



# Agribusiness and Economics Research Unit

A Lincoln University Research Centre.  
New Zealand's specialist land-based university.

## Consumer insights and willingness to pay for attributes: New Zealand yogurt products in Shanghai, China

Peter Tait  
Paul Rutherford  
Tim Driver  
Xuedong Li  
Caroline Saunders  
Paul Dalziel



Research Report No. 347  
June 2018

***Research to improve decisions and outcomes in business, resource and environmental issues.***

The Agribusiness and Economics Research Unit (AERU) operates at Lincoln University, providing research expertise for a wide range of international, national and local organisations. AERU research focuses on business, resource and environmental issues.

The Agribusiness and Economics Research Unit (AERU) has four main areas of focus. These areas are: wellbeing economics; trade and the environment; economic development; and non-market valuations.

Research clients include Government agencies, both within New Zealand and from other countries, other international agencies, New Zealand enterprises in the private sector, and community groups.

### **AERU MISSION**

To exercise leadership in research for sustainable well-being.

### **AERU VISION**

The AERU is a cheerful and vibrant workplace where senior and emerging researchers are working together to produce and deliver new knowledge that promotes sustainable well-being.

### **AERU STRATEGIC AIMS**

- To be recognised by our peers and end-users as research leaders for sustainable well-being;
- To mentor emerging researchers and provide advanced education to postgraduate students;
- To maintain strong networks to guide AERU research efforts and to help disseminate its research findings; and
- To contribute to the University's financial targets as agreed in the AERU business model.

### **DISCLAIMER**

While every effort has been made to ensure that the information herein is accurate, the AERU does not accept any liability for error of fact or opinion which may be present, nor for the consequences of any decision based on this information.

Summaries of AERU Research Reports beginning with #235, are available at [www.lincoln.ac.nz/aeru](http://www.lincoln.ac.nz/aeru). Printed copies of AERU Research Reports can be requested from the AERU Administrator.

© Agribusiness and Economics Research Unit. Lincoln University, New Zealand, 2016.



This work is licenced under the Creative Commons Attribution 3.0 New Zealand licence.

#### **Suggested citation for this report:**

Tait, Peter, Paul Rutherford, Tim Driver, Xuedong Li, and Caroline Saunders (2018). *Consumer insights and willingness to pay for attributes: New Zealand yogurt products in Shanghai, China*. Research Report No. 347, Lincoln University: Agribusiness and Economics Research Unit.

# **Consumer insights and willingness to pay for attributes: New Zealand yogurt products in Shanghai, China**

**Peter Tait  
Paul Rutherford  
Tim Driver  
Xuedong Li  
Caroline Saunders  
Paul Dalziel**

**Research Report No 347**

**June 2018**

*Report prepared for the Integrating Value Chain project funded by Our Land and Water  
National Science Challenge*

**Agribusiness and Economics Research Unit  
P O Box 85084  
Lincoln University  
Lincoln 7647  
New Zealand**

**Ph: (64) (3) 423 0372**  
**<http://www.lincoln.ac.nz/AERU/>**

**ISSN 1170-7682 (Print)**  
**ISSN 2230-3197 (Online)**  
**ISBN 978-1-877519-58-1 (Print)**  
**ISBN 978-1-877519-59-8 (Online)**



# Table of Contents

<b>LIST OF FIGURES</b>	<b>VI</b>
<b>LIST OF TABLES</b>	<b>VII</b>
<b>EXECUTIVE SUMMARY</b>	<b>VIII</b>
<b>CHAPTER 1 INTRODUCTION</b>	<b>1</b>
1.1 New Zealand yogurt market profile	1
1.2 Chinese yogurt market profile	3
1.3 Chinese yogurt consumer sustainability preferences	4
1.4 Chinese digital media and smart technology use in relation to yogurt products	5
<b>CHAPTER 2 METHODOLOGY</b>	<b>7</b>
2.1 Choice experiments	7
2.2 Selection of yogurt attributes	7
2.3 Yogurt attribute levels	9
2.4 Experimental design	9
<b>CHAPTER 3 RESULTS</b>	<b>11</b>
3.1 Knowledge of countries	11
3.2 Yogurt purchasing habits	11
3.3 Yogurt product preferences	15
3.4 Māori culture and enterprise	20
3.5 Attitudes to yogurt production practices	21
3.6 Digital media and technology use for yogurt	22
<b>CHAPTER 4 CHOICE EXPERIMENT ANALYSIS</b>	<b>31</b>
4.1 Consumer willingness-to-pay for credence attributes	35
<b>CHAPTER 5 CONCLUSION</b>	<b>38</b>
<b>REFERENCES</b>	<b>42</b>
<b>APPENDIX 1 DEMOGRAPHICS</b>	<b>45</b>
<b>APPENDIX 2 STATISTICAL METHOD</b>	<b>46</b>
<b>APPENDIX 3 QUESTIONNAIRE</b>	<b>50</b>

## List of Figures

Figure 1-1 Volume of New Zealand yogurt exports (KgMS), 2007-2016	2
Figure 1-2 Value of New Zealand yogurt export (NZ\$ million), 2007-2016	2
Figure 1-3 Annual turnover of top eight New Zealand dairy firms in 2016 (NZ\$ Million)	3
Figure 1-4 Volume (KgMS) and value (NZ\$000) of New Zealand yogurt exports to China, 2007-2016	4
Figure 2-1: Example yogurt choice set shown to respondents	10
Figure 3-1: Knowledge of countries	11
Figure 3-2: The consumption frequency of five types of yogurt	12
Figure 3-3 Average consumption per week of yogurt (kg/week)	12
Figure 3-4: Usual price paid for yogurt (Yuan/kg)	13
Figure 3-5: Methods and frequency of consumption of yogurt	13
Figure 3-6: Drinking yogurt consumption occasions	14
Figure 3-7: Spoonable yogurt consumption occasions	14
Figure 3-8: Frequency of purchase of yogurt products for different recipients	14
Figure 3-9: Importance of yogurt characteristics	15
Figure 3-10: Attributes of an ideal yogurt product	16
Figure 3-11: Percentage of participants who had seen yogurt being sold with a particular country of origin	17
Figure 3-12: Frequency of purchase of yogurt with a particular country of origin	17
Figure 3-13: Ranking of countries for producing high quality yogurt	18
Figure 3-14: Frequency of purchase of particular brands of yogurt	18
Figure 3-15: Reasons for purchasing New Zealand yogurt	19
Figure 3-16: Knowledge of Māori culture	20
Figure 3-17: Attributes associated with yogurt produced from a Māori enterprise	20
Figure 3-18: Agreement with statements relating to yogurt production practices	21
Figure 3-19: Frequency of access the Internet using mobile device and home computer	22
Figure 3-20: Place of use of mobile device to search for yogurt products or production information	23
Figure 3-21: Frequency of use of smartphone technologies for searching for product information or purchasing yogurt products	23
Figure 3-22: Use of types of mobile apps in relation to yogurt products	24
Figure 3-23: Use of apps with mobile device	24
Figure 3-24: Average percentage of food and beverage purchases by retailer type	25
Figure 3-25: Average percentage of yogurt purchases by retailer type	25
Figure 3-26: Frequency of online purchases of types of yogurt products	25
Figure 3-27: Main reasons for shopping online for yogurt products	26
Figure 3-28: Online channel retailer choices	26
Figure 3-29: Frequency and location of use of home computer(s) and/or mobile device(s) for purchasing yogurt products online	27
Figure 3-30: Level of trust in sources of yogurt product information	27
Figure 3-31: Main reasons for low trust in sources of yogurt product information	28
Figure 3-32: Level of trust in sources for yogurt product purchasing	28
Figure 3-33: Main reasons for low level trust in sources for yogurt product purchasing	29
Figure 3-34: Sources of information about or awareness of new yogurt products	30
Figure 4-1: Reasons for choosing the “none of these’ option in a yogurt choice set	31

Figure 4-2: Yogurt attributes ignored when selecting preferred yogurt options	32
Figure 4-3: Yogurt choice task debriefing: ability to express importance, understanding of attributes meaning, understanding of choice task exercise	34
Figure 4-4: Average consumer willingness to pay for selected yogurt attributes	36
Figure 4-5: Distributions of consumer willingness to pay for selected yogurt attributes	36

## **List of Tables**

Table 1.1 Value of NZ dairy product exports (NZ\$000), 2015-2017	3
Table 2.1 Yogurt attributes included in the choice experiment	8
Table 2.2 Yogurt attribute levels used in the choice experiment	9
Table 3.1: Use of digital media for yogurt choices and production information	22
Table 3.2: Influences on informing choices and knowledge of production processes when searching for information about yogurt products	23
Table 4.1 Mixed Logic Error Component model of yogurt choices	33
Table 4.2: Consumer willingness-to-pay for selected yogurt attributes	35

## **Executive Summary**

A theme of the Our Land and Water (OLW) National Science Challenge is to achieve “greater value in global markets”. This includes “understanding our international customers’ demands for products from New Zealand’s land and water”. This research is funded by the OLW national science challenge from the programme Integrating Value Chains and is one of a series of four reports assessing consumer behaviour and preferences in market. In addition the report examines the consumer’s use of media and technology to obtain information on and/or purchase products. This report is on consumer’s behaviours and attitudes towards purchasing, using and gaining information on yogurt in Shanghai.

Dairy production is important in New Zealand (NZ) agriculture, comprising a range of commodities and products. In particular, yogurt production is included in the classification “other dairy”, which accounts for approximately 1 per cent of total NZ dairy exports (at a value of approximately NZ\$10 million in 2016). The Chinese market for yogurt products is growing faster than consumption of any other dairy product, with yogurt expected to achieve an approximate one-third share of the total Chinese dairy market by 2021. As China is NZ’s largest export destination for agricultural products, as well as yogurt products specifically, an understanding of the Chinese yogurt market is worth considering. While there is currently little literature specifically examining Chinese yogurt consumer preferences, other studies have examined Chinese consumer preferences for milk product attributes. In particular, extant studies have shown that Chinese consumers consider the sustainability and credence attributes of a range of dairy products to be important, including organic, food safety and provenance attributes. In addition, Chinese consumers frequently use a wide range of digital media and smart technology in relation to food and beverage products, with social media having a strong effect on consumer perceptions of products.

To examine Chinese consumer preferences and willingness-to-pay (WTP) for, as well as use of digital media and smart technology in relation to, yogurt products, the Agribusiness & Economics Research Unit (AERU) surveyed 837 consumers online. This included an examination of consumer behaviours, knowledge of countries, knowledge and perceptions of Māori culture and enterprise, attitudes to yogurt consumption and production methods, sustainability label awareness, and use of digital media and smart technology in relation to yogurt products. A choice experiment was also conducted to elicit consumer WTP for a range of yogurt product attributes.

### **Chinese consumer yogurt consumption and purchasing habits**

Firstly, the report demonstrates the Chinese consumers’ yogurt consumption habits in relation to five types of yogurt, including chilled drinking and spoonable yogurt, room temperature drinking and spoonable yogurt, and powdered yogurt. The results show that participants most commonly consumed chilled drinking yogurt, and consumed yogurt products most commonly ‘raw, just as it is (as opposed to including it as an ingredient in a dish)’. For drinking and/or spoonable yogurt, participants most commonly consumed these products ‘as a snack (any time of the day)’. Participants most frequently purchased yogurt for ‘participants themselves’ or ‘younger members of their family’.

In addition, most participants indicated that they consumed the five types of yogurt less than 1 kg per week. Participants also indicated their usual spend for a kilogram of yogurt was between 15 and 20 Yuan, followed by 10 to 15 Yuan/kg and then 20 to 25 Yuan/kg.

### **Chinese consumer attitudes to yogurt product characteristics**

Participants indicated that the yogurt attributes important in their purchase decision included the presence of a quality certificate, followed by nutritional value and flavour. For the attributes that made up the participants’ ideal yogurt product, the most important attributes were ‘preservative free’, ‘no additives’ and ‘no artificial colours’.



Participants indicated that their most frequently seen country-of-origin of yogurt product was China, followed by NZ and then the USA. Similarly, participants had most frequently purchased yogurt products of Chinese origin, followed by NZ. Participants also indicated that they believed NZ yogurt products had the highest quality, followed by Chinese and then Swiss products. Participants most frequently purchased yogurt brand was Ambrosial, followed by Mengniu and Yili. The three brands are all China's domestic origin yogurt brands. The top three frequently purchased NZ yogurt brands included Yoplait, Anchor and I am NZ.

Participants stated the most important reason for them to purchase NZ yogurt was 'NZ's "clean and green" image', followed by 'higher quality' and 'the high quality of the natural environment in NZ'.

### **Chinese consumer knowledge of Māori culture and enterprise**

The research presents participants' knowledge and perceptions of Māori culture and enterprise in relation to yogurt production. Results show that most participants knew a few things about Māori culture. In addition, participants indicated that the most associated attributes with yogurt produced from a Māori enterprise was 'natural', followed by 'high quality' and 'sustainability'. Participants also indicated that environmental, social and cultural attributes, such as 'reduced environmental impact', 'traditional', 'care of traditional cultures' and 'social responsibility' were also highly associated with yogurt produced from a Māori enterprise.

### **Chinese consumer attitudes to yogurt production practices**

Regarding yogurt production practices, the results of this report show that the majority of participants agreed that 'the food safety of yogurt is directly related to quality of the natural environment where dairy is farmed' and that 'the quality of yogurt is directly related to quality of the natural environment where dairy is farmed'. Most participants also agreed that 'sustainable yogurt labelling certification is a guarantee of high product quality' and 'I could be interested in buying yogurt with a sustainability label (showing environmental, economic and social aspects)'.

### **Chinese consumer WTP for selected yogurt attributes**

The results of the Choice Experiment show that respondents are WTP on average the highest premium for yogurt produced from New Zealand (¥118/kg), followed by Chinese yogurt (¥77/kg) and then German (¥70/kg). These are the highest average premiums estimated over the set of attributes considered and reflect the established recognition of country-of-origin as an important signal of quality. The highest valued production attributes are enhanced food safety (¥44/kg), followed by organic production (¥42/kg) and environmentally sustainable (¥39/kg).

Compared to the average price of a kilogram of yogurt, respondents are WTP on average 143 per cent more for New Zealand produced yogurt, followed by Chinese (93 per cent) and then German (85 per cent). In terms of production attributes, respondents are WTP averagely 54 per cent more for enhanced food safety, followed by organic production (51 per cent), and environmentally sustainable (47 per cent).

### **Chinese consumer's use of digital media and technology for yogurt information searching and purchasing**

Results show that digital media was used more frequently to inform choices than for finding production information. Tmall, Taobao, Jingdong (JD), Baidu, WeChat and Weibo were the most overall used on mobile devices (over home computer) for informing choices and searching information regarding yogurt production. Health professionals were identified as the greatest influence on both informing yogurt choices and searching for yogurt production information.

Participants were also asked to indicate the frequency and place of use of mobile device and home computer when searching for products information or purchasing. With participants most frequently using their

mobile device for both purposes at home. A range of smartphone interactive technologies (such as barcodes, QR codes, RFID/NFC) were also used for these purposes, with barcodes being used most frequently for both purchasing and information searching. On the use of mobile apps, the most frequent reason for use was for finding out about 'health', followed by 'purchasing' and 'product reviews'. Although current use was low, many respondents were interested in using apps for 'environmental information' and for 'traceability'. Specific apps used most frequently on participants' mobile device were WeChat followed by Ele-me, and then Dianping. These apps allow consumers to search yogurt products information, write products reviews and/or purchase yogurt products online.

Participants reported their yogurt expenditure across different retail channels when shopping for yogurt. The highest average expenditure across retailers was for supermarkets followed by hypermarkets and online. The most frequently purchased yogurt type online was drinkable, followed by spoonable. The types of yogurt products that most frequently purchased online were shown to be drinkable and spoonable yogurt, with participants stating that the main reason they used online shopping for yogurt products was equally 'access to special offers/promotions' and 'a greater variety of products available online'.

The results also show participants' level of trust in a number of digital media sources and smart technologies. Firstly, the most commonly used source for online yogurt purchases was TMall, followed by supermarkets and Jingdong (JD). Related to this, participants most used their mobile device (over home computers) at home for the purpose of purchasing yogurt products online. Regarding online yogurt product information sources, participants indicated the highest trust in generic mobile apps, followed by branded mobile apps and online customer reviews. A small number of respondents indicated a low-level trust of the provided sources for yogurt product information searching. The most commonly stated reasons included 'I do not trust the provider of the information', and 'I have privacy concerns regarding the technology involved'.

For yogurt product purchasing, participants indicated that they had the highest trust in mobile devices, followed by personal computers and then online shopping. A small number of respondents indicated a low-level trust of branded mobile apps, generic mobile apps, online shopping, personal computers and/or mobile devices. The most commonly stated reasons were 'I have privacy concerns regarding the technology involved', and 'I am not familiar with the technology involved'.

Finally, participants indicated their most common source of awareness of new yogurt products with 'in-store (from where I did most of my food product shopping)', and 'online (from where I did most of my food product shopping)' and 'via online advertising (websites)' being the most common.

# Chapter 1

## Introduction

A theme of the Our Land and Water (OLW) National Science Challenge is to achieve “greater value in global markets”. This includes “understanding our international customers’ demands for products from NZ’s land and water”. This research is funded by the OLW national science challenge in the programme Integrating Value Chains and is one of a series of four reports assessing consumer behaviour and preferences in market. In addition the report examines the consumer’s use of media and technology to obtain information on and/or purchase products. This report is on the Shanghai consumer’s behaviours and attitudes towards yogurt. The other reports are on kiwifruit in Shanghai, and beef and wine in California. These markets and products were selected in consultation with the project advisory board.

Thus, the current report details the development and application of a survey of Shanghai yogurt consumers. The survey is designed to examine three main areas: consumption behaviour, WTP for credence attributes, and the use of digital media and smart technologies.

While search attributes such as price or colour can be observed directly, and experience attributes such as flavour or texture can be assessed when consumed, credence attributes such as environmental sustainability cannot be immediately seen or experienced at the point of sale (Wirth et al., 2011). For products promoting credence attributes, the role of verification including labelling is of significant importance.

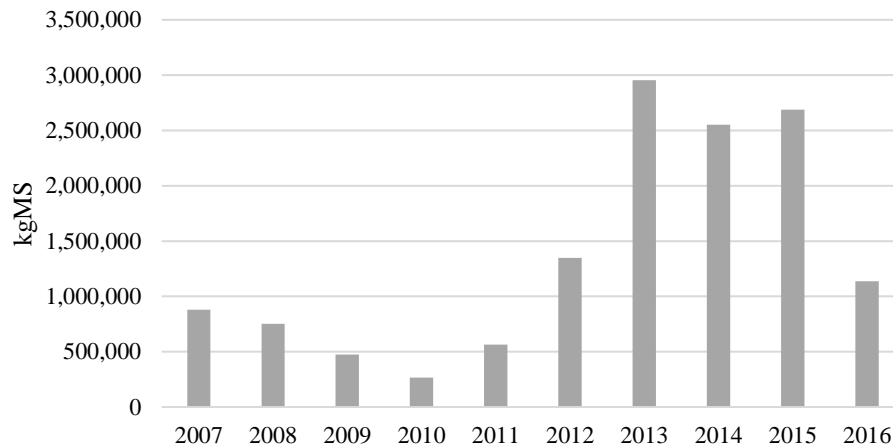
Agricultural exports are an important contributor to the NZ economy. While NZ historically relied on key markets such as the United Kingdom for export trade, it has over the last decade shifted its export focus to as China. It is important for NZ exporters to understand these markets and the different cultures and preferences of those consumers. Doing so is critical for market access, and for realising potential premiums (Guenther et al., 2015). It is also important to assess the use of smart media by consumers to find out more information on and purchase products. This covers online shopping (e-commerce), social media and mobile devices (smartphones) as well as the use of QR Codes and barcodes. These technologies provide mechanisms for the effective marketing and selling of NZ food and beverage products. It is important for exporters to both understand and consider their use in the development of effective digital marketing and sales strategies (Driver et al., 2015).

### 1.1 New Zealand yogurt market profile

Yogurt is classified as “other dairy” under the Harmonised Trade System codes, which is one of the six major categories for NZ dairy products. In 2015, “other dairy” accounted for approximately 1 per cent of total NZ dairy exports (MBIE, 2017).

Although NZ has a small share of “other dairy” products in the global market, exports of yogurt products are growing strongly. As shown in Figure 1.1 in 2013, NZ’s export of yogurt reached a record with 2,953,171 kgMS, valued at approximately NZ\$22.65 million but have since declined. Between 2007 and 2015, the volume of NZ yogurt exports increased, but declined significantly from 2015 to 2016 (Statistics NZ, 2018).

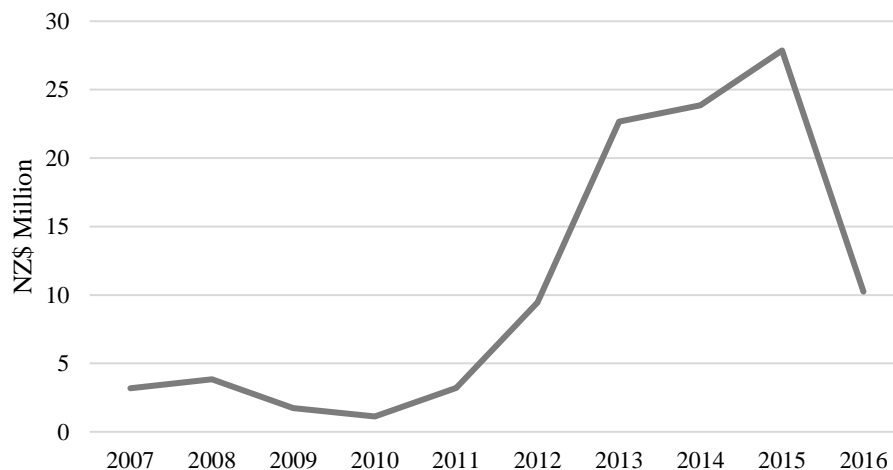
**Figure 1-1 Volume of New Zealand yogurt exports (KgMS), 2007-2016**



Source: Statistics New Zealand, 2018

Figure 1-2 shows the value of NZ yogurt exports increased considerably from 2010 to 2015 but then declined in 2016.

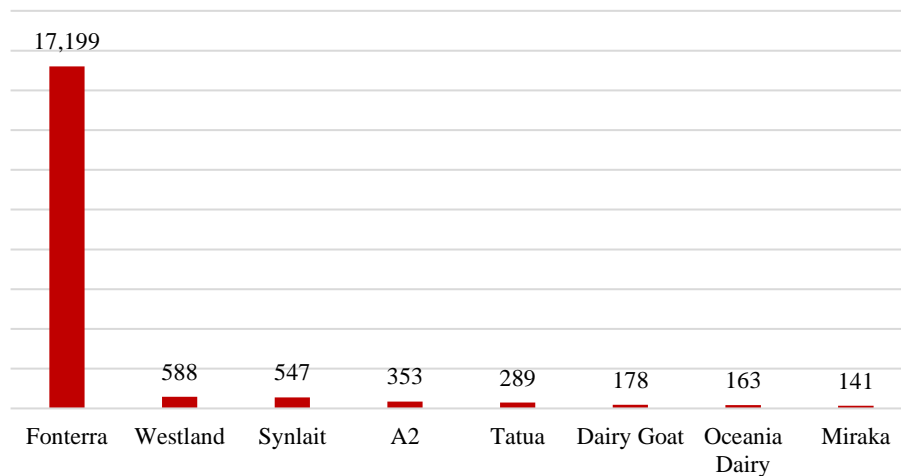
**Figure 1-2 Value of New Zealand yogurt export (NZ\$ million), 2007-2016**



Source: Statistics New Zealand, 2018

Fonterra Co-operative Group is the dairy market leader among the 27 NZ dairy firms by turnover, as shown in Figure 1.3 (MBIE, 2017). Fonterra currently controls over 80 per cent of NZ's dairy supply, and accounts for approximately 25 per cent of NZ's total dairy exports by value (MBIE, 2017). Fonterra is also the NZ leader in yogurt retail sales, in particular for plain yogurt products, followed by flavoured yogurt and fruit yogurt products (Euromonitor, 2017).

**Figure 1-3 Annual turnover of top eight New Zealand dairy firms in 2016 (NZ\$ Million)**



Source: MBIE, 2017

## 1.2 Chinese yogurt market profile

China is currently NZ's primary market for dairy products, with NZ dairy exports to China increasing by 23.2 per cent between 2016 and 2017 (as shown in Table 1.1) (Statistics NZ, 2017a).

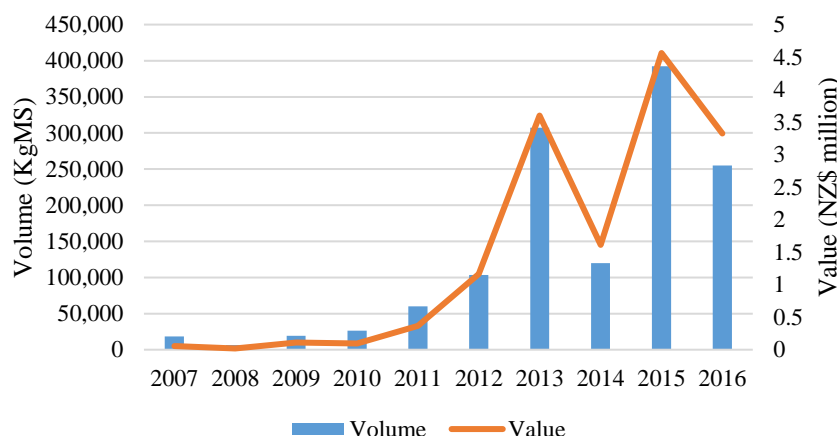
In relation to yogurt, China is NZ's largest market. NZ exports of yogurt products to China were valued at over NZ\$3 million in 2016. The volume of yogurt exports to China have increased in recent years, from 18,354 kgMS in 2007 to 255,055 kgMS in 2016 (as shown in Figure 1.4) (Statistics NZ, 2017).

**Table 1.1 Value of NZ dairy product exports (NZ\$000), 2015-2017**

Rank	Country	2015	2016	2017	% change (2016-2017)
1	China	2,478,326	2,776,614	3,421,096	23.2
2	United States of America	1,200,616	1,005,859	874,945	-13.0
3	Algeria	576,447	478,653	779,343	62.8
4	Australia	469,790	487,854	635,917	30.3
5	Japan	649,725	590,196	598,110	1.3

Source: Statistics New Zealand, 2017.

**Figure 1-4 Volume (KgMS) and value (NZ\$000) of New Zealand yogurt exports to China, 2007-2016**



Source: Statistics New Zealand, 2017

Chinese consumption of yogurt products is growing faster than consumption of other dairy products (Hancock, 2017). Between 2011 and 2016, the compound annual growth rate (CAGR) of yogurt products was 18.4 per cent, which was ranked second after cheese (20.8 per cent). Yogurt sales are also predicted to achieve a CAGR of 16 per cent between 2016 and 2021 (Euromonitor, 2017a). The demand for yogurt products is expected to achieve approximately a third share of the Chinese dairy market by 2021 (DBS, 2017). Yogurt products have been the main revenue earner for many major dairy producers in China in recent years, with the development and sale of yogurt considered as an opportunity for foreign brands to enter into the Chinese dairy market (Hancock, 2017).

In particular, premium brands of yogurt products have become increasingly popular in the Chinese dairy market, with “ambient yogurt” (room-temperature yogurt products) the most popular product type among Chinese consumers (Ni, 2017).

China’s three dominant dairy producers are state-owned Bright Dairy, and private competitors Mengniu and the Inner Mongolia Yili Dairy Group (Hancock, 2017). These three dairy firms control approximately 70 per cent of China’s dairy market.

### 1.3 Chinese yogurt consumer sustainability preferences

Previous work undertaken by the AERU has examined consumer preferences for credence attributes of food and beverage products including sustainability attributes, in a number of international markets relevant to NZ exporters, including China (Guenther et al., 2015; Miller et al., 2014, 2017b; Saunders et al., 2015). In particular, Guenther et al. (2015) identified a range of sustainability attributes important to Chinese consumers in relation to food and beverage products, as well as the factors that underpinned these. For example, the authors identified that food safety, environmental condition and animal health ranked within the top 5 attributes important to Chinese consumers in relation to food and beverage products, with similarly high importance placed on health-enhancing foods and social responsibility in production. In relation to food safety, one of the most important underpinning factors for Chinese consumers was environmental condition, signalling the importance of sustainability attributes in relation to other factors in this market (Guenther et al., 2015).

Xu et al. (2010) investigated the impacts of family eating habits and consumption of Western-style fast food on Chinese college students’ consumption of dairy products, including milk, cheese, ice cream and yogurt. The authors noted that per capita consumption of yogurt was high in Beijing. The results of their study showed that dining at Western-style fast food restaurants had a positive influence on yogurt

consumption among Chinese college students. The authors also found price to be an important factor that impacted on yogurt consumption, with female consumers had higher yogurt consumption than their male consumers (Xu et al., 2010).

In recent years, several researchers have studied Chinese consumers' preferences for milk products. Gao et al. (2016) analysed Chinese consumers' WTP for sustainable milk in three selected districts (Xicheng, Haidian and Changping) in Beijing. The authors found that most participants did not have a good understanding of the concept of sustainability, as well as a limited knowledge of sustainable food production and some confusion as to the difference between sustainable food and "green food". Results indicated that participants were WTP up to a 40% premium for sustainable milk.

Xu et al. (2016) examined Chinese consumers' price acceptance for organic milk in Beijing. The results of the study indicated that young females with a strong educational background had the strongest preference for organic milk. In addition, consumers with families tended to be WTP more for organic milk (Xu et al., 2016). The authors also indicated that consumers with higher disposable income were WTP a premium for organic milk.

Xu et al. (2017) investigated Chinese parents' perceptions of safety concerns and WTP for milk-based beverages in Beijing. The authors found that, generally, parents are WTP substantial premiums for the provision of additional safety assurances such as national brands, government-provided quality and safety (QS) certificates and for imported products (Xu et al., 2017).

Yin et al. (2017) studied Chinese consumers' WTP for traceable infant milk products in Shangdong Province. Results indicated that traceability information was more important than a product's brand or country of origin. Importantly, it was found that Chinese consumers preferred "foreign milk powder" to domestic milk powder products (Yin et al., 2017). Yin et al (2017) found that the Chinese consumer are, on average, WTP US\$13.959 for European Union brand infant milk formula, followed by US\$11.003 for NZ brand infant milk formula, and US\$7.907 for Chinese well-known brand.

Other research has examined relationships between consumer preferences and yogurt products in countries other than China. For example, Moro et al. (2015) examined Italian consumers' WTP in relation to two functional attributes (enrichment with catechins and probiotics) in yogurt products using a web-based stated choice experiment. The results showed the participants were WTP a premium for catechins-enriched yogurt (Moro et al., 2015). Mugeru et al. (2017) used a choice experiment to assess Western Australian consumers' WTP for local food products (skinless chicken breast and fruit yogurt). The results indicated that respondents would pay a premium price for locally produced-yogurt, with the addition of real fruit seen as a significant attribute that consumers would be WTP a premium for products (Mugeru et al., 2017).

## **1.4 Chinese digital media and smart technology use in relation to yogurt products**

Digital media and smart technologies offer channels for product communication. These include online shopping (e-commerce), social media and mobile devices (such as smartphones) which provide direct mechanisms for the marketing of NZ primary products. It is important for agribusiness supply chain managers to understand their use in relation to the development of effective digital marketing and sales strategies.

Previous work conducted by the AERU has examined the use of digital media and smart technologies in relation to food and beverage products in international markets relevant to NZ exporters. This work has shown that the use of digital media and smart technologies in relation to food and beverage products (for the purposes of finding product information and purchasing products) is important for consumers in international markets, with its use being particularly pronounced in emerging market countries (Driver et al., 2015; Miller et al., 2014).

Peng et al. (2015) analysed the effects of social media on consumers' awareness and purchasing behaviour in relation to food safety issues. The authors used a "set-style yogurt and jelly event" in their study design. The "set-style yogurt and jelly event" was a food safety scandal, which was exposed on a Chinese micro-blog. A celebrity posted on his micro-blog: "Do not eat set-style yogurt and jelly any more, especially for the kids. The inside is terrible. I can't say any more". This message was redistributed on the platform approximately 120,000 times, generating 22,155 comments within 5 hours. In this sense, a single post on Chinese social media drew significant attention to the two products mentioned with regards to their safety. Peng et al. (2015) analysed the content and frequency of blog posts relating to the above event on we media, including the releasing and forwarding of micro-blog posts, the number of Baidu news items, and Baidu Index (which indicates the degree of user attention to keywords). The results showed that the use of social media greatly negatively affected sales of set-style yogurt and jelly products in China. In addition, the authors indicated that social media had a significant negative impact on the Chinese consumers' purchasing behaviour regarding the involved products and the brand reputation of the involved manufacturers (Peng et al., 2015).

Recent studies have examined the effects of Chinese consumers' use of digital media and smart technologies on information sharing, searching and purchasing behaviours. For example, Weibo is one of the most influential and popular social media and mobile apps in China. It is considered to have an impact on Chinese consumers, as well as an increasing influence on consumers overseas. Both of them allow people to post information about their products and also to provide a payment method for consumers. In response to this, Duan and Dholakia (2015) studied the impact of Weibo on Chinese consumer values, finding that the service has a significant influence on transforming Chinese consumer values. For example, the modern Chinese consumer value of "enjoy now" is replacing traditional Chinese consumer values, such as suppressing desire, delaying gratification and thriftiness (Duan and Dholakia, 2015).

Other studies have investigated the relationship between Chinese consumer use of technology and preferences and behaviours. Alibaba has held its annual global online shopping events on November 11<sup>th</sup> since 2009, which has since become the largest and most successful online promotion campaign in China. Xu et al. (2017) demonstrated that informational incentives and social influences facilitate Chinese consumer participation in online shopping events. In particular, factors examined in their study (including promotional information, information review, endorsement and peer imitation) showed positive effects on consumers' purchasing behaviour, which facilitates this online shopping event. Similar results were also shown by Vazquez et al. (2017) who showed that smart technologies have powerful direct relationships with the generation of positive word of mouth among Chinese consumers. This is important, as previous studies have suggested that electronic word-of-mouth can have considerable influence on consumer product perceptions and purchase behaviour (Doh and Hwang, 2009; Gruen et al., 2006; Gupta and Harris, 2010; Park and Kim, 2008). Finally, Gao et al. (2015) investigated the critical determinants of Chinese consumers' intentions toward continued use of mobile purchase systems. The findings of the study indicated that system quality, information quality, service quality, and privacy and security concerns impact on consumers' continued use intentions towards mobile purchase.

While Chinese use of digital media and smart technology in relation to food and beverage products is significant, there is a current lack of published studies on investigating its use specifically in relation to yogurt products.



## Chapter 2

# Methodology

The method included a structured and self-administered online survey that included a Choice Experiment, conducted in Shanghai, China in January 2018. The surveys were administered through Qualtrics™, a web-based survey system, and had a sample size of 837 yogurt consumers.

Sampling involved the recruitment of participants from an online panel database of consumers 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. Potential respondents were recruited by e-mail and screened out if they consumed yogurt less than monthly, or new nothing about NZ. The email included a short description of the study, a link to start the online survey and instructions to run the survey.

The survey was developed by the research team drawing from a literature review on Chinese consumer trends for dairy and yogurt products (see Chapter 1), results from previous surveys examining consumer attitudes in overseas markets (Guenther et al., 2015; Miller et al., 2014; Saunders et al., 2015), a pilot survey of 100 Shanghai yogurt consumers (November 2017) and consultation with industry partners and stakeholders.

### 2.1 Choice experiments

This study employs the stated preference method of choice experiments to estimate consumer WTP for credence attributes of yogurt. Choice experiments have been extensively used to value consumer preferences for food product attributes (Tait et al., 2015; 2016; 2016b; Miller et al., 2017). As opposed to revealed preference methods such as using direct or indirect market prices, this survey based approach facilitates valuation of attributes that may not be directly observable in market prices such as the attributes explored in the current report. The ability of this method to identify which individual attributes are more important in consumer choices, and to estimate marginal WTP for these attributes, has seen this approach to valuation become increasingly favoured by researchers.

The method involves simulating the context in which consumers would normally make choices among a set of competing yogurt alternatives. This is achieved by designing an experiment in which attributes are systematically and independently varied to produce multiple choice scenarios. In this study, alternative yogurt products presented to consumers are described by the yogurt type, production practices, country of origin and price. Consumers are then asked to indicate their preferred yogurt alternative in each scenario, with the observed levels of attributes in the chosen and non-chosen alternatives modelled in a probabilistic econometric framework. The resulting model outputs can then be used to estimate consumer WTP for the yogurt attributes of interest. A fuller presentation of theoretical foundation and statistical procedure can be found in Appendix 2 Statistical Method.

### 2.2 Selection of yogurt attributes

The central objective of the Choice Experiment is motivated by the following hypothesis:

*“It is possible to use original research in key international markets to determine credence attributes matched to NZ production systems that are valued by international consumers of all agri-food products sourced from NZ, especially from Maori enterprises”*

While *search* attributes such as price or colour can be observed directly, and *experience* attributes such as flavour or texture can be assessed following consumption, *credence* attributes are not able to be directly observed or verified by consumers' consumption of the product. For products promoting credence attributes, the role of labelling is of significant importance. Relevant credence attributes to be included in the choice experiment were identified through literature review combined with results of the scoping survey (Table 2.1).

Social responsibility attributes have been defined in many diverse ways, with no clear dominant definition (Miller et al., 2017). The description used here was formed on the basis of being a central defining characteristic of Maori enterprises. This view was formed by reviewing of Māori enterprise definitions available online used in current products. These reflected an important Māori enterprise characteristic concerning collective ownership structures. The review also revealed a second major defining characteristic, stewardship over relevant natural resources including land. We consider that the environmental sustainability attribute already included is sufficient to meet this criteria and so do not specify a stewardship specific attribute.

**Table 2.1 Yogurt attributes included in the choice experiment**

<b>Enhanced food safety</b>	The yogurt has been officially certified by a Food Safety Agency who guarantees that the production of this yogurt employs a management system that provides food safety additional to minimum regulatory requirements.
<b>Enhanced animal welfare</b>	The yogurt has been officially certified by an Animal Welfare Agency who guarantees that the production of this yogurt employs a management system that that provides animal welfare additional minimum regulatory requirements.
<b>Certified Organic</b>	The yogurt is 100% organically produced, is GE free, with no synthetic fertilisers or pesticides used.
<b>Environmental sustainability</b>	The yogurt has been officially certified by an Environmental Agency who guarantees that the production of this yogurt employs a management system that minimises environmental effects of production and distribution.
<b>Social responsibility</b>	The yogurt has been produced by dairy farms that are community owned and operated. Socially responsible growers and suppliers actively include public interest into decision making.
<b>Type</b>	The type of yogurt can be either: drinking, spoonable, or powdered
<b>Country of origin</b>	This attribute displays the country where the yogurt is produced
<b>Price</b>	Yuan per kg of yogurt

### 2.3 Yogurt attribute levels

The levels that each yogurt attribute can take are presented in Table 2.2. Price levels were determined by the distribution of observed market prices in Shanghai for yogurt (as at December 2017). Countries of origin were selected based on volumes of sales in China for 2017.

**Table 2.2 Yogurt attribute levels used in the choice experiment**

Yogurt attributes	Attribute levels					
Enhanced food safety	No label	Certified				
Enhanced animal welfare	No label	Certified				
Certified Organic	No label	Certified				
Environmental sustainability	No label	Certified				
Social responsibility	No label	Community owned and operated				
Variety	Drinking	Spoonable		Powdered		
Country of Origin	No label	NZ	China	Germany	Spain	Thailand
Price Yuan/kg 2017	20, 30, 40,50, 60, 100, 150, 200, 250					

### 2.4 Experimental design

It is not possible to present respondents with all possible combinations of attribute levels (Table 2.2). Instead, Experimental Design methodology is used to create combinations of attribute levels, which represent a subset of the total combinations possible, and maximise the amount of statistical information available. These combinations are formed into choice sets. Figure 2.1 presents an example of a choice set shown to respondents. Each choice set comprises four options, of which respondents chose their preferred option. Three options present alternative yogurt, while the fourth is a ‘none of these’ option.

The study employs NGene™ software to apply a D-efficient fractional factorial design approach. Providing information on the likely values of model coefficient estimates improves this process. For the initial experimental design, we looked at similar studies for design parameters, then updated these with coefficient estimates from a model fitted to pilot survey data (n=100). The resulting updated experimental design is applied to the remaining number of respondents with each respondent answering ten choice sets.

**Figure 2-1: Example yogurt choice set shown to respondents**

**Group  
1/10**

In the next set of questions, imagine you're buying yogurt from an average retailer for personal consumption.

Which of the following three yogurt do you prefer? Please use the button to mark your choice.

	Product one	Product two	Product three	More information
Variety	Semi-solid yogurt	Yogurt powder	Liquid yogurt	
Strengthen food safety	Certification			
Enhance animal welfare	Certification			
Organic certification	Certification			
Environmental sustainability	Certification			
Social responsibility	Community ownership and management			
Country of origin	Thailand	new Zealand		
Yuan / kg yogurt	30 yuan / kg	200 yuan / kg	30 yuan / kg	
<b>select</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<b>neither</b> <input type="radio"/>



## Chapter 3

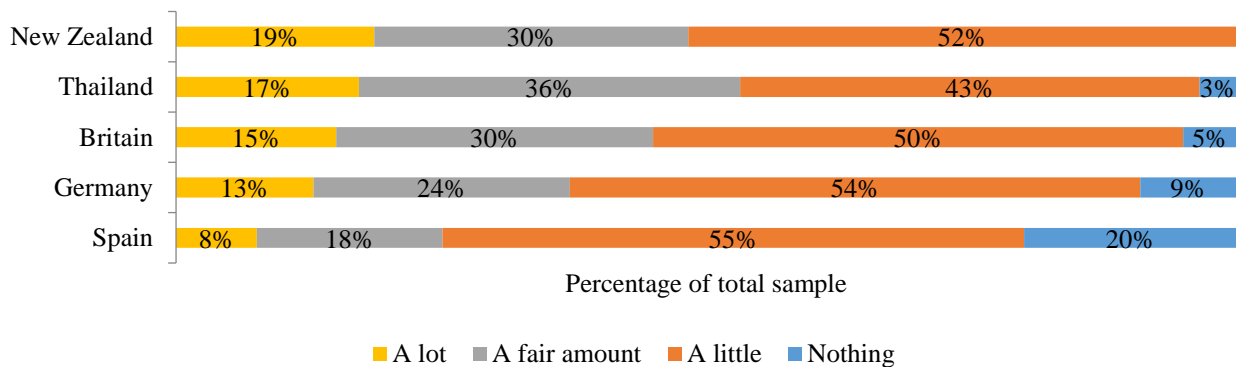
### Results

This chapter presents the results of the survey examining Shanghai consumer preferences for yogurt products, including their knowledge of particular countries (3.1), yogurt purchasing habits (3.2), attributes to yogurt products (3.3), knowledge of Māori culture and enterprise (3.4), attitudes to yogurt production (3.5), as well as their use of digital media and smart technology in relation to yogurt products (3.6). The results of a choice experiment are presented in Chapter 4.

#### 3.1 Knowledge of countries

Participants were first asked to indicate how much they knew about a series of countries using a four-point Likert scale, including the points A lot (1), A fair amount (2), A little (3) and Nothing (4). For the purposes of this research, these countries were selected based on their status as significant yogurt producing/exporting countries, including Thailand, Britain, Germany and Spain, as well as NZ. Results are shown in Figure 3-1. All participants indicated some level of knowledge of NZ, with 19% participants stating that they know a lot. This is perhaps not surprising given knowledge of NZ was a screening factor for completing the survey

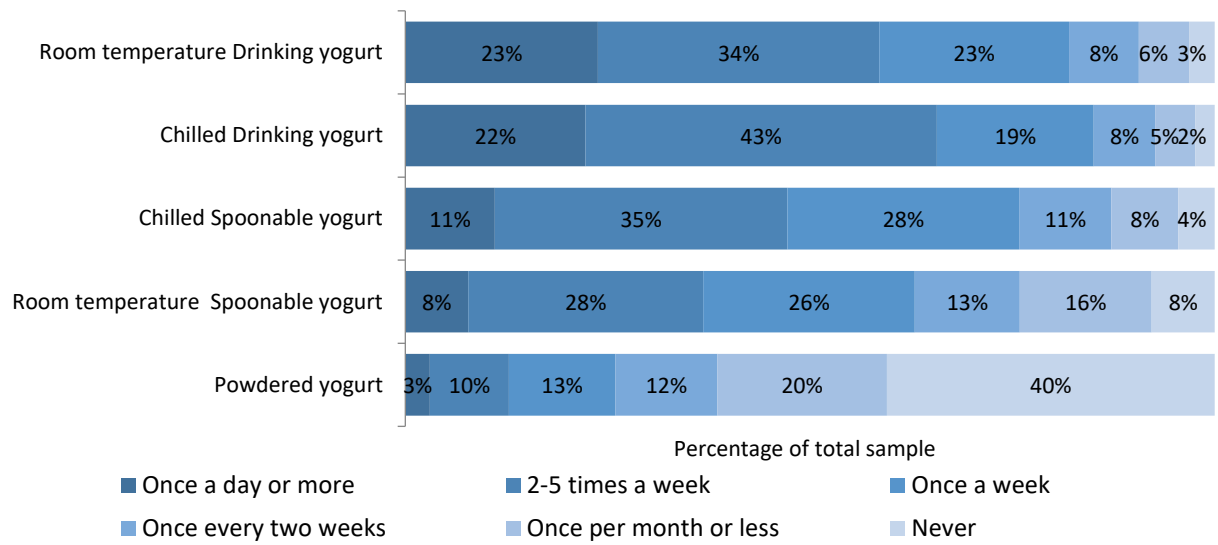
Figure 3-1: Knowledge of countries



#### 3.2 Yogurt purchasing habits

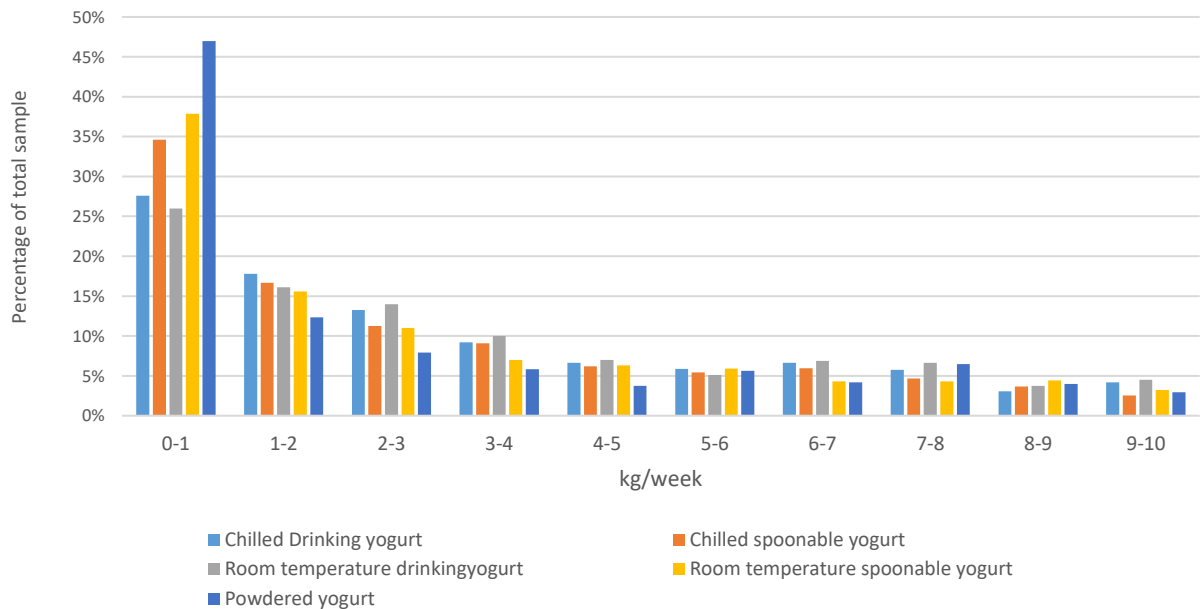
The next set of questions were concerned with participants' purchasing habits in relation to yogurt. Participants were asked to indicate how much (kg) yogurt they ate each week. The types of yogurt included room temperature and chilled drinking yogurt, room temperature and chilled spoonable yogurt, and powered yogurt, with the frequency of drinking/eating ranging from once a day or more to never. Figure 3-2 shows that room temperature drinking yogurt was the most frequently consumed yogurt (23 per cent, once a day or more, 34 per cent, 2-5 times a week), followed by chilled drinking yogurt (22 per cent, once a day or more, 43 per cent, 2-5 times a week), and chilled spoonable yogurt (11 per cent, once a day or more, 35 per cent, 2-5 times a week).

**Figure 3-2: The consumption frequency of five types of yogurt**



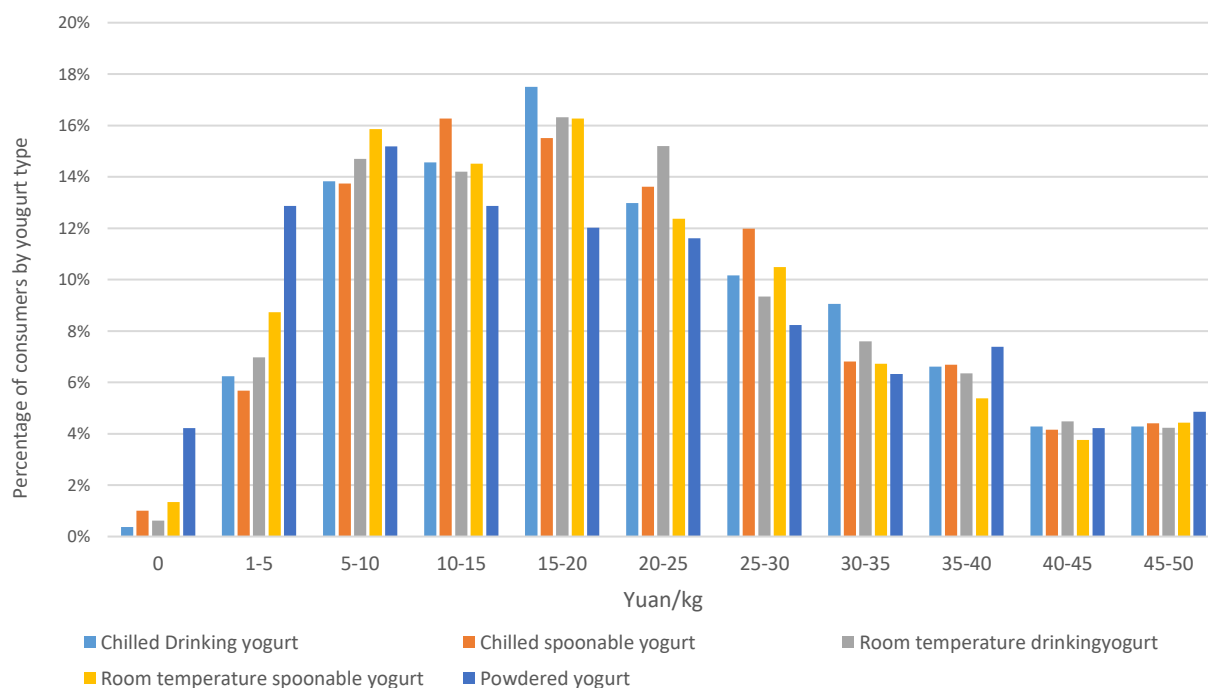
Participants were then asked to indicate their average weekly consumption of the different types of yogurt. Results are presented in Figure 3-3. Overall, most participants indicated that they consumed the five types of yogurt less than 1 kg per week. Almost 50 per cent of participants consumed less than 1 kg of powdered yogurt per week.

**Figure 3-3 Average consumption per week of yogurt (kg/week)**



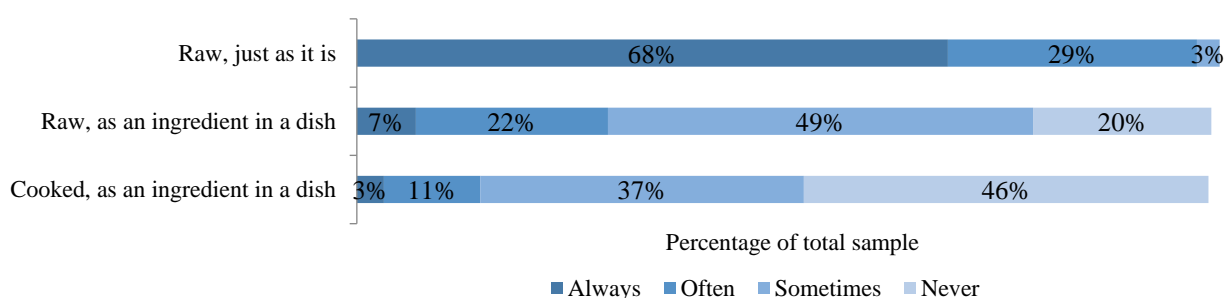
Participants then were asked to indicate the price that they usually paid for yogurt. Results are presented in Figure 3-4. The results show that most participants usually spent 15-20 Yuan/kg of yogurt, followed by 10-15 Yuan/kg and 20-25 Yuan/kg.

**Figure 3-4: Usual price paid for yogurt (Yuan/kg)**



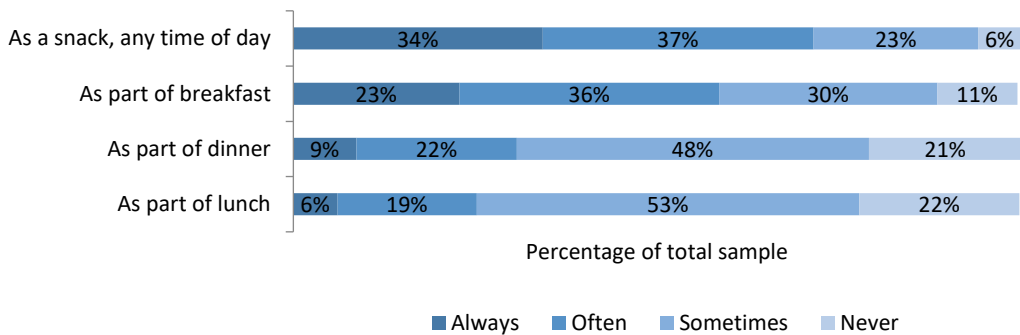
Participants were also asked in what ways do they consume yogurt. Results are presented in Figure 3-5, that the most frequent method of consumption of yogurt was raw, just as it is (97 per cent always/often), followed by raw, as an ingredient in a dish (29 per cent always/often).

**Figure 3-5: Methods and frequency of consumption of yogurt**



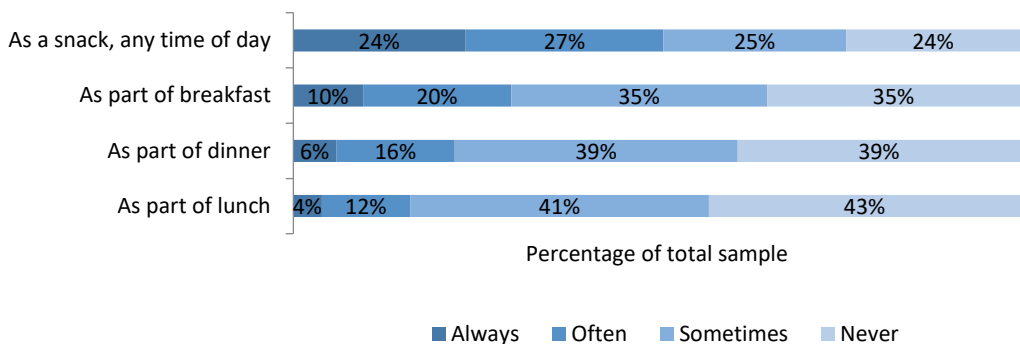
Following this, participants were asked to consider the frequency at which they consumed drinking and spoonable yogurt. Results are shown in Figure 3.6 and Figure 3.7. For drinking yogurt (as shown in Figure 3-6), the most frequent occasion for consumption was as a snack, any time of day (71 per cent always/often), followed by as part of breakfast (59 per cent always/often).

**Figure 3-6: Drinking yogurt consumption occasions**



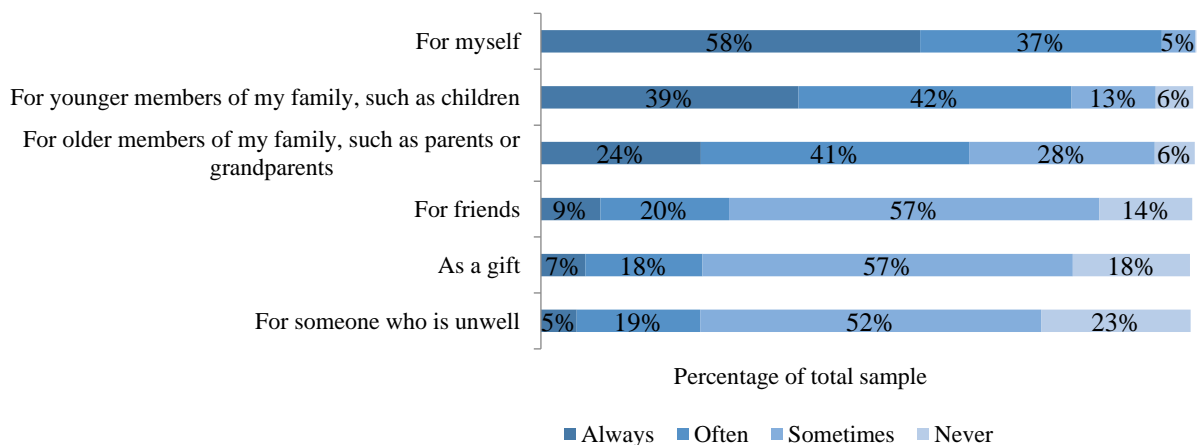
For spoonable yogurt (as shown in Figure 3-7), the most frequent occasion for consumption occasion was as a snack, any time of day (51 per cent always/often), followed by as part of breakfast (30 per cent always/often), and as part of dinner (22 per cent always/often).

**Figure 3-7: Spoonable yogurt consumption occasions**



Participants were then asked to indicate the frequency at which they usually purchased yogurt products for members of their family and others, as shown in Figure 3-8. The most frequent purchase recipient was “for myself” (58 per cent always), followed by for younger members of my family (39 per cent always), and for older members of my family (24 per cent always).

**Figure 3-8: Frequency of purchase of yogurt products for different recipients**

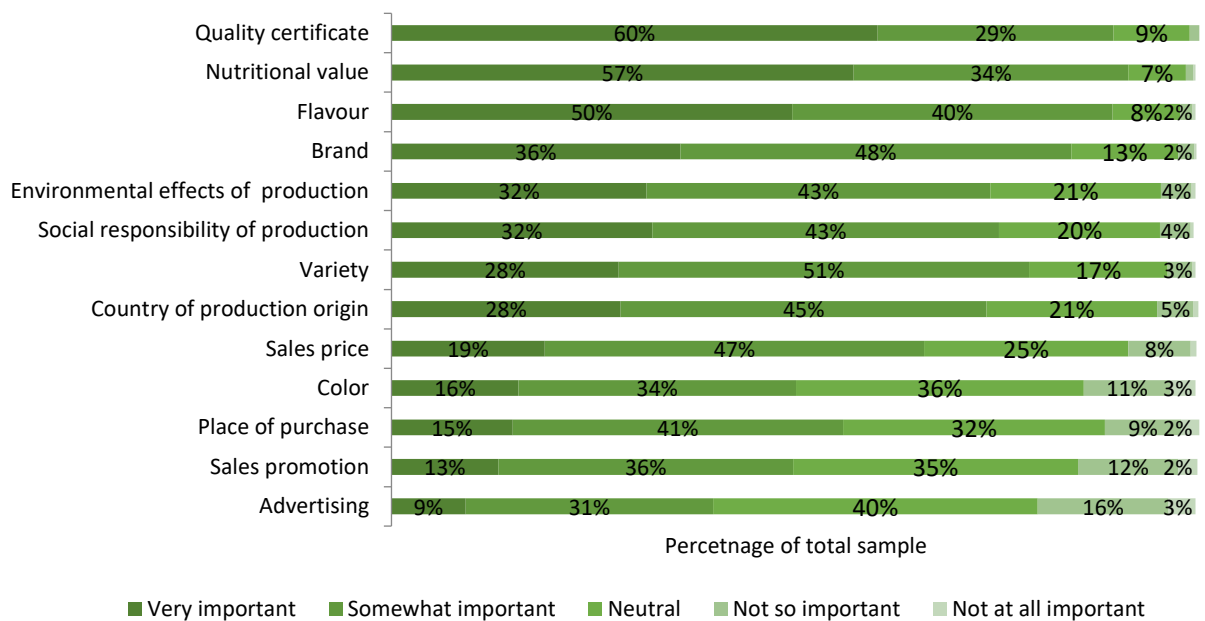




### 3.3 Yogurt product preferences

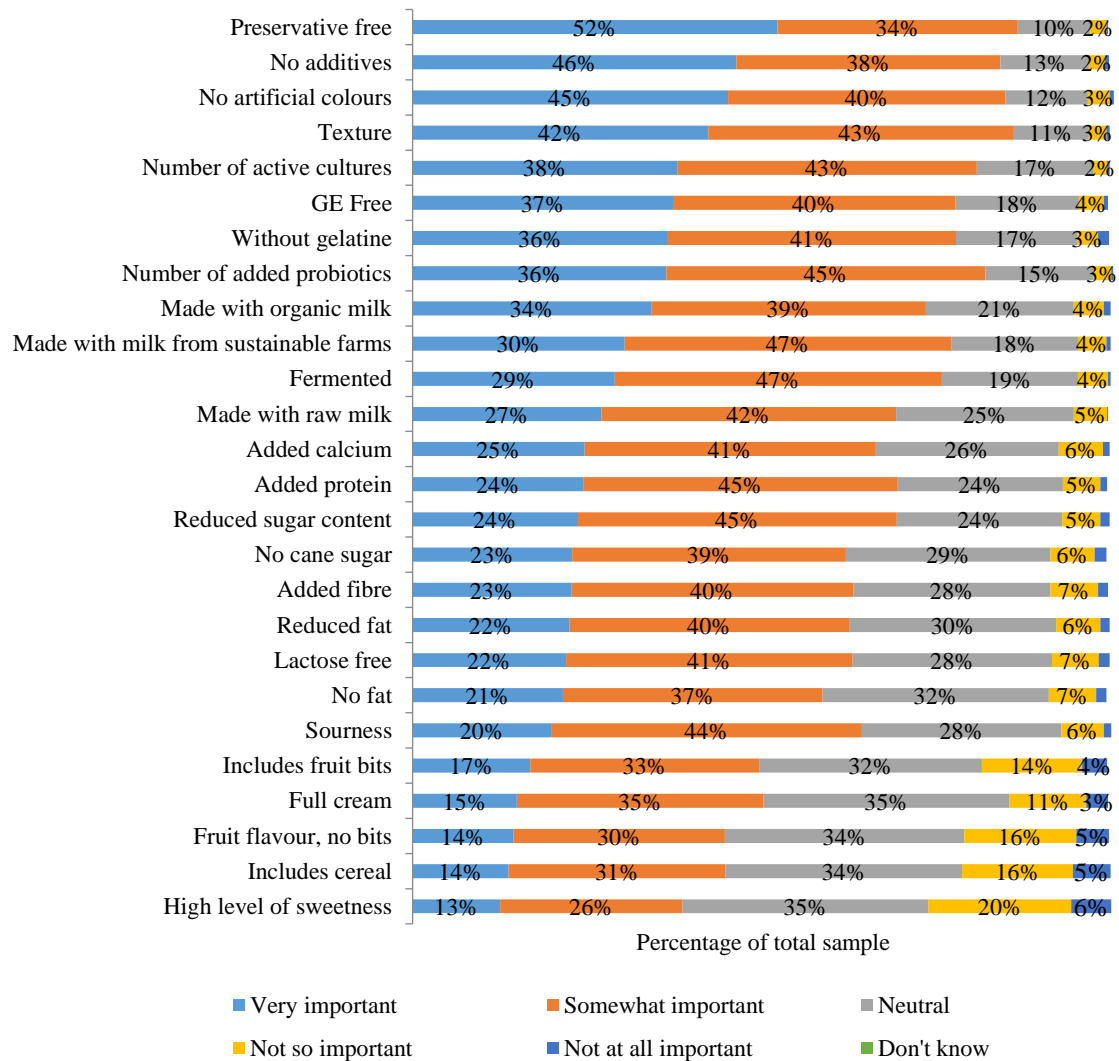
Participants were then asked to indicate how important a range of product characteristics are to them when buying yogurt. Results are presented in Figure 3.9. The characteristics with the highest importance were shown to be quality certificate (60 per cent strongly prefer), followed by nutritional value (57 per cent strongly prefer), and flavour (50 per cent strongly prefer). In addition, the environmental effects of production (32 per cent strongly prefer) were considered to be important to consumers when buying yogurt. Participants also indicated that brand (36 per cent strongly prefer), variety (28 per cent strongly prefer), country of product origin (28 per cent strongly prefer) and sales prices (19 per cent strongly prefer) influenced their purchasing decisions.

**Figure 3-9: Importance of yogurt characteristics**



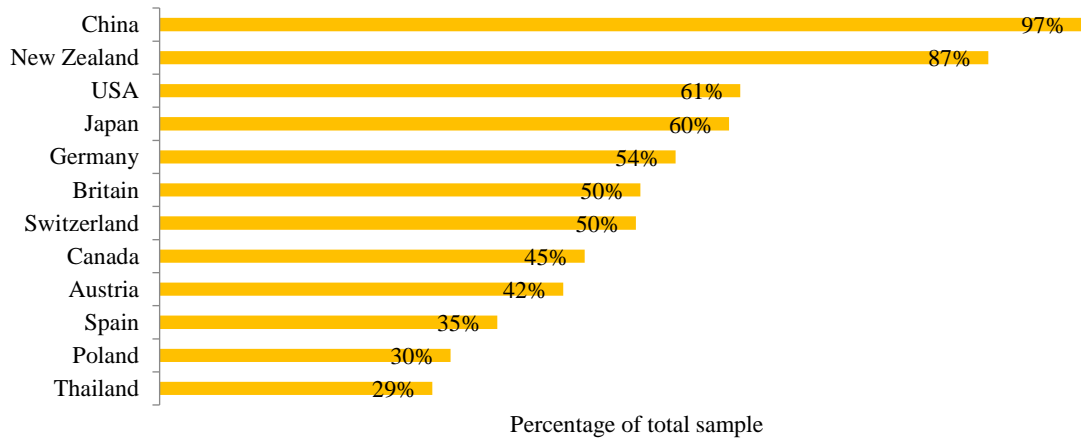
Participants were then asked to indicate which product attributes would be included in their ideal yogurt product. Results are shown in Figure 3-10. Overall, preservative free (86 per cent very important/somewhat important), texture (85 per cent very important/somewhat important) and no artificial colours (85 per cent very important/somewhat important) were the top three important attributes of ideal yogurt product.

**Figure 3-10: Attributes of an ideal yogurt product**



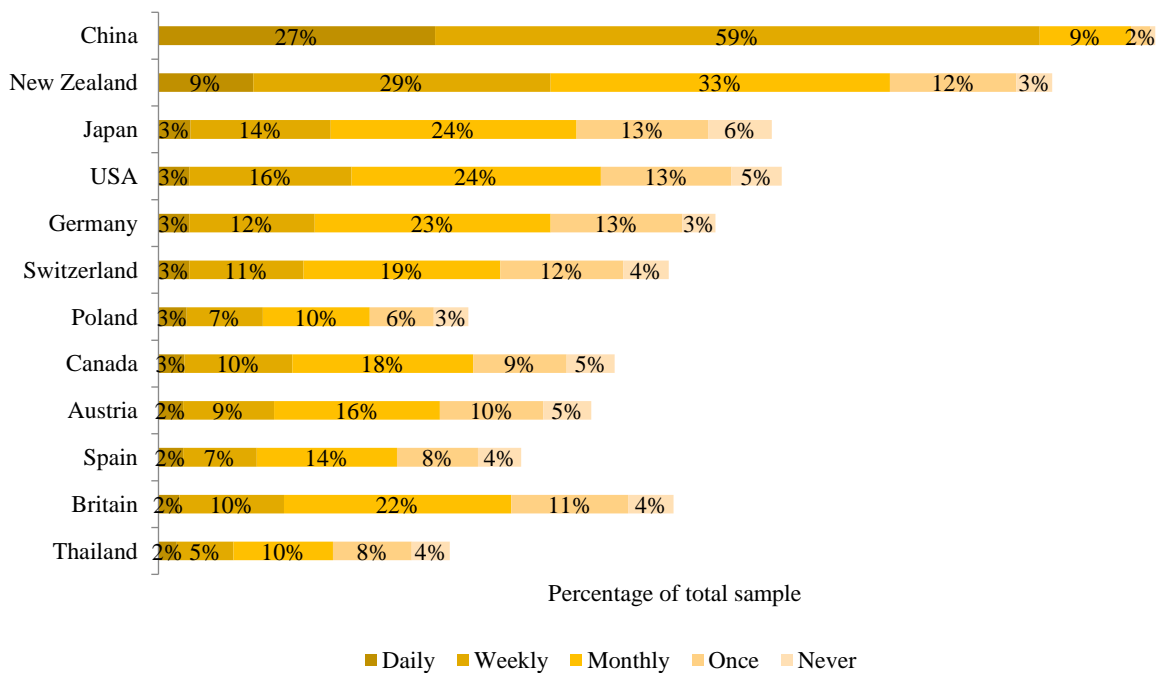
Participants were then asked to indicate if they had seen yogurt being sold with a country-of-origin cue. These included for the countries Thailand, Poland, Spain, Austria, Canada, Switzerland, Britain, Germany, Japan, USA and China, as well as NZ. Results are presented in Figure 3-11 that China was the most commonly identified country-of-origin (97 per cent), followed by NZ (87 per cent) and the USA (61 per cent).

**Figure 3-11: Percentage of participants who had seen yogurt being sold with a particular country of origin**



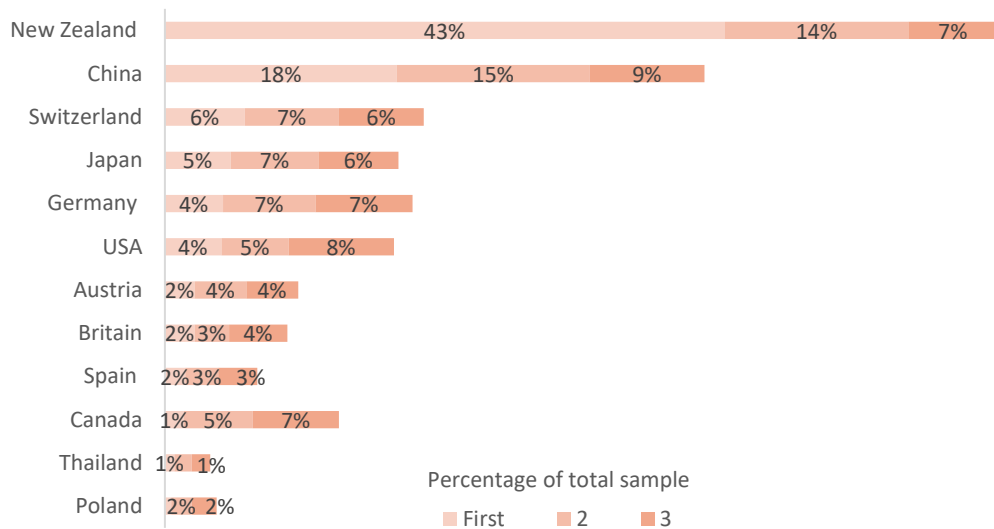
Following this, participants were asked to indicate the frequency at which they had purchased yogurt with a particular country-of-origin. Results are presented in Figure 3-12. The highest conversion rate (seen and purchased at least weekly) was for China (59 per cent weekly), followed by NZ (29 per cent weekly) and Japan (14 per cent weekly).

**Figure 3-12: Frequency of purchase of yogurt with a particular country of origin**



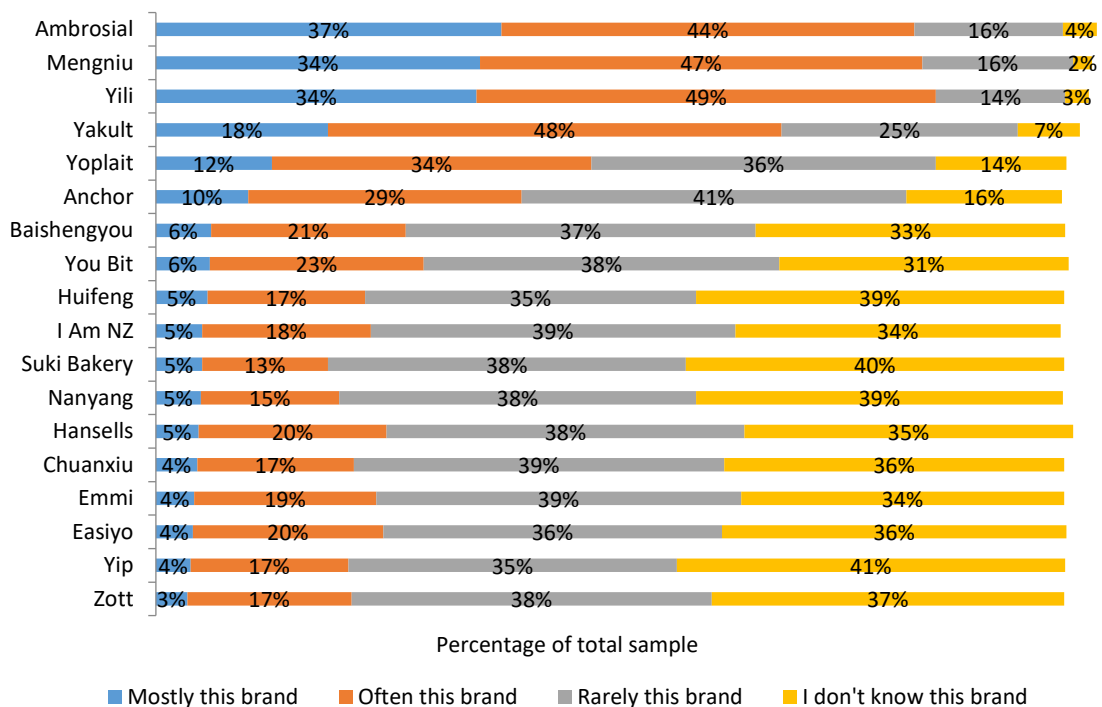
Following this, participants were asked to indicate which countries they believed to produce the highest quality yogurt using a ranking scale of 1 to 6 (1 being the highest). Results presented in Figure 3-13 show, that NZ was ranked first most often (43 per cent), followed by China (18 per cent) and Switzerland (6 per cent).

**Figure 3-13: Ranking of countries for producing high quality yogurt**



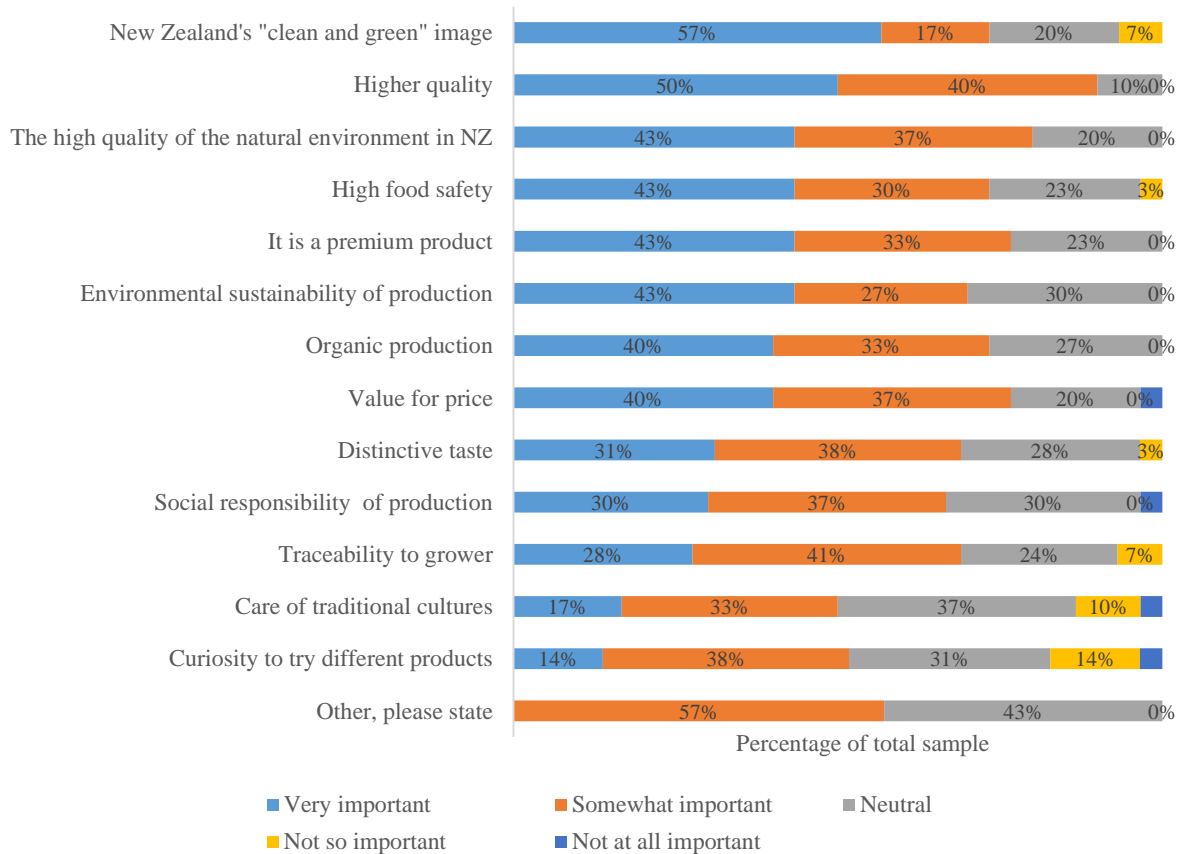
Participants were also asked to indicate the frequency at which they had purchased particular brands of yogurt, as presented in Figure 3.14. Overall, the most frequently purchased yogurt brand was Ambrosial (37 per cent mostly this brand), followed by Yili (34 per cent mostly this brand) and Mengniu (34 per cent mostly this brand). These top three brands are all China’s domestic yogurt brands. The top three frequently purchased NZ included Yoplait (12 per cent mostly this brand), Anchor (10 per cent mostly this brand), and I am NZ (5 per cent mostly this brand).

**Figure 3-14: Frequency of purchase of particular brands of yogurt**



Participants were asked to indicate the reasons that they purchased NZ yogurt products. Results are presented in Figure 3.15, and show that ‘NZ’s clean and green image’ was ranked as the most important reason for purchasing NZ yogurt (57 per cent very important), followed by ‘higher quality’ (50 per cent very important) and then ‘the high quality of the natural environment in NZ’ (43 per cent very important).

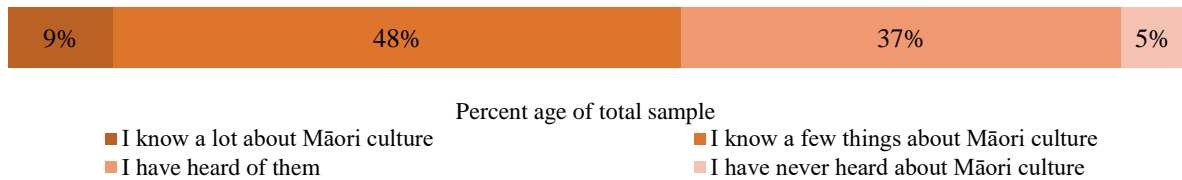
**Figure 3-15: Reasons for purchasing New Zealand yogurt**



### 3.4 Māori culture and enterprise

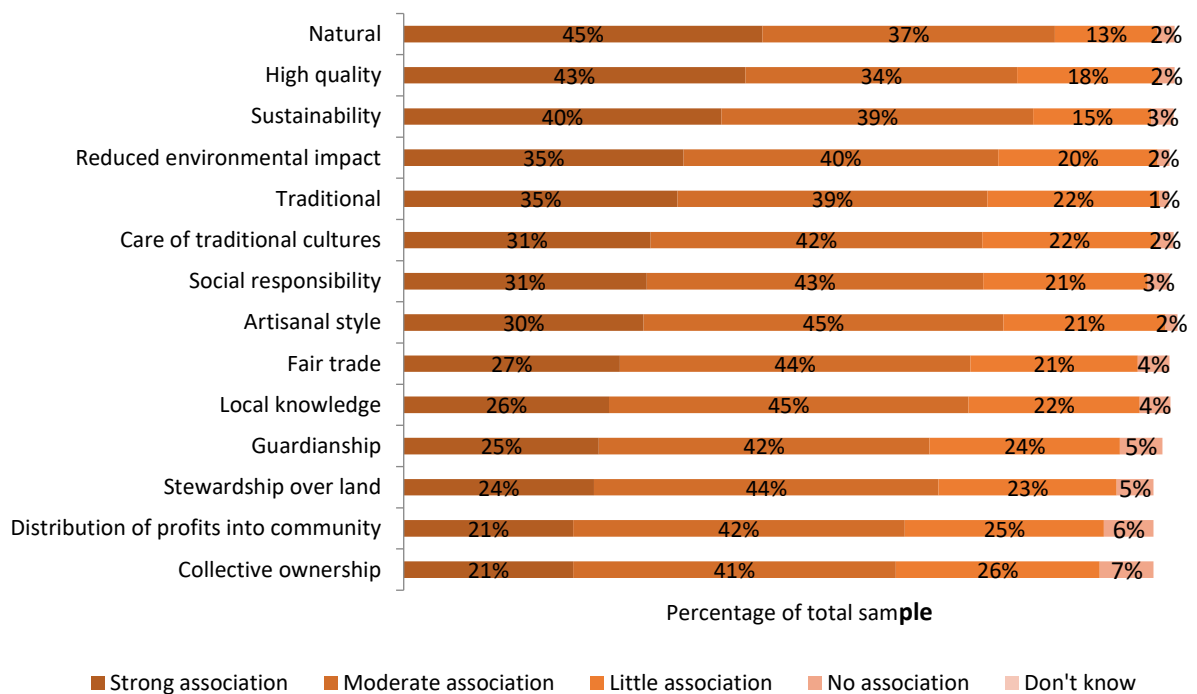
The survey also examined participants’ knowledge of and associations with Māori culture, generally and specifically in relation to yogurt production. Participants were initially asked to approximate their knowledge of Māori culture, as shown in Figure 3-16 only 5 per cent had never heard about Māori culture.

**Figure 3-16: Knowledge of Māori culture**



Following this, participants were asked to indicate to what extent they associated a series of attributes with yogurt produced from a Māori enterprise. Results are shown in Figure 3.17. In addition, certain environmental, cultural and social attributes, such as reduced environmental impact, traditional, care of traditional cultures and social responsibility were also stated strongly associated with yogurt produced from a Māori enterprise. These show the strongest association was natural (45 per cent strong association), followed by high quality (43 per cent strong association) and sustainability (40 per cent strong association). In addition, certain environmental, cultural and social attributes, such as reduced environmental impact, traditional, care of traditional cultures and social responsibility were also stated strongly associated with yogurt produced from a Māori enterprise.

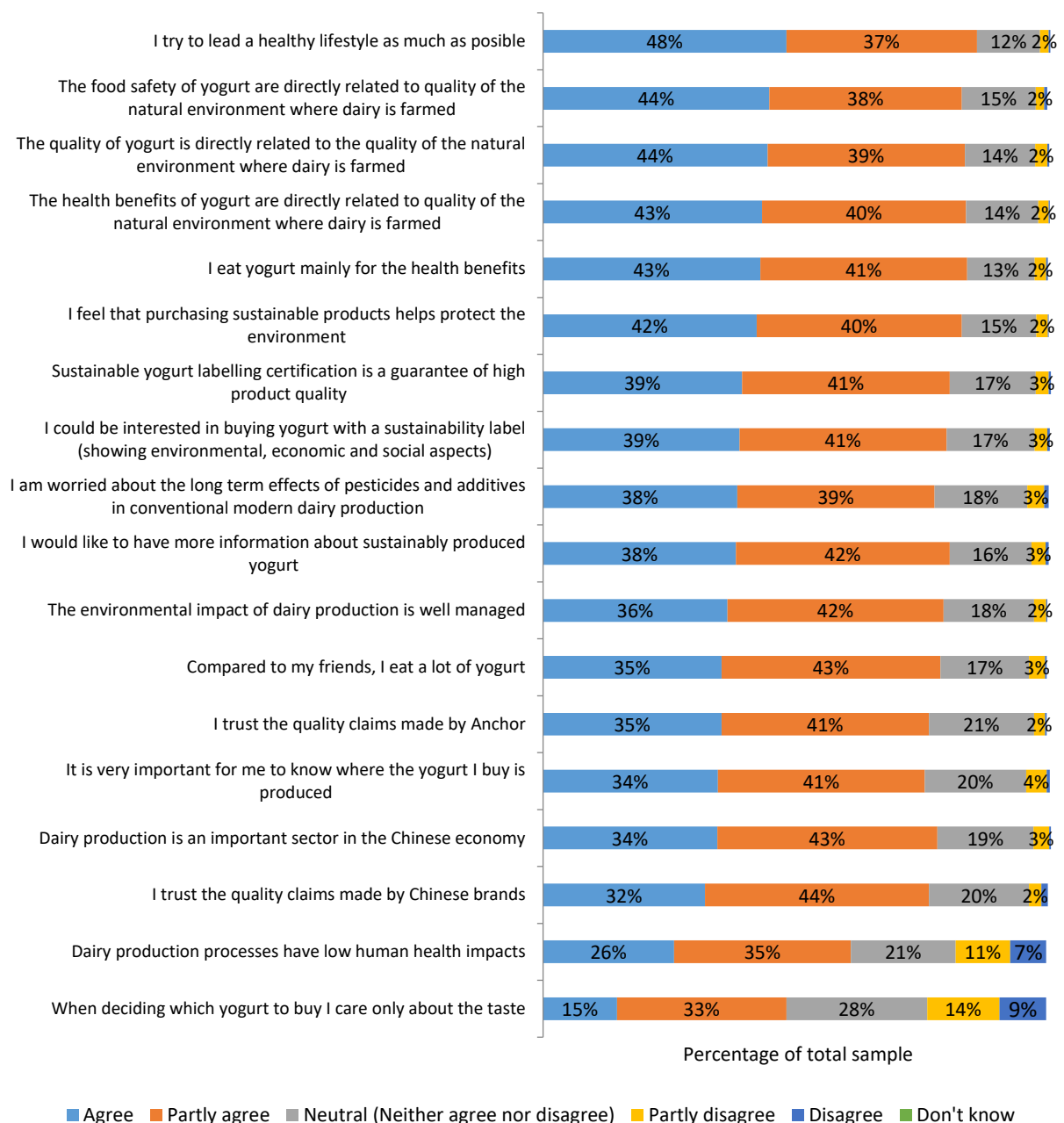
**Figure 3-17: Attributes associated with yogurt produced from a Māori enterprise**



### 3.5 Attitudes to yogurt production practices

Participants were asked to indicate their agreement with a range of statements in relation to yogurt production practices. This included statements regarding participants' views on the economic, environmental and social impact of yogurt production. Additionally, participants were asked about their perception of the relation of yogurt consumption and health benefits. Results are shown in Figure 3-18. The most agreed statements relating to production practice was 'I try to lead a healthy lifestyle as much as possible' (85 per cent agree/partly agree), followed by 'the food safety of yogurt are directly related to quality of the natural environment where dairy is farmed' (82 per cent agree/partly agree). Most participants also agreed that 'sustainable yogurt labelling certification is a guarantee of high product quality' (80 per cent agree/partly agree), and 'I could be interested in buying yogurt with a sustainability label (showing environmental, economic and social aspects)' (80 per cent agree/partly agree).

**Figure 3-18: Agreement with statements relating to yogurt production practices**

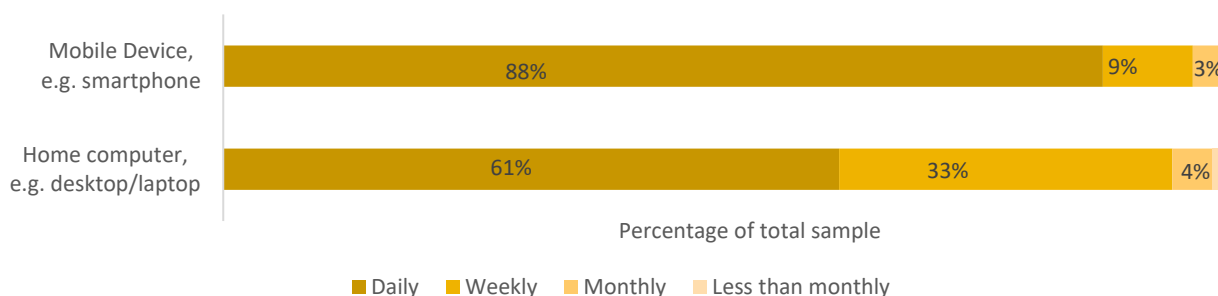


### 3.6 Digital media and technology use for yogurt

The survey also asked participants to describe the ways in which they used various forms of digital media and smart technology in relation to finding information about and/or purchasing yogurt products.

Initially, participants were asked to indicate how often they accessed the internet by mobile device or home computer. Results presented in Figure 3-19 show most participants used both mobile device and home computer frequently to access the Internet, with daily access by mobile devices (88 per cent) significantly higher than by home computer (61 per cent).

**Figure 3-19: Frequency of access the Internet using mobile device and home computer**



Following this, participants were asked if they used particular digital media sources with the same device types (home computer, mobile device) for the purposes of yogurt product selection or to find out how a yogurt product is produced. Results (Table 3.1) show that digital media was used more frequently to inform choices than for finding production information. In terms of informing choices, except for food company web pages and LinkedIn, mobile devices were used more frequently than home computer. TMall, Taobao and Jingdong were the top three online information sources used on mobile device for inform choices. In terms of production information, Baidu was the most frequently used online information on mobile device, followed by TMall and Taobao.

**Table 3.1: Use of digital media for yogurt choices and production information**

	Inform Choices		How Produced	
	Home Computer	Mobile Device	Home Computer	Mobile Device
TMall	37%	58%	24%	32%
Taobao	33%	52%	23%	30%
Jingdong	33%	51%	23%	28%
Baidu	40%	46%	39%	41%
WeChat	20%	45%	16%	32%
Weibo	21%	36%	18%	27%
Alibaba	24%	28%	19%	21%
Retailer websites	25%	28%	22%	23%
Food blogs	21%	26%	21%	23%
Food company web pages	28%	25%	31%	24%
Forums	24%	25%	23%	22%
QQ Zone	18%	25%	16%	20%
Youku	22%	23%	19%	18%
LinkedIn	18%	16%	17%	15%

Percentage of total sample



Participants were also asked if a range of sources influenced them when making for yogurt product choices or searching for production information. Table 3.2 shows that health professionals are the greatest influence informing product choices (61%) and production information (46%).

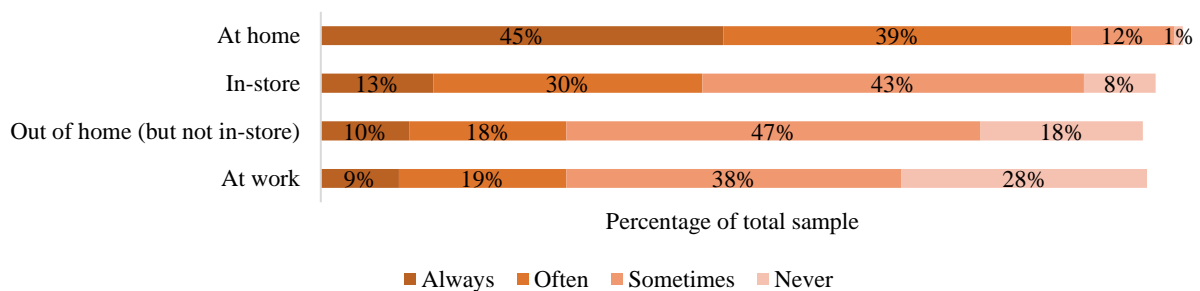
**Table 3.2: Influences on informing choices and knowledge of production processes when searching for information about yogurt products**

	<b>Inform Choices</b>	<b>How Produced</b>
Health professionals	61%	46%
Government information	40%	38%
Celebrity chefs	41%	21%
International bodies (e.g. World Health Organization)	39%	38%
Non-government organizations (e.g. Greenpeace)	33%	34%
Sports celebrities	32%	18%
Other celebrities	31%	18%
Industry marketing boards	30%	32%

Percentage of total sample

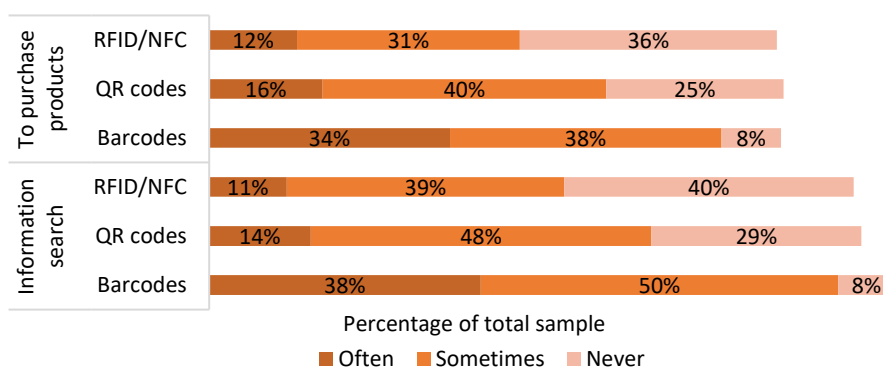
Participants who used mobile devices to search for inspiration or product information were also asked to indicate where they usually did this. Figure 3-20 shows that most participants used mobile devices at home (84 per cent always/often), followed by in-store (43 per cent always/often).

**Figure 3-20: Place of use of mobile device to search for yogurt products or production information**



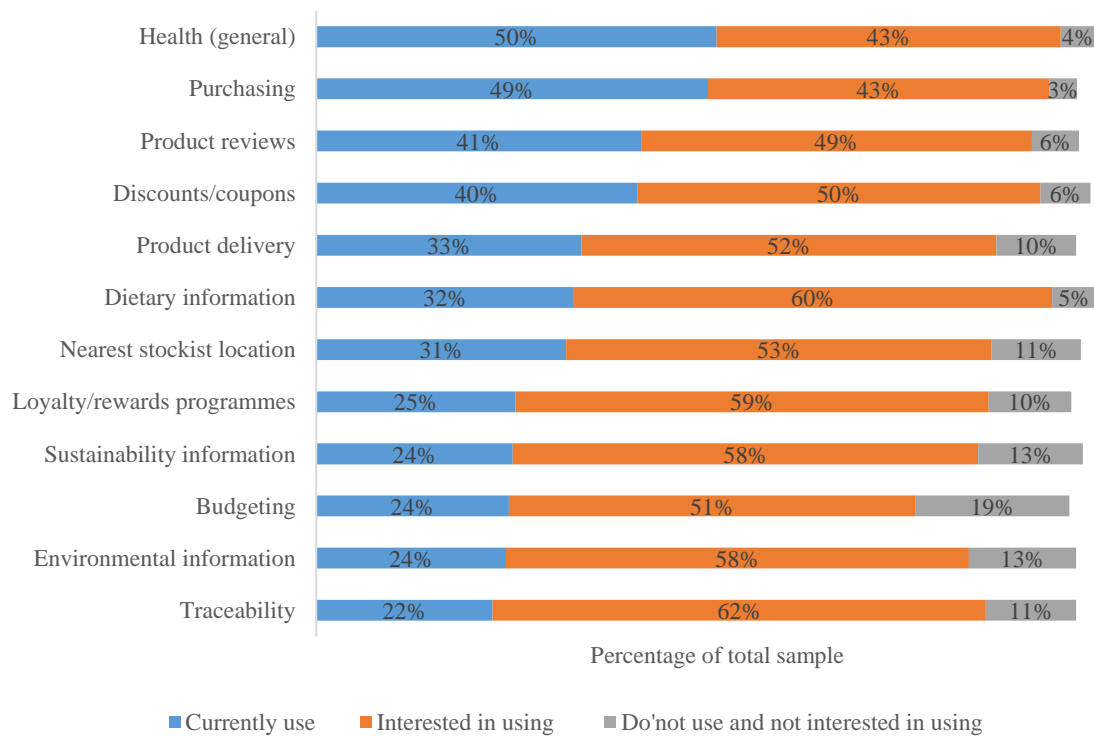
Participants were also asked to indicate the frequency at which they had used a series of smartphone-interactive technologies (barcodes, QR codes, RFID/NFC) for the purposes of finding information about or purchasing yogurt products. Results are presented in Figure 3-21. Barcodes were shown to be the most frequently used interactive technology for both purchasing (72 per cent often/sometimes) and information searching (88 per cent often/sometimes).

**Figure 3-21: Frequency of use of smartphone technologies for searching for product information or purchasing yogurt products**



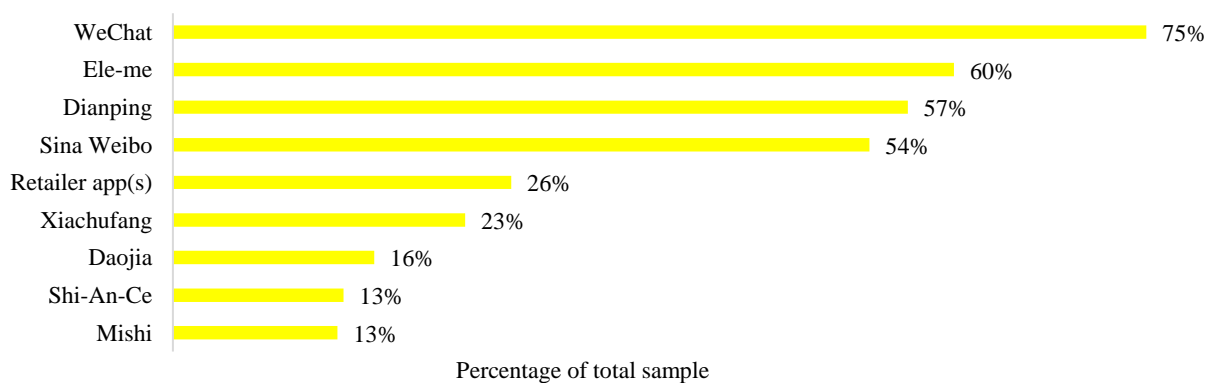
Participants were also asked the extent to which they had used mobile apps in relation to yogurt products for a range of reasons. This included whether they currently use these apps (82 per cent of total sample), are interested in using them, or don't use them and are not interested in using them. These results are shown in Figure 3-22 that the most stated reasons for using mobile apps were health (general) (50 per cent currently use, 43 per cent interested in using), followed by purchasing (49 per cent currently use, 43 per cent interested in using) and product reviews (41 per cent currently use, 49 per cent interested in using).

**Figure 3-22: Use of types of mobile apps in relation to yogurt products**



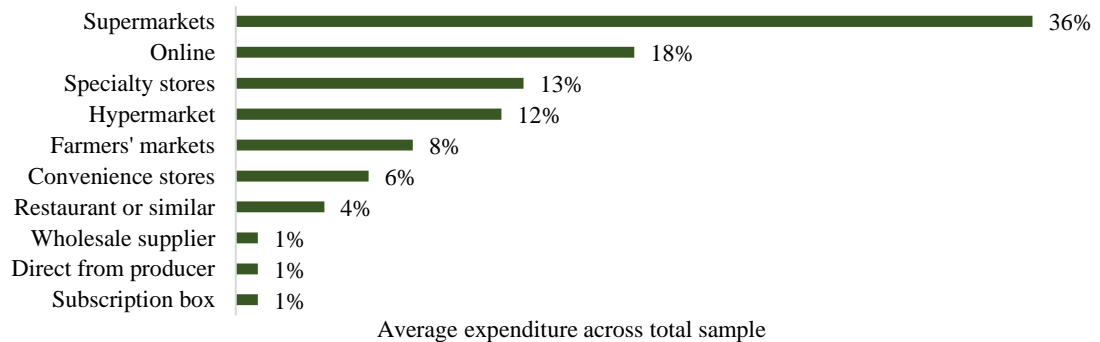
Participants were also asked which apps they used on their mobile device. Results are presented in Figure 3-23. The highest overall use was of WeChat (75 per cent), followed by Ele-me (60 per cent) and Dianping (57 per cent). The listed apps allow consumers to find product information, purchase products and/or write products reviews.

**Figure 3-23: Use of apps with mobile device**



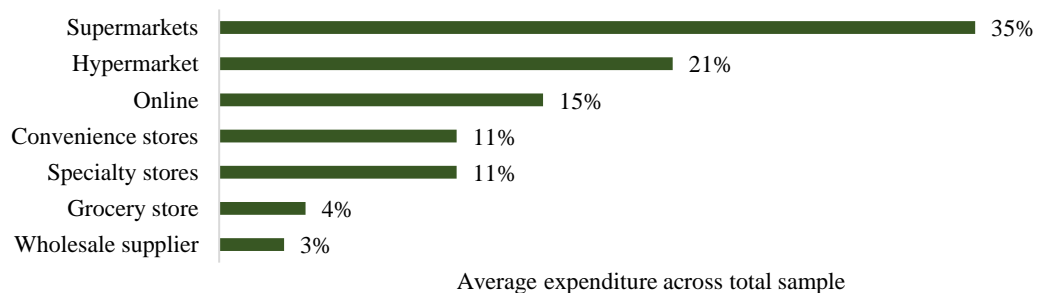
The survey also contained a series of questions designed to elicit participants' use of online shopping for yogurt. Firstly, participants were asked to indicate their percentage of purchases from a series of retailer types for their usual food and beverage shopping. Results are presented in Figure 3.4. showing consumers making on average 36 per cent of purchases at supermarkets and 18 per cent online.

**Figure 3-24: Average percentage of food and beverage purchases by retailer type**



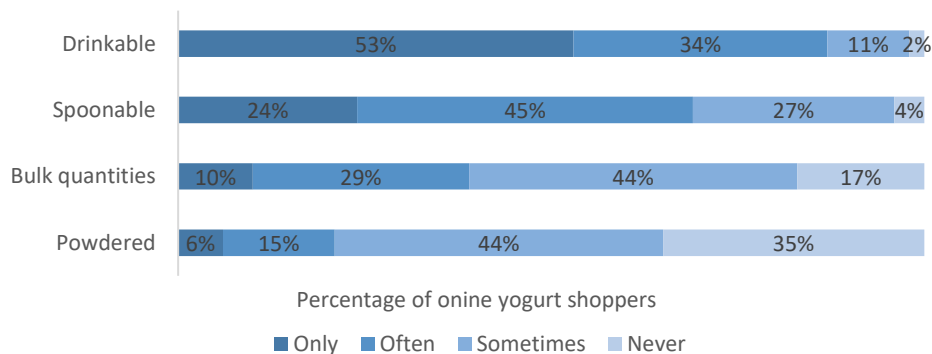
Following this, participants were asked to indicate the percentage of usual yogurt purchases from a series of retailer types. Results are presented in Figure 3-25 with supermarkets also shown to have the highest average purchase rate (35 per cent), followed by hypermarkets (21 per cent). An average of 15 per cent of yogurt purchases were made online with 68 per cent of the total sample making some purchases online.

**Figure 3-25: Average percentage of yogurt purchases by retailer type**



Participants who purchased yogurt online (n = 568) were also asked to indicate the frequency at which they purchased the different types of yogurt products online. These results are shown in Figure 3.26. Overall, the most frequent type of online yogurt purchase was for drinkable, followed by spoonable yogurt products.

**Figure 3-26: Frequency of online purchases of types of yogurt products**



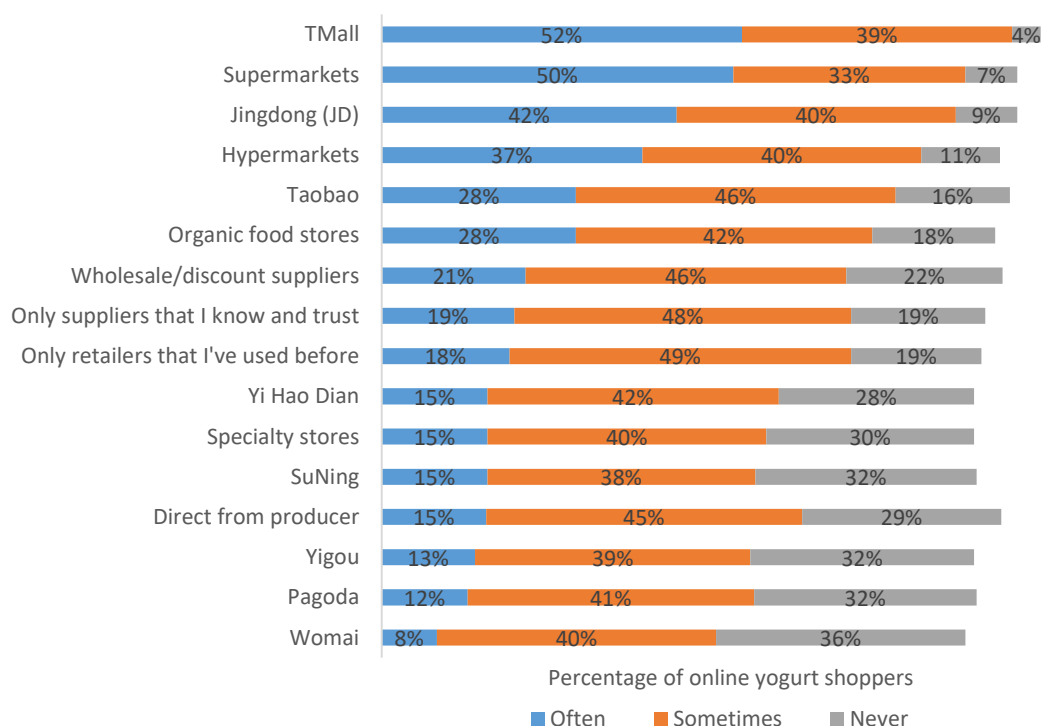
Participants were then asked their main reason for shopping online for yogurt products. Results are presented in Figure 3-27. Access to special offers and promotions (19 per cent) and a greater variety of products available online (19 per cent) were the most stated main reasons for shopping online, followed by the convenience of home delivery (13 per cent).

**Figure 3-27: Main reasons for shopping online for yogurt products**



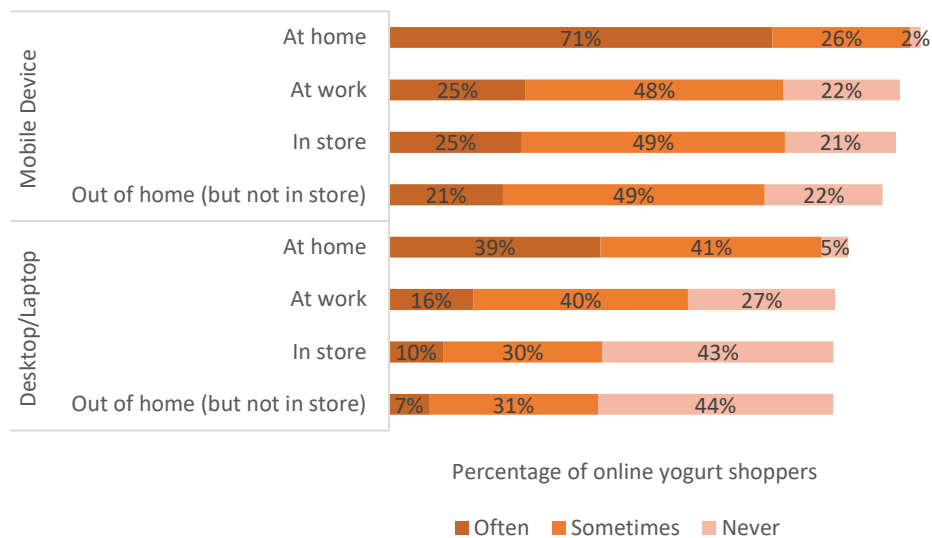
Participants who purchased yogurt online were then asked which online retailers they purchased from. Results shown in Figure 3.28 reveal that the most frequently used source for yogurt purchase online was TMall (82 per cent often), followed by online supermarkets (50 per cent often) and Jingdong (42 per cent often).

**Figure 3-28: Online channel retailer choices**



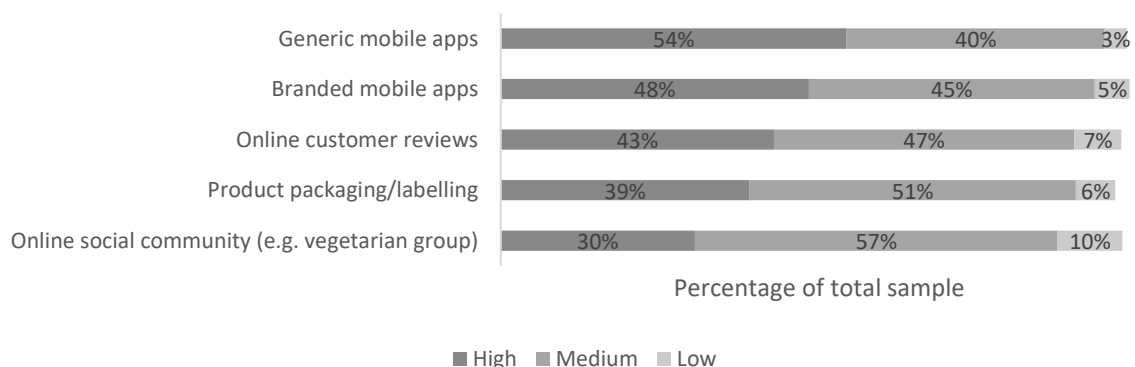
Following this, participants were asked to indicate the frequency at which and in which location(s) they used home computers (desktop/laptop) or mobile devices for making yogurt purchases online. Results are shown in Figure 3-29. ‘At home’ was the most commonly stated location for purchasing yogurt products online by using mostly mobile devices (71 per cent often).

**Figure 3-29: Frequency and location of use of home computer(s) and/or mobile device(s) for purchasing yogurt products online**



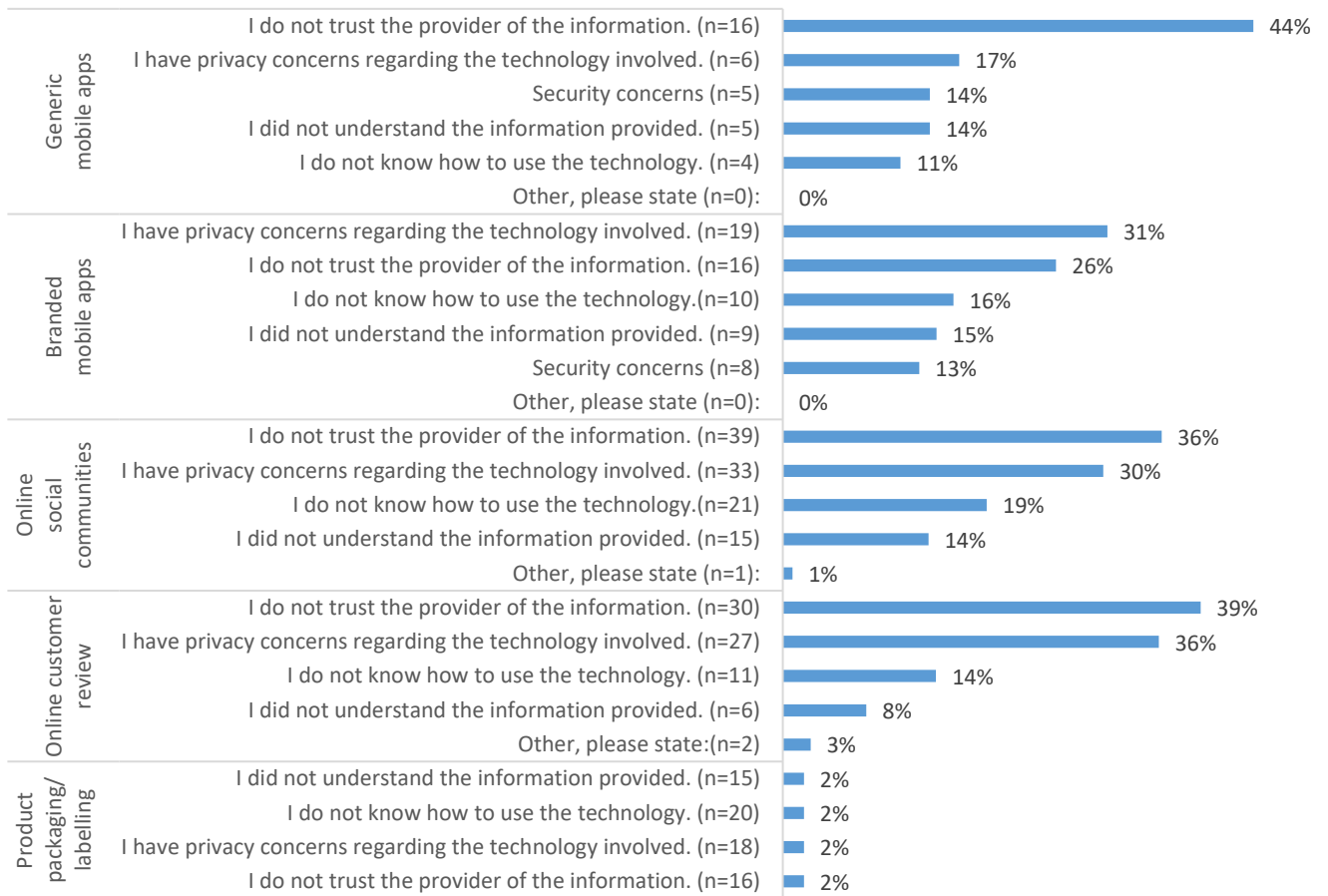
The next set of questions asked participants to consider trusted sources for either information on yogurt or yogurt product purchasing. Participants were asked to indicate the extent to which they trusted a series of sources when looking for information regarding yogurt products. Results are presented in Figure 3-30. The most trusted source for yogurt product information was generic mobile apps (54 per cent high), followed by branded mobile apps (48 per cent high) and online customer reviews (43 per cent high).

**Figure 3-30: Level of trust in sources of yogurt product information**



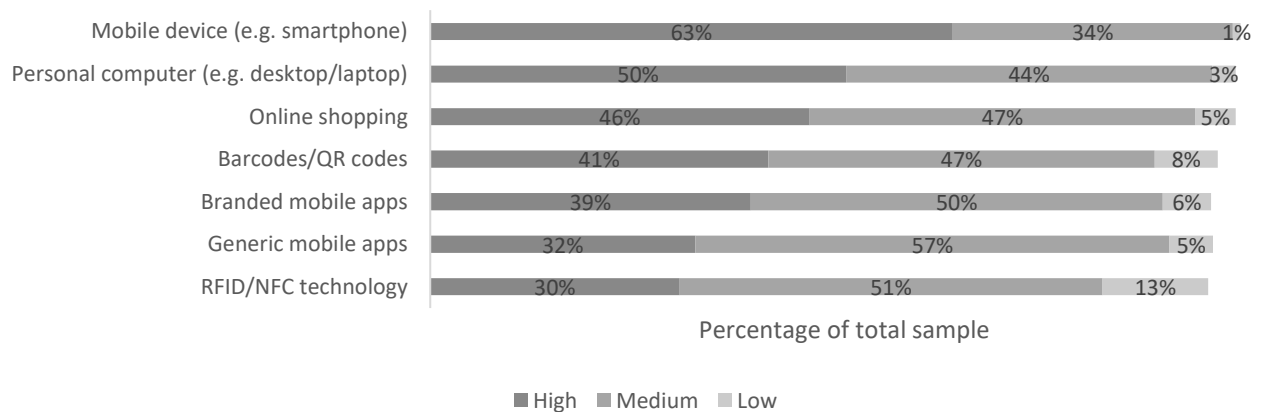
For participants, who had indicated they did not trust any of the provided sources for yogurt product information searching, were then asked to indicate the main reasons that they had a low level of trust, the results of which are shown in Figure 3.31. The most commonly stated reasons were ‘I do not trust the provider of the information’ and ‘I have privacy concerns regarding the technology involved’.

**Figure 3-31: Main reasons for low trust in sources of yogurt product information**



Similarly, participants were asked to indicate the extent to which they trusted a range of sources for purchasing yogurt. Results are presented in Figure 3.32. Mobile devices (63 per cent high) were the most trusted, followed by personal computers (50 per cent high) and online shopping (46 per cent high).

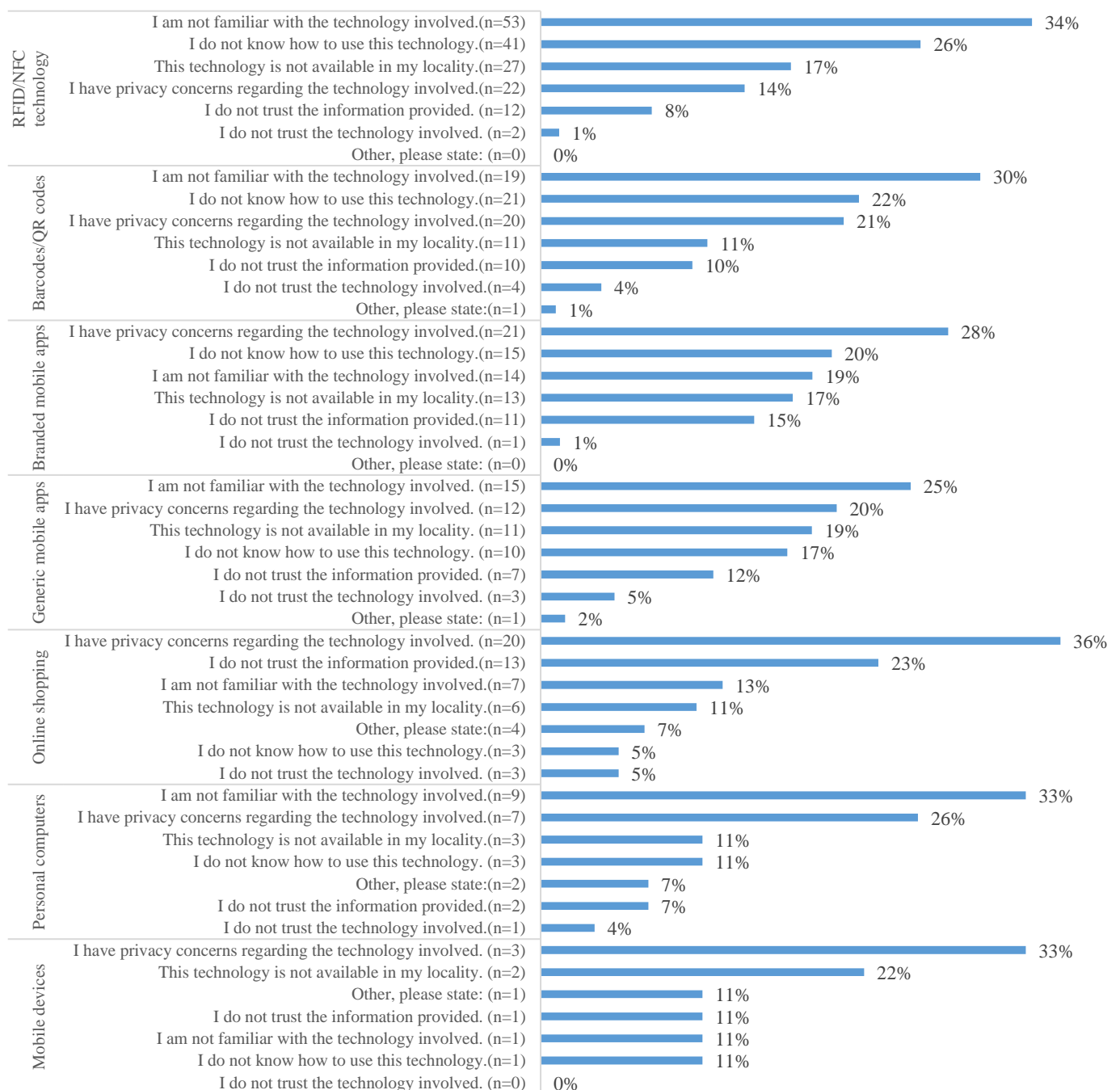
**Figure 3-32: Level of trust in sources for yogurt product purchasing**



For participants, who had a low level of trust in the provided range of sources for yogurt product purchasing, were asked to indicate the reasons why they did not trust the sources. Figure 3-33 shows that, among these participants, a larger number of participants did not trust either RFID/NFC technology or Barcodes/QR codes. The most commonly stated reason was ‘I am not familiar with the technology involved’ (34 per cent RFID/NFC technology, 30 per cent Barcodes/QR codes), followed by ‘I do not know how to use this technology’ (26 per cent RFID/NFC technology, 22 per cent Barcodes/QR codes).

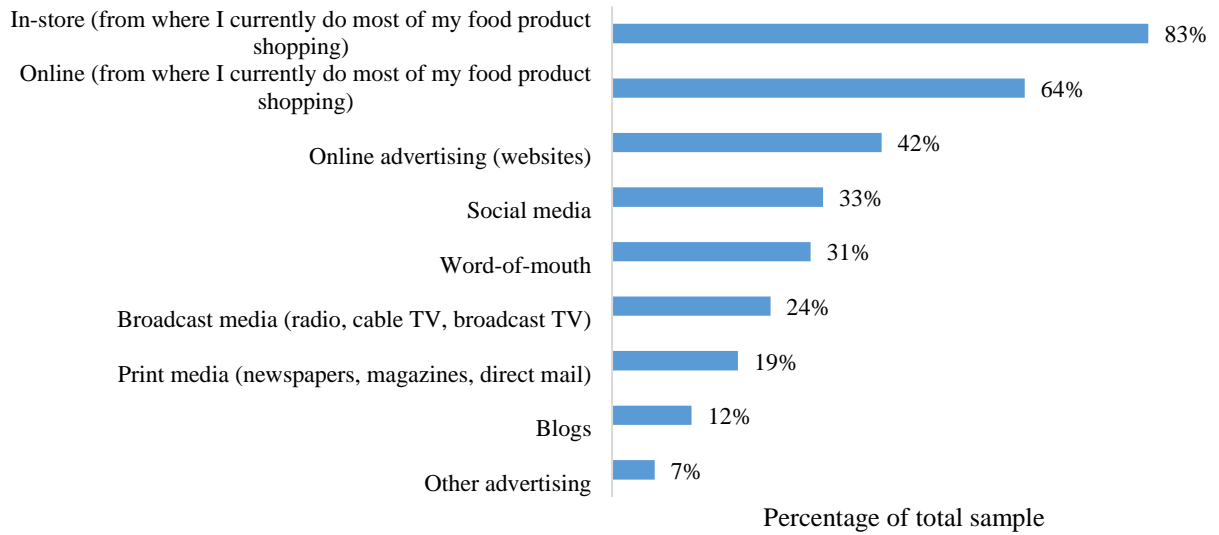
A smaller number of participants stated they had a low level trust in branded mobile apps, generic mobile apps, online shopping, personal computers and/or mobile devices. The most commonly stated reasons were ‘I have privacy concerns regarding the technology involved’, and ‘I am not familiar with the technology involved’.

**Figure 3-33: Main reasons for low level trust in sources for yogurt product purchasing**



Finally, participants were asked to indicate how they usually found out or became aware of new yogurt products. As presented in Figure 3-34 that the most common source was ‘in-store (from where I currently do most of my food product shopping)’ (83 per cent), followed by ‘online (from where I currently do most of my food product shopping)’ (64 per cent) and ‘online advertising (websites)’ (42 per cent).

**Figure 3-34: Sources of information about or awareness of new yogurt products**





## Chapter 4

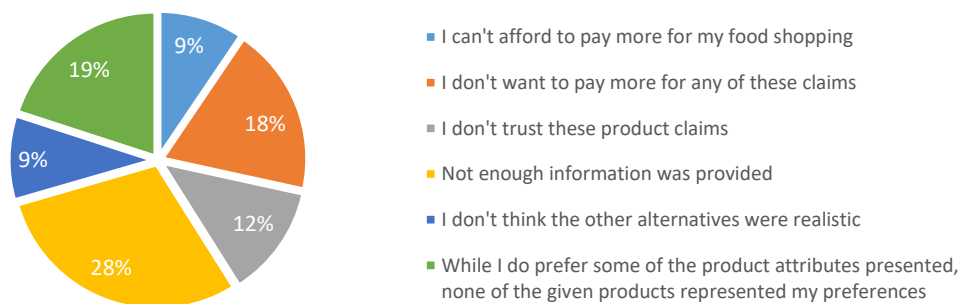
# Choice Experiment Analysis

This chapter presents the results of the choice experiment described in Chapter 2 designed to examine the influence of yogurt attributes on consumer's yogurt choices. The attributes included in the choice experiment used to describe yogurt products were:

- Enhanced food safety
- Enhanced animal welfare
- Organic production
- Environmental sustainability
- Social responsibility
- Country where yogurt is produced
- Price per kg
- Yogurt type

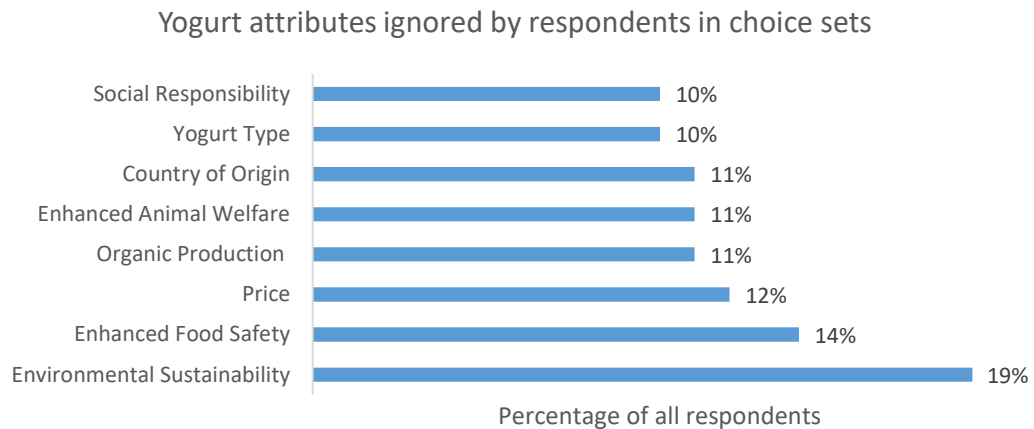
Alternative yogurt products described by differing combinations of these attributes were presented to consumers who then indicated their preferred yogurt alternative in each scenario. The attributes associated with a respondents chosen yogurt alternative, and those from the non-chosen alternatives, were analysed using a Mixed Logit Error Components (MXLEC) model (see Appendix 2 for technical details). This type of model constitutes a standard contemporary methodology. When making choices, respondents may select the 'none of these' option in a choice set. This is usually a truthful indication of their *unwillingness to pay* for the yogurt and associated attributes presented to them in a particular choice set. One in seven respondents chose the 'none of these' option in at least one choice set, with this option chosen 250 times in total (3% of all choices (7,212) across the sample). Respondents who chose this option were asked a follow up question to ascertain their reasons (Figure 4-1).

**Figure 4-1: Reasons for choosing the “none of these” option in a yogurt choice set**



An underpinning statistical assumption is that all the information that a respondent sees in a choice set has a role to play in determining their choice of yogurt option. If respondents ignore some of the attributes when they select their preferred option, this assumption is weakened and requires further examination. Following each choice task, respondents were asked to indicate which, if any, of the yogurt attributes being considered did they ignore (Figure 4.2). We can see that each outcome is ignored to some degree, with a relatively high degree for the environmental attribute. We test for any effect of this behavioural information analytically and find no improvement over the current model specification (Table 4.1).

**Figure 4-2: Yogurt attributes ignored when selecting preferred yogurt options**



By conventional econometric standards the model performs well (Table 4.1). All yogurt attributes are statistically significant, meaning that they are important factors in a consumer's choice of yogurt option. The model predicts how respondents choose a particular yogurt option based on the outcomes and costs associated with that option. The parameter estimates tell us how an attribute relates to the overall utility of consumers from the benefits they perceive from each attribute. The model generates a distribution for each random parameter (normal) with the mean and standard deviation of the distribution reported. A larger magnitude of the standard deviation of the distribution indicates a relatively larger degree of preference differences across respondents for that yogurt attribute outcome. For example, respondents have the most diverse preferences for selecting a yogurt option from NZ (s.d. =1.081), meaning that some respondents will not want a NZ yogurt while others have strong positive preference for NZ yogurt. Estimated parameters indicate that respondents are more likely to choose a yogurt option that is produced in NZ, while they are less likely to choose yogurt options imposing greater prices. Other findings include that consumers are more likely to select one of the yogurt options presented than the 'none of these option'.

**Table 4.1 Mixed Logic Error Component model of yogurt choices**

	Parameter mean estimates <sup>1</sup>		Standard deviation of random parameters	
<b>Random parameters in utility function</b>				
Enhanced Food Safety	0.546***	(0.04)	0.550***	(0.05)
Enhanced Animal Welfare	0.478***	(0.03)	0.308***	(0.07)
Environmentally Sustainable	0.489***	(0.04)	0.350***	(0.07)
Social Responsibility	0.401***	(0.04)	0.392***	(0.06)
Organic	0.542***	(0.03)	0.416***	(0.06)
<b>Country-of Origin</b>				
China	1.001***	(0.09)	0.992***	(0.08)
Germany	0.905***	(0.05)	0.905***	(0.06)
Spain	0.614***	(0.07)	0.428***	(0.12)
Thailand	-0.119***	(0.05)	0.717***	(0.09)
NZ	1.550***	(0.11)	1.081***	(0.13)
Price per kg	-0.013***	(0.00)	0.127***	(0.00)
Drinking yogurt type	0.571***	(0.03)	0.571***	(0.03)
Powdered yogurt type	0.421***	(0.07)	1.043***	(0.09)
Opt-out 'none of these'	6.601***	(0.74)	4.913***	(0.46)
<b>Latent Random Effects of the non-opt-out choices</b>				
Standard Deviation	4.341***	(0.41)		
<b>Model Fit Statistics</b>				
Log Likelihood function	6,928			
Log Likelihood chi <sup>2</sup> stat (25 df)	5,806***			
McFadden Pseudo R <sup>2</sup>	0.307			
Number of observations	7,212			

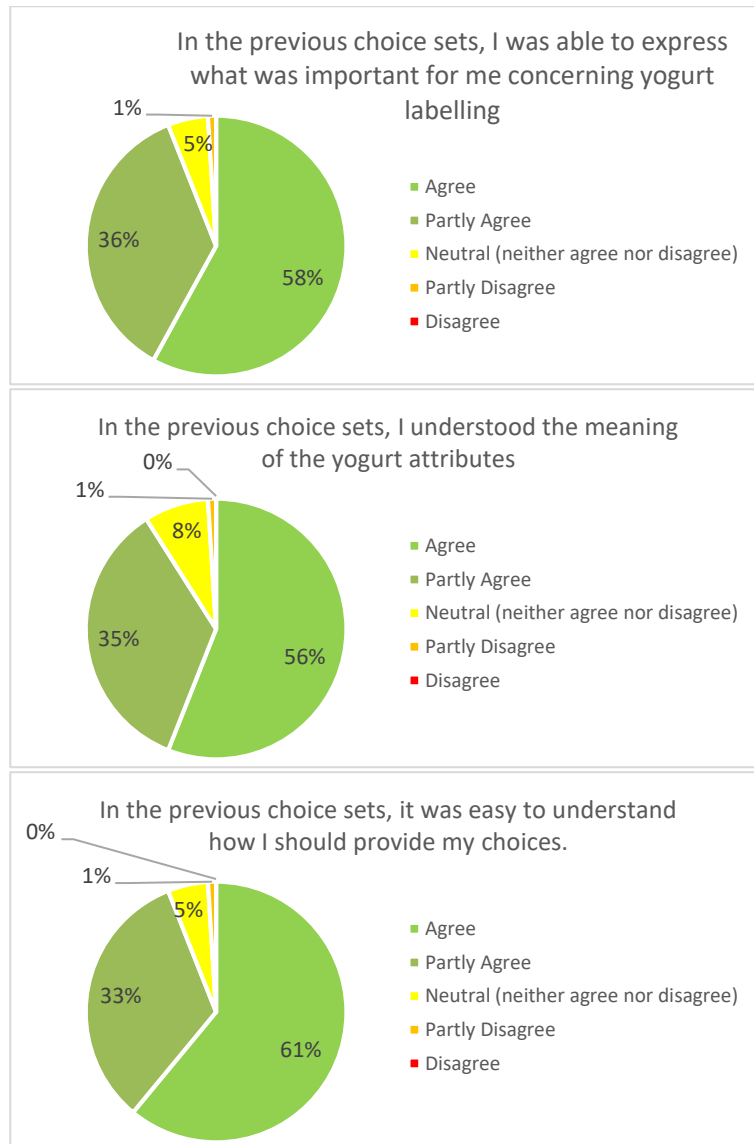
\*\*\*, \*\*, \* denote statistical significance at the 1 per cent, 5 per cent and 10 per cent levels respectively for the null hypothesis that a parameter estimate is not significantly different from zero.

Standard errors in brackets.

<sup>1</sup> Parameter mean estimates indicate the estimated average value in the model, for each different parameter.

Debriefing questions following the choice tasks demonstrate that, overall, respondents were able to express what was important to them in yogurt labelling, that they understood the meaning of the yogurt attributes, and were able to complete the choice task (Figure 4.3).

**Figure 4-3: Yogurt choice task debriefing: ability to express importance, understanding of attributes meaning, understanding of choice task exercise**



## 4.1 Consumer willingness-to-pay for credence attributes

Applying model estimates (Tables 4.1) and equation 1.10 (See Appendix 2 Statistical Method) generates estimates of respondents WTP for attributes of yogurt (Table 4.2). WTP is an estimate of how much money a respondent would be willing to give up for a change in the relevant yogurt attribute, and is calculated using the ratio of an attribute parameter and the cost parameter. These estimates reveal that country-of-origin plays an important role in yogurt consumer choices with the highest average marginal WTP being for NZ produced yogurt (¥118/kg) (Figure 4-4), followed by Chinese produced yogurt (¥77/kg) and German (¥70/kg). The highest valued production attributes are enhanced food safety (¥44/kg), followed by organic production (¥42/kg) and enhanced animal welfare (¥37/kg).

Relative to the average price per kilogram of yogurt, respondents are WTP on average a 143 per cent premium for NZ produced yogurt product. In terms of production attributes, respondents are WTP on average 54 per cent more for enhanced food safety, 51 per cent for organic production and a 47 per cent environmentally sustainable production.

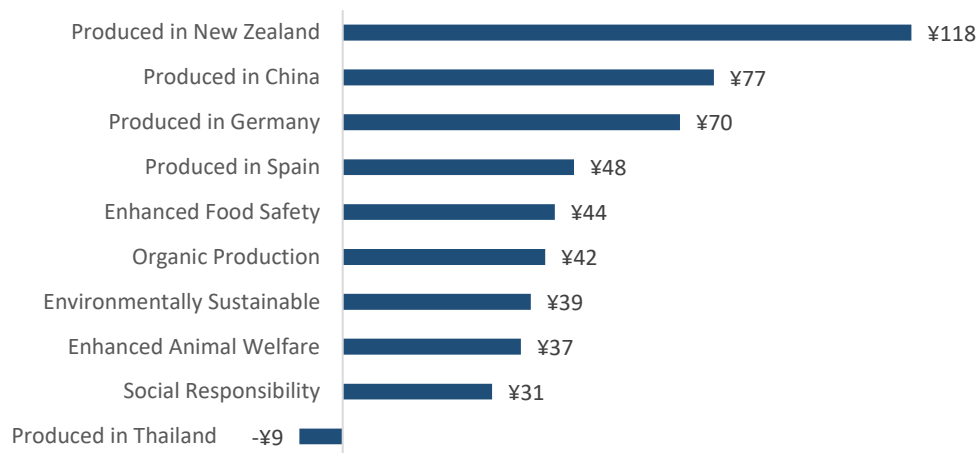
**Table 4.2: Consumer willingness-to-pay for selected yogurt attributes**

Attributes	WTP ¥/kg (2017)
Enhanced Food Safety	¥44 [54%] (38,50)
Enhanced Animal Welfare	¥37 [45%] (32,44)
Environmentally Sustainable	¥39 [47%] (34,46)
Social Responsibility	¥31 [38%] (26,38)
Organic	¥42 [51%] (37,49)
China	¥77 [93%] (57,85)
Germany	¥70 [85%] (62,81)
Spain	¥48 [58%] (38,59)
Thailand	¥-9 [-11%] (-17,-2)
New Zealand	¥118 [143%] (104,140)

**Note:** ¥ Average WTP (95 per cent Confidence Interval)

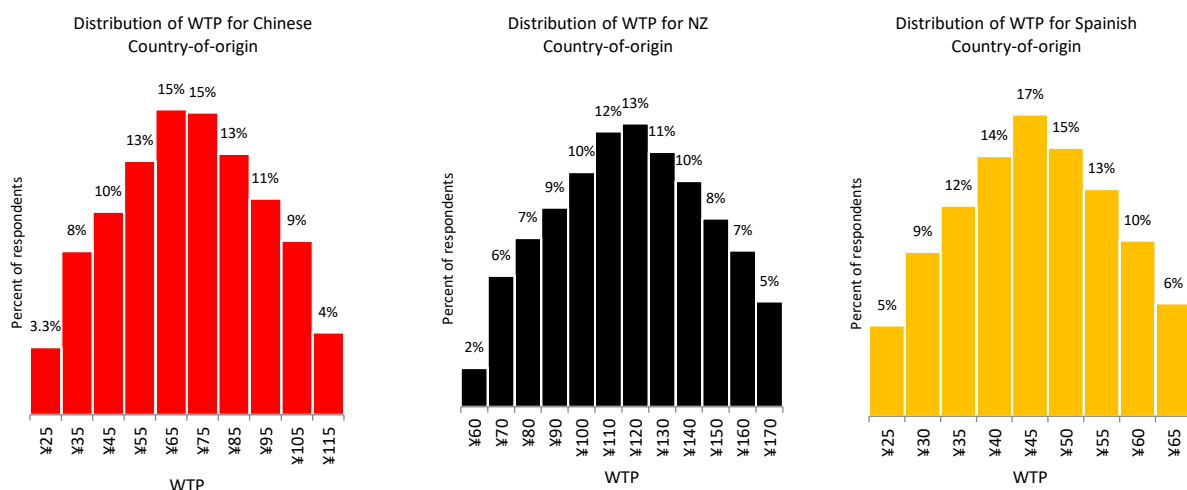
WTP as per cent of average price used in choice experiment in square brackets

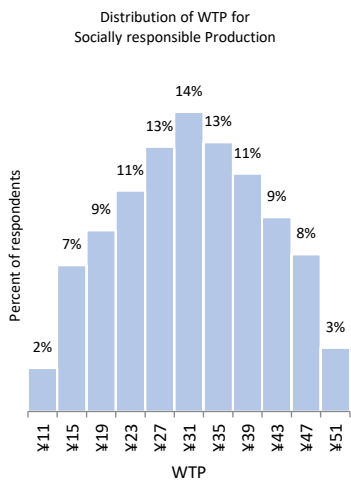
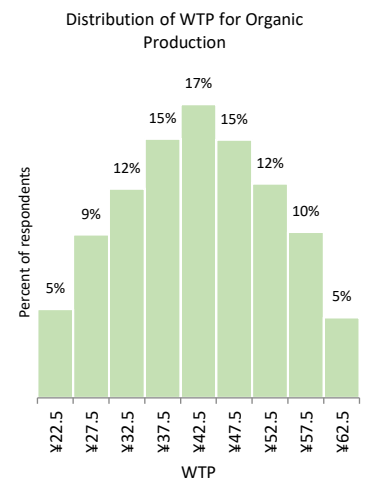
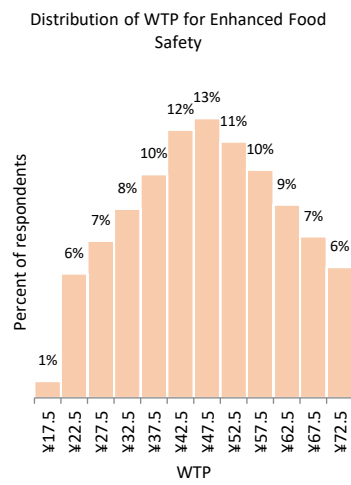
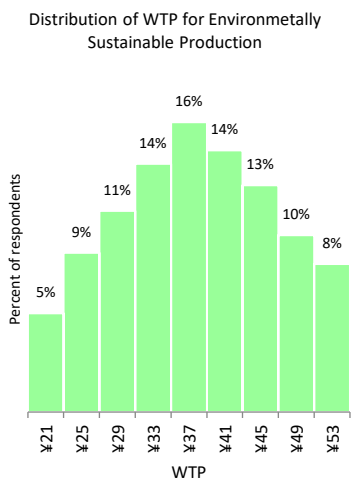
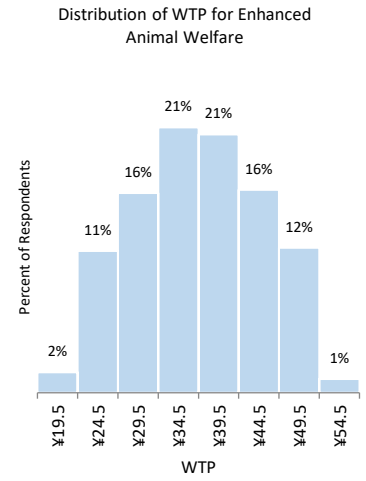
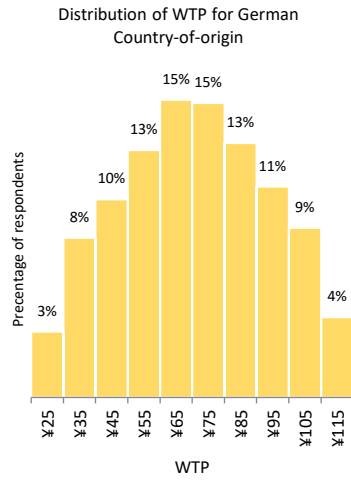
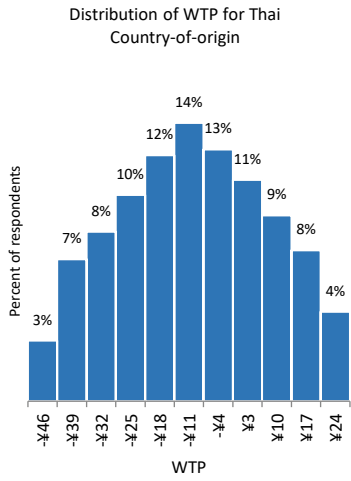
**Figure 4-4: Average consumer willingness to pay for selected yogurt attributes**



Focusing on the average WTP premiums presented in **Error! Reference source not found.** and **Error! Reference source not found.** can obscure the range of values that are held by different respondents in the survey. Examining the distributions of WTP can help to identify the proportion of consumers who are WTP higher and lower values (**Error! Reference source not found.**). These distributions reveal that for some attributes there is a relatively narrow range of estimates while for others the spread of preferences held across the sample is greater. For example, comparing the distributions of WTP for Spanish country-of-origin to that of NZ reveals that preferences for Spanish wine are more concentrated relative to NZ. Comparing the distribution of Spanish values to those for Chinese yogurt reveals significant overlap in the two distributions suggesting that some consumers in this segment are indifferent to either country of origin. Another example of the importance of looking at the distribution rather than just averages is that, while the average WTP for Thai yogurt is negative, we can see that almost a third of the sample actually have positive WTP for this country of origin.

**Figure 4-5: Distributions of consumer willingness to pay for selected yogurt attributes**





## **Chapter 5**

### **Conclusion**

In China, yogurt consumption is growing at a faster rate than any other dairy product, with demand for yogurt products expected to achieve an approximate one-third share of the Chinese dairy market by 2021. As China is NZ's primary destination for yogurt exports (and dairy exports generally), the future potential for increasing yogurt exports to China is significant.

This report presents results from a survey of Shanghai yogurt consumers examining consumer preferences and behaviour in purchasing and consumption of yogurt, as well as their knowledge of NZ and Māori culture, and their use of digital media and technologies in product information searching and purchasing. To quantify the impact of consumer preferences on product choice this survey applies a Choice Experiment to estimate consumer WTP for attributes of yogurt including country of origin.

#### **Chinese consumer yogurt purchasing and consumption habits**

The research shows participants consumption habits in relation to five types of yogurt: room temperature and chilled drinking yogurt, room temperature and chilled spoonable yogurt, and powdered yogurt. Results show that room temperature drinking yogurt was the most frequently consumed yogurt (23 per cent, once a day or more; 34 per cent, 2-5 times a week), followed by chilled drinking yogurt (22 per cent, once a day or more; 43 per cent, 2-5 times a week), and chilled spoonable yogurt (11 per cent, once a day or more; 35 per cent, 2-5 times a week). Most participants consumed less than 1 kg a week of any of the five types of yogurt. For example, almost half of powdered yogurt consumers ate less than 1 kg of powdered yogurt per week. Results also show that most participants usually spent 15 to 20 Yuan for a kilogram of yogurt, followed by 10 to 15 Yuan/kg and 20 to 25 Yuan/kg.

Participants' most common method of yogurt consumption was 'raw, just as it is'. Participants' most frequent occasion for drinking and/or spoonable yogurt products consumption was 'as a snack in at any time of the day'. Participants indicated that they usually purchase yogurt product 'for myself', followed by 'for younger members of my family', and then 'for older members of my family'.

#### **Chinese consumer attitudes to yogurt product characteristics**

The research examined Chinese consumers' attitudes towards a selection of sales and marketing characteristics when buying yogurt products. Participants indicated that the yogurt attributes important in their purchase decision included the presence of a quality certificate (60 per cent very important), followed by nutritional value (57 per cent very important), and flavour (50 per cent very important). In addition, environmental and social attributes, such as environmental effects of production (32 per cent very important), brand (36 per cent very important), variety (28 per cent very important), country of product origin (28 per cent very important), and sales prices (19 per cent very important) also important in participants' purchasing decisions.

When asked what ingredients their ideal yogurt product would contain, respondents indicated that yogurt being preservative free was a priority (52 per cent very important), that yogurt be additive free (46 per cent very important) with no artificial colours (45 per cent very important).

China was the most commonly identified country for producing yogurt from a selection of 12 countries (97 per cent), followed by NZ (87 per cent) and then the USA (61 per cent). China was also the most frequently purchased country of origin (27 per cent daily, 59 per cent weekly), followed by NZ (9 per cent daily, 29 per cent weekly), and Japan (3 per cent daily, 14 per cent weekly). Whereas, NZ was ranked first for producing high quality yogurt (43 per cent), above China (18 per cent) and then Switzerland (6 per cent).

Participants indicated their brand purchase frequency, with the top three most frequently purchased being Ambrosial (37 per cent, mostly this brand), followed by Yili (34 per cent mostly this brand), and Megniu



(34 per cent mostly this brand). These three brands of yogurt product are all China's domestic brands. The top three frequently purchased NZ brands were Yoplait (12 per cent mostly; 34 per cent often), Anchor (10 per cent mostly; 29 per cent often) and then I am NZ (5 per cent mostly; 18 per cent often).

### **Chinese consumer knowledge of Māori culture and enterprise**

The report shows participants' knowledge and perception of Māori culture and enterprise in relation to yogurt production. More than half of participants knew at least a few things about Māori culture (57 per cent) with just 5 per cent having never heard about Māori culture. Participants stated that the attributes they would most associate with yogurt produced from a Māori enterprise (if it were available) were 'natural', followed by 'high quality' and 'sustainability'. Environmental, social and cultural attributes, such as reduced environmental impact, traditional, care of traditional culture and social responsibility, were also identified as important attributes with yogurt produced from a Māori enterprise.

### **Chinese consumer attitudes to yogurt production practices**

Regarding yogurt production practices, the results of this report show that the majority of participants agreed that 'the food safety of yogurt is directly related to quality of the natural environment where dairy is farmed' (82 per cent agree/partly agree) and that 'the quality of yogurt is directly related to quality of the natural environment where dairy is farmed' (83 per cent agree/partly agree). Most participants also agreed with the statement that 'sustainable yogurt labelling certification is a guarantee of high product quality' and 'I could be interested in buying yogurt with a sustainability label (showing environmental, economic and social aspects'.

### **Chinese consumer WTP for selected yogurt attributes**

The results of the Choice Experiment show that respondents are willing to pay on average the highest premium for yogurt produced from NZ (¥118/kg), followed by Chinese yogurt (¥77/kg) and then German (¥70/kg). These are the highest average premiums estimated over the set of attributes considered and reflect the established recognition of country-of-origin as an important signal of quality. The highest valued production attributes are enhanced food safety (¥44/kg), followed by organic production (¥42/kg) and environmentally sustainable (¥39/kg).

Compared to the average price of a kilogram of yogurt, respondents are willing to pay on average 143 per cent more for NZ produced yogurt, followed by Chinese (93 per cent) and then German (85 per cent). In terms of production attributes, respondents are willing to pay averagely 54 per cent more for enhanced food safety, followed by organic production (51 per cent), and environmentally sustainable (47 per cent).

### **Chinese consumer's use of digital media and technology for yogurt information searching and purchasing**

This research asks participants about the various forms of digital media and smart technology in relation to information searching and purchasing yogurt. Most participants indicated high internet access rates using both mobile devices and home computers, with daily mobile device use significantly higher than that for home computers.

Results show that digital media was used more frequently to inform choices than for finding production information. Tmall, Taobao, Jingdong (JD), Baidu, WeChat and Weibo were the most overall used on mobile devices (over home computer) for informing choices and searching information regarding yogurt production. Health professionals were identified as the greatest influence on both informing yogurt choices and searching for yogurt production information.

Participants were also asked to indicate the frequency and place of use of mobile device and home computer when searching for products information or purchasing. With participants most frequently using their mobile device for both purposes at home. A range of smartphone interactive technologies (such as barcodes, QR codes, RFID/NFC) were also used for these purposes, with barcodes being used most frequently (34

per cent for purchasing; 38 per cent for information searching). On the use of mobile apps, the most frequent reason for use was for finding out about 'health (50 per cent)', followed by 'purchasing'(49 per cent) and 'product reviews' (41 per cent). Although current use was low, many respondents were interested in using apps for 'environmental information' (58 per cent) and for 'traceability' (62 per cent). Specific apps used most frequently on participants' mobile device were WeChat (73 per cent), followed by Ele-me (60 per cent), and then Dianping (57 per cent). These apps allow consumers to search yogurt products information, write products reviews and/or purchase yogurt products online.

Participants reported their yogurt expenditure across different retail channels when shopping for yogurt. The highest average expenditure across retailers was for supermarkets (35 per cent) followed by hypermarkets (21 per cent) and online (15 per cent). The most frequently purchased yogurt type online was drinkable (36 per cent only online), followed by spoonable (16 per cent only online).

The top three main reasons for participants purchasing yogurt products online were 'I have access to special offers and promotion online', 'there is a greater variety of products available online' and 'I like the convenience of having products delivered to my home'. Participants' most used source for purchasing yogurt products online was TMall, followed by supermarkets, and Jingdong (JD). Participants mostly used their mobile device rather than computers at home for the purpose of purchasing yogurt products online.

The findings of the report show that participants' most trusted source for yogurt production information was generic mobile apps, followed by branded apps and then online customer reviews. A small number of participants indicated that they had low trust in a series of sources, including generic mobile apps, branded mobile apps, online customer reviews, product packaging/labelling and /or the online social community. The most commonly stated reasons were 'I do not trust the provider of the information' and/or 'I have privacy concerns regarding the technology involved'.

In terms of purchasing yogurt products online, participants had the highest trust in mobile device, followed by personal computer and then online shopping. A small number of the participants indicated that they had a low level trust in either RFID/NIC technology or Barcodes/QR. The most commonly stated reasons were 'I am not familiar with the technology involved', and 'I do not know how to use this technology'.

Finally, participants indicated their most common source of awareness of new yogurt products with 'in-store (from where I did most of my food product shopping)'(83 per cent), and 'online (from where I did most of my food product shopping)' (64 per cent) and 'via online advertising (websites) (42 per cent)' being the most common.

While the findings reported here are helpful in describing the overall characteristics of the average Shanghai yogurt consumer, greater depth of understanding will be possible with further analysis of responses to allow better scrutiny across potential segments of the market. Possible consumer segments include high vs. low consumption, type of consumption, high vs. low expenditure and NZ yogurt purchasers, amongst others.



## References

- Daly A., Hess S., & Train K., (2012). Assuring finite moments for willingness to pay in random coefficient models. *Transportation* 39(1):19-31.
- DBS. (2017). China Dairy Sector. Retrieved 19<sup>th</sup> April 2018 from [https://www.dbs.com.sg/treasures/aics/templatedata/article/industry/data/en/GR/042016/dairy\\_china.xml](https://www.dbs.com.sg/treasures/aics/templatedata/article/industry/data/en/GR/042016/dairy_china.xml)
- Duan, J., & Dholakia, N. (2015). The reshaping of Chinese consumer values in the social media era. *Qualitative Market Research*, 18(4), 409-426.
- Driver, T., Saunders, C., Guenther, M., Dalziel, P., & Rutherford P. (2015). Maximising Export Returns: The use of digital media and smart technology in shopping and information gathering for food and beverages in markets relevant to New Zealand. AERU Research Report No.337, December 2015. Agribusiness and Economics Research Unit, Lincoln University: Lincoln, New Zealand.
- Euromonitor. (2017a). Yoghurt and Sour Milk Products in China. Retrieved 20<sup>th</sup> April 2018 from <http://www.euromonitor.com/yoghurt-and-sour-milk-products-in-china/report>
- Euromonitor. (2017b). Yoghurt and Sour Milk Products in New Zealand. Retrieved 20<sup>th</sup> April 2018 from <http://www.euromonitor.com/yoghurt-and-sour-milk-products-in-new-zealand/report>
- Fiebig, D.G., Keane, M.P., Louviere, J., & Wasi, N. (2010). The generalized multinomial logit model: Accounting for scale and coefficient heterogeneity. *Marketing Science* 29(3):393-421
- Gao, L., Waechter, K. A., & Bai, X. (2015). Understanding consumers' continuance intention towards mobile purchase: A theoretical framework and empirical study – A case of China. *Computers in Human Behavior*, 53, 249-262. doi:<https://doi.org/10.1016/j.chb.2015.07.014>
- Gao, Z., Li, C., Bai, J., & Fu, J. (2016). Chinese consumer quality perception and preference of sustainable milk. *China Economic Review*. doi:<https://doi.org/10.1016/j.chieco.2016.05.004>
- Hancock, T. (Producer). (2017). China's yoghurt sales poised to overtake milk for first time. *Financial Times*. Retrieved 20<sup>th</sup> April 2018 from <https://www.ft.com/content/3045fca8-9c50-11e7-8cd4-932067fbf946>
- Hanemann, W.M. (1984). Welfare Evaluations in Contingent Valuation Experiments with Discrete Responses. *American Journal of Agricultural Economics*, 66(3):332-341.
- Hanley, N., & Shogren, J.F., White, B. (2013). *Introduction to environmental economics*. Oxford: Oxford University Press.
- Juutinen, A., Svento, R., Mitani, Y., Mäntymaa, E., Shojie, Y., & Siikamäki, P. (2012). Modeling observed and unobserved heterogeneity in choice experiments. *Environmental Economics*, 3(2):57-65.
- Kragt, M.E. (2013). The effects of changing cost vectors in choices and scale heterogeneity. *Environmental and Resource Economics*, 54(2):201-221.
- Lancaster, K.J. (1966). A new approach to consumer theory. *The Journal of Political Economy*, 74(2):132-157.
- Louviere, J.J., & Eagle, T.C. (2006). Confound it! That pesky little scale constant messes up our convenient assumptions. *Proceedings of the Sawtooth Software Conference*: 211-228.

- MBIE. (2017). The Investor's Guide to the New Zealand Dairy Industry 2017. Retrieved 23<sup>rd</sup> April 2018 from <http://www.mbie.govt.nz/info-services/sectors-industries/food-beverage/documents-image-library/folder-2017-investors-guides/investors-guide-to-the-new-zealand-dairy-industry-2017.pdf>
- McFadden, D. (1974). Conditional logit analysis of qualitative choice behavior. In P. Zarembka (Ed.), *Frontiers of econometrics* (pp. 105-142). New York: Academic Press.
- Miller, S., Driver, T., Velasquez, N., & Saunders, C. (2014). Maximising Export Returns (MER): Consumer behaviour and trends for credence attributes in key markets and a review of how these may be communicated. AERU Research Report No. 332, July 2014. Agribusiness and Economics Research Unit, Lincoln University: Lincoln, New Zealand.
- Miller, S., Tait, P., Saunders, C., Dalziel, P., Rutherford, P., & Abell, W. (2017). Estimation of consumer willingness-to-pay for social responsibility in fruit and vegetable products: A cross-country comparison using a choice experiment. *Journal of Consumer Behaviour* 1-13. <http://dx.doi.org/10.1002/cb.1650>.
- Moro, D., Veneziani, M., Sckokai, P., & Castellari, E. (2015). Consumer Willingness to Pay for Catechin-enriched Yogurt: Evidence from a Stated Choice Experiment. *Agribusiness*, 31(2), 243-258. doi:doi:10.1002/agr.21401
- Mugera, A., Burton, M., & Downsborough, E. (2017). Consumer Preference and Willingness to Pay for a Local Label Attribute in Western Australian Fresh and Processed Food Products. *Journal of Food Products Marketing*, 23(4), 452-472. doi:10.1080/10454446.2015.1048019
- Ni, Cheryl. (2017). Yogurt - China - August 2017. Retrieved 23<sup>rd</sup> April 2018 from <http://reports.mintel.com/display/793353/>
- NZIER. (2017). Dairy trade's economic contribution to New Zealand. Retrieved 23<sup>rd</sup> April 2018 from Wellington: [https://nzier.org.nz/static/media/filer\\_public/29/33/29336237-3350-40ce-9933-a5a59d25bd31/dairy\\_economic\\_contribution\\_update\\_final\\_21\\_february\\_2017.pdf](https://nzier.org.nz/static/media/filer_public/29/33/29336237-3350-40ce-9933-a5a59d25bd31/dairy_economic_contribution_update_final_21_february_2017.pdf)
- Peng, Y., Li, J., Xia, H., Qi, S., & Li, J. (2015). The effects of food safety issues released by we media on consumers' awareness and purchasing behavior: A case study in China. *Food Policy*, 51, 44-52. doi:https://doi.org/10.1016/j.foodpol.2014.12.010
- Revelt, D., & Train, K. (1998). Mixed logit with repeated choices: Households' choices of appliance efficiency level. *The Review of Economics and Statistics*, 80(4):647-657.
- Saunders, C., Guenther, M., Driver, T., Tait, P., Dalziel, P. and Rutherford, P. (2015). Consumer attitudes to New Zealand food product attributes and technology use in key international markets. AERU Research Report No. 333. Agribusiness and Economics Research Unit, Lincoln University: Lincoln, New Zealand. Accessible here: <https://hdl.handle.net/10182/6623>
- Scarpa, R., Ferrini, S., & Willis, K. (2005). Performance of error component models for status quo effects in choice experiments. In: Scarpa, R. and Alberini, A. (Eds.), *Applications of Simulation Methods in Environmental and Resource Economics*, 6th ed. Springer Netherlands, Dordrecht, pp. 247-273.
- Scarpa, R., Thiene M., & Galletto, L. (2010). Consumers WTP for Wine with Certified Origin: Preliminary Results from Latent Classes Based on Attitudinal Responses. *Journal of Food Products Marketing* 15(3):231-248. <http://dx.doi.org/10.1080/10454440902973377>
- Statistics New Zealand. (2017). Global NZ: Year ended December 2017-tables: S Merchandise trade by commodity. Retrieved 23<sup>rd</sup> April 2018 from <https://www.stats.govt.nz/reports/global-new-zealand-year-ended-june-2017>

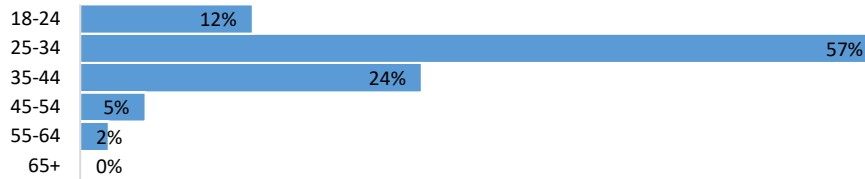
- Statistics New Zealand. (2018). Harmonised Trade - Exports -Harmonised Trade - Exports Retrieved 23<sup>rd</sup> April 2018 from <http://archive.stats.govt.nz/infoshare/ViewTable.aspx?pxID=cd2d33a0-2360-4637-944f-53fd694b00f3>
- Tait, P. R., Saunders, C., & Guenther, M. (2015). Valuing preferences for environmental sustainability in fruit production by United Kingdom and Japanese consumers. *Journal of Food Research* 4(3) <http://dx.doi.org/10.5539>.
- Tait, P. R., Saunders, C., & Miller, S. (2016). Exploring the impacts of food label format on consumer willingness to pay for environmental sustainability: a choice experiment approach in the UK and Japan. *International Food Research Journal* 23(4):1787-1796.
- Tait, P. R., Saunders, C., Guenther, M., & Rutherford, P. (2016b). Emerging versus developed economy consumer willingness to pay for environmentally sustainable food production: A choice experiment approach comparing Indian, Chinese and United Kingdom lamb consumers. *Journal of Cleaner Production* 124:65-72. <http://dx.doi.org/10.1016/j.jclepro.2016.02.088>.
- Thurstone, L.L. (1927). A law of comparative judgement. *Psychological Review*, 34(4):273-286.
- Wirth, F.F., Stanton, J.L., & Wiley, J.B. (2011). The relative importance of search versus credence product attributes: organic and locally grown. *Agricultural and Resource Economics Review* 40:48-62.
- Xu, P., Yang, Y., & Lone, T. (2017). Chinese Parents' Safety Concerns and Willingness to Pay for Child Milk Beverages: A Case Study from Beijing. *The Chinese Economy*, 50(3), 141-156. doi:10.1080/10971475.2017.1297647
- Xu, P., Zheng, S., & Zhou, S. (2010). Family and Western-Style Fast Food: Influences on Chinese College Students' Dairy Consumption. *Journal of Food Products Marketing*, 17(1), 1-24. doi:10.1080/10454446.2011.532370
- Xu, P., Zhou, J., & Lone, T. (2016). Price Acceptance for Organic Milk in Beijing, China. *Journal of Food Products Marketing*, 22(7), 752-766. doi:10.1080/10454446.2015.1121432
- Xu, X., Li, Q., Peng, L., Hsia, T.-L., Huang, C.-J., & Wu, J.-H. (2017). The impact of informational incentives and social influence on consumer behavior during Alibaba's online shopping carnival. *Computers in Human Behavior*, 76, 245-254. doi:<https://doi.org/10.1016/j.chb.2017.07.018>
- Yin, S., Xu, Y., Chen, M., & Wang, Y. (2017). Consumer preference and willingness to pay for the traceability information attribute of infant milk formula: Evidence from a choice experiment in China. *British Food Journal*, 119(6).

# Appendix 1 Demographics

**Figure A.1. Gender**



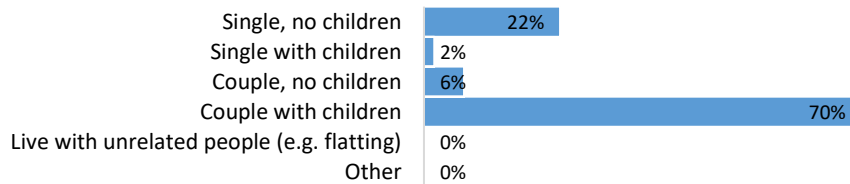
**Figure A.2. Age**



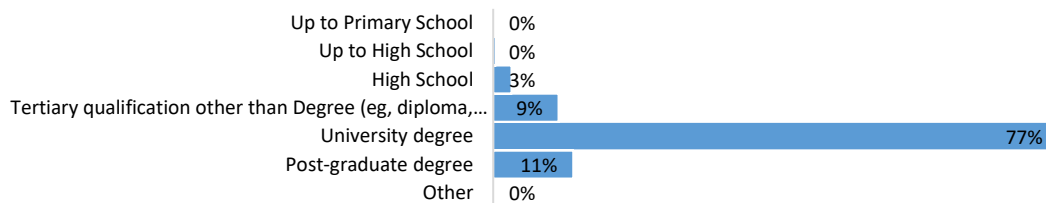
**Figure A.3. Dwelling location**



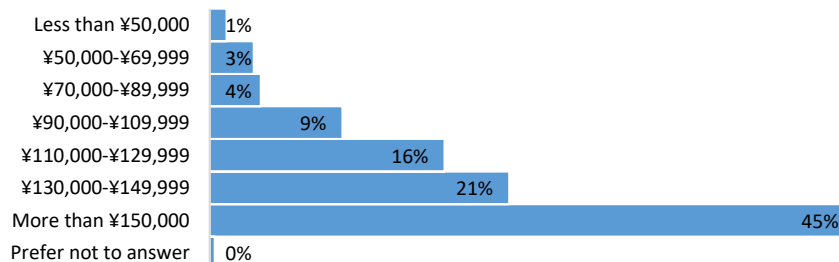
**Figure A.4. Household make-up**



**Figure A.5. Highest level of education**



**Figure A.6. Gross annual household income (CHN ¥)**



## Appendix 2 Statistical Method

This appendix provides technical details of statistical analysis of choice data. The appendix includes a brief description of the theoretical foundations of choice analysis followed by statistical probability estimation approaches, focusing on contemporary models applied in this report. Lastly, the method used in generating monetary estimates is described.

### B.1 Conceptual Framework

In Choice Experiments (CEs), researchers are interested of what influences, on average, the survey respondents' decisions to choose one alternative over others. These influences are driven by people's preferences towards the attributes but also the individual circumstances such as their demographics or perceptions of the choice task (e.g., the level of difficulty or understanding) (Hensher et al. 2015).

Each alternative in a choice set is described by attributes that differ in their levels, both across the alternatives and across the choice sets. The levels can be measured either qualitatively (e.g., poor and good) or quantitatively (e.g., kilometres). This concept is based on the characteristics theory of value (Lancaster 1966) stating that these attributes, when combined, provide people a level of utility<sup>1</sup>  $U$  hence providing a starting point for measuring preferences in CE (Hanley et al. 2013; Hensher et al. 2015). The alternative chosen, by assumption, is the one that maximises people's utility<sup>2</sup> providing the behavioural rule underlying choice analysis:

$$U_j > U_i \quad (0.1)$$

where the individual  $n$  chooses the alternative  $j$  if this provides higher utility than alternative  $i$ . A cornerstone of this framework is Random Utility Theory, dated back to early research on choice making (e.g., Thurstone 1927) and related probability estimation. This theory postulates that utility can be decomposed into systematic (explainable or observed) utility  $V$  and a stochastic (unobserved) utility  $\varepsilon$  (Hensher et al. 2015; Lancsar and Savage 2004).

$$U_{nj} = V_{nj} + \varepsilon_{nj} \quad (0.2)$$

where  $j$  belongs to a set of  $J$  alternatives. The importance of this decomposition is the concept of utility only partly being observable to the researcher, and remaining unobserved sources of utility can be treated as random (Hensher et al. 2015). The observed component includes information of the attributes as a linear function of them and their preference weights (coefficient estimates).

$$V_{nsj} = \sum_{k=1}^K \beta_k x_{nsjk} \quad (0.3)$$

with  $k$  attributes in vector  $x$  for a choice set  $s$ . Essentially, the estimated parameter  $\beta$  shows "the effect on utility of a change in the level of each attribute" (Hanley et al. 2013, p. 65). This change can be specified as linear across the attribute levels, or as non-linear using either dummy coding or effect coding approaches. The latter coding approach has a benefit of not confounding with an alternative specific constant (ASC) when included in the model (Hensher et al. 2015).

---

<sup>1</sup>Related terminology used in psychology discipline is *the level of satisfaction* (Hensher et al. 2015).

<sup>2</sup>In choice analysis, utility is considered as *ordinal utility* where the relative values of utility are measured (Hensher et al. 2015).



## B.2 Statistical Modelling of Choice Probabilities

The statistical analysis aims to explain as much as possible of the observed utility using the data obtained from the CE and other relevant survey data. In order to do so, the behavioural rule (eq. 1.1) and the utility function (eq. 1.2) are combined (Hensher et al. 2015; Lancsar and Savage 2004) to estimate the probability of selecting an alternative  $j$ :

$$\Pr_{nsj} = \Pr(U_{nsj} > U_{nsi}) = \Pr(V_{nsj} + \varepsilon_{nsj} > V_{nsi} + \varepsilon_{nsi}) = \Pr(\varepsilon_{nsi} - \varepsilon_{nsj} < V_{nsj} - V_{nsi}) \forall j \neq i \quad (0.4)$$

where the probability of selecting alternative  $j$  states that differences in the random part of utility are smaller than differences in the observed part. A standard approach to estimate this probability is a conditional logit, or multinomial logit (MNL) model (McFadden 1974). This model can be derived from the above equations (1.2 and 1.3) by assuming that the unobserved component is independently and identically distributed (IID) following the Extreme Value type 1 distribution (see e.g. Hensher et al. 2015; Train, 2003). Although the MNL model provides a “workhorse” approach in CE, it includes a range of major limitations (see e.g. Fiebig et al. 2010; Greene and Hensher 2007; Hensher et al. 2015):

- Restrictive assumption of the IID error components
- Systematic, or homogenous, preferences allowing no heterogeneity across the sample
- Restrictive substitution patterns, namely the existence of independence of irrelevant alternatives property where introduction (or reduction) of a new alternative would not impact on the relativity of the other alternatives
- The fixed scale parameter obscures potential source of variation

Some or all of these assumptions are often not realised in collected data. These restrictive limitations can be relaxed in contemporary choice models. In particular, the random parameter logit (RPL) model (aka, the mixed logit model) has emerged in empirical application allowing preference estimates to vary across respondents (Fiebig, et al. 2010; Hensher et al. 2015; Revelt and Train, 1998). This is done by specifying a known distribution of variation to be parameter means. The RPL model probability of choosing alternative  $j$  can be written as:

$$\Pr_{nsj} = \frac{\exp(\beta_n' x_{nsj})}{\sum_J \exp(\beta_n' x_{nsj})} \quad (0.5)$$

where, in the basic specification,  $\beta_n = \beta + \eta_n$  with  $\eta$  being a specific variation around the mean for  $k$  attributes in vector  $x$  (Fiebig, et al. 2010; Hensher et al. 2015). Typical distributional assumptions for the random parameters include normal, triangular and lognormal distributions, amongst others. The normal distribution captures both positive and negative preferences (i.e., utility and disutility) (Revelt and Train, 1998). The lognormal function can be used in cases where the researcher wants to ensure the parameter has a certain sign (positive or negative), a disadvantage is the resultant long tail of estimate distributions (Hensher et al. 2015). The triangular distribution provides an alternative functional form, where the spread can be constrained (i.e., the mean parameter is free whereas spread is fixed equal to mean) to ensure behaviourally plausible signs in estimation (Hensher et al. 2015). Further specifications used in modelling include parameters associated with individual specific characteristics (e.g, income) that can influence the heterogeneity around the mean, or allowing correlation across the random parameters. The heterogeneity in mean, for example, captures whether individual specific characteristics influence the location of an observation on the random distribution (Hensher et al. 2015). In this study, the frequency of visits to rivers, streams and lakes was used to explain such variance.

Another way to write this probability function (in eq. 1.4) (Hensher et al. 2015) involves an integral of the estimated likelihood over the population:

$$L_{njs} = \int_{\beta} \Pr_{nsj}(\beta) f(\beta|\theta) d\beta \quad (0.6)$$

In this specification, the parameter  $\theta$  is now the probability density function conditional to the distributional assumption of  $\beta$ . As this integral has no closed form solution, the approximation of the probabilities requires a simulation process (Hensher et al. 2015; Train, 2003). In this process for data  $X$ ,  $R$  number of draws are taken from the random distributions (i.e. the assumption made by the researcher) followed by averaging probabilities from these draws; furthermore these simulated draws are used to compute the expected likelihood functions:

$$L_{nsj} = E(\Pr_{nsj}) \approx \frac{1}{R} \sum_R f(\beta^{(r)} | X) \quad (0.7)$$

where the  $E(\Pr_{nsj})$  is maximised through Maximum Likelihood Estimation. This specification (in eq. 1.6) can be found in Hensher et al. (2015). In practice, a popular simulation method is the Halton sequence which is considered a systematic method to draw parameters from distributions compared to for example, pseudo-random type approaches (Hensher et al. 2015).

### B.3 Econometric Extensions

Common variations of the RPL model include specification of an additional error component (EC) in the unobserved part of the model. This EC extension captures the unobserved variance that is alternative-specific (Greene and Hensher 2007) hence relating to substitution patterns between the alternatives (Hensher et al. 2015). Empirically, one way to explain significant EC in a model is SQ-bias depicted in the stochastic part of utility if the EC is defined to capture correlation between the non-SQ alternatives (Scarpa et al., 2005).

Another extension which has gained increasing attention in recent CE literature, is the Generalized Mixed Logit (GMXL) model (Czajkowski et al. 2014; Hensher et al. 2015; Juutinen et al. 2012; Kragt 2013; Phillips 2014). This model aims to capture remaining unobserved components in utility as a source of choice variability by allowing estimation of the scale heterogeneity alongside the preference heterogeneity (Fiebig et al. 2010; Hensher et al. 2015). This scale parameter is (inversely) related to the error variance, and in convenient applications such as MNL or RPL, this is normalised to one to allow identification (Fiebig et al. 2010; Louviere and Eagle 2006). However, it is possible that the level of error variance differs between or within individuals, due to reasons such as behavioural outcomes, individual characteristics or contextual factors (Louviere and Eagle 2006).

Recent GMXL application builds on model specifications presented in Fiebig et al. (2010), stating that  $\beta_n$  (in eq. 1.4) becomes:

$$\beta_n = \sigma_n \beta + \gamma \eta_n + (1 - \gamma) \sigma_n \eta_n \quad (0.8)$$

where  $\sigma$  is the scale factor (typically = 1) and  $\gamma \in \{0,1\}$  is a weighting parameter indicating variance in the residual component. In the case the scale factor equals 1, this reduces to the RPL model. The importance of the weighting parameter is the impact on the scaling effect on the overall utility function (population means) versus the individual preference weights (individual means): when  $\gamma$  parameter approaches zero the scale heterogeneity affects both means, whereas when this approaches one the scale heterogeneity affects only the population means (Hensher et al. 2015; Juutinen et al. 2015). Interpretation of these parameters includes

- If  $\gamma$  is close to zero, and statistically significant, this supports the model specification with the variance of residual taste heterogeneity increases with scale (Juutinen et al. 2012); and
- If  $\gamma$  is not statistically significant from one, this suggests that the unobserved residual taste heterogeneity is independent of the scale effect, that is the individual-level parameter estimates differ in means but not variances around the mean (Kragt, 2013)

The scale factor specification (eq. 1.7) can also be extended to respondent specific characteristics associated with the unobserved scale heterogeneity (Hensher et al. 2015; Juutinen et al. 2015):

$$\sigma_n = \exp\{\bar{\sigma} + \tau\omega_n\} \quad (0.9)$$

where  $\bar{\sigma}$  is the mean parameter in the error variance; and  $\omega$  is unobserved scale heterogeneity (normally distributed) captured with coefficient  $\tau$  (Hensher et al. 2015; Juutinen et al. 2015; Kragt, 2013). Juutinen et al. (2012), for example, in context of natural park management found that respondents' education level and the time spent in the park explained the scale heterogeneity ( $\tau > 0$ , p-value  $< 0.01$ ). In this study, the respondents indicated levels of choice task understanding and difficulty were used to explain scale heterogeneity.

## B.4 Estimation of Monetary Values

Typically the final step of interest in the CE application is the estimation of monetary values of respondent preferences for the attributes considered in utility functions. These are commonly referred to as marginal willingness-to-pay (WTP). WTP estimation is based on the marginal rate of substitution expressed in dollar terms providing a trade-off between some attribute  $k$  and the cost involved (Hensher et al. 2015) and is calculated using the ratio of an attribute parameter and the cost parameter. WTP can take into account interaction effects, if statistically significant, such as with the respondent demographics. WTP of attribute  $j$  by respondent  $i$  is calculated as the ratio of the estimated model parameters accommodating the influence of the random component (Cicia et al. 2013) as:

$$WTP_i^j = - \left( \frac{\beta_j + \varepsilon_{ij}}{\beta_{price} + \varepsilon_{ip}} \right) \quad (0.10)$$

The estimated mode parameters can also be used to estimate compensating surplus (CS) as a result of policy or quality change in a combination of attributes, using (Hanemann, 1984):

$$CS = \frac{-1}{\beta_{cost}} \left[ \ln \sum_{j=1}^J \exp\{V_j^0\} - \ln \sum_{j=1}^J \exp\{V_j^1\} \right] \quad (0.11)$$

which calculates the difference in utilities before the policy or quality change ( $V_0$ ) and after the policy or quality change ( $V_1$ ) (Hanley et al. 2013; Lancsar and Savage 2004). Similar to WTP, the monetary estimation of this change is possible by using the estimate for the monetary attribute  $\beta_{cost}$ . Lastly, there are some challenges associated with the empirical estimation of the WTP in the RPL based models. One approach is to use a fixed cost, which simplifies the WTP estimation (Daly et al. 2012) but which may not be as behaviourally a plausible consideration as allowing heterogeneous preferences towards the cost attribute (Bliemer and Rose, 2013; Daziano and Achnicht, 2014). Conceptually, the estimated cost parameter is a proxy for the marginal utility of income for respondents and economic theory suggests individuals will respond differently to varying income levels. The use of a random cost parameter however, presents complications in deriving population distribution moments from the ratio of two random parameters.

## Appendix 3 Questionnaire

### OLW Shanghai Yogurt

---

#### Start of Block: Intro and Screening Questions

#### YOGURT ATTRIBUTES SURVEY

Welcome to this survey about consumer preferences for yogurt attributes.

The survey is an on-line questionnaire that takes about 10 – 15 minutes. You do not have to participate. You have the right to decline to answer any question or stop the survey at any time. If you do stop the survey before the end, the information you have provided will be destroyed.

The Agribusiness and Economics Research Unit at Lincoln University in New Zealand are conducting this survey. Data will be held on a secure server on the University campus. The survey does not collect identifying information, and your responses cannot be linked to you. The survey has been reviewed and approved by the Lincoln University Human Ethics Committee. The lead researcher is Dr Peter Tait, and his manager is Prof Caroline Saunders. If you have any questions or concerns about the research, you may contact them at:

Peter Tait Caroline Saunders  
+64 3 423 0384 +64 3 423 0382  
peter.tait@lincoln.ac.nz; caroline.saunders@lincoln.ac.nz

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

To begin the survey, begin by clicking on the >> button below.

Yours sincerely  
Dr. Peter Tait

Which city do you live in?

- Hangzhou
- Beijing
- Shanghai
- Dongguan
- Wuhan
- Other, please specify: \_\_\_\_\_

*Skip To: End of Block If Which city do you live in? != Shanghai*

How often do you purchase **yogurt**?

- Daily
- Weekly
- Fortnightly
- Monthly
- Less than once a month
- Never

*Skip To: End of Block If How often do you purchase yogurt? = Less than once a month*

*Skip To: End of Block If How often do you purchase yogurt? = Never*

How much do you know about the following countries?

	Nothing	A little	A fair amount	A lot
Germany	<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"/>
Spain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thailand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Britain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**End of Block: Intro and Screening Questions**

**Start of Block: Screened Out**

Thank you for your participation. Unfortunately we need respondents who meet particular criteria for food consumption and shopping. As you do not meet his criteria, you do not have to

answer any more questions. Thank you for your time. Click >> to be returned to the research company website (this may take a few moments).

End of Block: Screened Out

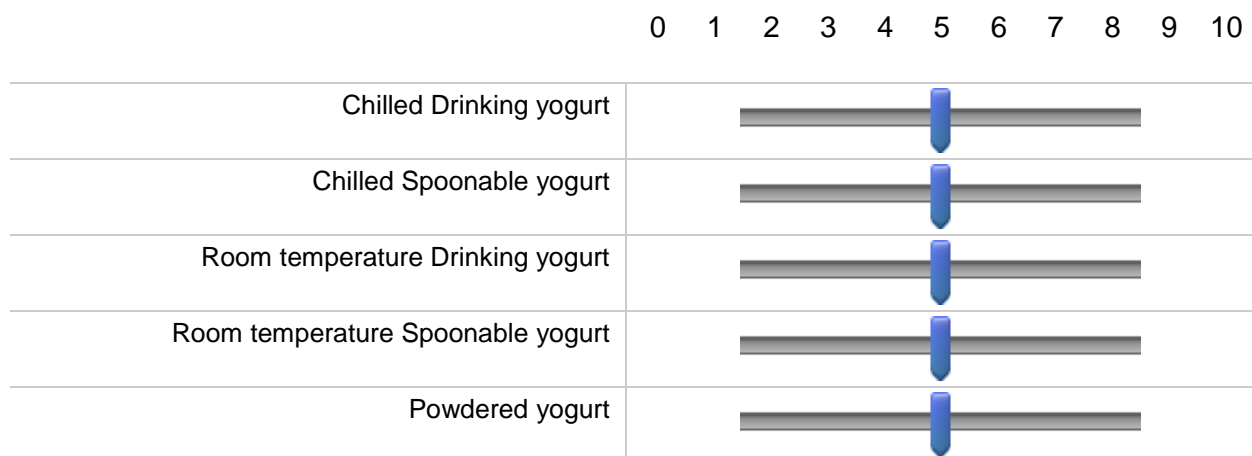
Start of Block: Product Questions

How often do you eat the following types of yogurt?

	Once a day or more	2-5 times a week	Once a week	Once every two weeks	Once per month or less	Never
Chilled Drinking yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chilled Spoonable yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Room temperature Drinking yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Room temperature Spoonable yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Powdered yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

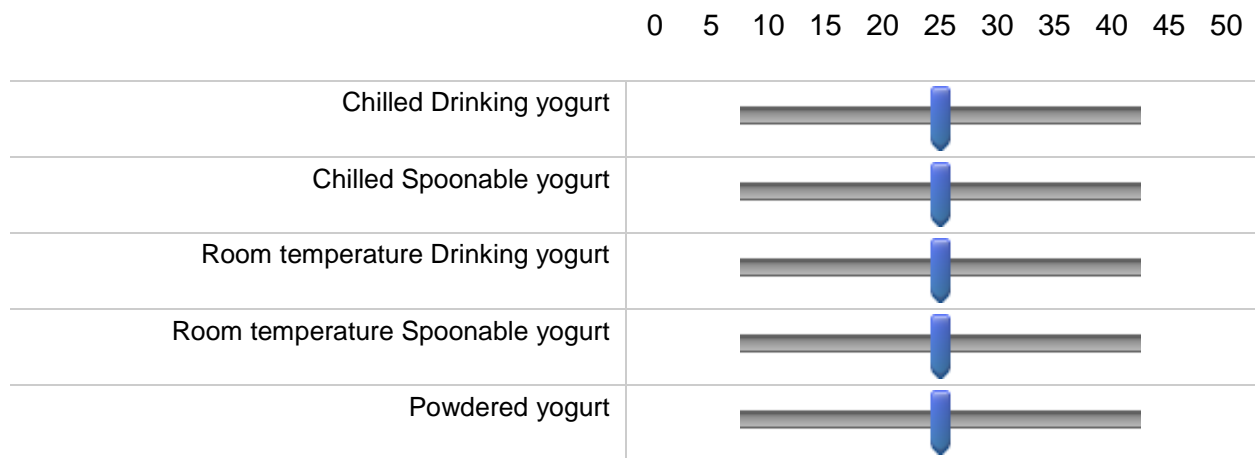
How **much** yogurt do you eat in an average week?

Please move the slider along to indicate your **average consumption per week** (kg/week) of the following varieties.



What price do you usually pay for yogurt?

Please move the slider along to indicate how much you usually spend per kg of the following varieties



In what ways do you eat yogurt?

	Always	Often	Sometimes	Never
Raw, just as it is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raw, as an ingredient in a dish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooked, as an ingredient in a dish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What occasions throughout the day do you eat yogurt?

	Drinking Yogurt				Spoonable Yogurt			
	Always	Often	Sometimes	Never	Always	Often	Sometimes	Never
As a snack, any time of day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As part of breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As part of lunch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As part of dinner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Who do you buy yogurt for?

	Always	Often	Sometimes	Never
For myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For younger members of my family, such as children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For older members of my family, such as parents or grandparents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a gift	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For someone who is unwell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



How important do you think are the following yogurt characteristics?

	Strongly prefer	Somewhat prefer	Neutral	Not so important	Not at all important	Don't know
Flavour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Color	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Place of purchase	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutritional value	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country of production origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality certificate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales promotion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advertising	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental effects of production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social responsibility of production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very important	Somewhat important	Neutral	Not so important	Not at all important	Don't know
Includes fruit bits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit flavour, no bits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Added calcium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Added protein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Added fibre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reduced sugar content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High level of sweetness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reduced fat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No fat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Full cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sourness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE Free	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No additives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No artificial colours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Without gelatine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of active cultures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fermented	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preservative free	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No cane sugar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of added probiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Includes cereal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Made with raw milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Made with organic milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Made with milk from sustainable farms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lactose free	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Texture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have you seen yogurt being sold with the following country of origin?

Please select all that apply

	Seen	Not seen
China	<input type="radio"/>	<input type="radio"/>
New Zealand	<input type="radio"/>	<input type="radio"/>
Spain	<input type="radio"/>	<input type="radio"/>
Germany	<input type="radio"/>	<input type="radio"/>
Thailand	<input type="radio"/>	<input type="radio"/>
Britain	<input type="radio"/>	<input type="radio"/>
Switzerland	<input type="radio"/>	<input type="radio"/>
Poland	<input type="radio"/>	<input type="radio"/>
Austria	<input type="radio"/>	<input type="radio"/>
Canada	<input type="radio"/>	<input type="radio"/>
Japan	<input type="radio"/>	<input type="radio"/>
USA	<input type="radio"/>	<input type="radio"/>

Carry Forward Selected Choices from "Have you seen yogurt being sold with the following country of origin? Please select all that apply"

How often have you purchased yogurt with the following country of origin?

Please select all that apply

	Daily	Weekly	Monthly	Once	Never
China	<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"/>
Spain	<input type="radio"/>	<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"/>	<input type="radio"/>
Thailand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Britain	<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"/>
Poland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Austria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Canada	<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"/>
USA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which countries do you think produce the highest quality yogurt?

Please rank the following countries by clicking and dragging them into the box, you can move a country up or down the list

Quality (1=best)
_____ China
_____ New Zealand
_____ Spain
_____ Germany
_____ Thailand
_____ Britain
_____ Poland
_____ Austria
_____ Switzerland
_____ Canada
_____ Japan
_____ USA

How often do you buy the following **brands** of yogurt?

	Mostly this brand	Often this brand	Rarely this brand	I don't know this brand
Anchor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I Am NZ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suki Bakery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Easiyo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hansells	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zott	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yoplait	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emmi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yakult	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nanyang	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ambrosial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mengniu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yili	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chuanxiu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baishengyou	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yip	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You Bit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Huifeng	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Display This Question:*

*If How often have you purchased yogurt with the following country of origin? Please select all that apply New Zealand - Never Is Selected*

Why did you purchase New Zealand yogurt?

Please indicate how important the following **reasons** have in your choice to purchase **New Zealand yogurt?**

	Very important	Somewhat important	Neutral	Not so important	Not at all important	Don't know
Distinctive taste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Higher quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Value for price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Curiosity to try different products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental sustainability of production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is a premium product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High food safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social responsibility of production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traceability to grower	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organic production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New Zealand's 'clean and green' image	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Care of traditional cultures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The high quality of the natural environment in NZ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How much do you know about New Zealand's indigenous culture, Māori?

- I know a lot about Māori culture
- I know a few things about Māori culture
- I have heard of them
- I have never heard about Māori culture

*Display This Question:*

*If How much do you know about New Zealand's indigenous culture, Māori? != I have never heard about Māori culture*

What would you associate with yogurt produced from a Māori enterprise?

	Strong association	Moderate association	Little association	No association	Don't know
Reduced environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social responsibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collective ownership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stewardship over land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distribution of profits into community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guardianship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Artisanal style	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Care of traditional cultures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traditional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fair trade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Natural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate your level of agreement with the following statements

	Agree	Partly agree	Neutral (Neither agree nor disagree)	Partly disagree	Disagree	Don't know
Dairy production is an important sector in the Chinese economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When deciding which yogurt to buy I care only about the taste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like to have more information about sustainably produced yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I eat yogurt mainly for the health benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to my friends, I eat a lot of yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The environmental impact of dairy production is well managed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dairy production processes have low human health impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to lead a healthy lifestyle as much as possible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is very important for me to know where the yogurt I buy is produced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Sustainable yogurt labelling certification is a guarantee of high product quality

I am worried about the long term effects of pesticides and additives in conventional modern dairy production

I feel that purchasing sustainable products helps protect the environment

The quality of yogurt is directly related to the quality of the natural environment where dairy is farmed

The health benefits of yogurt are directly related to quality of the natural environment where dairy is farmed

The food safety of yogurt are directly related to quality of the natural environment where dairy is farmed

I trust the quality claims made by Chinese brands

I trust the quality claims made by Anchor

I could be interested in buying yogurt with a sustainability label (showing environmental, economic and social aspects)



## End of Block: Product Questions

---

### Start of Block: Choice Experiment: Usual personal consumption

#### Comparing yogurt products

In the next set of questions, please imagine you are purchasing yogurt from your usual retailer for **usual personal consumption**.

You will be shown a series of yogurt choice sets, each displaying three different yogurt products. Each yogurt is labelled with information describing how the yogurt was produced and the price per kilogram. The yogurts differ based on the information presented otherwise they are the same.

#### Yogurt attributes for you to consider in the next questions

**Enhanced food safety** The yogurt has been officially certified by a Food Safety Agency who guarantees that the production of this yogurt employs a management system that provides food safety additional to minimum regulatory requirements.

**Enhanced animal welfare** The yogurt has been officially certified by an Animal Welfare Agency who guarantees that the production of this yogurt employs a management system that that provides animal welfare additional minimum regulatory requirements.

**Certified Organic** The yogurt is 100% organically produced, is GE free, with no synthetic fertilisers or pesticides used.

**Environmental sustainability** The yogurt has been officially certified by an Environmental Agency who guarantees that the production of this yogurt employs a management system that minimises environmental effects of production and distribution.

**Social responsibility** The yogurt has been produced by dairy farms that are community owned and operated. Socially responsible growers and suppliers actively include public interest into decision making.

**Country of origin** This attribute displays the country where the yogurt is produced

**Variety** The type of yogurt can be either: ambient drinking yogurt, ambient spoonable yogurt, or powdered yogurt

**Price** ¥ per kg of yogurt

For each question, please choose which yogurt product you would most likely purchase. This includes keeping in mind how the price would fit in your usual grocery budget.

**Group**  
**1/10**

In the next set of questions, imagine you're buying yogurt from an average retailer for personal consumption.

Which of the following three yogurt do you prefer? Please use the button to mark your choice.

	Product one	Product two	Product three	More information
Variety	Semi-solid yogurt	Yogurt powder	Liquid yogurt	
Strengthen food safety	Certification			
Enhance animal welfare	Certification			
Organic certification	Certification			
Environmental sustainability	Certification			
Social responsibility	Community ownership and management			
Country of origin	Thailand	new Zealand		
Yuan / kg yogurt	30 yuan / kg	200 yuan / kg	30 yuan / kg	
<b>select</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<b>neither</b> <input type="radio"/>

>>

End of Block: Choice Experiment: Usual personal consumption

Start of Block: Post-CE Questions

In the previous choice sets which, if any, of the yogurt attributes did you ignore when making your choices?

- I used all the available information and didn't intentionally ignore any product attributes

OR

Please select all the product attributes that you didn't consider at all when making your choices

- Yogurt Type
- Enhanced Food Safety
- Enhanced Animal Welfare
- Organic
- Environmental Sustainability
- Social responsibility
- Country of origin
- Price

In the previous choice sets, it was easy to **understand** how I should provide my choices.

- Agree
- Partly agree
- Neutral (neither agree nor disagree)
- Partly disagree
- Disagree

In the previous choice sets, I was able to **express what was important for me** concerning yogurt labelling.

- Agree
- Partly agree
- Neutral (neither agree nor disagree)
- Partly disagree
- Disagree

In the previous choice sets, I **understood the meaning** of the labelling alternatives.

- Agree
- Partly agree
- Neutral (neither agree nor disagree)
- Partly disagree
- Disagree

In the previous choice sets, how did you find **expressing which type of yogurt labelling information** was important to you?

- Very easy
- Fairly easy
- Neither easy nor difficult
- A little difficult
- Very difficult

In the previous yogurt choice sets, did you chose the **“None of these”** option in most or all the choice sets?

- Yes
- No

*Display This Question:*

*If In the previous yogurt choice sets, did you chose the “None of these” option in most or all the ch...  
= Yes*

Please indicate the main reason for doing so

- I can't afford to pay more for my food shopping
  - I don't want to pay more for any of these attributes
  - I don't trust these product statements
  - Not enough information was provided
  - I don't think the other alternatives were realistic
  - I would not buy any of the given alternatives
  - While I do prefer some of the product attributes presented, none of the given products represented my preferences
  - Other reason, please specify
- 

End of Block: Post-CE Questions

---

Start of Block: Technology Questions

**The next set of questions are about the use of technology for yogurt product shopping.**

How often do you access the Internet using the following devices?

	Daily	Weekly	Monthly	Less than monthly	Never
Mobile Device, e.g. smartphone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home computer e.g. desktop/laptop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you use any of the following to **inform your yogurt choices** or to find out **how a yogurt product is produced**?

*Please select all that apply.*

	Inform Choice		How Produced	
	Mobile Device	Home computer	Mobile Device	Desktop/Laptop
Weibo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taobao	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WeChat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alibaba	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jingdong (JD)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TMall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Food company web sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Food blogs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QQ Zone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forums	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baidu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retailer web sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Youku	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LinkedIn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

When searching for **yogurt products** or **how a yogurt product is produced**, are you influenced by any of the following?

*Please select all that apply.*

	Inform Choices	How Produced
Celebrity chefs	<input type="checkbox"/>	<input type="checkbox"/>
Sports celebrities	<input type="checkbox"/>	<input type="checkbox"/>
Other celebrities	<input type="checkbox"/>	<input type="checkbox"/>
Health professionals	<input type="checkbox"/>	<input type="checkbox"/>
Government information	<input type="checkbox"/>	<input type="checkbox"/>
Industry marketing boards	<input type="checkbox"/>	<input type="checkbox"/>
Non-government organisations (e.g. Greenpeace)	<input type="checkbox"/>	<input type="checkbox"/>
International bodies (e.g. World Health Organisation)	<input type="checkbox"/>	<input type="checkbox"/>

*Display This Question:*

*If Do you use any of the following to inform your yogurt choices or to find out how a yogurt product...  
: Inform Choice = Mobile Device*

When **using your mobile device** to search for products or product information about yogurt, where do you usually do this?

	Usually	Often	Sometimes	Never
At home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Out of home but not in-store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Display This Question:*

*If Do you use any of the following to inform your yogurt choices or to find out how a yogurt product...  
: Inform Choice = Mobile Device*

Have you ever used any of the following technologies in conjunction with your **smartphone** to search for yogurt-related **information** and/or make yogurt product **purchases**?

	Information search			To purchase products		
	Often	Sometimes	Never	Often	Sometimes	Never
Barcodes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
QR codes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RFID/NFC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you currently, or would be interested in, **using mobile apps** in relation to yogurt for the following reasons?

	Currently use	Interested in using	Don't use and not interested in using
Health (general)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dietary information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainability information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Budgeting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nearest stockist location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traceability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loyalty/rewards programmes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discounts/coupons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchasing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Display This Question:

If Do you currently, or would be interested in, using mobile apps in relation to yogurt for the foll... =  
Currently use

Do you currently use any of the following apps on your mobile device?

Please select all that apply.

	Yes
微信 WeChat	<input type="checkbox"/>
下厨房 Xiachufang	<input type="checkbox"/>
新浪微博 Sina Weibo	<input type="checkbox"/>
Shi-An-Ce	<input type="checkbox"/>
大众点评 Dianping	<input type="checkbox"/>
觅食 Mishi	<input type="checkbox"/>
Ele-me	<input type="checkbox"/>
到家 Daojia	<input type="checkbox"/>
Retailer app(s)	<input type="checkbox"/>

What percentage of your usual **food and beverages** purchases are made at the following retailers:

- \_\_\_\_\_ Supermarkets
- \_\_\_\_\_ Specialty stores
- \_\_\_\_\_ Farmers' markets
- \_\_\_\_\_ Online
- \_\_\_\_\_ Restaurant or similar
- \_\_\_\_\_ Subscription box
- \_\_\_\_\_ Direct from producer
- \_\_\_\_\_ Wholesale supplier
- \_\_\_\_\_ Hypermarket
- \_\_\_\_\_ Convenience stores

What percentage of your usual **yogurt** purchases are made at the following retailers:

- \_\_\_\_\_ Supermarkets
- \_\_\_\_\_ Specialty stores
- \_\_\_\_\_ Grocery store
- \_\_\_\_\_ Online
- \_\_\_\_\_ Wholesale supplier
- \_\_\_\_\_ Hypermarket
- \_\_\_\_\_ Convenience stores

*Display This Question:*  
 If What percentage of your usual yogurt purchases are made at the following retailers: [ Online ] > 0

What kinds of yogurt products do you buy online?

*Please select all that apply.*

	Only	Often	Sometimes	Never
Drinkable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spoonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Powdered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All/multiple types	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bulk quantities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Display This Question:*  
 If What percentage of your usual yogurt purchases are made at the following retailers: [ Online ] > 0

What is your **main reason** for shopping online for yogurt products?

- Prices are generally lower online.
- I have access to special offers and promotions online.
- Products are generally higher quality online.
- There is a greater variety of products available online.
- I like the convenience of having products delivered to my home.
- I like being able to order products from overseas that are better or not available domestically.
- I like being able to avoid having to go to the store by shopping online.

Display This Question:

If What percentage of your usual yogurt purchases are made at the following retailers: [ Online ] > 0

When making yogurt purchases online, which of the following do you use?

Please select all that apply.

	Often	Sometimes	Never
Wholesale/discount suppliers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Direct from producer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supermarkets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organic food stores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hypermarkets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Only suppliers that I know and trust	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Only retailers that I've used before	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yigou	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jingdong (JD)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TMall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taobao	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pagoda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SuNing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yi Hao Dian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Specialty stores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Womai	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If What percentage of your usual yogurt purchases are made at the following retailers: [ Online ] > 0

When making yogurt purchases online, which device(s) do you use and where?

Please select all that apply.

	Mobile Device			Desktop/Laptop		
	Often	Sometimes	Never	Often	Sometimes	Never
At home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Out of home (but not in store)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When looking for **information regarding yogurt products**, what level of **trust** do you have in the following:

	High	Medium	Low
Generic mobile apps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Branded mobile apps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online social community (e.g. vegetarian group)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online customer reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product packaging/labelling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If When looking for information regarding yogurt products, what level of trust do you have in the fo...  
= Generic mobile apps [ Low ]

Why do you not trust **generic mobile apps** for yogurt product information searching?

Please select all that apply.

- I do not trust the provider of the information.
- I have privacy concerns regarding the technology involved.
- I do not know how to use the technology.
- I did not understand the information provided.
- Security concerns
- Other, please state: \_\_\_\_\_

Display This Question:

If When looking for information regarding yogurt products, what level of trust do you have in the fo...  
= Branded mobile apps [ Low ]

Why do you not trust **branded mobile apps** for yogurt product information searching?

Please select all that apply.

- I do not trust the provider of the information.
- I have privacy concerns regarding the technology involved.
- I do not know how to use the technology.
- I did not understand the information provided.
- Security concerns
- Other, please state: \_\_\_\_\_

*Display This Question:*

*If When looking for information regarding yogurt products, what level of trust do you have in the fo...  
= Online social community (e.g. vegetarian group) [ Low ]*

Why do you not trust online social communities for yogurt product information searching?

*Please select all that apply.*

- I do not trust the provider of the information.
- I have privacy concerns regarding the technology involved.
- I do not know how to use the technology.
- I did not understand the information provided.
- Other, please state: \_\_\_\_\_

*Display This Question:*

*If When looking for information regarding yogurt products, what level of trust do you have in the fo...  
= Online customer reviews [ Low ]*

Why do you not trust online customer reviews for yogurt product information searching?

*Please select all that apply.*

I do not trust the provider of the information.

- I have privacy concerns regarding the technology involved.
- I do not know how to use the technology.
- I did not understand the information provided.
- Other, please state: \_\_\_\_\_

*Display This Question:*

*If When looking for information regarding yogurt products, what level of trust do you have in the fo...  
= Product packaging/labelling [ Low ]*

Why do you not trust product packaging/labelling for yogurt product information searching?

*Please select all that apply.*

- I do not trust the provider of the information.
- I have privacy concerns regarding the technology involved.
- I do not know how to use the technology.
- I did not understand the information provided.
- Other, please state: \_\_\_\_\_

When **purchasing yogurt** products, what level of **trust** do you have in the following:

	High	Medium	Low
Mobile device (e.g. smartphone)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal computer (e.g. desktop/laptop)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online shopping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generic mobile apps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Branded mobile apps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Barcodes/QR codes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RFID/NFC technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Display This Question:*  
 If When purchasing yogurt products, what level of trust do you have in the following: = Mobile device (e.g. smartphone) [ Low ]

Why do you not trust **mobile devices** for yogurt product purchasing?

*Please select all that apply.*

- I do not trust the technology involved.
- I have privacy concerns regarding the technology involved.
- I do not know how to use this technology.
- This technology is not available in my locality.
- I am not familiar with the technology involved.
- I do not trust the information provided.
- Other, please state: \_\_\_\_\_

*Display This Question:*

*If When purchasing yogurt products, what level of trust do you have in the following: = Personal computer (e.g. desktop/laptop) [ Low ]*

Why do you not trust **personal computers** for yogurt product purchasing?

*Please select all that apply.*

- I do not trust the technology involved.
- I have privacy concerns regarding the technology involved.
- I do not know how to use this technology.
- This technology is not available in my locality.
- I am not familiar with the technology involved.
- I do not trust the information provided.
- Other, please state: \_\_\_\_\_

*Display This Question:*

*If When purchasing yogurt products, what level of trust do you have in the following: = Online shopping [ Low ]*

Why do you not trust **online shopping** for yogurt product purchasing?

*Please select all that apply.*

I do not trust the technology involved.

- I have privacy concerns regarding the technology involved.
- I do not know how to use this technology.
- This technology is not available in my locality.
- I am not familiar with the technology involved.
- I do not trust the information provided.
- Other, please state: \_\_\_\_\_



*Display This Question:*

*If When purchasing yogurt products, what level of trust do you have in the following: = Generic mobile apps [ Low ]*

Why do you not trust **generic mobile apps** for yogurt product purchasing?

*Please select all that apply.*

- I do not trust the technology involved.
- I have privacy concerns regarding the technology involved.
- I do not know how to use this technology.
- This technology is not available in my locality.
- I am not familiar with the technology involved.
- I do not trust the information provided.
- Other, please state: \_\_\_\_\_

*Display This Question:*

*If When purchasing yogurt products, what level of trust do you have in the following: = Branded mobile apps [ Low ]*

Why do you not trust **branded mobile apps** for yogurt product purchasing?

*Please select all that apply.*

I do not trust the technology involved.

- I have privacy concerns regarding the technology involved.
- I do not know how to use this technology.
- This technology is not available in my locality.
- I am not familiar with the technology involved.
- I do not trust the information provided.
- Other, please state: \_\_\_\_\_

*Display This Question:*

*If When purchasing yogurt products, what level of trust do you have in the following: = Barcodes/QR codes [ Low ]*

Why do you not trust barcodes/QR codes for yogurt product purchasing?

*Please select all that apply.*

- I do not trust the technology involved.
- I have privacy concerns regarding the technology involved.
- I do not know how to use this technology.
- This technology is not available in my locality.
- I am not familiar with the technology involved.
- I do not trust the information provided.
- Other, please state: \_\_\_\_\_

*Display This Question:*

*If When purchasing yogurt products, what level of trust do you have in the following: = RFID/NFC technology [ Low ]*

Why do you not trust RFID/NFC technology for yogurt product purchasing?

*Please select all that apply.*

- I do not trust the technology involved.
- I have privacy concerns regarding the technology involved.
- I do not know how to use this technology.
- This technology is not available in my locality.
- I am not familiar with the technology involved.
- I do not trust the information provided.
- Other, please state: \_\_\_\_\_

How do you usually find out or become aware of new yogurt products?

*Please select all that apply.*

In-store (from where I currently do most of my food product shopping)

- Online (from where I currently do most of my food product shopping)
- Word-of-mouth
- Online advertising (websites)
- Social media
- Blogs
- Print media (newspapers, magazines, direct mail)
- Broadcast media (radio, cable TV, broadcast TV)
- Other advertising
- Can't recall
- Other, please state: \_\_\_\_\_

**End of Block: Technology Questions**

---

**Start of Block: Demographics**

### **Demographics**

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

Gender

- Male
- Female

Age

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

What type of area do you live in?

- Urban
- Suburban
- Rural

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 (e.g. flatting)
- Other \_\_\_\_\_

What is your highest level of education?

- Up to Primary School
- Up to High School
- High School
- Tertiary qualification other than Degree (eg, diploma, vocational etc)
- University degree
- Post-graduate degree
- Other \_\_\_\_\_

Please indicate your total household income before taxes over the past 12 months:

- 低于 ¥50,000
- ¥50,000-¥69,999
- ¥70,000-¥89,999
- ¥90,000-¥109,999
- ¥110,000-¥129,999
- ¥130,000-¥149,999
- ¥150,000 以上
- 不想回答

That was the last question of the survey!

Thank you very much for your participation.

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

**End of Block: Demographics**

---

## RESEARCH REPORTS

---

- 320 **The Socio-technical Networks of Technology Users' Innovation in New Zealand: A Fuzzy-set Qualitative Comparative Analysis**  
Lambert S and Fairweather JR 2010
- 321 **Comparison of Innovation Policies in selected European, Asian, and Pacific Rim Countries: How to best to optimise Innovation Governance in New Zealand**  
Fairweather J, Wintjes R, Williams J, Rinne T and Nauwelaers C 2011
- 322 **The Economic and Social Value of Sport and Recreation to New Zealand**  
Dalziel P 2011
- 323 **An International Comparison of Models of Innovation and their Implications of New Zealand**  
Rinne TA and Fairweather J. 2011
- 324 **Enhancing Value for New Zealand Farmers by Improving the Value Chain**  
Saunders C, McDonald H and Driver T 2011
- 325 **An International Comparison of Models and Cultural and National Identity and their Implications for New Zealand Innovation**  
Rinne T and Fairweather J 2011
- 326 **Publication cancelled.**
- 327 **The Cost of Psa-V to the New Zealand Kiwifruit Industry and the Wider Community**  
Greer G and Saunders C 2012
- 328 **50 Years of the AERU: An Examination and Summary of Past Research**  
Driver T and Saunders C 2012
- 329 **Perceptions of Sustainability of Dairy Support Land Farmers**  
Bennett M.R, Pangborn MC and Bywater AC 2012
- 330 **Modelling Alternative Dryland Sheep Systems**  
Gicheha MG, Edwards GR, Bell ST and Burt ES 2012
- 331 **Report on a Succession and Governance Survey of a Random Stratified Sample of NZ Farmers**  
Nuthall PL and Old KM 2014
- 332 **Maximising Export Returns (MER): Consumer behaviour and trends for credence attributes in key markets and a review of how these may be communicated**  
Miller S, Driver T, Velasquez N, Saunders C 2014
- 333 **Consumer Attitudes to New Zealand Food Product Attributes and Technology Use in Key International Markets**  
Saunders C, Guenther M, Driver T, Tait P, Dalziel, P and Rutherford P, 2014
- 334 **Maximising Export Returns (MER): Communicating New Zealand's Credence Attributes to International Consumers**  
Lees N, Saunders C 2015
- 335 **The Wheel of Water: The Contribution of the Agricultural Sector in Selwyn and Waimakariri districts to the Economy of Christchurch**  
Guenther M, Greer G, Saunders C, Rutherford P 2015
- 336 **Maximising Export Returns: Consumer attitudes towards attributes of food and beverages in export markets relevant to New Zealand**  
Guenther M, Saunders C, Dalziel P, Rutherford P, Driver T 2015
- 337 **Maximising Export Returns: The use of digital media and smart technology in shopping and information gathering for food and beverages in markets relevant to New Zealand**  
Driver T, Saunders C, Guenther M, Dalziel P, Rutherford P 2015
- 338 **A Socio-Economic Research Plan for Evaluating Possible Interventions in New Zealand's Biosecurity Networks**  
Dalziel P, Hulme, Philip E, 2016
- 339 **The Land and the Brand**  
Saunders C, Dalziel P, Guenther M, Saunders J, Rutherford P 2016
- 340 **International Trade Implications for Consumer Attitudes to New Zealand Food Attributes**  
Saunders JT, Driver T 2016
- 341 **Modelling Agricultural Impacts of EU-NZ Trade Liberalisation**  
Saunders J, Saunders C, McLellan B, Obadovic I, Driver T 2016
- 342 **New Zealand food and beverage consumer preferences for product attributes and alternative retailers, and in-market use of digital media and smart technology**  
Miller S, Driver T, Saunders C, Tait P, Rutherford P 2016
- 343 **Measuring the Economic Impact of Whānau Ora Programmes: He Toki ki te Mahi Case Study**  
Dalziel P, Saunders C, Guenther M 2017
- 344 **Unlocking Export Prosperity: An Introduction to the Research Programme**  
Saunders C, Dalziel P, Harker R, Reid, J, and Cammock P 2017
- 345 **Assessing New Zealand public preferences for native biodiversity outcomes across habitat types: A choice experiment approach incorporating habitat engagement**  
Tait P, Saunders C, Miller S, Rutherford P, Greer G and Abell W 2017
- 346 **Consumer insights and willingness to pay for Attributes: Kiwifruit in Shanghai**  
Tait P, Rutherford P, Driver T, Li X, Saunders C, and Dalziel P 2018