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Australian farmers' and food processors' values

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Acknowledgements

The project was supported by the Australian Research Council (DP0209041). Emma Lea is supported by an ARC postdoctoral fellowship. The authors wish to thank the survey participants.

Abstract

Purpose – The aim of this exploratory study was to examine and compare a range of business values held by farmers and food processors.

Design/methodology/approach – Questionnaires with a section on business values were posted to 200 farmers and 200 food processing businesses in Victoria, Australia, with response rates of 44 per cent (n=69) and 31 per cent (n=48), respectively, achieved.

Findings – The most important of the 28 value items for farmers were high quality produce, honesty, and caring for employees. For processors, the most important values were quality products, customer value, and caring for employees. Between group differences reached statistical significance for one-third of the items. In particular, processor businesses valued innovation and convenience products more highly and had a stronger process orientation than did farming businesses. Environmental sustainability, caring for the community, and providing healthy products were more integral to farming than processing businesses.

Research limitations/implications – The main limitation was the small sample sizes, although it is likely that response bias was not high. Future research could survey a larger sample of food industry representatives and examine the values held by other food industry sectors.

Practical implications – This information could increase the effectiveness of communications with industry groups on a range of issues and in the formulation of appropriate health and environmental policies.

Originality/value – To the authors' knowledge, this is the first study to compare the values of farmers and food processors. This information is particularly important for those in the food industry and health and environmental policy makers.

Keyword(s):

Australia; Farms; Food products; Business ethics.

Introduction

Consumption of plant foods such as fruits and vegetables has important health implications. For example, the consumption of fruits and vegetables has been shown to decrease the prevalence of many diet-related diseases, including type 2 diabetes, cardiovascular disease, and obesity (Joshipura et al., 1999; Bazzano et al., 2002; Gundgaard et al., 2003; Key et al., 2003; Montonen et al., 2003). However, consumption of plant foods in Australia is lower than optimal (Australian Bureau of Statistics, 1997), as it is in many other countries (Agudo et al., 2002; Stables et al., 2002; Lang et al., 2003). For example, only 11 per cent and 51 per cent
of adults in Victoria (Australia) eat the recommended daily intake of five or more servings of vegetables and two or more servings of fruit, respectively (Victorian Government Department of Human Services, 2004). Reasons for low consumption of plant foods include price, lack of cooking skills, taste, availability, and time factors (Cox et al., 1998; Lea et al., 2005a). In addition, it is likely that the types of food provided by the food industry and the marketing of these foods play an important role in influencing the consumption levels of plant foods (Nestle, 2002; Glanz and Hoelscher, 2004; Glanz and Yaroch, 2004). An understanding of the underlying motivations of the food industry may help to elucidate ways to increase the consumption of plant foods, such as through policy changes directed towards food industry sectors. Collaborations between the food industry, media and nutrition educators have been proposed (e.g. Kraak and Pelletier, 1998), providing an additional reason to understand the motivations of food industry sectors and to identify the sectors that may be most amenable to collaboration. Examination of food industry sector motivations will gauge their potential for responding appropriately to consumer wants and needs, as well as their ability to contribute to improving public health.

In particular, the values held by members of the food industry are important to examine as values influence attitude formation, cognition and behaviour, the latter mainly through the mediation of beliefs and attitudes (Feather, 1982; Kalof et al., 1999). Thus, values may be considered as underlying influences on the behaviour of the food industry. Personal values have been defined as lasting beliefs about desirable goals that function as guiding principles in life (Rokeach, 1973; Schwartz, 1992).

There are a number of factors that may be considered when assessing business values, including orientation (e.g. market, process, product) and ideologies (e.g. social responsibility, government involvement). Market orientation typically involves an external orientation and a focus on, and responsiveness to, customers and competitors (Harmsen et al., 2000). Product orientation tends to involve a focus on the product itself (e.g. respect for the product, an emphasis on product quality), either in opposition to or as a supplement to market orientation (Harmsen et al., 2000). In contrast, process orientation involves a focus on a set of processes, such as efficiency and vertical integration (Harmsen et al., 2000). It has been noted that a given company usually only scores highly on one of these orientations (Harmsen et al., 2000). Characteristics of the product, such as healthiness, quality and convenience, may be valued differently according to these orientations and may differ by food industry sector. Levels of innovation and research and development in the business are also related to these orientations (Harmsen et al., 2000). Value-added products comprise a highly competitive segment of the food industry, with many new products being introduced every year (Nestle, 2002; Traill and Meulenberg, 2002). Values that have broader implications for society include concern for the environment and the community, including the health of the public (Singhapakdi et al., 1996).

The level of environmental concern of the food industry is important to consider, given the impact the food industry has on the environment. Agricultural practices have a strong impact on resource use and the environment. In Australia, for example, the majority (67 per cent) of water used is for agriculture (Australian Bureau of Statistics, 2004) and salinity is a major problem (Hamblin, 2001). Rural environmental degradation has been estimated to cost over AU$2 billion annually (Madden et al., 2000). In addition, the role of Australia as a food exporter contributes to land degradation and greenhouse gas emissions, such as via increased food miles (the distance food travels to reach the consumer) (Daniels, 1992; Lang et al., 2001; Jones, 2002). The value of Australian food exports is 70 per cent of the total value of Australian farm and fisheries production and Australia is the eleventh largest food exporting country in the world (Department of Agriculture Fisheries and Forestry – Australia, 2005). Food processing also has a large environmental impact, such as via energy and resource use, including packaging and distribution of products (OECD Environment Policy Committee, 2001; Norberg-Hodge et al., 2002). In addition, the marketing of processed products may lead to excessive energy intake by consumers, although the type of product clearly has an impact on this (e.g. whether an energy-dense, low-nutrient product or not). Not eating to excess minimises environmental harm, as less food will need to be produced and processed (Gussow and Clancy, 1986).
The types of values discussed above have been examined in a number of surveys and case studies of businesses, including farming and food processing businesses (Traill and Meulenberg, 2002; Maybery et al., 2005). For example, Australian farmers' values have been categorised as economic, conservation or lifestyle (Maybery et al., 2005). However, the authors are unaware of any published research that has compared the values of food industry sectors, such as farmers and food processors. It is likely that differences are present between such sectors, and if so, this would have implications for how food industry sectors may be targeted to help create conditions conducive to increased plant food consumption. Therefore, the aim of this exploratory study was to examine and compare a range of business values held by farmers and food processors, particularly those involved with production of at least some plant foods.

**Methodology**

Data were collected from two food industry surveys, which were predominantly about managers' beliefs and behaviours related to plant foods (e.g. fruits, vegetables, grains, legumes). These were a survey of farmers (Study 1) and a survey of food processors (Study 2). Descriptions of the studies are provided below, followed by a description of data analyses.

Ethical approval for the project was obtained from the Deakin University Human Research Ethics Committee and informed consent was obtained from each participant.

**Study 1: farmer survey**

**Procedure**

A total of 200 farmers were selected from the business telephone directory for Victoria. As there is no publicly available consolidated listing of farmers in Victoria, this provided the most appropriate sampling frame. Because of the focus of the survey on plant foods, half of the farmers were randomly selected from those listed under plant food categories, such as "Apple and Pear Growers" and "Vegetable Growers". The remainder of the sample was randomly selected from those listed under the heading of "Farmers". The sample was restricted to those who farmed in regions where plant foods were likely to be grown. A questionnaire was mailed to the sample in November 2003, together with a cover letter and reply-paid envelope. Questionnaire design and administration was based on Dillman's (2000) recommended methods. Two follow-up mail outs and a telephone reminder were made to non-respondents.

**The questionnaire**

A literature search (Biemans and Harmsen, 1995; Grunert et al., 1996; Singhapakdi et al., 1996; Grunert et al., 1997; Harmsen et al., 2000) and structured interviews with farming and industry representatives (Lea, 2003) were conducted to help formulate the initial questionnaire, which was then piloted among a small number of farmers. The questionnaire included items on growing practices and plans, difficulties with growing, distributing and promoting plant foods, beliefs about Australian consumers, and background information (e.g. farm size, demographic information). The key section for this paper consisted of 28 items on farm values, such as "The ethics and social responsibility of this farming business is essential to its long-term profitability" (see Table I). Some items were adapted from the literature, including work on company orientation (Biemans and Harmsen, 1995; Harmsen et al., 2000) and instruments to measure corporate ideology (Goll and Zeitz, 1991) and marketers' perceived role of ethics and social responsibility (Singhapakdi et al., 1996). For example, the five items on ethics and social responsibility (e.g. "This farming business believes that to remain competitive in a global environment, ethics and social responsibility have to be disregarded") and "The most important concern for this farming business is making a profit, even if it means harming the environment" were based on items used by Singhapakdi et al. (1996). Two items ("This farming business emphasises the production/marketing of tried and true products and the avoidance of heavy research and development costs" and "This farming
business believes that the least government is the best government") were based on items used by Goll and Zeitz (1991). The remaining items were based on concepts in the marketing literature (particularly Biemans and Harmsen, 1995; Harmsen et al., 2000), such as company orientation, and from themes derived from the structured interviews the authors conducted (e.g. the importance of various product characteristics such as healthiness). The items were preceded by the question: “In relation to your farming business, how much do you agree or disagree with the following?”. Items were measured on a five-point scale ranging from "strongly agree" to "strongly disagree".

**Participant characteristics**

A total of 69 farmers returned a completed questionnaire, representing a 44 per cent response rate after taking into account questionnaires that were unable to be delivered and those delivered to people for whom the questionnaire was not relevant (e.g. no longer involved in farming). Approximately three-quarters of participants (77 per cent, n=52) were male. Age ranged between 26 and 78 years with a mean of 50 years. Mean farm size was 829 hectares (median 168 hectares), with size ranging between two and 6,000 hectares. Of the participants, 77 per cent (n=49) were exclusively involved with growing plant foods, especially fruit and vegetables. A total of 6 per cent of participants (n=4) were involved in using organic methods of production.

**Study 2: food processor survey**

**Procedure**

As there is no publicly available consolidated listing of food-processing businesses in Victoria, 200 Victorian food-processing businesses were selected from the *Yellow Pages* business telephone directory and the Kompass Australia business directory. Half of the sample was selected from each of these sources. The businesses selected from the Kompass directory were all of those listed as having a Victorian address under the categories most pertinent to the survey's focus on plant foods, such as “Pulses and legumes” and “Bread, cakes and pastry”. The remaining half of the sample, selected from the telephone directory, was randomly selected from those listed under “Food products – manufacturers and processors”. This resulted in approximately half of the listings under this category in Victoria being included. A questionnaire was mailed to the sample in March 2004, addressed to the managing director, together with a cover letter and reply-paid envelope. Questionnaire design and administration, including follow-up reminders, followed that for the farmers' survey described above.

**The questionnaire**

The questionnaire was devised in the same way as the farmers' questionnaire, including interviews with food processing representatives (Lea, 2003) and piloting among a small sample of processors. The questionnaire contained items on production practices and plans, difficulties with processing, distributing and promoting plant/plant-based foods, beliefs about Australian consumers, and background information (e.g. annual turnover, demographic information). The key section for this paper was on company values. These values were the same as those for the farmers' questionnaire, but rephrased slightly to be suitable for food processing companies (e.g., "The ethics and social responsibility of my company is essential to its long-term profitability"; see Table I). The items were preceded by the question: "In relation to your company, how much do you agree or disagree with the following?". As for the farmers' questionnaire, items were measured on a five-point scale.

**Participant characteristics**

Completed questionnaires were received from 48 representatives of food-processing businesses. The response rate was 31 per cent, after taking into account questionnaires that were unable to be delivered and those delivered to people for whom the questionnaire was
irrelevant (e.g. no longer in business). Three-quarters of participants (n=36) were male. Age ranged between 24 and 72 years, with a mean of 47 years. The mean number of company employees was 126 (median 29), ranging between three and 2,000. The mean annual business turnover was AU$63 million, although the median was lower at AU$3 million (range of between AU$100,000 and AU$750 million). Businesses were involved with producing a range of plant-based foods, particularly grain-based foods such as tortillas, bread and pastries (22 per cent, n=10), condiments, seasonings, sweeteners and stocks (22 per cent, n=10), and potato and other vegetable-based foods (16 per cent, n=7). These businesses tended to specialise in these particular categories of foods. In contrast, a further quarter (27 per cent, n=12) of businesses tended to produce a range of foods. These included roasted nuts and dried fruit and vegetables, or a range of frozen and canned foods, or cereals and dairy based foods. Almost one-third of processors (30 per cent, n=14) were using at least some organic ingredients.

Data analysis

All statistical analyses were conducted with SPSS for Windows statistical software (version 12). Farmer and food processor mean responses to the value items were calculated and compared, with analysis of variance used to identify whether between group mean differences reached statistical significance (alpha of 0.05). Mean responses for each value item were then ranked within each food industry group. Only limited statistical analyses could be performed due to the relatively low number of respondents.

Results

In considering the findings presented here, it is important to recognise the study limitations, particularly the small sample sizes, low response rate and the possible response bias. These are fairly typical of business surveys, which tend to obtain low responses rates (e.g. 16 per cent in a survey of European food processors (Traill and Meulenberg, 2002), 47 per cent in a survey of Australian farmers (Maybery et al., 2005)). However, late responders to the farmer and processor questionnaires were compared with early responders and found to be similar (data not reported here), suggesting that response bias was not high.

Mean responses to value items for farmers and food processors are provided in Table I. The most important values for farmers were:

- high quality produce;
- honesty;
- caring for employees;
- healthy produce; and
- customer value.

For food processors, the five most important values were:

1. high quality products;
2. customer value;
3. caring for employees;
4. being ethical and socially responsible; and
5. competitiveness.

Provision of high quality products was the most important value for both farmers and food processors, with customer value, caring for employees, honesty, provision of tasty products, ethical and social responsibility, and competitiveness also ranking highly for both groups. Rankings were identical for farmers and processors for the four least important values; that is, an emphasis on the production and marketing of tried and true products, cost reduction being more important than high quality, making a profit at the expense of the environment, and the need to disregard ethics and social responsibility to remain competitive. However,
health and environmental factors ranked more highly for farmers, while processors were more focused on product orientation and innovativeness.

Between group mean differences reached statistical significance for one-third of the items. In particular, processor businesses valued innovation and convenient products more highly and had a stronger process orientation than did farming businesses. Conversely, environmental sustainability, caring for the community and providing healthy products were more integral to farming than to processing businesses. In addition, farmers were more likely than processors to value protection for the industry over an open market.

Discussion

These findings have implications for the production and promotion of plant and plant-based foods. The importance of quality foods for farmers and processors is reassuring and may reflect consumer concern with quality (Williams et al., 2004). The integrity of the food supply chain is important to ensure the continued competitiveness of rural and food industries. In recognition of this, there has been a proliferation of food safety and quality systems over recent years. Customer value was also important to both groups. It should be noted that there might be negative and positive implications of customer "value". For example, if the true cost of food is externalised (e.g. externalisation of environmental problems associated with production), cheap food is not always beneficial and costs may be passed on, for example, in the form of poor health, taxes, or poor environmental conditions for future generations (Pretty et al., 2000; Waltner-Toews and Lang, 2000). The meaning of “customer value” for food industry sectors is an area for future in-depth research.

Interestingly, the healthiness of foods was of greater importance to farmers than to processors. This was also found in an earlier Australian food industry survey by one of the authors (Worsley and Murphy, 1994). Unprocessed plant foods such as fruits, vegetables, wholegrains and nuts, as grown by farmers, tend to be healthy and nutritious foods. However, processing of plant foods may remove some nutrients (e.g. refining of grains) and involve the addition of some less nutritious plant and other foods in various quantities (e.g., fats, sugar). Therefore, processed plant-based foods are not necessarily healthy. Food processing companies may value competitiveness, taste and other factors over health, as was found here. Thus, if food processors do not provide sufficiently healthy plant-based food products, the promotion and marketing of fresh, unprocessed plant foods needs to be increased in order to deliver the associated health benefits. One way that this could be done is via direct marketing of plant foods, such as farmers’ markets, community supported agriculture and internet marketing (Grunert and Ramus, 2005). Farmers' themselves value health as well as quality and taste and therefore may be ideal promoters, as well as producers, of plant foods.

Farmers valued environmental sustainability more highly than did processors. This is likely to be at least partly due to farmers’ closer connection with the land and hence to the environmental problems faced in Australia. One way that farmers in Australia contribute to amelioration of environmental problems is by participation in Landcare, of which there were over 4,000 groups in 1998 (Curtis and Van Nouhuys, 1999). However, as discussed previously, food processing also has a large environmental impact (OECD Environment Policy Committee, 2001; Norberg-Hodge et al., 2002), including as a result of the marketing of processed products. Education of the food-processing sector of the importance of environmental sustainability and the impact of the processing sector on the environment, including ways to diminish this impact, would be valuable.

The number of farms in Australia is decreasing rapidly (Australian Bureau of Statistics, 2003). Compared to agriculture in the European Union (EU) and the USA, Australian farmers are not heavily subsidised by the government, and have been hit hard by the recent drought. Hence, this may explain the higher support of farmers for protection for the industry over an open market compared to processors. Perhaps government subsidies could be targeted towards environmentally sustainable plant food growers to help them produce, promote and market plant foods in their region. It is possible that there would be differences in response according
to characteristics such as farm and company size. Further research conducted on a larger sample than that of the current study would allow any such differences to be elucidated.

Processors were more likely to value convenience products than were farmers. Compared to raw produce such as fresh fruits and vegetables, many value-added processed foods are viewed by consumers as “convenience” products (Jaeger, 2003; Shiu et al., 2004). However, a recent survey of consumers by the authors (Lea et al., 2005b) found that consumers did not think they would consume more plant foods if more “convenience” options were available, such as pre-cut vegetables or frozen plant-based meals. Therefore, the goal of increased consumption of plant foods among Australian consumers to meet the recommended daily intakes may not be achieved via production of “convenience” foods. Instead, it appears necessary to pursue other avenues. For example, strategies could emphasise increasing consumers’ food preparation skills, increasing the attractiveness of fresh produce (e.g. making it “trendy”) (Lea et al., 2005a), and decreasing advertising of foods that compete with healthy plant-based foods (e.g. energy-dense, low-nutrient products) (Nestle, 2002).

Processors ranked product orientation higher and valued process orientation significantly more than did farmers. Both industry groups valued the product higher than the process, which helps to explain their strong focus on product quality. Indeed, product orientation was more highly correlated with product quality than was process orientation, particularly for farmers (Farmers: quality product-product orientation $r=0.31, p < 0.01$; quality product-process orientation $r=-0.05$, NS; Processors: quality product-product orientation $r=0.53, p < 0.001$; quality product-process orientation $r=0.45, p < 0.001$). Product-oriented businesses will be successful if their emphasis on quality products is linked to understanding of consumers. That is, they need to understand consumer needs, behaviours, motives, and so on (Harmsen et al., 2000). Processors usually conduct more market research than farmers and therefore may be expected to have a greater understanding of consumers, however, research conducted by the authors suggests that it is farmers that have a greater understanding (Worsley and Murphy, 1994; Lea et al., 2005b). Both industry sectors would benefit from stronger links between consumers, processors, and farmers, in order to increase knowledge of consumers' beliefs and behaviours and understanding of environmental and health issues.

Processors valued innovation more highly than did farmers. Farmers perhaps do not see the need for the production of raw commodities to be as innovative as the production of value-added processed products. However, farmers may need to become more innovative, despite the increased risk, in order to assure their own survival (Verhees and Meulenberg, 2004) and also to increase plant food production and consumption. For example, they may need to become involved with the production of a wider range of produce, more environmentally sustainable methods of production (e.g. drip irrigation, integrated pest management), or more varied marketing methods (e.g. a combination of selling to wholesalers and by direct marketing methods). Farmers may also be able to become more heavily involved with the promotion of plant foods. Partnerships between farmers, industry groups (e.g. fruit and vegetable grower associations), government and non-government health and environmental organisations, consumer groups, and regional food groups, for example, may prove advantageous.

Farmers valued caring for the community more highly than did processors. It is likely that farmers are more integrated into the community than processors and therefore feel a greater sense of obligation towards their community. Qualitative research could help to increase understanding of this finding, including how farmers (and processors) care for the community. Possible ways include minimisation of pollution (e.g. ensuring pesticides and fertilisers do not infiltrate into the local water supply, reducing noise pollution), providing employment opportunities for the local community, membership of community groups (e.g. landcare), and providing healthy, high quality products.

Conclusions, implications and future research
Respondents in this survey were involved to some degree with plant foods as opposed to heavy involvement with other foods such as meat. Future research could survey a larger sample of food industry representatives. It would also be useful for future studies to examine the values held by other food industry sectors, including retailers and food service.

With regard to the potential for food processors and farmers to help increase plant food consumption, it appears that processors need to place a greater emphasis on the healthiness of their products, while farmers, who already place a strong emphasis on health, need to be more highly involved with the promotion of their products and more innovative. Furthermore, awareness needs to be raised among processors of the environmental implications of their industry, or appropriate constraints set in place. Environmental guidelines that take into account issues such as origin of ingredients and production methods could be developed at the company, industry or government level. The utilisation of information on business values will help increase the effectiveness of communications with industry groups on a range of issues and in the formulation of appropriate health, environmental and other policies.
Table I

<table>
<thead>
<tr>
<th>Value items</th>
<th>Farmers Mean</th>
<th>Farmers SD</th>
<th>Farmers Rank</th>
<th>Processors Mean</th>
<th>Processors SD</th>
<th>Processors Rank</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ethics and social responsibility of this business is essential to its</td>
<td>4.3</td>
<td>0.8</td>
<td>8</td>
<td>4.2</td>
<td>0.9</td>
<td>10</td>
<td>NS</td>
</tr>
<tr>
<td>long-term profitability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This business would prefer protection for the industry over an open market</td>
<td>3.5</td>
<td>1.1</td>
<td>21</td>
<td>2.9</td>
<td>0.9</td>
<td>24</td>
<td>**</td>
</tr>
<tr>
<td>In this business, being ethical and socially responsible is very important</td>
<td>4.3</td>
<td>0.7</td>
<td>9</td>
<td>4.4</td>
<td>0.8</td>
<td>4</td>
<td>NS</td>
</tr>
<tr>
<td>Caring for employees is important to this business</td>
<td>4.5</td>
<td>0.6</td>
<td>3</td>
<td>4.4</td>
<td>0.7</td>
<td>3</td>
<td>NS</td>
</tr>
<tr>
<td>This business believes that social and environmental responsibility and</td>
<td>4.2</td>
<td>0.7</td>
<td>12</td>
<td>4.2</td>
<td>0.8</td>
<td>11</td>
<td>NS</td>
</tr>
<tr>
<td>profitability can be compatible</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This business has a social and environmental</td>
<td>3.8</td>
<td>0.8</td>
<td>16</td>
<td>3.8</td>
<td>1.0</td>
<td>17</td>
<td>NS</td>
</tr>
<tr>
<td>responsibility beyond making a profit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This business has a strong market orientation</td>
<td>3.8</td>
<td>0.8</td>
<td>15</td>
<td>4.1</td>
<td>0.7</td>
<td>13</td>
<td>N***</td>
</tr>
<tr>
<td>This business is innovative</td>
<td>3.7</td>
<td>0.7</td>
<td>17</td>
<td>4.2</td>
<td>0.7</td>
<td>9</td>
<td>N***</td>
</tr>
<tr>
<td>This business is democratic</td>
<td>3.5</td>
<td>0.7</td>
<td>19</td>
<td>3.6</td>
<td>1.1</td>
<td>20</td>
<td>NS</td>
</tr>
<tr>
<td>This business is authoritative</td>
<td>3.1</td>
<td>0.9</td>
<td>24</td>
<td>3.1</td>
<td>1.1</td>
<td>23</td>
<td>NS</td>
</tr>
<tr>
<td>Research and development are important to the</td>
<td>4.2</td>
<td>0.7</td>
<td>11</td>
<td>4.1</td>
<td>0.8</td>
<td>12</td>
<td>NS</td>
</tr>
<tr>
<td>success of this business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This business has a strong product orientation</td>
<td>4.0</td>
<td>0.7</td>
<td>13</td>
<td>4.3</td>
<td>0.7</td>
<td>6</td>
<td>N***</td>
</tr>
<tr>
<td>This business has a strong process orientation</td>
<td>3.4</td>
<td>0.8</td>
<td>22</td>
<td>4.0</td>
<td>0.8</td>
<td>16</td>
<td>N***</td>
</tr>
<tr>
<td>High quality products are important to this business</td>
<td>4.7</td>
<td>0.4</td>
<td>1</td>
<td>4.6</td>
<td>0.6</td>
<td>1</td>
<td>NS</td>
</tr>
<tr>
<td>Customer value is important to this business</td>
<td>4.4</td>
<td>0.6</td>
<td>5</td>
<td>4.5</td>
<td>0.7</td>
<td>2</td>
<td>NS</td>
</tr>
<tr>
<td>Cost reduction is more important than high quality</td>
<td>2.1</td>
<td>1.0</td>
<td>26</td>
<td>2.3</td>
<td>0.8</td>
<td>26</td>
<td>NS</td>
</tr>
<tr>
<td>products to this business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy products are important to this business</td>
<td>4.5</td>
<td>0.7</td>
<td>4</td>
<td>4.0</td>
<td>0.8</td>
<td>15</td>
<td>NS</td>
</tr>
<tr>
<td>Tasty products are important to this business</td>
<td>4.3</td>
<td>0.7</td>
<td>7</td>
<td>4.2</td>
<td>0.8</td>
<td>8</td>
<td>NS</td>
</tr>
<tr>
<td>Convenience products are important to this business</td>
<td>3.6</td>
<td>0.8</td>
<td>18</td>
<td>4.1</td>
<td>0.9</td>
<td>14</td>
<td>NS</td>
</tr>
<tr>
<td>Environmental sustainability is integral to this business</td>
<td>4.3</td>
<td>0.8</td>
<td>6</td>
<td>3.7</td>
<td>0.8</td>
<td>18</td>
<td>N***</td>
</tr>
<tr>
<td>This business is conservative</td>
<td>3.5</td>
<td>0.9</td>
<td>20</td>
<td>3.1</td>
<td>1.0</td>
<td>22</td>
<td>*</td>
</tr>
<tr>
<td>Honesty is important to this business</td>
<td>4.5</td>
<td>0.6</td>
<td>2</td>
<td>4.3</td>
<td>0.7</td>
<td>7</td>
<td>*</td>
</tr>
<tr>
<td>The competitiveness of this business is important</td>
<td>4.2</td>
<td>0.6</td>
<td>10</td>
<td>4.4</td>
<td>0.8</td>
<td>5</td>
<td>NS</td>
</tr>
<tr>
<td>The most important concern for this business is making a profit, even if it</td>
<td>1.8</td>
<td>0.9</td>
<td>27</td>
<td>2.0</td>
<td>0.9</td>
<td>27</td>
<td>NS</td>
</tr>
<tr>
<td>means harming the environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Caring for the community is important to this business</td>
<td>4.0</td>
<td>0.7</td>
<td>14</td>
<td>3.6</td>
<td>0.7</td>
<td>19</td>
<td>**</td>
</tr>
<tr>
<td>This business believes that to remain competitive in a global environment,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ethics and social responsibility have to be disregarded</td>
<td>1.8</td>
<td>0.7</td>
<td>28</td>
<td>1.9</td>
<td>0.8</td>
<td>28</td>
<td>NS</td>
</tr>
<tr>
<td>This business emphasises the production/marketing of tried and true</td>
<td>3.0</td>
<td>1.0</td>
<td>25</td>
<td>2.7</td>
<td>1.0</td>
<td>25</td>
<td>NS</td>
</tr>
<tr>
<td>products and the avoidance of heavy research and development costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This business believes that the least government is the best government</td>
<td>3.1</td>
<td>1.1</td>
<td>23</td>
<td>3.1</td>
<td>0.9</td>
<td>21</td>
<td>NS</td>
</tr>
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</table>

Notes: a Statistical significance of differences between group means: * p < 0.05, ** p < 0.01, *** p < 0.001, NS not significant; b Ranking of means was made on the basis of up to three decimal places where necessary; c Note that in the farmers' questionnaire, the term “farming business” was used for each item, while in the processors' questionnaire “company” was used; d Approaches significance (p = 0.06); e Note that in the farmers' questionnaire, “products” was replaced with “produce”, for each applicable item; Response options were “strongly disagree” (coded as 1), “disagree” (2), “unsure/neutral” (3), “agree” (4), “strongly agree” (5); The range of number of respondents for individual items was 64 to 69 for farmers and 46 to 48 for processors. Table I. Mean responses to value items for farmers and food processors

References


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