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Consumer attitudes towards attributes of food and the use of digital media and smart technologies to inform and purchase food

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Abstract

Understanding international consumer preferences and attitudes towards food is important for countries like New Zealand that depend heavily on food exports. New Zealand's export focus has changed over the last few decades from almost all exports going to Europe, to more into Asian markets, in particular to China. It is therefore important that different cultures and preferences in these markets are considered and understood. This paper will present results from a pilot survey in six countries (UK, Korea, Japan, India, China and Indonesia) focusing on how consumers in different markets respond to different attributes and on how New Zealand producers can communicate those using smart technology and digital media in overseas markets. The results highlight the importance of food safety and health foods in these markets. In general, developing countries valued attributes more than developed countries. This included environmental quality in food which was also seen as key for underpinning food safety.

Keywords Consumer preferences, food products, smart media, New Zealand, developing countries, cross-country comparison

JEL code D120 Consumer Economics: Empirical Analysis

Introduction

The value that consumers place on different attributes in food products is likely to vary across different countries and commodities. Credence attributes are qualities believed by a consumer to be present in a product even though they cannot be identified, experienced and inspected by consumers whether before or after purchase (e.g. food safety, animal welfare, environmental protection and cultural authenticity). The values and consumers' attitudes and preferences towards credence attributes in food have been investigated in several studies worldwide (Saunders et al, 2013; Eurobarometer, 2009; Synovate, 2007). However, the literature has tended to be concentrated on consumer preferences in developed country markets such as the United Kingdom (UK), and a few studies have been published on how consumers in emerging markets such as India, China and Indonesia evaluate different attributes of food products.

New Zealand is a developed country which is heavily dependent on its agricultural exports. Historically, New Zealand's main export market has been the UK but in recent years, the focus of New Zealand exporters has evolved from almost all exports going to Europe, to more going to Asian markets, particularly China. It is therefore important that New Zealand exporters understand different cultures and preferences in these markets and how they differ from other markets in order to gain a premium for their exports but also how these can be communicated using digital media and smart technology.

This study is part of a wider research project 'Maximising Export Returns (MER)', a three year project undertaken by the Agribusiness and Economics Research Unit (AERU) at Lincoln University funded by the New Zealand Ministry for Business, Innovation and Employment (MBIE). This project aims to explore how export firms can capture price premiums by including credence attributes in products for overseas markets. It builds on previous work of the AERU which showed that overseas consumers (including those in the UK, China, and India) value different food attributes in New Zealand products (Saunders et al., 2013). The study particularly showed that food safety was the most important food attribute. Not surprisingly India and China rated food safety certification as more important than respondents from the UK. However, more surprising was that in most cases Indian and Chinese consumers valued other credence attributes more than in the UK, including for organic, environmental quality, animal welfare and recyclability (Saunders et al., 2013). In this study, these findings are investigated in more detail by assessing important factors underpinning key attributes in food products. This study also included more countries (i.e. Indonesia, Japan and Korea). Finally, the use of smart media and digital technologies to communicate with consumers in market. Hence, this study aims to investigate consumers' attitudes and preferences towards credence attributes in food products as well as the use of digital media and smart technologies to provide information about food and to purchase food in six overseas markets three developed countries (Japan, Korea and the UK) and three developing countries (China, India and Indonesia).

The paper is structured as follows. The next section gives a brief history of New Zealand agricultural trade and especially the rise in importance of emerging markets. A literature review of consumer preferences for food attributes, especially in the countries of interest, as well as a review of the use of smart technology for obtaining information and purchasing food. This is followed by the methodology of the study. The design of the survey and its implementation are then described, followed by the presentation and discussion of survey results. Finally, conclusions are made.

The importance of emerging markets and consumer preferences

Historically, the UK was New Zealand's greatest export market taking almost all exports until 1960. However, the focus of New Zealand exporters has changed over the last few decades with a growth in exports to Asian markets, in particular to China. Since 2010, China has been New Zealand's key export market for agricultural commodities, facilitated through the signing of a Free Trade Agreement between both countries in 2008. In 2014, the export value of New Zealand's agricultural exports to China was valued at NZ\$8.4 billion – a 64 per cent increase from the previous year (Statistics New Zealand 2014). In contrast, New Zealand's agricultural exports to India have fluctuated but in 2010 India started negotiations towards a Free Trade Agreement with New Zealand which has the potential for India to become an important export market (MFAT, 2013). While other Asian markets like Japan and Korea are already well established trading partners for New Zealand, countries like Indonesia has some trade with New Zealand but has been identified as a potential growth market for the future. In particular, New Zealand's trade relationship with Indonesia has been given impetus by the ASEAN¹, Australia and New Zealand Free Trade Agreement (AANZFTA), into which Indonesia became a member in January 2012 (MFAT, 2014).

With growing trade into emerging markets in Asia, it is important for New Zealand exporters to understand consumer preferences and attitudes towards food in these markets. There is some literature on consumer preference in these markets of interest but this varies, and there are few if any studies which compare across countries. For China, studies have shown that food safety is the most important credence attribute for consumers (Saunders et al., 2013; Zheng et al., 2013; Pan, 2012). Concerns for food safety may have increased since food safety incidents occurred - nationally and internationally – such as the Fonterra botulism scare in 2013 or the 2008 melamine scare in infant formula. The Chinese government has introduced a number of food safety assurance schemes including a system of food labels. However, it is argued many consumers have limited trust, as well as limited recognition and understanding of the authenticity of these labels (Sun and Collins 2012; Liu et al. 2012). “Safe food” is argued to be also related to the idea of “green food” in China, with a study finding that consumers associating organics with being safer and healthier because of the lack of pesticide and other residues on food (Thøgersen & Zhou, 2010). It is therefore argued that the high interest in organic products is often driven by concerns for health rather than concern for the environment (Miller et al., 2014). Another study found that there is a strong preference by Chinese consumer's foods with a health/functional attribute with women's health and children's health segments indicated being the strongest (HKTDC, 2013).

Food safety is also a key attribute in food for Indian consumers. However, there are few studies that have quantified this, Saunders et al. (2013) showed that Indian consumers were willing to pay over 70 per cent for food safety certified dairy and lamb products from New Zealand. Another study conducted by Birol et al. (2010) showed that Indian consumers who were exposed to information on “food safety certified” labelled grapes were more likely to purchase them than those who did not see the additional information. Some studies have also shown that there is a growing number of Indian consumers who show a preference for environmental attributes associated with food products (Ishaswini and Datta, 2011; Mahapatra, 2013; Saxena and Khadelwal, 2010). In particular, eco-labelling and eco-friendly packaging has been shown to affect the purchasing decisions of urban middle class Indians (Vernekar and Wadhwa, 2011). Similar to China, a study has found that Indian consumer regard organics as a healthier

¹ This is the Association of Southeast Asian Nations.

alternative to conventionally produced food due to the lack of pesticide residues rather than environmental concerns (Kumar and Ali, 2011; Finzer et al., 2013; Chakrabarti 2010).

Similarly, food safety is an important attribute in food for UK consumers (The Consumer Council, 2013; Which?, 2013; Saunders et al., 2013), and this has grown in importance after food safety scares such as the 2013 Horsemeat adulteration scandal (The Consumer Council, 2013) and the 2011 German sprouts *E. coli* outbreak (EFSA, 2012). Some argue that it is for this reason that country of origin labelling has increased in importance (Font i Furnols et al., 2011; Mintel, 2013a; Mintel, 2013b). UK consumers show a preference for local food which is often argued to be associated with other attributes, including freshness, support for local producers, environmental concerns, better taste, safety, quality and gourmet status (Edwards-Jones et al. 2008; Loureiro and Umberger, 2007). Other credence attributes that are influencing purchase decisions of UK consumers are products labelled organic. Similar to China and India, the interest in organics is for reasons other than concern for the environment, such as health (no pesticide use) and as an extension of a healthy lifestyle (Garcia et al., 2010). UK consumers are concerned about animal welfare in food production with studies showing consumers would be willing to pay extra for products which production followed animal welfare standards (Ellis et al., 2009; Napolitano et al., 2007; Nocella et al., 2010). Some studies found other attributes are important to UK consumers when food shopping and influence purchase decisions, these include ethical production such as Fair Trade and carbon labelling (Nandonde, 2012; Guenther et al., 2012; Gadema & Oglethorpe, 2011).

Only a few studies have assessed consumer preferences for credence attributes in Indonesia and even fewer with the in-depth analysis relative to those of the UK, China and India. Some inferences can be made with the information that does exist. Some studies suggest that consumer demand for environmental and ethical attributes in food products do exist and maybe increasing in the Indonesian food market (Wulandari et al., 2012), there is particular demand for organic products as part of an increasing interest in healthy lifestyles (Kurnia et al., 2013; Hermawan and Yusran 2013).

The review of studies on preferences for credence attributes does show consumers value these. However, given their very nature this means they have to be communicated and verified in market. An issue is how to communicate the particular attributes in market and then to ensure that the food products are authentic. However, recent technological advances and their use by consumers are changing the way in which people obtain knowledge and awareness of, and ultimately purchase, food products. Such new technological developments include the use of mobile devices, as well as other “real-world” items, and their integration with the Internet (Web 2.0), particularly within the processes of online marketplaces and social media (Miller et al., 2014). In recent years, online shopping has grown in importance amongst consumers internationally. While food still retains a low share of total goods purchased online (around 7 per cent at its maximum in some international markets), some studies suggested that over 50 per cent of consumers have purchased food and grocery items online at least once in the past (Harding and Tager, 2013).

New technology is also used by retailers as a tool for food marketing and communicating credence attributes. In recent years the use of social media sites (e.g. Facebook, Twitter, LinkedIn, Google+ among others) as marketing tools has grown significantly. Experian (2013) indicated that, for internet users in the US, UK and Australia, 27 per cent of time spent online is spent on social media sites (16 minutes of every hour). Also, the uptake of new mobile technologies has been significant in recent years and the type of mobile device used by consumers may be of high relevance when considering a mobile marketing strategy, as a

different operating system may imply a differing functionality and use between devices (Miller et al., 2014). The willingness of consumers to accept marketing communications via mobile technologies has the potential to be important for exporters. Gao et al. (2013) showed that US, Chinese and Western European consumers had similar attitudes towards mobile marketing, with the perceived ease of use indicated as the highest influencing factor in consumers' perceived usefulness of mobile marketing. Persaud and Azhar (2012) suggest that brand trust is key determinant for consumers' willingness to accept mobile marketing and consumers prefer to have some control over marketing interactions as far as when and how they would participate.

To summarise, while the reviewed studies indicate a certain level of importance for credence attributes in food products amongst consumers in overseas markets, there is still little known about consumers' attitudes and preferences for credence attributes of food products in some emerging markets in Asia and also between those countries. There have also not been many studies of cross country comparison of the use of digital media and smart technology for obtaining information and conducting purchases of food. These are particularly important to New Zealand exporters who then can differentiate and target their messages using valued credence attributes to the different markets.

Method

The method included a structured and self-administered pilot survey. Six surveys were conducted in June 2014. The surveys involved three developed countries (Japan, Korea and the UK) and three developing countries (China, India and Indonesia). The survey was administered through Qualtrics™, a web-based survey system, and had a sample size of 100 consumers in each country.

The sampling strategy for the surveys involved the recruiting of participants from an online panel database of consumers. Each survey was stratified by the countries' age, household income distributions and occupation of the chief income earner of the household. The sample was randomly distributed within the regions in the six countries. The original survey was in English. For the Chinese, Japanese, Indonesian and Korean survey the questionnaire was translated into the respective language by a professional translation service and cross-checked by another translation service. Survey respondents were screened out by income, when they were not going grocery shopping at least once a month and when they did not know New Zealand as a country. In particular, the screen by income was used to target the middle class in each country.

The pilot survey was comprised of a range of questions constructed to assess consumers' attitudes and preferences towards a number of attributes of food products. The attributes rated by consumers in the survey consisted of basic food attributes as well as environmental and social attributes. This was followed by detailed queries into factors important for four key attributes; these were food safety, environmental quality, animal welfare and health foods. These factors are listed in Appendix I. The survey included questions on attitudes towards New Zealand, followed by queries about attitudes and behaviours towards the use of smart media in food purchases as well as obtaining information about food products.

Results & discussion

In this section, results of the pilot surveys are presented. The results show the attitudes and preferences of consumers in the UK, China, India, Japan, Korea and Indonesia towards attributes of food products. Previous research identified four key attributes as well as price and quality as key factors informing consumer choices (Saunders et al 2013). This research also indicated that the factors influencing these key credence attributes differed across markets. Therefore, this pilot survey firstly identified the importance of the key attributes and then further assessed the importance of factors that influenced consumers' attitudes towards the key attributes. Following this respondents were asked about what factors they associate with New Zealand. The survey then had a series of questions on the attitude towards and use of digital media and smart technologies for both obtaining information on and in the actual purchasing of food. Finally a series of question on the demographics of the respondents were obtained. As stated above, the sample size of the pilot was 100 in each country. The purpose of the pilot is to inform a larger survey of these countries in 2015.

Consumer preferences for credence attributes in food across countries

Based on a five-point Likert scale varying from *very important* to *not important at all*, participants were asked about the importance of the following attributes in food products. These attributes were: quality, price, fair trade, animal welfare, environmental quality, health food and food safety when shopping. Figure 1 shows the percentage of replies in each country that responded *important* or *very important* to those seven attributes.

Figure 1: Importance of attributes in food products

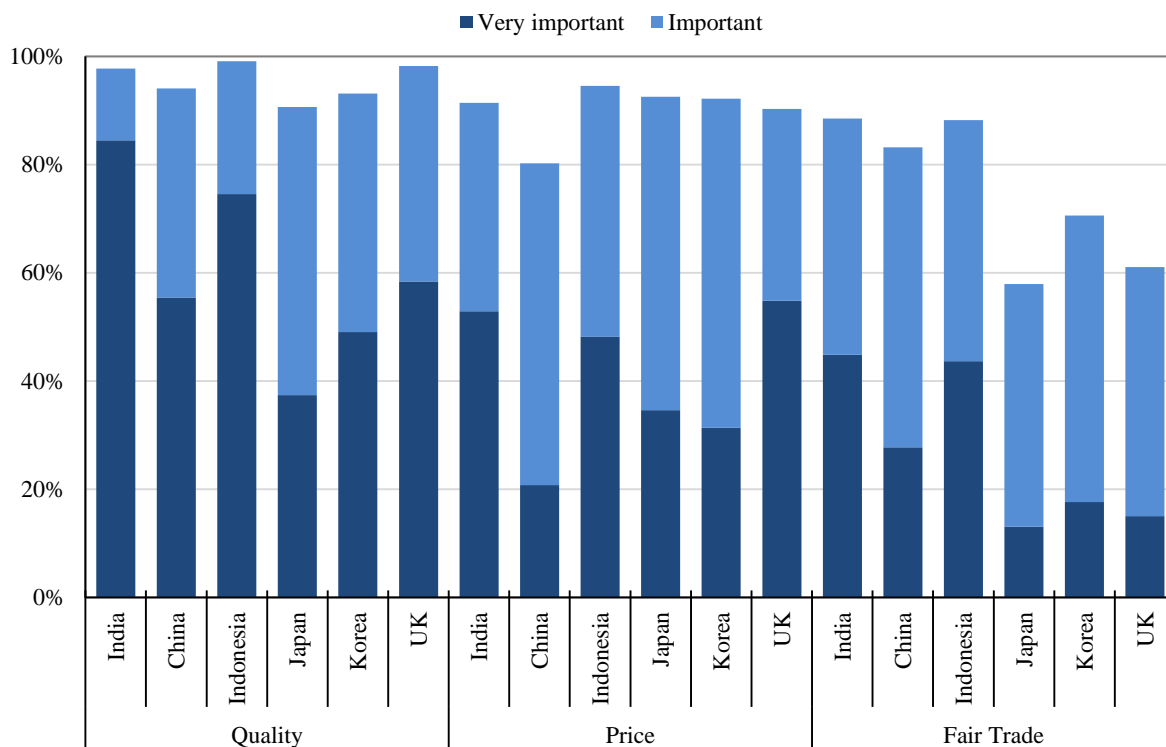
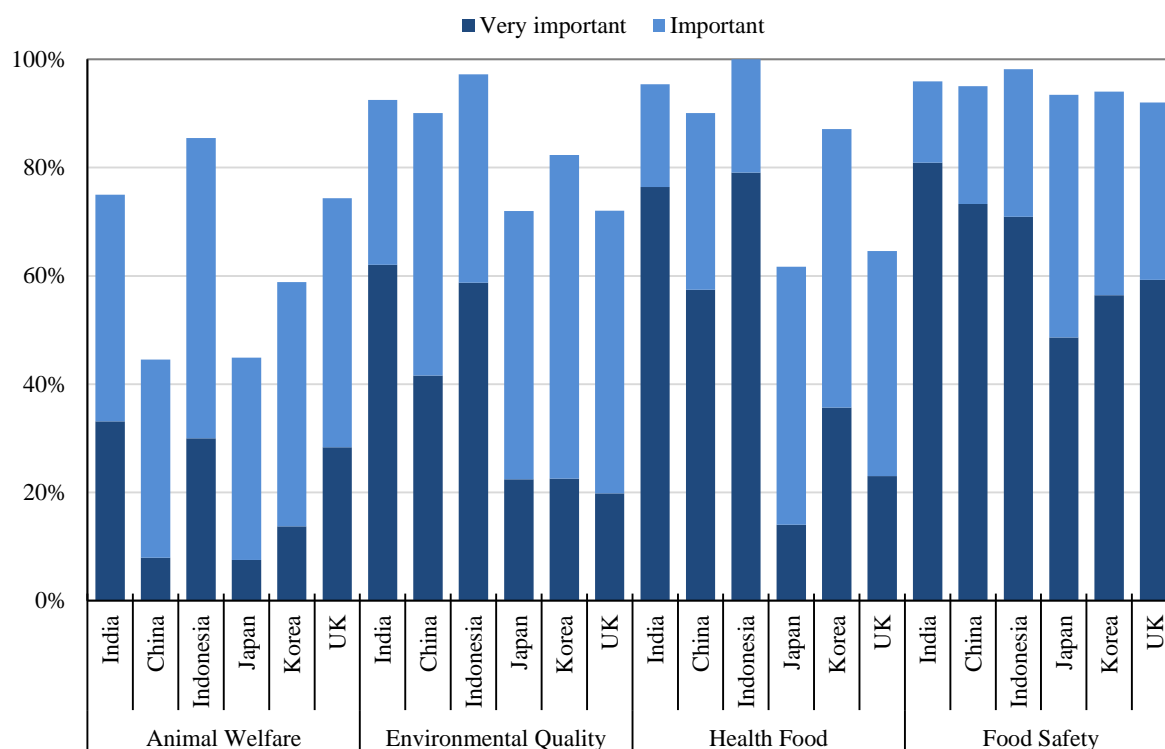


Figure 1 (continued): Importance of credence attributes in food products



A higher percentage of the respondents from developing countries compared to developed countries stated that quality was an important or very important attribute. This may reflect the different supply chains in these countries and the controls over these. Price had mixed importance across the respondents in the different countries but was lowest in China. Of all the attributes, fair trade was the least important, particularly among Japanese respondents of whom only 13 per cent rated fair trade as very important.

As expected the results showed that overall food safety is the most important of the seven attributes in all countries, with an average of 95 per cent of respondents across all countries indicating food safety to be either *very important* or *important* when food shopping. This was highest in Indonesia at 98 per cent and lowest in the UK at 92 per cent which again is as expected given the relatively safe supply chain in the UK. The next most important attribute in general was health food with all Indonesian respondents stating this was important or very important. A high percentage of Indian and Chinese respondents also thought this was *very important* or *important* at 95 and 90 per cent, whereas the percentage was lower in Korea, the UK and Japan at 87 65, and 62 per cent respectively.

Environmental quality was considered important and very important across all markets with highest per cent from respondents in Indonesia (97 per cent), followed by India (92 per cent), China, (90 per cent), Korea (82 per cent), and Japan and the UK at 72 per cent, each. Animal welfare was considered most important by respondents from Indonesia, then India and the UK with 85, 75 and 74 per cent, respectively stating it was *important* or *very important*. Only 45 per cent of Chinese and Japanese respondents thought this was *very important* or *important* and 59 per cent if Korean.

In general, the results showed the importance of the attributes. Animal welfare, environmental quality and health food, were higher among the developing countries than in the developed

countries. This is in line with a previous study by Saunders et al. (2013) where Indian and Chinese consumers valued credence attributes in food products more than consumers in the UK, especially for organic, environmental quality, animal welfare and recyclability.

In the next set of questions, participants were asked to rate on a five-point Likert scale varying from *very important* to *not important at all* the importance of a range of factors influencing attitudes towards each of four key attributes. The key attributes were food safety, animal welfare, environmental quality and health food. The factors of these attributes are listed in Appendix I.

The key factors of importance for food safety (see Appendix I) were all rated highly in importance by Indian and Indonesian consumers with hygiene standards, rates of contamination, use by date labelling and freshness the most important. In China, the results were similar to those in India and Indonesia but private certification, barn raised animals, animal welfare and low input agriculture were not seen as important. In the developed markets, the percentage of respondents who considered the factors important or very important were lower although the highest importance was placed on similar factors to the developing countries. Interestingly, a key factor relating to food safety was environmental quality. Results further showed that in all countries government certification was more important to participants than private certification; particularly in the developing countries. Animal welfare as a factor of food safety was an important factor, particularly to Indonesian, Indian and UK respondents but of less importance in the other markets.

The survey also asked participants to consider the importance of factors as they relate to environmental quality (see Appendix I). Almost consistently, the developing countries considered all factors to be more important to environmental quality than the developed countries, with the most important factors being; water and air quality; protecting sea life and endangered animals; organic production; and recycling. Recycling was particularly seen as an important factor in Indonesia with 95 per cent of respondents rating it as an important factor in environmental quality. Respondents in India and Indonesia indicated organic production as an important factor affecting environmental quality.

When asked about the importance of factors related to animal welfare (see Appendix I), participants in all markets considered good quality of life; shelter and well fed as most important. In contrast, the least important factors related to animal welfare were free range and barn raised. These were of low importance for Japanese respondents with only 17 per cent and 25 per cent considering these factors as important. Interestingly, participants in Indonesia, India and China rated type of feed relatively highly in its importance for animal welfare.

With regards to the importance of factors related to health foods, results were more varied and different factors related to health foods were important to participants in different countries. Child health; bone health; digestive and immune system were most important across the six markets. However, the least important factors related to health foods were country of origin and brand. Interestingly, in India and Indonesia memory was considered highly important while in Korea, India and Indonesia beauty and skin benefits were rated as highly important in health foods.

The next set of questions included queries about what factors they associated with New Zealand. Respondents were asked to indicate on a five point Likert scale what factors they consider to be important related to New Zealand. Figure 2 presents the results for each country that responded *important* or *very important* to the attributes. Clean environment was considered

most important across all countries, particularly 80 per cent of Indonesians considered it as very important. Open spaces and wilderness were also important in relation to New Zealand, followed by the aspect that New Zealand is not crowded. Other attributes associated with New Zealand included in the survey were innovative, friendly, safe and integrity. Among these, safe was considered most important while innovative was seen as least important in relation to New Zealand.

Figure 2: Importance of factors in relation to New Zealand (in per cent)

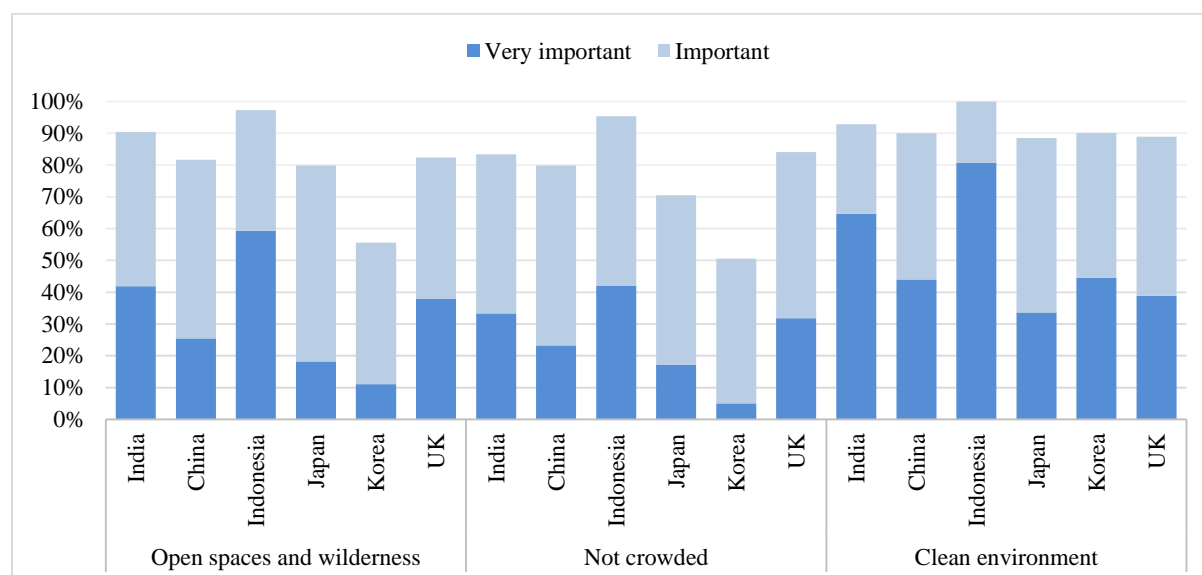
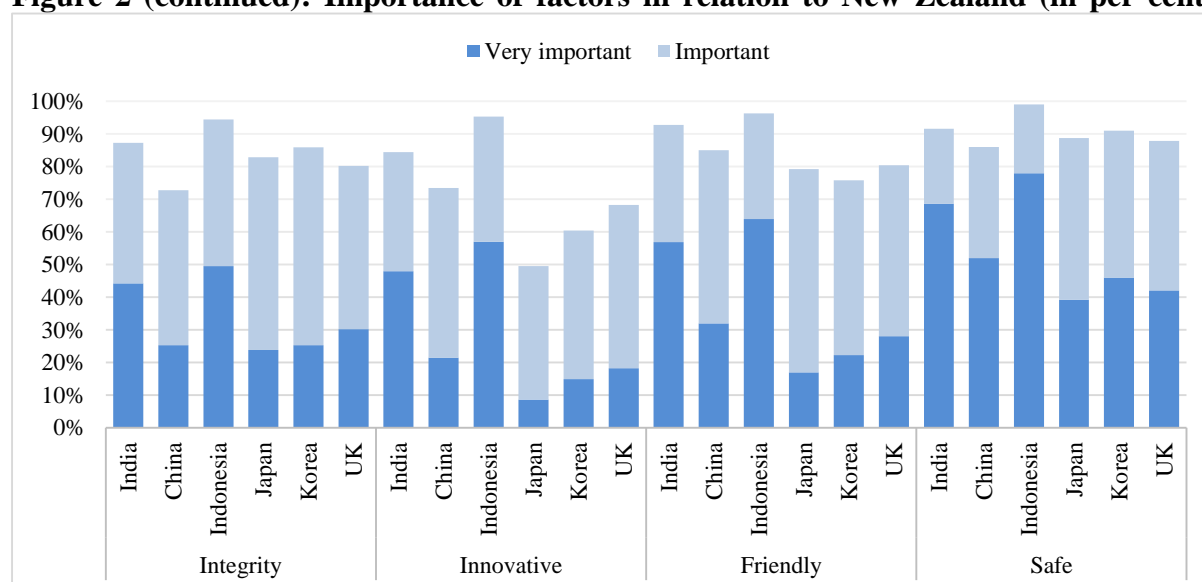


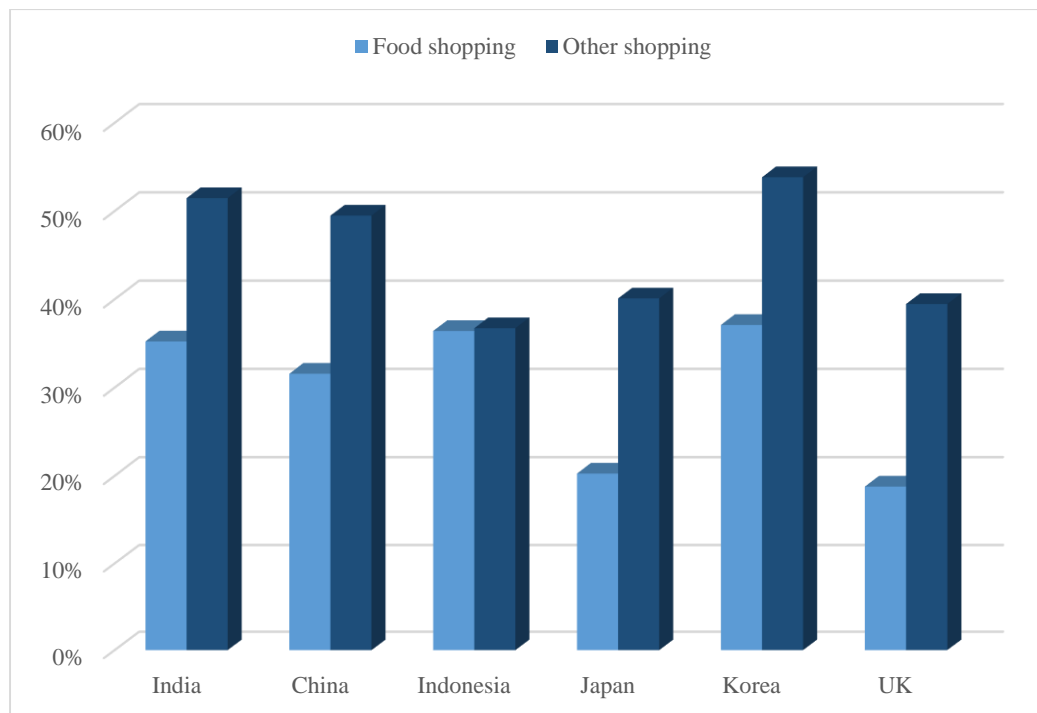
Figure 2 (continued): Importance of factors in relation to New Zealand (in per cent)



The use of digital media and smart technology in shopping and information gathering of food

This study also examined methods by which product information may be communicated within these markets. This specifically referred to digital media and smart technology that are currently used internationally for communication or information sharing purposes. The questionnaire included several questions on consumers' use of these technologies both for obtaining information and conducting purchase of food products within the six markets. When asked what percentage of food shopping and what percentage of other shopping took place online, participants in most countries indicated that they shop for other products online more frequently than for food products (see Figure 3). This is consistent with other studies which found food shopping on line was lower (see Harding and Tager, 2013). As shown in Figure 3, the highest overall percentage of online shopping for food products was reported by Korean respondents, with 37 per cent of shopping for food products online, followed by Indonesian respondents (36 per cent), then Indian respondents (35 per cent). The lowest percentage of food shopping carried out online was reported by respondents from the UK, with 19 per cent of food shopping done online.

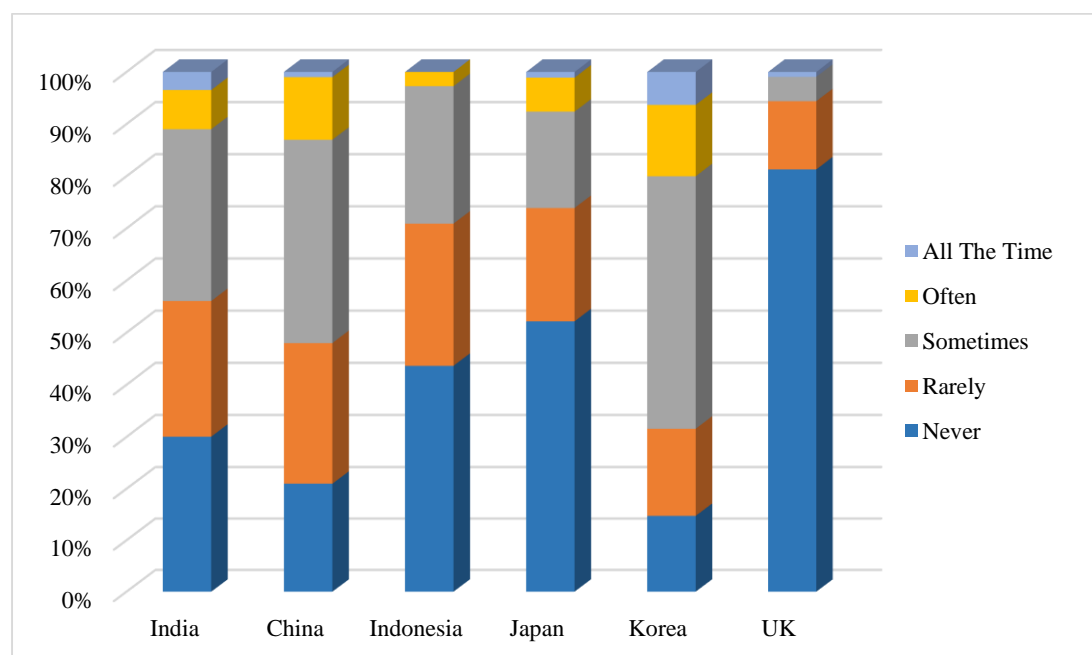
Figure 3: Consumers share of online shopping by type (in per cent)



When asked for reasons for shopping online, the majority of participants in each country (excluding Korea) specified that they liked the convenience of having products delivered to their homes, particularly within the UK (59 per cent). In contrast, the majority of Korean participants (53 per cent) indicated their reason for shopping online is that prices are generally lower online. Interestingly, the other main reason for shopping online was to order products from overseas that are better or not available at home. This was particularly indicated by Chinese, Indian, Indonesian and Japanese respondents at 23, 19, 18 and 17 per cent, respectively.

The majority of survey respondents owned a mobile device. When asked how often they use this device for online food purchases, only 5 per cent of the UK respondents stated they used it *often* or *sometimes* for online food shopping with 87 per cent stated they had never used it at all for food purchases. This was much lower than in Japan (18 per cent), Indonesia (26 per cent), China (40 per cent), Korea (49 per cent) and India (58 per cent) as shown in Figure 4.

Figure 4: Online shopping behaviour using mobile device (in per cent)



When respondents were then further asked about their use of a mobile app to obtaining more information about food products, it was shown that more than half of Chinese and Korean respondents have used mobile apps to find out more about food product information. This was in contrast to UK and Japanese respondents of which only 13 per cent and 25 per cent used mobile apps to gather information about food products.

Conclusion

Several studies have investigated consumers' attitudes and preferences towards different food attributes across countries. However, there are only a few studies that assessed consumer attitudes towards basic food attributes and the product's environmental and social performance in some emerging markets in Asia and also across those countries. These emerging markets are gaining in importance for New Zealand and therefore, information on consumers' preferences towards food attributes in these markets, how they differ from other markets and how these attributes can be communicated using digital media and smart technology is important information for New Zealand producers and exporters.

This study is part of a wider project on how New Zealand's biological industries can use their credence attributes to maximise exports returns. This part of the study included a pilot survey conducted in three developed countries (UK, Korea and Japan) and three developing countries (India, China, Indonesia) to assess consumer's attitudes towards credence attributes in food

products as well as the use of digital media and smart technologies to retrieve information about food and to purchase food.

Overall, this study found that consumers valued the credence attributes positively. In many cases, developing countries valued attributes more than developed countries. However, the relationship between the attributes and important factors underpinning the attributes showed differences across the markets. For example, a key factor in food safety was environmental quality being one of the top five for developing countries, but not for the developed countries. The use of digital media in market by consumers also varied considerably with the UK the least likely to use these for food purchases or obtaining further information while consumers in the developing markets such as China, India and Indonesia indicated to use digital media more often.

The results from the pilot surveys are indicative only, since the sample sizes are small. However, these findings will inform the larger survey that will be conducted in April 2015 to elicit the willingness –to – pay for attributes in different markets using choice experiments. In a further step, these results will then be used to calculate the impact of this on New Zealand producer returns using the Lincoln Trade and Environment Model (LTEM); this partial equilibrium trade model forecasts international trade, production and consumption of agricultural commodities.

References

- Birol, E., Roy, D. Deffner, K. and Karandikar, B. (2009). *Developing country consumers' demand for food safety and quality: Is Mumbai ready for certified and organic fruits? Contributed Paper prepared for presentation at the International Association of Agricultural Economists Conference, Beijing, China, August 16-22, 2009.*
- Birol, E., Roy, D. and Torero, M. (2010). How Safe Is My Food? Assessing the Effect of Information and Credible Certification on Consumer Demand for Food Safety in Developing Countries. IFPRI Discussion Paper 01029.
- The Consumer Council (2013). *Food supply chain issues and the horsemeat scandal - the consumer view, July 2013*. Retrieved 26 May 2014 from http://www.consumercouncil.org.uk/filestore/documents/Food_Supply_Chain_Issues_And_The_Horsemeat_Scandal_-_The_Consumer_View_July_2013..pdf.
- Chakrabarti, S. (2010). Factors influencing organic food purchase in India—expert survey insights. *British Food Journal*, 112(8): 902-915.
- Eurobarometer (2009) *Europeans' attitudes towards the issue of sustainable consumption and production*. Analytical report. Brussels European Commission
- Edwards-Jones, G., Milà i Canals, L., Hounsome, N., Truninger, M., Koerber, G., Barry Hounsome, B., ... Jones, D.L. (2008). Testing the assertion that 'local food is best': the challenges of an evidence-based approach. *Trends in Food Science & Technology*, 19(5), 265-274.
- European Food Safety Authority (2012) E.coli: Rapid response in a crisis. EFSA: Bruxelles. Retrieved from <http://www.efsa.europa.eu/en/press/news/120711.htm>
- Ellis, K.A., Bilington, K., McNeil, B. and McKeegan, D.E.F. (2009). Public opinion on UK milk marketing and dairy cow welfare. *Animal Welfare* 18(3): 267-282. Abstract obtained from University of Glasgow eprints.
- Experian (2013). *Experian Marketing Services Reveals 27 Percent of Time Spent Online is on Social Networking*. Retrieved 24 February 2014 from <http://press.experian.com/United-States/Press-Release/experian-marketing-services-reveals-27-percent-of-time-spent-online-is-on-social-networking.aspx>.
- Finzer, L.E., Ajay, V.A., Ali, M.K., Shivashankar, R., Goenka, S., Sharma, P., Pillai, D.S., Khandelwal, S., Tandon, N., Srinath Reddy, K., Venkat Narayan, K.M. and Prabhakaran, D. (2013). Fruit and Vegetable Purchasing Patterns and Preferences in South Delhi. *Ecology of Food and Nutrition*, 52(1): 1-20.

- Font i Furnols, M., Realini, C., Montossi, F., Sañudo, C., Campo, M.M., Oliver, M.A., Nute, G.R. and Guerrero, L. (2011). Consumer's purchasing intention for lamb meat affected by country of origin, feeding system and meat price: A conjoint study in Spain, France and the United Kingdom. *Food Quality and Preference*, 22: 443-451.
- Gadema Z & Oglethorpe D. (2011). The use and usefulness of carbon labelling food: A policy perspective from a survey of UK supermarket shoppers. *Food Policy* 36 (6), 815–822.
- Gao T., Rohm, A.J., Sutan, F, Pagani, M. (2013). Consumers un-tethered: A three-market empirical study of consumers' mobile marketing acceptance. *Journal of Business Research*, 66: 2536–2544.
- Garcia, C., Fearne, A. and Wood, L. (2010). The role of involvement in the attention paid by supermarket shoppers to organic products. *Journal of Innovation Economics and Management*, 1(5): 127-144.
- Guenther, M., Saunders, CM. Tait, PR. (2012). Carbon labeling and consumer attitudes. *Carbon Management Journal*. Vol 3(5), 445-455.
- Harding, D. and Tager, S. (2013). *The digital disconnect in consumer products*. Bain & Company. Retrieved 29 May 2014 from <http://www.bain.com/publications/articles/the-digital-disconnect-in-consumer-products.aspx>.
- Hermawan, A. and Yusran, H.L. (2013). *Healthy lifestyle and Consumer Willingness to Pay Organic Foods. The 2nd IBSM, International Conference on Business and Management, 2 – 4 October 2013*. Chiang Mai – Bangkok, Thailand.
- Hong Kong Trade Development Council (HKTDC) (2013). China's health food market. Retrieved 6 June 2014 from <http://china-trade-research.hktdc.com/business-news/article/China-Consumer-Market/China-s-health-food-market/ccm/en/1/1X000000/1X002L54.htm>.
- Ishaswini and Datta, S.K. (2011). Pro-environmental Concern Influencing Green Buying: A Study on Indian Consumers. *International Journal of Business Management*, 6(6): 124-133.
- Kumar, M. and Gautam, V. (2010). Exploring the consumer attitude towards sustainable food consumption in India: The behavior gap. Arth Anvesan. *A Bi-Annual Journal of SMVD University College of Management*, 5(1&2): 15-23.
- Kumar, S. and Ali, J. (2011). *Analyzing the Factors Affecting Consumer Awareness on Organic Foods in India. Prepared for presentation at 21st Annual IFAMA World Forum and Symposium on the Road to 2050: Sustainability as a Business Opportunity, 20-13 June 2011*. Frankfurt, Germany.

- Kurnia, P., Sun, X. and Collins, R. (2013). *Consumers Perceptions toward Organic Food in Yogyakarta, Indonesia. Proceedings of the IVth IS on Improving the Performance of Supply Chains in Transitional Economics.*
- Liu, X., Wang, C., Shishime, T. and Fujitsuka, T. (2012). Sustainable Consumption: Green Purchasing Behaviours of Urban Residents in China. *Sustainable Development*, 20: 293-308.
- Loureiro, M. L. and Umberger, W. L. (2007). A choice experiment model for beef: what US consumer responses tell us about relative preferences for food safety, country of origin labelling and traceability. *Food Policy*, 32: 496-514.
- Mahapatra, S. (2013). A study on consumer's perception for green products: An empirical study from India. *International Journal of Management & Information Technology*, 7(1): 924-933.
- Miller, S., Driver, T., Velasquez, N. and Saunders, C. (2014). Maximising Export Returns (MER): Consumer behaviour and trends for credence attributes in key markets and a review of how these may be communicated. (Research Report No. 332; AERU). Lincoln, New Zealand: Lincoln University, Agribusiness and Economics Research Unit.
- Ministry of Foreign Affairs and Trade (MFAT). (2013). *New Zealand-India Free Trade Agreement*. Retrieved from <http://www.mfat.govt.nz/Trade-and-Economic-Relations/2-Trade-Relationships-and-Agreements/India/>
- Ministry of Foreign Affairs and Trade (MFAT). (2014). ASEAN, Australia and New Zealand Free Trade Agreement. Retrieved from <http://www.mfat.govt.nz/Trade-and-Economic-Relations/2-Trade-Relationships-and-Agreements/Asean/index.php>
- Mintel (2011). *Functional Food and Drink – UK – September 2011*. Retrieved 6 June 2014 from <http://store.mintel.com/functional-food-and-drink-uk-september-2011>.
- Mintel (2013a). *A big thumbs up for British post horse meat scandal - one in two Brits now feel British food is better quality than imported*. Retrieved 26 May 2014 from <http://www.mintel.com/press-centre/food-and-drink/a-big-thumbs-up-for-british-post-horse-meat-scandal-one-in-two-brits-now-feel-british-food-is-better-quality-than-imported>.
- Mintel (2013b). *Just half of Brits trust the food industry to provide safe food to eat*. Retrieved 26 May 2014 from <http://www.mintel.com/press-centre/food-and-drink/food-safety-after-horse-meat-scandal>.
- Nandonde, F.A. (2012). Consumers' attitude towards Fairtrade coffee in the UK. *DBA Africa Management Review*, 2(2): 1-13.
- Napolitano, F., Pacelli, C., Girolami, A. and Braghieri, A. (2007). Effect of Information About Animal Welfare on Consumer Willingness to Pay for Yogurt. *Journal of Dairy Science*, 91: 910-917.

- Nocella, G., Hubbard, L. and Scarpa, R. (2010). Farm Animal Welfare, Consumer Willingness to Pay, and Trust: Results of a Cross-National Survey. *Applied Economic Perspectives and Policy*, 32(2): 275-297.
- Pan, E., 2012. Food safety ranks first, corruption into the top 3. *Xiao Kang*. 64–68
- Persaud, A. and Azhar, I. (2012). Innovative mobile marketing via smartphones: Are consumers ready? *Marketing Intelligence and Planning*, 30 (4): 418-443.
- Saunders, C., Guenther, M., Tait, P., Saunders, J. (2013). *Assessing consumer preferences and willingness to pay for NZ food attributes in China, India and the UK. Proceedings of the 87th Annual Conference of the Agricultural Economics Society, University of Warwick, United Kingdom, 8-10 April 2013*. Banbury, UK: Agricultural Economics Society.
- Saxena, R. and Khandelwal, P.K. (2010). Can Green Marketing be used as a tool for Sustainable Growth?: A Study Performed on Consumers in India—An Emerging Economy. *International Journal of Environmental, Cultural, Economic, and Social Sustainability*, 6(2): 277-291.
- Statistics New Zealand (2014). *Global New Zealand - International Trade, Investment, and Travel Profile: Year ended June 2014*. Wellington: Statistics New Zealand.
- Sun, X. and Collins, R. (2012). *A Preliminary Study of Chinese Consumers' Willingness-to-Pay for Fruit Produced with Sustainable Attributes. Proceedings on the IV International Symposium on Improving the Performance of Supply Chains in the Transitional Economies 1006*, pp. 349- 354.
- Synovate. (2007). Synovate Global Omnibus survey on climate change. London: Synovate Research. Retrieved 11 May 2010 from <http://www.synovate.com/consumer-insights/infact/issues/200704/>
- Thøgersen, J. and Zhou, Y. (2012). Chinese Consumers' Adoption of a 'green' Innovation – The Case of Organic Food. *Journal of Marketing Management*, 28(3-4): 313-333.
- Thøgersen, J. and Zhou, Y. (2010). *Motives of Organic Food Buyers in China—Do They Differ from Europe? Knowledge Collaboration & Learning for Sustainable Innovation. ERSCP-EMSU conference. The 14th European Roundtable on Sustainable Production and Consumption (ERSCP), The 6th Environmental Management for Sustainable Universities (EMSU), 25-29 October, 2010*. Delft, The Netherlands.
- Vernekar, S.S. and Wadhwa, P. (2011). Green Consumption: An Empirical Study of Consumers Attitudes and Perception regarding Eco-Friendly FMCG Products, with special reference to Delhi and NCR Region. *Opinion*, 1(1): 64-74.
- Wulandari, R., Suharjo, B., Soehadi, A.W. and Purnomo, H. (2012). Characteristic and Preferences of Green Consumer Stratification As Bases to Formulating

Marketing Strategies of Ecolabel-Certified Furniture. *Issues in Social and Environmental Accounting*, 6(1/2): 123-141.

Zheng, Y., Li, X. and Peterson, H.H. (2013). In pursuit of safe foods: Chinese preferences for soybean attributes in soymilk. *Agribusiness*, 29(3): 377–391.

Appendix I

Food Safety
Hygiene standards Rates of contamination Traceability Private certification Government certification Country of origin Barn-raised animals Type of feed Animal welfare Reduced use of pesticides Organic production GM-free Number of additives Environmental quality Low input agriculture Freshness Brand Labelling of "Use by date"
Environmental Quality
Water quality Protecting wetlands Protecting coastal and sea-life Protecting endangered animals and plants Protecting native biodiversity Protecting non-native biodiversity Air quality GHG emissions Organic production Low input agriculture Recycling Open spaces Wilderness

Animal Welfare
<p>Good quality of life</p> <p>Good shelter and living conditions</p> <p>Certification</p> <p>Animals are well-fed</p> <p>Type of feed</p> <p>No cruelty</p> <p>Humane slaughter</p> <p>Free range</p> <p>Natural conditions</p> <p>Barn raised</p>
Health Food
<p>Digestive health</p> <p>Detoxification</p> <p>Beauty benefits</p> <p>Skin benefits</p> <p>Heart health</p> <p>Blood health</p> <p>Bone and joint health</p> <p>Pregnancy</p> <p>Child health</p> <p>Baby health</p> <p>Energy and endurance</p> <p>Weight management</p> <p>Cholesterol</p> <p>Memory</p> <p>Immune system</p> <p>Country of origin</p> <p>Brand</p>