CORA Cork Open Research Archive
Cartlann Taighde Oscailte Chorcaí

Title	Cross-country comparison of strategies for building consumer trust in food
Authors	Wilson, Annabelle M.;Tonkin, Emma;Coveney, John;Meyer, Samantha B.;McCullum, Dean;Calnan, Michael;Kelly, Edel;O'Reilly, Seamus;McCarthy, Mary;McGloin, Aileen;Ward, Paul R.
Publication date	2019-04-09
Original Citation	Wilson, A. M., Tonkin, E., Coveney, J., Meyer, S. B., McCullum, D., Calnan, M., Kelly, E., O'Reilly, S., McCarthy, M., McGloin, A. and Ward, P. R. (2020) 'Cross-country comparison of strategies for building consumer trust in food', Health Promotion International, 35(2), pp. 267-278. doi: 10.1093/heapro/daz024
Type of publication	Article (peer-reviewed)
Link to publisher's version	10.1093/heapro/daz024
Rights	© 2020, the Authors. Published by Oxford University Press. All rights reserved. This is a pre-copyedited, author-produced version of an article accepted for publication in Health Promotion International following peer review. The version of record [Wilson, A. M., Tonkin, E., Coveney, J., Meyer, S. B., McCullum, D., Calnan, M., Kelly, E., O'Reilly, S., McCarthy, M., McGloin, A. and Ward, P. R. (2020) 'Cross-country comparison of strategies for building consumer trust in food', Health Promotion International, 35(2), pp. 267-278. doi: 10.1093/heapro/daz024] is available online at: https://doi.org/10.1093/heapro/daz024
Download date	2026-11-15 16:59:46
Item downloaded from	https://hdl.handle.net/10468/10469



University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

A cross-country comparison of strategies used to build consumer trust in the food supply.

Wilson A, Tonkin E, Coveney J, Meyer S, McCullum D, Calnan M, Kelly E, O'Reilly S, McCarthy M, McGloin A & Ward P

***Health Promotion International*, accepted 11 March 2019.**

Abstract

Consumer trust in the modern food system is essential given its complexity. Contexts vary across countries with regards to food incidents, regulation and systems. It is therefore of interest to compare how key actors in different countries might approach (re)building consumer trust in the food system; and particularly relevant to understanding how food systems in different regions might learn from one another. The purpose of this paper is to explore differences between strategies for (re)building trust in food systems, as identified in two separate empirical studies, one conducted in Australia, New Zealand and the United Kingdom (Study 1) and another on the Island of Ireland (Study 2). Interviews were conducted with media, food industry and food regulatory actors across the two studies (n=105 Study 1; n=50 Study 2). Data were coded into strategy statements, strategies describing actions to (re)build consumer trust. Strategy statements were compared between Study 1 and 2 and similarities and differences were noted. The strategy statements identified in Study 1 to (re)build consumer trust in the food system were shown to be applicable in Study 2, however there were notable differences in the contextual factors that shaped the means by which strategies were implemented. As such, the transfer of such approaches across regions is not an appropriate means to addressing breaches in consumer trust. Notwithstanding, our data suggests that there is still capacity to learn between countries when considering strategies for (re)building trust in the food system but caution must be exercised in the transfer of approaches.

Key words

food system; food scare; consumer; trust

Introduction

Literature Review

Food safety and integrity

With advancements in food production systems and the growing globalisation of food markets comes increasing challenges to food safety and integrity (Dreyer *et al.* 2010). Consequently, the definition of 'food incident or crisis' is evolving (Spink and Moyer 2011). Food regulatory bodies typically focus on food safety and define food incidents as 'any situation within the food supply chain where there is a risk or potential risk of illness or confirmed illness or injury associated with the consumption of a food or foods' (Commonwealth of Australia 2012). However, given that consumer expectations of food systems encompass expectations beyond health alone (Brom 2000, Zwart 2000, Kjærnes 2012), this definition can be extended to include incidents that do not pose a threat to public health but are instead breaches of food integrity; this is, food fraud. Concurrent with the shifts in food production creating new opportunities for food incidents, is the increasing gap between producers and consumers (Allen 1999, Bildtgard 2008, Meyer *et al.* 2012) and a reduction in consumer knowledge and control over their food. Research suggests this has resulted in divergence in consumer and food-system-actor perspectives on food risks (Williams *et al.* 2004, Verbeke 2005, Ueland *et al.* 2012, Tonkin *et al.* 2016).

Consumer perceptions of food risk and the need for trust

Recent research exploring consumer perspectives on food risk delineate traditional food risks (for example, pathogenic contamination) and modern food risks as "risks produced through human technologies, interventions and due to human decision making" (for example, biotechnology in food production) (Tonkin *et al.* 2016, p. 243). Determining vulnerability to traditional and modern risks requires specialized knowledge that is often beyond the capacity of lay individuals (Meyer *et al.* 2012). Consequently, consumer trust in the food system has become increasingly important. Trust (or distrust) facilitates decision-making by reducing the extent to which consumers need to actively

weigh the risk involved in their decisions, and is particularly important when they do not hold the expert knowledge required to make informed decisions (Luhmann 1979). If trust in food systems is damaged through food incidents, consumers are required to calculate risks when making daily decisions for themselves and those for whom they provide food. Research therefore calls for "effective, efficient and reliable food risk governing structures to protect public health, mitigate economic consequences and maintain consumer confidence" (Devaney 2016, p. 1).

Food system actors and international food incidents

Research shows food system management of food incidents influences both public trust, and their intention to purchase food (Mazzocchi *et al.* 2008, Jacob *et al.* 2011, Yamoah and Yawson 2014) and therefore food system actors play a critical role in both maintaining and (re)building trust in the food system (Arnot 2011). Actors from the media, food regulatory and food industry bodies have been shown to influence consumer trust as they identify food incidents and communicate with consumers about how to mitigate risks (Henderson *et al.* 2011). How these actors impact consumer trust however differs according to the region within which they work, and the previous food incidents experienced from which their governance approaches have been developed. Noteworthy food incidents include the Garibaldi food poisoning incident in Australia in 1995, the Bovine Spongiform Encephalopathy (BSE) crisis in the United Kingdom (UK) in 1996, the dioxin crisis involving the Island of Ireland (IOI) in 2008, and the Fonterra infant formula incident in New Zealand (NZ) in 2014 (Thomson *et al.* 2012, Dey and Montet 2017). All these incidents had unique characteristics (Jacob *et al.* 2011, Thomson *et al.* 2012, Yamoah and Yawson 2014, Regan *et al.* 2016, Dey and Montet 2017), and therefore unique insights into how to best manage food incidents to support consumer trust for the food system actors involved. However, there is a lack of empirical research that investigates the strategies used in different countries to (re)build consumer trust in the food system.

Previous research examining food incidents and consumer trust

Previous research has explored the role of the media, industry and regulators in (re)building consumer trust (Henderson *et al.* 2014, Wilson *et al.* 2014, Wilson *et al.* 2016). It has also identified strategies that can be used to (re)build trust during times of both food crises and 'business as usual' (times when there are not food crises) (Wilson *et al.* 2016). Other studies have compared consumer trust in food across countries; primarily in Europe and using quantitative approaches to data collection (Fritz and Fischer 2007, Mazzocchi *et al.* 2008). Additionally, studies have also used quantitative methods to focus on alternate but related elements of the food system, for example consumer perception of food risk (Hohl and Gaskell 2008) and food risk management (Van Kleef *et al.* 2007). There is no previous work to compare the extent to which strategies for (re)building trust during and following a food incident differ between countries.

The purpose of this paper is to explore differences between strategies for (re)building trust identified in four countries: the Island of Ireland (IOI), Australia, New Zealand (NZ) and the United Kingdom (UK). Data were collected in two separate studies; the first comparing Australia, NZ and the UK (Study 1), and the second the IOI (Study 2). Study 2 adopted the methodology used in study 1, facilitating the comparative approach to analysis. The second study was important to ascertain whether the strategies identified in Study 1 made sense in and were relevant to another country. The present paper aims to identify the learnings that could be shared between the countries in terms of (re)building trust in response to food incidents.

Materials and Methods

Study 1

Overall methods for Study 1 have been reported elsewhere (Wilson *et al.* 2013). Specific strategies for creation of the model to (re)build consumer trust have also been reported elsewhere (Wilson *et al.* 2016) and provide a point of comparison for the present paper. The key components are described briefly below.

Development of strategy statements

Interviews were conducted with 105 participants (UK: 12 media, 11 food regulatory/policy, 14 industry actors; Australia: 19 media, 26 food regulatory/policy, 11 industry actors; NZ: 2 media, 5 policy/regulatory, 5 industry actors), from March-October 2013. Research team members and their contacts suggested media, regulatory or industry actors who would be suitable to participate based on their experience in reporting, responding to and managing food incidents. These contacts were invited to participate via email. Interviews were then carried out face-to-face, via phone or Skype. A hypothetical scenario about a food scare was utilised to start discussion with participants. The interview then progressed to more general questioning including relationships with stakeholders, importance of consumer trust in the food system and strategies used to develop consumer trust in the food system. Audio recordings were transcribed verbatim by a transcription service. Transcripts were de-identified by name and organisation, imported into Nvivo and coded for strategies to build, break, maintain or rebuild trust in the food system by one researcher (AW). Data coded for these four areas were subject to a three step process; (1) coded data were organised into key themes based on identified strategies to (re)build trust, (2) data from Australia, NZ and the UK was considered separately and then compared and (3) data from actor groups was considered separately and then compared. Themes were consistent across countries and actor groups. However, each strategy statement had a slightly different context or meaning in each actor group as previously described (Wilson *et al.* 2016).

An electronic survey was then emailed to the interview participants to assess the extent to which they agreed with the proposed strategy statements (58 completed). Hence the ten strategies that were identified and revised based on the survey became the strategy statements for (re)building consumer trust in the food system for Study 1 (Wilson *et al.* 2016). These are shown in Tables 1-3. A context was provided for each strategy statement for each actor group which provided an example of that strategy for the different actor groups.

Study 2

Study 2 was designed as a replication study based on published methods and findings in Study 1 (Wilson *et al.* 2013). Data were collected on the IOI from autumn 2015 to spring 2016. The Study 2 instrument design was amended (outlined below) to fit with researchers' perspectives on how food crises have played out in the IOI context in the past. The published Study 1 protocol (Wilson *et al.* 2013) was followed and further information about processes was obtained from researchers involved in Study 1 through six Skype meetings and email contact as required. As such, the selection and recruitment of participants, interviews, and preliminary data analysis were directly comparable to those above.

The final hypothetical scenario used in Study 2 took a slightly different approach to that used in Study 1. The same hypothetical scenario was presented as Study 1, however in Study 2 it was presented to participants in a staged or unfolding manner. The researchers believed this closely represents how historical food crises have emerged on IOI.

Development of strategy statements

Interviews were conducted with 50 participants (20 media, 13 food regulatory and 17 food industry actors). These participants were purposefully selected from key organisations, their views reflected the views and experiences of senior management and key decision makers across the IOI. These people were contacted by email and a follow-up phone call. Participants can be described as information rich respondents who have a high level of responsibility and accountability and who are involved in managing food incidents. In the media cohort there was representation from print, radio/television and online contributors including editors, senior journalists, general contributors who report on food but also specialist contributors who write primarily in the area of food and agricultural correspondents. A similar approach was taken in the Industry and Regulatory cohorts until theoretical saturation was reached. Interview transcripts were de-identified by name and

organisation and imported into Nvivo for analysis. Study 2 analysis was completed through a two phase process. The first phase was completed blind of the findings of Study 1 ensuring statement selection was not biased by Study 1 statements. In phase 1, broad themes that represented the types of strategies undertaken by the stakeholders to build, break, maintain or rebuild trust in the food supply were identified, resulting in n=44 key strategies being identified. In phase 2 these key strategies were then compared to the strategies identified by Study 1. As such, the strategy statements from Study 2 (n=44; known as initial strategy statements) were compared and classified into statements from Study 1 (n=10) (known as revised strategy statements*)*.

The comparative process of Phase 2 showed the initial strategy statements were significantly more detailed than the Study 1 statements, but in comparing each set of statements the more detailed initial strategy statements (n=44) aligned quite closely with those from Study 1 (n=10). For example there were a number of strategy statements identified from the Study 2 data relating to protocols and procedures. These statements reflected strategies which (re)build consumer trust in food systems during and post crisis, as well as statements which reflect on-going activities such as food chain integrity. The identification of multiple statements may be an effect of the staged methodological approach which revealed greater level of detail regarding actions and reactions of actors. Each strategy statement was supported with evidence from interviews and coded through NVivo. A context was provided for each strategy statement for each actor group, providing a description of that strategy in the context of the different actor groups.

International comparison

Strategy statements from Study 1 and revised strategy statements from Study 2 were placed into three tables (organised by actor group) with their contextual description. The contextual description was compared by the researcher (AW) and similarities and differences were identified. Data (quotes from interviews) demonstrating each strategy statement for the different actor groups from Study 1

and Study 2 were reviewed to confirm or refute the similarities and differences observed through comparison of the strategy statements and their contexts in the three tables.

Findings

In this section we compare the different contexts, meanings, similarities and differences obtained for the strategy statements in Study 1 and Study 2, by actor group.

Comparison of strategy statements in Study 1 and 2: Media

The ten strategy statements identified in Study 1 and Study 2, and the different contexts observed for **media actors,** are presented in Table 1. When the context for the strategy statements is the **same** between Study 1 and Study 2, the context is presented in **bold font** throughout**.**

As evident in Table 1, the description of the context of each strategy statement had elements which were identical for three of the strategy statements. These were 'have protocols and procedures in place', 'be credible' and 'educate stakeholders and/ or consumers'. For example, the similarity in the context of 'be credible' is evident in the actions of the two media actors from Study 1 and Study 2 below who report only quoting sources or publishing information with a credible source and being sure about the story:

> *'They should only quote people who are credible and go for good sources. I mean if you stick to those principles you can't go wrong really' (Study 1; UKM13),*
>
> *'Before anything was published whether it was print or online, it would have to be, we would have to be 100% definite about the story, we would have to have done our checks, contacted the relevant statutory authorities, gone to the company, given them a chance to respond. So as with anything, you proceed with caution, you don't publish until you're sure because well a) if its inaccurate then you know but b) you don't want to hype something up and create panic if there's no, if it's unnecessary' (Study 2; IOIM4).*

[Insert - Table 1: Strategy statements from Study 1 (Australia, NZ and the UK) and Study 2 (IOI) for media actors – here]

The remaining seven strategy statements had a different description of context. For example, the statement 'be consistent' was interpreted differently by media actors in Study 1 and Study 2. In Study 1, being consistent was about reporting a consistent message in terms of content (what is reported) and across different stakeholder groups, '*It's all in consistent messaging really. Once you've dealt with that it's drip feeding and bringing in the right people as well to reaffirm messages' (Study 1; UKM14).* In comparison, in Study 2, 'be consistent' was about ensuring that a consistent procedure was always followed in response to a food incident.

Despite different wording to describe the context for the strategy statements for Study 1 and Study 2, similarities were still evident. For example, for 'collaborate with stakeholders' media actors in both studies highlighted the importance of relationships with contacts from the food industry.

> *'I think if food companies want consumers to trust their food then they've got to trust journalists and journalists have a role there to sort of allow companies to believe in what they do and that they will do it with accuracy' (Study 1; UKM4).*

Comparison of strategy statements in Study 1 and 2: Food Regulators

The ten strategy statements identified in Study 1 and Study 2 and the different contexts observed for **food regulatory actors** are presented in Table 2.

As evident in Table 2, the description of the context of each strategy statement had elements which were identical for four of the strategy statements. These were 'have protocols and procedures in place', 'be credible', 'collaborate with stakeholders' and 'educate stakeholders and/ or consumers'. Interestingly, the entire description of the strategy statement 'educate stakeholders and/ or consumers' was identical between Studies 1 and 2; the only strategy statement across all three actor groups for which this was the case. For example, regulators in Study 1 and Study 2 talked about

educating consumers about the food regulatory system and specific events like food recalls through similar strategies, in this case online and social media approaches:

[Insert - Table 2: Strategy statements from Study 1 (Australia, NZ and the UK) and Study 2 (IOI) for food regulatory actors – here]

> *'I'm just trying to – because we do have that consumer website here so that consumers have got a specific website they can go to, to get good information about food safety and the regulatory systems here' (Study 1; NZP11),*
>
> *'Yeah and then agree what we need to tell consumers and how we get that out, that information out so something like this, maybe a mass product withdrawal so we need to get that information out using broadcast media and now using social media' (Study 2; IOIR5).*

Similarities between the strategy 'collaborate with stakeholders' were also demonstrated in data. In relation to collaboration between regulators and other stakeholders, a regulator in NZ highlighted the importance of working with the food industry, '*Well I think that [response to food incident] would probably involve more than just the regulator. It's going to have to be a collaborative effort between industry and the regulator' (Study 1; NZP11).* A regulator from Study 2 expanded on this, describing why food industry actors collaborate with regulators,

> *'Yeah absolutely because I think they have learned that it's better to contact us early than it is to contact us too late because we can help. I mean at the end of the day they are legally obliged to put safe food in the market. They are not going to want to have their brand be the brand that consumers don't want to buy…They have realised now that there is no point in hiding or trying to hide something. This is where they are focused on, ok fine they may be coming from here, now it's up to as we said the traceability systems in place backwards and forwards to make sure that this whole supply chain works' (Study 2; IOIR1).*

The remaining six statements had a different description of context. For example, regulators in Study 1 considered 'building your reputation' to be about developing trust with consumers during positive

times when trust levels were relatively high. That way, when there was a food incident and trust with consumers was required, it already existed,

> *'I also have a view that you should work on trust before you need to use it. So if you're running a factory the time that you want to do maintenance on your equipment is not when you're running at peak through point. So the time that you want to build your trust and build up social capital is not at the time that you're most needing it so it will always help to have got trust beforehand then what can be extraordinarily powerful when you're in an incident like that is to have other parties come in and say 'yeah we support what they're doing' (Study 1; NZP7).*

On the other hand, regulators in Study 2 perceived 'building your reputation' to be about using scientific evidence to make decisions and being open with the public,

> *'Again it goes back to science and we have the science, this is what we know from the scientific information we have available to us and based on this information this is the decision we have taken. We are open with that and if we feel that there are gaps in that information we will say it and we will say we will be back to you when we have more' (Study 2; IOIR1).*

Despite different wording to describe the context for the strategy statements for Study 1 and Study 2, similarities were still evident. For example, regulators in both studies highlighted that an element of 'be transparent' was to communicate with consumers including responding to their queries and engaging with consumers to meet their needs:

> *'So the best thing I would say is let people know. Let people know what you think's going on' (Study 1; NZP4),*
>
> *'I mean we are always very open. If we didn't know something or we are waiting we always say we don't know that yet but we will come back to you when we do know' (Study 2; IOIR1).*

Comparison of strategy statements in Study 1 and 2: Food Industry

The ten strategy statements identified in Study 1 and Study 2 and the different contexts observed for **food industry actors** are presented in Table 3. As evident in Table 3, the description of the context of each strategy statement had elements which were identical for three of the strategy statements. These were 'be transparent', 'have protocols and procedures in place' and 'be credible'. For example, industry actors in Study 1 and Study 2 highlighted the importance of being transparent with consumers in relation to processes and food-related risk:

[Insert - Table 3: Strategy statements from Study 1 (Australia, NZ and the UK) and Study 2 (IOI) for food industry actors – here]

> *'The second piece is obviously answering consumers' questions and concerns and being transparent with them about our processes' (Study 1; AUI2),*
>
> *'You don't sweep it under the carpet if that's….you know it's absolutely……it's there but you have to quantify or qualify what the exposure is to people. To customers and ultimately to consumers' (Study 2; IOII10).*

The remaining seven strategy statements had a different description of context between actors in Study 1 and Study 2. For example, industry actors in Study 1 considered 'putting consumers first' to mean responding to the needs and wants of consumers, for example,

> *'We are also are aware that when you talk about food trust, it's not just about the safety of the food. Increasingly customers, consumers, want to know about their ethical, responsible production. Want to know about the supply chain; how is their food produced? In some respects that's led our work on sustainability and it's also again us talking about the credentials of the dairy industry through a number of our promotion programs for dairy' (Study 1; AUI7&8).*

On the other hand, to industry actors in Study 2, 'putting consumers first' was related to protecting consumers through ensuring food safety was integral to all protocols and procedures and identifying when there is a problem, '*Again, at this stage, it's getting to the extent of the problem. It's to fully*

protect our customers' (Study 2; IOII3). Interestingly, for the strategy statement 'collaborate with stakeholders', industry actors in Study 1 highlighted the importance of working with the media, while actors in Study 2 did not refer specifically to the media but rather to suppliers, customers and relevant agencies. Despite different wording to describe the context for the strategy statements for Study 1 and Study 2, similarities were still evident. For example, food industry actors in both studies highlighted that sharing knowledge with consumers about food products and food production is an important element of the strategy statement 'educate stakeholders and/ or consumers'. The importance of educating consumers was highlighted by one industry actor in Study 1, '*In talking about trust it's easy to undermine someone's trust if they don't understand the issue in the first place' (Study 1; UKI10).*

Discussion

The purpose of this paper was to explore differences and similarities between strategies for (re)building trust identified in two separate studies, one conducted in Australia, NZ and the UK (Study 1) and another on the IOI (Study 2). The results show that strategy statements identified in Study 1 to (re)build consumer trust in the food system were consistent with Study 2; however, there were notable differences in the means by which strategies were conceptualized and enacted. In only one of the 30 individual strategy statements the entire description of the context for the strategy statement was identical between Study 1 and Study 2 (Table 2). However, there were instances where there were multiple descriptions of the context of a strategy statement, and parts of the context were the same while some were different. Therefore this research shows that while the overarching principles used to (re)build trust during and following a food incident are common to food system actors, the way these are put into practice varies considerably between countries.

It is likely that the strategy statements themselves were consistent because in general they reflect principles from best-practice risk communication literature. Openness, transparency, independence, and timeliness/responsiveness are all reflected in the strategies common to Study 1 and Study 2, and

included in a model for food risk communication in food regulation proposed by Charlebois and Summan (2015), and in this literature more generally (van Kleef *et al.* 2009, Cope *et al.* 2010, Barnett *et al.* 2016). That risk communication literature should be foundational to food system actors' practice is no surprise, given that the globalisation of food markets has focussed within them the issue of food risk (Devaney 2016). It is encouraging therefore that this study might suggest that food system actors in multiple countries have been receptive to calls to incorporate risk communication principles in their practice, particularly in relation to food safety incidents. This finding also demonstrates that the model proposed by Wilson *et al.* (2016), which is built on the strategies statements explored here, is applicable to practice internationally.

While the overarching strategies were similar, a different description of their context suggests that while the strategy reflects the same fundamental principle, the task used to enact strategies may vary considerably by location. Given the different contexts in which the different actors work, and the different contexts between the countries in Study 1 and Study 2, differences in their application of the strategies are to be expected. We can 'explain' this difference by reference to Critical Realism, and particularly 'realistic evaluation' and 'realist synthesis' (Danermark *et al.* 2002, Pawson *et al.* 2005, Pawson 2006). Proponents of Critical Realism argue that any intervention (be it a public health program or a food scare) should be regarded as a complex system, and as soon as that enters other social systems (like different countries), we will experience different and often unknown outcomes based on the different contexts. Therefore, one should assume that within different social, cultural or geographical groups (in Study 1 and Study 2), the contexts of those groups (history, politics, social relationships, history etc) will mean that we will get different outcomes. This helps us to understand why many of the strategies (interventions) may be similar between Study 1 and Study 2, but they may be understood and put in to practice differently due to the different contexts within which they operate. This finding highlights the problematic nature of adopting strategies to building trust without understanding the context within which the strategies are interpreted, developed and enacted. Therefore, while strategies for (re)building consumer trust in food may be utilised between

countries, this study demonstrates that it is pertinent to consider how they may interact with the local context before implementing them in practice.

Strengths and limitations

The food incident scenario was presented in an unfolding manner in Study 2, and more interview time was dedicated to discussing the scenario compared with Study 1. As such, the identification of multiple statements in Study 2 may be an effect of the staged methodological approach which revealed a greater level of detail regarding actions and reactions of actors. Study 2 did not have a consensus development stage, but instead the large number of initial strategy statements identified from interviews was reduced through alignment with the 10 overarching strategies from Study 1. As such, it is possible that the high level of agreement seen between the studies regarding strategies for (re)building trust is partially an artefact of the methodology. The emphasis within the analysis on the context of each strategy as described by participants therefore is an appropriate examination of this data. Despite these differences, the replication of the robust methods of Study 1, and the analysis from the same team of researchers provides confidence in the findings and recommendations of this international comparison study. Additionally, the large study samples in both studies, the diversity in actor roles, contrasting regional sizes and food incident histories enables nuances in practices to be exposed and exploited to the benefit of all regions. Finally, the international collaboration inherent in the project design fosters shared learning and capacity building across regions, initiating international relationships that will facilitate both implementation of the recommendations of this work, and future partnership to support consumer trust in food across regions.

Implications for research

This work is a platform for further research exploring (re)building consumer trust in food systems. A critical next step for all regions is research sense checking the strategies identified in this work with consumers. Research with consumers could assist in identifying the relative importance of the strategies identified here, enabling a greater focus on priority areas for improvements in regional

food systems to facilitate trust (re)building. Additionally, consumer research using an international comparison methodology could shed light on regional nuances in consumer response to these strategies. Another area for further examination is how these strategies are currently represented in the organisational practices and policies of the governance and regulatory organisations within the different regions. Research of this nature would highlight priority areas for organisational improvement to support consumer trust in food, especially if collaboration between the regions studied occurred to draw on their relative strengths as identified in this paper. Finally, future research could test the usefulness of the strategies in a real-world scenario such as a food incident in different regions, and the consequent impact on consumer trust.

Conclusion

Strategies used by media, food regulatory and food industry actors for (re)building trust during and following a food incident were consistent across countries. Therefore, the overarching strategies identified here are applicable for practice internationally. However, a different context was noted for the different actors and for some strategies, a different context across countries (Study 1 and Study 2). Therefore, countries can learn from each other when looking for practical strategies to maximise consumer trust in the food system, however attention must be paid to how these might be practically enacted in a different regional context.

References

Allen, P. (1999) Reweaving the food security safety net: mediating entitlement and entrepreneurship. *Agriculture and Human Values,* **16**, 117-129.

Arnot, C. (2011) Building consumer trust in the food system. *Food Technology,* **65**,6, 132-132.

Barnett, J., F. Begen, S. Howes, A. Regan, A. McConnon, A. Marcu, S. Rowntree and W. Verbeke (2016) Consumers' confidence, reflections and response strategies following the horsemeat incident. *Food Control,* **59**, 721-730.

Bildtgard, T. (2008) Trust in food in modern and late-modern societies. *Social Science Information,* **47**,1, 99-128.

Brom, F. W. A. (2000) Food, consumer concerns, and trust: Food ethics for a globalizing market. *Journal of Agricultural & Environmental Ethics,* **12**,2, 127-139.

Charlebois, S. and A. Summan (2015) A risk communication model for food regulatory agencies in modern society. *Trends in Food Science & Technology,* **45**,1, 153-165.

Commonwealth of Australia (2012). National Food Incident Response Protocol C. o. Australia. Canberra, Commonwealth of Australia.
Cope, S., L. J. Frewer, J. Houghton, G. Rowe, A. R. H. Fischer and J. de Jonge (2010) Consumer perceptions of best practice in food risk communication and management: Implications for risk analysis policy. *Food Policy,* **35**,4, 349-357.
Danermark, B., M. Ekstrom, L. Jakobsen and J. Karlsson (2002) Explaining Society. Critical Realism in the Social Sciences. London, Routledge.
Devaney, L. (2016) Good governance? Perceptions of accountability, transparency and effectiveness in Irish food risk governance. *Food Policy,* **62**, 1-10.
Devaney, L. (2016) Good governance? Perceptions of accountability, transparency and effectiveness in Irish food risk governance. *Food Policy,* **62**, 1-10.
Dey, G. and D. Montet (2017) History of Food Traceability. Food Traceability and Authenticity, CRC Press**:** 1-30.
Dreyer, M., O. Renn, S. Cope and L. Frewer (2010) Including social impact assessment in food safety governance. *Food Control,* **21**,12, 1620-1628.
Fritz, M. and C. Fischer (2007) The role of trust in European food chains: theory and empirical findings. *International Food and Agribusiness Management Review,* **10**,2, 141-163.
Henderson, J., J. Coveney, P. R. Ward and A. W. Taylor (2011) Farmers are the most trusted part of the Australian food chain: Results from a national survey of consumers. *Australian and New Zealand Journal of Public Health,* **35**,4, 319-324.
Henderson, J., A. Wilson, S. B. Meyer, J. Coveney, M. Calnan, D. McCullum, S. Lloyd and P. R. Ward (2014) The role of the media in construction and presentation of food risks. *Health, Risk and Society,* **16**,7-8, 615-630.
Hohl, K. and G. Gaskell (2008) European Public Perceptions of Food Risk: Cross-National and Methodological Comparisons. *Risk Analysis,* **28**,2, 311-324.
Jacob, C. J., C. Lok, K. Morley and D. A. Powell (2011) Government management of two media-facilitated crises involving dioxin contamination of food. *Public Understanding of Science,* **20**,2, 261-269.
Kjærnes, U. (2012) Ethics and action: a relational perspective on consumer choice in the European politics of food. *Journal of Agricultural and Environmental Ethics,* **25**,2, 145-162.
Luhmann, N. (1979) Trust and power: Two works by Niklas Luhmann. Chichester, John Wiley & Sons.
Mazzocchi, M., A. Lobb, W. B. Traill and A. Cavicchi (2008) Food scares and trust: A European study. *Journal of Agricultural Economics,* **59**,1, 2-24.
Meyer, S. B., J. Coveney, J. Henderson, P. R. Ward and A. W. Taylor (2012) Reconnecting Australian consumers and producers: Identifying problems of distrust. *Food Policy,* **37**,6, 634-640.
Pawson, R. (2006) Evidence-based policy: a realist perspective. London, Sage.
Pawson, R., T. Greenhalgh, G. Harvey and K. Walshe (2005) Realist review - a new method of systematic review designed for complex policy interventions. *Journal of Health Services & Research Policy,* **10**, 21-34.
Regan, Á., M. Raats, L. C. Shan, P. G. Wall and Á. McConnon (2016) Risk communication and social media during food safety crises: a study of stakeholders' opinions in Ireland. *Journal of Risk Research,* **19**,1, 119-133.
Spink, J. and D. Moyer (2011) Defining the Public Health Threat of Food Fraud. *Journal of Food Science,* **76**,9, R157-R163.
Thomson, B., R. Poms and M. Rose (2012) Incidents and impacts of unwanted chemicals in food and feeds. *Quality Assurance and Safety of Crops & Foods,* **4**,2, 77-92.
Tonkin, E., J. Coveney, S. B. Meyer, A. M. Wilson and T. Webb (2016) Managing uncertainty about food risks – Consumer use of food labelling. *Appetite,* **107**, 242-252.
Ueland, Ø., H. Gunnlaugsdottir, F. Holm, N. Kalogeras, O. Leino, J. M. Luteijn, S. H. Magnússon, G. Odekerken, M. V. Pohjola, M. J. Tijhuis, J. T. Tuomisto, B. C. White and H. Verhagen (2012) State of the art in benefit-risk analysis: Consumer perception. *Food and Chemical Toxicology,* **50**,1, 67-76.

Van Kleef, E., J. R. Houghton, A. Krystallis, U. Pfenning, G. Rowe, H. Van Dijk, I. A. Van Der Lans and L. J. Frewer (2007) Consumer evaluations of food risk management quality in Europe. *Risk Analysis,* **27**,6, 1565-1580.
van Kleef, E., O. Ueland, G. Theodoridis, G. Rowe, U. Pfenning, J. Houghton, H. van Dijk, G. Chryssochoidis and L. Frewer (2009) Food risk management quality: Consumer evaluations of past and emerging food safety incidents. *Health Risk & Society,* **11**,2, 137-163.
Verbeke, W. (2005) Agriculture and the food industry in the information age. *European Review of Agricultural Economics,* **32**,3, 347-368.
Williams, P., E. Stirling and N. Keynes (2004) Food fears: a national survey on the attitudes of Australian adults about the safety and quality of food. *Asia Pacific Journal of Clinical Nutrition,* **13**,1, 32-39.
Wilson, A., J. Coveney, J. Henderson, S. Meyer, M. Calnan, M. Caraher, T. Webb, A. Elliott and P. Ward (2013) Trust makers, breakers and brokers: Building trust in the Australian food system. *BMC Public Health*, 229.
Wilson, A. M., J. Henderson, J. Coveney, S. B. Meyer, T. Webb, M. Calnan, M. Caraher, S. Lloyd, D. McCullum, A. Elliott and P. R. Ward (2014) Media actors' perceptions of their roles in reporting food incidents. *BMC Public Health,* **14**,1, 1305.
Wilson, A. M., D. McCullum, J. Henderson, J. Coveney, S. B. Meyer, T. Webb and P. R. Ward (2016) Management of food incidents by Australian food regulators. *Nutrition & Dietetics,* **73**,5, 448-454.
Wilson, A. M., E. Withall, J. Coveney, S. B. Meyer, J. Henderson, D. McCullum, T. Webb and P. R. Ward (2016) A model for (re) building consumer trust in the food system. *Health promotion international*, daw024.
Wilson, A. M., E. Withall, J. Coveney, S. B. Meyer, J. Henderson, D. McCullum, T. Webb and P. R. Ward (2016) A model for (re)building consumer trust in the food system. *Health Promot Int*.
Yamoah, F. and D. Yawson (2014) Assessing Supermarket Food Shopper Reaction to Horsemeat Scandal in the UK. *International Review of Management and Marketing,* **4**,2, 98-107.
Zwart, H. (2000) A short history of food ethics. *Journal of Agricultural and Environmental Ethics,* **12**,2, 113-126.

Table 1: Strategy statements from Study 1 (Australia, NZ and the UK) and Study 2 (IOI) for media actors

Strategy statement	Study 1	Study 2
1. Be transparent	• Present a balanced story to the public e.g. not frighten or lull people into a false sense of security • Interview a range of parties	• Quote and cite information sources.
2. Have protocols and procedures in place	• **Presence of and compliance to standards of conduct** (e.g. Standards of Business Conduct and the Australian Press Council)	• **Presence of and compliance with standards of conduct.** • Establish good practice (e.g. corroboration) and editorial rules.
3. Be credible	• Use trusted sources • **Use accurate and well researched information** • **Interpret scientific information correctly**	• **Use accurate and well researched trusted sources of information.** • **Interpret scientific information correctly**.
4. Be Proactive	• Check credibility of information sources prior to disseminating (including social media such as tweeting)	• Seek out the full story. • Monitor online, social media and other sources for emerging stories. • Follow all lines of investigation.
5. Put consumers first	• Keep consumers safe by informing them of food incidents e.g. details of recall, foods under investigation etc.	• -
6. Collaborate with stakeholders	• Develop trusted contacts between company and the media • Joint statement with company PR following an incident • Reiteration of reassuring messages	• Use existing food industry and food regulator contacts to build stories.
7. Be Consistent	• Provide consistent messaging to reaffirm messages e.g. safety of a product post incident • Message consistency amongst stakeholders	• Always follow protocols and procedures. • Updating the public.
8. Educate stakeholders and/or consumers	• **Inform consumers**	• **Inform consumers** and provide a relevant context. • Provide details on how a food investigation is unfolding and provide results as they come available.

9. Build your reputation	• Good PR prior and after a crisis can help maintain reputation	• Our track record with regard to integrity of stories covered. • Uncovering stories of importance to our readers/listeners.
10. Keep your promises (reworded as 'Be Responsive' for Study 2)	• -	• Provide timely, quality information. • Keep our readers/listeners well informed.

Table 2: Strategy statements from Study 1 (Australia, NZ and the UK) and Study 2 (IOI) for food regulatory actors

Strategy statement	Study 1	Study 2
1. Be transparent	• Report to consumers what is being done to ensure food is safe • Respond to consumer queries	• Engage and respond to consumer needs using up-to-date, clear and accessible information.
2. Have protocols and procedures in place	• **Evidence-based audits of industry to check adherence to standards and codes** • **Crisis management system in place in the event that a food incident occurs** • Baseline studies to verify the effectiveness of the regulations	• **Evidence-based audits of industry to check adherence to standards and codes.** • **Crisis management system in place in the event that a food incident occurs.**
3. Be credible	• Publish the evidence (e.g. results of tests, statistics) • **Use of independent experts** e.g. doctor, health professional etc. to provide explanations	• Use scientific evidence and **independent expert opinion** and translate this for the public.
4. Be Proactive	• Extra vigilance especially when products have been involved in recent food incidents	• Review and update standards and regulations to ensure they remain relevant. • Monitor to identify emerging risks.
5. Put consumers first	• Demonstrate that consumers' best interest is a priority • Listen to consumers and understand their needs and expectations and respond accordingly	• Operate on the basis of precautionary principle through removing potential risk to public health and get advice to consumers immediately.
6. Collaborate with stakeholders	• Keep in **regular contact with industry** so that they know what is being done on their behalf • **Maintain on-going partnerships between industry and regulators** (e.g. industry test results published by regulators) • Involve media right from the start on an incident on your own terms	• **Engage regularly with industry** and other agencies to discuss any issues arising. • **Maintain ongoing interaction between food industry and regulation** (e.g. dissemination of information and reports). • Update media and the public regarding on-going food safety issues.
7. Be Consistent	• Message consistency amongst stakeholders	• Remain within our remit when communicating during a critical food incident.

8. Educate stakeholders and/or consumers	• **Provide industry and consumer information in appropriate language (e.g. via website)**	• **Provide industry and consumer with information which is understandable and accessible.**
9. Build your reputation	• Work on building trust before you need to use it	• Use scientific evidence to make decisions. • Being open with the public on all food safety issues arising
10. Keep your promises	• -	• Making information public as it becomes available. • Responding to queries in a timely manner.

Table 3: Strategy statements from Study 1 (Australia, NZ and the UK) and Study 2 (IOI) for food industry actors

Strategy statement	Study 1	Study 2
1. Be transparent	• **Inform consumers what has occurred and what is being done to rectify the situation** • Communicate with consumers (e.g. enquiry lines, social media etc.)	• **Inform consumers what has occurred and what is being done to rectify the situation**
2. Have protocols and procedures in place	• **Incident management** plans and where applicable trained crisis management personnel • Script for consumer helpline to manage consumer calls during an incident	• **Incident management plans,** guidance for communications with stakeholders and the public. • Have clear supplier and processing audit protocols and procedures.
3. Be credible	• Make sure credible expert available to provide comment to the media • **Use of credible, independent expert to speak to the media during an incident e.g. FSANZ, FSA** • Expert should be able to speak in terms understood by consumers and the media	• Stand back and allow **independent bodies or experts to speak to the media during an incident e.g. FSA/FSAI.** • Use product traceability to assure consumers of measures taken in product integrity.
4. Be Proactive	• Publish findings of reports • Withdrawal of products if any chance of risk	• Anticipating consumer concerns and preparing responses.
5. Put consumers first	• Respond to consumers' wants and needs e.g. increasing concern for sustainability etc.	• Food safety is a major priority within our protocols and procedures.
6. Collaborate with stakeholders	• Engage with the media to invite discussion and questions • Good understanding of how the media works can enable the effective use following an incident to recover from it • Build reliable media contacts to draw on	• Develop long-term relationships with suppliers, customers and relevant agencies.
7. Be Consistent	• Information for consumers and professionals is consistent (although language may differ) • Consistency of products • Message consistency amongst stakeholders	• Use of one spokesperson to control what is being said and to respond as the crisis unfolds. • Being consistent in the communication of facts.
8. Educate stakeholders and/or consumers	• Build the knowledge base of consumers (e.g. how food is produced)	• Share knowledge and expertise with suppliers and customers. • Use branding and other marketing communications to

		enhance consumers understanding of food products.
9. Build your reputation	• Good PR prior and after a crisis can help maintain reputation	• Marketing activities that build brand equity. • Build long-term relationships with customers and suppliers.
10. Keep your promises	• Maintain commitments and claims made	• Manage a food incident mindful of future implications on consumer trust. • Make food safety and traceability data available to those who request it. • Be audit ready.