

PEER-REVIEWED ARTICLE

Food Protection Trends, Vol 45, No. 5, p. 298-304
https://doi.org/10.4315/FPT-24-046
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Food Fraud Awareness and Consumer Trust in Food Authenticity on the Island of Ireland: Post-Brexit Challenges and Recommendations

ABSTRACT

On January 31st, 2020, United Kingdom (UK) withdrew from European Union (EU) in a process known as Brexit. Regulatory changes arising from Brexit have led to a more complicated trade and food system in both the UK and EU. This has the potential to increase food fraud risks at the shared border between Northern Ireland and Ireland, a development that could reduce consumer trust in the food industry. The purpose of this study is to address these challenges by exploring consumer perceptions of food fraud and authenticity in the Island of Ireland to inform recommendations to improve consumer trust in the food industry, where needed. Two focus group sessions were conducted in both Ireland and Northern Ireland, involving eight participants in each region who were solely or primarily responsible for their household food shopping. Thematic analysis was used for analysing the transcripts. Strengthening of transparency, quality assurance, political accountability, and legislative stability were participants' recommendations to strengthen trust in the food industry in this post-Brexit era.

By adopting the themes identified in this study, consumers on the Island of Ireland will be better equipped to navigate the ever-changing and somewhat unpredictable post-Brexit realities facing the food industry.

INTRODUCTION

Food fraud is a deliberate and intentional act motivated by economic gain, which includes various fraudulent activities such as tampering, misrepresentation of food and intentional false labelling of food (19, 40). Globally, food fraud is estimated to cost around 30 billion Euros (about 31.5 billion Dollars) per year (5, 42). The high volume of food fraud is associated with serious economic and public health concerns within the food industry (27).

Fraudulent food products can cause financial losses for consumers who unknowingly purchase adulterated or counterfeit items. For instance, buying premium-priced olive oil that is fraudulently mixed with lower-quality oils means paying more for a product that does not meet expected quality (5). This undermines trust in the market and can lead to higher costs for items that lack the desired value (5,

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8, 26). In addition to this, mistrust can tarnish brands' image and make it difficult to regain trust (30). Also, food fraud detection may cause costly recalls which may disrupt the supply chain and lead to great loss for the food companies (5).

The health risks associated with food fraud are profound, as illustrated by the 2008 melamine scandal in China, which resulted in severe health complications, including kidney damage and fatalities among infants (5). Other notable incidents, such as the 1981 Spanish olive oil fraud and the 2013 horsemeat scandal, demonstrate how food fraud can significantly erode consumer confidence, even if it does not always have direct health consequences (25, 26, 39).

In the UK, post-Brexit regulatory changes have introduced new risks, particularly concerning food authenticity and safety. For instance, the separation of Northern Ireland from the EU regulatory framework has led to a complex regulatory divergence, where Northern Ireland aligns with EU standards while the rest of the UK follows its own regulations. This duality poses challenges such as potential delays in supply chains (which could undermine foods quality), increased administrative burdens, and higher costs of compliance for food businesses (4). Moreover, the lack of uniformity in standards between the EU and the UK increases the likelihood of regulatory gaps, which could be exploited by fraudulent actors. Examples include circumventing tariffs, mislabelling products to claim false origins, or exploiting price differences between markets. Particularly, the withdrawal from the EU's Rapid Alert System for Food and Feed (RASFF) has reduced the UK's access to real-time information on food safety incidents, potentially delaying responses to emerging risks. These issues call for the need for stronger measures to ensure food authenticity and prevent fraud in the post-Brexit era.

Recent measures, including the EU's "From the Hives" initiative and the UK's implementation of food fraud prevention strategies, aim to address these challenges. However, understanding how these regulatory changes impact consumer awareness and perceptions of food fraud is crucial for ensuring a transparent and resilient food system (14, 15).

Despite extensive research on food fraud and consumer perceptions, there is a notable gap in addressing the specific impacts of post-Brexit regulatory changes on food safety and authenticity in the UK (5). This research aims to fill this gap by investigating consumer awareness, perceptions, and attitudes towards food fraud and authenticity in the context of recent regulatory changes. Understanding these factors will contribute to more effective industry and governmental strategies for food fraud prevention (26) and enhance food safety protections for Island of Ireland consumers.

To achieve these aims the following research objectives are posed:

1. To investigate the awareness of food fraud and authenticity among consumers on the Island of Ireland.
2. To determine the factors affecting consumers' food purchasing decisions.
3. To recommend ways to improve food controls and consumer trust in food authenticity post-Brexit.

METHODS

Study Design

This study used a qualitative approach, employing focus groups to gather insights into consumer perceptions. This method was chosen to explore the new area of post-Brexit impact on food fraud awareness. Qualitative research is ideal for generating hypotheses and understanding the underlying motivations and attitudes of consumers (37).

Ten questions informed by extensive literature review on the impacts of Brexit on consumer trust, and related issues such as food authenticity, quality, and pricing were asked from eight consumers in each of the two focus group sessions conducted. Before conducting the focus groups, input was sought from expert in the field and members of research panel who helped refine and tailor the questions to the relevant study context.

Participant Recruitment

The participants for the focus group were recruited by sending emails across both UCD and Ulster University mailing lists through the help of some module coordinators and college administrators and the interested participants replied to signify interest. The requirements for participation include, been over the age of 18, been an ordinarily resident of either the Republic of Ireland or Northern Ireland and the participants must either be solely or majorly responsible for their household food purchase.

Rationale for Using Exploratory Focus Groups

The primary purpose of the focus group was to gather insights to inform the design of a larger, more structured quantitative survey and these two focus groups provided sufficient data to identify key themes, concepts, and potential variables relevant to this research objectives. While, qualitative studies often aim for saturation, exploratory focus groups like in the case of this study was meant to uncover diverse perspectives. Therefore, the two focus groups captured a range of initial ideas and perceptions related to the impact of Brexit on trust in the food industry.

Focus Group Procedure

The first focus group session for consumers in Northern Ireland was moderated by an experienced PI (Dr. Sinead Furey) based in Ulster University and was conducted online due to the different locations of the participants within

TABLE 1. Focus Group Questions

No	Questions
Q1	What does the term "Brexit" mean to you?
Q2	How familiar are you with the food industry in the Northern Ireland/Republic of Ireland?
Q3	How has Brexit impacted your food choices or purchasing habits?
Q4	In your opinion, how has Brexit affected the quality and safety of food in the NI/ROI?
Q5	How has Brexit affected your trust in the food industry?
Q6	What factors contribute to your trust in the food industry?
Q7	What changes in labelling, sourcing, or food standards do you think should be implemented to ensure trust in the food industry?
Q8	Do you believe Brexit has had an impact on food prices, and if so, how has this affected you?
Q9	What sources do you rely on to stay informed about the food industry?
Q10	Have you noticed any changes in the way food is marketed since Brexit?
Q11	Do you have any additional comments or concerns about the impact of Brexit on the food industry?

Note: The focus group represents the initial data collection phase of a larger, ongoing study.

Northern Ireland. The second focus group, however, was conducted in person by the research student (Babatope David Omoniyi) after learning and demonstrating the ability to conduct a focus group. Although all the participants were selected using convenience sampling methods, each consumer present were distinct and represented different geographical areas of their respective regions. To provide further clarity, *Table 1* summarizes the key questions that guided the data collection process, ensuring alignment with the study's objectives.

Ethical Approval

Before recruiting the participants, ethical approval was sought from both UCD and Ulster University Ethics committees. The project was deemed low-risk and approved by UCD Human Research Ethics Committee (HREC) with the reference number: LS-C-23-164-Omoniyi-Lalor. Equivalent approval was secured from Ulster University's Research Ethics Filter Committee. The focus group was conducted online with Microsoft Teams to facilitate participants' attendance, and their informed consent was sought to record them.

Data Analysis

Focus group recordings were transcribed verbatim. Participants' names were replaced with pseudonyms to ensure anonymity. Following the thematic analysis procedure using Braun and Clarke's six-phase framework, that includes becoming familiar with the data, generating initial codes, searching for themes, reviewing the themes, defining, and

naming themes, and lastly, producing the report (7), the transcripts were analysed with the assistance of NVivo version 14 software. Thematic analysis was chosen for this study due to its efficacy when it comes to identifying patterns across a dataset, its flexibility, and the fact that it also enables the researcher to examine the dataset thoroughly to provide a comprehensive result (37).

RESULTS

Food Fraud Awareness

In exploring food fraud awareness, five key themes emerged: mislabelling and deceptive marketing, cultural misrepresentation, quality and origin of ingredients, substitution fraud, and consumer vigilance.

Mislabelling and Deceptive Marketing

Mislabelling and deceptive marketing is one of the key themes' participants identified as primary example of food fraud. Misleading labels, as Participant 2 stated, often mean that products are "labelled as something that it's not necessarily." This practice erodes consumer trust and results in health risks. Participant 4 highlighted, "Buying these types of products can actually harm you and reduce how you trust the seller next time." These types of deceptive marketing have a way of impacting consumers' purchasing decisions by concealing the true quality, safety, or dietary suitability of products.

Cultural Misrepresentation

The participants also noted the use of culturally sounding names and branding to fraudulently mislead consumers about

a product's authenticity. According to one of the participants, products marketed with "fancy Italian-sounding names" were often not authentically Italian, Participant 7 also observed: "They might label something as 'Italian,' but it's not really from Italy at all." This practice takes advantage of consumer perceptions of cultural authenticity, thereby influencing their willingness to pay a premium for certain products.

Quality and Origin of Ingredients

The perceived quality and origin of ingredients from the Island of Ireland emerged as critical factors linked to food fraud awareness. Participant 2 compared the quality of chicken across regions, stating, "The chicken from Ireland and the UK is significantly better." The participants also associated specific origins with higher standards of quality, reflecting trust in locally sourced products. Like cultural misrepresentation above, consumers in the Island of Ireland trust foods coming from either the UK or Republic of Ireland. However, this trust can be manipulated through misrepresentation of origin, which is another form of fraud that can undermine transparency and market integrity.

Substitution Fraud

Another common theme associated with food fraud awareness among participants is the substitution fraud, where a lower-value product replaces a higher-value one, is another theme that was widely recognised among the participants. Participant 6 for instance recalled cases in the seafood industry where "... what you think you're getting isn't actually the fish you ordered." This fraudulent practice raises significant concerns about health risks, particularly for individuals with allergies or dietary restrictions, and contributes to a broader erosion of trust in the food supply chain.

Consumer Vigilance

The participants in this study also expressed a growing sense of responsibility to verify product claims. This stems from the expectation for transparency and accountability within the food industry as consumers are increasingly aware of food fraud. One of the participants shared his experience with what he sees on the news regarding honey fraud, and this led to a decision to be more careful and check very well the next time he purchases this item. Consumers are now exhibiting more proactive behaviours such as scrutinising labels and seeking certifications, to guard against any fraudulent practices. This increased consumer vigilance is essential for promoting greater accountability within the food industry.

Factors Affecting Consumers' Food Purchasing Decisions

The themes that emerged from the participants' food purchasing behaviors were locality and seasonality, quality and cost, and preferences for minimally processed foods. Although these themes seem broader than food fraud, they actually provide context for understanding trust and perceptions post-Brexit.

Locality and Seasonality

The participants expressed a preference for local, seasonal foods, this shows that they trust in shorter, more transparent supply chains. According to participant 2, "I prefer going to my local butcher rather than buying meat out of the supermarket." This preference could be linked with concerns about food authenticity, this is because local and seasonal foods are perceived to have fewer opportunities for adulteration or food fraud activities.

Quality and Cost

Quality was consistently prioritised among all the participants, although they acknowledged the need to balance it with cost. Participant 3 for instance noted, "I think, for me, it's quality but with/and cost as well." This balance influences trust, because consumers are less likely to question the authenticity of higher-quality products from trusted sources, particularly when they are reasonably priced.

Minimally Processed Foods

Most of the participants prefers less processed foods, they associated these foods with authenticity and health. Participant 7 noted, "I prefer natural ingredients too because I see what I am buying in its natural form, and the chances of adulteration are low." This theme is like the locality and seasonality theme.

According to the findings of this study, participants' choices show a reasonable level of desire for transparency of the food supply chain. Also, the choices made also shows concerns about the vulnerabilities of highly processed foods to fraud.

Recommendations to Improve Consumer Trust in the Food Industry Post-Brexit

The themes generated on the recommendations to improve consumer trust in the food industry includes transparency, quality assurance, political accountability, and legislative stability:

Transparency

The need for clearer labelling and communication about trade agreements and food standards are critical. As Participant 4 stated, "Transparency for the consumer, particularly around quality and safety standards, would be important."

Quality Assurance

Another equally interesting theme is the need to improve on the existing quality assurance for the food industry in the Island of Ireland. The participants noted that it is essential to continue maintaining high standards for imported and local foods. And when this quality assurance is improved, participants emphasised the need for consistent monitoring to preserve trust in product quality.

Political Accountability and Legislative Stability

Lastly on the recommendation to improve trust is political accountability and legislative stability. The participants expressed concern about the absence of political oversight and the uncertainty of post-Brexit regulations. Participant 7 highlighted: *“There’s uncertainty about what’s devolved, what’s not devolved.”* Stable governance and clear regulatory frameworks are essential for sustaining trust in the food system.

DISCUSSION

Consumer trust plays a pivotal role in ensuring the stability of trade and other activities in the food industry, especially in the post-Brexit era. Various predictions have been made by different quarters and stakeholders in the food system regarding Brexit’s impact (4, 29). Given the significant trade volume and the considerable percentage, the food sector contributes to the GDP of both NI and ROI, it is crucial to assess Brexit’s impact on consumer trust (6). Providing recommendations to alleviate consumer fears and improve trust levels in regulatory bodies and other stakeholders in the food system is of utmost importance.

Contrary to some literatures (3, 5, 41, 45), participants in this study demonstrated a strong understanding of food fraud, aligning with findings by Charlebois et al. (8) and Moreira et al., (31). Participants linked food fraud with mislabelling and deceptive marketing (10, 24). They expressed dissatisfaction with these fraudulent activities, believing they could easily fall victim to such practices due to the expertise involved. Participants also mentioned cultural misrepresentation, where they are misled into buying products by using foreign-sounding names, falsely suggesting the products have qualities attributed to a particular origin.

Mislabelling occurs when food products are inaccurately labelled, leading consumers to make incorrect assumptions about their content, origin, or quality (43). Deceptive marketing, on the other hand, involves misleading practices designed to entice consumers into choosing certain products (33). Despite current food labelling legislation, marketing departments in the food industry often seduce consumers with misleading labelling. For instance, using pictures of fresh fruits or vegetables—which are only present in tiny amounts in the product—or employing terms such as ‘no added sugar,’ ‘natural,’ or ‘healthy’ misleads consumers (21). Addressing these strategies is crucial for maintaining consumer trust and ensuring fair market practices (24).

The Mislabelling and Deceptive Marketing theme focuses on the intentional misrepresentation of food products through inaccurate labelling and misleading marketing strategies. Cultural misrepresentation refers to inaccurately portraying a food product’s cultural or geographic origins, including protected geographical indications (PGI) and protected designations of origin (PDO) (35). These schemes safeguard the authenticity of products tied to specific regions and traditional production methods. An example is Balsamic vinegar of Modena PGI,

which commands a premium price due to its authenticity compared to generic counterparts. Such practices significantly influence consumer perceptions and purchasing decisions, highlighting the importance of accurate representation in maintaining trust and market integrity.

Substitution fraud occurs when a high-quality ingredient is replaced with a cheaper or inferior alternative without the consumer’s knowledge, eroding trust in the food supply chain. Participants highlighted examples such as fish and honey, noting that substitution fraud heightens their vigilance as consumers. Beyond deception, these practices have been linked to significant health risks (40), emphasizing the importance of transparency in food production and labelling.

Consumer vigilance emerged as another significant theme. It emphasizes the role of consumers in identifying and combatting food fraud. Often, this vigilance stems from prior experiences with food fraud and the desire to avoid it in the future. According to findings, many consumers have preconceived biases toward food products from different areas (35), which fraudsters exploit by mislabelling products to appear as originating from trusted regions (8, 12, 28). For instance, participants believe Irish dairy products and chickens are usually authentic, and fraudsters might mislabel products from other regions as Irish to deceive consumers.

Participants in this study are keen on obtaining quality and affordable food. Many prefer purchasing locally sourced foods due to lower food miles and a sense of responsibility to support local businesses (38). While cost and physical attributes of food are important, participants prioritize making the best quality choices regardless of these factors. Seasonal availability of foods also plays a crucial role in their purchasing decisions, with frustration arising when such products are unavailable. These shopping preferences reflect underlying concerns about food authenticity and trust in the food supply chain, particularly post-Brexit.

The most recommended solution to improving consumer trust in the food industry post-Brexit is transparency. Participants seek clarity regarding trade agreements and safety and regulatory standards affecting the foods they purchase. While they may not fully understand how regulatory changes impact the food on the shelves, they want assurance that these changes will not affect the perceived quality, quantity, and safety of their daily food commodities. If any regulatory changes do impact food quality, participants expect regulatory bodies to communicate these changes clearly and transparently.

Another widely accepted recommendation among participants is quality assurance. Certain products, such as Irish dairy products, are renowned for their high quality. Participants believe that, despite changes in trade, regulations, or legislation, the current quality standards should be maintained. For example, even though the UK is no longer part of the EU, participants expect foods sourced from within the EU by the UK to meet high-quality and safety standards.

Political accountability is another critical recommendation. Participants, particularly those from NI, expressed concerns that public officials are not being held accountable enough. They believe greater accountability would ensure higher and more consistent food standards.

Legislative stability was also highlighted. The findings revealed that UK consumers are uncertain about the legislative framework governing the food industry. The grace period for the Brexit Freedoms Bill, which allowed the UK government to change all retained EU laws for food safety, ended on December 31, 2023. As of 2024, several key food-related laws in the UK differ from those in the EU. This lack of clarity raises concerns about food safety, quality, and authenticity, making it difficult for consumers to trust the food supply chain. Addressing these concerns through clear and stable legislative frameworks is crucial for maintaining consumer confidence.

Finally, all stakeholders in the food system need to focus on ensuring consumer trust is maintained amidst post-Brexit changes. Food producers, industry regulators, retailers, and policymakers must adopt a transparent, accountable, and consumer-focused approach that prioritizes safety, trust, and satisfaction. This collaborative effort will better equip consumers on the Island of Ireland to navigate the evolving post-Brexit realities.

The current study has some limitations. Given the number of focus groups conducted, the findings may not be fully representative of the broader population in NI and ROI. The use of convenience sampling introduces potential biases, as the sample was not randomized. Additionally, more women and older adults participated in this study, which may reflect their greater involvement in food shopping (37), but it limits the perspectives of other demographic groups. Despite these limitations, the findings provide valuable insights into consumer attitudes, behaviours and the recommendations that they feel would help improve trust in the food industry.

Future research should aim to address these limitations by conducting additional focus groups to achieve data saturation and ensure diverse representation across demographic groups. Furthermore, quantitative research with a larger, representative sample of the population would provide more generalizable results. Longitudinal studies could also be employed to examine how consumer trust evolves over time in response to regulatory and trade changes. These approaches will help build a more comprehensive understanding of the factors influencing consumer trust in the post-Brexit food landscape.

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CONCLUSION

This study explored consumer awareness of food fraud, the factors influencing food purchasing decisions, and the post-Brexit challenges to maintaining trust in the food system. From the findings, the impact of mislabelling, cultural misrepresentation, and substitution fraud on consumer perceptions of authenticity and safety was seen. Also, there is a growing expectation for transparency and accountability within the food industry as more consumers are vigilant and making effort to prevent themselves from food fraud as evident in the consumer vigilance theme. Consumers' preference for local and minimally processed foods shows that there is more demand for shorter supply chains as these are perceived as more trustworthy. Although quality remains a priority, participants of this study acknowledged the tension between cost and authenticity, and clamoured the need for accessible, high-quality products to sustain consumer confidence.

In the post-Brexit context within the Island of Ireland, the study shows the importance of stable governance and legislative clarity to address uncertainties surrounding food standards. Recommendations to enhance trust include improved labelling, consistent quality assurance practices, and clearer communication of regulatory changes. These findings contribute to ongoing discourse on consumer trust in the food system, and it offers practical and straightforward recommendations to policymakers and industry stakeholders aiming to address food fraud and adapt to the evolving regulatory landscape.

ACKNOWLEDGMENTS

The research team is grateful to the Shared Island Unit, the Department of Further and Higher Education and the HEA for the allocation of funding under the North-South Research Funding Programme 2021 (*Food Fraud: A study on the perceived exposure of the food and drink industry to food fraud in Northern Ireland versus the Republic of Ireland. Does Brexit have any impact? industry, regulatory and consumer perspectives*) with the grant number R24090. The authors do not report any conflicts of interest or additional commercial funding in respect of this research.

DECLARATION OF GENERATIVE AI & AI-ASSISTED TECHNOLOGIES IN WRITING PROCESS

During the preparation of this work, the author (Babatope David Omoniyi) used Chat GPT to enhance readability, and correct tenses. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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