

# Revealing stakeholder attitudes about local food in a university foodservice using Q Methodology

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## **Abstract**

**Background:** Local food has many positive attributes. The ‘Local Food Movement’ is driven by consumer demand and brings attention to a value-based food system that focuses on the environmental, social and ethical implications of a food system. There is no consensus on how to define local, but by letting the consumer and foodservice define the term local, stakeholders can determine the direction of foodservice localisation in the context of their local food system. To date there have been no comprehensive multi-stakeholder studies assessing attitudes to local food in a university foodservice setting.

**Objective:** Researchers need to work to understand the attitudes of stakeholders so they can predict how organisational change will be received. The purpose of this study was to explore diverse stakeholder viewpoints to localization in a university foodservice. The research question was “what are the dominant shared stakeholder viewpoints about local food and how might an understanding of these be used to help management localize the foodservice?” Attitudes about local food were measured using Q Methodology, a mix of both quantitative and qualitative research paradigms and hence a robust methodology for exploring subjective attitudes. This study will measure the attitudes of students, foodservice staff, management staff, and food suppliers of a university hall of residence in Otago, New Zealand.

**Design:** The full breadth of attitudes around local food was identified from the literature, popular media and one-on-one stakeholder interviews. From this a Q set of statements about local food (n=42) was generated. Q sort interviews were conducted with the participant group (n=47). Each stakeholder sorted statements, from agree to

disagree, in a forced distribution and was then interviewed on their sorting decisions. PQMethod software was used for a factor analysis across the pool of statements to identify shared viewpoints within the participant group. These were interpreted using qualitative interview data.

**Results:** Four dominant shared viewpoints were identified within the participant group. Thirteen participants aligned with a factor, named “The Leaders”, 12 with “The Idealists”, 14 with “The Globalists” and eight with “The Individualists”. “The Leaders” and “The Globalists” were informed about traceability of the food system and were supportive of a sustainability strategy involving local food. “The Idealists” were willing to make sacrifices for local food but had unrealistic ideals about localisation and “The Individualists” felt local food ensured better quality food. Both of these factors were uninformed about food system traceability and felt local food had better food safety and more ethical and sustainable production. All factors defined ‘local’ differently: “The Leaders” defined ‘local’ broadly as within New Zealand, while other factors defined ‘local’ more narrowly as a specific region of New Zealand, making them pessimistic about some aspects of localisation.

**Conclusion:** Definitions of ‘local’ were product-dependent and often include broader regional and national food systems. Definitions were flexible enough that all suppliers could work within them, but narrow enough to put pressure on foodservice staff and suppliers to identify further capacity of the local food system. The values of the ‘Local Food Movement’ were recommended for value-based food goal planning to drive localisation and foodservice sustainability.

## **Preface**

This research is an original independent work by the author, with joint academic supervision from Miranda Miroso and Heather Spence. An interest in sustainability and foodservice instigated this research. The researcher started this research as a member of Dunedin's Our Food Network, which is supportive of and supports localisation. The researcher put the utmost importance on representing stakeholder views, not her own.

The candidate was responsible for the following:

- Defining the research question.
- Submission of ethical approval.
- Selecting, communicating with and gaining site approval from the college.
- Recruitment of participants.
- Development of Q set.
- Conducting and transcribing Q sort interviews.
- Thematic analysis with PQMethod software.
- Interpretation of factors.
- Recommendations for the foodservice.
- Write-up of the thesis and primary responsibility of final content of the thesis

The research was completed from September until October 2013 and June until to November 2014. The researcher presented aspects of this thesis at the Nutrition Society of New Zealand Conference and Postgraduate and Early Careers Nutrition Research Conference, both held in August 2014.

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# Table of contents

Abstract.....	ii
Preface.....	iv
Acknowledgements.....	v
Table of contents.....	vi
List of tables.....	ix
List of figures.....	x
1 Introduction.....	1
2 Literature review .....	3
2.1 Localisation in the literature .....	3
2.1.1 Localisation in foodservice sector .....	3
2.1.2 Localisation in the university foodservice sector.....	4
2.1.3 Defining ‘local’ .....	5
2.1.4 Regional and global food systems .....	6
2.1.5 Marketing and labelling considerations and locality .....	7
2.1.6 Is the ‘Local Food Trap’ a trap? .....	7
2.2 Considerations of local food procurement in a foodservice setting.....	8
2.2.1 Economic considerations .....	8
2.2.2 Environmental considerations.....	10
2.2.3 Social considerations .....	10
2.2.4 Quality considerations .....	11
2.2.5 Policy considerations .....	12
2.3 Attitudes and measurement.....	13
2.3.1 Attitudes.....	13
2.3.2 Q Methodology as a research method for attitude measurement.....	13

2.3.3	Strengths of Q Methodology .....	14
2.3.4	Q Method versus R Method factor analysis .....	15
3	Objective statement .....	17
4	Subjects and methods .....	18
4.1	Study design .....	18
4.1.1	Introduction to the case study context .....	18
4.1.2	Development of the Q sort .....	19
4.1.3	The Q sort grid.....	22
4.1.4	Piloting .....	23
4.1.5	Participant recruitment .....	24
4.1.6	The Q sort interview .....	26
4.1.7	Post-sorting interviews .....	29
4.2	Explanation of data analysis .....	29
4.2.1	Use of PQMethod software .....	29
4.2.2	Correlation between Q sorts .....	30
4.2.3	Factor extraction: correlation of Q sorts loading onto factors.....	30
4.2.4	Use of Eigenvalues in factor extraction.....	31
4.2.5	Factor arrays .....	31
4.3	Factor interpretation .....	31
5	Results .....	33
5.1	Stakeholder interviews for developing the concourse.....	33
5.2	Total participant group sociodemographics .....	35
5.3	Factor overview .....	36
5.3.1	Factor loadings .....	36
5.3.2	Correlation between factors.....	38

5.3.3	Labelling the factors .....	38
5.3.4	Consensus between factors .....	38
5.3.5	Complete sociodemographic data by factor.....	41
5.4	Factor interpretations .....	44
5.4.1	Introduction to factor array .....	44
5.4.2	Summary interpretation of “The Leaders” .....	44
5.4.3	Full interpretation of “The Leaders” .....	46
5.4.4	Summary interpretation of “The Idealists” .....	51
5.4.5	Summary interpretation of “The Globalists” .....	53
5.4.6	Summary interpretation of “The Individualists” .....	55
5.5	Stakeholder definitions of ‘local’ .....	57
5.6	Summary of results .....	61
6	Discussion and conclusion .....	62
6.1	Dominant stakeholder discourses about foodservice localisation .....	62
6.2	Recommendations for the study foodservice .....	64
6.3	Study strengths and limitations .....	66
6.4	Implications for future research .....	68
6.5	Conclusion .....	68
7	Application of research to foodservice dietetic practice .....	70
8	References .....	71
9	Appendices .....	76



## List of tables

<b>Table 1:</b> Sociodemographics of the participant group .....	35
<b>Table 2:</b> Table showing manual flagging of factor loadings .....	36
<b>Table 3:</b> Table of consensus statements. ....	38
<b>Table 4:</b> Sociodemographics of participants in each factor.....	41
<b>Table 5:</b> Product-dependent definitions of ‘local’ .....	58

## List of figures

<b>Figure 1:</b> Map of the Otago region .....	6
<b>Figure 2:</b> Comparison of qualitative factor analysis methods.....	16
<b>Figure 3:</b> Interview focus for different stakeholder groups .....	20
<b>Figure 4:</b> Excerpt from table showing statements sorted by concourse theme.....	21
<b>Figure 5:</b> Q sort grid.....	23
<b>Figure 6:</b> Advertisement for participants .....	25
<b>Figure 7:</b> Written instructions for Q sort activity .....	28
<b>Figure 8:</b> Details of suppliers on a local, regional and national level.....	34
<b>Figure 9:</b> Factor Array, the best fit Q sort representing a single factor's collective viewpoint, for "The Leaders" .....	44
<b>Figure 10:</b> Factor Array, the best fit Q sort representing a single factor's collective viewpoint, for "The Idealists" .....	51
<b>Figure 11:</b> Factor Array, the best fit Q sort representing a single factor's collective viewpoint, for "The Globalists" .....	53
<b>Figure 12:</b> Factor Array, the best fit Q sort representing a single factor's collective viewpoint, for "The Individualists" .....	55
<b>Figure 13:</b> Map of New Zealand with 'local' definition boundaries .....	60
<b>Figure 14:</b> Summary of factor viewpoints .....	61
<b>Figure 15:</b> The Real Food Challenge guidelines .....	66

# **1 Introduction**

Food re-localisation is a growing and international trend. The concept of local food was born in Italy in 1986 with the “Slow Food Movement” aimed at preserving local food values and traditions<sup>1</sup>. The regional traditions and culture linked to a product are considered a mark of quality and so the European Union regulates this through protecting the designation of origin of their food and agricultural products. The ‘Local Food Movement’, has now become a social movement outside of Europe in which individuals choose local food in the belief that it is inherently better than global food<sup>2,3</sup>. Small farmers and groups of consumers concerned about local farming and supportive of sustainable and ethical practices are driving the ‘Local Food Movement’<sup>2</sup>. Most literature on local food now comes from the United States where farmers’ markets and other local food initiatives have fostered this movement<sup>4</sup>, coupled with increasing support from national government policy<sup>5,6,7</sup>.

Local food has, rightly or wrongly, been identified as a sustainable solution to food procurement<sup>8</sup>. Local food is seen as a means to ensure ethical and quality food production but often as an infeasible ideal for university foodservices<sup>3</sup>. The ‘Local Food Movement’ focuses on much broader concepts than just locality; it brings attention to a value-based food system that focuses on the environmental, social and ethical implications of a food system<sup>8</sup>. A local food system is a changeable and reactive entity, changing with local consumer demand, national policies and international trade. Foodservices both affect and are affected by local food systems. Some individuals identify as local food consumers<sup>9</sup> and find foodservices that show corporate responsibility through local food procurement more appealing<sup>10</sup>.

In the United States the farm to college school lunch programmes run in thousands of schools and universities and grants and resources through their national Know Your Farmer Know Your Food initiative facilitates programmes like this<sup>7</sup>. Arguably, universities should be leading the charge on local food; as academic institutions they are in a good position to educate their community about food and as food distributors they make up a large market sector for local food producers<sup>11</sup>.

Stakeholder perception of local food is flexible<sup>9</sup>. It is a contentious and identity-laden concept. Varied perceptions of 'local' have to be understood before assessing the implications of localisation of a foodservice. To the researchers knowledge there has been no comprehensive study of multi-stakeholder attitudes to local food in a university foodservice setting. Stakeholder-specific surveys or interviews have focused on staff and/or suppliers<sup>2,12,13</sup> and in doing so failed to identify opportunities for collaboration between different stakeholder groups. These methods are also based on predefined attitudes whereas the parameters in Q Method are stakeholder-derived<sup>14</sup>. Finally, Q Methodology aims to identify the range of stakeholder viewpoints in an organisation without generalising. Often unexpected themes emerge from focusing on the culture of one institution rather than individuals.

Staff, students and food suppliers all influence service delivery. Understanding attitudes of stakeholders is the first step to identifying initiatives that will be accepted by stakeholders and where stakeholders can collaborate for localisation<sup>15</sup>.

## **2 Literature review**

This chapter starts with a critical discussion of the literature around local food (2.1). It then discusses considerations of local food procurement in a foodservice setting (2.2), and concludes with a discussion on measurement of attitudes (2.3).

### **2.1 Localisation in the literature**

#### **2.1.1 Localisation in foodservice sector**

Food outlets are seeking local food to meet customer demand<sup>16,17</sup> and restaurants are leading the charge. Sourcing local meat, seafood and produce were predicted to be top trends in restaurants for 2013 and 2014 by over 1,800 international chefs<sup>18,19</sup>. Hyper-local sourcing through on-site vegetable gardens also featured because increasingly diners want to know more about their food choices<sup>17</sup>.

There are many initiatives in the foodservice sector that focus on local purchasing. Many hospital foodservices are now responsible for the broader environmental impacts of their organisations. In the international ‘Health Care Without Harm’ programme that integrates public health and sustainability<sup>20,21</sup>, over 250 institutions have implemented local purchasing initiatives. Bon Appétit, an international foodservice company and market leader in sustainability, pride themselves on sourcing 20% of their ingredients from small or artisan producers within a 200 km (150 mile) radius<sup>22</sup>. Multinational corporation Sodexo, a foodservices and facilities management company, has committed to spending one billion dollars to support the growth of small to medium sized enterprises including local food businesses by 2017<sup>23</sup>, including university foodservices.

### **2.1.2 Localisation in the university foodservice sector**

Three hundred international universities have signed the Talloires declaration acknowledging the role of universities in tackling environmental issues<sup>24</sup>. Sustainable initiatives are becoming popular on university campuses, including local eating.

The majority of university foodservice research on localisation comes out of the United States or Canada and concentrates on the logistics of local food purchasing, not stakeholder attitudes. Many review articles have critiqued universities local or sustainable projects, Trivette gives in depth understanding of the logistics of local food purchasing in southern New England universities<sup>25</sup>, while Bartlett compares the success and resilience of such university projects<sup>26</sup>. Park and Reynolds give an informative comparative analysis of local food initiatives at Canadian Universities<sup>27</sup>.

To the researchers knowledge there is no comprehensive multi-level stakeholder study assessing attitudes to local food in a university foodservice. Ardent et al detail the use of qualitative research in foodservice organisations and its challenges; ethnographic observatory studies, interviews and surveys are the standard methodologies used<sup>28</sup>. Key foodservice articles on local food include a survey of managers and suppliers by Chamberlin at Duke University<sup>2</sup>, a survey of foodservice management at Iowa University by Strohbehn and Gregoire<sup>12</sup> and a interview based study of university foodservice managers across New York which identifies best practices for university eat local initiatives by Macken<sup>13</sup>. Chamberlin used a different production survey for suppliers and foodservice managers and the review articles on the logistic of local food purchasing compare data from various sources. This review reveals that primary standardised research methodologies are underused in local food research in university

foodservices. Also, these studies do not include students as the consumer and so have failed to identify the culture of the university foodservice as a complete system of suppliers, producers and consumers.

### **2.1.3 Defining ‘local’**

The definition of ‘local’ depends on community size, customer perception, and the type of product as this determines the closest efficient production source<sup>29</sup>; there is no consensus on what is ‘local’. Local food usually implies a limited geographical distance of food transport. However, it can also refer to direct-to-consumer marketing arrangements that facilitate consumer connection with their food producers<sup>2,5</sup> or imply certain positive attributes consumers associate with local food. Producers define ‘local’ based on their distribution networks or fail to define it because they do not have a local market<sup>3</sup>.

In the United States ‘local’ can be defined as food transported within a state or country<sup>4,21</sup> or according to the 2008 Farm Act as a food produced within a 640 km (400 mile) radius of the point of sale or consumption<sup>4,5</sup>. By this definition, food almost anywhere in New Zealand could be considered ‘local’ by anyone living in New Zealand. The geographical definition of ‘local’ used in New Zealand’s food retail sector is food produced within a 200 km (150 mile) radius of the point of sale or consumption<sup>30</sup>. For Dunedin this defines ‘local’ as the lower half South Island, or anything south of Timaru and east of Haast (Figure 1). The Otago farmers’ market defines ‘local’ based on the geographical boundaries of Otago but this is flexible<sup>31</sup>. Vendors come from as far as Wanaka (277 km) in the Queenstown Lakes District, Clinton (109 km) in the Clutha District and Waimate (159 km) in the Waitaki District.

There are some vendors from South Canterbury who joined when numbers at the market were low, but these will be replaced with vendors from within Otago when they choose to leave the market.



**Figure 1:** Map of the Otago region<sup>32</sup>.

#### **2.1.4 Regional and global food systems**

Regional food systems have a broader geographical area than local food systems, one that includes more marketing and supply chain options for better economic returns<sup>33</sup>. These areas interconnect multiple local food boundaries. Regional food systems have been used as an alternative way of decreasing food miles for some college foodservices<sup>13</sup>. It is essential to define the acceptable boundaries of ‘local’ so the



foodservice has clear criteria to measure the baseline and progress of localisation<sup>34</sup>. To the consumer, regional food systems may not be as desirable or marketable as local food systems<sup>33</sup>, yet local food systems are unavoidably embedded in regional and global food system<sup>3,8,35</sup>. An emphasis on local can exclude large scale strategies to deal with food production challenges<sup>8</sup> so it is important to keep local in the context of larger food systems.

#### **2.1.5 Marketing and labelling considerations and locality**

Local food sales can be made directly from producer to consumer<sup>36</sup> but sales volumes are increased if instead it passes through a regional distributor or a foodservice in an intermediated marketing supply chain (see 2.2.1 for more details)<sup>11</sup>. Institutional foodservices can rely on suppliers to source locally if dealing with individual producers is too difficult<sup>13</sup>. Mainstream supply chains, on the other hand, rely on national and international networks to deliver products to consumers<sup>36</sup>.

Country of origin labelling of ingredients and food is voluntary in New Zealand, to avoid added food production costs and allow flexible marketing<sup>37,38</sup>. Packaged food needs to have supplier details displayed and they must have country of origin information on hand<sup>37</sup>. Not having country of origin information poses a problem for foodservices striving to understand locality in their food system.

#### **2.1.6 Is the ‘Local Food Trap’ a trap?**

Social or environmental outcomes are not necessarily improved by local food systems but are often associated with it. To assume local food is inherently more sustainable, ethical, or higher quality without due reason is referred to as the ‘Local Food Trap’<sup>8</sup>.

Stakeholders need to define what ‘local’ means to them; if stakeholders consistently place importance on the social and environmental reliability of local food then this can be used to determine the direction of localisation for that organisation<sup>3</sup>. Food system sustainability is when all activities related to the food system are socially just, accessible, support the development of local communities and economies and regenerate natural resources<sup>39,40</sup>. Activities include agricultural food production, food processing, distribution and consumption. Pursuing goals of the ‘Local Food Movement’ within local or broader food systems is worthwhile<sup>3</sup> as it encourages sustainable food systems where environmental health, social justice and economic viability are all considered<sup>41</sup>.

## **2.2 Considerations of local food procurement in a foodservice setting**

### **2.2.1 Economic considerations**

Local food systems are praised in the literature for increasing employment opportunities<sup>11</sup> and the proportion of profit for producers<sup>12</sup>. Consumers reliably pay more for locally sourced products if they believe these benefits<sup>2,29</sup>, or local food improves overall food quality<sup>27</sup>. This attitude is a reaction to globalisation of the food system where major corporations control the majority of the food industry<sup>42,43</sup>. Local food is perceived as being expensive but often worthwhile as “sustainability has become the first great marketing tool of the 21st century”<sup>44</sup>. Local food can enhance a foodservice’s reputation and give a competitive advantage through marketing and corporate responsibility<sup>10</sup>. Willingness to pay for local food is crucial as this provides capital for localisation<sup>27</sup>. If consumers are not willing to pay more for local cost

offsetting activities, such as waste reduction, increased fees or purchasing less kitchen equipment can make localisation cost neutral.

A recent report for the United States Department of Agriculture found economic development attributable to local food systems to be small, unmeasured or offset by public investments into their establishment<sup>5</sup>. However, many foodservices are large organisations, and any change to their practices will have downstream economic effects on their communities<sup>45</sup>. Institutional foodservices provide a new market<sup>2,3,7</sup> for small producers to expand<sup>11,23</sup>. Local food marketed through intermediated food systems (2.1.5) provides over three times the profit for the producer compared to food marketed through direct-to-consumer food systems<sup>36</sup>.

Critics argue local food is inequitable as they encourage small farms producing for an elite group<sup>46</sup>. Food is produced and processed efficiently by large global corporations<sup>2,44,2,47</sup>. While this drives down profit margins of food produced in developing countries<sup>48</sup>, it still improves the economy of these areas with more food insecurity than New Zealand<sup>49</sup>. New Zealand is reliant on global markets for economic growth of its domestic markets<sup>50</sup>. Generally it is desired to keep the processing of local ingredients onshore to retain the jobs and skill base<sup>5</sup>; however, it is increasingly going offshore due to cheap overseas labour<sup>44</sup>. Even local processing of non-local ingredients or products benefits the local economy<sup>37,47</sup> and foodservices often find these mixed local-global products attractive as they cost less<sup>13</sup>.

### **2.2.2 Environmental considerations**

The food sector is affected by climate change and is a large contributor to greenhouse gases<sup>17</sup>. Literature suggests that although local food can reduce greenhouse gas emissions from food miles, it does not necessarily ensure sustainable food systems<sup>51</sup>. Since the majority of greenhouse gas emissions come from production rather than transport, sustainably produced imported food can have less of an environmental impact than unsustainably produced local food<sup>43</sup>. Therefore, the carbon footprint of the entire lifecycle of a product should be considered. If locality takes priority over the total environment impact at a policy level it leads to unforeseen implications<sup>51</sup>. Research in university foodservices has found environmental impacts are not a key driver when buying local<sup>13,52</sup>, compared to price and nutrition quality.

### **2.2.3 Social considerations**

Consumers and producers are looking for a sustainable product in a broader sense than just food miles<sup>2</sup>. When identifying best practices for localisation Macken identified that foodservice management felt a stronger commitment to small businesses and their communities than they did to their carbon footprint<sup>13</sup>. As part of an educational institution, university foodservices have a responsibility to support and teach sustainability<sup>45</sup> while making their organisational values visible to students<sup>16,34</sup>. Customers are now seeking fair trade products for ethical working conditions, humanely raised animals for animal welfare and organic products for ecologically sound food<sup>17</sup>. Foodservices can be advocates for this as they shape what consumers want by the products or services they make available to them<sup>10</sup>. A Harvard University study illustrated that certain areas of sustainability were not understood by students and endeavoured to inform them for stakeholder engagement<sup>53</sup>. Consumers see chefs and

foodservice staff as experts in food procurement<sup>17</sup>, so they have the responsibility to make good decisions for their consumers<sup>54,55</sup>.

The goals of localisation, even if derived from the 'Local Food Trap' (2.1.6), are just as important to focus on as locality itself when understating attitudes to local food<sup>3,8</sup>. Universities can be market leaders in developing local, sustainable and social food systems<sup>27</sup> and give suppliers support and credit for doing the same.

Fostering student connections with food producers and suppliers has facilitated community connectedness for many college foodservices<sup>2,12,56</sup>. Foodservice staff gain morale and work satisfaction from relationships with local producers<sup>13,34</sup> and the creativity that comes with optimising local seasonal ingredients on a menu<sup>17,57</sup>. Ownership of local food gives a taste of the region that is unique and something for the foodservice to be proud of<sup>13</sup>. Foodservice is becoming less about productivity and more about creating a sense of community<sup>57</sup>.

#### **2.2.4 Quality considerations**

Consumers perceive a loss in identity in global food supply<sup>17</sup>. Traceability, the ability to see the environmental and social impacts, is thought to be easier in short supply chains<sup>13</sup>. New Zealand is well respected for food regulation<sup>58</sup>. The Ministry of Primary Industries assures imported food is safe through making pre-clearance arrangements with importers, having residue limit standards, microbiological standards and labelling provisions<sup>37</sup>. The regulatory action of Food Safety Australia New Zealand and the Ministry of Agriculture and Forestry Verification Services complements this<sup>58</sup>. This ensures traceability of both local and imported food. Customers perceive local food,

especially for perishable fruit and vegetables, to be fresher and taste better<sup>3,29</sup>, yet there is insufficient evidence to show that local food improves food security (having enough access to food that is affordable and nutritious) or nutrition<sup>5</sup>.

### **2.2.5 Policy considerations**

Forming local food policies establishes a framework to drive and monitor local food decisions<sup>13,34</sup>. Isolated projects have limited impact but can stimulate interest amongst resistant stakeholders and lead to formal, long-term commitments in purchasing policies. First producers and suppliers need to understand the expectations of a foodservice around local food before they can act on unified goals with the foodservice<sup>12</sup>. An operational definition of 'local' is required (2.1.3) and then strong communication channels between key stakeholders in food procurement so the definition can be known<sup>27</sup>. Identifying where contentious issues sit between stakeholders can direct stakeholder-specific education for those stakeholders who are resistant to collaboration<sup>15</sup>. Evidenced-based food system goals and their on-going monitoring are the desired outcome of localisation. The Real Food Challenge, used by 130 universities, has developed a set of standards for quantifying sustainable food<sup>59</sup>. They measure the percentage of local food, as well as measuring social and environmental attributes such as fair, ecologically sound and humane food. Quantifying these values and sharing that information with suppliers gives them the encouragement they need to seek ethical products.

Before making localisation policies, foodservices need to be aware of local food production capacity and expand it if necessary<sup>27,34</sup>. Use of intermediates, such as community groups, who are experts in connecting local food demand with local food

supply can make localisation policies achievable<sup>27</sup>. Identifying sustainability champions within a foodservice can also be useful<sup>22</sup>.

There is no one solution or strategy, but successful food policy initiatives require change through strong leadership<sup>27</sup>. Paternalistic policy making has a place when individuals do not want the responsibility of decision-making<sup>54</sup>. Policies must have the support of senior management as well as leaders at all stakeholder levels in the foodservice<sup>34</sup>. Chamberlin found that staff need to be fully committed to localisation otherwise other duties will overshadow it<sup>2</sup>.

## **2.3 Attitudes and measurement**

### **2.3.1 Attitudes**

“An attitude is a predisposition to behave in a particular way” due to underlying beliefs and feelings<sup>60</sup>. Attitudes determine how something is experienced, and how we feel about that experience. They are notoriously hard to measure.

### **2.3.2 Q Methodology as a research method for attitude measurement**

Q Methodology combines the strengths of qualitative and quantitative paradigms<sup>60-62</sup>. It aims to explore the variety of attitudes around a topic and identify dominant shared viewpoints: each viewpoint that emerges is called a factor<sup>63</sup>. It is a powerful method for determining attitudes around controversial topics where it is hard to measure people's opinions<sup>60,64,65</sup>. It has successfully been used for environmental<sup>66</sup>, political<sup>62,67</sup>, health<sup>61</sup> and sustainability issues<sup>64,68</sup>. Q Methodology is an effective methodology for informing policymaking and its implementation<sup>15,64</sup>.

First, the discourse around an issue is identified from the literature or stakeholder interviews with those who are experts on the topic<sup>69</sup>. A set of Q statements is chosen from the discourse to cover all opinions on a topic. Participants are given this set of statements (the Q set) and they place them in a forced distribution, from agree to disagree onto the Q sort Grid (4.1.3)<sup>60</sup>. People with a spectrum of clearly different opinions are asked to be participants and are all able to express their viewpoint if the Q set is balanced. Q sorts are analysed using PQMethod software<sup>70</sup>, which analyses data for correlation and generates the factors. The patterns of attitudes that are identified in the factors can then be interpreted.

Attitudes are related, but often in juxtaposition, to behaviour<sup>60</sup>. Attitudes can be weak, temporary or context dependent. Q Method measures attitudes within a given context of statements in the Q set and does not pretend to generalise outside of this.

### **2.3.3 Strengths of Q Methodology**

When sorting statements, the participant applies their own meaning to them and a deeper level of reasoning is achieved around the research question<sup>60</sup>. By the post-sort interview, participants are able to verbalise this, giving rich qualitative data to support the factor analysis. For participants who have not iterated their opinion towards local food before, this exploratory method helps everyone come to give an opinion.

Q Methodology gives holistic data about heterogeneous viewpoints<sup>71</sup>. Each statement is considered in the context of the Q set statements, and even when two factors rank a statement the same, the context in which they rank it will be different. The subjective meaning a stakeholder takes from a given context is objectified through the Q sort<sup>64</sup>.



The researcher then interprets these viewpoints with a holistic perspective, noting shared viewpoints and the relationship between those. Often unexpected themes emerge from focusing on the culture of one institution rather than individuals<sup>14</sup>. Unique viewpoints of only a few stakeholders can still be extracted from the correlation matrix<sup>72</sup> thus preserving unique viewpoints and preventing false generalisations<sup>73</sup>.

#### **2.3.4 Q Method versus R Method factor analysis**

Traditionally, attitudes are measured using R Method factor analysis. Q Method is R Method factor analysis turned on its side<sup>66</sup>. This means the advantages of Q Method are often the disadvantages of R Method and vice versa (Figure 2).

Q Method	R Method
<b>Similarities</b> In-depth understanding of controversial topics <sup>66</sup> . Seeks entire range of attitudes on a given topic. Looks at correlation through factor analysis.	
<b>Differences</b>	
Measurement is focused on the context of Q set and does not aim to generalise outside of this <sup>66</sup> .	Measurement is independent of context and generalisable to a larger population <sup>66</sup> .
Only a small (well-selected) sample required to identify viewpoints <sup>66,73</sup> .	Require large sample size to reach statistical significance <sup>74</sup> .
Preserves unique viewpoints correcting false generalisations <sup>72,73</sup> .	Aggregate data risks false generalisations <sup>73</sup> .
Abductive reasoning for understanding viewpoints and the differences between individuals <sup>15</sup> .	Deductive reasoning to test a hypothesis on the prevalence of viewpoints <sup>15</sup> .
Research from stakeholder frame of reference <sup>62</sup> .	Research from researcher frame of reference <sup>62</sup> .
Research from a universe of potential statements on a topic including attitudes that cannot be predefined <sup>14</sup> .	Research generated from researcher categories of predefined attitudes, which can preclude new attitudes arising <sup>14</sup> .
Hard for stakeholders to predict researcher desired outcome preventing bias <sup>60</sup> .	Easy for stakeholders to predict researcher desired outcome causing bias <sup>60</sup> .
Measures correlations of stakeholder attitudes across a set of statements <sup>66</sup> .	Measures correlations of stakeholder attitudes across stakeholder traits or sub groups <sup>72,73</sup> .
Multi-stakeholder groups can use the same Q set for standardised comparison between them <sup>69</sup> .	Stakeholder surveys, interviews or focus groups are often stakeholder-specific, precluding standardised comparison.

**Figure 2:** Comparison of qualitative factor analysis methods: Q Method and R Method

Q Methodology is a good choice when wanting to explore attitudes of stakeholders and the relationships between them within a narrow focus, such as the culture of a specific organisation<sup>69</sup>.

### **3 Objective statement**

This research aims to fill two predominant research gaps (2.1.2). Firstly, the majority of university foodservice research on localisation concentrates on the logistics of local food purchasing, not stakeholder attitudes. Secondly, there is no comprehensive multi-level stakeholder study assessing attitudes to local food in a university foodservice. Stakeholder opinions must be considered for successful change in a foodservice<sup>6</sup>, therefore, researchers need to work to understand attitudes and use them to inform interventions and policy changes that are culturally acceptable.

The objectives of this thesis are:

1. To identify dominant stakeholder discourses about local food using Q Methodology, across food suppliers, college management, foodservice management and students.
2. To use stakeholder discourses to:
  - a) Define what 'local' means to stakeholders in this foodservice setting.
  - b) Make socially acceptable recommendations for foodservice localisation, based on stakeholder attitudes to local food.
  - c) Make localisation recommendations that fulfil the professional responsibility of dietitians and foodservices to drive sustainable food systems.

## **4 Subjects and methods**

This chapter discusses Q Method, a novel research methodology used in this study. It outlines the study design (4.1), data analysis (4.2) and factor interpretation (4.3). Definitions of common Q Method terminology are in the Appendices (Appendix 1).

### **4.1 Study design**

#### **4.1.1 Introduction to the case study context**

This study was completed in a university residential college (the researcher will refer to it as ‘the college’ but stakeholders often refer to it as ‘the hall’), in Dunedin, New Zealand, and is accommodation for 187 first year university students. The college’s foodservice provides breakfast, lunch and dinner for residents. Toast and spreads are available outside mealtimes. A seven-week winter menu is repeated twice and an eight-week summer menu three times. At main meals there are three meat-based and one vegetarian main choice, two choices of carbohydrates and three of vegetables. The foodservice manager at the college is sustainably minded and the college has attempted composting and worm farm initiatives in the past. The college foodservice is starting to embark on, as opposed to already engaged in, the process of foodservice localisation. This case study is timely as the ‘Local Food Movement’ is currently gaining momentum in Dunedin. There is citywide enthusiasm seen at the level of research, local government and local community action. The researcher received ethics approval from the University of Otago. A proposal providing background to the research plan and describing the intended research methodology was submitted to the college’s foodservice manager and warden six months before the research was to begin. Both parties accepted the proposal.

#### **4.1.2 Development of the Q sort**

Statements were initially pulled from the concourse around local food in both academic literature and popular media. Literature and media concentrated on universities in the United States and Canada. Participation in Dunedin's Our Food Network (a local community group which aims to evolve and facilitate local food supply networks) meetings orientated this concourse to the Dunedin situation.

A small number of stakeholders (n=9) participated in one-on-one semi-structured interviews (Appendix II and III), to elicit opinion statements around local food. These stakeholders did not have to be associated with the college. To check a wide range of viewpoints, this was done with those who were supportive of, against and indifferent to local food. All those approached took part in the interviews. We collected primary data at this stage to generate statements additional to those found in the literature. The researcher transcribed answers to the interview questions during interviews, as direct quotations were not required for generating statements. This was additional to the usual requirements of Q Methodology but needed to capture the diversity of attitudes in the specific organisation where the study was being conducted<sup>69</sup>. Stakeholders with different relationships to the college were selected to ensure certain viewpoints were captured (4.1.5): the foodservice manager, the warden, three suppliers, two university foodservice academics and three students. All stakeholder groups were asked how they define local food, what they perceived as the college's incentives and barriers to buying local food and how receptive they thought the college would be to localisation. The interview focus for different stakeholder groups is detailed below (Figure 3). Stakeholders were interviewed on site at the college with the exception of suppliers who were interviewed over the phone.

<b>Stakeholder</b>	<b>Focus of Interview</b>
<b>Foodservice Manager</b>	General information about the foodservice and its menu. Information was sought on the college's suppliers and whether they could easily add suppliers to the approved supplier list.
<b>Warden</b>	Goals for the foodservice, the college's image and how localising the foodservice might fit into this.
<b>Suppliers</b>	Geographical origin of their products and their attitudes to local food in this context.
<b>University Academics</b>	Dunedin food system and how the college works within this.
<b>Students</b>	Perceptions of local food and the foodservice and any willingness to be involved in localising the food service.

**Figure 3:** Interview focus for different stakeholder groups.

Interviews were stopped when it was decided that data saturation had been reached, i.e. when no new viewpoints about local food emerged with each additional interviewee<sup>74</sup>.

A pool of 163 statements was generated. Some statements represented local food attitudes while others were issues stakeholders consistently linked with local food. The literature, stakeholder interviews and piloting revealed issues (such as local waste redistribution and animal welfare) linked to locality. These issues were also included in the Q set to explore other stakeholders' understanding of these links.

The statements were printed onto cards and manually sorted into six themes: policy, social responsibility, New Zealand identity, economic, environment, and quality. Any obvious overlapping concepts were removed within each theme. The statements were then put in table format on Microsoft Excel for Mac<sup>75</sup> under those six themes (Appendix IV, excerpt in Figure 4).

<b>Social Responsibility</b>	<b>+ve</b>	<b>neutral</b>	<b>-ve</b>
<b>Choice</b>	The college should buy more local food if it wants to without having to consult students	<b>The college should buy more local food if the majority of students agree to this</b>	The college should buy more local food. I don't care if they do or don't
<b>Ethics</b>	The college should meet its social responsibility to source local food	The college should not change it's purchasing based on ethical values	<b>The college should ignore the self-righteous notion that local food is best</b>
<b>Trend setting</b>	<b>The college should become a market leader and show foodservices can support the 'Local Food Movement'</b>		The college does not need to source local food as its competitors are not yet doing this

**Figure 4:** Excerpt from table showing statements sorted by concourse theme (e.g. social responsibility). Rows are labelled with a topic title and columns are labelled according to whether the statements are positive, neutral or negative in orientation towards local food. Statements that were selected for the final Q set are in bold.

Columns were used to sort statements into those that were positive, neutral and negative towards local food. These columns were used to achieve a balance of opinions across the final Q set. Balance is important so that all participants, no matter what they think about the topic, feel they can express their opinion through the statements<sup>68,69</sup>. Each row of statements was named by its theme. Those that contributed an original contribution to the Q set were selected<sup>69</sup>, further refining the list to 60 statements.

A standard number for a Q set sample is 40-80 statements<sup>69</sup>. A Q Methodology expert at the University of Otago was consulted about the nature and size of the sample. The

foodservice manager was consulted to check the feasibility and usefulness of implementing initiatives suggested by the statements. This also minimised any concern about how the foodservice was being portrayed by the study. There was concern that students and staff would get reader fatigue so the sample was set at 42 statements. This made the Q sort activity less taxing and was appropriate for a narrow topic coverage<sup>69</sup>.

The final 42 statements included five to seven statements on each of the six themes, making sure there were approximately equal numbers of positive, neutral and negative statements across the final Q set<sup>68</sup>. It was not possible to have equal numbers within each theme, as some themes were inherently negative or positive towards local food. The Q Methodology expert did a final check of the Q set for balance.

#### **4.1.3 The Q sort grid**

The Q sort grid (Figure 5) was a forced distribution, as is standard in this methodology, with 42 positions for the statements. A near normal symmetrical distribution was designed for the 42 statements; statistically this is just as good as a normal distribution<sup>73</sup>. The slope of a Q sort grid can be changed to suit the participant group. A flat slope is good for participants who are experts on a topic, yet a steep slope is recommended for those who are less informed so they can place more statements near the middle of the grid. Since this study involved a range of stakeholders with varying levels of knowledge and interest in local food, the researcher chose a middle point between steep and flat. Columns of the grid were labelled from -5, most disagree, and to +5 most agree.





help to do this. To check a wide range of viewpoints, piloting was done with those who were supportive of, against and indifferent to local food. These individuals had no or little relationship to the college and those who piloted the study were not included as participants. The researcher's interviewing technique was refined through the piloting process. The literature suggested it takes 45 to 60 minutes to sort a Q set of the size used in piloting<sup>66</sup>. As individuals were decisive and used to having to employ fast reasoning, pilot tests were done in less than half an hour, an acceptable participant time burden for stakeholders.

Q Methodology is an effective way to look at topical and controversial issues (2.3.2). Again, topics indirectly linked to local, especially those hot on social media such as animal welfare, caught participant interest. A few were included in the Q set but care was taken not to let this shift the focus of the concourse. Other foodservice research on local food has included the concept of organic in relation to local food<sup>77</sup>. We used a statement about preservatives to represent this sentiment without crossing over with other ethical practices such as supporting animal welfare, sustainability and small scale farming that can cross-over with the notion of organic.

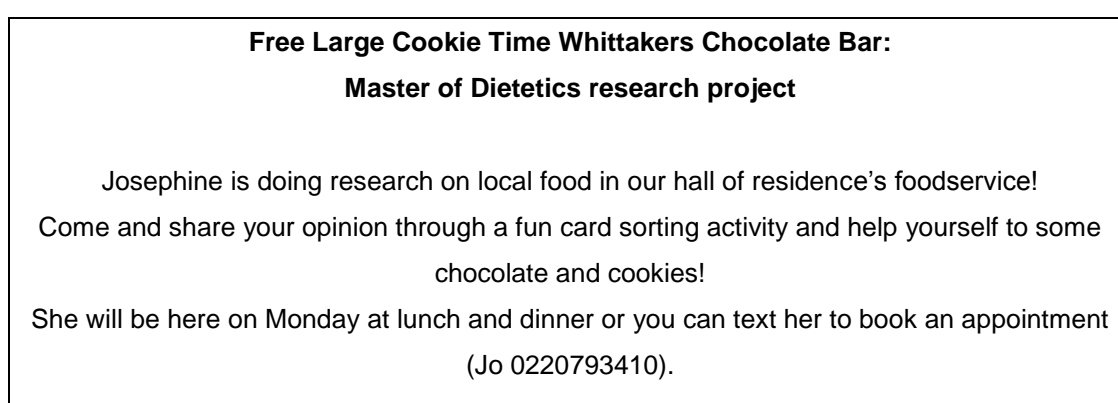
#### **4.1.5 Participant recruitment**

There were 47 participants in this study. Participants were suppliers, foodservice staff, management staff, residential assistants and students as they each had different relationships to the college. It is normal for participant recruitment to be strategic in Q Method studies. Participants are selected because they are thought to have a pivotal point of view (one that differs from other participants)<sup>73</sup>. In this study, strategic sampling was used to engage with all stakeholders who had a viewpoint worth

considering in relation to localisation of the foodservice. A small number of well-chosen participants is adequate to reveal factors<sup>66</sup>. A large number of participants do not increase statistical significance in Q Methodology<sup>73</sup>.

A list of suppliers was obtained from the foodservice manager. Suppliers were contacted by telephone and asked to participate in the study. Q sort interviews were then completed at the suppliers' places of work at a convenient time. All foodservice staff were asked to participate by the foodservice manager on the researcher's behalf. The top three members of college management were approached in person, as the researcher knew them through the ethics approval process. Q sort interviews for staff and students were in a tutorial room on site at the college and within working hours.

Students were recruited on site at the college. An advertisement was posted on the college's Facebook page to inform students of the study (Figure 6).



**Figure 6:** Advertisement for participants posted on the college's Facebook page for residents.

Those who expressed interest in participating scheduled a 30-minute interview with the researcher. Students were given a cookie and chocolate bar as reimbursement for their time. Residential assistants were referred to as students because they were recruited in

the same way, live on site with the students and, like students, rely on the foodservice for all their meals. Their role was noted in case they proved to be more concerned with the college's local food agenda than first year students.

All participants were given an information form and signed a consent form before partaking in the study (Appendix V and VI). Student interviews were initiated first as there was a large number of potential participants and they were flexible with interview times. College staff and suppliers were interviewed when interviews with students slowed. Interviews were stopped at n=47 when four factors, a desired number for comparison, emerged (4.2).

#### **4.1.6 The Q sort interview**

Relevant sociodemographic data and personal information that might influence attitudes were collected through a written 8-item pre-sorting questionnaire, one for students and one for staff and suppliers (Appendix VII and VIII). The researcher was then able to draw crude conclusions about the relationship between loading onto a factor and other characteristics of those stakeholders<sup>66,73</sup>, adding richness to the data.

Q Method does not concentrate on comparing participant sub groups like R Method studies (2.3.4) as stakeholder groups do not necessarily influence factor loading within a narrow focus of one organisation<sup>69</sup>. Making assumptions about participants a priori goes against the nature of exploratory research methods and risks researcher bias<sup>60</sup>. Thus identical Q sets and study procedures were used for each group. Statements were designed so that all stakeholder groups could answer them. For statements that concentrated on students' role in the foodservice, staff and suppliers naturally sorted

the statement based on their expectation of students' perspectives. This gave valuable information on how the consumer was perceived and hence why they received the service they do.

The only non-standardised part of the study was the use of two different pre-sorting questionnaires. All participants were asked for their gender, age and ethnicity. Participants were primarily chosen based on their different roles in relation to the college. All staff and suppliers were asked to participate and a group of students was recruited. The age of participants was often dependent on their role in relation to the college. Most participants were New Zealand European (n=38). Participants could be balanced for gender (females n=22, males n=25), but not age or ethnicity. Students were asked for their area of study in case this influenced attitudes and what values were driving their career or life plans for the future. Pilot testing revealed that open-ended questioning about values was hard to answer so a literature search was done to select a list of life course values people commonly identify with. The list was presented to students to help them answer this question (Appendix IX). Suppliers and staff were asked what values were driving their purchasing decisions. They did not require any further direction to answer this question.

Pre-sorting scales were also used to measure participant characteristics<sup>73</sup>. Participants were asked to rate, on a scale of 1 to 10, how closely they identified with the Otago region and how closely they identified with sustainable living. For suppliers and staff of the college, there were two separate scales, one for work and one for home, so that an average of the two could be calculated. Students were also asked where they were born, where they grew up, where they identify as home and, if not born in New Zealand,

what age they moved to New Zealand. It was predicted that most students, who had moved to Dunedin in February, would not identify with Dunedin as an adult might.

The Q sort activity was conducted in person, not online, so that the researcher was on site to interact with participants throughout the sorting activity<sup>73</sup>. Written instructions were included on the grid (Figure 7).

<p><b>Research Question: What might be done to localise the hall's foodservice?</b></p> <p>Please sort the statements based on the extent to which you agree or disagree with them onto the grid.</p> <p>Place statements you agree with to the right (positive)</p> <p>Place statements you disagree with to the left (negative).</p> <p>Statements which you don't feel strongly about can be placed in the centre.</p>
---

**Figure 7:** Written instructions for Q sort activity printed on top of the Q sort grid

The instructions were repeated verbally for added clarification. First, the participants were asked to sort the cards into three piles: those statements they felt they agreed with, disagreed with and were unsure or neutral about<sup>76</sup>. The participant was told to ask about any statements they found confusing, so the concept could be explained to avoid random placement of the card. Secondly, participants were asked to rank the cards from strongly agree (5) to strongly disagree (-5) onto the Q sort grid. The researcher guided them through this process, asking them to first put the negative pile onto the grid at the disagree end and the positive pile onto the grid at the agreed end. Once positive and negative statements had been moved onto the grid, the researcher asked them to do the same for the remaining neutral statements. If the participant voiced concern that they had too many statements to fit on one side of the grid the researcher reassured them that

neutral statements do not need to sit in the zero column as it is the ranking of the statements relative to each other that is important<sup>73</sup>.

#### **4.1.7 Post-sorting interviews**

The researcher then interviewed participants on their placement of the cards, focusing on salient items at the extremes of the grid, items they expressed interest in or items that seemed out of place. The post-sorting interview was used to check participants had interpreted statements correctly. If a statement looked out of place the researcher asked about that sorting decision, and if the statement had been misinterpreted explained it and the participant was given the opportunity to move in response to the statement's intended meaning. Each participant was asked to give his or her definition of local food, specifying a geographical area, as a part of the interview. The researcher closed interviews by asking the participant if there was any part of their opinion around local food that they felt they could not express through the cards. Interviews ranged from ten minutes to two hours, depending on how much information participants were willing to offer. The interviews were recorded and transcribed by the interviewer.

## **4.2 Explanation of data analysis**

### **4.2.1 Use of PQMethod software**

The Q sorts were analysed using free downloaded software called PQMethod for Mac<sup>70</sup> designed for Q Methodology studies. It is a DOS-based platform to enter data for correlation and factor analysis. The PQMethod online manual was followed to run three data analyses<sup>78</sup>. Forty-two statements were manually entered into TextEdit<sup>79</sup>, and then uploaded onto the software. Each statement was given a numerical value (-5 to +5) for

its position on the grid. Each participant Q sort was manually entered into the software and given a label. For students, this was based on his or her demographic data. For suppliers or employees of the college, this was based on their role in relation to the college. All stakeholder groups were combined in the same analysis to look at the shared viewpoints between, rather than within, groups (4.1.6)<sup>80</sup>.

#### **4.2.2 Correlation between Q sorts**

The software was used to produce a correlation matrix followed by an inverted factor analysis. This determines shared dominant viewpoints, known as factors, in the participant Q sorts. The software calculated a weighted average to show the correlation of participant Q sorts with each factor. The software converted weighted scores into z-scores (how a factor placed statements compared to other factors) for cross factor examination, revealing sorting similarities and differences between factors<sup>81</sup>.

#### **4.2.3 Factor extraction: correlation of Q sorts loading onto factors**

Initially seven factors were extracted from the correlation matrix, one for every six Q sorts<sup>76</sup>. The researcher then did a manual varimax rotation to choose the best factor solution (5.3.1). Q sorts that were significantly correlated with a factor were flagged, except those that were confounded (loaded onto more than one factor). Significant factors have two or more non-confounded significant loadings. An analysis was run with a significance level of 0.40 to 2dp. Four factors were extracted, representing four groups of people who sorted the statements in a similar way<sup>71</sup>.



#### **4.2.4 Use of Eigenvalues in factor extraction**

Eigenvalues (reported to 1 decimal place) indicate the “statistical strength and explanatory power” of a factor<sup>82</sup>. Those with a value above 1.0 are taken to be strong but in large datasets this can result in meaningless factors being extracted. With 46 participants six significant factors emerged, three of the factors had Eigenvalues between 1.5-1.7 and 10 loadings were confounded. With an additional participant (n=47) four factors emerged with stronger Eigenvalues (>1.9) and confounded loadings reduced to seven. The Eigenvalues were weak (<1.4) for the two factors that dropped out. Also, four factors were considered to be more practical for interpretation and making recommendations to the college so it was decided that data saturation was reached. The Eigenvalue cut-off was moved to 1.5 to accommodate this dataset.

#### **4.2.5 Factor arrays**

A factor array is a single Q sort that represents the collective viewpoint of a factor. The Q sorts of participants that share a particular viewpoint are merged, using the Z-scores, to draw the single exemplifying Q sort or factor array<sup>72,81</sup>.

### **4.3 Factor interpretation**

A factor array was drawn for the four factors. A crib sheet, a standardised way of ordering statements based on how they are sorted by a factor, was used to help interpret the factor arrays in a systematic way (Appendix X to XIII). The crib sheet detailed the statements each factor ranked at +5, +4, -4 and -5 and distinguishing statements (statements the factor ranked differently to other factors)<sup>76</sup>. This wholistic approach draws the researcher’s attention to the importance and position of certain statements,

not just those at the extremes. Interview transcripts of those participants who loaded onto a given factor were used to add meaning to the factor arrays, thus drawing on the strengths of both qualitative and quantitative research paradigms<sup>60-62</sup>. Participant quotes added emotion to the data and an understanding of the subtle differences in how participants load onto the factors. Anytime a student used the college's name this was substituted for "the college" for confidentiality. Each factor was given a name based on the most salient parts of its viewpoint and idiosyncrasies when compared to the other factors.

## 5 Results

This chapter details stakeholder interviews for developing the concourse (5.1), participant group sociodemographics (5.2) and the results of factor analysis: factor overview (5.3) and factor interpretation (5.4). It then provides stakeholder definitions of local (5.5) and a summary of results (5.6). A factor array is drawn for each factor (Figure 7-10) and interpreted with the help of the qualitative data collected in the pre-sorting questionnaire and the post-sorting interview. This chapter should be read in conjunction with the table of rank order values for each statement (Appendix XIV). Participants' quotations are in quotation marks. When referring to a particular statement, the statement number is given in brackets, followed by its rank order value, that is its column number in the factor array. For distinguishing statements, those statements the factor ranked significantly differently from other factors, asterisks follow the rank order value. One asterix (\*) is used to mark those significant at the  $p < 0.05$  level and two asterix (\*\*) is used to mark those significant at the  $p < 0.01$  level.

### 5.1 Stakeholder interviews for developing the concourse

The foodservice uses over 30 different suppliers, some they have been loyal to for 13 years<sup>83</sup>. Using small suppliers is no barrier for them as it can be for other university foodservices<sup>13</sup>. They spend up to \$1,000 to \$2,000 a week with main suppliers.

The Fruit and Vegetable Supplier estimates 80% of fruit and vegetables are local to the South Island in summer and 60% in winter. Their supplier believes it is possible to make this 90% across seasons with a local food clause in the supplier contract, but the variety of produce would be limited in winter<sup>84</sup>. Dry, canned and frozen goods, on the

other hand, are usually imported. There are local level, regional level and national level suppliers as well as suppliers who do not clearly sit in these strict categories. They are described here (Figure 8).

#### **Local Level Supplier**

- **Fruit and Vegetable Supplier:** Locally owned business that purchases from Dunedin's two vegetable markets, Turners and Growers, and Market Gardener Limited. These have both New Zealand and imported produce but they purchase more local products than imported.

#### **Regional Level Supplier**

- **Meat Supplier:** Dunedin processor sources meat from the lower half of the South Island, south of the Canterbury region.
- **Dairy Supplier:** Sourced indirectly from Fonterra. The supplier's milk plant is in Christchurch, but other dairy products and preserved meats can be sourced from the North Island and sometimes Australia. Dairy is purchased through the University Union, in a cooperative purchasing agreement with the other twelve colleges.

#### **National Level Supplier**

- **Multi-product Suppliers:** Source products both nationally and internationally and distribute these products throughout their branches in New Zealand, including one branch in Dunedin. These suppliers stock all food products, from fresh to dry and frozen.

#### **Other**

- **Dry Goods Supplier:** Locally owned business that import dry goods from overseas, but has a Dunedin distribution network only.
- **Poultry Supplier:** Locally owned business that purchase New Zealand poultry and process it in Dunedin.

**Figure 8:** Details of suppliers on a local, regional and national level. Those that do not fit into strict categories are listed under "other".

## 5.2 Total participant group sociodemographics

A total number of 47 participants performed the Q sort activity (Table 1); 25 (53%) were male and 22 (47%) were female. Most of the participant group, 30 participants (64%), were students or residential assistants living at the college. The remaining participants were either college employees (19%) or had a business affiliation as a food supplier to the college (17%). The majority of the participant group were aged 18-25 years (64%) and were New Zealand European (81%).

**Table 1:** Sociodemographics of the participant group (n=47) from pre-sorting questionnaire: gender, age (years), ethnicity and relationship to the college.

	Number of participants (No.)	Percentage (%)
<b>Gender</b>		
Male	25	53
Female	22	47
<b>Age</b>		
18-25 years	30	64
25-40 years	4	9
41 years +	13	28
<b>Ethnicity</b>		
New Zealand European	38	81
Other	9	19
<b>Relationship to the college</b>		
Student	30	64
Staff	9	19
Food supplier	8	17

## 5.3 Factor overview

### 5.3.1 Factor loadings

A factor represents a group of stakeholders with statistically similar Q sorts i.e. a group of stakeholders that share the same viewpoint. Four factors were identified through the manual flagging process (4.2.3). Thirty-three of the participant group loaded significantly onto factors, five did not load significantly onto factors and eight were confounded (Table 2). To identify individual participants students were labelled by their gender and study discipline, while staff and suppliers were labelled according to their role in relation to the college.

**Table 2:** Table showing manual flagging of factor loadings. Those statements that loaded onto a factor at the significance level of 0.40 to two decimal places were flagged (marked with a X). Significant loadings are displayed bold. Confounded loadings are italicised.

	Factor 1	Factor 2	Factor 3	Factor 4
Female Psychology and Marketing	0.0645	0.1663	-0.0081	<b>0.7378X</b>
Female Teaching	<i>0.5976X</i>	<i>0.5703X</i>	-0.0253	-0.0640
Female Applied Science	<i>0.6491X</i>	<i>0.4218X</i>	0.0366	0.2180
Male Residential Assistant Physiotherapy	0.3924	0.0988	<b>0.4037X</b>	0.2264
Female Law and Maori	0.2640	<b>0.5712X</b>	0.1344	0.3816
Female Law and Politics	<i>0.5545X</i>	<i>0.5193X</i>	0.0454	0.1805
Female Residential Assistant Physical Education	<b>0.8054X</b>	0.2051	0.0636	-0.0003
Male Law 1	<b>0.7588X</b>	0.0270	0.1763	0.2287
Female Surveying	0.3646	<b>0.6392X</b>	0.1710	0.2130
Male Health Science 1	-0.1375	0.0242	0.0550	0.1409
Female Residential Assistant Physiotherapy	0.2207	<i>0.4727X</i>	0.1331	<i>0.5014X</i>
Female Commerce 1	<b>0.5542X</b>	-0.0421	0.1722	0.0125
Female Commerce 2	0.3809	0.2732	<b>0.6303X</b>	0.2366
Male Health Science 2	0.2744	-0.0233	0.3839	0.1979
Female Health Science	0.1735	0.1435	<b>0.4231X</b>	0.2802
Male Teaching	<b>0.4424X</b>	0.0711	0.1432	0.3644

Male Residential Assistant Physical	0.2277	-0.2618	<b>0.4401X</b>	-0.1032
Education and Commerce				
Female Linguistics	0.2469	-0.0313	<b>0.6949X</b>	0.1211
Male Law 2	-0.1139	0.1527	<i>0.5755X</i>	<i>0.5119X</i>
Female Psychology and Law	<i>0.5552X</i>	<i>0.6935X</i>	0.0525	0.0194
Female Genetics 1	0.3553	0.1680	0.0567	<b>0.5045X</b>
Female Commerce 3	0.3389	-0.0064	0.1527	<b>0.6308X</b>
Female Physiology	0.3134	0.0954	<b>0.4070X</b>	0.2200
Male Law and Geology	0.2564	0.1953	0.3948	0.2725
Male Surveying	<b>0.5861X</b>	0.0835	0.2338	0.3051
Male Law 3	0.2536	-0.0035	<b>0.5166X</b>	0.0412
Female Law and Arts	0.1738	<b>0.5303X</b>	0.2011	0.1128
Female Genetics 2	0.3081	0.1502	0.1173	<b>0.7853X</b>
Male Management 1	0.0517	0.3049	<b>0.4439X</b>	-0.0295
Female Management	0.0854	0.3353	0.2903	0.3818
Male Lunch Chef	<i>0.4794X</i>	<i>0.4334X</i>	<i>0.4112X</i>	0.1806
Male Kitchen Store-man	<b>0.5535X</b>	0.3122	0.3039	0.1199
Male Chef	<b>0.5387X</b>	0.3478	0.2880	0.2385
Female Chef	<b>0.6242X</b>	0.1215	0.3070	0.3061
Foodservice Manager	<i>0.5170X</i>	0.2381	<i>0.4319X</i>	-0.0997
Male Management 2	<b>0.6595X</b>	0.2344	0.1144	0.1133
Male Servery Employee	0.1576	<b>0.8583X</b>	0.0492	0.1810
Meat Supplier	<b>0.6752X</b>	0.3079	0.0679	0.1552
Dairy Supplier	-0.0558	<b>-0.4601X</b>	0.2264	-0.1931
National Supplier 1	-0.1059	0.2490	<b>0.5718X</b>	0.3668
Poultry Supplier	0.3462	0.2838	-0.0681	0.3889
Dry Goods Supplier	<b>0.6482X</b>	-0.0233	0.1576	-0.0079
National Supplier 2	0.2644	-0.0443	<b>0.4217X</b>	0.1623
Male Psychology	0.1530	0.0219	<b>0.4781X</b>	-0.2528
Male Ecology	<b>0.4894X</b>	0.3390	0.3617	-0.2528
Fruit and Vegetable Supplier	<b>0.6529X</b>	0.2165	0.1941	0.2589
National Supplier 3	0.0985	-0.3417	0.1013	0.1389
<b>Eigenvalues</b>	<b>15.17</b>	<b>3.14</b>	<b>2.81</b>	<b>1.94</b>
<b>Variance (%)</b>	<b>18</b>	<b>11</b>	<b>10</b>	<b>9</b>
<b>Total Variance (%)</b>	<b>48</b>			

### 5.3.2 Correlation between factors

Correlations between factors varied from 0.45 to 0.74. All factors are positively correlated. This means that factors will share aspects of the same opinion and the researcher should explore the more subtle differences between factors<sup>81</sup>. Factors 1 and 2 are highly positively correlated. Factor 2 was a bipolar factor, one participant was negatively aligned with this factor's discourse but the other participants were all positively aligned. Factors 2 and 3 were least strongly correlated.

### 5.3.3 Labelling the factors

The factors were named: "The Leaders", "The Idealists", "The Globalists" and "The Individualists", respectively. Together they account for 48% of the variance in the Q-sorts. Anything above 40% is considered a sound solution<sup>82</sup>.

### 5.3.4 Consensus between factors

As all factors were positively correlated, all groups agreed with localising the foodservice. There was general consensus on a number of statements (Table 3).

**Table 3:** Table of consensus statements, those statements ranked similarly across all factors. The statement number, the statement and the rank order values for each factor are shown. All were non-significant at  $P > 0.01$ .

No.	Statement	F1	F2	F3	F4
22	The college should buy cheap imported food to get more bang for its buck	-5	-5	-5	-5
38	White fish from Vietnam, white fish from Bluff, it's all the same.	-5	-5	-5	-5
32	The college should give its leftover food to a local food redistribution service.	5	5	5	5
9	The college should buy more local food if the majority of students agree to this	3	1	2	2



Across all factors, participants agreed that the college should not buy cheap imported foods just because they are cheap (22; -5) and the quality of cheap imported fish does not match New Zealand fish (38; -5). Participants, such as the Female Residential Assistant Law and Politics Student, verbalised widespread desire for “a balance of cost and quality”. The Female Surveying Student explained: “it’s important the hall is looking after us [the students and residential assistants] and keeping us healthy as the hall is our [the students’] home”.

It was strongly agreed to give leftover food to a local food redistribution organisation (32; 5). When asked about sustainability initiatives, the foodservice manager identified: “food waste would be my first priority”. The Female Law and Arts Student said: “you see how much people don’t eat and what they do throw out.” Genetics Student 2 highlighted that:

“We have so much leftover food and it just seems so stupid. When they serve us food I wish they gave us less, like half portions. Foodservice staff were going on about how there was 30kg going to waste but they should serve us less.”

There was significant difference across the four factors in their placement of statement 9: the college should buy more local food if the majority of students agree to this (9; 1 to 3). This sentiment was summarised by the Male Teaching Student: “Students don’t need to give consent for something that is a positive.” Staff (and residential assistants) were more conservative, the Male Kitchen Store-man said it was “down to the customer, you are in a job for the customer” and the Female Chef said “I’m expecting that they have to agree to pay more, have to give consent if it cost more”. The Female Law Student deferred that decision to the college saying, “I don’t know the

implications of going local cost-wise. It is down to the hall to make that decision”. The Male Residential Assistant Physical Education and Commerce Student felt: “You would hope that the foodservice would make the best decision with what they know because it’s their job. You hope they know enough to make that decision without students knowing”.

There was little difference in how factors ranked the statement about labelling local food items on the menu (19; -1 to 1). There was not statistically significant consensus but this shows a trend to rank this statement with a neutral rank value. Some, such as Male Law Student 3 and Female Commerce Student 2 affirmed: “I like to be informed about what I am eating personally” and “I wouldn’t choose my meal based on whether it’s local or not but I would like to know where my food is from”, respectively. Others were like Female Health Science Student 1 who admitted, “when I eat I don’t care where it comes from, I just want to eat”.

### 5.3.5 Complete sociodemographic data by factor

**Table 4:** Sociodemographics of participants in each factor from pre-sorting questionnaire: gender; age; ethnicity and relationship to the college in a college foodservice.

Factor 1	Definition of 'local' <sup>a</sup>	Ethnicity <sup>b</sup>	Key values striving to live by <sup>c</sup>	Place of birth <sup>d</sup>	Location defined as home <sup>e</sup>	Association with the Otago region <sup>f</sup>	Association with sustainability <sup>g</sup>
Female Residential Assistant							
Physical Education	Otago	NZ European	Family	Greymouth	Taranaki	6	7
Male Law 1	New Zealand	NZ European	Money, family, loyalty, success	Invercargill	Invercargill	6	7
Female Commerce 1	Lower South Island	NZ European	Money, success, family	Wellington	Wellington	5	6
Male Teaching	New Zealand	NZ European	Family, teaching	Dunedin	Southland	8	6
Male Surveying	New Zealand	NZ European	Family, cooperation	Queenstown	Queenstown	7	5
Male Kitchen Store-man	New Zealand	NZ European				10	6,8
	Otago/Lower South Island						
Male Chef	Island	NZ European				10	8,7
Female Chef	New Zealand	NZ European				10	5,5
Male Management 2	Otago	NZ European				10	7,7
Meat Supplier	Lower South Island	NZ European				10	6,7
Dry Goods Supplier	New Zealand	NZ European				9	7,5
Male Ecology	Lower South Island	NZ European	Career, family	Dunedin	Queenstown	7	7
Fruit and Vegetable Supplier	Otago	NZ European				8	7,8
	New Zealand	NZ European	1. Family 2. career,			8.2	6.5

success, money

Factor 2	Definition of 'local' <sup>a</sup>	Ethnicity <sup>b</sup>	Key values striving to live by <sup>c</sup>	Place of birth <sup>d</sup>	Location defined as home <sup>e</sup>	Association with the Otago region <sup>f</sup>	Association with sustainability <sup>g</sup>
Female Law and Maori	Otago	Maori	Family, success, money	Whangerei	Christchurch/No rthland	4	7
Female Surveying	Otago/South Island	NZ European	Family, trust	Christchurch	Christchurch	4	5
Female Law and Arts	Otago, South Island	NZ European	Health, success	Dunedin	Dunedin	10	4
Servery Staff Employee	Otago	NZ European				10	8,4
Dairy Supplier	Dunedin	NZ European				10	9,9
	Otago	NZ European	Family and success			7.6	6.2

Factor 3	Definition of 'local' <sup>a</sup>	Ethnicity <sup>b</sup>	Key values striving to live by <sup>c</sup>	Place of birth <sup>d</sup>	Location defined as home <sup>e</sup>	Association with the Otago region <sup>f</sup>	Association with sustainability <sup>g</sup>
Male Residential Assistant					Sydney/Putarur		
Physiotherapy	Dunedin/Otago	Maori	Family Community, success, friendship	Hamilton	u, Waikato	3	8
Female Commerce 2	Dunedin/Otago	NZ European	Family, maori health	Tauranga	Tauranga	6	5
Female Health Science	Otago/ New Zealand	Maori		Rotorua	Rotorua	8	8
Male Residential Assistant							
Physical Education and Commerce	Lower South Island	NZ European	Success, oportunity	Nelson	Dunedin	9	7
Female Linguistics	Otago	NZ European	Family, other		Timaru	7	6

			cultures Drive, work ethic, empathy	Nowra, Australia South Africa			
Female Physiology	New Zealand Otago/Lower South Island	NZ European	Ssuccess, prestige, money, influence	Queenstown	Rotorua Queenstown	3 6	5 6
Male Law 3	New Zealand	Samoan				8	7,7
Male Management 1	New Zealand	NZ European				10	8,8
National Supplier 1	Otago	Asian				10	10,9
National Supplier 2	Dunedin	Asian		Seoul	Wanaka	4	9
Male Psychology	Otago	NZ European	Family, success			6.8	8
<b>Factor 4</b>	<b>Definition of 'local'<sup>a</sup></b>	<b>Ethnicity<sup>b</sup></b>	<b>Key values striving to live by<sup>c</sup></b>	<b>Place of birth<sup>d</sup></b>	<b>Location defined as home<sup>e</sup></b>	<b>Association with the Otago region<sup>f</sup></b>	<b>Association with sustainability<sup>g</sup></b>
Female Psychology and Marketing	South Island, New Zealand	NZ European	Money	Christchurch	Alexandra	7	2
Female Genetics 1	New Zealand	NZ European	Family	England	Dunedin	8	6
Female Commerce 3	Otago	NZ European	Success, friends	Timaru	Timaru	2	5
Female Genetics 2	Otago	NZ European	Status, travel	Dunedin	Christchurch	5	6
	Otago/New Zealand	NZ European				5.5	4.75

<sup>a</sup>Participants were asked what geographical region they define as local in the Q sort interview. <sup>b</sup>Participants self-disclosed their ethnicity <sup>c</sup>Participants were assisted (with a list of values) to disclose key values they wanted to live by. The researcher chose the most common answer to represent the factor on these questions.

<sup>d</sup>Self-categorised place of birth

<sup>e</sup>Self-categorised location participant defines as home

<sup>f</sup>Participants rated how closely the identified with the Dunedin region and <sup>g</sup>how closely the identified with sustainable living on a scale of 1 to 10. An average of these scores was calculated for each factor (to 1d.p.). Suppliers were asked for their perceived association with sustainable living in both their home and work life (x,x). The researcher calculated average scores, using an average of the suppliers' two sustainability scores for their association to sustainable living.

## 5.4 Factor interpretations

This section gives an introduction to the factor array (5.4.1), full interpretation of “The Leaders” (5.4.3) and summary interpretations for each factor (5.4.2 and 5.4.4 to 5.4.6).

The other full factor interpretations are in the appendices (Appendix XII to XIV).

### 5.4.1 Introduction to factor array

The goal of a factor array is to provide the best possible estimate of the relevant factor and in doing so give a sense of what its best fit or 100% loading Q sort may look like<sup>71</sup>.

### 5.4.2 Summary interpretation of “The Leaders”

The factor array for “The Leaders” is shown below (Figure 9).

MOST DISAGREE						MOST AGREE				
-5	-4	-3	-2	-1	0	1	2	3	4	5
38	37	<b>41</b>	18	15	5	34	<b>30</b>	<b>16</b>	<b>8</b>	32
22	<b>7</b>	10	<b>31</b>	21	25	<b>19</b>	14	<b>13</b>	<b>33</b>	27
	24	23	<b>42</b>	2	6	39	<b>20</b>	9	36	
		17	4	<b>29</b>	1	<b>3</b>	40	11		
				26	<b>28</b>	12				
					35					

**Figure 9:** Factor Array, the best fit Q sort representing a single factor’s collective viewpoint, for “The Leaders”. The Crib sheet for this factor can be found in Appendix X. Distinguishing statements, those ranked significantly differently from other factors, are in bold ( $p < 0.05$ ).

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### **“The Leaders”**

This factor has an Eigenvalue of 15.2 and explains 18% of the study variance. Thirteen participants loaded onto “The Leaders”; six were students, four staff and three suppliers. Two suppliers ran locally owned business and one was a regional level supplier. Over half the staff interviewed (56%) and a third of the suppliers (38%) aligned themselves with this factor. Local food was defined broadly as coming from within New Zealand.

“The Leaders” wanted to localise the foodservice and were informed and pragmatic enough to judge when there would be a benefit in doing so. They wanted to buy local to be fair to local business and the local economy. They were proactive, wanting to inform students of what is available before they go flatting through having a local meal once a month. “The Leaders” wanted to be market leaders in localisation and were open to collaboration to achieve this to minimise financial constraints on the foodservice and administration constraints on the supplier. Country of origin labelling was not seen as a priority due to the burden on suppliers. “The Leaders” wanted a sustainability strategy and supported changes to policy or supplier contracts within reason. They did not want to make it policy to spend a minimum amount on local food in case the quality or amount of food was sacrificed. “The Leaders” were not willing to sacrifice food staples for localisation. They were informed about traceability in the food system and so knew that local products are not inherently better than imported ingredients. They wanted to consider not only where a food item was from but also how it was produced. They defined ‘local’ more broadly than the other factors and acknowledged the need for product-dependent definitions of ‘local’.

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### **5.4.3 Full interpretation of “The Leaders”**

“The Leaders” wanted to be fair to local businesses (16; 3\*). The Female Residential Assistant Physical Education Student sums up this sentiment nicely saying, “I think we can have way more impact on the local economy. Big fish in a small pond compared to small fish in a large pond”. The Dry Goods Supplier was of the mind-set to “support small local businesses to keep the business community going”. He explained this by saying, “we are a local company, local people putting money back into the community... this is all about keeping the community together”. The Female Residential Assistant Physical Education Student said, “charity starts at home: if you start building your local economy then it is going to help New Zealand in the long run”. The Female Commerce Student further emphasised this saying, “the hall should support its own community because it is better for the hall if it is thriving”.

There was a desire to become a market leader for other university foodservices (11; 3). College staff and suppliers were happy to work together and the Meat Supplier said: “it is something we could do in conjunction, depending on where the hall is going we would have to follow”. Suppliers rely on business from university foodservices and the Dry Goods Supplier commented: “ business is incredibly low for suppliers when the students leave town for that big break [November to February].” The Female Chef mentioned, “I like talking to people down here. I do hate ringing and talking to someone in Auckland”. The Male Kitchen Store-man pointed out there is already “a lot of cafes in town buying locally”. “The Leaders” were the most realistic in wanting any changes to be made within the current budget (27; 5). The suppliers empathised with the college’s position and the Dry Goods Supplier revealed: “we participate in the quote for the business. I know they have to feed people on \$7 a day. They have to



produce food at a price”. “The Leaders” were also willing to collaborate with excess food production (33; 4\*) to help suppliers prevent waste and to help the college get a good price. The Male Ecology Student commented, “menus can be adjusted so there is less waste”, while the Meat Supplier said: “I let the hall know if there is a bargain on large amounts of ham and bacon, that helps with their budgets and things”.

There was both support and pessimism for a local food clause in contracts with suppliers (4; -2) or making it policy to spend 70% of the budget on local food (2; -1). Male Management 2 worried about quality: “if we are bound into a contract with a local supplier we might not actually get the best product... I agree with the local food clause but not putting a number on it”. However, the Male Chef felt it might be costly: “where affordable to do so go local. Our budget is tiny – something like \$7 a day to feed each student. All our cans are imported; otherwise, we wouldn’t be able to feed them [the students]”. Female Commerce Student 1 pointed out “that goal could be really unattainable as it could depend on the product or whether it is summer or winter... some things you just have to accept that you won’t be able to buy local”. The Female Chef, the primary purchaser, proposed an alternative, saying, “I like the idea of asking for the most local product possible within price point”, while the Male Kitchen Store-man believed “just because it is local doesn’t mean it is always best”.

They both felt it is important to know both how and where food is produced (31; -1\*\*), Male Management 2 saying, “that is something you look at on a case-by-case basis, both could rule a product out”. The Dry Goods Supplier encouraged looking at it from a food systems perspective:

“It comes down to what we produce. Watties no longer grow their own peaches because the market has changed. Labour is too expensive here. You can’t just start growing. The growers here have to decide what they want to grow because you can’t grow much here”.

However, the Fruit and Vegetable Supplier blamed the broader food system “Growing up it was buy New Zealand made, keep your country working. Now everything is going overseas.”

“The Leaders” defined ‘local’ broadly, reflecting the informed, realistic nature of the participants. The Female Chef believed that, “it is true local food is best, but when New Zealand is such a small community ‘local’ can be just over on the other island, it’s not too far away”. They discussed locality as being product-dependent and the Male Kitchen Store-man said, “it’s all going to vary based on the product bought. You could allocate certain percentages to different categories, meat, vege [vegetable] and grain”. They were proactive in wanting the campus to have a sustainability strategy including local food (7; -4\*), and the Female Law Student emphasised “a strategy would be a good thing to make sure it happened”.

This factor did not think suppliers should have to give country of origin information as much as other factors (3; 1\*). The Male Teaching Student said that it “is kind of unrealistic; you don’t know all the answers. They should be able to say where most of the food is from” and the Meat Supplier said, “it could jeopardise what we are doing. We can track where meat is coming from. That would be a lot of work; it can be done but that will be a pain”. Yet the Dry Goods Supplier saw it was feasible: “Every

product has a country of origin. You can ring the company for spec sheets on any products. We are now starting to put country of origin on bags”.

“The Leaders” had faith in the traceability of the food system for determining ethical working conditions (41; -3\*) or food safety (42; -2\*\*). The Meat Supplier mentioned, “there are some importers who are exploiting workers definitely, but not all of them are”. Female Commerce student 1 stated, “just because it is from overseas doesn’t mean that ethical conditions are not met and other countries like Australia will have very similar food safety standards as us”. The Dry Goods Supplier argued “I’ve been to factories overseas and the working conditions and food safety are better than they are in New Zealand”. The Female Chef believed that it is dependent on where the food comes from:

“Some countries have good food safety. I wouldn’t be buying any food from Israel at the moment or where a plane got shot down. I would buy from Australia and if I had to America”.

They did not think it practical to avoid New Zealand pork for fear of poor animal welfare (14; 2) or dairy for fear of environmental damage (35; 0\*). The Male Teaching Student said, “I want to eat dairy from producers like Fonterra”, while the Meat Supplier mentioned that “most of the dairy is polluting other areas, not ours”.

“The Leaders” were also open to importing vegetables (28; 0\*\*) and bananas (29; 1\*\*) despite food miles, seeing the practical implications of removing them from the student’s diet. The Female Chef commented: “everyone loves bananas, they are a really good staple”. The Male Ecology Student felt it was about:

“Staying as local as possible but still having the diversity in food; no one

wants to eat the same thing every night. You can't diversify the menu if you don't source from elsewhere".

"The Leaders" wanted the college to introduce students to the idea of eating local before they go flatting (13; 3\*). They preferred featuring a local meal on the menu one night a month (8; 4\*\*) to labelling local menu items with an 'L' (19; 1\*). They wanted students to be informed about local food but not through labelling. The Male Ecology Student felt "most of the time you could assume where it came from". Male Law Student 1 said: "I get really annoyed when people are ignorant to local culture, its like people who go overseas and eat McDonalds" but felt: "if it is local then I guess it should be at a level where you don't need to label it, we can just know that it is mainly local food".

#### 5.4.4 Summary interpretation of “The Idealists”

The factor array for “The Idealists” is shown below (Figure 10).

MOST DISAGREE					MOST AGREE					
-5	-4	-3	-2	-1	0	1	2	3	4	5
38	10	7	26	<b>20</b>	5	9	21	<b>34</b>	<b>35</b>	32
22	37	39	<b>17</b>	<b>41</b>	27	8	12	33	36	14
	24	23	<b>28</b>	4	<b>31</b>	<b>13</b>	11	3	<b>42</b>	
		<b>29</b>	18	2	6	40	<b>16</b>	15		
				1	19	30				
					25					

**Figure 10:** Factor Array, the best fit Q sort representing a single factor’s collective viewpoint, for “The Idealists”. The Crib sheet for this factor can be found in Appendix XI. The full interpretation for “The Idealists” can be found in Appendix XV. Distinguishing statements, those ranked significantly differently from other factors, are in bold ( $p < 0.05$ ).

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### **“The Idealists”**

This factor has an Eigenvalue of 3.2 and explains 11% of the study variance. Five participants loaded onto “The Idealists”; three students; one staff and one supplier. The supplier was negatively associated with this factor, having an anti-idealist mind set. Local food was defined as coming from within the immediate Otago region.

This factor, full of optimism for a value-based food system, was named “The Idealists”. “The Idealists” were more concerned with ethical issues compared to other factors. They sympathised with media hype, on poor animal welfare in New Zealand raised pork and the dairy industry polluting New Zealand. Like “The Leaders”, they wanted to support New Zealand food production and local businesses. What was unique was their optimism around collective initiatives such as having a student and staff run vegetable garden or student representatives to attend local food network meetings, and that they were willing to make sacrifices to lower food miles. They wanted food to be produced fairly and locally yet could still list other sustainability initiatives they rate more important. Always optimistic, they felt informed students would become more environmentally conscious consumers. Yet still, for them local food is not just a self-righteous notion but also a mark of quality and ethical fairness. They were not conscious of the feasibility or cost of localising a foodservice and didn’t offer any practical suggestions to achieve these demands. The Dairy Supplier opposed the rest of the factor’s viewpoint. He defined ‘local’ as food produced within Dunedin, compared to within the Otago region. He was concerned about localisation as his business brought products in from the North Island. He knew the college needed to get dairy from regional food supply systems and he accepted preservatives, avoided by the rest of the factor, as he knew they are required for the shelf life of milk.

#### 5.4.5 Summary interpretation of “The Globalists”

The factor array for “The Globalists” is shown below (Figure 11).

MOST DISAGREE					MOST AGREE					
-5	-4	-3	-2	-1	0	1	2	3	4	5
38	<b>41</b>	26	15	4	34	4	35	<b>20</b>	40	<b>39</b>
22	7	<b>24</b>	<b>5</b>	<b>8</b>	30	27	9	28	<b>3</b>	32
	18	10	6	25	<b>13</b>	<b>37</b>	21	33	31	
		<b>42</b>	<b>2</b>	1	11	23	<b>36</b>	<b>29</b>		
				12	19	16				
					<b>17</b>					

**Figure 11:** Factor Array, the best fit Q sort representing a single factor’s collective viewpoint, for “The Globalists”. The Crib sheet for this factor can be found in Appendix XIII. The full interpretation for “The Globalists” can be found in Appendix XVI. Distinguishing statements, those ranked significantly differently from other factors, are in bold ( $p < 0.05$ ).

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### **“The Globalists”**

This factor has an Eigenvalue of 2.8 and explains 10% of the study variance. Eleven participants loaded onto “The Globalists”: eight students, one staff member and two national level suppliers. Only national level suppliers (Figure 9) aligned themselves with “The Globalists”. Local food was most commonly defined as coming from within the Otago region. Nine students in the participant group had nationalities other than New Zealand European and five of those (67%) loaded onto this factor: three Maori, one Samoan and two Asian participants. Half the students called the North Island home. Three students were born and one spent her childhood outside of New Zealand.

This factor was called “The Globalists” as they believed in sourcing the best quality and price product, tapping into the global market when necessary. They supported international trade more than other factors. They were comfortable with global markets and only supported local business when it is competitive with the global market. They felt how food is produced is more important than where food is produced, yet they had the strongest desire to know the country of origin of food, seeing its importance for traceability. Informed about traceability of the food system, they were not concerned about food safety, working or environmental production conditions of imported food, or preservatives in their food. They held the sentiment that local food was high quality but were not willing to pay more for it. They did not support buying food from the farmers’ market, as they felt local food in this capacity would be too expensive. They wanted to import non-local vegetables, Australian meat and dietary staples such as bananas when competitive on quality and price. “The Globalists” wanted to include local as a part of a campus sustainability strategy but did not support making it policy to spend a minimum amount on local food.



#### 5.4.6 Summary interpretation of “The Individualists”

The factor array for “The Individualists” is shown below (Figure 12).

MOST DISAGREE						MOST AGREE				
-5	-4	-3	-2	-1	0	1	2	3	4	5
22	<b>36</b>	15	7	18	1	<b>26</b>	<b>41</b>	<b>29</b>	40	14
38	24	6	25	4	2	8	9	28	<b>30</b>	32
	17	39	<b>20</b>	<b>10</b>	16	34	35	27	31	
		<b>13</b>	12	19	21	5	<b>42</b>	3		
				11	<b>37</b>	<b>33</b>				
					23					

**Figure 12:** Factor Array, the best fit Q sort representing a single factor's collective viewpoint, for “The Individualists”. The Crib sheet for this factor can be found in Appendix XIV. The full interpretation for “The Individualists” can be found in Appendix XVII. Distinguishing statements, those ranked significantly differently from other factors, are in bold ( $p < 0.05$ ).

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### **“The Individualists”**

This factor has an Eigenvalue of 1.9 and explains 9% of the study variance. Four female students, from analytical study disciplines such as science and commerce, loaded onto “The Individualists”. There were two genetics students, one psychology student and a commerce student. “The Individualists” did not associate strongly with Dunedin or a sustainable mind-set. ‘Local’ was defined as coming from Otago or New Zealand, the group too small to establish a common definition.

“The Individualists” were quality focused and felt where food was grown was an important aspect of quality and consequently were happy to pay 50c more a day towards local food. They wanted to buy seasonal food from where it grows best within New Zealand for its improved quality and nutritional content. However, they put most emphasis on how food was produced and were most sceptical of the blanket claim that local food was best.

They most strongly supported buying food from the farmers’ market and knowing country of origin information, yet were cynical about the traceability of our food system and the feasibility of buying local food for a large foodservice. They were concerned about issues of animal welfare and ethical working conditions. They also had concerns about the food safety of imported food, yet were happy to have imported foods to improve variety and nutritional value. “The Individualists” believed food localisation was not students’ responsibility, so were against collective initiatives involving students, but were supportive of policy change where foodservice staff are in charge of decision-making. They placed little importance on keeping students informed, being fair to local businesses or becoming a market leader in local food.

## **5.5 Stakeholder definitions of ‘local’**

Participant definitions of ‘local’ varied (5.3.5). “The Leaders” defined ‘local’ most broadly as within New Zealand (5.4.3). The way “The Leaders” defined ‘local’ helped them to sort statements in a logical manner, making their sorting decisions and relevant comments realistic and insightful for the researcher when making recommendations for the college. The most common definition of ‘local’ overall was Otago (39%). While this is desirable for many products, it is not always going to be feasible.

Suppliers were more likely to support aspects of localisation if a definition of ‘local’ matched what they were already doing. “The Globalists” defined ‘local’ as within the Otago region but identified practical advantages to sourcing food from the North Island (Appendix XVI). National Supplier 1 defined ‘local’ as within New Zealand, while National Supplier 2 defined ‘local’ as within Otago. However, both national level suppliers aligned themselves with “The Globalists”, possibly because they could not identify with being local food suppliers as regional level suppliers might.

The two regional level suppliers defined ‘local’ differently. The Meat Supplier defined it as food produced within the lower South Island and aligned himself with “The Leaders” while the Dairy Supplier defined it as food produced within Dunedin and opposed “The Idealists”. How they defined ‘local’ and what food items they supplied (2.1.3) determined how they viewed the issue of localisation. Product-dependent definitions of ‘local’ would incorporate every stakeholder’s definition of ‘local’ and match these definitions to different food items, as appropriate (Table 5).

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**Table 5:** Product-dependent definitions of 'local'.

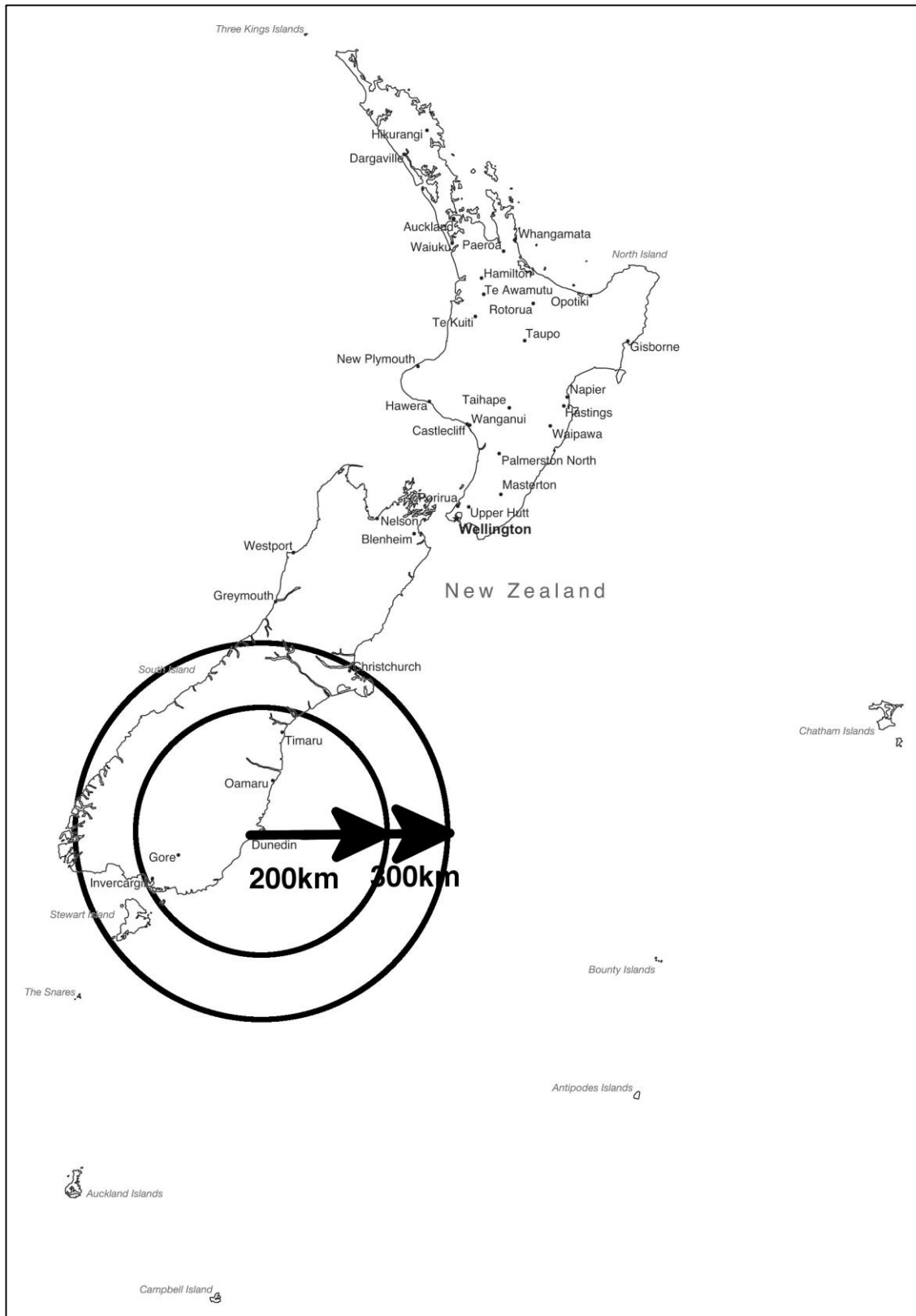
<b>Food Item</b>	<b>Definition of 'local'</b>
<b>Fruit</b>	
Peach, pears, apples, plums, nectarines and cooler climate fruits	Central Otago
Citrus and other warm climate fruits	New Zealand
Bananas, pineapples, mangoes and other tropical fruits	Not considered local
<b>Vegetables</b>	
Leeks, broccoli, swedes, cabbages, spinach, beans, potatoes, parsnips, kale, silverbeet, herbs, bok choy, peas	Lower South Island
Carrots	New Zealand
<b>Meat</b>	
Beef, lamb	Lower South Island
Chicken, fish (fresh or frozen), pork, bacon, ham	New Zealand
<b>Milk products</b>	
Milk, yoghurt and cheese	New Zealand
<b>Dried and processed foods</b>	
Coffee, tea, sugar, flour, rice, pasta, nuts.	Not considered local
Canned foods	New Zealand
Bread (with/without imported ingredients)	New Zealand

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Like the Dairy producer, half the participant group (53%) gave a regional definition of local food (2.1.4), within the lower South Island or New Zealand. Dairy and meat processing has been merged from local processing units into central processing plants in Canterbury<sup>85</sup>. These products have large distribution networks that out-compete small businesses with a local product. A regional definition of local food is the only feasible option for these industries. As stakeholder definitions of 'local' varied between that of local and regional size, both are definitions acceptable to stakeholders.

In a New Zealand food systems context, the difference between local and regional food system is very small (2.1.3). For Dunedin, the geographical radius of the food system would have to increase by another 100 km, to a 300 km radius to include the Canterbury region (Figure 13).





Broad definitions of 'local' encourages factors outside "The Leaders" acceptance (5.5) and the economic benefits of regional food systems can act as drivers for localisation (2.1.4). Product specific definitions of 'local' were defined (Table 5) based primarily on "The Leaders" viewpoint, identified as informed forerunners of localisation (5.4.3). Other factors were not dismissed as the definition incorporates every factor's definition at some point, to ensure it is acceptable to all stakeholders.



**Figure 13:** Map of New Zealand with 'local' definition boundaries based on a radius of 200 km and 300 km<sup>86</sup>.

## 5.6 Summary of results

The dominant shared viewpoints are summarised in the figure below (Figure14).

<p style="text-align: center;"><b>“The Leaders”</b></p>  <p>N=13 (6 students, 4 staff, 3 suppliers)</p> <ul style="list-style-type: none"> <li>• Want to inform students.</li> <li>• Want to become a market leader.</li> <li>• Proactive and realistic.</li> <li>• Want to work within the current budget.</li> <li>• Informed about food system traceability and know that local food doesn't guarantee best food.</li> </ul>	<p style="text-align: center;"><b>“The Idealists”</b></p>  <p>N=5(3 students, 1 staff, 1 supplier –negative)</p> <ul style="list-style-type: none"> <li>• Ethically minded.</li> <li>• Encourage conscious-consumers.</li> <li>• Support collective initiatives.</li> <li>• Willing to limit imported food for food miles.</li> <li>• Emotional rather than pragmatic.</li> <li>• Uninformed about food system traceability and fell for ‘Local Food Trap’.</li> </ul>
<p style="text-align: center;"><b>“The Globalists”</b></p>  <p>N=11 (8 students, the warden, 2 suppliers)</p> <ul style="list-style-type: none"> <li>• Open to global markets.</li> <li>• Want to import dietary staples.</li> <li>• Focused on quality.</li> <li>• Informed about food system traceability and know that local food does not guarantee best food.</li> </ul>	<p style="text-align: center;"><b>“The Individualists”</b></p>  <p>N=4 (all students)</p> <ul style="list-style-type: none"> <li>• Want to import dietary staples.</li> <li>• Do not support collective initiatives.</li> <li>• Want the foodservice to make localisation decisions on their behalf.</li> <li>• Willing to pay more for local food.</li> <li>• Uninformed about food system traceability and fell for ‘Local Food Trap’.</li> </ul>

**Figure 14:** Summary of factor viewpoints, factor arrays and post-sorting interview quotations were used to summarise the thinking that appears to have motivated stakeholders in each factor<sup>87</sup>.

## **6 Discussion and conclusion**

### **6.1 Dominant stakeholder discourses about foodservice localisation**

Stakeholder definitions of ‘local’ varied between that of local and regional size. Overwhelmingly, participants want to support local economies (2.2.1), including regional agriculture<sup>37,50</sup> (2.1.4). Participants recognised the economic benefit for local producers to use imported ingredients or process foods offshore. “The Globalists” and “The Individualists” did not want to lose diet staples to reduce food miles (Appendix XVI and XVII). Local food was more than just food miles to participants. In line with this Hamilton found broader goals, sustainable, socially just and ethical food, to be the focus of ‘Local Food Movement’ rather than locality itself<sup>3</sup>. “The Idealists” and “Individualists” fell into the ‘Local Food Trap’ as they believed local food inherently meets these goals (Appendix XV and XVII). “The Leaders” and “The Globalists” did not fall for this but still identified with the broader goals of ‘The Local Food Movement, supporting other findings from policy literature<sup>10,34</sup> and U.S companies<sup>17,57</sup> who report social responsibility as a key driver for localisation.

Literature suggests that foodservice staff have the responsibility to make good decisions on behalf of their consumers (2.2.3) but that student connection with food production is beneficial for localisation<sup>2,12</sup>. Participants in this study were not supportive of fostering connections with food production and “The Individualists” in particular willingly deferred decision-making to the foodservice (Appendix XV). The belief that it is not students’ responsibility could be because farm to college programs are not normalised in our education system like they are in the U.S.



Like other literature (2.2.1), suppliers in “The Leaders” factor indicated that they needed to work with the college as university foodservices are a large source of business<sup>11,12</sup>. Within “The Leaders”, there was a relationship of mutual trust; suppliers will collaborate with the college if staff make their purchasing demands known (5.4.3). Participants felt it was not be possible to ask suppliers to source from the farmers’ market for the volumes the college requires. Yet research on best practise shows that partnerships with community groups, who can match local production with demand, can overcome this (2.2.5)<sup>27</sup>. “The Idealists” and “The Globalists” but not “The Leaders” were not open to asking suppliers for country of origin information. Yet Park and Reynolds found university foodservices that fostered such relationships were most successful in making policies for sustainability<sup>27</sup>.

It is widely accepted in the literature that university foodservices have a moral obligation to educate customers (2.2.3)<sup>10</sup>. Participants, especially “The Leaders”, supported informative initiatives with the least time burden (5.4.3), again this burden may be overestimated in New Zealand where farm to college initiatives are not common practise. Only “The Idealists” felt that it would make students more environmentally conscious (Appendix XV) yet this is consistently reported in policy literature<sup>10,34</sup>. This could be the influence of students in the participant group as most policy literature concentrates on purchasing and institutional change from a management perspective.

Like other foodservices, price and quality were the most salient dimensions of food choice, not the environment (2.2.2)<sup>13,52</sup>. Highlighting environmental dimensions will reduce unforeseen environmental implications<sup>51</sup> and identify sustainable, local food

staples. Local food was perceived as expensive (2.2.1), but unlike the literature which suggests consumers reliably pay more for local food<sup>2,29</sup>, only “The Individualists” would do so (Appendix XVII). Grebitus does, however, report that willingness to pay for food depends on a myriad of factors and this foodservice is smaller, privately funded and not as upscale as other research universities<sup>29</sup>.

## **6.2 Recommendations for the study foodservice**

The four college staff who loaded onto “The Leaders” are trusted to make localisation decisions on students’ behalf. They wanted to expose students to local food through:

- A student and staff-run vegetable garden initiative.
- A local meal once a month.

Interventions have to work within this college food culture while making their values visible to students<sup>16,34</sup>. Both of these initiatives are easy for “The Leaders” to implement and visible to other stakeholders in the college. These small projects will start localisation on the right foot, showing it is both easy and feasible<sup>34</sup>.

“The Leaders” can open communication channels with other stakeholders. Before organisational policymaking can occur, locality must be defined (2.2.5) and the supply capacity of local food identified. They can start this by:

- Using product-specific definitions of local and sharing these with suppliers for each food item they supply
- Asking suppliers for country of origin labelling on order forms.
- Partnership with the local Our Food Network community group.

Suppliers need to understand local food expectations<sup>12</sup> through communication with the college<sup>27</sup>, this will inform and unify stakeholders in their goals for localisation.

Understanding local food systems can help stakeholders resolve contentious issues precluding localisation. These activities will raise awareness of local food systems:

- A food and sustainability talk by the Otago ‘Student-led Sustainability Group’.
- A cost benefit analysis looking at the environmental, social and economic dimensions of sustainable foods by Otago HUNT 331 students (2.1.6).
- A food systems traceability talk by a national supplier from “The Globalists”.

Knowledge about local food and environmental implications of food production is integral to localisation<sup>77</sup>. It will shift purchasing emphasis onto the environmental dimension of sustainable food systems<sup>41</sup>. Identifying what local food is feasible and competitive in price will ease pessimism about clauses and policies around local food, while stakeholders can inform each other to overcome the ‘Local Food Trap’.

Local food needs to be accounted for in the foodservice policies and financial planning (2.2.1 and 2.2.5). Long-term evidence-based goals the foodservice could adopt are:

- Develop local food clauses in contracts with supplier with targets for local food.
- Develop a policy to spend a set amount of the food budget on local food and monitor local purchasing.
- Include localisation in a sustainability strategy and mission statement.
- Redistribution of funds: concentrating on reducing food waste (2.2.1).

As participants and the literature associate ethical and sustainable production with local food, value-based food goals can drive localization (2.1.6). The Real Food Challenge<sup>59</sup> uses a pictorial system (Figure 16). This makes setting standards and their monitoring simple and visible. Localisation leaders can reflect these goals in their mission statement so it is a part of the college’s vision. Food waste was an emotional issue for

stakeholders and so can be associated with a value-based food system while saving money for more expensive local products<sup>57</sup>.



**Figure 15:** The Real Food Challenge guidelines: values measured are shown in the image to the left and the pictorial system used to quantify the percentage of product-dependent local food items for dairy and total local food is shown on the right<sup>59</sup>.

### 6.3 Study strengths and limitations

This study used a powerful methodology for exploring stakeholder attitudes to identify shared dominant viewpoints and the difference between them. It used one standardised methodology across a comprehensive range of stakeholders that influence the foodservice. By identifying shared viewpoints and focusing on all stakeholders in the college food system rather than single stakeholders the researcher was able to gain a deep understanding of the foodservice culture.

As with any study, this study had some limitations. Participants sorted cards based on what they thought feasible, not on what they wanted done. However, after raising awareness with the participant group and removing barriers to localisation, attitudes might change so that results underestimate stakeholder support. Attitudes are interpreted in the context of the Q set, knowing that they evolve with organisational change<sup>34</sup>. Another possible methodological limitation which is inherent in Q Method is that the way a statement is phrased can influence participants. For example, while previous literature has discussed how modern consumers want to know all about where and how their food is produced<sup>17</sup>, the labelling initiative suggested in this Q set was not supported. The post-sort interview provided the researcher with some insights into why stakeholders ranked this statement as being infeasible but had the statement offered another type of labelling initiative, the direction of the results might have differed. Pretesting of the statements ensured that the researcher provided the best set of statements possible but it is important to be aware of the inevitable limitations of the Q-set provided.

Another limitation was that as a small, strategically sampled, group of participants was used to ascertain factors so the results of this Q Method study cannot be generalised (2.3.4)<sup>66</sup>. However, the researcher did not intend to generalise results to a wider population. While the scope of the results was limited to one college foodservice, it has the power to enact change given that understanding stakeholder attitudes can redefine how the organisation sees itself and operates<sup>73</sup>.

## **6.4 Implications for future research**

While outside the scope of this study, an R survey based on the four factors could be used to assess their prevalence in stakeholders from other university college foodservices. The attitudes discovered through this Q Method study would be used to design a survey. Following this line of inquiry would allow the researcher to generalise results (to see how prevalent they are) to a broader foodservice population<sup>66</sup> and make statistical inferences about how sociodemographics and personal attributes influence viewpoints.

## **6.5 Conclusion**

This Q Method study has been an inquiry into the attitudes of stakeholders towards localisation. This has been important given that stakeholder attitudes determine what interventions and policies are successful in a given foodservice<sup>15</sup>. The study has included a comprehensive range of stakeholders the university foodservice setting including staff, students and food suppliers and in doing so, it has explored the potential for collaboration between these stakeholder groups.

This thesis has suggested that product-dependent definitions of ‘local’ will likely be more acceptable and less restrictive for stakeholders. Product-dependent definitions of ‘local’ will allow the foodservice to keep food staples and contracts with suppliers who supply items outside of the regional food system, but will increase pressure on stakeholders to pursue local alternatives where they exist.

All recommendations were based on the four dominant stakeholder discourses and so aimed to work within budget and maintain food quality<sup>52</sup>. Where there was shared

viewpoints, recommendations aimed to increase collaboration between stakeholder groups and where there was opposing viewpoints, recommendations aimed to resolve ambiguity through raising awareness of local food systems. Value-based food goal planning was recommended to allow the ethical and sustainability values participants associate with local food to drive localisation efforts.

Sustainability goals are the responsibility of dietetic and foodservice professionals. Over time the foodservice has the capacity to foster sustainable culture change through engagement with, and education of, stakeholders<sup>10,26</sup>. With each generation of students there is an opportunity to influence their expectations of the service and progress policies in parallel<sup>34</sup>. By focusing on the social and environmental goals of the 'Local Food Movement', rather than locality itself, changes made locally can have an impact on local and global communities<sup>8</sup>.

## **7 Application of research to foodservice dietetic practice**

Successful foodservice dietitians require forethought and understanding stakeholder attitudes especially when implementing change.

This study has contributed to foodservice research and practice in three key ways:

1. It has contributed to the international foodservice literature on attitudes to local food and sustainability.
2. It has provided an understanding of stakeholder attitudes to local food in a New Zealand university college foodservice setting and has defined 'local' in this context for dietitians and foodservice managers interested in localization in this context.
3. It has introduced a new and valuable methodology for exploring stakeholder attitudes in foodservices to:
  - a) identify stakeholders with various roles within or external to a foodservice that have shared viewpoints and start collaborative work between them;
  - b) identify stakeholders with opposing viewpoints and start awareness raising within and between them;
  - c) predict interventions and policies that will be well received<sup>15</sup>.

In conclusion, Q Methodology has proven to be a useful methodology to explore stakeholder attitudes for progressive foodservice development. Foodservice managers and dietitians accountability for sustainability practices will increase in the future and this methodology can identify pathways for improving the sustainability of foodservices.



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## 9 Appendices

### Appendix I

#### List of Q Methodology definitions:

Concourse	Complete range of attitudes on the research topic, gathered from a range of sources, from which statements are generated.
Discourse	Common viewpoints share by a group of stakeholders (in a factor).
Statement	One of the statements printed onto a card for the sorting activity.
Q set	Complete set of statements for the Q sort activity.
Q grid	Grid with 42 spaces, in a quasi forced normal distribution, into which stakeholders sort the statements.
Q sort	Data collected for each stakeholder when they sort the statements onto the Q grid.
Q sort activity	Card sorting activity. Stage one: stakeholders sort statements into piles of those statements they agree, or disagree with or are neutral about. Stage two: stakeholders rank statements onto a forced distribution, or Q Grid, from most agree to most disagree.
Pre-sort questionnaire	Stakeholder questionnaire filled out by every stakeholder, to collect sociodemographic data before the Q sort activity.
Post-sort interview	Stakeholders are asked about their sorting decisions, starting with the cards placed at the extremes of the grid, and then moving onto the more neutral statements or any statement that appears out of place. Stakeholders can still move any cards to better represent their viewpoint.
Q sort interview	Combined Q Sort Activity, pre-sort

	questionnaire and post-sort interview.
Crib sheet	A standardised way of ordering statements based on how they are sorted by a factor, to help interpret factor arrays systematically.
Factor	Group of stakeholders with shared viewpoints, represented by statistically similar Q sorts.
Factor array	Best fit Q sort representing a single factor's collective viewpoint.

## Appendix II

### Supplier interview questions:

What sorts of products do you supply to the college?

Do you know the regional origin of each food product?

Would you ever advertise that information to clients?

Do you think suppliers should always have to disclose where their food items come from on their order forms?

How much of your products are imported versus New Zealand products?

What is 'local' to you?

Would be it be possible for the college to purchase more local food from you?

What are the benefits of sourcing local food?

What are the barriers of sourcing local food?

Is it cost competitive?

Is it possible for the college to spend 70% of their food bill with you on locally sourced food items?

Would you be willing to make connections with more local growers and producers?

Would pressure from customers change this?



## Appendix III

### Student interview questions:

Do you identify with the Dunedin/Otago region?

Do you identify with any specific foods made locally?

Are you currently satisfied with the foodservice food?

Do you think the foodservice incorporates enough local food currently?

What do you define as 'local' in regards to food?

Do you want to know where your food comes from?

Do you think the majority of students care where there food comes from?

Do you know of any local food brands?

Have you experienced any foods since being in Otago that you consider as foods unique to this region?

What are the advantages/disadvantages of the foodservice buying local food?

Do you think it is socially responsible to buy local food?

Have you heard of the 'Local Food Movement'?

What opportunity could students be given to choose local food?

How would you feel if this college started serving more local food?

Would you pay 5% more on your student fees towards local food?

Will having a locally-sourced menu make the college more desirable to students?

Do you think other students care about local food?

## Appendix IV

### Q sort statements

Those in **Bold** were selected as the final 42 statements for the Q sort activity.

<b>Economic</b>	+ve	Neutral	-ve
Imported goods	The college should aim to spend 70% of its food budget on local food	The college can spend 30% of its food budget on imported goods for items hard to get in New Zealand	<b>The college should buy cheap imported foods to get more bang for its buck</b>
South Island meat	The college should ask suppliers for local meat only to save on transportation costs	The college should ask suppliers for only New Zealand raised beef, lamb and pork	<b>The college should not limit itself to New Zealand raised lamb, pork and beef if cheaper Australian meat is available</b>
New Zealand economy	The college should buy more local food to support the region's economy	The college should support both local business and international companies	<b>The college should buy more imported food to support international trade</b>
New Zealand identity	The college should buy local food to support ordinary New Zealanders		<b>The college should first see if local businesses use imported ingredients</b>
Cost	<b>Students would, if necessary, be willing to pay 50c more a day on their fees for more local food</b>	<b>The college should buy as much local food as it can within its current food budget</b>	The college should focus on affordability of its meals before including local food

Policy	+ve	Neutral	-ve
Marketing	<b>The college should use locally sourced food in its foodservice to make it more attractive to future students</b>	A locally sourced menu will not be noticed by students	A locally sourced menu will not attract students to the college
Procurement	<b>The college should make it its policy to spend 70% of its food budget on local food</b>	The college should create lenient policies around local purchasing	The college should have no policies that specify how much should be spent on local food
Point of origin	<b>The college should make sure suppliers can tell them where every food item is from</b>		
Supplier contract	The college should contract suppliers to provide the most local product they have available for each item		<b>The college should not have a local food clause in its contracts with suppliers</b>
Connecting with farmers	<b>The college should ask suppliers to source local food such as that available at farmers' market, on its behalf</b>	<b>The college should have student reps that make connections with local growers and producers</b>	
Policy	The college should have a campus sustainability strategy that includes local food		<b>The college should not include local food as a part of a campus sustainability strategy</b>
Local meals	The college should have a local food showcase day	The college should feature a completely local meal one night a week	<b>The college should feature a completely local meal at least one night a month</b>

<b>Social responsibility</b>	+ve	Neutral	-ve
Choice	The college should buy more local food if it wants to, without having to consult students	<b>The college should buy more local food if the majority of students agree to this</b>	The college should buy more local food. I don't care if they do or don't
Ethics	The college should meet its social responsibility to source local food	The college should not change it's purchasing based on ethical values	<b>The college should ignore the self-righteous notion that local food is best</b>
Trend setting	<b>The college should become a market leader and show NZ foodservices can support the 'Local Food Movement'</b>		The college does not need to source local food as its competitors are not yet doing this
Advocacy	<b>The college should have student and staff reps attend local food network meetings in Dunedin</b>		
Personal habits	<b>The college should introduce the idea of eating local to its students, before they go flatting</b>		
Human and animal welfare	The college should buy local food as it is certified with our food safety regulations		<b>The college should avoid NZ pork that is associated with negative animal welfare</b>
Responsible decision making	<b>The college should go local to encourage students who are first time voters to be environmentally conscious consumers</b>		There are other ways the foodservice could encourage students to be conscious consumers

New Zealand identity	+ve	Neutral	-ve
Local business	<b>The college should buy local food to be fair to businesses in its community</b>		
Peer group	The college should buy more local food to encourage local food enthusiasm in this peer group		<b>The college should buy imported food so that students learn about other food cultures</b>
New Zealand brand loyalty	<b>The college should buy food made by iconic New Zealand brands such as Edmonds</b>	I don't mind if I eat an Ingham chicken nugget made in New Zealand instead of a foreign brand	The college should buy Whittakers chocolate over Cadburys chocolate
Labelling	The college should label all local food items with its producer's name and logo	<b>The college should label local menu items with an 'L' on the menu</b>	Students do not want to be connected to the origin of its food
Food tradition	<b>The college should put on a special Scottish or Maori dinner to celebrate the region's food traditions</b>	The college should buy cheese rolls from local fundraisers to embrace this southern tradition	The college should source more Pacific foods from Auckland
Sustainable identity	The college should have a local food blog featuring local suppliers and menu items		<b>The college should concentrate on other sustainability initiatives before local food</b>

<b>Environment</b>	<b>+ve</b>	<b>Neutral</b>	<b>-ve</b>
Menu repetition	The college should rely on vegetables that grow well in New Zealand over the winter months i.e. cabbages, carrots, spinach, swedes		<b>The college should buy non-local vegetables over winter months when cabbages, carrots, spinach, swedes get repetitive</b>
Food miles	The college should make food miles its top priority when buying food		<b>The college should buy dietary staples such as bananas without concern about food miles</b>
Production	The college should support local food as it is likely to be energy efficient food production	<b>The college should buy stone fruit from Central Otago but citrus fruit from the North Island as that where it grows best</b>	<b>The college should buy food based on how it is produced, not where it is grown</b>
Waste	<b>The college should give its leftover food to a local food redistribution organisation</b>		
Farming waste	<b>The college should tell suppliers to inform them when there is excess local produce that is going to waste</b>		
Environment damage	<b>The college should buy local food so it can check it is produced sustainably</b>		The college should avoid using dairy producers that pollute our region

Quality	+ve	Neutral	-ve
Freshness	<b>The college students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb on hand</b>		<b>I don't mind if there are preservatives in food to improve its shelf life for transport</b>
Fish	I don't want to eat fish from Vietnam		<b>White fish from Vietnam, white fish from Bluff, it is all the same</b>
Quality	The college should change its menu with seasonal availability of food of the highest nutritional value	The college should buy food only from national and international suppliers to ensure quality	<b>The college should focus on quality, delicious food regardless of where it comes from</b>
Nutrition	<b>The college should buy seasonal local food for its high nutritional value</b>	Apples can be kept in a cool store so it doesn't matter if they are from America or New Zealand	The college would get less variety on the menu if it were local, sacrificing its nutritional value
Food safety	<b>The college should avoid imported food, as it may not be to New Zealand food safety regulations</b>		
Working conditions	<b>The college should avoid imported food to ensure ethical working conditions are met</b>		

## **Appendix V**

### **Exploring foodservice localisation in a university foodservice setting**

#### **INFORMATION SHEET FOR PARTICIPANTS**

I am Josephine Greer, a Master of Dietetics student in the Dept of Human Nutrition. This research is part of my degree. Thank you for showing an interest in my project.

Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

#### **What is the Aim of the Project?**

This project aims to assess attitudes to local food at the college. This project is being undertaken as part of the requirements for Josephine Greer's Master of Dietetics.

#### **What Types of Participants are being sought?**

Approximately 10-15 people will be interviewed. Specifically, we are looking for:

- People over 18 years of age
- People who are likely to offer a broad range of opinions on local food issues
- An even proportion of males and females
- Various ethnic groups (New Zealand European, Maori, Pacific Islanders, Asian)
- People considered as stakeholders at the college. For students at the college, a diverse range of students across humanities, business and science will be sought. In the case of the college's staff / wider foodservice stakeholders, people in a varied range of job positions will be targeted e.g. foodservice manager, foodservice staff, head of college and those affiliated with the college through the Otago University foodservice division and food suppliers to the foodservice.

#### **What will Participants be asked to do?**

If you agree to take part in this project, you will be asked to

- Answer 10-15 semi-structured questions
- Spend 30-45 minutes with the interviewer answering these questions
- Student participants will be given cookies and chocolate at the end of the interview.
- Participation in the research will be scheduled at the most convenient time possible for the participant.



Please be aware that you may decide not to take part in the project without any disadvantage to yourself.

**What Data or Information will be collected and what use will be made of it?**

- Interviews will be audio taped and transcribed into writing.
- Statements from the interview, or a modified version of these, may be used as opinion statements for phase II of the project.
- Only those involved will have access to the data with participant identification on it; Josephine Greer (researcher) Miranda Miroso and Heather Spence (Supervisors) and a data transcriber.

The data collected will be securely stored in such a way that only those mentioned above will be able to gain access to it. Data obtained as a result of the research will be retained for **at least 5 years** in secure storage. Any personal information held on the participants such as contact details and audio tapes after they have been transcribed may be destroyed at the completion of the research, even though the data derived from the research will, in most cases, be kept for much longer or possibly indefinitely.

The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve your anonymity.

This project involves an open-questioning technique. The general line of questioning includes perceptions of local food in the college foodservice setting. The questions will not have been planned in advance, but will depend on the way in which the interview develops. Consequently, although the Department of Human Nutrition is aware of the general areas to be explored in the interview, the Committee has not been able to review the precise questions to be used.

In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable, you are reminded of your right to decline to answer any particular question(s).

**Can Participants change their mind and withdraw from the project?**

You may withdraw from participation in the project at any time throughout the project and without any disadvantage to yourself.

**What if Participants have any Questions?**

If you have any questions about our project, either now or in the future, please feel free to contact either:

Josephine Greer

or

Miranda Miroso

Department of Human Nutrition

Department of Food Science

josephine.greer@gmail.com

Telephone Number: 479 7953

miranda.miroso@otago.ac.nz

This study has been approved by the Department stated above. However, if you have any concerns about the ethical conduct of the research you may contact the University of Otago Human Ethics Committee through the Human Ethics Committee Administrator (ph 03 479-8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

## **Exploring foodservice localisation in a university foodservice setting**

### ***CONSENT FORM FOR PARTICIPANTS***

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the project is entirely voluntary;
2. I am free to withdraw from the project at any time without any disadvantage;
3. Audio tapes and transcripts will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for at least five years;
4. This project involves an open-questioning technique. The general line of questioning includes perceptions of local food, its benefits and limitations. The precise nature of the questions have not been determined in advance, but will depend on the way in which the interview develops. If I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project without any disadvantage of any kind.
5. Participants will receive cookies and chocolate at the end of the activity.
6. The results of the project may be published and will be available in the of Otago Library (Dunedin, New Zealand) but every attempt will be made for anonymity.

I agree to take part in this project.

.....

(Signature of participant)

.....

(Date)

.....

(Printed Name)

**Exploring foodservice localisation in a university foodservice setting**  
**INFORMATION SHEET FOR PARTICIPANTS**

I am Josephine Greer, a Master of Dietetics student in the Dept of Human Nutrition. This research is part of my degree. Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

**What is the Aim of the Project?**

This project aims to assess attitudes about local food at The college. This project is being undertaken as part of the requirements for Josephine Greer's Master of Dietetics.

**What Types of Participants are being sought?**

Approximately 10-15 people will be interviewed. Specifically, we are looking for:

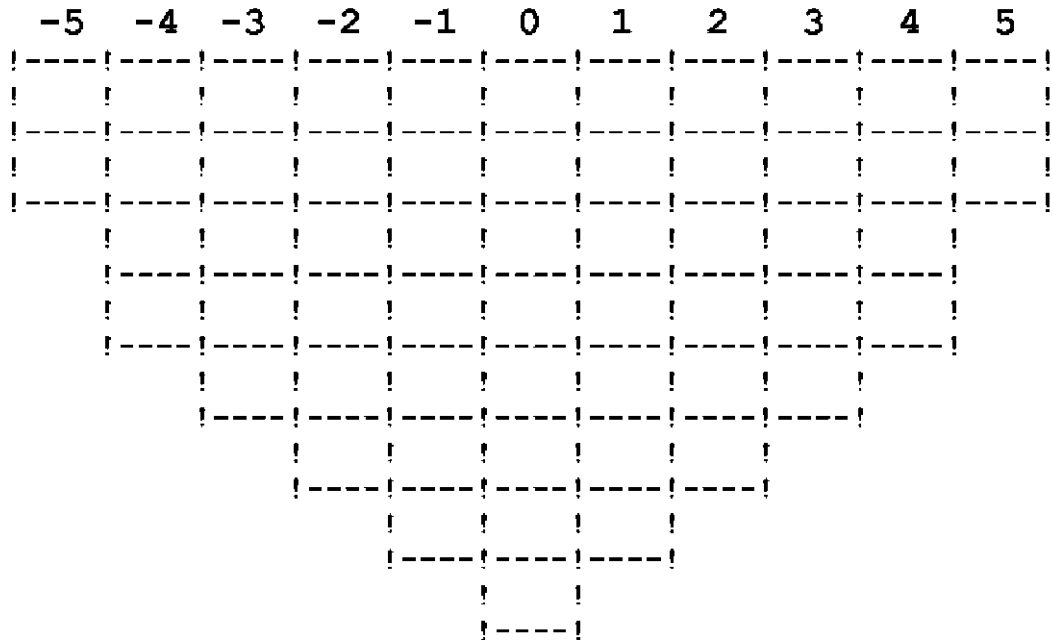
- People over 18 years of age
- People who are likely to offer a broad range of opinions on local food issues
- An even proportion of males and females
- Various ethnic groups (New Zealand European, Maori, Pacific Islanders, Asian)
- People considered as stakeholders at the college. For students at the college, a diverse range of students across humanities, business and science will be sought. In the case of the college's staff / wider foodservice stakeholders, people in a varied range of job positions will be targeted e.g. foodservice manager, foodservice staff, head of college and those affiliated with the college through the Otago University foodservice division and food suppliers to the foodservice.

Approximately 40 people will be asked to complete this study. This is the second part of a two-part study. You MAY or MAY NOT have participated in part one of this study to be eligible for inclusion in part two of this study. .

**What will Participants be asked to do?**

- You will be asked to partake in an activity that involves arranging a series of 40-50 statements into strongly agree (5) to strongly disagree (-5) according to the grid below.

- At the end of this activity, you will be asked a few questions on why you sorted things the way you did.
- The whole activity will take approximately 30 minutes. You will be given cookies and chocolate at the end of the activity.



**Fig. 1. Diagram of an example Q sort.**

Please be aware that you may decide not to take part in the project without any disadvantage to yourself.

#### **What Data or Information will be collected and what use will be made of it?**

- Interviews will be audio taped and transcribed.
- The numbered cards in the distribution will be recorded and analysed to identify similar attitudes between participants.
- Only those involved will have access to the data with participant identification on it: Josephine Greer (researcher) Miranda Miroso and Heather Spence (Supervisors) and a transcriber.

The data collected will be securely stored in such a way that only those mentioned above will be able to gain access to it. Data obtained as a result of the research will be retained for **at least 5 years** in secure storage. Any personal information held on the participants such as contact details and audio tapes, after they have been transcribed may be destroyed at the completion of the research even though the data derived from the research will, in most cases, be kept for much longer or possibly indefinitely.

The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve your anonymity.

This project involves an open-questioning technique. The general line of questioning includes perceptions of local food in the college's foodservice setting. The precise nature of the questions which will be asked have been planned in advance, but will depend on the way in which the interview develops. Consequently, although the Department of Human Nutrition is aware of the general areas to be explored in the interview, the Committee has not been able to review the precise questions to be used.

In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable, you are reminded of your right to decline to answer any particular question(s).

### **Can Participants change their mind and withdraw from the project?**

You may withdraw from participation in the project at any time throughout the project and without any disadvantage to yourself.

### **What if Participants have any Questions?**

If you have any questions about our project, either now or in the future, please feel free to contact either:

Josephine Greer

or

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Department of Human Nutrition

Department of Food Science

josephine.greer@gmail.com

Telephone Number: 479 7953

miranda.miroso@otago.ac.nz

This study has been approved by the Department stated above. However, if you have any concerns about the ethical conduct of the research you may contact the University of Otago Human Ethics Committee through the Human Ethics Committee Administrator (ph 03 479-8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

**Exploring foodservice localisation in a university foodservice setting**

***CONSENT FORM FOR PARTICIPANTS:***

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:

1. My participation in the project is entirely voluntary;
2. I am free to withdraw from the project at any time without any disadvantage;
3. Audio tapes and transcripts will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for at least five years;
4. I will receive cookies and chocolate at the end of the activity.
5. The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve my anonymity.

I agree to take part in this project.

.....

(Signature of participant)

.....

(Date)

.....

(Printed Name)

## Appendix VII

### Pre-sorting questionnaire for students:

Please fill in the following if you feel comfortable.

1. Gender:

2. Age:

3. Ethnicity:

4. Area of Study:

5. Where do you want to be in 5 years' time and what is driving you to get there (i.e. what is most important to you, what values do you live by)? Please be as specific as possible for this question.

6. Place of birth (town, country):

Place where you grew up, if different from above:

Place where you identify as home, if different from above:

If not born in New Zealand, what age did you move to New Zealand?

7. How closely do you identify with the Dunedin/Otago region from 1 to 10. 1 being I only live here but don't know the region. 10 being it is the place I most strongly identify with as home.

1      2      3      4      5      6      7      8      9      10

8. Rate your interest in sustainability from 1 to 10. 1 being I never think about it. 10 being I actively do things to limit my impact on the environment.

1      2      3      4      5      6      7      8      9      10



## Appendix VIII

### Pre-sorting questionnaire for staff/suppliers:

Please fill in the following if you feel comfortable.

1. Gender:

2. Age:

3. Ethnicity:

4. Your role in relation to the college:

5. How closely do you identify with the Dunedin/Otago region from 1 to 10. 1 being I only live here but don't know the region. 10 being it is the place I most strongly identify with as home.

1      2      3      4      5      6      7      8      9      10

6. At home do you support sustainable living? 1 being I never think about it. 10 being I actively do things to limit my impact on the environment.

1      2      3      4      5      6      7      8      9      10

What drives this?

7. At work do you support sustainable living? 1 being I never think about it. 10 being I actively do things to limit my impact on the environment.

1      2      3      4      5      6      7      8      9      10

What drives this?

8. If you are a supplier or purchase food on behalf of the college, what drives your purchasing decisions?

## **Appendix IX**

**List of values given to students to assist with answering value-based questions in the pre-sort questionnaire:**

Family  
Money  
Loyalty  
Success  
Cooperation  
Trust  
Community  
Friendship  
Health  
Opportunity  
Drive  
Work ethic  
Prestige  
Money  
Influence  
Status  
Fairness

## Appendix X

### Crib sheet for “The Leaders”

For significant distinguishing statements the statement number is shown in bold.

#### Items Ranked at +5

Number	Statement	F1	F2	F3	F4
32	The college should give its leftover food to a local food redistribution organisation	5	5	5	5
27	The college should buy as much local food as it can within its current budget	5	0	1	3

#### Items Ranked at +4

Number	Statement	F1	F2	F3	F4
<b>8</b>	The college should feature a completely local meal at least one night a month	4	1	-1	1
<b>33</b>	The college should tell suppliers to inform them when there is excess local produce going to waste	4	3	3	1
36	The college's students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb at hand	4	4	2	-4

#### Items ranked higher in factor 1 than in other factor arrays

Number	Statement	F1	F2	F3	F4
<b>8</b>	The college should feature a completely local meal at least one night a month	4	1	-1	1
11	The college should become a market leader and show that New Zealand foodservices can support the 'Local Food Movement'	3	2	0	-1
13	The college should introduce the idea of eating local to its students, before they go flatting	3	1	0	-3
16	The college should buy local food to be fair to businesses in its community	3	2	1	0
<b>19</b>	The college should label local menu items with an 'L' on	1	0	0	-1

	the menu				
<b>33</b>	The college should tell suppliers to inform them when there is excess local produce going to waste	4	3	3	1
27	The college should buy as much local food as it can within its current budget	5	0	1	3
36	The college's students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb on hand	4	4	2	-4

### Items ranked more neutral in factor 1 than any other factor

Number	Statement	F1	F2	F3	F4
2	The college should make it its policy to spend 70% of its food budget on local food	-1	-1	-2	0
3	The college should make sure suppliers can tell them where every food item is from	1	3	4	3
14	Studholme should avoid New Zealand pork that is associated with negative animal welfare	2	5	1	5
<b>28</b>	The college should buy non-local vegetables over winter months when cabbages, carrots, spinach and swedes get repetitive	0	-2	3	3
<b>29</b>	The college should buy dietary staples like bananas without concern for food miles	-1	-3	3	3
39	The college should focus on quality, delicious food regardless of where it comes from	1	-3	5	-3
<b>41</b>	The college should avoid imported food, as it may not be to New Zealand food safety regulations	-3	-1	-4	2
<b>42</b>	The college should avoid imported food to ensure that ethical working conditions are met	-2	4	-3	2

### Items ranked lower in factor 1 than in other factor arrays

Number	Statement	F1	F2	F3	F4
<b>3</b>	The college should make sure suppliers can tell them where every food item is from	1	3	4	3
<b>7</b>	The college should not include local food as a part of a campus sustainability strategy	-4	-3	-4	-2
23	The college should not limit itself to New Zealand raised lamb, pork and beef if cheaper Australian meat is	-3	-3	1	0

	available				
<b>31</b>	The college should buy food based on how it is grown not where it is grown	-2	0	4	4

#### **Items Ranked at -4**

Number	Statement	F1	F2	F3	F4
7	The college should not include local food as a part of a campus sustainability strategy	-4	-3	-4	-2
24	The college should buy more imported foods to support international trade	-4	-4	-3	-4
27	The college should buy as much local food as it can within its current budget	5	0	1	3

#### **Items Ranked at -5**

Number	Statement	F1	F2	F3	F4
22	The college should buy cheap imported foods to get more bang for its buck	-5	-5	-5	-5
38	White fish from Vietnam, white fish from Bluff, it's all the same	-5	-5	-5	-5

## Appendix XI

### Crib Sheet for “The Idealists”

For significant distinguishing statements the statement number is shown in bold.

#### Items Ranked at +5

Number	Statement	F1	F2	F3	F4
32	The college should give its leftover food to a local food redistribution organisation	5	5	5	5
14	Studholme should avoid New Zealand pork that is associated with negative animal welfare	2	5	1	5

#### Items Ranked at +4

Number	Statement	F1	F2	F3	F4
<b>35</b>	The college should avoid using dairy producers that pollute our region	0	4	2	2
36	The college’s students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb on hand	4	4	2	-4
<b>42</b>	The college should avoid imported food to ensure that ethical working conditions are met	-2	4	-3	2

#### Items ranked higher in factor 2 than in other factor arrays

Number	Statement	F1	F2	F3	F4
6	The college should have student representatives that make connections with local growers and producers	0	0	-2	-3
12	The college should have student and staff representatives attend local food network meetings in Dunedin	1	2	-1	-2
14	Studholme should avoid New Zealand pork that is associated with negative animal welfare	2	5	1	5
15	The college should go local to encourage students who are first time voters to be environmentally-conscious consumers	-1	3	-2	-3
21	The college should concentrate on other sustainability	-1	2	2	0

	initatives before local food				
<b>34</b>	The college should buy local food so it can check its produced sustainably	1	3	0	1
35	The college should avoid using dairy producers that pollute our region	0	4	2	2
36	The college's students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb on hand	4	4	2	-4
42	The college should avoid imported food to ensure that ethical working conditions are met	-2	4	-3	2

### Items ranked more neutral in factor 2 than any other factor

Number	Statement	F1	F2	F3	F4
5	The college should ask suppliers to source local food like that available at the farmers' market, on its behalf	0	0	-2	1
<b>13</b>	The college should introduce the idea of eating local to its students, before they go flatting	3	1	0	-3
<b>16</b>	The college should buy local food to be fair to businesses in its community	3	2	1	0
<b>26</b>	Students would, if necessary, be willing to pay 50c more a day on their fees for more local food (0.49)	-1	-2	-3	1
<b>41</b>	The college should avoid imported food, as it may not be to New Zealand food safety regulations	-3	-1	-4	2

### Items ranked lower in factor 2 than in other factor arrays

Number	Statement	F1	F2	F3	F4
23	The college should not limit itself to New Zealand raised lamb, pork and beef if cheaper Australian meat is available	-3	-3	1	0
27	The college should buy as much local food as it can within its current budget	5	0	1	3
<b>28</b>	The college should buy non-local vegetables over winter months when cabbages, carrots, spinach and swedes get repetitive	0	-2	3	3
<b>29</b>	The college should buy dietary staples like bananas without concern for food miles	-1	-3	3	3
31	The college should buy food based on how it is grown	-2	0	4	4

	not where it is grown				
37	I don't mind if there are preservatives in food to improve its shelf-life for transport	-4	-4	1	0
39	The college should focus on quality, delicious food regardless of where it comes from	1	-3	5	-3

#### Items Ranked at -4

Number	Statement	F1	F2	F3	F4
24	The college should buy more imported foods to support international trade	-4	-4	-3	-4
37	I don't mind if there are preservatives in food to improve its shelf life for transport	-4	-4	1	0
10	The college should ignore the self-righteous notion that local food is best	-3	-4	-3	-1

#### Items Ranked at -5

Number	Statement	F1	F2	F3	F4
22	The college should buy cheap imported foods to get more bang for its buck	-5	-5	-5	-5
38	White fish from Vietnam, white fish from Bluff, it's all the same	-5	-5	-5	-5



## Appendix XII

### Crib Sheet for “The Globalists”

For significant distinguishing statements the statement number is shown in bold.

#### Items Ranked at +5

Number	Statement	F1	F2	F3	F4
32	The college should give its leftover food to a local food redistribution organisation	5	5	5	5
<b>39</b>	The college should focus on quality, delicious food regardless of where it comes from	1	-3	5	-3

#### Items Ranked at +4

Number	Statement	F1	F2	F3	F4
<b>3</b>	The college should make sure suppliers can tell them where every food item is from	1	3	4	3
31	The college should buy food based on how it is grown not where it is grown	-2	0	4	4
40	The college should buy seasonal local food for its high nutritional value	2	1	4	4

#### Items ranked higher in factor 3 than in other factor arrays

Number	Statement	F1	F2	F3	F4
3	The college should make sure suppliers can tell them where every food item is from	1	3	4	3
<b>17</b>	The college should buy more imported food so that students learn about other food cultures	-3	-2	0	-4
<b>20</b>	The college should put on a Scottish or Maori special dinner to celebrate the region's food traditions	2	-1	2	-2
23	The college should not limit itself to New Zealand raised lamb, pork and beef if cheaper Australian meat is available	-3	-3	1	0
<b>24</b>	The college should buy more imported foods to support international trade	-4	-4	-3	-4
28	The college should buy non-local vegetables over	0	-2	3	3

	winter months when cabbages, carrots, spinach and swedes get repetitive				
<b>29</b>	The college should buy dietary staples like bananas without concern for food miles	-1	-3	3	3
<b>37</b>	I don't mind if there are preservatives in food to improve its shelf life for transport	-4	-4	1	0

### Items ranked more neutral in factor 1 than any other factor

Number	Statement	F1	F2	F3	F4
10	The college should ignore the self-righteous notion that local food is best	-3	-4	-3	-1
16	The college should buy local food to be fair to businesses in its community	3	2	1	0
25	The college should first see if local businesses use imported ingredients	0	0	-1	-2

### Items ranked lower in factor 3 than in other factor arrays

Number	Statement	F1	F2	F3	F4
2	The college should make it its policy to spend 70% of its food budget on local food	-1	-1	-2	0
<b>5</b>	The college should ask suppliers to source local food like that available at the farmers' market, on its behalf	0	0	-2	1
7	The college should not include local food as a part of a campus sustainability strategy	-4	-3	-4	-2
<b>8</b>	The college should feature a completely local meal at least one night a month	4	1	-1	1
18	The college should buy food made by iconic New Zealand brands like Edmonds	-2	-2	-4	-1
26	Students would, if necessary, be willing to pay 50c more a day on their fees for more local food (0.49)	-1	-2	-3	1
30	The college should buy stone fruit from Central Otago but citrus from the North Island as that is where it grows best	2	1	0	4
34	The college should buy local food so it can check its produced sustainably	1	3	0	1
<b>41</b>	The college should avoid imported food, as it may not be to New Zealand food safety regulations	-3	-1	-4	2

<b>42</b>	The college should avoid imported food to ensure that ethical working conditions are met	-2	4	-3	2
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#### **Items Ranked at -4**

Number	Statement	F1	F2	F3	F4
7	The college should not include local food as a part of a campus sustainability strategy	-4	-3	-4	-2
18	The college should buy food made by iconic New Zealand brands like Edmonds	-2	-2	-4	-1
41	The college should avoid imported food, as it may not be to New Zealand food safety regulations	-3	-1	-4	2

#### **Items Ranked at -5**

Number	Statement	F1	F2	F3	F4
22	The college should buy cheap imported foods to get more bang for its buck	-5	-5	-5	-5
38	White fish from Vietnam, white fish from Bluff, it's all the same	-5	-5	-5	-5

## Appendix XIII

### Crib Sheet for “The Individualists”

For significant distinguishing statements the statement number is shown in bold.

#### Items Ranked at +5

Number	Statement	F1	F2	F3	F4
14	Studholme should avoid New Zealand pork that is associated with negative animal welfare	2	5	1	5
32	The college should give its leftover food to a local food redistribution organisation	5	5	5	5

#### Items Ranked at +4

Number	Statement	F1	F2	F3	F4
<b>30</b>	The college should buy stone fruit from Central Otago but citrus from the North Island as that is where it grows best	2	1	0	4
31	The college should buy food based on how it is grown not where it is grown	-2	0	4	4
40	The college should buy seasonal local food for its high nutritional value	2	1	4	4

#### Items ranked higher in factor 4 than in other factor arrays

Number	Statement	F1	F2	F3	F4
2	The college should make it its policy to spend 70% of its food budget on local food	-1	-1	-2	0
5	The college should ask suppliers to source local food like that available at the farmers' market, on its behalf	0	0	-2	1
8	The college should feature a completely local meal at least one night a month	4	1	-1	1
23	The college should not limit itself to New Zealand raised lamb, pork and beef if cheaper Australian meat is available	-3	-3	1	0
<b>26</b>	Students would, if necessary, be willing to pay 50c more a day on their fees for more local food (0.49)	-1	-2	-3	1

<b>29</b>	The college should buy dietary staples like bananas without concern for food miles	-1	-3	3	3
<b>37</b>	I don't mind if there are preservatives in food to improve its shelf-life for transport	-4	-4	1	0
<b>40</b>	The college should buy seasonal local food for its high nutritional value	2	1	4	4
<b>41</b>	The college should avoid imported food, as it may not be to New Zealand food safety regulations	-3	-1	-4	2
<b>42</b>	The college should avoid imported food to ensure that ethical working conditions are met	-2	4	-3	2

#### **Items ranked more neutral in factor 4 than any other factor**

Number	Statement	F1	F2	F3	F4
3	The college should make sure suppliers can tell them where every food item is from	1	3	4	3
9	The college should buy more local food if the majority of students agree to this	3	1	2	2
<b>10</b>	The college should ignore the self-righteous notion that local food is best	-3	-4	-3	-1
23	The college should not limit itself to New Zealand raised lamb, pork and beef if cheaper Australian meat is available	-3	-3	1	0
36	The college's students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb at hand	4	4	2	-4

#### **Items ranked lower in factor 4 than in other factor arrays**

Number	Statement	F1	F2	F3	F4
6	The college should have student representatives that make connections with local growers and producers	0	0	-2	-3
11	The college should become a market leader and show that New Zealand foodservices can support the 'Local Food Movement'	3	2	0	-1
12	The college should have student and staff representatives attend local food network meetings in Dunedin	1	2	-1	-2

<b>13</b>	The college should introduce the idea of eating local to its students, before they go flatting	3	1	0	-3
15	The college should go local to encourage students who are first time voters to be environmentally conscious consumers	-1	3	-2	-3
16	The college should buy local food to be fair to businesses in its community	3	2	1	0
19	The college should label local menu items with an 'L' on the menu	1	0	0	-1
<b>20</b>	The college should put on a Scottish or Maori special dinner to celebrate the region's food traditions	2	-1	2	-2
<b>36</b>	The college's students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb on hand	4	4	2	-4
39	The college should focus on quality, delicious food regardless of where it comes from	1	-3	5	-3

#### Items Ranked at -4

Number	Statement	F1	F2	F3	F4
17	The college should buy more imported food so that students learn about other food cultures	-3	-2	0	-4
24	The college should buy more imported foods to support international trade	-4	-4	-3	-4
36	The college's students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb at hand	4	4	2	-4

#### Items Ranked at -5

Number	Statement	F1	F2	F3	F4
22	The college should buy cheap imported foods to get more bang for its buck	-5	-5	-5	-5
38	White fish from Vietnam, white fish from Bluff, it's all the same	-5	-5	-5	-5

### Appendix XIV

#### Rank order values for each statement

Number	Statement	F1	F2	F3	F4
1	The college should use locally sourced food in its foodservice to make it more attractive to future students	0	-1	-1	0
2	The college should make it its policy to spend 70% of its food budget on local food	-1	-1	-2	0
3	The college should make sure suppliers can tell them where every food item is from	1	3	4	3
4	The college should not have a local food clause in its contracts with suppliers	-2	-1	-1	-1
5	The college should ask suppliers to source local food like that available at the farmers' market, on its behalf	0	0	-2	1
6	The college should have student representatives that make connections with local growers and producers	0	0	-2	-3
7	The college should not include local food as a part of a campus sustainability strategy	-4	-3	-4	-2
8	The college should feature a completely local meal at least one night a month	4	1	-1	1
9	The college should buy more local food if the majority of students agree to this	3	1	2	2
10	The college should ignore the self-righteous notion that local food is best	-3	-4	-3	-1
11	The college should become a market leader and show that New Zealand foodservices can support the 'Local Food Movement'	3	2	0	-1
12	The college should have student and staff representatives attend local food network meetings in Dunedin	1	2	-1	-2
13	The college should introduce the idea of eating local to its students, before they go flatting	3	1	0	-3
14	Studholme should avoid New Zealand pork that is associated with negative animal welfare	2	5	1	5
15	The college should go local to encourage students who are first time voters to be environmentally-conscious consumers	-1	3	-2	-3
16	The college should buy local food to be fair to businesses in its community	3	2	1	0
17	The college should buy more imported food so that students learn about other food cultures	-3	-2	0	-4

18	The college should buy food made by iconic New Zealand brands like Edmonds	-2	-2	-4	-1
19	The college should label local menu items with an 'L' on the menu	1	0	0	-1
20	The college should put on a Scottish or Maori special dinner to celebrate the region's food traditions	2	-1	2	-2
21	The college should concentrate on other sustainability initiatives before local food	-1	2	2	0
22	The college should buy cheap imported foods to get more bang for its buck	-5	-5	-5	-5
23	The college should not limit itself to New Zealand raised lamb, pork and beef if cheaper Australian meat is available	-3	-3	1	0
24	The college should buy more imported foods to support international trade	-4	-4	-3	-4
25	The college should first see if local businesses use imported ingredients	0	0	-1	-2
26	Students would, if necessary, be willing to pay 50c more a day on their fees for more local food (0.49)	-1	-2	-3	1
27	The college should buy as much local food as it can within its current budget	5	0	1	3
28	The college should buy non-local vegetables over winter months when cabbages, carrots, spinach and swedes get repetitive	0	-2	3	3
29	The college should buy dietary staples like bananas without concern for food miles	-1	-3	3	3
30	The college should buy stone fruit from Central Otago but citrus from the North Island as that is where it grows best	2	1	0	4
31	The college should buy food based on how it is grown not where it is grown	-2	0	4	4
32	The college should give its leftover food to a local food redistribution organisation	5	5	5	5
33	The college should tell suppliers to inform them when there is excess local produce going to waste	4	3	3	1
34	The college should buy local food so it can check its produced sustainably	1	3	0	1
35	The college should avoid using dairy producers that pollute our region	0	4	2	2



36	The college's students and staff should run a vegetable garden to have some fresh herbs, spinach and rhubarb on hand	4	4	2	-4
37	I don't mind if there are preservatives in food to improve its shelf life for transport	-4	-4	1	0
38	White fish from Vietnam, white fish from Bluff, it's all the same	-5	-5	-5	-5
39	The college should focus on quality, delicious food regardless of where it comes from	1	-3	5	-3
40	The college should buy seasonal local food for its high nutritional value	2	1	4	4
41	The college should avoid imported food, as it may not be to New Zealand food safety regulations	-3	-1	-4	2
42	The college should avoid imported food to ensure that ethical working conditions are met	-2	4	-3	2

## Appendix XV

### Full interpretation of “The Idealists”

“The Idealists” showed strong ethical values with a desire to avoid New Zealand pork associated with negative animal welfare (14; 5), and dairy that could pollute the region (35; 4\*). They believed that avoiding imported food assured better working conditions for food producers (42; 4\*). The Female Law Student stated: “in New Zealand it is easier to make sure that ethical working conditions are being met”. The Male Surveying Student revealed: “there are lots of dairy producers so why would we support ones that are polluting our region”. Others, such as the Female Law and Arts Student, were more informed about the realities of the dairy industry commenting: “wouldn’t they all be polluting? Sometimes you just have to count your losses and take what you can get”.

Like “The Leaders”, “The Idealists” had a preference for New Zealand meat (23; -3) and supporting local food to be fair to local businesses (16; 2\*\*). They were more willing to make sacrifices for the environment, limiting dietary staples such as bananas (29, -3\*) and non-local vegetables (28, -2\*) in order to reduce food miles. The Male Served Employee commented that, “they [the foodservice] would just have to get creative with the menu I guess”.

Participants in “The Idealists” were most proactive about collective initiatives such as a student-run vegetable garden (36; 4) or having student representatives to make connections with local producers (6; 0) or attend local food network meetings (12; 2). While some students showed enthusiasm, others did not; the Female Law Student had neither “time nor energy”. The Female Law and Arts Student explained that “job-wise it wouldn’t be much of an extension from the job the kitchen has already”.

There was support for educating students about local food before flatting (13; 1\*\*), and the Male Servery Employee asserted that, “when you are living in a hall it doesn’t matter where the food comes from. When they do go flatting I always see students at the farmers’ market”. “The Idealists” wanted the college to encourage students to be conscious voters (15; 3\*). The Female Law Student mentioned: “reinforcing local food... makes them think about environment issues. An interest has to start somewhere”. The Female Surveying Student explained:

“We were the first generation to learn about sustainability. We have had it drilled into us our whole lives. Even though I am not that passionate about the environment, I would vote to support those policies because we have been brought up with that conscience.”

“The Idealists” did not stress the need for localisation to be done within budget (27; 0). However, they were not willing to pay an extra 50c a day for this either (26; -2), the Female Law Student commenting “that the cost should fall to the hall because we already pay so much” and the Female Law and Arts Student commenting that “as a whole students probably wouldn’t [pay]”.

Both how and where food is produced was important to this group (31; 0\*), again “The Idealists” wanted the best of both worlds. They believed it was easier to check for sustainable practices in local products (34; 3\*\*) and because of this, viewed food safety standards differently to most other factors (41; -1\*). The Female Law and Arts Student commented: “How it is produced is very important but if it is grown in New Zealand

we know how it is produced anyway”. The Male Servery Employee identified the potential trap in believing local is always best saying:

“In a sense we know where it is coming from [so] we know people are being paid decent wages because our standards are quite high as opposed to the Philippines or something.... [but] just coming from New Zealand doesn’t mean you can be 100% sure you are safe, you still have to check”.

The Female Law and Arts Student also argued that she “wouldn’t go for local food if it was less sustainable or poor animal welfare”.

This factor was least accepting that local food is just a self-righteous notion (10, -4), as they placed more importance on locality than quality and taste (39, -3). The Female Law and Arts Student stated: “It usually is better quality. We can tell that it is better quality. We know that it has been tested by us rather than buying food that we don’t know what has happened to it”.

“The Idealists” are hard to please and they are overly idealistic, wanting what is best for their community and their college, whether sustainably or ethically driven. They favoured other sustainability objectives beside local food (21; 2) and Female Law and Arts Student listed “food waste, students paper, foodservice packaging and recycling and waste distribution”. Local food is just one item on their agenda. Their sentiment about local food is mixed in with a lot of other idealisms displayed by the Male Servery Employee:

“Is buying local food really necessary? There are other things I rank a lot higher. It comes down to economy and what is feasible. It is not something that is really imperative.... Finding out what is produced with the least [sic]

repercussions. Regardless of its country of origin or how local it is in New Zealand. We should probably get a cow for the college, a couple of hens. Obviously it won't serve the whole community but it shows a commitment to being sustainable.

Yet he knows he is asking for the moon saying, "If you want produce to be clean and ethical you would have to restructure the whole economy of the college itself."

The Male Milk Supplier opposed this viewpoint. His "milk is coming from Christchurch Fonterra milk plant... [which] gets milk from all over the South Island" so unlike the rest of "The Idealists" (35; 4) he would make allowances for dairy production (35; -5) "as long as they are not dumping into any drains". While the factor disliked preservatives (37; -4), he didn't mind them (37; 3) as he accepted that "milk has preservatives in it now so it can keep for 2 weeks, not 3 days. Everything is going that way for convenience now". All participants were totally supportive of local food redistribution (5.3.3) but the Dairy Supplier showed some resistance (32; 2) as "if someone gets sick that's my [his] credibility gone". He viewed farmers' markets differently (5; -4) compared to "The Idealists" (5;0). He did not qualify for the markets as "all my [his] stuff is produced up north". His opinion was a direct reflection of his role in supplying the college and the fear of losing business.

## Appendix XVI

### Full interpretation of “The Globalists”

“The Globalists” believed quality was the most important attribute of food, not locality (39; 5\*\*). The Male Residential Assistant Physiotherapy Student argued: “fine if its local but it has to be good quality. You can't have a local dish that no one is going to eat”. “The Globalists” appreciated local food for improved nutrition (40; 4). Male Law Student 3 vocalised he was “all for the best quality meal regardless of location. Obviously local food is the best as it is the freshest most of the time. But if it is crappy local food there is no point in buying it in that case”. How it is grown was more important than where it is grown (31; 4). Male Law Student 3 mentioned: “I am [he was] more concerned about the food itself not where it has come from”. Female Commerce Student 2 brought up that “if it is good quality food it shouldn't really matter where it comes from”. The Female Physiology Student gave the example: “If you take canned fruits they might be grown in different areas but some brands might add something awful. It's what you're eating not where it was grown that is important”.

Despite this, “The Globalists” had the strongest desire to know country of origin information for food items (3; 4\*\*). Male Law Student 3 recognised “sometimes food can be a bit sketchy. You see in the news random food from China with bad things in it”. The two suppliers also supported this, with Male National Supplier 1 stating:

“If someone asks us a question we should know [where a product comes from]. We can search that information on the computer but the description is not on the order forms except for certain products like New Zealand pork”.

They also disregarded the idea that local food was just a self-righteous notion (10; -3) as they felt New Zealand products were high quality. Male Management 1 said: “I am all for New Zealand made. I think our quality is better than stuff overseas”. However, they were against featuring a local meal once a month (8; -1\*\*) and sourcing through the farmers’ market (5, -2\*\*) due to expense and the belief by some, including Male National Supplier 2 that “the farmers’ market could not supply a big organisation”.

“The Globalists” were most opposed to making it policy to source 70% of food locally (2; -2\*) as put by Male Residential Assistant Physical Education and Commerce Student: “it may cause fees to rise and the quantity of how much you actually get to eat may change”. Male Law Student 3 summarised this sentiment, saying: “I don’t think we should aim to meet a quota of local food. If there is good local food around, support it, but if the local food isn’t good I’d like it to come from somewhere else”.

Over half the students in this factor were from the North Island or had spent some of their childhood outside of New Zealand. Their association with the Otago region was 6.8 (5.3.5), lower than “The Leaders” and “The Idealists” but not “The Individualists”. They did not support limiting purchasing to where food grows best within New Zealand (30; 0) because they did not mind looking to global markets for produce. Yet they did want to source produce that grows well in the North Island. The Female Health Science Student commented: “I know North Island food is great because I am from there” and Male Law Student 3 remarked: “If I want an orange or a kiwifruit, they grow up north”. National Supplier 2 spoke of a practical advantage of sourcing from all over New Zealand saying, “the North Island crop starts first and then Central Otago”.

“The Globalists” were more supportive of a Maori or Scottish special dinner to learn about the heritage of the region (20; 2\*). Two Maori students felt the cultural aspect of the theme night was important, and Male Residential Assistant Physiotherapy and Female Linguistics Student commented: “people should know what food is traditional” and “they do a lot of American and Japanese food nights but never any heritage Maori and Scottish meals... a lot of people wouldn’t have experienced that”, respectively. On the other hand, other students just liked theme nights for variety. Male Law Student 3 commented “I just like it when they do theme meals” and the Male Psychology Student remarked: “it brings more fun and different foods. It brings a different atmosphere from the kitchen and dining room”.

Paying homage to their namesake, “The Globalists” supported international trade more than other factors (24; -3\*). The Male Psychology Student thought: “you [the college] should look for something that is best for us [the students], not just something that is around us [the college]”. Also there was less concern about local businesses using imported ingredients (25, -1). The Male Residential Assistant Physiotherapy Student agreed with “putting money into a local business even if there is imported ingredients”. Male Law Student 3 said, “as long as you know where the ingredients are coming from, I don’t think you should patronise the local business”.

They were least likely to pay more fees for localisation of the foodservice (26; -3). Female Physiology Student attributed this to her association with the Otago region (5.3.5): “because I am not from here or know anyone in the industry it is not important to me”. The Male Residential Assistant Physical Education and Commerce Student queried: “is local food really worth that little bit extra every day?” The Female



Commerce Student felt she would pay more for local food “if it changed the quality drastically”. They wanted to be fair to local businesses (16; 1) but not as much as other factors, often perceiving local food to be too expensive. National Supplier 2 remarked: “I support local businesses when possible; it comes down to price”. National Supplier 2 worked for an Australian owned company and felt they supported the local economy more than New Zealand owned companies saying, “we spend a lot more money on trucks and forklifts, all brought and the maintenance done locally. You are supporting businesses in that way. A small kiwi company will push those things out for ages”.

“The Globalists” were least concerned about preservatives in their food (37; 1\*) or traceability of imported foods for food safety regulations (41: -4\*) and ensuring ethical working conditions (42; -3\*\*). The Female Linguistics Student and Female Commerce Student 2 argued, correctly, that “fruit is screened when it comes into the country, it has to be to standards” and the “government should be monitoring this” respectively.

“The Globalists” were not concerned about food miles. They did not mind buying non-local vegetables (28; 3), Australian meat (23; 1) and importing dietary staples such as bananas (29; 3\*) when convenient or price competitive. The Male Residential Assistant Physiotherapy Student commented: “dietary staples are really important [for health] with a young group like hall freshers”.

They did not think buying within New Zealand made it easier to check for sustainability practices in a given food chain (34; 0). Male Law Student 3 felt that, “as long as you know where it [food] is coming from you can check [production methods]”. National Supplier 1 felt that, “A grade suppliers should have A grade

products” regardless of geographical origin. They held concern for the environment and as with “The Leaders”, were proactive in wanting a campus sustainability strategy including local food (7; -4).

## Appendix XVII

### Full interpretation of “The Individualists”

For “The Individualists”, quality came first. Like “The Idealists”, this factor wanted quality delicious food but also placed importance on locality (39; -3) because they perceived local food as high quality. They were happy to buy food from where it grows best within New Zealand (30; 4\*). Female Genetics Student 1 said, “It’s still in New Zealand. You have to use what you have got; limiting yourself to Central Otago would be hard” and Female Genetics Student 2 felt, “where it grows best is where it is the nicest”. “The Individualists” appreciated seasonal, local food (40; 2) for the nutritional content. Like “The Leaders” they felt local food may be attractive to potential students (1; 0), if not now, then in the future, as participants such as Female Genetics 2 believed, “local food means nicer food”.

They empathised with “The Idealists” on issues of animal welfare (14; 5) and ethical working conditions (42; 2\*\*) in the food system. Many participants voiced concern for animal welfare; the Female Psychology and Marketing Student stated she was a vegetarian. Female Genetics 2 said: “if those animals are treated rightly then that is more important than it being local” and Female Genetics 1 felt: “if people stopped buying no free range it would be so much easier for everyone to buy better free range meat”.

“The Individualists” placed more importance on how food is grown compared with where food is grown (31; 4), aligning themselves with “The Globalists” this time. Commerce Student 3 stated: “If food is grown overseas it can be produced just as well as local food. How is what is most important, to see how workers are treated which you

can tell from company reputation”. Both “The Individualists” and “The Globalists” are happy to optimise nutrition with imported foods such as non-local vegetables (28; 3), bananas (29; 3\*) and Australian meat (23; 0). The Female Commerce Student also made the comment that, “some things grow best overseas and are nicer imported”.

“The Individualists” were most inclined to think that local food was a self-righteous notion (10; -1\*\*). Female Genetics 1 proclaimed: “I don’t think that people should be buying local food based on the image. I agree with local food”. Female Genetics 2 echoed this, saying “do it as a personal choice not just because of some preconceived idea”. They were unconcerned with the authenticity of the claim but against blindly supporting it.

They were most supportive of sourcing food from the farmers’ market (5; 1) but recognised potential barriers to doing so, as Female Genetics 1 said, “my family shops at farmers’ market but for the college it seems quite hard to shop at a quaint farmers’ market with the amount of food we go through”. Female Commerce 3 thought that, “suppliers might not do that [source food from the farmers’ market on the colleges behalf].

They were concerned with issues of food safety (41; 2\*\*). The Female Psychology Student said, “the foodservice should know where it [the food] comes from on our behalf, it’s a health thing”. They were least concerned with local businesses using imported ingredients (25; -2), and Female Commerce 3 said, “I don’t think every local business would keep track of where their ingredients come from. Bit unrealistic and time consuming”. As with all other factors, country of origin information was desired

(3; 3), and the Female Psychology Student mentioned: “they should know where stuff comes from, that it doesn’t come from some random country”. Like “The Leaders” they also recognised the barriers to getting country of origin information, and Female Genetics 1 noted: “they should be able to but I also think that that is a huge ask”.

“The Individualists” did not want to buy local food to support local businesses (16; 0) or for the college to become a market leader in local food (11; -1), unlike other factors. Female Genetics Student 1 affirmed this by saying:

“The motivation out there shouldn’t be to please the businessman. I want to know the food hasn’t been through any crazy journey to get here or has any preservatives in it. It might be naïve but I trust the food here more than food from overseas”.

The four students of “The Individualists” gave no precedence to statements around education. They did not think it was important to inform students about local food before flatting (13; -3\*\*) or creating environmentally conscious consumers (15; -3). Female Genetics Student 1 felt that “it depends what sort of person you are. For a lot of people it might go over their head; others would pick up on this”. There was disinterest in informing the student body about local food through having Scottish or Maori special dinners (20; -2\*) or labelling local menu items with an ‘L’ on the menu. Female Genetics Student 2 said, “students wouldn’t look at it” and the Female Psychology and Marketing Student reiterated this, saying “students don’t really care” (19; -1). However, they supported a local meal once a month (8; 1).

In juxtaposition to “The Idealists, this factor was against collective student-run initiatives (6; -3, 12; -2). Female Commerce 3 divulged: “for staff it is a really good idea; for students they won't put it into practice”. When it came to an on-site vegetable garden (36; -4\*\*) Female Genetics 2 thought that, “the college would never do it... It's not the top of my priorities and I don't think it would be the top of many people's priorities”. Female Genetics 1 revealed:

“I have quite a downer on student councils. I have gone through them my whole life and I haven't seen any great advances when it comes to organised group movements I just don't see them working. Students talking to students is wasting their time; they don't give a shit.”

They were most supportive of making a local food policy to spend 70% of the budget on local food (2; 0). Female Genetics 1 said “I think that is a good goal [70%] to start off with...to going completely ‘local’ but Female Commerce Student 3 was a voice of reason, feeling that “it would be quite hard, depending on the food they [the college] want”. “The Individualists” also showed willingness for students to pay 50c more a day for local food (26; 1\*\*) and the other factors with more staff and suppliers would not have expected this from students.