or joint health*, then *memory or brain function*. Country -specific consumer preferences for these claims are ranked and shown in Table 3-1 while Chinese and Japanese participants rated *immunity* as the most important health claim in food, Australians indicated that *heart health and/ or cholesterol lowering* was the most important health claim in foods. Interestingly, for Japanese respondents, the health claim of *eye care* in foods was more important than for respondents from China and Australia.

Table 3-1: Top 5 health and wellbeing claims by country

	Australia	China	Japan
1	Heart health and/or cholesterol lowering (68.1%)	Immunity (82.5%)	Immunity (72.3%)
2	Bone and/or joint health (67.3%)	Bone and/or joint health (78.7%)	Eye care (69.0%)
3	Memory or brain function (66.9%)	Reduced risk of cancer (75.7%)	Improved physical activity and/or strength (69.0%)
4	Weight management (66.7%)	Heart health and/or cholesterol lowering (75.5%)	Weight management (67.3%)
5	Energy and endurance (64.4%)	Memory or brain function (75.3%)	Bone and/or joint health (67.3%)

Note: Rating is based on respondents that selected 'very important' and 'important' in this question. Percentages shown in brackets is the sum of responses that selected 'very important' and 'important'.

3.2 Importance of specific health and/ or wellbeing claims in food

Following the assessment of consumer attitudes towards sixteen health and wellbeing claims in as a reason for food purchase, the survey then examined five specific health/wellbeing claims in more depth assessing product purchases for these claims and if consumers believe whether these claims for these products are based on scientific testing; these are aligned with the broad health claims targeted by the HVN science challenge (see Chapter 1). The five specific health/wellbeing claims included:

1. Prevent/control obesity, diabetes and/or heart disease;
2. aiding and improving immunity;
3. aiding digestion and/or improved gut comfort;
4. improved physical activity and/or strength; and
5. baby or child health/development.

If a participant had indicated (in the second question of the survey) that they had purchased food products to prevent/control obesity, diabetes and/or heart disease, they would be shown a follow-up question showing them a list of food products to indicate which specific food item they had purchased for this purpose, as well as if they believed that specific claim of the specific product was based on scientific testing. The list of food products included: cheese, butter, milk powder, liquid milk, yoghurt, yoghurt/probiotic drink(s), margarine, other dairy products, beef, lamb, chicken, other meat products, kiwifruit, apples, berries, other fruit products, broccoli, avocados, other vegetable products, honey, mussels, salmon, other fish or seafood products, oats, fruit juice, nuts, cereals, muesli bars and other food products. For the question regarding *baby or child health/development*, four extra products were included; these were infant formula, toddler milk, baby cereals and weaning/baby food.

In the survey development the consensus was to have a comprehensive list of products as possible. As a results it is not surprising that respondents did not select every food product.

3.2.1 Purchases of products to prevent/control obesity, diabetes and/or heart disease

This question asked respondents to indicate which of the following products they purchase to *prevent/control obesity, diabetes and/or heart disease* and whether they believe that the claims on the product are scientifically validated. The question was shown to respondents that selected *very important* or *important* for the flowing claims in the second question of the survey: 'prevent/manage diabetes', 'weight management', 'heart health and/or cholesterol lowering' and 'blood pressure control'. The top 10 products purchased to prevent/control obesity, diabetes and/or heart disease by country are presented in Table 3-2.

Table 3-2: Top 10 purchased food products for the purpose of preventing/controlling obesity, diabetes and/or heart disease by country

	Australia	China	Japan
1	Broccoli (62.2%)	Apples (64.7%)	Yoghurt (64.5%)
2	Nuts (58.2%)	Yoghurt (62.1%)	Apples (43.6%)
3	Apples (57.6%)	Kiwifruit (61.2%)	Broccoli (42.2%)
4	Avocados (57.3%)	Nuts (55.7%)	Yoghurt/Probiotic drink (41.9%)
5	Other vegetables (56.7%)	Broccoli (55.4%)	Liquid milk (38.1%)
6	Salmon (55.8%)	Oats (52.8%)	Nuts (37.2%)
7	Berries (52.7%)	Beef (51.0%)	Other vegetables (35.5%)
8	Chicken (52.4%)	Honey (50.1%)	Cheese (35.2%)
9	Yoghurt (52.1%)	Cereals (50.1%)	Chicken (34.9%)
10	Other fruit (48.5%)	Berries (49.9%)	Kiwifruit (31.1%)

Note: Percentage shows respondents selecting 'yes' in this question.

Table 3-2 shows the top 10 of purchased food products to *prevent/control obesity, diabetes and/or heart disease* by country. It can be seen that the product purchases are varied by country. While Australian participants indicated that they purchase *broccoli* for these benefits (62 per cent), Chinese participants indicated that they purchase *apples* to prevent/control obesity, diabetes and/or heart disease (65 per cent). In contrast, more Japanese participants indicated that they purchase *yoghurt* for this purpose (65 per cent).

Participants were then asked to indicate if they believed that specific claims for the *prevention/control of obesity, diabetes and/or heart diseases* were scientifically verified for the above products. Table 3-3 shows the top 10 products for each country that the consumers believe the claim is based on scientific testing. Also, similar to the above, responses varied between countries while almost half of Australian respondents stated to believe the claim of *prevention/control of obesity, diabetes and/or heart diseases* is based on scientific testing for nuts, Chinese respondents believe this is true for kiwifruit (54 per cent) and Japanese for yoghurt (60 per cent).

Table 3-3: Top 10 products believed that the claim of preventing/controlling obesity, diabetes and/or heart disease is based on scientific testing by country

	Australia	China	Japan
1	Nuts (48.2%)	Kiwifruit (53.9%)	Yoghurt (59.9%)
2	Broccoli (45.1%)	Apples (53.1%)	Yoghurt/Probiotic drink (44.5%)
3	Salmon (44.8%)	Yoghurt (52.5%)	Broccoli (40.1%)
4	Avocados (44.2%)	Nuts (51.6%)	Apples (39.5%)
5	Yoghurt (42.4%)	Oats (49.9%)	Nuts (39.2%)
6	Berries (42.1%)	Broccoli (49.3%)	Liquid milk (36.9%)
7	Apples (41.8%)	Cereals (45.2%)	Other vegetables (35.8%)
8	Other vegetables (41.5%)	Berries (44.9%)	Cheese (32.0%)
9	Oats (39.0%)	Honey (44.3%)	Chicken (31.1%)
10	Other fish or seafood (38.7%)	Yoghurt/Probiotic drink (42.3%)	Fruit juice (29.7%)

Note: Percentage shows respondents selecting 'yes' in this question.

However, for some products respondents in the three surveyed countries indicated they do **not** believe that the claim of preventing/controlling obesity, diabetes and/or heart disease is based on scientific testing. Table 3-4 shows the top 10 products for each country that are **not** believed to be scientifically validated. It can be seen that respondents from all countries indicated to **not** believe that dairy spreads and milk powder to prevent/control obesity, diabetes and/or heart disease is based on scientific testing.

Table 3-4: Top 10 products believed that the claim of preventing/controlling obesity, diabetes and/or heart disease is NOT based on scientific testing by country

	Australia	China	Japan
1	Milk powder (18.3%)	Margarine (27.1%)	Margarine (17.4%)
2	Margarine (16.5%)	Butter (21.9%)	Milk powder (14.8%)
3	Butter (14.3%)	Other dairy products (20.1%)	Butter (12.5%)
4	Fruit juice (13.7%)	Cheese (18.1%)	Lamb (12.2%)
5	Muesli bars (13.4%)	Other meat (17.5%)	Other dairy products (11.9%)
6	Cheese (12.8%)	Lamb (13.4%)	Beef (10.5%)
7	Other dairy products (12.2%)	Chicken (13.4%)	Other meat (9.6%)
8	Liquid milk (11.0%)	Milk powder (13.1%)	Cereals (9.3%)
9	Mussels (10.1%)	Yoghurt/Probiotic drink (13.1%)	Mussels (9.0%)
10	Cereals (10.1%)	Fruit juice (12.5%)	Salmon (8.7%)

Note: Percentage shows respondents selecting 'no' in this question.

3.2.2 Purchases of products for aiding and improving immunity

This question asked respondents to indicate which of the following products they purchase to *aid and improve immunity* and whether they believe that the claims on the product are based on scientific testing. The question was shown to respondents that selected *very important* or *important* for claim ‘immunity’ in the second question of the survey. The top 10 products purchased for *aiding and improving immunity* by country are presented in Table 3-5.

Table 3-5: Top 10 purchased foods for aiding and improving immunity by country

	Australia	China	Japan
1	Berries (46.9%)	Kiwifruit (54.8%)	Yoghurt (69.4%)
2	Broccoli (46.5%)	Yoghurt (50.8%)	Yoghurt/Probiotic drink (45.8%)
3	Other vegetables (46.1%)	Beef (49.5%)	Cheese (37.3%)
4	Apples (42.0%)	Liquid milk (48.3%)	Liquid milk (37.3%)
5	Avocados (40.8%)	Honey (48.0%)	Broccoli (33.1%)
6	Kiwifruit (38.0%)	Apples (47.7%)	Apples (30.6%)
7	Yoghurt (37.6%)	Nuts (47.1%)	Other vegetables (26.4%)
8	Honey (37.1%)	Oats (42.8%)	Nuts (25.7%)
9	Salmon (36.3%)	Broccoli (42.2%)	Beef (24.3%)
10	Other fruit (35.9%)	Cereals (40.6%)	Chicken (22.5%)

Note: Percentage shows respondents selecting ‘yes’ in this question.

While Australian participants indicated that they purchase *berries* and *broccoli* to *aid and improve immunity* (47 per cent, each), Chinese participants indicated that they purchase *kiwifruit* to *aid and improve immunity* (54.8 per cent). In contrast, Japanese participants indicated that they purchase *yoghurt* and *yoghurt drinks* for this purpose (69 per cent and 46 per cent, respectively).

Participants were then asked to indicate if they believed that the claims for *aiding and improving immunity* were scientifically verified for the above products. Table 3-6 shows the top 10 products for each country that the consumers believe that the claims are based on scientific testing. A third of Australian participants believe this is true for *broccoli* (47 per cent) and *other vegetables* (46 per cent). Chinese and Japanese respondents believe this is true for the products they indicated to buy for this purpose. This was *kiwifruit* and *yoghurt* for Chinese respondents and *yogurt* and *yoghurt drink* for the Japanese survey participants.

Table 3-6: Top 10 products believed that the claim of aiding and improving immunity is based on scientific testing by country

	Australia	China	Japan
1	Broccoli (33.9%)	Kiwifruit (46.2%)	Yoghurt (62.7%)
2	Other vegetables (33.5%)	Yoghurt (45.5%)	Yoghurt/Probiotic drink (42.3%)
3	Berries (32.7%)	Honey (43.7%)	Cheese (36.6%)
4	Apples (30.2%)	Apples (43.4%)	Liquid milk (35.6%)
5	Avocados (29.8%)	Nuts (42.5%)	Broccoli (34.2%)
6	Kiwifruit (27.8%)	Liquid milk (41.2%)	Apples (31.0%)
7	Other fruit (27.3%)	Cereals (40.3%)	Nuts (27.1%)
8	Yoghurt (26.1%)	Oats (39.7%)	Other vegetables (26.8%)
9	Salmon (25.3%)	Broccoli (38.2%)	Honey (25.7%)
10	Honey (24.9%)	Beef (37.8%)	Chicken (25.4%)

Note: Percentage shows respondents selecting 'yes' in this question.

For some products, survey respondents indicated they do **not** believe that the claim *aiding and improving immunity* is based on scientific testing. Table 3-7 shows the top 10 products for each country that respondents do **not** believe to be scientifically validated for this claim. It can be seen that respondents in Australia and China do **not** believe that *aiding and improving immunity* as a benefit in dairy spreads is scientifically validated, while Japanese are more likely to think this is not true for margarine, milk powder and mussels.

Table 3-7: Top 10 products believed that the claim of aiding and improving immunity is NOT based on scientific testing by country

	Australia	China	Japan
1	Margarine (12.7%)	Margarine (22.8%)	Margarine (14.1%)
2	Butter (10.6%)	Butter (17.8%)	Milk powder (10.9%)
3	Milk powder (10.2%)	Cheese (12.9%)	Mussels (9.5%)
4	Fruit juice (10.2%)	Other meat (12.3%)	Lamb (9.2%)
5	Mussels (9.4%)	Milk powder (12.0%)	Butter (8.8%)
6	Other dairy products (8.6%)	Other dairy products (12.0%)	Oats (8.5%)
7	Muesli bars (8.6%)	Yoghurt/Probiotic drink (11.4%)	Muesli bars (8.5%)
8	Cheese (8.2%)	Other fish or seafood (11.1%)	Other dairy products (8.1%)
9	Cereals (8.2%)	Chicken (10.8%)	Other fish or seafood (8.1%)
10	Liquid milk (7.8%)	Muesli bars (10.8%)	Other meat (7.0%)

Note: Percentage shows respondents selecting 'no' in this question.

3.2.3 Purchases of products for aiding digestion and/or improved gut comfort

This question asked respondents to indicate which of the following products they purchase to *aid digestion and/or improved gut comfort* and whether they believe that the claims of the product are based on scientific testing. The question was shown to respondents that selected *very important* or *important* for the claim 'aid digestion and improved gut comfort' in the second question of the

survey. The top 10 products purchased aiding digestion and/or improved gut comfort by country are presented in Table 3-8.

Table 3-8: Top 10 purchased food products for aiding digestion and/or improved gut comfort by country

	Australia	China	Japan
1	Yoghurt (50.6%)	Yoghurt (65.0%)	Yoghurt (64.1%)
2	Yoghurt/Probiotic drink (42.6%)	Yoghurt/Probiotic drink (50.8%)	Yoghurt/Probiotic drink (40.6%)
3	Berries (28.5%)	Apples (44.1%)	Apples (29.3%)
4	Apples (26.4%)	Honey (41.1%)	Other vegetables (28.9%)
5	Oats (26.0%)	Kiwifruit (34.7%)	Liquid milk (25.0%)
6	Broccoli (25.1%)	Berries (32.0%)	Kiwifruit (19.9%)
7	Other vegetables (24.7%)	Other vegetables (31.0%)	Cheese (18.8%)
8	Other fruit (24.3%)	Other fruit (30.3%)	Other fruit (15.2%)
9	Cereals (23.0%)	Cereals (30.0%)	Fruit juice (15.2%)
10	Kiwifruit (20.9%)	Oats (29.3%)	Broccoli (14.8%)

Note: Percentage shows respondents selecting ‘yes’ in this question.

As shown in the table, respondents from all countries purchase yoghurt and yoghurt drinks to *aid digestion and/or improve gut comfort* and as shown in Table 3-9 respondents believe that this claim for these products is based on scientific testing. In addition, respondents from all countries indicated to buy apples for this benefit and interestingly Chinese were more likely to purchase honey to *aid digestion and/or improve gut comfort* as shown in Table 3-8 which they also believe is scientifically validated to *aid digestion and/or improve gut comfort* (see Table 3-9).

Table 3-9: Top 10 products believed that the claim of aiding digestion and/or improved gut comfort is based on scientific testing by country

	Australia	China	Japan
1	Yoghurt/Probiotic drink (37.0%)	Yoghurt (54.5%)	Yoghurt (61.3%)
2	Yoghurt (36.6%)	Yoghurt/Probiotic drink (44.4%)	Yoghurt/Probiotic drink (39.8%)
3	Oats (22.1%)	Apples (40.4%)	Apples (32.4%)
4	Berries (18.7%)	Honey (35.7%)	Other vegetables (29.3%)
5	Broccoli (17.4%)	Kiwifruit (34.7%)	Liquid milk (23.4%)
6	Other fruit (16.2%)	Oats (33.7%)	Kiwifruit (21.9%)
7	Cereals (16.2%)	Berries (30.0%)	Cheese (20.3%)
8	Kiwifruit (15.7%)	Other fruit (29.6%)	Broccoli (19.1%)
9	Apples (15.7%)	Other vegetables (29.3%)	Fruit juice (19.1%)
10	Other vegetables (15.7%)	Broccoli (29.0%)	Other fruit (18.8%)

Note: Percentage shows respondents selecting ‘yes’ in this question.

For some products, survey respondents indicated they do **not** believe that the claim *aiding digestion and/or improved gut comfort* is based on scientific testing. Table 3-10 shows the top 10 products for each country that respondents do **not** believe to be scientifically validated for this claim. It can be seen that respondents in Australia and China do **not** believe that *aiding and improving immunity* as a benefit in dairy spreads is scientifically validated, while Japanese think this is not true for milk powder and margarine. Also, respondents from all countries don't believe this is true for meat and seafood.

Table 3-10: Top 10 products believed that the claim of aiding digestion and/or improved gut comfort is NOT based on scientific testing by country

	Australia	China	Japan
1	Butter (10.6%)	Margarine (20.9%)	Milk powder (11.7%)
2	Margarine (10.6%)	Butter (15.8%)	Margarine (10.5%)
3	Lamb (10.6%)	Chicken (14.1%)	Lamb (10.2%)
4	Liquid milk (9.8%)	Other meat (13.5%)	Mussels (9.0%)
5	Beef (9.8%)	Other fish or seafood (12.8%)	Other dairy products (8.6%)
6	Mussels (9.8%)	Lamb (12.5%)	Butter (8.2%)
7	Cheese (9.4%)	Other dairy products (12.1%)	Beef (7.8%)
8	Other dairy products (9.4%)	Beef (11.1%)	Other meat (7.8%)
9	Other meat (9.4%)	Cheese (10.8%)	Liquid milk (7.4%)
10	Milk powder (8.9%)	Mussels (10.8%)	Cheese (7.0%)

Note: Percentage shows respondents selecting 'no' in this question.

3.2.4 Purchases of products for improved physical activity and/or strength

This question asked respondents to indicate which of the following products they purchase *to improve physical activity and/or strength* and whether they believe that the claims of the product are based on scientific testing. The question was shown to respondents that selected *very important* or *important* for the claims 'improved physical activity or strength' and 'bone and/or joint health' in the second question of the survey. The top 10 products purchased *to improve physical activity and/or strength* by country are presented in Table 3-11.

Table 3-11 Top 10 purchased foods for improved physical activity and/or strength by country

	Australia	China	Japan
1	Beef (55.4%)	Beef (60.0%)	Beef (49.2%)
2	Chicken (46.6%)	Lamb (45.3%)	Chicken (49.2%)
3	Lamb (38.4%)	Chicken (40.6%)	Liquid milk (45.6%)
4	Cheese (32.7%)	Liquid milk (38.2%)	Cheese (42.1%)
5	Liquid milk (31.6%)	Nuts (36.2%)	Yoghurt (37.2%)
6	Broccoli (31.6%)	Yoghurt (34.4%)	Yoghurt/Probiotic drink (25.2%)
7	Other vegetables (31.3%)	Milk powder (32.4%)	Other meat (25.2%)
8	Salmon (30.3%)	Cheese (32.1%)	Nuts (23.0%)
9	Yoghurt (29.9%)	Apples (30.6%)	Apples (21.4%)
10	Nuts (27.9%)	Honey (29.4%)	Honey (21.0%)

Note: Percentage shows respondents selecting 'yes' in this question.

Results show that respondents from all countries purchase meat products to *improve physical activity and/or strength* and they believe that the claim for these products is based on scientific testing (see Table 3-12). In addition, respondents from all surveyed countries purchase liquid milk for this benefit which they also believe is scientifically validated to *improve physical activity and/or strength* (see Table 3-12).

Table 3-12: Top 10 products believed that the claim of improved physical activity and/or strength is based on scientific testing by country

	Australia	China	Japan
1	Beef (39.5%)	Beef (49.1%)	Beef (46.0%)
2	Chicken (33.0%)	Lamb (40.9%)	Chicken (45.3%)
3	Lamb (27.9%)	Nuts (34.7%)	Liquid milk (44.0%)
4	Liquid milk (24.5%)	Chicken (34.4%)	Cheese (40.8%)
5	Broccoli (24.5%)	Liquid milk (33.8%)	Yoghurt (39.2%)
6	Other vegetables (24.1%)	Honey (32.1%)	Yoghurt/Probiotic drink (27.2%)
7	Salmon (22.8%)	Oats (30.6%)	Nuts (24.9%)
8	Yoghurt (22.4%)	Apples (30.3%)	Other meat (24.3%)
9	Other fish or seafood (21.1%)	Yoghurt (29.7%)	Apples (22.3%)
10	Oats (20.7%)	Cereals (29.1%)	Other fish or seafood (21.7%)

Note: Percentage shows respondents selecting ‘yes’ in this question.

However, for some products respondents in the three surveyed countries indicated they do **not** believe that the claim improved physical activity or strength is based on scientific testing. Table 3-13 shows the top 10 products for each country that are **not** believed to be scientifically validated. It can be seen that respondents from all countries indicated to **not** believe that dairy spreads and milk powder in order to *improve physical activity and/or strength* is based on scientific testing.

Table 3-13: Top 10 products believed that the claim of improved physical activity and/or strength is NOT based on scientific testing by country

	Australia	China	Japan
1	Butter (10.9%)	Liquid milk (16.8%)	Margarine (11.0%)
2	Milk powder (8.8%)	Milk powder (15.9%)	Butter (8.7%)
3	Margarine (8.2%)	Fruit juice (13.8%)	Milk powder (8.7%)
4	Cheese (7.8%)	Apples (13.5%)	Other dairy products (8.4%)
5	Other dairy products (7.5%)	Beef (12.6%)	Mussels (8.4%)
6	Fruit juice (7.5%)	Butter (12.4%)	Lamb (7.1%)
7	Liquid milk (7.1%)	Yoghurt/Probiotic drink (12.4%)	Honey (7.1%)
8	Yoghurt/Probiotic drink (6.1%)	Kiwifruit (12.4%)	Salmon (7.1%)
9	Chicken (6.1%)	Nuts (12.1%)	Other fish or seafood (7.1%)
10	Other meat (6.1%)	Margarine (11.8%)	Oats (7.1%)

Note: Percentage shows respondents selecting ‘no’ in this question.

3.2.5 Purchases of products for baby and child health/ development

This question asked respondents to indicate which of the following products they purchase *for baby and child health/ development* and whether they believe that the claims of the product are based on scientific testing. The question was shown to respondents that selected *very important* or *important* for the claim ‘baby or child health’ in the second question of the survey. The top 10 products purchased for *baby and child health/ development* by country are presented in Table 3-14.

Table 3-14 Top 10 purchased food products for baby and child health/development by country

	Australia	China	Japan
1	Infant formula (38.5%)	Infant formula (69.6%)	Infant formula (40.7%)
2	Toddler milk (34.8%)	Toddler milk (54.5%)	Liquid milk (40.0%)
3	Baby cereals (34.1%)	Baby cereals (48.2%)	Yoghurt (40.0%)
4	Yoghurt (31.9%)	Weaning/baby food (38.3%)	Weaning/baby food (30.7%)
5	Liquid milk (30.4%)	Yoghurt (34.8%)	Baby cereals (26.4%)
6	Apples (29.6%)	Liquid milk (32.4%)	Milk powder (26.4%)
7	Cheese (28.9%)	Kiwifruit (31.6%)	Cheese (25.7%)
8	Broccoli (27.4%)	Apples (31.6%)	Yoghurt/Probiotic drink (22.1%)
9	Other fruit (26.7%)	Beef (30.8%)	Apples (22.1%)
10	Other vegetables (26.7%)	Milk powder (29.6%)	Toddler milk (21.4%)

Note: Percentage shows respondents selecting ‘yes’ in this question.

Results show that respondents from all countries purchase infant formula, toddler milk and baby cereals *for baby and child health/development*. In addition, Japanese respondents indicated to purchase liquid milk for this benefit. Respondents from all countries believe that the claim for these products is based on scientific testing (see Table 3-15).

Table 3-15: Top 10 products believed that the claim of baby or child health/development is based on scientific testing by country

	Australia	China	Japan
1	Infant formula (31.9%)	Infant formula (57.7%)	Liquid milk (42.9%)
2	Toddler milk (29.6%)	Toddler milk (49.0%)	Infant formula (41.4%)
3	Baby cereals (25.9%)	Baby cereals (38.3%)	Yoghurt (40.7%)
4	Yoghurt (25.2%)	Weaning/baby food (30.4%)	Weaning/baby food (34.3%)
5	Apples (23.7%)	Kiwifruit (30.4%)	Milk powder (29.3%)
6	Other fruit (23.7%)	Apples (29.6%)	Baby cereals (27.1%)
7	Cheese (23.0%)	Nuts (29.6%)	Cheese (27.1%)
8	Other vegetables (23.0%)	Cereals (28.9%)	Apples (26.4%)
9	Liquid milk (22.2%)	Liquid milk (28.1%)	Yoghurt/Probiotic drink (25.0%)
10	Berries (22.2%)	Yoghurt (28.1%)	Toddler milk (23.6%)

Note: Percentage shows respondents selecting ‘yes’ in this question.

For some products, survey respondents indicated they do **not** believe that the *claim of baby or child health/development* is based on scientific testing. Table 3-16 shows the top 10 products for each country that are **not** believed to be scientifically validated. It can be seen that respondents from all countries indicated to **not** believe *baby or child health/development* is based on scientific testing for margarine. Interestingly, the Japanese respondents do not believe that the *claim of baby or child health/development* in baby cereals is based on scientific testing.

Table 3-16: Top 10 products believed that the claim of baby or child health/development is NOT based on scientific testing by country

	Australia	China	Japan
1	Margarine (7.4%)	Margarine (16.2%)	Margarine (8.6%)
2	Fruit juice (6.7%)	Cheese (15.8%)	Baby cereals (6.4%)
3	Liquid milk (5.9%)	Butter (15.8%)	Butter (6.4%)
4	Muesli bars (5.9%)	Other meat (13.0%)	Other dairy products (6.4%)
5	Baby cereals (5.2%)	Other fish or seafood (11.9%)	Other fruit (6.4%)
6	Other meat (5.2%)	Lamb (11.1%)	Salmon (6.4%)
7	Toddler milk (4.4%)	Other dairy products (10.7%)	Milk powder (5.7%)
8	Butter (4.4%)	Beef (10.3%)	Lamb (5.7%)
9	Beef (4.4%)	Milk powder (9.9%)	Broccoli (5.7%)
10	Lamb (4.4%)	Yoghurt/Probiotic drink (9.9%)	Other fish or seafood (5.7%)

Note: Percentage shows respondents selecting ‘no’ in this question.

3.3 Scientific testing of health and wellbeing claims in food

In the next set of questions the survey assessed consumers’ importance of scientific validation of different health and wellbeing claims as well as different authentication schemes for health and wellbeing claims’ certification.

3.3.1 Importance of scientific testing of health and wellbeing claims in food

On a five-point Likert scale ranging from ‘very important’ to ‘not important at all’ participants were asked to indicate how important scientific testing is for selected health and/or wellbeing claims in food. The claims included *weight management, prevention/management of diabetes, heart health and/or cholesterol lowering, blood pressure control, improved activity or strength, baby or child health, and aiding digestion and improved gut comfort*. Results are shown in Figure 3-6 and 3-7; they are from a singular question within the survey.

As shown in Figure 3-6, *heart health and/or cholesterol lowering* in food was rated the most important health claim to be scientifically validated; Australian and Chinese respondents with 49 per cent, each indicated this is *very important*. In contrast, only 28 per cent of Japanese rated scientific validation for this claim as *very important*. Similarly, almost half of the Australian survey participants stated that it is *very important* to scientifically validate the claim *blood pressure control* in foods, this was higher than the importance ratings from the Chinese and Japanese respondents. Figure 3-6 shows also that scientific validation for the claim of *aiding digestion and improved gut comfort* in foods was highly important for consumers in the three surveyed countries with more than 75 per cent of consumers in each country rating this as *very important* and *important*.

Figure 3-6: Importance of scientific testing for hearth health and/ or cholesterol lowering; Aid digestion and improved gut comfort; improved physical activity and/or strength; blood pressure control

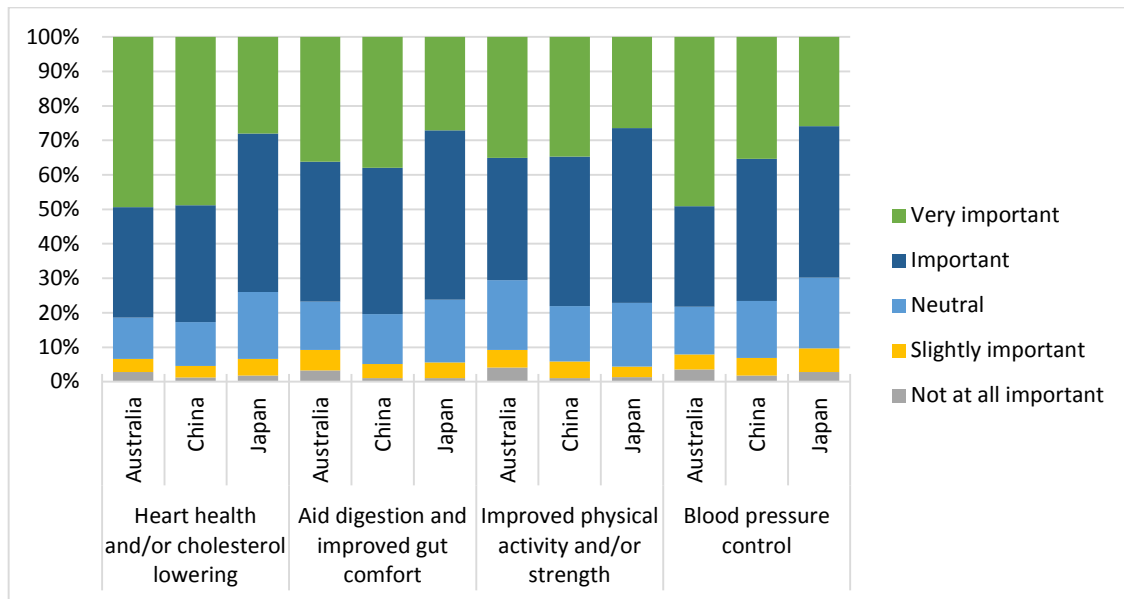
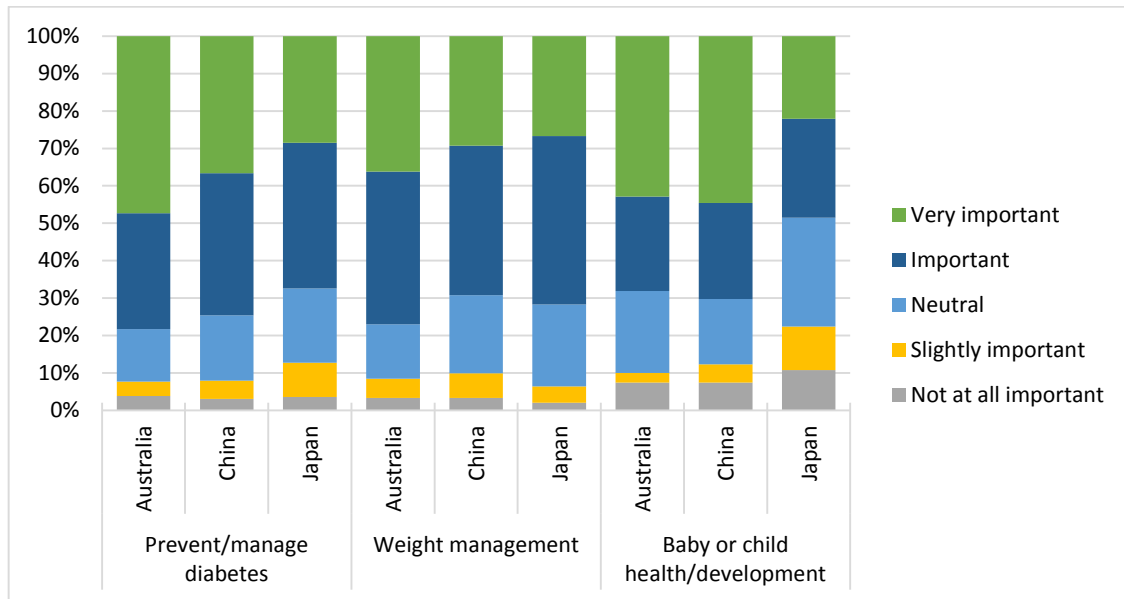


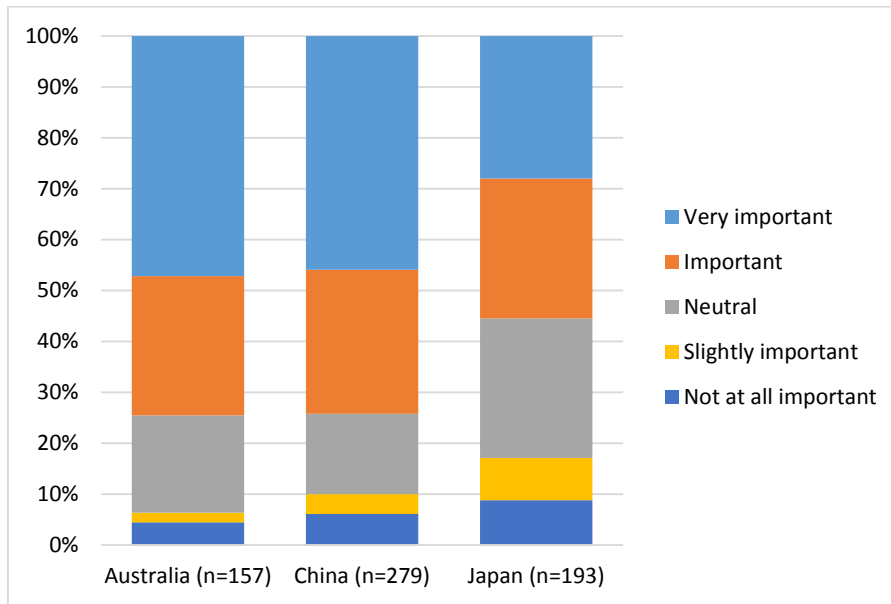
Figure 3-7 shows that scientific validation of the claims of *prevent/manage diabetes* is highly important to Australians with; 47 per cent stating this is *very important*, compared to only 28 per cent of Japanese claiming this is *very important*. Similarly, scientific validation of the claim *weight management* is more important to Australian respondents (36 per cent *very important*) than to Chinese (29 per cent *very important*) and Japanese (28 per cent *very important*). The figure shows further that scientific validation of the claim *baby or child health/ development* is important to Australian and Chinese respondents but it is not as important to Japanese respondents, with more than 10 per cent indicating this is not *important at all*.

Figure 3-7: Importance of scientific testing for prevent/ manage diabetes; weight management; baby or child health/ development



A sub-sample of participants with children was also analysed and not surprisingly this showed that the importance of scientific testing for *baby or child health/development* in food products was higher than for the total sample. The results are given in Figure 3-8 which shows that 74 per cent of Australian and Chinese participants indicated that scientific testing for *baby or child health/development* in relation to food products was *very important* and *important*. Also, more than half of Japanese respondents with children stated that scientific testing for *baby or child health/development* in relation to food products was *very important* and *important*.

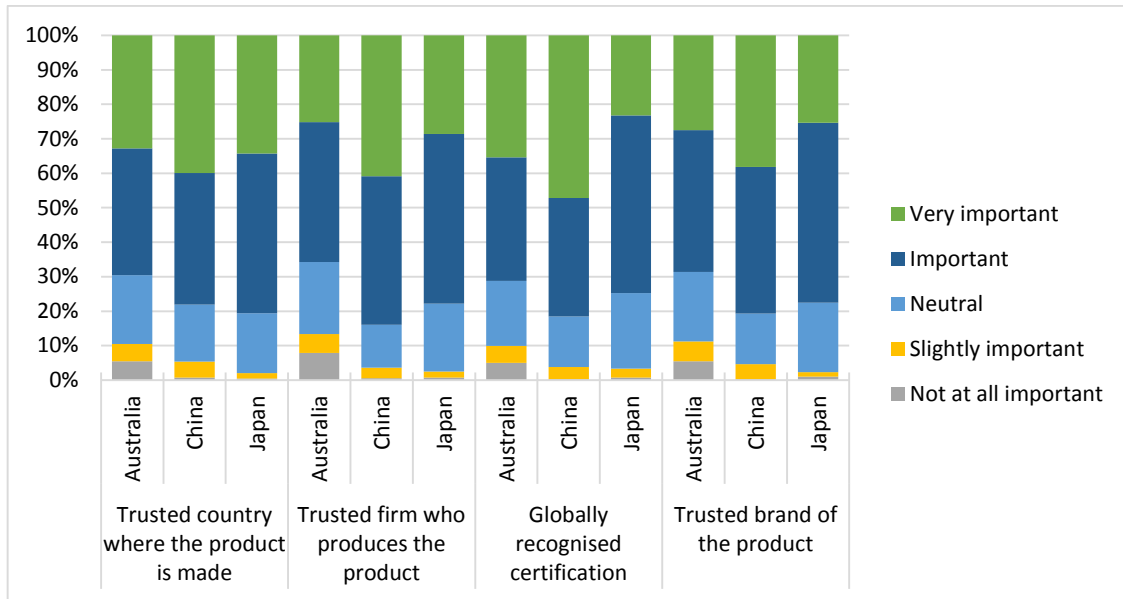
Figure 3-8: Importance of scientific testing for baby or child health/ development in foods from participants with children



3.3.2 Certification types for health and wellbeing benefits in food

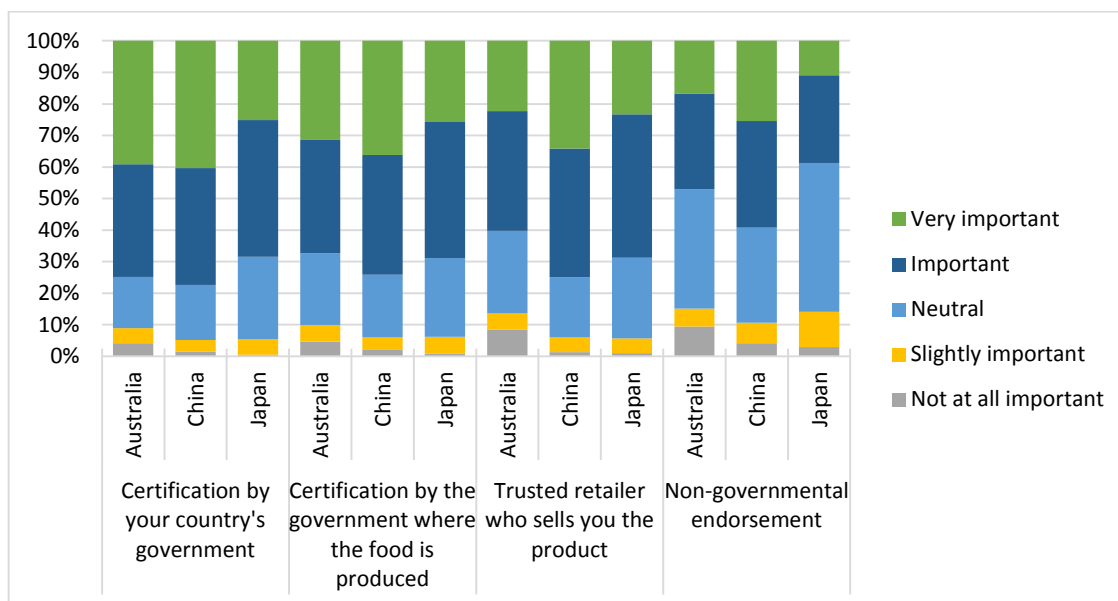
On a five point Likert scale, participants were then asked to rate the importance of different health and/ or wellbeing claims authentication schemes. Authentication types included: *certification by your country's government*; *certification by the government where the food is produced*; *globally recognised certification*; *non-governmental endorsement*; *trusted brand of the product*; *trusted firm who produces the product*; *trusted retailer who sells you the product*; *trusted country where the product is made*. Results are shown in Figure 3-9 and 3-10; they are from a singular question within the survey.

Figure 3-9: Importance of certification of health and/or wellbeing claims by type



As presented in Figure 3-9 and Figure 3-10 the importance of different authentication types for health and wellbeing claims in food varied between countries. While Australia participants put high importance on *certification by their own government* (39 per cent *very important*; 36 per cent *important*), Chinese participants indicated high importance for *trusted firm who produces the product* (41 per cent *very important*; 43 per cent *important*) and Japanese participants indicated high importance on *trusted country where product is made* (34 per cent *very important*; 46 per cent *important*). Lowest importance across all surveyed countries was observed for *non-governmental endorsement*.

Figure 3-10: Importance of certification of health and/or wellbeing claims by type



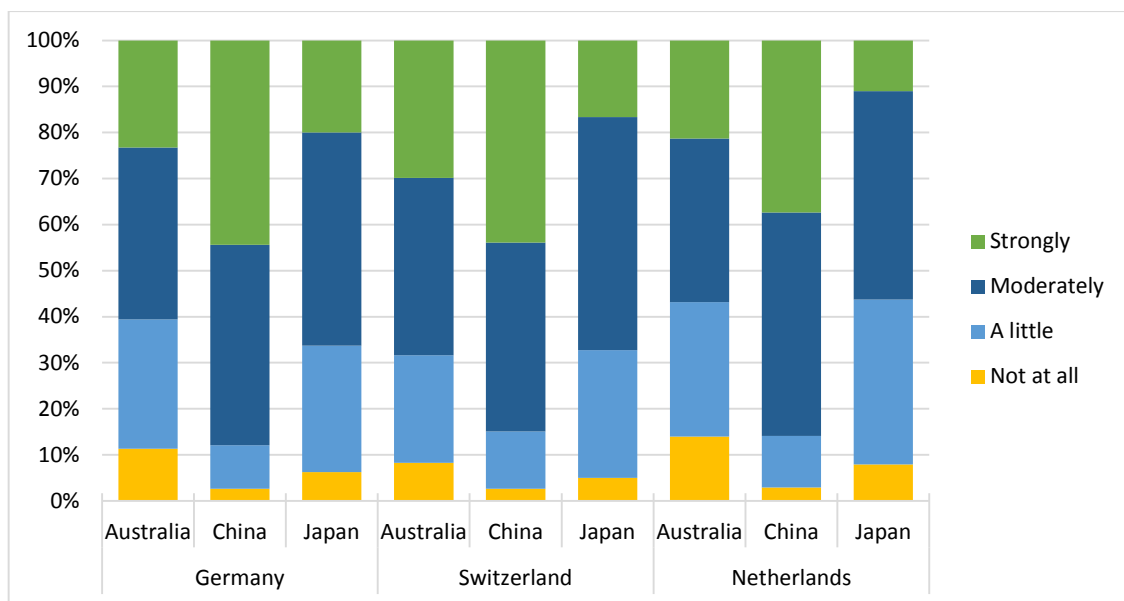
3.4 Countries reputation for foods with health and wellbeing benefits

As mentioned in Chapter 1, the aim of the HVN Science Challenge is to grow the New Zealand's international reputation as a producer of high-quality, safe foods with scientifically validated health benefits, hence it is important to understand how consumers rate and compare New Zealand with regard to foods for enhancing health or wellbeing and which countries' scientific testing of these claims consumers trust.

3.4.1 Countries associated with food with health and wellbeing benefits

Participants were then asked to indicate the extent to which they associated selected countries with foods for enhancing health or wellbeing. These countries included *Germany, Switzerland, New Zealand, USA, Japan, China, India, Australian* and the *Netherlands*. Results are shown in Figure 3-11 to 3-13; they are from a singular question within the survey.

Figure 3-11: Selected European countries associated with food for enhancing health and/or wellbeing



As shown in Figure 3-11, European countries are overall highly associated with food for enhancing health and/or wellbeing by consumers in China, Japan and Australia. This is particularly true for *Germany* which was ranked highest by Chinese participants with 89 per cent indicating a strong and moderate association with this country for foods with health and wellbeing benefits. For Japanese and Australian participants *Switzerland* was highly associated with foods for enhancing health and/or wellbeing; 67 per cent of Japanese and 68 per cent of Australians associated this country *strongly* and *moderately* with this type of foods.

Figure 3-12: Selected Pacific countries associated with food for enhancing health and/or wellbeing

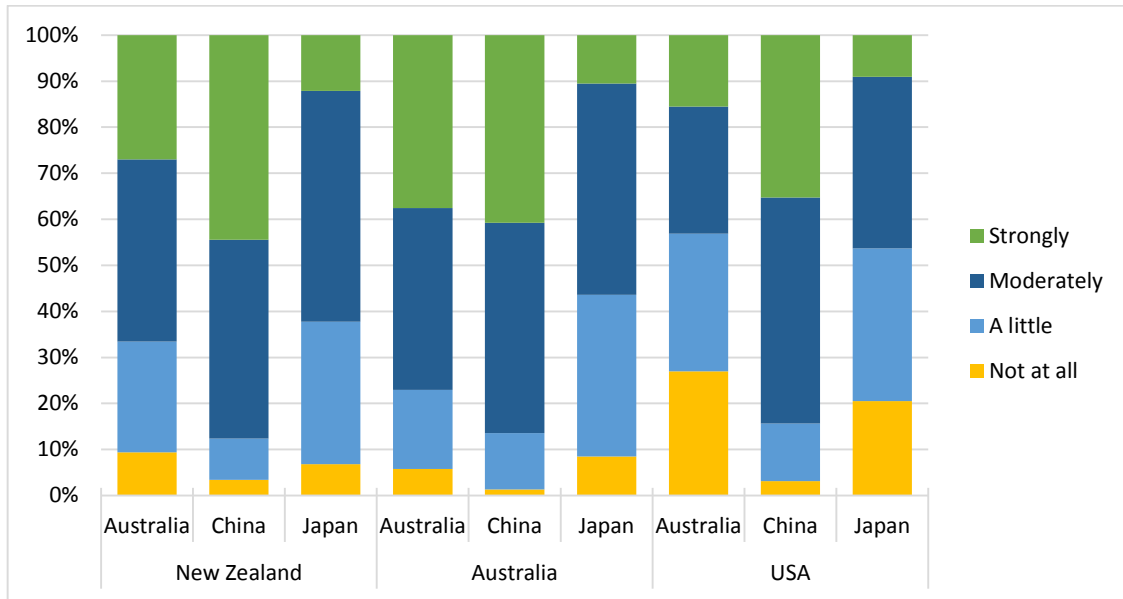


Figure 3-12 shows the survey participants' association of selected Pacific countries with health and wellbeing enhancing foods. It can be seen that Australian participants associate their own country highly with these food products with 77 per cent of participants selecting *strongly* and *moderately* in this question, while Chinese participants associate *New Zealand* strongly with health and wellbeing enhancing foods with 88 per cent of participants showing a strong and moderate association. The USA was associated highly with health and wellbeing enhancing foods by Chinese respondents (35 per cent *strongly*; 49 per cent *moderately*) compared to Australian (16 per cent *strongly*; 28 per cent *moderately*) and Japanese respondents (19 per cent *strongly*; 37 per cent *moderately*).

Figure 3-13: Selected Asian countries associated with food for enhancing health and/or wellbeing

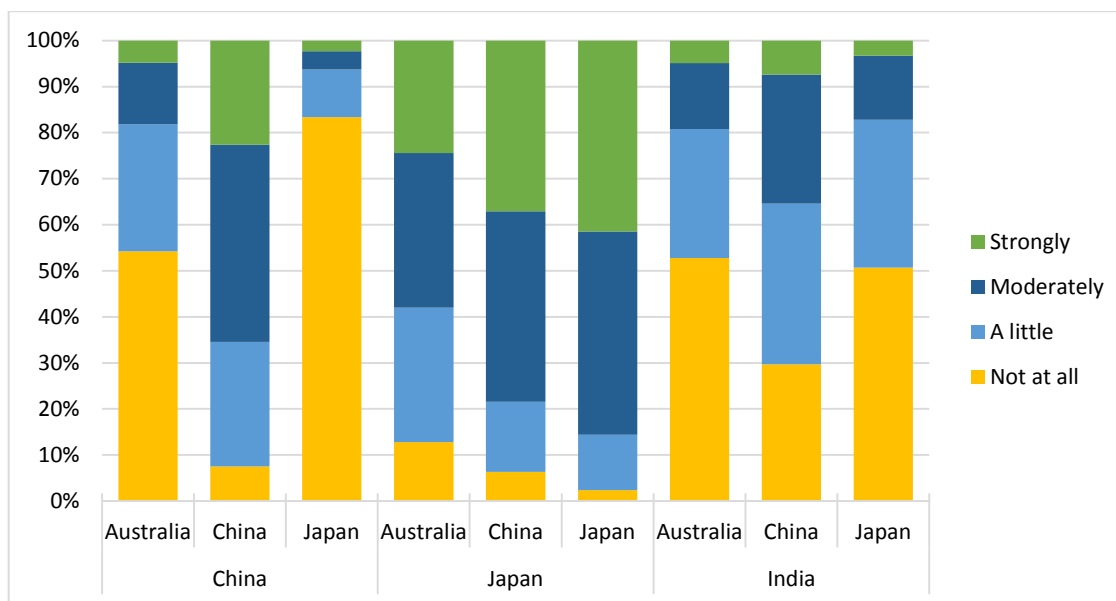


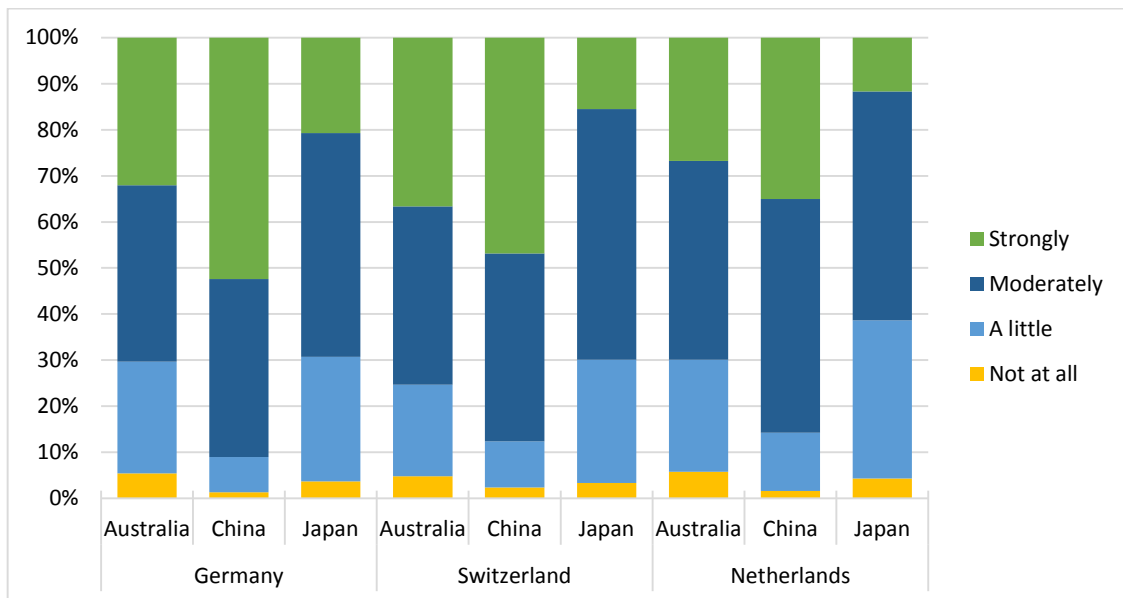
Figure 3-13 shows the survey participants’ association of selected Asian countries with foods with health and wellbeing enhancing benefits. It can be seen that Japanese participants associate their own country highly with these food products with 86 per cent of participants selecting *strongly* and *moderately* in this question, also Chinese participants associate Japan strongly with health and wellbeing enhancing foods with 78 per cent selecting *strongly* and *moderately*. , the For Chinese and Australian respondents, the least associated country of all listed countries for foods with health and wellbeing claims across participants was *India* with more than 30 per cent of participants in both countries selecting ‘not at all’. For Japan, the least associated country for foods with health and wellbeing enhancing benefits was *China* with 83 per cent of participants indicating to *not at all* associate this Asian country with foods claiming to incorporate health and wellbeing benefits.

In summary, overall, participants from the three surveyed countries associated *Japan* most with foods for enhancing health or wellbeing, followed by *Switzerland*, then *Australia*. Cross-country comparison showed that Chinese participants associated *Germany* most with foods for health and wellbeing enhancing benefits, followed by *New Zealand* and *Australia*. In contrast, Australian and Japanese participants, associate their own country most with foods for enhancing health or wellbeing, followed by *Switzerland*. Across all surveyed countries, *New Zealand* was ranked fourth (out of nine countries), in particular the Chinese participants associated *New Zealand* strongly with foods for health and wellbeing enhancing benefits with 88 per cent selecting *strongly* and *moderately*. The country least associated with foods for enhancing health or wellbeing was *India*.

3.4.2 Trust for scientifically validated health and wellbeing claims from different countries

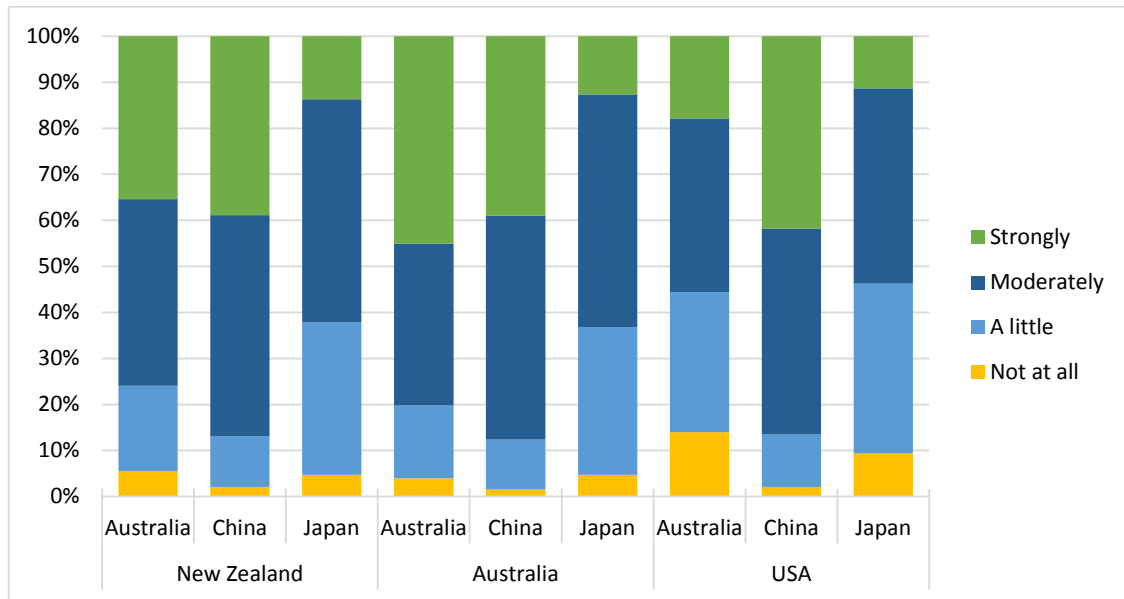
In the last question of the survey, participants were asked to indicate the extent to which they trust a food product’s specific claims for health or wellbeing benefits provided that scientific testing took place in one of the selected countries. The list of countries was the same than in the previous question and included *Germany, Switzerland, New Zealand, USA, Japan, China, India, Australian* and the *Netherlands*. Results are shown in Figure 3-14 to 3-16; they are from a singular question within the survey.

Figure 3-14: Trust in scientifically tested health and / wellbeing claims in selected European countries



As shown Figure 3-14, European countries are overall highly trusted if scientific testing would take place there, particularly in *Germany* and *Switzerland*. Chinese participants indicated the highest trust if scientific testing took place in *Germany* with more than 50 per cent selecting *strongly* and a further 39 per cent selecting *moderately*. This was followed by strong trust in products that were scientifically tested in *Switzerland* which was trusted highly by Japanese (16 per cent *strongly*; 55 per cent *moderately*) and Chinese participants (47 per cent *strongly*; 41 per cent *moderately*).

Figure 3-15: Trust in in scientifically tested health and / wellbeing claims in selected Pacific countries



As shown Figure 3-15, Japanese, Australian and Chinese participants trust food with health and/or wellbeing benefits if scientific testing would take place in one of the listed Pacific countries. Australian participants indicated the highest trust if scientific testing would take place in their own country (45per cent *strongly*, 35 per cent *moderately*). New Zealand is trusted by participants across all three surveyed countries with Chinese participants indicating the highest trust (39 per cent *strongly*, 48 per cent *moderately*), followed by Australians (35 per cent *strongly*, 41 per cent *moderately*), then Japanese (14 per cent *strongly*, 49 per cent *moderately*). Scientific testing for health and wellbeing claims in the *USA* was trusted highly by Chinese respondents (42 per cent *strongly*; 45 per cent *moderately*); this was lower for Japanese and Australian participants.

Figure 3-16: Trust in scientifically tested health and / wellbeing claims in selected Asian countries

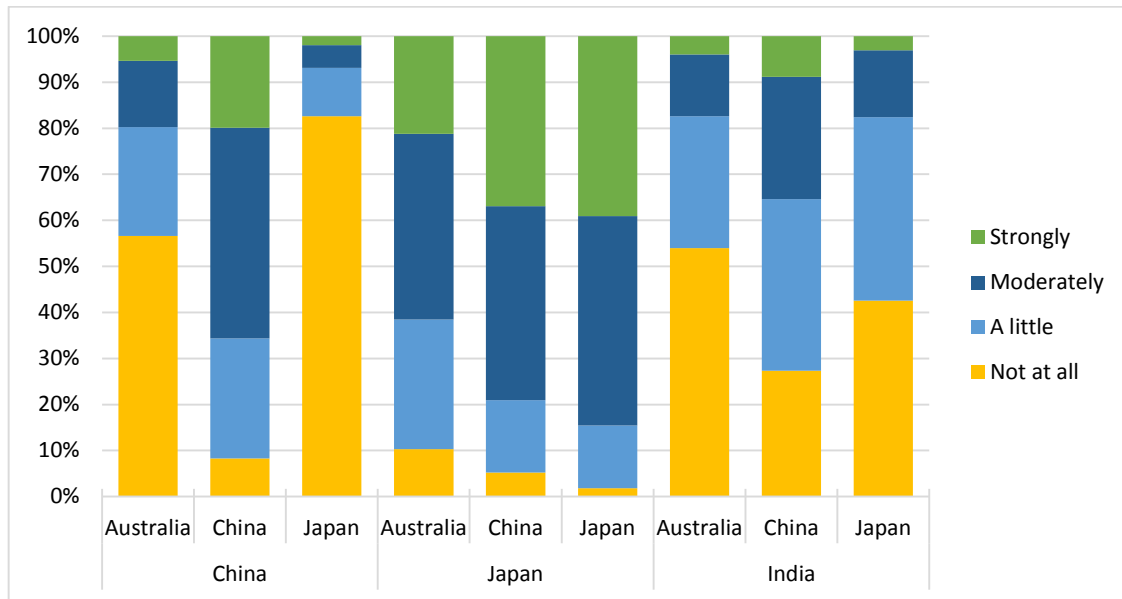


Figure 3-16 shows the trust in scientific testing for food with health and wellbeing claims is mixed for the listed Asian countries. Among all participants from the three surveyed countries, the most trusted Asian country was *Japan*, which is trusted highly by its own people (39 per cent *strongly*, 45 per cent *moderately*) and by Chinese (37 per cent *strongly*, 42 per cent *moderately*). Chinese participants indicated strong trust in their own country (20 per cent *strongly*, 46 per cent *moderately*) while Australian and particularly Japanese participants indicated lesser trust in *China*, with 83 per cent of Japanese respondents selecting *not at all*. However, the least trusted Asian country for scientific testing of health and wellbeing claims across participants from all surveyed countries was *India* with more than a quarter of participants in each country stating to *not at all* trusting products scientifically validated in this country.

In summary, survey participants trust scientific testing for health or wellbeing claims in food strongly if it took place in *Switzerland*, *Australia*, and *Germany*. Country-specific responses showed that Chinese participants trust food which scientific testing of health and wellbeing claims took place in *Germany*, followed by *Switzerland* and *Australia*. In contrast, Australian and Japanese participants, trust food for which scientific testing for health and wellbeing claims took place in their own country. In addition, Australian participants indicated to highly trust health and wellbeing claims in food products if they would be scientifically validated in *New Zealand* while Japanese trust *Switzerland* highly for its scientific testing. Overall, the country the least trusted in scientific testing for foods for health and wellbeing claims was *India*.

Chapter 4

Results Expert survey

This chapter will describe the results from a key informants' survey with regard to their insights into consumer behaviours and trends in international markets for health and wellbeing enhancing foods.

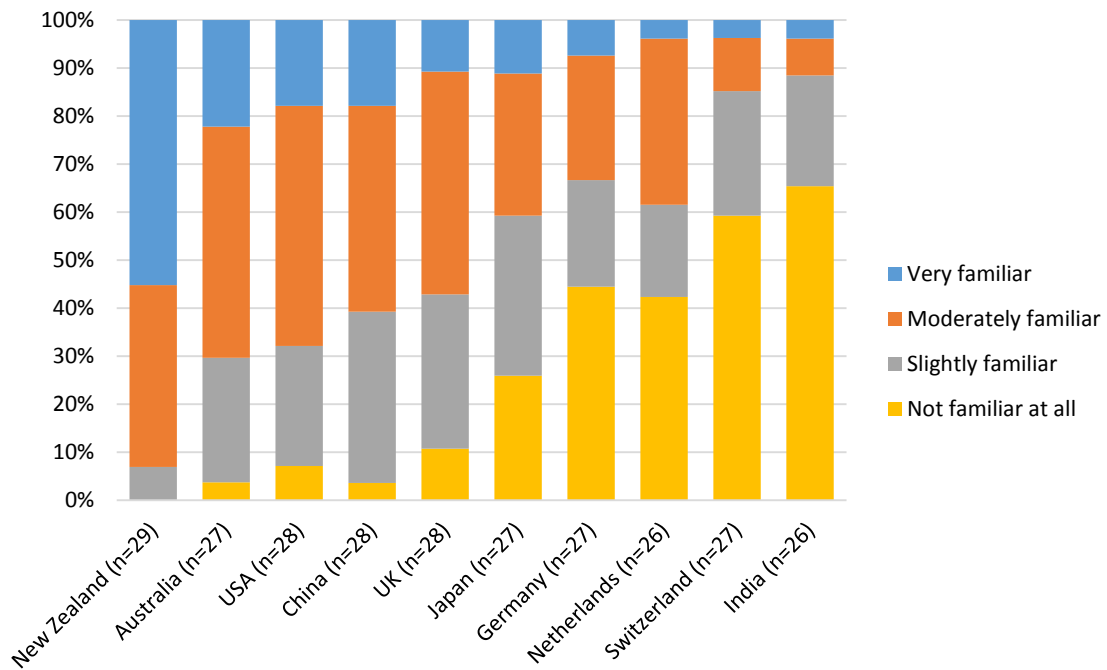
4.1 Familiarity with demand for the health-enhancing food and beverages in country markets

In the first survey question, participants were asked to indicate on a four-point Likert scale, varying from 'very familiar' to 'not familiar at all', their familiarity with demand for the health-enhancing food and beverages in selected country markets. These countries included *New Zealand, Australia, UK, USA, Japan, India, Germany, Switzerland, Netherlands and Others*.

As shown in Figure 4-1, participants indicated the most familiarity with the demand for health-enhancing food and beverages in New Zealand (55 per cent *very familiar*; 38 per cent *moderately familiar*), followed by Australia (22 per cent *very familiar*; 48 per cent *moderately familiar*), then USA (18 per cent *very familiar*; 50 per cent *moderately familiar*) and China (18 per cent *very familiar*; 43 per cent *moderately familiar*). Given the sample selection it was not surprising that participants were most familiar with New Zealand. Participants indicated less familiarity with demand for the health-enhancing food and beverages in European markets such as Germany, the Netherlands and Switzerland except for the UK with 11 per cent of participants indicating high familiarity and another 46 per cent of participants indicating moderate familiarity with the UK market. Survey respondents were least familiar with the demand for health-enhancing food and beverages in India, with 65 per cent indicating they are not familiar at all with the Indian demand for health-enhancing food and beverages.

In addition, a diverse range of other country markets that they are familiar with. These included *high familiarity* with ASEAN, Korea and Taiwanese market, *moderately familiarity* with Sweden and France and a *slight familiarity* with Canada. Another respondent pointed out his/her familiarity with Infant milk projects in the Asia-Pacific and factories in the Netherlands.

Figure 4-1: In your role, how familiar are you with demand for the health-enhancing food and beverages in the following markets?



4.2 Importance of products with health or wellbeing claims

The next question asked participants on a four-point Likert scale, varying from ‘very important’ to ‘not important at all’ to rate the importance of health and wellbeing claims for selected products in the markets they are familiar with. The products included *Cheese, Butter, Milk powder, Infant formula, liquid milk (dairy), Other dairy, Eggs, Beef, Lamb, Pork, Chicken, Other meat, Confectionery, Kiwifruit, Apples, Other fruit, Vegetables, Honey, Fish/Seafood, Wine, Beer*. Results are shown in Table 4-1.

Results show that participants indicated that it is important to make claims about health and wellbeing benefits in dairy products, and this is most important for infant formula (83 per cent very important). Similarly, participants stated it is very important to have health and wellbeing claims on honey (70 per cent *very important*). With regard to meat products, health claims are particularly important for pork products (23 *very important*). Results further showed that health claims were the least important in confectionery (71 per cent *not at all*) and alcoholic beverages such as beer (60 per cent *not important at all*) and wine (32 per cent *not important at all*).

Further, a few respondents pointed out that health or wellbeing claims are very important for breakfast cereals, craft beer, blackcurrants, and Green Shell Mussels.

Table 4-1: How important are the health and wellbeing claims for the following foods and beverages in the markets you are familiar with?

	Very important	Moderately important	Slightly important	Not at all important
Cheese (n=23)	0%	30%	52%	17%
Butter (n=23)	0%	35%	43%	22%
Milk powder (n=23)	26%	43%	30%	0%
Infant formula (n=23)	83%	13%	4%	0%
Liquid milk (dairy) (n=23)	26%	61%	13%	0%
Other dairy (n=21)	24%	52%	14%	10%
Eggs (n=22)	9%	50%	32%	9%
Beef (n=23)	13%	39%	39%	9%
Lamb (n=22)	14%	45%	23%	18%
Pork (n=22)	23%	18%	45%	14%
Chicken (n=23)	17%	35%	35%	13%
Other meat (n=20)	10%	40%	30%	20%
Confectionery (n=21)	0%	14%	14%	71%
Kiwifruit (n=23)	52%	26%	17%	4%
Apples (n=23)	26%	39%	26%	9%
Other fruit (n=22)	27%	45%	23%	5%
Vegetables (n=23)	39%	39%	17%	4%
Honey (n=23)	70%	13%	17%	0%
Fish/Seafood (n=23)	30%	48%	22%	0%
Wine (n=22)	5%	18%	45%	32%
Beer (n=20)	0%	10%	30%	60%

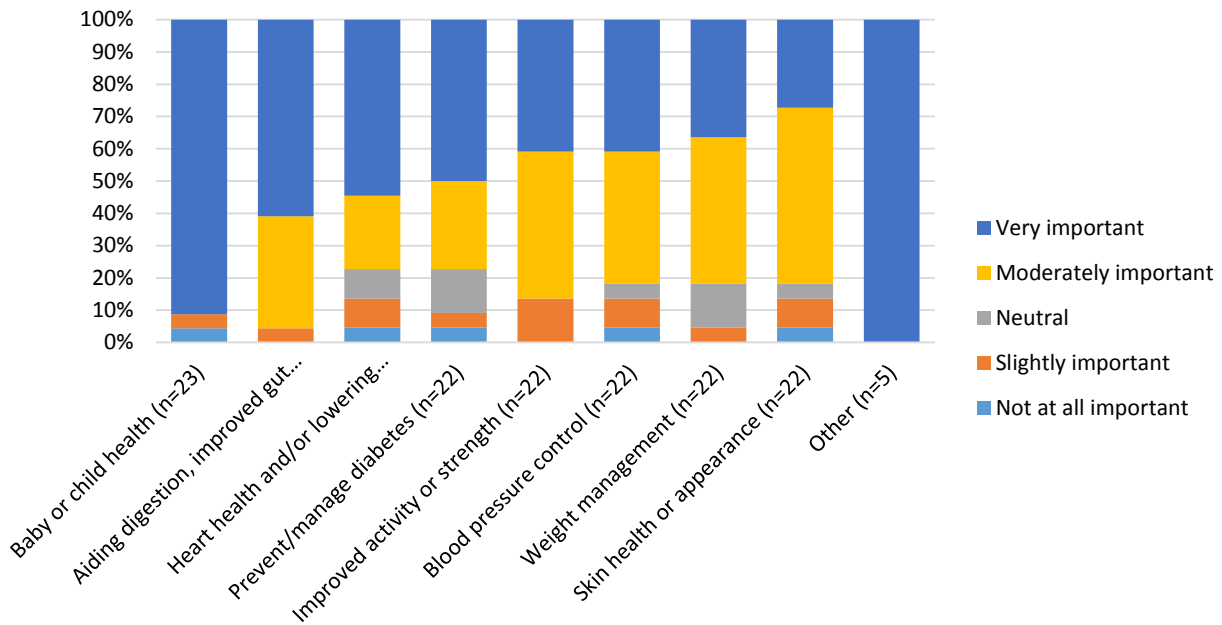
A comment was made that there is a demand for functional health benefits in all foods in order to prevent future health issues, for example from China's air pollution. Another respondent pointed out that there is a demand for fruits and vegetables based on their assumed health benefits.

4.3 Importance of health and wellbeing claims and their scientific testing

Based on a five-point Likert scale, varying from 'very important' to 'not important at all', participants were asked to rate (based on their experience) the importance of eight health and/or wellbeing claims for accessing high-value market segments. The claims included *prevent/manage diabetes; improved activity or strength; weight management; aid digestion and improved gut comfort; heart health and/or lowering cholesterol; blood pressure control; skin health and appearance, baby or child health/development*. Results are shown in Figure 4-2.

All claims are important for gaining access into high-value market segments. However, the claim of *baby or child health* was rated the most important health claim with 91 per cent rating this claim as very important. This was followed by the claim of *aiding digestion and improved gut comfort*; 61 per cent of participants rated it as a very important claim for accessing high-value market segments. Figure 4-2 shows further that the claim of *heart health/ and or cholesterol lowering* in food and beverages is important to gain access into high-value market segments, with 55 per cent of participants selecting very important and a further 23 per cent selecting moderately important. Also, the claims of *prevent/ manage diabetes* and *improved activity or strength* were rated important in order to access high-value market segments. In contrast, *skin health and appearance* was of less importance to survey respondents than the other listed health and wellbeing claims.

Figure 4-2: In your experience, how important are the following health or wellbeing claims for accessing high-value market segments?

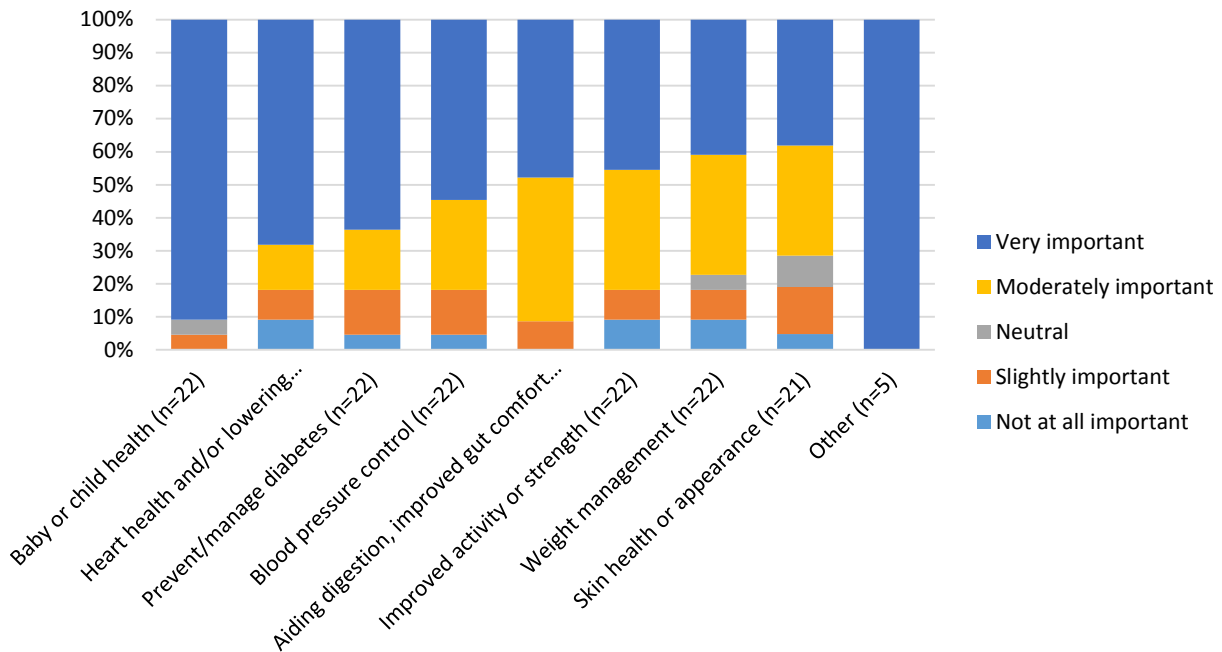


In addition to the listed claims that are important to access high-value market segments, respondents added the following claims: *gluten free, eye health, cognitive health/performance, mobility, brain health and cognition*.

In the next question, on a five-point Likert scale ranging from ‘very important’ to ‘not important at all’, survey participants were asked to indicate how important scientific evidence is in providing confidence to their customers/ consumers to pay a premium for health or wellbeing claims in food and beverages. The claims included *prevent/manage diabetes; improved activity or strength; weight management; aid digestion and improved gut comfort; heart health and/or lowering cholesterol; blood pressure control; skin health and appearance; baby or child health/development*.

As shown in Figure 4-3, respondents indicated that scientific evidence for all claims is important. *Baby or child health* was noted to be the most important claim to have scientific evidence for customers/ consumers to pay a premium with 91 per cent of participants rating this as very important. This was followed by the importance of scientific evidence for the claims *heart health and/or cholesterol lowering* and *prevent/ manage diabetes* with 68 per cent and 64 per cent of participants rating this as very important, respectively. In contrast, the claim for *skin health and appearance* was considered not as important to be scientifically validated as the other listed claims; however, it was still very important for more than a third of respondents. Further claims with importance of scientific evidence were added by respondents; these included *gluten free, cognitive health/performance, and cognition*.

Figure 4-3: How important is scientific evidence in providing your customers or consumers with confidence to pay a premium for health or wellbeing claims in their purchases of food and beverages?



Further comments were received with participants stating that generally scientific evidence for health claims may assist gaining market access and it is an important way to build consumer trust.

Further testing showed that statistically, there is a strong positive relationship between the health and wellbeing claims and their scientific testing.

4.1 Associations with New Zealand

The next set of questions assessed how the experts rate their customer/ consumers association with New Zealand.

In the first question participants were asked to evaluate how much they think their consumers/ customers would know about New Zealand as a country on a five-point Likert scale ranging from ‘very knowledgeable’ to ‘not at all’. Results are shown in Table 4-2.

All participants indicated that their consumers/ customers know about New Zealand as a country, with the majority indicating that their consumers/ customers are *knowledgeable* (54 per cent) about the country. Interestingly, almost a third of the respondents pointed out that their consumers/ customers are *aware* of New Zealand as a country *but don’t know much* about it.

Table 4-2: Thinking of the customers or consumers that you deal with in your work, how much you think they would know about New Zealand as a country? Please choose only one. (n=24)

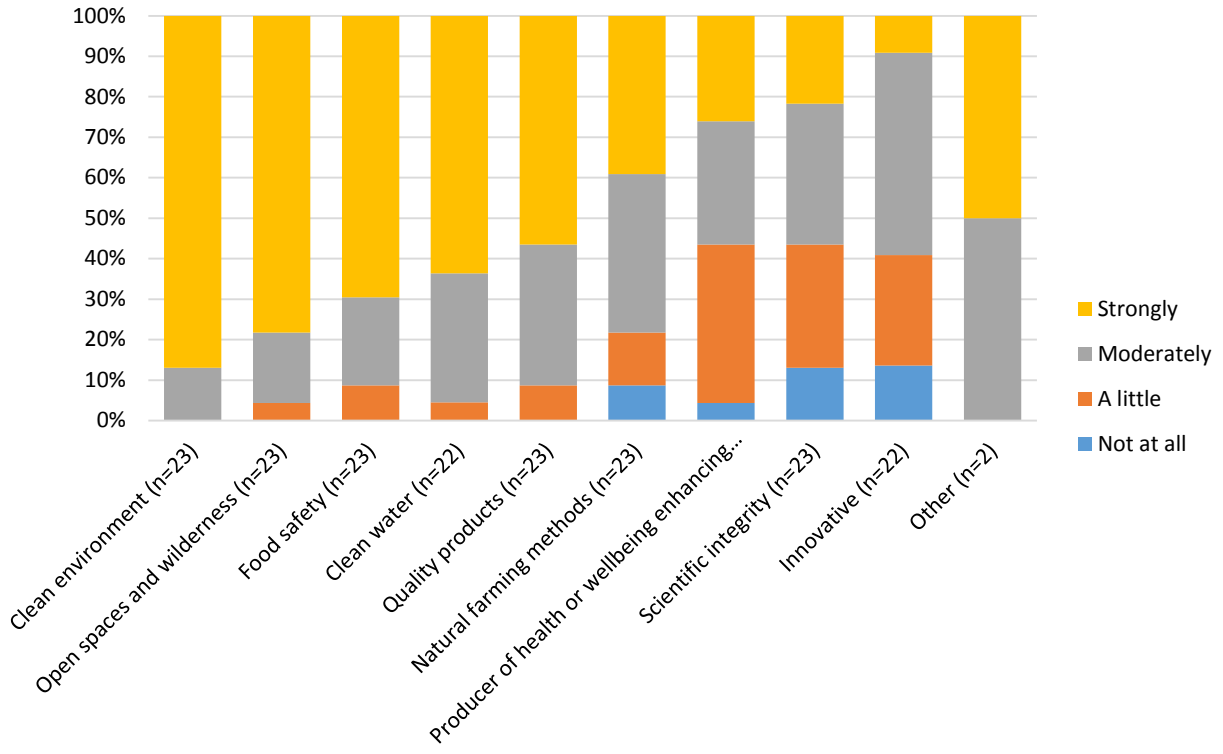
Very knowledgeable	Knowledgeable	Neutral	Aware but don’t know much	Not at all
8%	54%	8%	29%	0%

A few further comments were received with some respondents stating that the awareness for New Zealand is surprisingly high in overseas markets but that it differs between markets. One respondent noted that while New Zealand is important to Asian markets it is not as important to European markets. Another respondent observed that the good knowledge of New Zealand is particularly present in regions/ countries where brand awareness for New Zealand products was built.

In the next question, respondents were asked to indicate on a four-point Likert scale ranging from ‘strongly’ to ‘not at all’ how much they think their customers/ consumers associate certain factors with New Zealand. These factors included *open spaces and wilderness*; *food safety, clean water*; *clean environment*; *natural farming methods*; *quality products*; *producer of health and wellbeing enhancing foods*; *scientific integrity* and *innovativeness*.

Figure 4-4 shows that *clean environment* and *open spaces and wilderness* were thought to be associated most strongly with New Zealand (87 per cent and 78 per cent, respectively). *Food safety* was also an important factor that customers/ consumers would associate *strongly* with New Zealand (70 per cent), as well as *clean water* (64 per cent strongly) and *quality products* (57 per cent strongly). Twenty –six per cent of participants indicated that their customers/ consumers had a strong association of New Zealand as a *producer of health and wellbeing enhancing foods*. In addition, 22 per cent think that their customers/ consumers have a strong association of New Zealand for *scientific integrity*. In contrast, *innovativeness* was rated the least associated with New Zealand by the survey participants with only 9 per cent assuming a strong association for their customers/ consumers. Further factors that were listed by respondents that their customers/ consumers associate with New Zealand included *kiwifruit, non-GMO, and non-nuclear*.

Figure 4-4: Again thinking of those customers or consumers, how much do you think they associate the following factors with New Zealand as a country of origin?



One respondent commented further that New Zealand has a very strong ‘clean and green image’, however for the factor of ‘open spaces’ it is competing with Australia and the USA. The respondent further noted that for ‘scientific integrity’ New Zealand has had some negative press and the respondent also pointed out that the importance of innovation is market-specific. The respondent also explained that New Zealand’s reputation as being a ‘producer of health or wellbeing enhancing food’ relates strongly to Manuka Honey.

The next question of the survey asked participants to indicate to what extent their customers/ consumers think of New Zealand as a reliable country for ensuring that health and wellbeing claims are validated by good science. As shown in Table 3-3, all participants rate New Zealand as somewhat reliable for ensuring that health and wellbeing claims are validated by good science, with more than a quarter of participants indicating that their consumers/ customers rate New Zealand *very reliable* and almost half of the participants indicating that their customers/ consumers think of New Zealand as a *moderately reliable* country.

Table 4-3: In your experience, to what extent do you think of New Zealand as a reliable country for ensuring that health and wellbeing claims are validated by good science? Please choose only one. (n=22)

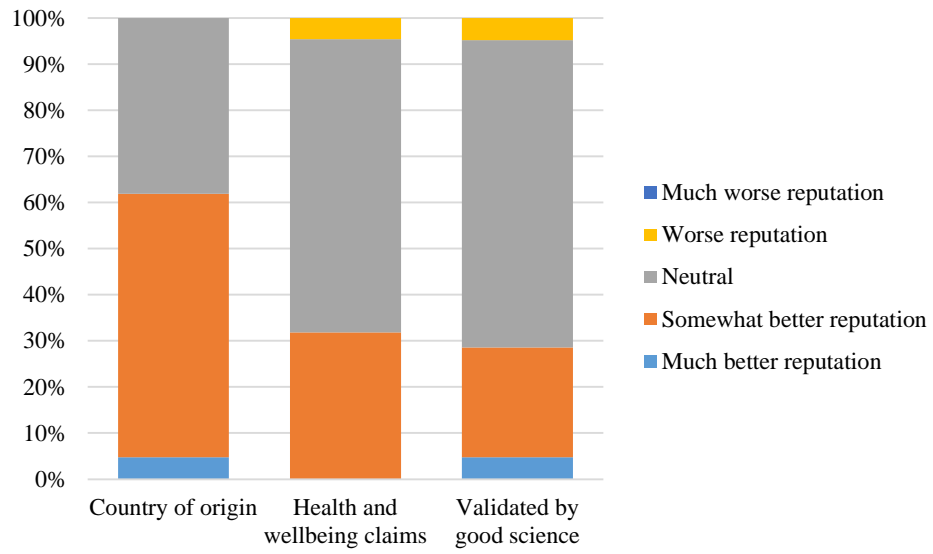
Very reliable	Moderately reliable	Neutral	Slightly reliable	Not at all reliable
27%	45%	18%	9%	0%

One respondent commented further that New Zealand has a good regulatory reputation that is trusted by consumers/customers. However, the respondent pointed out that customers/ consumers associate natural claims with New Zealand more than scientific claims.

The last question of the survey asked the participants if they have noticed any changes over the last five years with respect to New Zealand’s reputation for the aspects of *country of origin, health and wellbeing claims* and *validated good science*.

Results are illustrated in Figure 4-5 and shows that most participants have noticed that New Zealand has increased its reputation for all three claims. This is most true for *country of origin* with the majority indicating ‘somewhat better reputation’ (57 per cent). With regard to New Zealand’s reputation for health and wellbeing claims and validated good science, the majority of participants have not noticed a change (64 per cent for *health and wellbeing claims* and 67 per cent for *validated good science*).

Figure 4-5: Have you noticed any changes over the last five years in New Zealand's reputation for the aspects listed below? (n=21)



4.2 Further trends in overseas markets

The final question of the survey invited participants to list any other trends they have observed with regard to health and wellbeing enhancing products in high-value market segments. Almost all of the respondents observed the importance and growth in the sector. One participant highlighted that there is an increasing demand from consumers for functional foods and foods that are preventative and increasing demand that these claims are scientifically validated (this goes beyond raw ingredients, e.g., value add products).

A diverse range of other trends were listed by respondents, these included the importance of elements of traditional Chinese Medicine in markets; and claims such as 'Natural Healthy' and 'Gluten-free'. Another respondents stated that seasonal fruits from New Zealand are gaining in importance for the high-value market segments of health and wellbeing. Additionally, products such as 'Grass fed meat' and 'dairy' are becoming more important and recognised overseas. Another respondent noted that claims such as 'good for you', 'wholesome' and 'natural with minimal processing' are generally trending higher. Other trends listed by respondents included 'Omega' and 'polyunsaturated' health claims, as well as 'Natural Flavours and ingredients' that are derived from plant. Another respondent stated that the non-dairy market has great potential to grow in the future.

There were conflicting responses to scientifically validated health and wellbeing claims. Here are two statements by different respondents that show the range of opinions.

“Claims are only useful to validate the emotional response of the consumer to the product. If consumer cannot see or experience the benefit then claims are less useful.”

“Many consumers appear to be mistrustful of "scientist's" claims as conflicting nutritional information is now widespread in the media and scientific literature. It seems to be important to get well known bloggers or media personalities onside with any claims a product wishes to make to get the benefits from scientific claims. From a regulatory perspective however, large companies in particular need solid scientific backing for any claims they wish to make and therefore mainstream products certainly need to be able to be supported by scientific data.”

Chapter 5

New Zealand's reputation

The previous chapters showed that the results from the consumer and expert surveys together obtained a combination of qualitative and quantitative data to establish a robust methodological baseline assessment of New Zealand's current international reputation in 2016 as a provider of scientifically validated food products with health benefits.

The consumer survey assessed the attitudes and preferences of 400 consumers in each of Australia, Japan and China towards a variety of health and wellbeing claims in food. Results showed that overall participants value these claims in food. However, different claims are important to consumers in different markets but products from New Zealand were highly rated across all countries.

Initially, sixteen health and wellbeing claims were selected (*energy and endurance; prevent/manage diabetes; improved physical activity/strength; weight management; aid digestion and improved gut comfort; heart health and/or lowering cholesterol; blood pressure control; immunity; reduced risk of cancer; skin health, bone and/or joint health; memory or brain function; eye care; aid for relaxation/sleep; baby or child health/development; and anti-aging products*) with participants in each country indicating the importance of each claim when shopping for food. Overall, *Immunity* in food products was rated most important, followed by *bone and/or joint health*, then *memory or brain function*. However, the importance of health and wellbeing claims in food was varied across countries. While Chinese and Japanese participants rated *Immunity* as the most important health claim, for Australians *heart health and/ or cholesterol lowering* was the most important health claim in foods. *Baby or child health/ development* was highly important to respondents from China while it was less important to respondents from Australia and Japan. Not surprisingly, further analysis of the sub-sample of participants with children showed that the importance of *baby or child health/development* in food products was slightly higher than the importance of that attribute in the total sample.

The survey then assessed product purchases for four specific health and wellbeing claims (i.e. *prevent/control obesity, diabetes and/or heart disease; aiding and improving immunity; aiding digestion and/or improved gut comfort; improved physical activity and/or strength; and baby or child health/development*) and if consumers believe whether these claims are based on scientific testing.

- With regard to food purchases to *prevent/control obesity, diabetes and/or heart disease* these were varied by country. While Australian participants indicated that they purchase *broccoli, nuts and apples* for these benefits, Chinese participants indicated that they purchase *apples, yoghurt and kiwifruit* to prevent/control obesity, diabetes and/or heart disease. In contrast, Japanese participants indicated that they purchase *yoghurt, apples and broccoli* for this purpose. Respondents from each country believed that these products are scientifically validated to prevent/control obesity, diabetes and/or heart disease.
- With regard to *aid and improve immunity* Australians indicated to purchase berries, broccoli and other vegetables for this benefit while Chinese participants indicated that they purchase kiwifruit, yoghurt and beef to *aid and improve immunity*. In contrast, Japanese participants indicated that they purchase yoghurt and yoghurt drinks for this purpose.

- Respondents from all countries indicated to purchase yoghurt and yoghurt drinks to *aid digestion and/or improve gut comfort* and they believed that this claim for these products is based on scientific testing. In addition, respondents from all countries indicated to buy apples for this benefit and interestingly Chinese indicated to purchase honey to *aid digestion and/or improve gut comfort* as which they also believe is scientifically validated to *aid digestion and/or improve gut comfort*.
- In order to *improve physical activity and/or strength* respondents from all countries purchase meat products to and they believe that the claim for these products is based on scientific testing. In addition, respondents from all surveyed countries purchase liquid milk for this benefit which they also believe is scientifically validated to *improve physical activity and/or strength*.
- Results show that respondents from all countries purchase infant formula, toddler milk and baby cereals *for baby and child health/development*. In addition, Japanese respondents indicated to purchase liquid milk for this benefit. Respondents from all countries believe that the claim for these products is based on scientific testing.

Following this, the survey assessed consumers' importance of scientific validation of different health and wellbeing claims. Results showed that overall *heart health and/or cholesterol lowering* was rated the most important claim to be scientifically validated, followed by *aiding digestion and improved gut comfort*, then *improved physical activity and/or strength*. Then the survey examined consumers' importance of different authentication schemes for health and wellbeing claims' certification. This varied between countries. While Australia participants put high importance on *certification by their own government*, Chinese participants indicated high importance on *trusted firm who produces the product* and Japanese participants indicated high importance on *trusted country where product is made*. Lowest importance across all surveyed countries was observed for *non-governmental endorsement*.

It is important to understand how consumers rate New Zealand for foods for enhancing health or wellbeing among other countries. The survey asked participants to indicate the extent to which they associate selected countries with foods for enhancing health or wellbeing. These countries included *Germany, Switzerland, New Zealand, USA, Japan, China, India, Australian and the Netherlands*. Results showed that overall, participants from the three surveyed countries associated *Japan* most with foods for enhancing health or wellbeing, followed by *Switzerland*, then *Australia*. Cross-country comparison showed that Chinese participants associated *Germany* most with foods for health and wellbeing enhancing benefits, followed by *New Zealand* and *Australia*. In contrast, Australian and Japanese participants, associate their own country most with foods for enhancing health or wellbeing, followed by *Switzerland*. Across all surveyed countries, *New Zealand* was ranked fourth (out of nine countries), in particular Chinese participants associated *New Zealand* strongly with foods for enhancing health or wellbeing. The country least associated with foods for enhancing health or wellbeing was *India*.

Participants were asked to indicate the extent to which they trust a food product's specific claims for health or wellbeing benefits provided that scientific testing took place in one of the nine listed countries. Survey participants across all countries indicated to trust scientific testing for health or wellbeing claims in food strongly if it took place in *Switzerland, Australia, and Germany*. Country-specific responses showed that Chinese participants trust food which scientific testing of health and wellbeing claims took place in *Germany*, followed by *Switzerland* and *Australia*. In contrast, Australian and Japanese participants, trust food which scientific testing for health and wellbeing claims took place in their own country. In addition, Australian participants indicated to highly trust health and wellbeing claims in food products if they would be scientifically validated in *New Zealand* while Japanese trust *Switzerland* highly for its scientific testing. Overall, the country the

least trusted in scientific testing for foods for health and wellbeing claims was *India*. Interestingly, Japanese participants trusted the least if scientific testing for health and wellbeing claims was undertaken in *China*.

The expert survey assessed consumer behaviours and trends from the export point of view, for that key informants with experience of as well as key customers and product gatekeepers in different markets were surveyed with an online questionnaire. Sampling involved the recruitment of participants with experience in their professional roles in markets for high-value nutrition products, and their demand and importance in overseas markets. The panel size was 29 key informants.

Initially, survey participants were asked to indicate how familiar they are with demand for the health-enhancing food and beverages in selected country markets (i.e. *New Zealand, Australia, UK, USA, Japan, India, Germany, Switzerland, Netherlands and Others*). Participants indicated most familiarity with the demand for health-enhancing food and beverages in New Zealand, followed by Australia, then USA and China. Participants indicated less familiarity with demand for the health-enhancing food and beverages in European markets such as Germany, the Netherlands and Switzerland except for the UK.

With regard to the importance of health and wellbeing claims for selected products in the markets, participants stated that claims for health and wellbeing benefits were important in dairy products; within that the most important for infant formula, in honey and in meat products, particularly in pork products. Health claims were the least important in confectionary and in alcoholic beverages such as beer and wine.

Then eight health and/or wellbeing claims (i.e. *prevent/manage diabetes; improved activity or strength; weight management; aid digestion and improved gut comfort; heart health and/or lowering cholesterol; blood pressure control; skin health and appearance, baby or child health/development*) were presented with respondents indicating their importance for accessing high-value market segments. *Baby or child health* was rated the most important health claim, followed by the claim of *aiding digestion and improved gut comfort*, then *heart health and/or cholesterol lowering*. *Skin health and appearance* was of lesser importance to survey respondents than the other listed health and wellbeing claims.

Participants were then asked to indicate how important scientific evidence is in providing confidence to their customers/ consumers to pay a premium for health or wellbeing claims in food and beverages. These claims included *prevent/manage diabetes; improved activity or strength; weight management; aid digestion and improved gut comfort; heart health and/or lowering cholesterol; blood pressure control; skin health and appearance, baby or child health/development*. Respondents indicated that scientific evidence for all claims is important. *Baby or child health* was thought to be the most important claim for which scientific evidence customers/ consumers would pay a premium, followed by claims *heart health and/or cholesterol lowering* and *prevent/ manage diabetes*. The claim for *skin health and appearance* was considered not as important to be scientifically validated as the other claims.

The study also assessed respondents' rating of their customer/consumers' knowledge, perception and trust New Zealand as a country. All participants indicated that their consumers/ customers know about New Zealand as a country. Further respondents assume that their customers/ consumers associated New Zealand most strongly with the factors of *clean environment and open spaces and wilderness*, followed by *food safety* and *clean water*. Twenty-six per cent of participants indicated that their customers/ consumers had a strong association of New Zealand as a *producer of health and wellbeing enhancing foods*. In addition, twenty-two per cent think that

their customers/ consumers have a strong association of New Zealand for *scientific integrity*. In contrast, *innovativeness* was rated the least associated with New Zealand by the survey participants.

In addition, all participants rate New Zealand as ‘somewhat’ reliable for ensuring that health and wellbeing claims are validated by good science. With regard to changes over the last five years in respect to New Zealand’s reputation for the aspects of *country of origin*, *health and wellbeing claims* and *validated good science*, participants have noticed that New Zealand increased its reputation for all three claims. This is mostly true for *country of origin* with the majority indicating ‘somewhat better reputation’. New Zealand’s reputation *for health and wellbeing claims* and *validated good science* the majority of participants have not noticed a change.

Chapter 6

Concluding comments

There is an increased interest by consumers in food and beverages that provide benefits beyond basic nutrition, e.g. in reducing or minimising risk of certain diseases and enhancing other health conditions. Examples of these foods are extensive and include meat, dairy, fruits and vegetables, whole grains, fortified foods and beverages. The demand for these products is growing and these products attract a premium which is especially important for exporting countries like New Zealand that are heavily dependent on food exports. This study is part of the *High –Value Nutrition National Science Challenge* which aims to use science to add value to New Zealand’s primary production and to grow the country’s international reputation as a producer of high-quality, safe foods with scientifically validated health benefits. In particular, this study assessed how consumers in export markets to New Zealand rate foods that offer extra health or wellbeing benefits that are scientifically validated beyond food’s normal nutrition value. In a web-based survey, 400 consumers in Australia, Japan and China were asked about their attitudes and preferences towards a variety of health and wellbeing claims in food and the importance of scientific testing of these claims. In addition, 29 key informants with experience of consumer behaviour and trends in different markets were surveyed in an online questionnaire.

Results from both surveys found that consumers in overseas markets rate health and wellbeing claims in food products important.

In particular, the consumer survey found that the claim for *immunity* in food products was rated most important by consumers, followed by *bone and/or joint health*, then *memory or brain function*. *Baby or child health/ development* was highly important to respondents from China. Consumers stated that they purchase specific food products to address these health and wellbeing purposes. For example, in order to *aid and improve immunity* Australians purchased berries, broccoli and other vegetables while Chinese participants purchased kiwifruit, yoghurt and beef. In contrast, Japanese participants purchased yoghurt and yoghurt drinks for this purpose. Respondents from all countries purchased yoghurt and yoghurt drinks to *aid digestion and/or improve gut comfort*. Generally, consumers believed that the claim for the product they buy to address the specific health and wellbeing purpose was scientifically validated.

Overall, participants from the three surveyed countries associated *Japan* most with foods for enhancing health or wellbeing, followed by *Switzerland*, then *Australia*. *New Zealand* was ranked fourth (out of nine countries), interestingly Chinese participants associated *New Zealand* strongly with foods for enhancing health or wellbeing. Survey participants across all countries trusted scientific testing for health or wellbeing claims in food strongly if it took place in *Switzerland*, *Australia*, or *Germany* whereas *New Zealand* ranked fifth (out of nine countries), and interestingly, Australian participants highly trusted health and wellbeing claims in food products if they would be scientifically validated in *New Zealand*.

Results from the expert survey showed that there is a strong positive relationship between the importance of a health and wellbeing claim and its scientific testing. Generally, to the extent that claims are important in the market, they benefit from scientific validation. Generally, the experts considered consumers have heard of *New Zealand*, however the depth of these consumers’ knowledge of *New Zealand* was mixed. The experts thought *New Zealand*’s reputation is more about *open spaces* and *a clean environment* than *scientific integrity* and *innovation* which has been

validated by other research. This is an interesting result and shows how New Zealand's promotion of high value nutrition products may need to stress the scientific integrity of New Zealand. The respondents thought New Zealand is reasonably reliable for ensuring that health and wellbeing claims are validated by good science. This was not considered to have changed for *validated good science* and *health and wellbeing claims* in the last five years. However, New Zealand's reputation as a *country of origin* has increased.

The purpose of this study was using the surveys to obtain qualitative and quantitative data for a methodological baseline assessment of New Zealand's current international reputation in 2016 as a provider of scientifically validated food products with health and wellbeing benefits. The results are to be replicated in subsequent surveys in 2019, 2022 and 2025 to assess how this has changed and the role of the *High –Value Nutrition National Science Challenge* in this.

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Appendix 1: Sample demographics

Table 2.1. Demographics

	Australia		China		Japan	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
Male	195	49.49%	217	54.52%	197	49.50%
Female	199	50.51%	181	45.48%	201	50.50%
Age						
18-29	98	24.81%	93	23.37%	61	15.33%
30-44	25	6.33%	213	53.52%	101	25.38%
45-59	122	30.89%	78	19.60%	94	23.62%
60-64	127	32.15%	9	2.26%	32	8.04%
65-74	8	2.03%	5	1.26%	94	23.62%
75+	15	3.80%	0	0.00%	16	4.02%
Household make-up						
Single, no children	98	24.81%	79	19.85%	130	32.66%
Single with children	25	6.33%	7	1.76%	22	5.53%
Couple, no children	122	30.89%	33	8.29%	59	14.82%
Couple with children	127	32.15%	274	68.84%	175	43.97%
Live with unrelated people (e.g. flatting/house share)	8	2.03%	3	0.75%	1	0.25%
Other	15	3.80%	2	0.50%	11	2.76%
Education						
Completed Primary School	11	2.78%	2	0.50%	8	2.01%
Completed High School	87	22.03%	18	4.53%	100	25.13%
Obtained qualification (e.g. certificate or diploma) after High School	105	26.58%	48	12.09%	73	18.34%
University Undergraduate Degree	107	27.09%	277	69.77%	184	46.23%
Post-Graduate Degree or Diploma or Certificate	81	20.51%	49	12.34%	30	7.54%
Other	4	1.01%	3	0.76%	3	0.75%

Table 2.2. Demographics (Income)

Australia			China			Japan		
	<i>n</i>	%		<i>n</i>	%		<i>n</i>	%
Less than AU\$25,000	22	5.58%	Less than ¥50,000	20	5.04%	2M円 or less	39	9.82%
AU\$25,000 - AU\$39,999	46	11.68%	¥50,000- ¥69,999	130	32.75%	2M円 - 3.5M円	52	13.10%
AU\$40,000 - AU\$54,999	53	13.45%	¥150,000 or more	240	60.45%	3.5M円 - 5.5M円	100	25.19%
AU\$55,000 - AU\$69,999	41	10.41%	Prefer not to answer	7	1.76%	5.5M円 - 8.5M円	101	25.44%
AU\$70,000 - AU\$84,999	34	8.63%				8.5M円 or more	88	22.17%
AU\$85,000 - AU\$100,000	45	11.42%				Prefer not to answer	17	4.28%
More than AU\$100,000	102	25.89%						
Prefer not to answer	51	12.94%						

Appendix 2: Consumer survey

Welcome to this survey on “food for enhancing health and/or wellbeing”, which focuses on foods that offer extra health and/or wellbeing benefits beyond food’s normal nutritional value. Our survey will help us understand how people value these extra benefits.

The questions in this survey take about 10 minutes to answer. You are not obliged to participate. You may decline to answer any question or stop the survey at any time. Also, if required, you can pause and return to the survey at a later time. If you choose to withdraw from answering the survey before the final question, the information you have provided up to that point will be destroyed.

This survey is being conducted by the Agribusiness and Economics Research Unit at Lincoln University in New Zealand. The research is funded by the New Zealand government. Data will be held on a secure server on the University campus. The survey does not collect any information that could identify your name and your responses cannot be linked to you. The survey has been reviewed and approved by the Lincoln University Human Ethics Committee. Results from the research may be published.

The lead researcher for this survey is Professor Caroline Saunders. If you have any questions or concerns about the research, you may contact her at:

Caroline Saunders +64 3 423 0382 caroline.saunders@lincoln.ac.nz

Completion of the survey will be taken as your consent to participate in this research. If at any time, before completing the survey, you wish to withdraw from the survey simply close your browser window. If you complete and submit the survey, you will not be able to withdraw your information at a later date. Your anonymity will be preserved at all times.

Thank you very much for participating in this research project; we are very grateful for your time and the information you provide by answering these questions.

Yours sincerely

Caroline Saunders

Food for Enhancing Health and/or Wellbeing

Our research project focuses on food for enhancing health and/or wellbeing. This is food that offers extra benefits for some aspect of personal health and/or wellbeing, beyond the normal nutritional value that all food has.

1. In your normal shopping for food, do you ever purchase any food or beverage products that offer benefits for enhancing health and/or wellbeing?
 - Yes
 - No (SCREEN OUT)

2. There are lots of reasons that people buy foods for enhancing health and/or wellbeing. How important are these reasons for your purchases of these foods?

	Very important	Important	Neutral	Slightly important	Not at all important	Don't know
Energy and endurance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevent/ manage diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved physical activity and/ or strength	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weight management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aid digestion and improved gut comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heart health and/ or cholesterol lowering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blood pressure control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Immunity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reduced risk of cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skin health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bone and/or joint health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Memory or brain function	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eye care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aid for relaxation/ sleep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baby or child health/ development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anti-aging products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: The answers to this question will be linked to the 'product' question (Questions 3 to 6), respondents will be shown the next question as appropriate/ dependent on their answers above.

3. You have indicated that you buy one or more products to **prevent/ control obesity, diabetes and/or heart disease**. Please indicate which of the following products you purchase for this purpose and whether their specific claims for health and/or wellbeing benefits are based on scientific testing. Please select all that apply.

	Which products do you purchase for this purpose?	Do you believe that the specific claims for health and/ or wellbeing benefits are based on scientific testing?		
		Yes	No	Don't know
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milk powder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquid milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt/ probiotic drink	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Margarine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other dairy products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kiwifruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broccoli	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avocados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mussels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salmon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fish or seafood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cereals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Muesli bars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other products, please specify _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display logic: This question will be shown to respondents that selected very important or important for any of the following: 'prevent / manage diabetes', 'weight management', heart health and/ or cholesterol lowering 'and 'blood pressure control' in Question 2.

4. You have indicated that you buy one or more products **aiding and improving immunity**. Please indicate which of the following products that you purchase for either of these purposes and whether their specific claims for health and/or wellbeing benefits are based on scientific testing. Please select all that apply.

	Which products do you purchase for this purpose?	Do you believe that the specific claims for health and/ or wellbeing benefits are based on scientific testing?		
		Yes	No	Don't know
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milk powder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquid milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt/ probiotic drink	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Margarine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other dairy products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kiwifruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broccoli	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avocados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mussels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salmon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fish or seafood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cereals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Muesli bars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other products, please specify _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display logic: This question will be shown to respondents that selected very important or important for 'Immunity' in Question 2.

5. You have indicated that you buy one or more products **aiding digestion and/ or improved gut comfort**. Please indicate which of the following products that you purchase for either of these purposes and whether their specific claims for health and/or wellbeing benefits are based on scientific testing. Please select all that apply.

	Which products do you purchase for this purpose?	Do you believe that the specific claims for health and/ or wellbeing benefits are based on scientific testing?		
		Yes	No	Don't know
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milk powder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquid milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt/ probiotic drink	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Margarine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other dairy products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kiwifruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broccoli	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avocados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mussels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salmon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fish or seafood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cereals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Muesli bars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other products, please specify _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display logic: This question will be shown to respondents that selected very important or important for 'aid digestion and improved gut comfort' in Question 2.

6. You have indicated that you buy one or more products for **improved physical activity and/or strength**. Please indicate which of the following products that you purchase for this purpose and whether their specific claims for health and/or wellbeing benefits are based on scientific testing. Please select all that apply.

	Which products do you purchase for this purpose?	Do you believe that the specific claims for health and/ or wellbeing benefits are based on scientific testing?		
		Yes	No	Don't know
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milk powder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquid milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt/ probiotic drink	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Margarine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other dairy products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kiwifruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broccoli	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avocados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mussels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salmon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fish or seafood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cereals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Muesli bars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other products, please specify _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display logic: This question will be shown to respondents that selected very important or important for any of the following: 'improved physical activity or strength', 'bone and/or joint health' in Question 2.

7. You have indicated that you buy one or more products for **baby or child health/development**. Please indicate which of the following products that you purchase for this purpose and whether their specific claims for health and/or wellbeing benefits are based on scientific testing. Please select all that apply.

	Which products do you purchase for this purpose?	Do you believe that the specific claims for health and/ or wellbeing benefits are based on scientific testing?		
		Yes	No	Don't know
Infant formula	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Toddler milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baby cereals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weaning/ baby food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milk powder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquid milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoghurt/ probiotic drink	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Margarine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other dairy products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kiwifruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broccoli	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avocados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mussels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salmon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fish or seafood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cereals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Muesli bars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other products, please specify _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display logic: This question will be shown to respondents that selected very important or important for 'baby or child health' in Question 2.

Scientific Testing of Product Claims

8. How important do you think it is that the following claims for health and/or wellbeing benefits are based on scientific testing?

	Very important	Important	Neutral	Slightly important	Not at all important	Don't know
Weight management						
Prevent/ manage diabetes						
Heart health and/or cholesterol lowering						
Blood pressure control						
Improved activity or strength						
Baby or child health						
Aiding digestion, improved gut comfort						

9. Claims about the health and/or wellbeing benefits of food can be backed up by certification. How important are these types of certification to you?

	Very important	Important	Neutral	Slightly important	Not at all important	Don't know
Certification by your country's government	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certification by the government where the food is produced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Globally recognised certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trusted brand of the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trusted firm who produces the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trusted retailer who sells you the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trusted country where the product is made	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-governmental endorsement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. To what extent do you associate the following countries with foods for enhancing health and/or wellbeing?

	Strongly	Moderately	A little	Not at all	Don't know
Germany	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Switzerland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New Zealand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
USA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Japan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
China	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
India	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Australia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Netherlands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. To what extent would you trust a food product's specific claims for health and/or wellbeing benefits if the scientific testing took place in the following countries?

	Strongly	Moderately	A little	Not at all	Don't know
Germany	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Switzerland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New Zealand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
USA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Japan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
China	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
India	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Australia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Netherlands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Demographics

The following questions will help us to compare this survey with the structure of your country's general population. Please remember that this is an anonymous survey, and that you cannot be identified from any information you provide.

12. Gender

- Male
- Female

13. Age

- 16-29
- 30-44
- 45-59
- 60-64
- 65-74
- 75+

14. Please indicate which of the following best describes your household make-up:

- Single, no children
- Single with children
- Couple, no children
- Couple with children
- Live with unrelated people/friends (e.g. flatting/ house share)
- Other _____

15. Please indicate your gross household income before taxes over the past 12 months:

- Less than AU\$25,000
- AU\$25,000 - AU\$39,999
- AU\$40,000 - AU\$54,999
- AU\$55,000 - AU\$69,999
- AU\$ 70,000 – AU\$84,999
- AU\$ 85,000 - AU\$100,000
- More than AU\$100,000
- Prefer not to answer

16. What is the highest level of education of the most highly qualified member in your household?

- Completed Primary School
- Completed High School
- Obtained qualification (e.g. certificate or diploma) after High School
- University Undergraduate Degree
- Postgraduate Degree or Diploma or Certificate
- Other _____

That was the last question of the survey!

If you press the submit button you give consent to participate in this research and you will not be able to withdraw your information at a later date. Thank you very much for your participation.

Click >> to be returned to the research company website (this may take a few moments).

Appendix 3: Expert survey

Welcome to this survey on health and wellbeing claims in food and beverages

The purpose is to assess the market for health enhancing foods and New Zealand's reputation in market as a country of origin for high quality foods and beverages with scientifically validated health and wellbeing claims.

The lead researcher is Professor Caroline Saunders. If you have any questions or concerns about this research you may contact her at

Email: Caroline.Saunders@lincoln.ac.nz

Phone: +64 3 423 0382

The survey is conducted by Agribusiness and Economics Research Unit at Lincoln University (New Zealand) on behalf of the High-Value Nutrition science challenge. Data will be held on a secure server on the University campus.

This survey will take about 5 minutes to answer. You are not obliged to participate, and you may decline to answer any question or stop the survey at any time. If you choose to withdraw from answering the survey before the final question, the information you have provided up to that point will be destroyed.

The survey does not collect any information that could identify you and your responses cannot be linked to you. Survey responses will be averaged, although some comments, if provided, may be quoted. Also, the results from the research may be published. Completion of the survey will be taken as your consent to participate in this research. If at any time before completing the survey you wish to withdraw from the survey, simply close your browser window. If you complete and submit the survey, you will not be able to withdraw your information at a later date. Your anonymity will be preserved at all times.

Thank you very much for participating in this research project. We are very grateful for your involvement, as well as your time and the information you provide by answering these questions.

Yours sincerely, Caroline Saunders

Q2 In your role, how familiar are you with demand for the health-enhancing food and beverages in the following markets?

	Very familiar	Moderately familiar	Slightly familiar	Not familiar at all
New Zealand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Australia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
UK	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
USA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Japan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
China	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
India	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Germany	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Switzerland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Netherlands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other 1, Please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other 2, Please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other 3, Please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3 Please add any other comments

Q4 How important are the health or wellbeing claims for the following products with the markets you are familiar with?

	Very important	Moderately important	Slightly important	Not at all important	N/A
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milk powder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Infant formula	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquid milk (dairy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other dairy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eggs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confectionery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kiwifruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish/ Seafood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other 1, Please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other 2, Please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other 3, Please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 Please add any other comments

Q7 In your experience, how important are the following health or wellbeing claims for accessing high-value market segments?

	Very important	Moderately important	Neutral	Slightly important	Not at all important	Don't know
Weight management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevent/manage diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heart health and/or lowering cholesterol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blood pressure control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved activity or strength	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skin health or appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baby or child health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aiding digestion, improved gut comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 Please add any other comments

Q9 How important is scientific evidence in providing your customers or consumers with confidence to pay a premium for health or wellbeing claims in their purchases of food and beverages?

	Very important	Moderately important	Neutral	Slightly important	Not at all important	Don't know
Weight management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevent/manage diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heart health and/or lowering cholesterol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blood pressure control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved activity or strength	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skin health or appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baby or child health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aiding digestion, improved gut comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 Please add any other comments

Q11 Thinking of the customers or consumers that you deal with in your work, how much you think they would know about New Zealand as a country? Please choose only one.

- Very knowledgeable
- Knowledgeable
- Neutral
- Aware but don't know much
- Not at all
- Don't know

Q12 Please add any other comments

Q13 Again thinking of those customers or consumers, how much do you think they associate the following factors with New Zealand as a country of origin?

	Strongly	Moderately	A little	Not at all	Don't know
Open spaces and wilderness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scientific integrity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Innovative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Natural farming methods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Producer of health or wellbeing enhancing foods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 Please add any other comments

Q15 In your experience, to what extent do your customers or consumers think of New Zealand as a reliable country for ensuring that health and wellbeing claims are validated by good science? Please choose only one.

- Very reliable
- Moderately reliable
- Neutral
- Slightly reliable
- Not at all reliable
- Don't know

Q16 Please add any other comments

Q17 Have you noticed any changes over the last five years in New Zealand's reputation for the aspects listed below?

	Much better reputation	Somewhat better reputation	Neutral	Worse reputation	Much worse reputation	Don't know
Country of origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health and wellbeing claims	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Validated by good science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q18 Please add any other comments

Q19 Are there any other trends you are observing in health and wellbeing claims in high-value market segments for food and beverages?

