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RESEARCH ARTICLE

Establishing confidence in food safety: is traceability a solution in consumers' eyes?

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Abstract

Consumers have become increasingly concerned about food safety due to numerous food scandals and incidents over the past two decades. Consequently, they demand to be informed of the processes involved along the food supply chain. Employing a traceability system, tracing food from 'farm to fork', has been embraced by the food industries and governments as an important tool to restore and increase consumers' confidence in food safety. However, there is limited research examining consumers' perceptions of, and confidence in, the food traceability system to fulfil the role of ensuring food safety. To bridge the knowledge gap, we conducted an online survey of 489 consumers from three major Australian cities. The results suggested that although participants had a great desire to know how their food was produced and handled, it was their understanding of, and confidence in, food traceability systems that strongly predicted their willingness to pay (WTP) for having their food traced. Participants also indicated that, in comparison to locally produced food products, it was more important to have imported food products traced. However, paradoxically, the information provided by the traceability system of imported food products was less trusted. The results highlight that, in order to use the food traceability system to gain consumer trust in food safety, it is critical to inform consumers how the system works to build their confidence in the system.

Keywords Food safety · Food origin · Consumer trust · Traceability · Willingness to pay

1 Introduction

The credibility of the food industries in providing safe food to consumers has been heavily challenged worldwide due to numerous food scandals and incidents over the past two decades. The outbreak of foodborne diseases has further exacerbated consumer concerns over food safety. The World Health Organisation (WHO) has identified that foodborne diseases are an important cause of morbidity and mortality (WHO 2015). Its research has shown that foodborne diseases caused 600 million (95% uncertainty interval [UI] 420–960) illnesses and 420,000 (95% UI 310,000–600,000) deaths globally in 2010 (WHO 2015).

Furthermore, consumers have become increasingly aware of health, social, and environmental consequences of their food choices, calling for high quality food with integrity, safety guarantees, and transparency (Aung and Chang 2014; Myae and Goddard 2012; Tang et al. 2015; Riccioli et al. 2020). There are also frequent and polarising debates about the legitimacy and safety of genetically modified food, which demand further solutions for consumers to be able to identify what they eat, and to have confidence in food sources, food development and commercial providers (Bosona and Gebresenbet 2013). Food safety related issues have had huge social impacts, including costly implications on the economy and businesses. For instance, the bovine spongiform encephalitis (BSE or mad cow disease) outbreak in the 1990s caused financial losses of US $5.6 billion globally (Kimball and Taneda 2004).

In response, governments worldwide have been forced to reactively impose new legislations and regulations for the food industries. As a result, a number of integrated food safety and quality management systems have been implemented (Aiello et al. 2015; Charlebois et al. 2014; Kirezieva et al. 2013; Rong et al. 2011; Trienekens and Zuurbier 2008;

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Van der Meulen 2015; Chen et al. 2019; Liu et al. 2018). Traceability of food across the supply chain, from 'farm to fork', has been regarded as an important tool supporting compliance with legislations and regulations. This entails monitoring of food safety and quality across the chain and help restoring and increasing consumer confidence (Aung and Chang 2014; Bosona and Gebresenbet 2013; Kher et al. 2010; Martinez and Epelbaum 2011; Tang et al. 2015; Cheung and Luber 2016).

While the introduction of traceability systems is partly aimed at restoring consumers' confidence in food safety, there is limited understanding in relation to consumers' perceptions and beliefs associated with food traceability (Aung and Chang 2014; Kim and Woo 2016; Van Rijswijk and Frewer 2012; Matzembacher et al. 2018). The rapid technological advancement, along with consumer demand and government regulations, will make food traceability from 'farm to fork' a reality, pushing a new level of supply chain visibility (Jouanjean 2019). For traceability systems to achieve their intended goal, it is imperative that consumers have faith in such systems and be willing to bear associated costs for a more transparent food system. Willingness to pay (WTP) will reflect the acceptance of traceability system by consumers. The present study is to examine how consumers' information needs, knowledge of, and confidence in traceability systems influences their WTP for having access to more traceable foods. In addition, the differences between consumers' attitudes towards domestic food products and imported food products in relation to traceability are also investigated.

1.1 Consumers' knowledge of food traceability

Historically, the notion of *food traceability* was a difficult concept for average consumers to understand and apply to their food purchasing choices. For example, many studies have shown that supermarket shoppers were largely unaware and apathetic towards traceability, whereas those who shopped in specialty stores were potentially more engaged but used salespeople as a proxy for seeking traceability information themselves (Giraud and Halawany 2006; Van Rijswijk et al. 2008). More recent research has shown that consumers are positioned at the centre of the food system, and their expectations of food traceability are driving purchasing behaviour like never before. For example, Charlebois and Haratifar (2015) demonstrated the perceived value of food traceability as consumers related it to food authenticity. They found that providing consumers with greater information about tracing and tracking of organic milk products across a supply chain has led to an increase in the market share of organic milk. The benefits of food traceability are that traceability can provide consumers with a guarantee of food authenticity and credibility, as well as providing a way to manage potential human and animal health risks and improving the overall quality of food production processes (Charlebois and Haratifar 2015; Liu et al. 2018).

The history of food traceability around the world has been a reactive one. The incidence of BSE in cattle around the world at the turning point of this millennium led to mandatory livestock traceability programs in many countries (Charlebois et al. 2014). Within the European Union, food traceability has become mandatory for food, feed, food-producing animals, and any other substance incorporated into food or feed since January 2005. In Australia, food traceability systems have been, so far, only applied in the meat industries. The National Livestock Identification System (NLIS) became mandatory in 2005, requiring the tagging and identification of cattle, sheep and goats (Charlebois et al. 2014; Meat & Livestock Australia 2019), and the Australian Pork industry has employed a NLIS (Pork) system in 2008 to link pigs to a property of origin using an identification code and movement documentation (Australian Pork Limited 2019). The NLIS and NLIS (Pork) traceability systems in Australia were largely implemented in response to market access and regulatory demands, the traceability process is not one which is actively communicated to consumers.

Although the initiative of the food traceability system by producers and regulatory institutions is, in part, to address consumers' demands for transparency in food-related information (Aung and Chang 2014; Myae and Goddard 2012; Tang et al. 2015), little is known about Australian consumers' understanding of the food traceability system. Consumers' knowledge of the food traceability system will play a key role in determining their acceptance of the system. Research has shown that knowledge and attitudes are closely interlinked across a number of fields in the food production space (Charlebois and Haratifar 2015; Liu et al. 2018; Pieniak et al. 2007; Zhang et al. 2012). For example, initial research of consumers' attitudes toward traceable food products in China suggested that consumers' knowledge of food traceability was positively associated with their WTP for traceable food products (Zhang et al. 2012). Therefore, in the present study we predict that good understanding of traceability system's capacity in ensuring food safety will be associated with a favourable attitude toward traceability system.

1.2 Confidence in the food traceability system

While understanding of the traceability system can influence consumers' attitudes toward it, confidence and trust in the system to achieve its goal will also play an important role. Indeed, research on technology acceptance has shown that perceived usefulness and relative advantage of a new system/technology is the key determinant of acceptance (Chen et al. 2011; Davis et al. 1989; Kim and Woo 2016; Wu and

Chen 2017). Specifically, if people believe a new system or technology can deliver what it is designed for, then they are more likely to have a higher level of confidence in that new system or technology, and consequently accept the system or technology.

For example, research on consumers' perceptions of a Quick Response (QR) code as a tool for food traceability and their intention to use a QR code has been examined from the perspective of system acceptance (Kim and Woo 2016). They found that consumers' confidence in QR code technology to provide important food-related information was the strongest predictor of their intention to use QR code. Applying the confidence concept to the food traceability system, we hypothesise that consumers will be more willing to accept the food traceability system if they are confident that the system is able to ensure food safety and quality.

1.3 Perceived safety of domestic food products vs. imported food products

Globalised food supply chains and market demands have made food industries around the world an interconnected and complex set of systems (Ortega et al. 2015). Imported food products are increasingly present on supermarket shelves (Barbarossa et al. 2016). However, the safety of imported food products, especially from Asian countries, has become a source of concerns for consumers in the developed countries for various reasons (Barbarossa et al. 2016; Ortega et al. 2011, 2015).

In Australia, a number of highly publicised food safety incidents involved imported foods. For example, imported frozen berries from China led to Hepatitis A outbreaks in 2015 (Carter 2015b), and a large number of imported food products have reportedly contained harmful substances (Carter 2015a; Marszalek 2015). Given the increasing concerns spurred by past food safety incidences, consumers are inclined to demand for more domestically produced food rather than imported food. For example, a survey conducted in Australia in 2013 revealed that Australian consumers trusted locally produced vegetables much more than imported vegetables (Ariyawardana et al. 2017).

With these comparatively higher levels of safety concerns over imported foods, consumers may have different expectations for domestic and imported food products in relation to the traceability systems of these foods. Understanding of consumers' expectations will help agribusinesses and policy makers to develop business strategies and regulatory market access requirements to meet consumers' needs.

1.4 The present study

To fulfil the objective of a food traceability system in restoring and enhancing consumers' confidence in food safety, it is essential that consumers have confidence in the food traceability system and accept such a system. To assess the acceptance of the system, we use WTP as an indicator. WTP has been widely used as an indicator of measuring acceptance of food products and services (Lim et al. 2013; Loureiro and Umberger 2007), and food traceability systems (Wu et al. 2015; Yin et al. 2017; Zhang et al. 2012).

One pathway for the system to gain consumers' confidence is through providing food production and handling related information. This is based on the assumption that the provision of food-related information will satisfy consumers' needs for such information (Aung and Chang 2014; Jin and Zhou 2014; Myae and Goddard 2012; Tang et al. 2015). The present study aims to examine Australian consumers' current needs for food related information, and how these needs influence their acceptance of the traceability system.

As discussed above, the food traceability system is a reasonably new concept for Australian consumers, and knowledge of the system has been shown related to consumers' WTP for traceable food products (Zhang et al. 2012). The present research aims to examine Australian consumers' knowledge of, and confidence in, the food traceability system in ensuring food safety, as well as how knowledge and confidence influence their acceptance of the system. A secondary aim of this study is to explore differences in Australian consumers' demands for traceability between domestic and imported food products, as well as their trust in the information provided by the traceability systems of domestic and imported food products.

2 Material and methods

2.1 Participants and procedures

A professional survey recruitment company was engaged to recruit participants from their database in the three largest cities in Australia: Brisbane, Melbourne, and Sydney. Potential participants were selected to represent all age groups and gender for the three cities. The identified participants were invited through email with a web link to the online survey in July 2016. Participants were paid a small fee by the survey company for their participation. Of the 1324 people who activated the link, 489 completed the survey, with a completion rate of 37%. Among the 489 participants, 46% were male participants. Participants were spread across all age groups, with 8.8% for aged 18–24 years, 16.8% for 25–34 years, 17.4% for 35–44 years, 18.0% for 45–54 years, 19.8% for 55–64 years, and 19.2% for 65 years or older. Of the respondents, 10.0% did not complete Year 12, 18.0% completed Year 12, 21.7% acquired postsecondary qualification, 29.9% completed an undergraduate degree, and 20.4% had a postgraduate degree (see Table 3 in "Appendix" for a

comparison of gender, age and education across the current sample, and greater populations for Brisbane, Melbourne and Sydney, as well as the whole of Australia overall, obtained from the Australian Bureau of Statistics database).

2.2 Measures

2.2.1 Information needs

This variable was measured by asking participants to indicate their agreement with four statements ($\alpha = 0.91$) on a 7-point scale (1 = strongly disagree to 7 = strongly agree). They are:

- "For me it is important to know how the food is grown and how the farm animals are raised",
- "For me it is important to know how the food products are manufactured",
- "For me it is important to know how the food products are transported", and
- "For me it is important to know how the food products are stored".

2.2.2 Knowledge of food traceability system

Given the notion of a food traceability system is reasonably new in Australia, participants were provided with the definition of traceability first, before answering the following questions. Traceability was introduced as: "To ensure food safety, agricultural and food sectors around the world have started to make all information transparent through technology such as a bar code or QR code (▩). With a scan using a mobile device such as a mobile phone, you will be able to trace all the information about a particular food product from farm to shop shelf. This is referred to as a traceability system."

Participants' subjective knowledge of traceability was measured with two items ($r = 0.86$) on a 5-point scale (1 = not at all to 5 = very much). The items are:

- "How much do you know about the traceability of food products?" and
- "How much are you aware that some food products provide traceability information?".

2.2.3 Confidence in traceability system

This was measured by using three items ($\alpha = 0.71$) on a 5-point scale (1 = not at all, 5 = very much). They are:

- "Do you think the food chain is able to trace every product?",
- "Does traceability provide assurance on food safety?", and
- "Is traceability more important than labelling on food products for you?".

2.2.4 Willingness to pay

In research on food products, this is predominately measured by the premium prices research participants are willing to pay (for a review, see Rödiger and Hamm 2015). However, Rödiger and Hamm (2015) found that the premium prices can be different by product categories. As the goal of present study was to investigate whether participants were willing to pay more for traceable food products in general without considering food categories, WTP was measured by asking participants "Are you willing to pay more for traceable food products?" (1 = not at all to 5 = very much).

2.2.5 Traceability in Australian food products vs. imported food products

This concept was measured using four items (1 = not at all to 5 = very much):

- "Is traceability of Australian food products important to you?",
- "Is traceability of imported food products important to you?",
- "How much will you trust the information provided by the traceability system in Australian food products?", and
- "How much will you trust the information provided by the traceability system in imported food products?".

3 Results

Table 1 presents the means and standard deviations, as well as the partial correlations between the measured variables.

3.1 Information needs

The reported information needs were quite high for all participants, and difference existed between male and female participants. More specifically, female participants ($M = 5.11$, $SD = 1.20$) reported higher information needs than male participants ($M = 4.78$, $SD = 1.43$), $t\ (487) = -2.80$, $p = .005$, $d = 0.25$, with 95% CI Mdiff (-0.57, -0.09). The results suggest that it is more important for female consumers to be informed about how the food products are produced and handled.

Age and levels of education were not associated with the reported information needs.

Table 1 Means, standard deviations, and partial correlations between key variables

Variable	Mean (SD)	1	2	3
Information needs	4.96 (1.32)	1		
Knowledge of traceability	1.91 (1.03)	0.33*	1	
Confidence in traceability system	2.45 (.88)	0.38*	0.50*	1
Willingness to pay (WTP)	2.30 (1.20)	0.38*	0.51*	0.55*

Information needs was measured on a 7-point scale with endpoints ranging from "*strongly disagree*" to "*strongly agree*". Responses on other variables were made on a 5-point scale with endpoints ranging from "*not at all*" to "*very much*"

*$p < .001$, indicting a less than 1‰ probability that the correlation is random

3.2 Subjective knowledge of traceability

The reported knowledge of traceability was very low ($M = 1.91$, $SD = 1.03$), considering the 5-point scale used (1 = no knowledge at all). There were differences in the traceability knowledge among demographics. In particular, female participants had less knowledge of traceability ($M = 1.80$, $SD = 0.93$) compared to male participants ($M = 2.05$, $SD = 1.12$), $t(486) = 2.71$, $p = .007$, $d = 0.24$, with 95% CI Mdiff (0.07, 0.43). Age was negatively associated with knowledge of traceability ($r = -0.28$, $p < .001$), indicating younger participants knew more about traceability than older participants. Moreover, education was positively associated with knowledge of traceability ($r = 0.17$, $p < .001$), suggesting that participants with higher levels of education were more informed about traceability than those with lower levels of education.

3.3 Confidence in traceability system

Participants reported lower level of confidence in traceability system ($M = 2.45$, $SD = 0.88$), considering the 5-point scale used (1 = not at all, 5 = very much). In addition, differences existed in demographics. Female participants ($M = 2.35$, $SD = 0.82$) were less confident than their male counterparts ($M = 2.56$, $SD = 0.93$), t (486) = 2.62, $p = .009$, $d = 0.24$, with 95% CI Mdiff (0.05, 0.36). Age was negatively associated with confidence ($r = -0.27$, $p < .001$), suggesting that younger participants were more confident with traceability system than older ones. In addition, education was positively related to confidence in traceability system ($r = 0.14$, $p = .002$), indicating that participants with higher levels of education were more confident with traceability system than those with lower levels of education.

3.4 Willingness to pay

The level of WTP was reasonably low ($M = 2.30$, $SD = 1.20$), just above "a little bit" on a 5-point scale. There was no significant difference between genders. However, age was negatively associated with the level of WTP ($r = -0.13$, $p = .005$), suggesting that younger participants were more prepared to pay more for traceability than older participants. On the other hand, education was positively related to WTP ($r = 0.11$, $p = .017$), indicating that participants with higher levels of education were more willing to pay for traceability than those with lower levels of education.

3.5 Correlations between key variables

As gender, age, and education were related with most of the key variables, partial correlations between the variables were examined while controlling for age, gender, and education (Table 1). All key variables were positively associated with each other. In particular, the more knowledge participants had about traceability and the more needs they had about food information; and, the more knowledge they had about traceability, the more likely they would have confidence in the system.

3.6 Predictors of WTP for traceability

Hierarchical regression analysis was conducted to identify the predictors of WTP for traceability. As shown in Table 2, confidence in a traceability system was the strongest predictor, indicating that the more trust participants had with the traceability system, the more likely they were willing to pay. Knowledge of traceability was also a key factor of WTP, suggesting that knowing more about the food traceability system was associated with increased WTP. Information needs about food production and handling was positively related to WTP, but to a lesser degree compared to knowledge of, and confidence in, a traceability system. In addition, when all predictors were considered simultaneously, age was positively associated with WTP. As noted from Table 2, the signs of coefficients for age and gender were changed in step 2 when the key independent variables were entered, indicating reciprocal suppression caused by the weak correlations between demographic variables and the key independent variables (Maassen and Bakker 2001). A separate regression analysis with the key independent variables only revealed the same pattern in terms of the relationship between the key independent variables and WTP.

3.7 Traceability in Australian food products vs. imported food products

Two separate paired sample *t*-tests were conducted to compare reported importance of traceability for Australian and

Table 2 Hierarchical multiple regression analysis predicting WTP

Predictor	Step 1			Step 2		
	R^2 F	B (SE)	β (*p*)	R^2 change F change	B (SE)	β (*p*)
Age	$R^2 = 0.025$ F (3, 484) = 4.22 *p* = .006	− 0.09 (0.04)	− 0.12 (.009)	$R^2 = 0.384$ F (3, 481) = 104.42 *p* < .001	0.06 (0.03)	0.08 (.037)
Gender		− 0.07 (0.11)	− 0.03 (.506)		0.17 (0.09)	0.07 (.061)
Education		0.09 (0.04)	0.09 (.047)		0.01 (0.03)	0.01 (.726)
Information needs					0.14 (0.04)	0.16 (.000)
Knowledge of traceability					0.35 (0.05)	0.31 (.000)
Confidence in traceability system					0.49 (0.06)	0.36 (.000)

Gender was coded as "1 = male, and 2 = female". *Education* was measured by degrees from "not completed Year 12, to postgraduate degree". *Information needs* was measured on a 7-point scale with endpoints ranging from "*strongly disagree*" to "*strongly agree*". Responses on other variables were made on a 5-point scale with endpoints ranging from "*not at all*" to "*very much*"

B unstandardised coefficients, *SE* standard error, *β* standardised coefficients with *P* stands for p-value

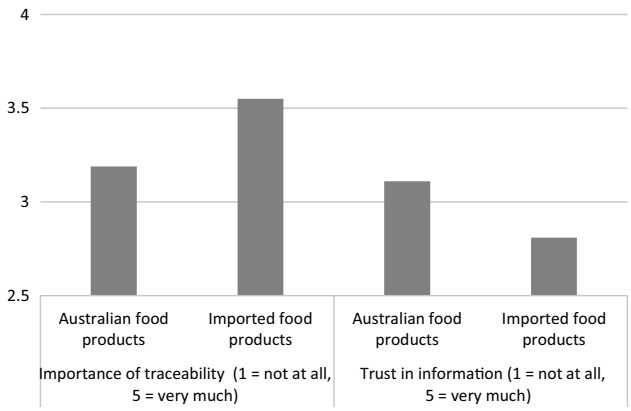

Fig. 1 Importance of traceability and trust in traceability information between Australian foods and imported foods

imported food products, as well as trust in information provided by the traceability systems (Fig. 1). There was a difference in the reported importance of traceability for Australian foods ($M = 3.19$, $SD = 1.19$) and imported foods ($M = 3.55$, $SD = 1.22$); $t(487) = -8.60$, $p < .001$, $d = 0.39$, with 95% CI Mdiff (− 0.45, − 0.28). These results suggest that participants believed that it is more important for imported food products to be traced, reflecting that they were more concerned about the safety of imported food products. There was also a difference in trust in the information provided by traceability system of Australian food ($M = 3.11$, $SD = 0.97$) and imported food ($M = 2.81$, $SD = 1.03$); $t\ (487) = 7.63$, $p < .001$, $d = 0.35$, with 95% CI Mdiff (0.22; 0.38). This suggests that consumers had less confidence in the integrity of the information provided by imported food products, even though they believed that it was more important for imported food products to have traceability system implemented.

4 Discussion

The findings of the present study are in line with past literature that shows consumers are increasingly demanding to know more about the food products they consume (Aung and Chang 2014; Myae and Goddard 2012; Tang et al. 2015). The present study reveals that Australian consumers strongly demand for information about the food products they purchase and consume in relation to how they are produced and handled along the supply chain. Our findings also suggest that Australian consumers in this study had very limited knowledge of traceability systems and this has led to low levels of WTP for such a system. The levels of confidence in, and the acceptance of, a traceability system to provide safety assurances around food products was also quite low, especially among particular demographic segments including females and older consumers, as well as those with lower levels of education. The findings reflect current circumstances in Australia, where food traceability systems are still a new concept for consumers and are largely industry driven. It further highlights a level of mistrust among consumers that the food industry, more broadly, can effectively provide a level of food safety assurance through traceability, which is not already provided via more traditional and accepted forms of food labelling. There is a need for the food industries to engage more actively with consumers and demonstrate how food traceability systems can support food integrity.

The establishment of a food traceability system is partially intended to restore and enhance consumers' confidence in food safety through providing detailed information about food products from 'farm to fork'. This is based on the assumption that information provided via a traceability system is able to satisfy consumers' needs. However, our findings suggest that the desire for information is only a starting point; consumers' need for information is a weaker predictor of consumers' acceptance of a traceability system,

when compared to traceability knowledge and confidence in a system. That is, although consumers wanted to know how their food was produced, processed, and handled, the desire for this knowledge does not automatically warranty their acceptance of a traceability system as a solution. Instead, consumers' confidence in the traceability system strongly determined their acceptance of the system. This finding is in line with the literature showing that perceived usefulness of a new technology strongly determines its acceptance (Chen et al. 2011; Kim and Woo 2016). Our results further highlight that possessing greater knowledge of a traceability system was associated with higher level of WTP for a traceability system. Knowledge of traceability emerged as the second strongest predictor, after confidence. It is important to note that, however, participants reported low levels of knowledge of and confidence in traceability, and the two factors were strongly correlated.

The findings have strong implications for the food industries, food authorities, and policy makers. To fully realise the benefits of a traceability system in enhancing consumers' trust in food safety, consumers need to be aware of the traceability process (i.e., what it is and why it is important). To increase consumers' perceived efficacy of a traceability system and their WTP for such a system, consumers need to understand the system and be influenced by the system. Agribusinesses should go beyond just focusing on satisfying consumers' information needs. In particular, at the early stages of deploying a traceability system, it is essential for the food industries and policy makers to develop effective communication strategies to actively engage with consumers during the development of food traceability systems.

Our results further demonstrate that Australian consumers may have different requirements and standards regarding food traceability systems for domestic vs. imported food products. Similar findings were evident based on studies conducted in Japan (Hall 2010) and the US (Lim et al. 2013) where it was revealed that consumers trust domestic traceability systems more compared to traceability systems in other countries. Therefore, it appears that the traceability of imported food products is more important to consumers, yet, trust in traceability information provided by imported food products is lower.

This paradox has significant policy implication for imported food products and the limitations of consumers' trust in the traceability system of imported food products, especially in the urban setting as reflected by the samples of the present study. To assure consumers that imported foods are safe, confidence in a traceability system is important but not enough by itself. Other quality assurances such as formal accreditations presented by a trusted third party and greater public accessibility of information may be required to enhance consumer confidence and lower their perceived risk.

While the present study has provided valuable insights, it carries with it some inherent limitations common in most forms of survey research. Namely, participants are self-selecting and from urban areas. Therefore, findings may not be generalisable across all populations (Amrhein et al. 2017). Although the present study is exploratory in nature, it has generated new research questions and hypotheses for future research with representative participant samples. In addition, the current measurement of WTP focused on participants' intention of paying more for traceable food products. There can be a gap between intention and actual behaviour. However, it is worth noting that behavioural intention is a strong predictor of actual behaviour (Ajzen and Gilber Cote 2008).

5 Conclusion

Traceability of food across the supply chain, from 'farm to fork', has been regarded as an important tool of monitoring food safety and quality across the chain and helps restoring and increasing consumer confidence. The present study highlights that, to fulfil the goal of using traceability systems to restore and enhance consumers' trust in food safety, it is critical to not only educate consumers about what the food traceability system is, but also why it is an effective tool for securing food safety. Enhancing consumers' understanding of and confidence in traceability will likely increase public confidence in such systems and lead to greater acceptance and WTP for traceable food products. The findings highlight that it is essential for food industries to develop effective communication strategies to actively engage with consumers during the development of food traceability systems.

In addition, the paradox regarding traceability in imported food products more important but having less trust in the traceability information suggests that, in the context of developed countries such as Australia, traceability systems for imported food products may play a limited role in building consumers' confidence in food safety. This indicates that other formal accreditations presented by a trusted third party may be required to enhance consumer confidence in imported food products.

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Appendix

See Table 3.

Table 3 A comparison of gender, age and education across the current sample; greater Brisbane, Melbourne and Sydney; and Australia overall

Factor	Current sample		Brisbane (ABS 2016)	Melbourne (ABS 2016)	Sydney (ABS 2016)	Australia (ABS 2016)
Gender						
Male (%)	46		49	49	49	49
Female (%)	54		51	51	51	51
Age group (years)		ABS groupings (years)				
		Below 20	26.1%	24.2%	24.6%	24.5%
18–24	8.8%	20–24	7.5%	7.4%	7.1%	6.7%
25–34	16.8%	25–34	15.1%	16.3%	16%	14.4%
35–44	17.4%	35–44	14%	14.3%	14.5%	13.5%
45–54	18.0%	45–54	13.2%	13.1%	13%	13.3%
55–64	19.8%	55–64	10.7%	10.6%	10.8%	11.8%
65 and older	19.2%	65 and older	13.4%	14.1%	14%	15.8%
Education						
Did not complete Year 12	10%	Primary	31.4%	30.3%	31%	31.5%
Completed Year 12	18%	Secondary	20.4%	19.4%	20%	20.1%
Post-secondary qualification	21.7%	Technical or further education	5.7%	5.7%	6.1%	5.9%
Undergraduate degree	29.9%	University or tertiary	18.7%	20.4	19.2%	16.1%
Postgraduate degree	20.4%					
		Other	23.8%	24.2%	23.7%	26.4%

ABS Australian Bureau of Statistics

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