Consumer perception of risk survey

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Introduction

This report provides the results from a Food Standards Agency (FSA) and Food Standards Scotland (FSS) commissioned survey to explore how consumers perceive food-related risks. The survey was undertaken by Kantar Public in 2017 and the analysis undertaken internally by the FSA's Analytics Unit.

An accompanying project, also undertaken by Kantar Public, investigated in more detail how consumers determine food risks, in terms of how risks are understood, classified, and responded to. This work took the form of 6 focus groups run held across the UK.

Both pieces of research build on a previous project undertaken for the FSA by Sophie Spring, a MSc Decision Science student at The London School of Economics.

The overarching objective of the survey was to improve the FSA's understanding of consumer perceptions in relation to food risk. Through better understanding in this area, the FSA sees the potential to improve the targeting, messaging and effectiveness in directing consumers towards making better informed and enhanced food consumption choices.

Methodology

Rationale

The rationale for this study is based on previous work by Starr (1985) “The Psychometric Paradigm” and Slovic (1987) “Perception of Risk”.

“The Psychometric Paradigm” model by Starr (1985) posits that perceived risk is strongly determined by two factors: what individuals believe are the “unknown” and the “dread”. Slovic (1987) builds on this model by developing strategies to study risk perception. As part of this study, people were asked to score 81 different hazards against these two factors. The hazards selected included diverse risks such as nuclear reaction accidents, lead pain and bicycles.

This approach provides a framework that can be used as a foundation to test consumer perceptions regarding various types of food risk. Through insights into the paradigm and risk assessment frameworks, this survey translates the two key factors of the “unknown” and the “dread” into a corresponding level of knowledge and concern (respectively).

People make quantitative judgements about the current and desired riskiness of a range of hazards within Starr’s (1985) psychometric paradigm. Slovic (1987) explains that these judgements are then related to wider judgements, based not only on “the unknown” (knowledge) and “the dread” (concern). Judgements over the “controllability” and source of the risk are also important. The direct application of both Starr (1985) and Slovic’s (1987) models allows the FSA to test respondents’ perceptions over the spectrum of knowledge, concern, control and source of food risks. These concepts form the rationale for analysing consumer perceptions in this way.

Approach

This research was based on an online survey of 1,194 participants during March 2017. The survey was administered to members of an online panel used for a range of other FSA research. The aim of the survey was to measure consumer risk perception in relation to 17 different food risks identified by FSA and FSS: Norovirus, *Listeria Monocytogenes* (hereafter, *Listeria*), *E. coli* O157, *Campylobacter*, food allergens, generic food poisoning, food intolerance, chemicals in food, mycotoxins, mercury in fish, coeliac disease, pesticides, acrylamides, TSE, variant CJD (hereafter, TSE), poisonous mushroom berries, *Salmonella* and radioactivity in food.

Note that the term ‘generic food poisoning’ was used as well as the names of specific pathogens that cause food poisoning i.e., *Campylobacter*, *Salmonella*, *Listeria*, *E. coli* O157 and norovirus.

The survey covered a structured series of questions asking respondents to score each food risk against each of the following 6 criteria:

- Knowledge
- Concern
- Control
- Source
- Duration of impact on health
- Severity of impact on health

Details of how each criterion was scored are provided in the relevant result sections.

For each of these six questions, the food risks were randomly ordered to reduce bias. The four later questions were asked for only ten of the seventeen risks. This relate to: Norovirus, *E. coli* O157, *Campylobacter*, food allergens, generic food poisoning, chemicals in food, pesticides, acrylamides, TSE and radioactivity in food. The reason for the decision to reduce the number of risks was to prevent respondents from feeling overwhelmed and /or disengaged with the survey.

Respondents were also asked about whether they, a member of their household or another family member had an allergy or food intolerance. This was to enable comparative analysis of whether

there were differences in risk perception between those that had experience of these conditions and those who had not.

The survey finally asked respondents a number of questions relating to demographic characteristics such as age, gender, employment status, education, life stage, - UK place of residence and ethnicity. These characteristics were used to breakdown the analysis.

A copy of the survey can be found in the Appendix.

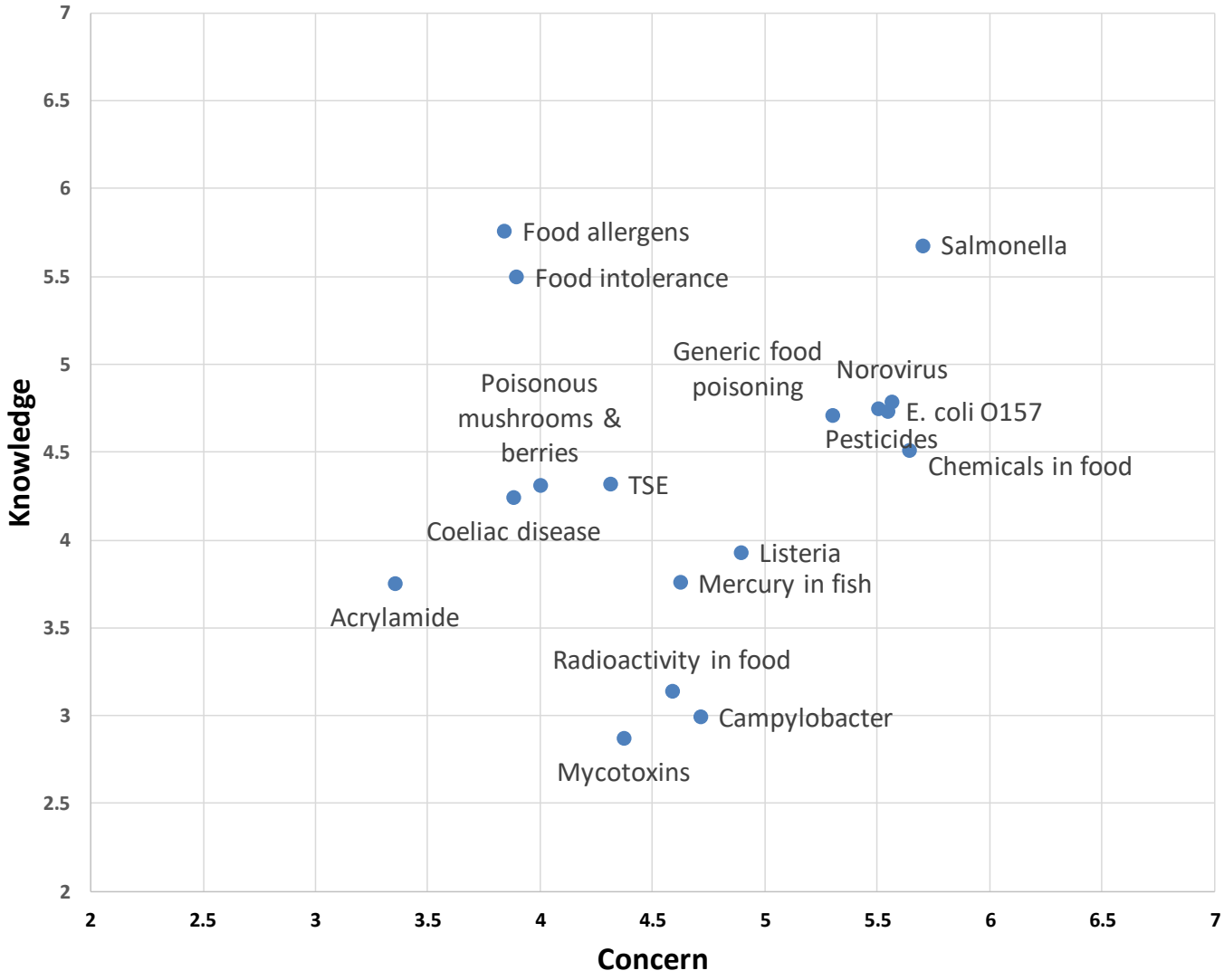
Results

Section 1: Knowledge and Concern

Respondents considered as part of the survey were asked to rate the knowledge and concern that they felt towards seventeen different food risks. The rating scale was between 0 and 10. For the

'knowledge' variable, a rating of 0 indicates 'I don't know anything at all about this', whilst a rating of 10 indicates 'I know a lot about this'. For the 'concern' variable, a rating of 0 indicates 'I am not at all concerned' and a rating of 10 indicates 'I am extremely concerned'.

Figure 1: Average ratings for Knowledge and Concern



As shown in Figure 1, respondents felt that they were relatively more knowledgeable over risks such as food allergens and food intolerance, with average ratings of 5.8 and 5.5 given respectively. However, respondents felt a modest level of concern of 3.8 and 3.9 respectively. *Salmonella* is the notable food risk that scores highly on both knowledge and concern, with each variable given a mean rating of 5.7. For all other food risks, the average score for knowledge was below 5.

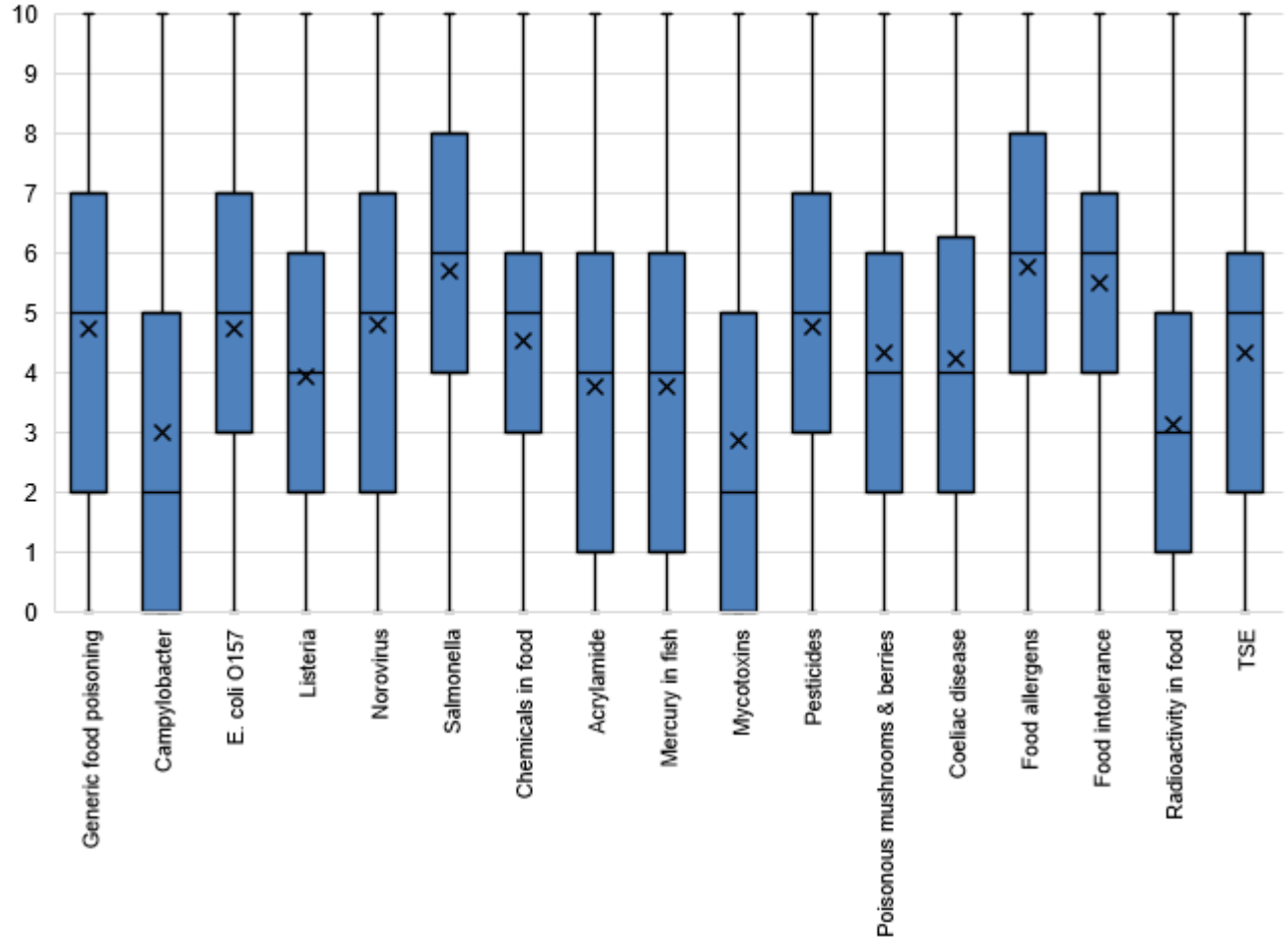
Generic food poisoning scored within the ranges of the specific food poisoning pathogens, with more knowledge of the pathogen generally related to more concern. Possibly surprising, claimed knowledge of *Salmonella* was higher than knowledge of generic food poisoning. Chemicals in food tended to score higher for both knowledge and concern then for specific chemicals. The exception was for pesticides where the two sets of scores were similar.

Knowledge

Starr (1985) and Slovic's (1987) work, as well as the results from the survey provide the opportunity to understand attitudes to knowledge and concern in better detail. Following a grid-comparison of both knowledge and concern, each variable can be considered individually. In analysing respondents' knowledge across different food risks, a box plot is drawn to provide an account of how respondents felt the depth of their knowledge was. Boxplots split and represent

food risk responses according to quartiles. With whiskers ranging from 0 to 10, at least one respondent scored extreme values for their knowledge of various food risks. Both the mean and median score for each food risk is presented below. A cross and dash mark these measures respectively. There tends to be not much variation in participants' self-rated scores across most food risks, as they range from median values of 2 to 6.

Figure 2: Boxplot for Knowledge ratings

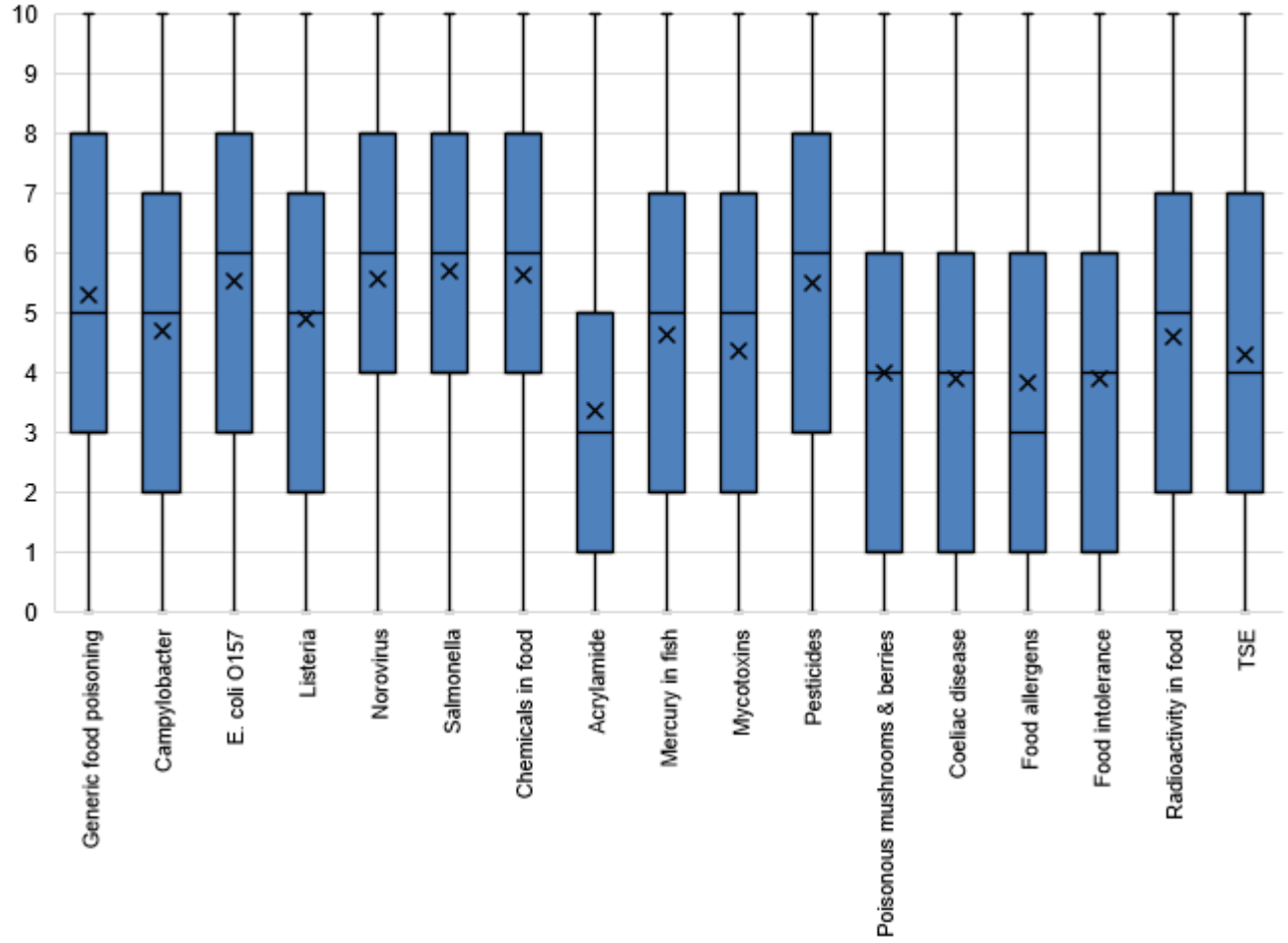


Salmonella, food allergens and food intolerance tend to be the food risks with a relatively higher knowledge rating, with a median result of 6 for each risk. Interestingly, results show that consumers are relatively less informed about *Campylobacter*, as the median rating for this food risk is only 2 (one of the lowest ratings across all risks considered). This is possibly surprising, given that *Campylobacter* is the pathogen responsible for the most cases of foodborne poisoning in the UK, with about 280,000 cases annually. Available on the FSA website.

Concern

Figure 3 presents consumer attitudes to concern in further detail. In analysing this variable across different food risks, a box plot is drawn to provide an account of how respondents felt the strength of their concerns were. The median score for each food risk is presented below. Results are similar to knowledge ratings, where there is not much variation in participants' self-rated scores across most food risks, as they range from median values of 2 to 6.

Figure 3: Boxplot for Concern ratings



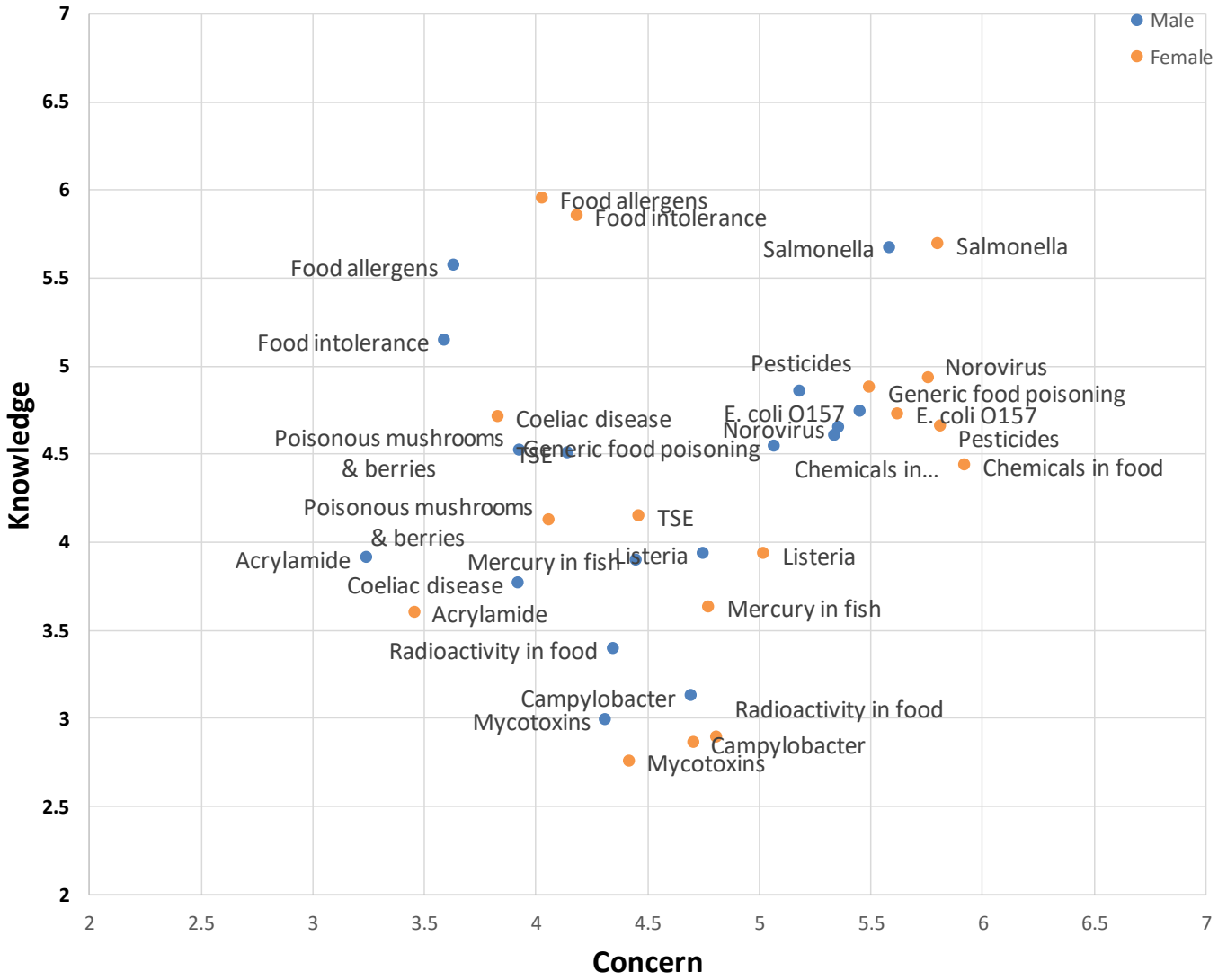
Acrylamide had the lowest concern score with an average of 3.4 with 11% of respondents answering “Do not know”. C*ampylobacter* is given a concern score of 4.7 but 28% of respondents answering “Do not know”. These food risks were the most likely for respondents to give an answer of “Do not know”. In contrast, the food risks that are rated most highly regarding concern is *Salmonella* and chemicals in food with rate of respondents answering “do not know” at 5% and 6% respectively.

Demographic Differences

It is possible to distinguish responses by various demographic variables. Figure 4 below provides an example, showing a grid-comparison of both knowledge and concern across food risks for both males (blue) and females (orange). There is no consistent pattern between genders, as the average ratings given in the grid do not lend themselves towards any obvious relationship between knowledge and concern.

Males tend to be less concerned about food allergens and food intolerance relative to females, with both risks given ratings of 3.6. Females scored food allergens and food intolerance at an average of 4.0 and 4.2 respectively. Results for *Salmonella* are similar for both genders, with males and females rating their mean knowledge of this risk as 5.6 /5.8. *Salmonella* also tends to be of high concern for both genders, with similar ratings for knowledge. However, none of these differences are statistically significant. Using the Chi-Square test of independence, there was a significant result at the 5% confidence level for a difference between gender in concern over nine of the 17 food risks. Namely Norovirus, generic food poisoning, food intolerance, chemicals in food, mercury in fish, pesticides, TSE, poisonous mushroom berries and radioactivity in food.

Figure 4: Average ratings for Knowledge and Concern split by gender



Chi-Square tests were also run for other demographic variables. For concern over *E. coli* O157, we can reject the null hypothesis and conclude that there is sufficient evidence of a relationship between the concern over *E. coli* O157 and age.

Section 2: Other factors

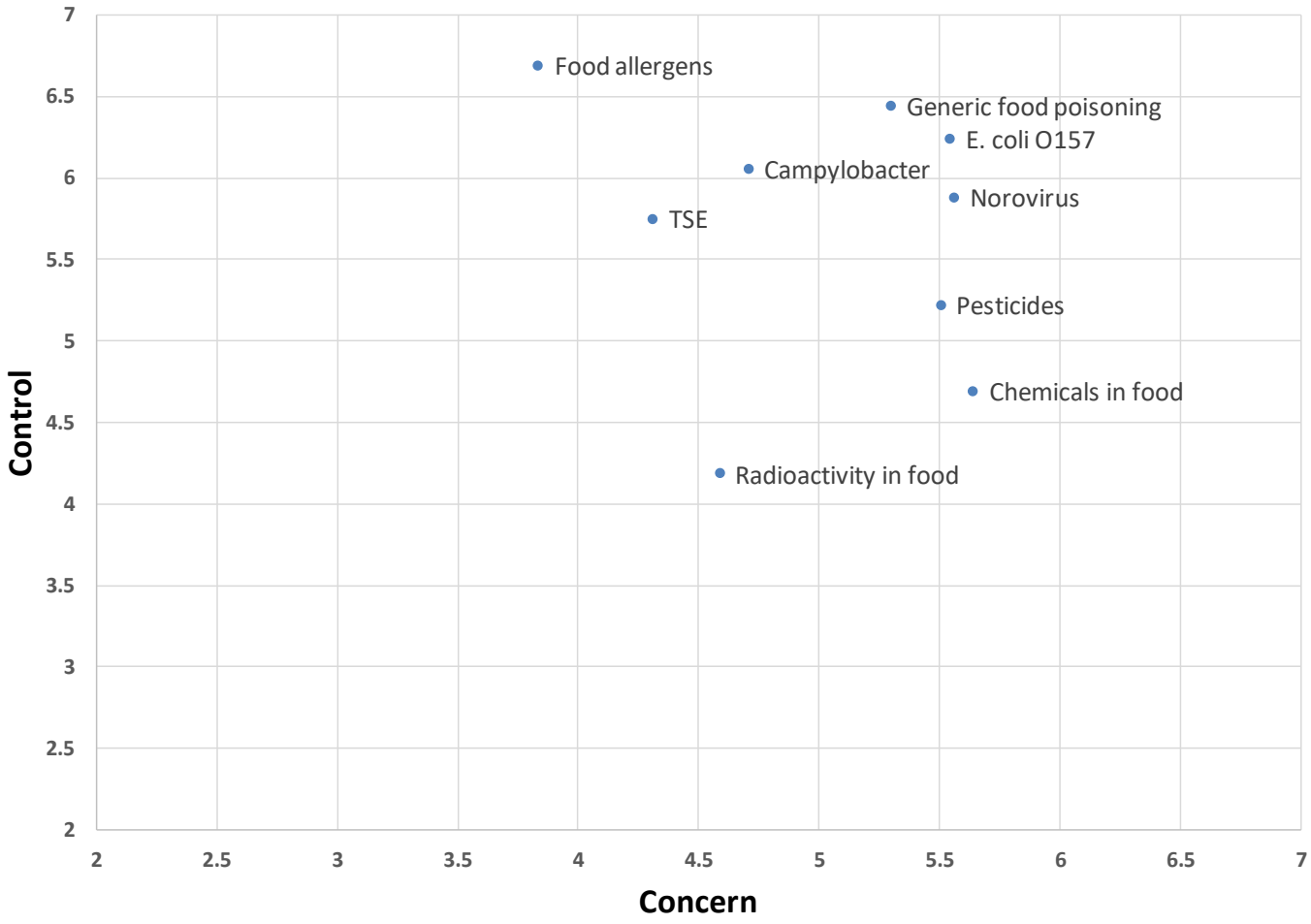
The following analysis considered a subset of the seventeen food risks. These relate to: food allergens, generic food poisoning, *Listeria*, *Campylobacter*, TSE, norovirus, radioactivity in food, food intolerance and chemicals in food. The reason for this decision was to prevent respondents from feeling overwhelmed and /or disengaged with the survey.

Control and Concern

Figure 5 looks at another combination of responses. Concern is plotted against the level of control that a respondent perceives themselves to have over the food-related risk. Specifically, participants were asked 'Thinking about your ability to avoid this risk, considering choices around where you eat, what you eat, and how you prepare food such as handwashing or cooking time, to what extent do you think you can avoid the risk of…?' The degree of control was captured through a 0-10 rating system.

Most of the food risks considered have a relatively high average level of concern, with *EColi,* Norovirus, Pesticides and Chemicals in food rated between 5.5 and 6. Those risks with a relatively high average level of control are *EColi,* Campylobacter, generic food poisoning and food allergens, rated between 6 and 7.

Figure 5: Average ratings for Control and Concern

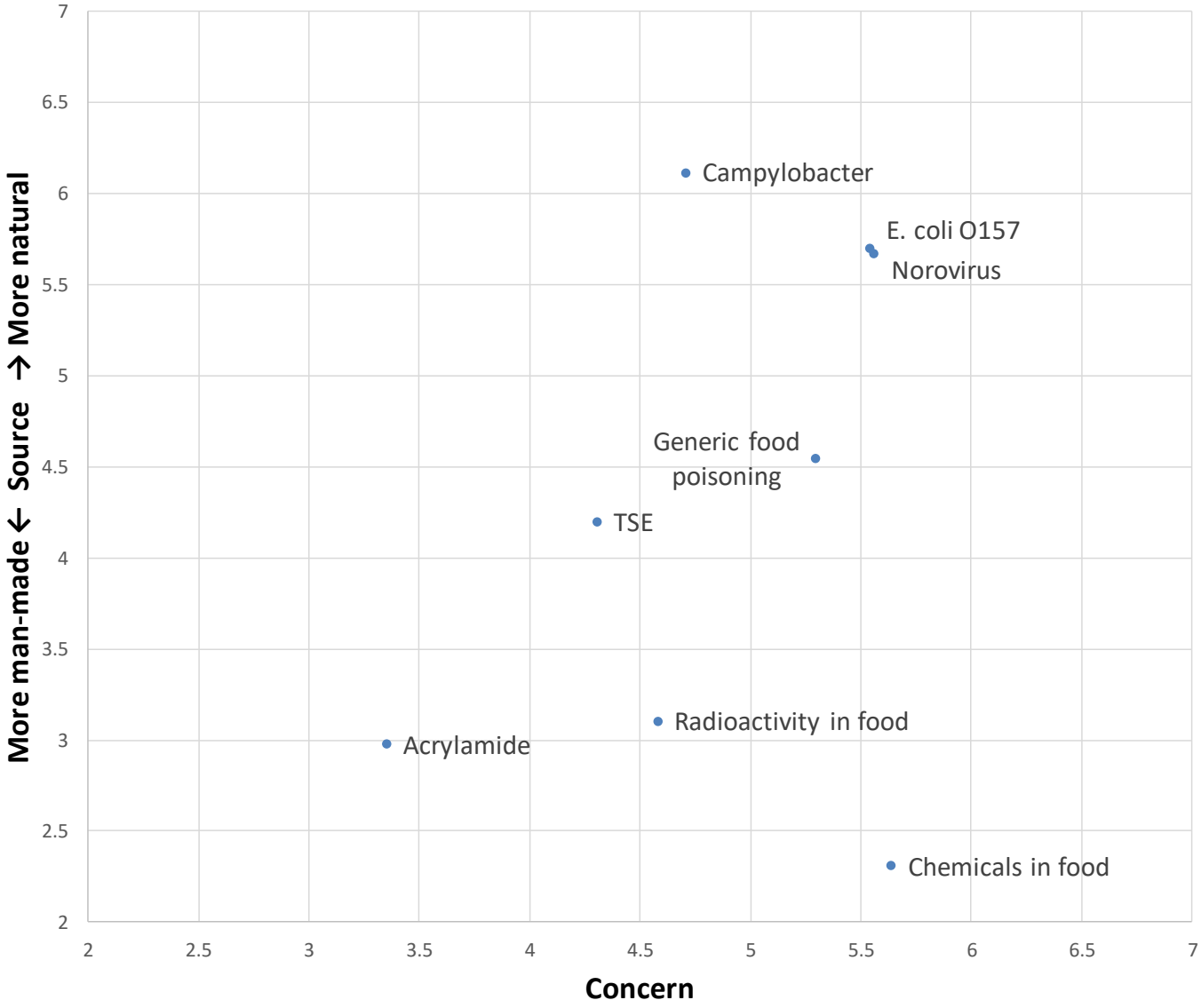


Concern and Source

The mean scores for concern and the source of the food risk are also plotted. To inform the results on risk source, participants were asked to think about where a food risk comes from and then to assess the extent to which it is man-made or occurs naturally. A lower score on the source indicates that respondents considered the risk more man-made than natural.

The grid below generally shows a positive relationship between the two variables. The more the respondent feels the risk occurs naturally, the more concerned they feel about it. This result is unexpected, as Slovic (1987) finds that consumers tend to be more concerned over man-made risks to those that occur naturally. Acrylamide is a food risk that occurs in starchy food that has been heated for extended periods, awarded a relatively low level of source and concern score, given at an average of 3 and 3.4 respectively. Conversely, norovirus and *Listeria* are examples of food risks that have high mean scores for source and concern. This is reflected in average ratings for concern, given at 5.6.

Figure 6: Average ratings for Source and Concern



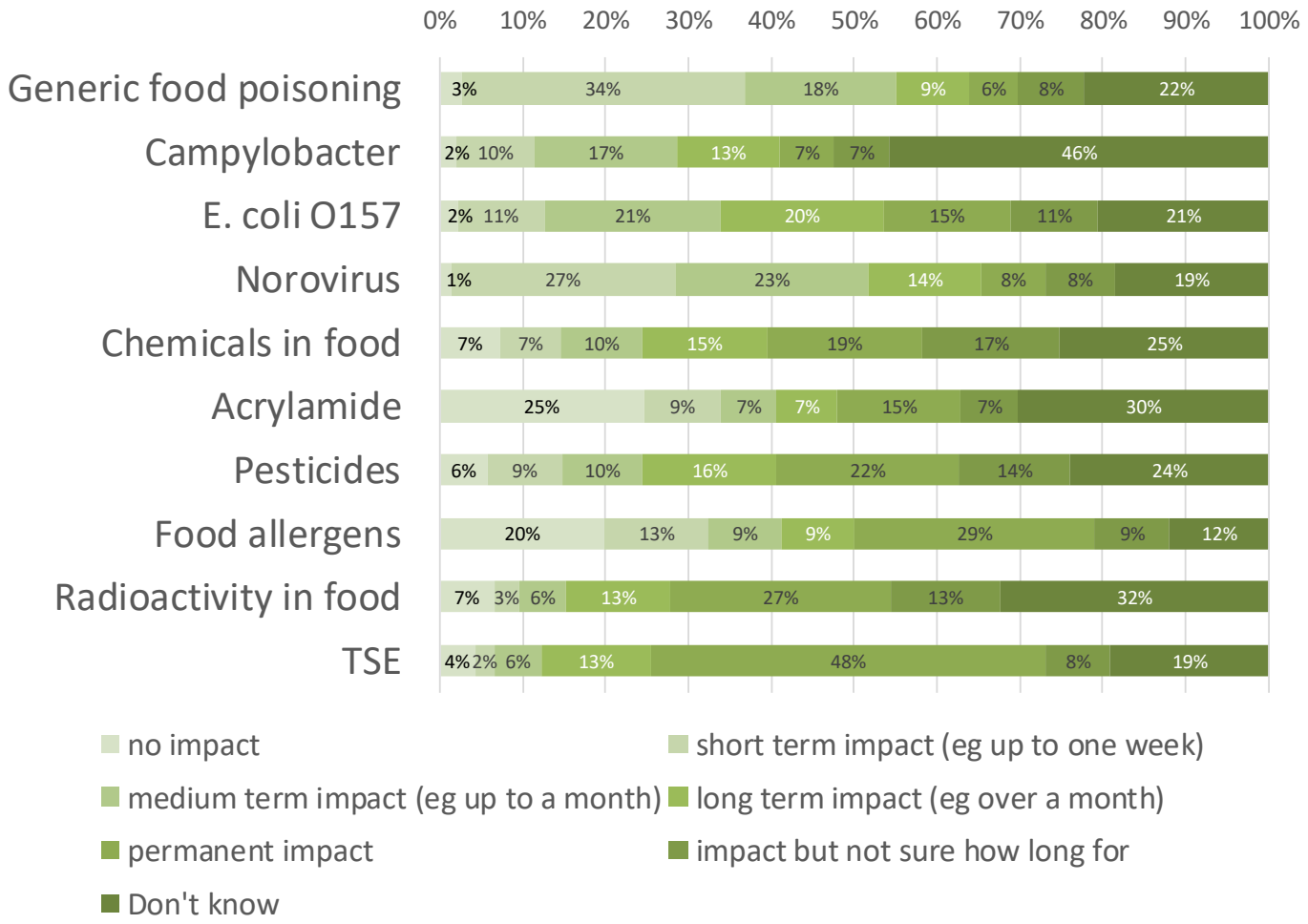
Perceived Impact of Food Risks

The consumer survey considered the likely length of impact that could be suffered by the respondent personally, if they were exposed to a given risk. Responses varied using a rating scale from 'no impact on my day-to-day life' to a 'permanent impact on my day-to-day life', with the possibility of selecting 'I'm not sure how long for' or 'I don't know'. Figure 7 shows the output for the perceived health impacts of food risks.

Among the most notable results, 34% of respondents said that the effects of generic food poisoning are short-term. Norovirus is also a risk that a considerable proportion of respondents thought posed short-term impact, given at 27%. Almost the same number of respondents also thought norovirus posed medium-term impacts (23%). The food risk that most respondents believed to have a long-term impact is *E. coli* O157, calculated as 20% of respondents.

25% of respondents perceived acrylamide to have no impact whatsoever. This could be because they have insufficient understanding of this risk and the impact this could have on their health and wellbeing. As well as this, 20% of respondents thought that food allergens had no impact. In analysing those who thought impacts were permanent, approximately 48% thought that this was the case for TSE. 46% of respondents did not understand what the impact of Campylobacter was. Again, this highlights the areas in which the FSA can work to add value to respondents' understanding of key food risks.

Figure 7: Consumer perception on the duration of food risk impacts

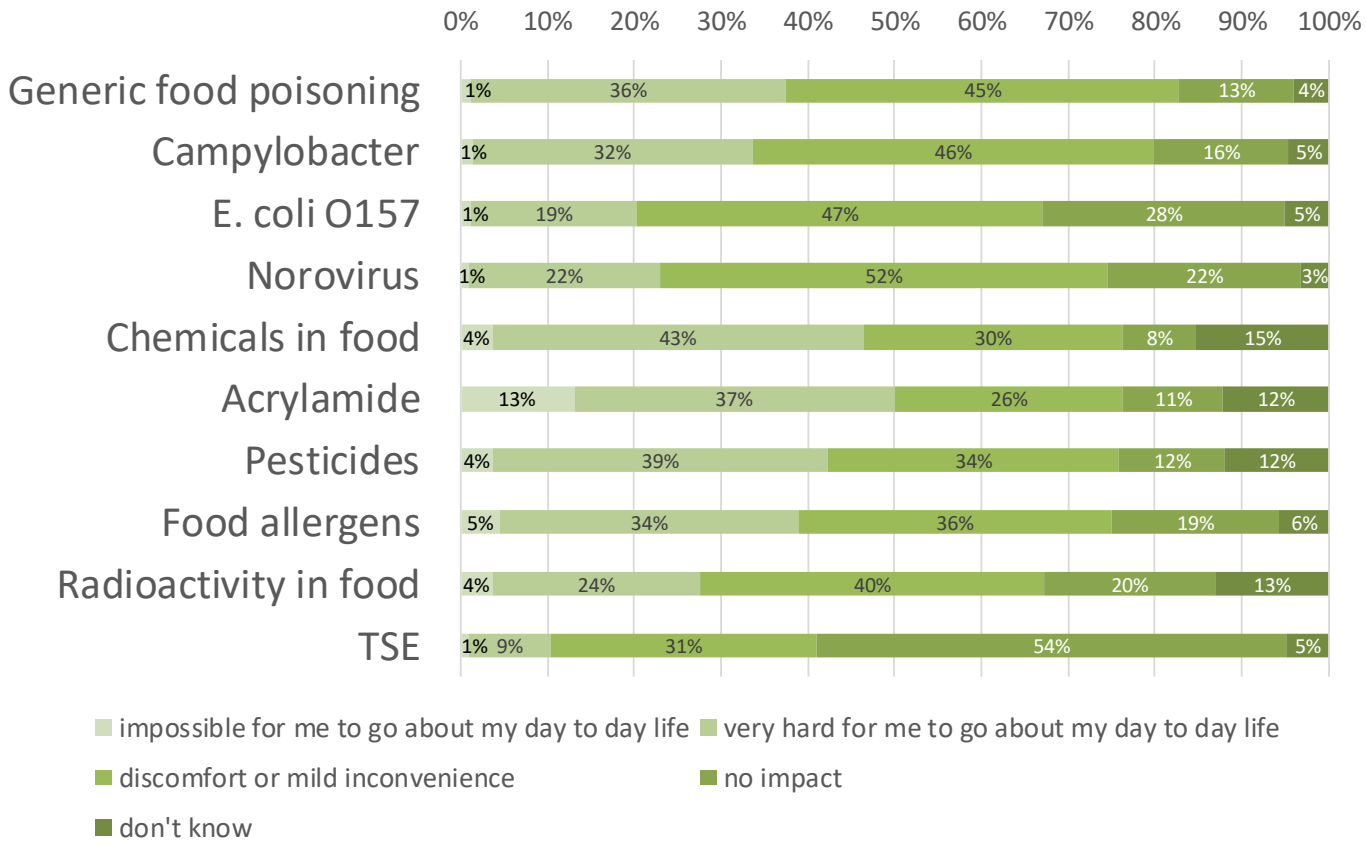


Perceived Harm caused by Food Risks

In addition to rating the perceived impact of food risks, respondents were also asked to rate the level of harm caused by each risk. Answers ranged from ‘no impact’ to ‘the impact would make it impossible for me to go about my day-to-day life’, with the option to select ‘I don’t know’. These results are shown in figure 8.

Most food risks were believed to pose either discomfort /mild inconvenience or pain that respondents considered very hard to endure. Surprisingly, roughly 54% of respondents thought that TSE posed no harm whatsoever. 15% of respondents did not know the level of harm that chemicals in food could cause, the highest percentage across all food risks considered in this survey, followed closely by 13% of respondents for radioactivity in food.

Figure 8: Consumer perception on the severity of food risk impacts



Section 3: Allergies

The following section focuses on food allergies and intolerance. Survey questions relate to the experiences of respondents personally, as well as other members of their household and other family members. Therefore, the following analysis focuses on those who have reported having either a food allergy or intolerance.

Figure 9: Stacked bar chart on reported allergies or food intolerance

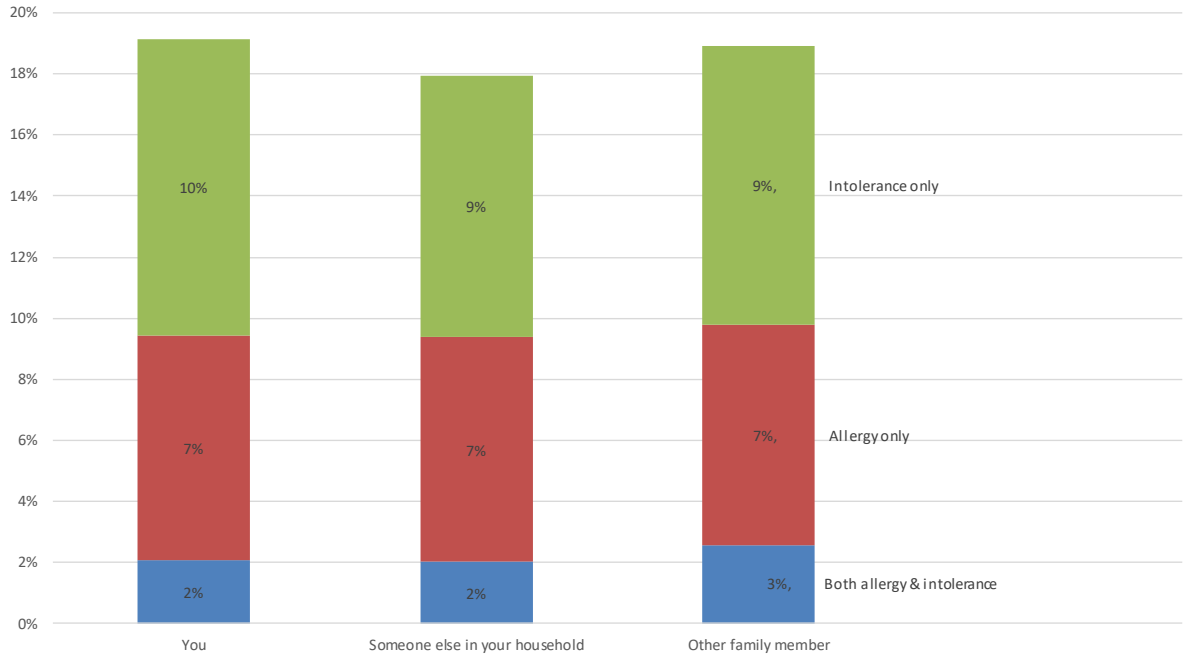
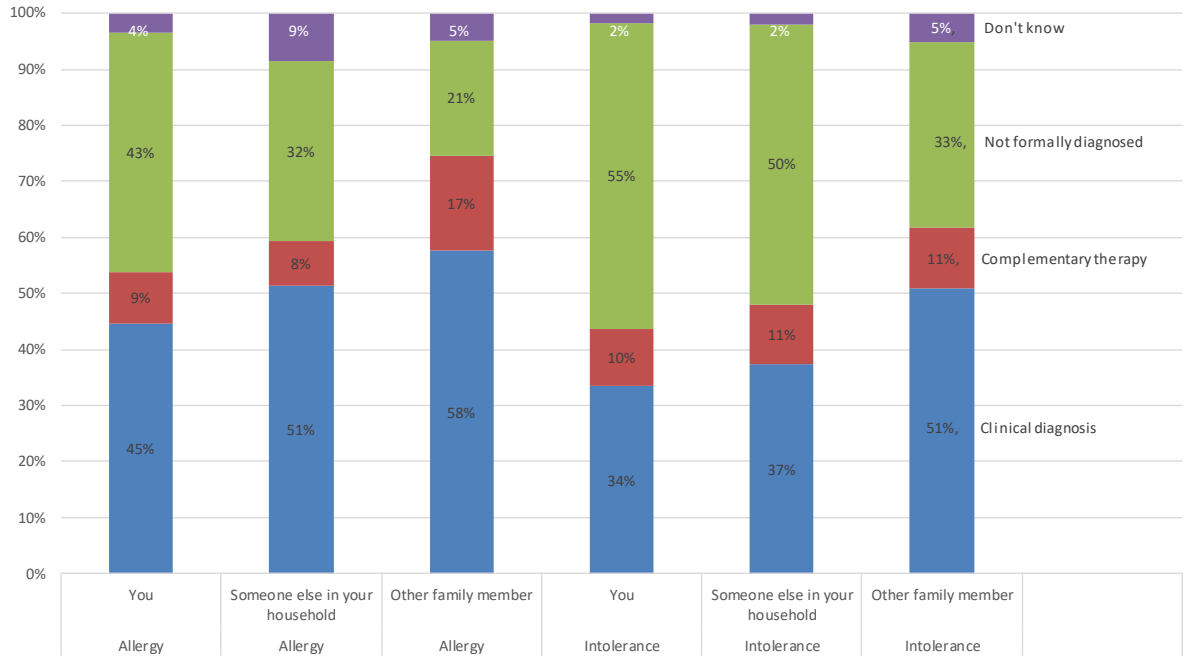


Figure 9 shows the proportion of respondents who reported a food allergy or intolerance. Results show that 7% and 10% had only an allergy and intolerance respectively. Similar proportions generally apply to whether someone else in the household has this and whether another family member did. The incidence of intolerance is relatively higher than the incidence of allergies. 2% of respondents themselves have both an intolerance and allergy. Results are similar for someone else in the household or someone else in the family with both an allergy and intolerance.

These results can be considered in conjunction with the FSA's Public Attitudes Tracker. The tracking survey runs biannually and monitors changes in consumer attitudes towards several topics of interest for the FSA, including concerns about food safety issues. Results from wave 15 are the most recent, where 2,007 consumers across England, Wales and Northern Ireland were asked whether they or anyone else that they regularly eat out with have food allergies or intolerances. 5% of respondents stated that they have a food intolerance, 4% stated that they have a food allergy and 1% stated that they had both an allergy and intolerance. These percentages generally corroborate the findings of this survey.

Clinical Diagnosis

Figure 10: Stacked bar chart on reported diagnosis of food allergies or intolerance



The bar chart above reflects respondents' experience regarding the diagnosis of a food allergy or intolerance. 45% of respondents were made aware of their allergy through clinical diagnosis in comparison to 34% who were diagnosed with a food intolerance clinically. For food allergies, the level of clinical diagnosis rises to 51% for someone else in the household and 58% for another family member. For intolerance, levels of clinical diagnosis rise to 37% for someone else in the household and 51% for another family member.

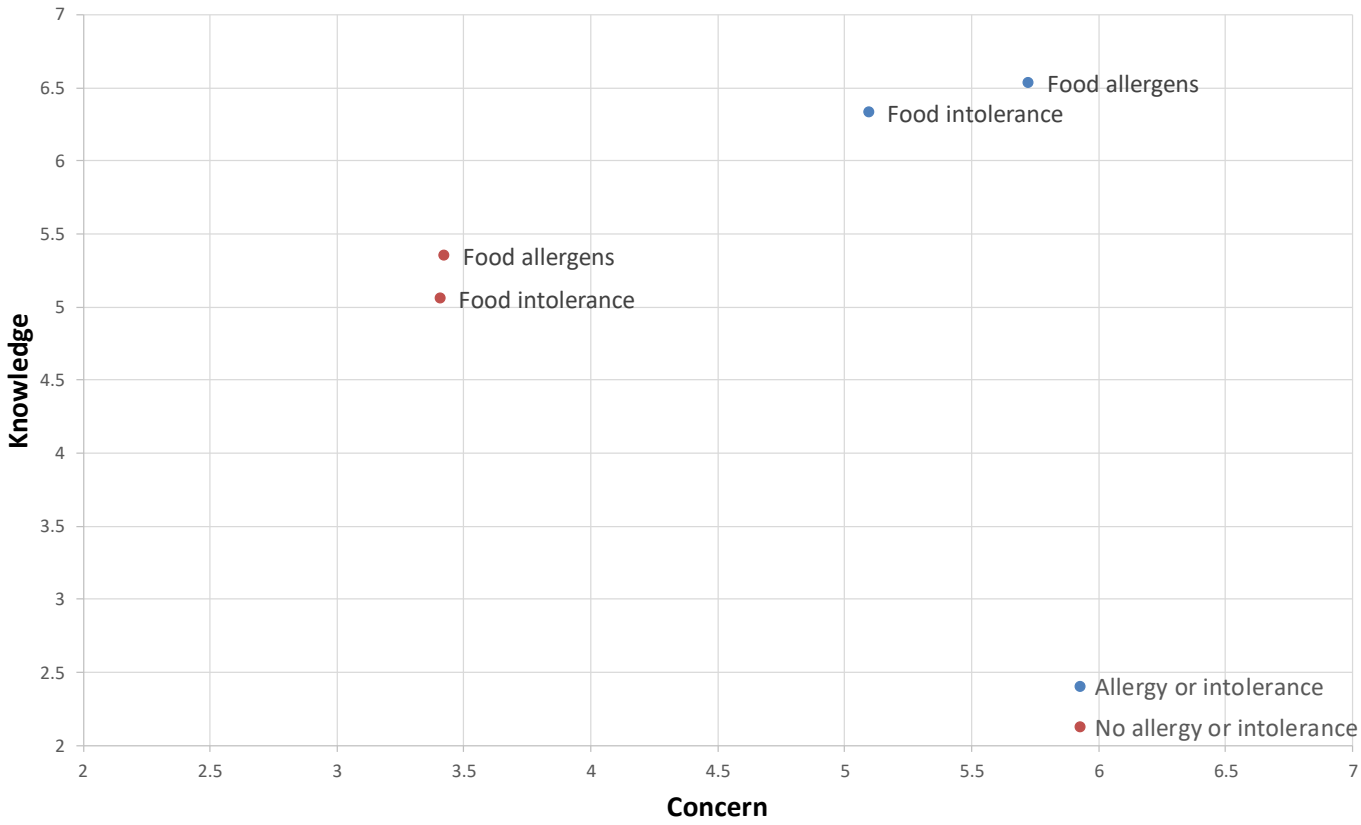
Between 9%-10% of respondents stated that their diagnosis of a food allergy or intolerance was through complementary therapy. For allergies, 43% stated that they were not formally diagnosed. This drops to 32% and 21% for someone else in the household and another family respectively. For intolerance, 55% state that they were not formally diagnosed. This drops to 50% for someone else in the household and to 33% for other family members.

These results can be considered in conjunction with the FSA's Food and You survey. The survey is a robust and representative data-collection tool that explores consumers' self-reported food-related activities and attitudes. With wave 4 being the latest available evidence (carried out in

2016), the results from interviews conducted with participants across England, Wales and Northern Ireland can be compared to this survey. In comparing these results, findings are consistent. The proportion of respondents in the Food and You survey (43%) who described their condition as a food allergy and have had this clinically diagnosed was identical to this study. Similar to the 35% found in this investigation, wave 4 of the Food and You survey found 24% of respondents to have described their condition as a food intolerance as well as having been clinically diagnosed.

Knowledge and Concern

Figure 11: Average ratings for Knowledge and Concern split by those with and without a food allergy or intolerance



To analyse the distinction between the perception of food risks between those with an allergy or intolerance and those without, Figure 11 shows a grid-comparison drawn for knowledge and concern. Although the grid is an adaptation of the relationship shown in Figure 1, the rationale for including this follows the work of Slovic (1987). Generally, there tends to be a positive relationship for knowledge and concern for those with and without an allergy or intolerance.

Those without an allergy and intolerance rated their concern over food allergens and food intolerance roughly 3.4. The knowledge they had regarding these were between 5.3 and 5. Conversely, those with an allergy or intolerance had significantly higher levels of knowledge and concern. Their concern over food allergens and food intolerance was 4.6 and 4.7 respectively. Knowledge over these were 6.5 and 6.3respectively. These results are intuitive. Those with an allergy or intolerance are likely to act with more caution over the food they consume. These respondents are likely to be more knowledgeable and concerned as they are at higher risk of danger. There is a statistically significant difference for all of these relationships for both knowledge and concern.

Conclusion

Starr's (1985) "Psychometric Paradigm" suggests that the "unknown" and the "dread" are two features that are predictive of how an individual perceives risk. Following the work of Slovic (1987), these factors have been reflected into a corresponding level of knowledge and concern. Slovic (1987) expands on this by factoring wider judgements made by individuals, stressing the importance of the ability to control and understanding the source of a risk. The application of these models has laid the foundations to test consumer perceptions to, in the case of this study, food risk.

Generally, consumers tend to be more knowledgeable about food allergens and intolerances. *Campylobacter* is a notable case where there is relatively low awareness, despite the risk causing approximately 280,000 cases of foodborne illnesses per annum.

As well as examining the relationship between concern and knowledge, the relationship between concern and source of risk has been explored. Generally, the results of this survey go against Slovic's (1987) finding that the more man-made a food risk, the more concerned consumers tend to be. Instead, results from this survey have shown that respondents were more concerned about food risks that occur naturally.

Respondents were also asked to consider the perceived impact and harm that certain food risks posed to their health. Generic food poisoning and norovirus were risks that were perceived to have short-term impacts. Acrylamide was thought to have no impact by nearly one quarter of respondents, possibly highlighting information and knowledge gaps that the FSA could fill. Generally, food risks were believed to pose either discomfort/mild inconvenience or pain that they considered very hard to endure.

In assessing respondents' prevalence of allergy or intolerance, results show similar rates of each (9% and 12% respectively). Of those with a diagnosis, a higher proportion of respondents were clinically diagnosed with a food allergy relative to those who were clinically diagnosed with a food intolerance. Results from the FSA's Food and You survey largely corroborate these findings, with similar levels of clinical diagnosis.

References

1. Slovic, P. (1987). Perception of Risk. *Science*, 236 (4799), 280-285

2. Starr, C. (1985). Risk Management, Assessment, and Acceptability. *Risk Analysis*, 5 (2), 97-102

Appendix

Demographic Breakdown

Table 1: Age breakdown

Age	Number of respondents
18-24	114
25-34	269
35-44	295
45-54	206
55-74	503
75+	107

Table 2: Gender breakdown

Gender	Number of respondents
Male	739
Female	751
In another way	3
Prefer not to say	1

Table 3: Residence breakdown

Country	Number of respondents
England	794
Scotland	300
Wales	200
Northern Ireland	200

Table 4: Education breakdown

Educational Qualification	Number of respondents
GCSE or equivalent	308
A-Level or equivalent	240

Higher education degree, NVQ/SVQ level 4 or equivalent	242
Degree (for example BA, BSc)	368
Higher or Doctoral degree (for example MSc, MA, PhD)	133
Professional or other vocational/work related qualification (for example nursing, accountancy)	118
No qualifications	74
Other (specify)	4
Don't Know	7

Table 5: Ethnicity breakdown

Ethnicity	Number of respondents
English /Welsh /Scottish /Northern Irish /British	1323
Irish	34
Gypsy /Irish Traveller	0
Any other White background	53
White and Black Caribbean	1
White and Black African	4
White and Asian	12
Any other Mixed /Multiple ethnic background	3
Indian	16
Pakistani	3
Bangladeshi	3

Chinese	7
Any other Asian background	7
Caribbean	7
African	8
Any other Black /African /Caribbean background	2
Arab	1
Prefer not to say	8
Any other ethnic group	2

CAWI

Questionnaire

Name of survey
FSA and FSS Risks Questionnaire

Client name

Author(s)

Ross, Natasha

This questionnaire was written according to Kantar TNS quality procedures

checked by

Pru Donocik

Repeating study (if this survey has been previously conducted)	
Name of survey	**FSA Risks Questionnaire**
Language	**English (United Kingdom)**
Survey length (minutes)	**15**
Version	**1**
Author(s)	**Ross, Natasha**
Contact	
Panel	
Sample size	**Gross:** **Net:**
Sample description	
Quota	
If several countries: indicate the countries	
If several targets	
Check-in site	**TNS Global**
Comments	

Index

Q001 - Q001: Text

Not back

This survey will explore the perceptions and behaviours of consumers in the UK in relation to different food risks.

The aim of this study is for the Food Standards Agency and Food Standards Scotland to gain further understanding on how consumers assess different food risks. The questions will be in regards to your personal perception and tolerability to various food risks.

Please click the arrow below to continue

B001: Demographics and Screeners **Begin block**

Q002 - age_number: AGE **Numeric**

Not back | Max = 100

How old are you?

Scripter notes: Add an answer option for 'Prefer not to say'

Screen out if if age is under 18

Q003 - age_range: Age range **Single coded**

Not back

Which of the following age groups do you fall into?

Normal

1 Under 18
GO TO SCREEN OUT
2 18-19
3 20-29
4 30-39
5 40-49
6 50-59
7 60-69
8 70+
9 Prefer not to say
GO TO SCREEN OUT

Scripter notes: ASK this question if age_number is prefer not to say. Otherwise autofill this question with age selected at age_number.

Q004 - gender: Gender **Single coded**

Not back

Which of the following best describes how you think of yourself?

Normal

1 Male
2 Female
3 In another way **Open*
4 Prefer not to say

Q005 - country: Country	Single coded

Not back

Where do you live?

Normal

1	England
2	Scotland
3	Wales
4	Northern Ireland
5	Other country
	GO TO SCREEN OUT

B001: Demographics and Screeners	End block

B002: All Risks - Awareness and Concern	Begin block

Q006 - intro1: Intro text	Text

Not back

Now we are going to ask you some questions about individual risks. Please answer to the best of your knowledge.

Scripter notes: Please rotate order in which Q007 and Q008 are show 50%/50%.

Q007 - knowledge_risks: Knowledge of risks | **Matrix**

Not back | Number of rows: 17 | Number of columns: 11

Please indicate how much you know about each of these food risks on the scale below. The scale is from 0, 'I don't know anything at all about this' to 10 'I know a lot about this'.

Random

Rendered as Dynamic Grid

	0	1	2	3	4	5	6	7	8	9	10
Norovirus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Listeria	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Food allergens (e.g. nuts, milk, shellfish)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Acrylamide (e.g. burnt toast)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Campylobacter	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Generic food poisoning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
TSE, variant CJD (e.g. Mad cow disease)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Food intolerance (e.g. lactose, caffeine)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Chemicals in food	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Radioactivity in food	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mycotoxins (fungal toxins)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mercury in fish	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Pesticides	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Coeliac disease	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. coli O157	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Salmonella	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Poisonous mushrooms/berries	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Scripter notes: Please script as a series of sliders underneath each risk

Q008 - concern_risk: Concern over risk **Matrix**

Not back | Number of rows: 17 | Number of columns: 11

Please indicate on the scale below how concerned you are about each of the following risks. You can select any number between 0 which is ' I am not at all concerned' and 10 which is 'I am extremely concerned'.

Random

Rendered as Dynamic Grid

	0	1	2	3	4	5	6	7	8	9	10
Norovirus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Listeria	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Food allergens (e.g. nuts, milk, shellfish)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Acrylamide (e.g. burnt toast)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Campylobacter	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Generic food poisoning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
TSE, variant CJD (e.g. Mad cow disease)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Food intolerance (e.g. lactose, caffeine)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Chemicals in food	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Radioactivity in food	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mycotoxins (fungal toxins)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mercury in fish	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Pesticides	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Coeliac disease	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. coli O157	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Salmonella	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Poisonous mushrooms/berries	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Scripter notes: Please script as a series of sliders underneath each risk Add a 'Don't Know' option as a radio button.

B002: All Risks - Awareness and Concern **End block**

B003: Questions for each risk **Begin block**

Q009 - intro2: Info Text **Text**

Not back

We are now going to ask you some further questions about some of these risks. Please answer these to the best of your knowledge.

The following questions will be about [RISK NAME HERE]

Scripter notes: These questions need to be asked of each of the following risks. These must be shown in a random order. Please script a block for each risk, and label the variables for each risk using the names below.

Please filter each risk on IF knowledge_risk of the specified risk is >0 OR concern_risk of the specified risk risk>0"..

Norovirus
E. coli O157
Food allergens (e.g. nuts, milk, shellfish)
Acrylamide (e.g. burnt toast)
Campylobacter
Generic food poisoning
TSE, variant CJD (e.g. Mad cow disease)
Chemicals in food
Radioactivity in food
Pesticides

Q010 - impact_time_riskname: Impact over time **Multi coded**

Not back | Min = 1

To the best of your understanding, which of the following describes the likely impact that could be caused to you personally if you were exposed to [RISK NAME HERE]?

Normal

1	It could have a short term impact on my day-to-day life (eg up to one week)
6	It could have a medium term impact on my day-to-day life (eg up to a month)
2	It could have a long term impact on my day-to-day life (eg over a month)
3	It could have a permanent impact on my day-to-day life
4	It could impact on my day-to-day life but I'm not sure how long for
5	It would have no impact on my day-to-day life
99	Don't know **Position fixed *Exclusive*

Ask only if **Q010 - impact_time_riskname**,1,2,3,4, 6

Q011 - harm_risk_riskname: Level of risk from harm **Multi coded**

Not back | Min = 1

And how severe do you think the likely impact of [INSERT RISK HERE] would be if you were exposed to it?

Flipped

1 The impact would make it impossible for me to go about my day to day life

4 The impact would make it very hard for me to go about my day to day life

2 The impact would cause discomfort or mild inconvenience, but it would be possible for me to go about my day to day life.

3 There would be no impact

99 don't know **Position fixed *Exclusive*

Q012 - awareness_riskname: Awareness source **Multi coded**

Not back | Min = 1

Where have you heard about [INSERT RISK HERE] before today?

Please tick all applicable boxes

Random

1 From an official source eg the NHS website, the Food Standards Agency or Food Standards Scotland

2 From reading online

3 From a TV or radio programme, or podcast (but not the news)

4 From a news source (i.e. online, newspaper or TV news)

5 From others talking about it (e.g. family or friends)

96 Other, namely... **Open *Position fixed*

99 Don't know **Position fixed *Exclusive*

Q013 - control_riskname: Control over avoiding risks | **Left-right matrix**

Not back | Number of rows: 1

Thinking about your ability to avoid this risk, considering choices around where you eat, what you eat, and how you prepare food such as handwashing or cooking time, to what extent do you think you can avoid the risk of [INSERT RISK HERE]?

Normal

Cannot avoid at all	0 1 2 3 4 5 6 7 8 9 10	Can completely avoid

Scripter notes: Script from 0 to 10.

Add Don't know option below.

Q014 - source_riskname: Source of risk | **Left-right matrix**

Not back | Number of rows: 1

Thinking about where this comes from, to what extent do you think [INSERT RISK HERE] is man-made or occurs naturally?

Normal

Manmade	0 1 2 3 4 5 6 7 8 9 10	Naturally occuring

Scripter notes: Script from 0 to 10.

Add Don't know option below.

B003: Questions for each risk | **End block**

B004: Allergens | **Begin block**

Q015 - allergy_or_intolerance: Allergy or intolerance | **Matrix**

Not back | Number of rows: 3 | Number of columns: 3

To the best of your knowledge, do you or someone else in your household suffer or have ever suffered from an adverse reaction such as a food allergy or intolerance after consuming certain foods?

Normal

Rendered as Dynamic Grid

	Food allergy	Food intolerance	Neither of these	Not as far as I am aware
You	☐	☐	☐	☐
Someone else in your household	☐	☐	☐	☐
Another family member	☐	☐	☐	☐

Scripter notes: Script rows as multicode for Food Allergy or Intolerance, but if respondent selects "Neither of these" then they shouldn't be able to select either of the other options.

Add hover information text to the words allergy or intolerance.

FOOD ALLERGY is when the food is eaten (or sometimes is just in contact with the skin) it triggers an immune system response which results in the release of histamine and other substances in the body. Symptoms may include abdominal pain, vomiting and diarrhoea; in the skin, itching and swelling (rash or nettle rash); in the upper airways, a runny nose or sneezing; in the lower airways, a wheeze or cough. Normally symptoms arise within a few minutes of eating the offending food, although they may be delayed by up to a couple of hours.

FOOD INTOLERANCE is much more common than food allergy. The onset of symptoms is usually slower, and may be delayed by many hours after eating the offending food. The symptoms may also last for several hours, even into the next day and sometimes longer. Symptoms include gastrointestinal symptoms such as bloating, diarrhoea, nausea, vomiting, irritable bowel and can include skin rashes and sometimes fatigue, joint pains, dark circles under the eyes, night sweats and other chronic conditions.

Ask only if **Q015 - allergy_or_intolerance** ROW=1 & COL=1 or **Q015 - allergy_or_intolerance** ROW=2 & COL=1 or **Q015 - allergy_or_intolerance** ROW=3 & COL=1

Q016 - how_allergy: How found out about allergy or intolerance | **Matrix**

Not back | Number of rows: 3 | Number of columns: 4

How did you or they find out about your/their food allergy?

Normal

Rendered as Dynamic Grid

	I/they have been diagnosed by an NHS or private medical practitioner (e.g. GP, dietician, allergy specialist in a hospital or clinic)	I/they have been diagnosed by an alternative or complementary therapist (e.g. homeopath, reflexologist, online or walk-in allergy testing service)	I/they have noticed that this food causes me problems, but I have not been formally diagnosed with a specific allergy	Don't know
You	☐	☐	☐	☐
Someone else in your household	☐	☐	☐	☐
Other family member	☐	☐	☐	☐

Scripter notes: Only show answers where they were selected at allergy question previously.

Ask only if **Q015 - allergy_or_intolerance** ROW=1 & COL=2 and **Q015 - allergy_or_intolerance** ROW=2 & COL=2 and **Q015 - allergy_or_intolerance** ROW=3 & COL=2

Q017 - how_intolerance: How they found out about their intolerance | **Matrix**

Not back | Number of rows: 3 | Number of columns: 4

How did you or they find out about your/their food intolerance?

Normal

Rendered as Dynamic Grid

	I/they have been diagnosed by an NHS or private medical practitioner (e.g. GP, dietician, allergy specialist in a hospital or clinic)	I/they have been diagnosed by an alternative or complementary therapist (e.g. homeopath, reflexologist, online or walk-in allergy testing service)	I/they have noticed that this food causes me problems, but I have not been formally diagnosed with a specific intolerance	Don't know
You	☐	☐	☐	☐
Someone else in your household	☐	☐	☐	☐
Other family member	☐	☐	☐	☐

Scripter notes: Only show answers where they were selected at intolerance question previously.

Q018 - Occupation: Education and employment status | **Multi coded**

Not back

Which of the following best describes you personally?

Normal

1 In full time employment (30+ hours a week)
2 In part time employment (8-29 hours a week)
3 I am a full or part time student studying for a degree (including BA, MA, PhD)
4 Not working and seeking work
5 Not working and not seeking work
6 Other

Q019 - life_stage: Life stage **Single coded**

Not back

Which of the following best describes your current living situation?

Normal

1	I live with my parents / carers
2	I am a student in student accommodation / house share
3	I am single and living independently, with no children
4	I live with my partner, we have no children
5	I am single and living independently, with my children
6	I live with my partner and our children
7	I am single and living independently, and my children have left home
8	I live with my partner, and our children have left home
96	other, namely... **Open *Position fixed*
9	Prefer not to say

Q020 - education: Educational level attained **Single coded**

Not back

What is the highest level of educational qualification you have completed, if any?

Normal

1	GCSE or equivalent qualifications
2	A-Level or equivalent
3	Higher education degree, NVQ/SVQ level 4 or equivalent
4	Degree (for example BA, BSc)
5	Higher or Doctoral degree (for example MSc, MA, PhD)
7	Professional or other vocational/work related qualifications (for example nursing, accountancy)
8	No qualifications
96	Other (specify): **Open *Position fixed*
99	Don't know **Position fixed *Exclusive*

Q021 - ethnicity: Ethnicity	Single coded

Not back

Which of the following ethnic group or groups do you most identify with?

Normal

1	English / Welsh / Scottish / Northern Irish / British
2	Irish
3	Gypsy / Irish Traveller
4	Any other White background
5	White and Black Caribbean
6	White and Black African
7	White and Asian
8	Any other Mixed / Multiple ethnic background
9	Indian
10	Pakistani
11	Bangladeshi
12	Chinese
13	Any other Asian background
14	Caribbean
15	African
16	Any other Black / African / Caribbean background
17	Arab
20	Any other ethnic group **Open*
19	Prefer not to say

B004: Allergens	End block