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Food Product Information: Trusted Sources and Delivery Media

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Abstract

Consumers receive food-related information from various sources and strive to make informed food choices regarding their health, lifestyle and belief. To be effective and reliable, the information consumers receive needs to be from a credible source and delivered to them in a way they trust. The aim of this study was to investigate the sources and media channels of that information consumer trust. An online and hardcopy survey of 298 consumers currently living in Australia was carried out. Many consumers believe that the source of food product information is important (87%). As a source of general and nutritional information, Health Professionals, Scientists and Government sources are the most trusted sources, with at least 80% of participants confident of the information coming from these sources. Retailer advertising and social media are the least trusted sources with just 29% and 11%, respectively, confident of these sources. As a delivery medium, printed food labels (67%) and printed brochures or fact sheets (56%) remain the most trusted delivery media compared with electronic media, such as mobile phone or the Internet.

Keywords

Food information, trusted source, extended product information, food label, electronic consumers

INTRODUCTION

Many factors govern consumer behaviour regarding food choice. The factors and their interactions are complex. For example, Furst *et al.* (1996) presents a conceptual mode where one's life course creates our ideals, personal factors, resources, social framework and food context. These in turn lead to a personal system and conscious value negotiations covering sensory perceptions, monetary considerations, convenience, health/nutrition, quality and relationship management, which in turn form the strategies for a particular food choice episode. Furthermore, consumer decisions regarding food choice can be swayed at the point of purchase by information important to them that is appropriately presented (Sutherland *et al.*, 2010; Milliron *et al.*, 2011). \ This means that product information is critical for product selection for consumers. However, many of the sources of product information are unverified and unreliable (Flanagin and Metzger 2001), and yet these may represent a major source of information for some consumers.

Information about food products covers mandatory nutritional information, the ingredient list, health and nutrient claims and a range of other information for specific population groups.

This includes information concerning organic production certification, status of the inclusion of genetically modified (GM) ingredients or the environmental impact of manufacturing of the food product. This information is widely available from a variety of sources, including mass media, farmers, growers, manufacturers, retailers, public authorities, consumer organisations, scientists and health professionals. Consumers are often exposed to this plethora of information, which can sometimes be contradictory and confusing.

Printed food labels have been the standard delivery medium of food product information. These printed labels continue to be the major delivery medium of food product information today. Recently, however, the Australian Government's review on the law and policy of food labelling (Australian Government, 2011) found that consumers were calling for more information about food products at the point of sale. Due to the potentially large amount of information and the potentially limited space/packaging, the Australian Government (2011) floated the notion of providing such information through electronic means such as mobile devices apps and referred to as 'extended labelling'.

While there have been studies concerning consumers' trust of various sources of food product information (See, for example Holgado et.al. 2000, Pieneak et.al 2007), very few contain details of sources and delivery media consumers trust. Overall, it appears that consumers trust government bodies to regulate and ultimately control new aspects of food production, manufacture, composition and labelling, but distrust food manufacturers to provide unbiased information as they are seen as profit driven (Behrens *et al.*, 2009).

With the potential to increase the amount and possible quality of information through electronic media, it is apposite to raise the question in Australia, what sources for food product information are trusted and what delivery media for that information are trusted? Consequently, the purpose of this study was to investigate the attitudes of trust in sources of food product information and trust of the diversity of delivery media available now, and potential in the future, for food information in Australia.

RESEARCH DESIGN

The approach chosen to explore the dimensions of trust in information source and media was to undertake a survey of consumers and shoppers to gain an indication of the information and its sources they considered and trusted during purchase. A snowball method (Goodman, 1961) originating in three locations in Victoria was used to populate the sample and a pencil and paper questionnaire and an online survey was used. Acquaintances of the research team were initially invited and they then nominated further people for the survey. A total of 298 participants completed the questionnaire in November 2011. The survey does not claim to be representative.

The questionnaire was structured to solicit information that participants desired about the food products they purchase, the sources and the delivery media of that information they trust. A 7-point Likert scale was used. The questionnaire was comprised of six sections: (a) food/grocery purchasing behaviour of the participant (b) the importance they placed on food product information (c) specific information on labels they sought such as ingredients, nutritional panel information, health and environment information as well and general brand and manufacturing information (d) trust in the sources of food product information. (e) the level of trust in delivery media of food product information. (f) Demographic details.

The presence of a statistically significant difference between the various demographic groups was determined using a z-test. Pairs of demographic groups were considered statistically significantly ($\alpha = 0.05$) different when their z score was more than two standard deviations distant from the mean, which means a value larger than 1.96 or smaller than -1.96.

LITERATURE REVIEW

Historically, limited information was available about food products. For example, an Australian food label from the 1950s has very little food product information compared to early 1990s. Consumers have become increasingly concerned and vocal about a range of ethical and other issues relating to the food products they purchase (Brom, 2000) and these concerns are governing food purchase behaviour (Korthals, 2001).

Printed food label has been the standard medium for delivery of food product information but with the advent of electronic communication and the rising demand for specialised information has resulted to an increasing number of the use of other media to deliver food product information. Among the non-traditional sources for food product information, the Internet has emerged as a popular medium (Choi & Park, 2006), and recently, there have been hundreds of food related mobile applications designed to provide consumers with food information. For example, GS1 GoScan, which allows consumers to check additional information, related to packaged food products; or Food Switch, which suggests alternatives packaged food products to consumers intending to buy a particular food product.

Historically, food product information originated from the manufacturer or the retailer. Food regulation and labelling in one form or another has been around for a long time. In 1962, the FAO and WHO attempted to draw national food labelling regulations together (Marks, 1984). However, at the start of the 1990s a major food label/claim 'shake-up' occurred in Australia (Rumble *et al.*, 2003) and the United States (McNamara, 1991), with, for example, both governments challenging manufacturer's food label claims, such as the notion of "fresh" heat-processed foods (Caswell, 1998). During this period, consumers also became increasingly critical of these aspects of the food they consume (Verbeke, 2005). Consequently, Australian and US legislation was established in the early to mid 1990s and, government regulatory bodies "stepped in to settle the debate", and alleviated to some extent consumers' concerns regarding nutritional information, health claims of ingredients and other food product information (Hooker & Teratanavat, 2008).

Over the last 15 years or so, consumer trust in food and information received about food has been dealt various blows as a result of large-scale food safety problems, hot debate over controversial new food technologies and the sometimes controversial opinions of outspoken environmental/consumer groups and the mass media (Anderson, 2000). The rise in concern over food safety and the wholesome nature of food may reflect the separation of the consumer to the farm and the advent of farmers' markets have started to address some of these concerns, as suggested by their increasing popularity. Farmers' markets, which have doubled in number in Australia over the six years from 2005 to 2011 from around 70 (Coster & Kennon, 2005) to 150 (AFMA, 2011), allow shoppers to mingle with and gain specific food product information direct from the producer. This may result in a trusting relationship for the consumer. However, the vast majority of consumers in Australia do not shop at farmers' markets, either due to choice, cost or geographical distance to one of the few farmers' markets. For these shoppers, trust in the food products or fresh produce they purchase, is more of an issue. In such circumstances, consumers seeking food information readily available at the point of sale by way of brand names, certifications and other marks of quality.

Consumer trust in food information often relates to healthy eating and this has largely been placed with health professionals, scientists and government sources, who are seen as experts in health, nutrition as well as assessing and regulating the risks associated with foods. A large European study involving more than 14,000 participants suggests that while 91% participants trusted health professionals and 80% trusting government sources – only 65% trusted printed food labels (Lappalainen *et al.*, 1998). Another study suggests family doctors and dieticians

are regarded as the most reliable, having the most expertise, being most accessible and most clear about the information (van Dillen *et al.*, 2004).

There is little trust in corporate and commercial sources of information (Spike & Menrad, 2009) and specifically, health and nutrition claims made by food manufacturers are viewed with scepticism (Chan *et al.*, 2005; Williams, 2005). However, such claims can be made more credible through endorsement by non-profit, health promoting organisations (Leathwood *et al.*, 2007) unless the public perceives that financial incentives are guiding this so-called independent advice (Bruhn *et al.*, 2002).

There are also major differences in trust internationally. For example, government regulatory bodies are generally trusted in the Netherlands (Kuttschreuter, 2006) and Taiwan (Chen, 2008) to provide food safety advice. However, in Germany, government bodies were not highly trusted (Röhr *et al.*, 2005; van Rijswijk & Frewer, 2008) and consumer/environmental organisations, physicians and nutritionists were considered the most trustworthy for food safety information (Röhr *et al.*, 2005). Germans also place more trust in the mass media for food safety information (Lobb *et al.*, 2006).

RESULTS AND DISCUSSION

Participant's background and their technological usage

The sample, reflecting its origin, was highly educated with only 9% having neither undertaken nor completed any post-secondary study and young (56%) being between 18 and 34 years of age. The majority resided in Victoria with 96% from Melbourne. The majority of participants (89%) were responsible for all (or most) or some of the grocery shopping in their household. This result is perhaps not surprising, considering that more than half of the participants (57%) belonged to small households and 55% were women. The participants shopped for only themselves (24%) or for two people only (34%).

A substantial portion (83%) of the participants agreed that when seeking information, their usual action was to use an online search engine, with a similar percentage (82%) claiming that they were comfortable with electronic/online transactions (Table 1).

Table 1: Participants' technological awareness and usage

Statement	Percentage (%) agreeing ^a	Percentage (%) strongly agreeing
When seeking information, my usual action is to use an online/web search engine	83	38
I am comfortable with electronic / online transactions	82	35
I consider myself technologically savvy	75	22
I am comfortable with electronic communication and social networking	71	24
I am always among the first to purchase newly launched electronic products	34	6

^a Includes slightly agreeing, moderately agreeing and strongly agreeing

Overall, three quarters of the participants believed that they were technologically savvy, which matches well with the education and age of the sample participants. With more than half of the participants in this study coming from Generation Y, which has been described as the most "technologically sophisticated generation" (Crampton & Hodge, 2009), it implies a strong potential for use of electronic media within this sample of the population for delivery of food product information, since these consumers are comfortable with such technology and already use it for various other purposes.

Food product information – what’s important and why

A US study (Butler 2010), notes that 85% of people refer to the food label when purchasing a food product for the first time. Fulgoni III and Miller (2006) also found that 83% of consumers checked the nutritional profile of a food product they were considering purchasing for the first time. In this study, information about food products purchased for the first time was important to 75% of the participants. Nutritional information was highly sought after, being important to 70% of the respondents and the list of ingredients was considered important by 66% of the participants.

Third party endorsement of a food product, e.g. Health Foundation, covers a diversity of potential consumer concerns, from personal health to the environment. In comparison with other categories of food product information, third party endorsements were least important to participants in this study. This is consistent with the findings of Mueller and Umberger (2010), who investigated third party endorsements of health claims on food in Australia and found little impact on consumer food choice. This may have resulted from almost indiscriminate use of such endorsements, thus devaluing them.

Table 2: Reasons consumers seek food product information

Rank	Category	Percentage (%) who seek food product information for these reasons
1	General health choices	81
2	Personal interest	53
3	Environmental concerns	22
4	Specific health concerns	22
5	Food allergies	19
6	On a specific diet	16
7	Religious reasons	7
8	Other	5

Four out of five participants (81%) indicated that making general health choices was one of the key reasons for seeking food product information (Table 2), which is consistent with a previous major study in Australia and New Zealand (FSANZ, 2008) and suggests that consumers in this study are generally interested in seeking information to guide and maintain their general well being and possibly avoid specific health concerns.

In the general information category, 85% of participants checked the price, with 81% and 79% checking the use-by-date and best-before-date, respectively (Table 3).

Table 3: Information checked when purchasing food product for the first time

Category	Percentage (%) checking*	Percentage (%) always checking
General information		
Price	85	37
Use by date	81	45
Best before date	79	39
Brand name	72	12
Nutrition information per 100 g	55	15
Nutrition information per serve	50	13
Storage instructions	50	13
Instructions for use/preparation	50	9
Country of origin	49	18
Product weight	46	8
% RDI	32	5
% DI	30	5
Nutrition information		
Nutrition Information panel generally	63	20
Carbohydrate – sugars	62	21
Fat – overall	61	21
Fat – specific types	60	18
Energy	55	15
Sodium	50	15
Fibre	51	12

Carbohydrate – overall	49	13
Protein	44	10
Minerals and/or vitamins	42	11
Ingredient information		
Ingredient list generally	61	23
Relative quantity of the main ingredients	58	16
Additives (preservatives, colours)	55	17
Other information		
Presence of possible allergenic ingredients	34	13
Claim about nutritional content	45	8
Claim about health benefits	41	5
Organic production	35	9
Genetically modified (GM) ingredients	33	14
Claim about the food's GI index	31	6
Claim about environmental sustainability in primary production or manufacturing	30	5
Allergen statements	25	9

* Includes usually, often and always checking

As can be seen, only 32% of the participants looked at the % of Recommended Dietary Intake (% RDI) at point of sale, with very few, just 5% of participants, always looked for this information. Lack of attention to this information suggest either consumer confusion of the the %DI/%RDI concept or this information may only become salient at the point of consumption (as opposed to the point of sale).

There was little difference between the per cent of participants that checked the nutrition information in either of the two formats (per 100 g and per serve). Interpretation difficulties between the two have been known for decades (at least in the US) (Jacoby, Chesnut & Silberman, 1977; Louie et al., 2007). In the UK, consumers appear to prefer per serving-based comparisons (Higginson et al., 2002) but in Australia, a recommendation has recently been made to remove reference to nutrition information on a per serve basis due to a low preference among Australians (Australian Government's Labelling Logic report 2011).

Apart from the Nutritional Information Panel (NIP) generally, the sugar content and fat content were the most frequently scrutinised nutrients on the NIP. Around 60% of participants checking for sugar and fat content on food products they are purchasing for the first time. This is consistent with previous findings in Australia (FSANZ, 2008), and with some international findings in New Zealand (FSANZ, 2008) and Sweden but quite different from others (the British look for fat content much more, the French look for the sugar content most while the Hungarians are most interested in the energy content with almost no interest in the amount of fat) as detailed in a multi-country study in Europe by Grunnert et al. (2010). National differences in attitudes towards health and other issues may account for these differences

There was moderate interest in the ingredient list generally, with 61% of participants checking it prior to a first time food purchase, while 34% of participants looked for the presence of possible allergenic ingredients.

When considering the range of other information present on a food label, there was most interest in claims about the nutritional content of the food (45%) and health related claims (41%). Overall, there was general agreement (63%) that there was sufficient relevant information on the packaging about the food purchased.

Trusted sources for food product information

A very high percentage of participants (87%) agreed that the source of information about food products was important to them. Health professionals, scientists, government sources and health-related associations are the most trusted parties to provide food product information. Around eighty per cent of participants were confident of the information released by these

sources which indicates a high degree of trust on these professionals and perceived independent non-profit institutions.

Table 4: Trusted sources for **General** and **Nutritional** food product information

Source	Percentage (%)	Percentage (%)
	Confident*	Confident*
	GENERAL	NUTRITIONAL
Health professionals (family doctors, dieticians)	83	83
Scientists (nutritionists, food chemists, agricultural scientists)	82	81
Government health departments and food regulators (Department of Human Services, Department of Health and Ageing, FSANZ)	80	76
Health-related associations (Heart Foundation, Coeliac Association)	78	75
Family and friends	52	46
Food manufacturers	52	51
Environmental associations/consumer advocacy groups (Greenpeace, Choice)	50	48
Third party organisations (product data services, non-profit organisations, non-food companies)	47	47
Books and magazines	45	46
Religious Certification Authority	35	31
General Internet sources	34	33
Retailer advertising	29	24
Social media (Facebook, Twitter)	11	12

- Includes usually, very and extremely confident

Government sources and health related associations were nearly identical, with 76% and 75% of participants trusting these two sources respectively. This is in line with Coveney (2007) study who identified government sources being most trusted, arguing that government sources had no financial interest in the consumers' purchase decision.

Trust in food manufacturers is identical to trust in family and friends (52%) as well as environmental associations and consumer advocacy groups (50%). This seems to be consistent with the moderate public scepticism of food manufacturers and retailers on healthy eating information (Jones et al., 2009). This result gave food manufacturers a ranking in the middle of the order of trusted sources of general food product information with 9% of participants never or very rarely confident of the information they provide. This moderately low trust is also consistent, to some extent, with similar studies elsewhere in the world. For example, 7% of participants in a South Korean study did not check the manufacturers' food labels at all, because they did not trust them (Kim & Kim, 2009).

When seeking to determine the presence of allergenic ingredients, consumer trust seems to be placed more on food manufacturers, rather than other sources, such as retail staff, who were considered to have insufficient knowledge to provide reliable information on this issue (Cornelissa-Vermaat et al., 2007; Voordouw et al., 2009).

Some results of past studies are similar to the findings of the current work, where for nutritional information, the family doctor (Hiddink et al., 1997) or other health professionals (Holgado et al., 2000) are most trusted source of information. The close relationship that forms between a patient and their personal/family doctor or other advising health professionals (for example a dietician) would be assumed to contribute to the high level of trust that consumers place in health professionals as sources of food product information.

Media Channels for delivery of food product information

For general food product information, 64% of participants trusted printed food labels and 54% of participants trusted printed fact sheets. In the case of electronic delivery media, substantially more participants trusted general Internet sources (37%), compared to all other forms of electronic delivery (smartphones, social media, email and SMS).

Table 6: Trust of various delivery media

Delivery medium	Percentage (%) confident ^a			Percentage (%) always confident		
	General	Nutrition	Food Safety	General	Nutrition	Food Safety
Label printed on the food product	64	71	67	6.0	8.2	11.3
Printed brochures or fact sheets	54	56	59	2.5	3.2	5.0
General Internet sources	37	34	34	1.1	2.1	2.2
Mobile smartphone applications	16	15	13	0.7	0.7	1.1
Social media (Facebook, Twitter)	16	14	13	0.7	0.4	1.1
E-mail	13	12	11	0.4	0.7	0.7
SMS/MMS	9	10	9	0.4	0.7	0.7

^a Includes usually, very and extremely confident

For both General and Nutritional information, 34% of participants were confident of the Internet as delivery medium, which substantially higher than for any other form of electronic delivery options provided. A similar number of participants (67%) were confident of printed food labels in delivery food safety information to them. Printed brochures/fact sheets ranked second, with 59% were confident of that delivery medium. As was the case with general and nutritional information, all electronic sources ranked below printed sources in an identical order, with general Internet sources the most trusted electronic source.

Most consumers (79%) agree that they trusted food labels more than general Internet sources as a delivery medium of food product information. Most consumers (80%) also agreed that they trusted food labels more than smartphone applications as a delivery medium of food product information. However, only 55% agreed that they only trusted food labels. This suggests that alternative media may have some promise for catering the diverse food product information needs of Australian consumers. Electronic delivery to personal, portable electronic devices enables provision of a vast amount of information to consumers, with the information being easily updated due to its electronic format. This appears to represent the future of food labelling (the so-called electronic food label) providing alternative forms of information delivery.

While the participants in this survey are clear on whom they trust for food product information, there is less certainty regarding the information delivery channels. The traditional form of delivery (printed food labels) is still trusted the most and there is substantial confidence in regard to printed brochures and fact sheets too. However, emerging forms of information delivery were less trusted. This is despite participants being comfortable with the technology and inclined to use that technology for various (other) routine tasks in their life.

CONCLUSION

This study provides the empirical evidence to support the potential use of electronic media to provide the wide range of information consumers seek about the food products they purchase. Electronic delivery offers not only personalised information but also an ability to deliver a larger amount of data directly to the consumers. Although the printed food label is by far still the most trusted medium due to its legality, there is evidence that consumers are open to other media of delivery i.e. electronic. However to ensure a success of its uptake, it is vital to understand issues associated with electronic delivery of food information such as availability of comprehensive packaged food products database, data ownership and accountability, and data quality and accuracy. All these are essential if the extended labelling approach using electronic smart devices is to be successful.

There are food safety and public health implications on which information sources consumers trust. It is imperative that the food information sources provide accurate information. This is because consumers can potentially used this information to make significant decisions about their health and wellbeing e.g. chronic disease diet. Additionally, food product information

when used appropriately can shape the health and nutrition profile of the population, hence have public health implications.

A major message to take from this work is that information about food products really needs to be provided to consumers by one or a combination of the four most trusted sources. If this is not always possible, then at minimum, endorsement of the information by these source(s) is required. This is already done to some extent, with government endorsement (through mandatory food labelling standards) of nutrition information, the ingredient list and health and nutrition claims. Such an approach needs to be extended to all other information (such as environmental claims and values) that can, and is, provided about food. Otherwise, food manufacturers run the real risk of supplying food, which is not accompanied by information that consumers trust. Thus could have major implications for sales as consumers may avoid purchase of those food products.

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