

PREDICTING ATTITUDES TOWARD FOOD FRAUD

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**Attitudes toward Food Fraud, Food Safety Concerns, National Culture,
and Self-labeling as a Victim**

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Abstract

This study examined a model that focused on the association between attitudes toward food fraud (AFF) and such factors as food safety concerns, self-labelling as a victim and national culture. The online survey included 106 German and 363 Israeli respondents and questionnaires on attitudes toward food fraud, food safety concerns, self-labelling as a victim of food fraud, and sociodemographic characteristics. The results indicate that national culture and self-labelling as a victim predict food safety perception, which predicts AFF. The discussion addressed our findings in the context of collective victimization, exposure to food fraud, and national culture.

Keywords: Food fraud, victim, national culture, food safety, collective victimization

Introduction

Food fraud involves an intentional misrepresentation of a product's real qualities (van der Meulen 2015) and is characterized by "deliberate and intentional substitution, addition, tampering, or misrepresentation of food, food ingredients, or food packaging; or false or misleading statements about a product, for economic gain" (Spink and Moyer 2011). Food fraud practices violate criminal and civil laws and represent a type of white-collar crime (for review, see Croall, 2009) and corporate offence (van Ruth, Huisman, and Luning 2017). The consequences include severe financial damage (Wilcock et al. 2004), damage to the nutritional quality of foods (e.g., diluting milk or fruit juices), and damage to consumer trust in the integrity of the food supply (Kets 2016), such as in cases of fraudulently marketing food as kosher (Sokol 2015). Moreover, sometimes food fraud places consumer health at risk and even causes death (Spink and Moyer 2011; Manning 2018).

It is critical to further our understanding of public opinion on food safety and food fraud to promote prevention and intervention policies and practices (Spink and Moyer 2011). Public opinion tends to influence practices and can significantly affect criminal justice policies (Roberts 2018), whereas research of public attitudes may promote policymaker responsiveness (Lax and Phillips 2009; Norrandar 2001). This study aims to elucidate the impact of self-labelling as a victim, food-related safety concerns, and national culture on attitudes toward food fraud.

Attitudes toward Food Fraud (AFF)

Lately, there has been theoretical growth (Lord, Elizondo, and Spencer 2017; Lord et al. 2017) and empirical interest in food crimes (Manning 2018; Manning and Soon 2014). However, the research on AFF is still limited (Levy and Kerschke-Risch 2020). The studies on public opinions on food fraud were mostly conducted in the USA and included one type of

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food fraud (knowingly selling contaminated food which resulted in death) within a list of different crimes (e.g., Cullen, Link, and Polanzi 1982; Rosenmerkel 2001; Rossi et al. 1974). Rossi et al. (1974) and Cullen et al.'s (1982) findings showed that respondents ranked this type of food fraud as a relatively severe crime (81st and 91st percentiles, respectively). Conversely, Rosenmerkel's (2001) survey showed that this item's severity ranking was relatively low (35th percentile). The differences between these studies may result from social changes over time or methodological differences. Be that as it may, such a discrepancy indicates a need to examine public AFF in the current cultural context and search for the underlying mechanism that predicts AFF.

Food Safety Concerns

Increasing concern over food safety represents a salient recent social change (Dey et al. 2018). The concept of food safety addresses an array of food-related issues that concern the public, including chemical additives (Haen 2014; Hammonds 1985), flavour enhancers, preservatives and colourings, residues from pesticides (Williams, Stirling, and Keynes 2004), food nanotechnologies (Brown, Fatehi, and Kuzma 2015), genetically-modified foods (Dey et al. 2018) and foodborne diseases (Jevšnik, Hlebec, and Raspor 2008). In order to understand consumer food safety perceptions and behaviours, studies have examined, inter alia, the preferences for fresh produce (e.g., Yin et al. 2018), quality perception of farmers' markets (e.g., Yu et al. 2017), the impact of brands and labels (e.g., Neill and Holcomb 2019; Neill and Williams 2016) and consumer willingness to pay for food safety (Lewis et al. 2017). It appears that consumers prefer organic products to the produce with "Green"/ safe labels and brands affiliated with proprietary enterprises than brands that belong to agricultural cooperatives (Yin et al. 2018). Also, consumers value information on food safety, but not necessarily the labels indicating this information (Neill and Holcomb 2019), though they are willing to pay more for products with safety labels (Lewis et al. 2017).

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Some studies explored the factors associated with perceptions of food safety. According to Beartha et al. (2014), perceptions of food additive risks and benefits are associated with knowledge, trust in regulators, and natural food preferences. Liu and Ma's (2016) study on Chinese consumers indicated that female, older, more educated, and more exposed to media participants reported more significant concern than participants who were male, younger, less educated, and less exposed to media. According to Adebowale and Kassim (2017), married participants had more knowledge of food safety than singles.

Although food fraud represents a risk to food safety (Kendall et al. 2019), the research on the relationship between consumer concerns about food safety and attitudes toward food fraud is limited. The research on risk perception in related areas indicates a positive relationship between risk perception of food technologies and trust (Eiser, Miles, and Frewer 2002) and the negative effect of perceived risk and consumer attitudes toward street food (Choi, Lee, and Ok 2013). Therefore, we hypothesized that:

H₁: There is a significant positive correlation between the concern about food safety and attitudes toward food fraud: the higher the concern about food safety, the more negative is the attitude toward food fraud.

National Culture

National culture is a critical factor in individual perceptions of food safety and food fraud (Nyarugwe et al. 2016). However, international research on national cultures and attitudes toward crime is rare. One such study shows that consumers from southern Europe (e.g., France, Italy, and Malta) perceive traceability (i.e., the ability to monitor the supply chains from farm to fork) as a measure for food safety more than northern Europeans (e.g., from the Netherlands and Germany (Giraud and Halawany 2006). As for the willingness to pay for food safety and authenticity, following the 2012 European horsemeat scandal, German and Spanish consumers expressed a higher inclination to pay more for safer food than the Italians and French (Agnoli

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et al. 2016). Moreover, according to van Rijswijk and Frewer's (2008) findings, consumers differ in their perception of safety. Thus, German and Italian consumers refer to food safety in terms of "risk" and "healthiness," whereas Spanish consumers refer to it in terms of "control" and "guarantees." Furthermore, Germans expressed lesser concerns about kosher food fraud and more substantial organic food concerns than Israelis (Levy and Kerschke-Risch 2020).

The current study also compares German and Israeli consumers and suggests that German and Israeli consumer differences may be related to national culture differences. Hofstede (2011; 2015) identified five universal cultural dimensions by which national cultures differ: power distance, individualism, masculinity, long-term orientation, and uncertainty avoidance. We suggest that the dimension relevant to AFF is uncertainty avoidance. High uncertainty avoidance manifests itself in high intolerance of deviant persons and ideas, a need for rules (Hofstede, 2011), and a search for truth and purity regarding products (de Mooij and Hofstede 2011). Hofstede's data (2020) indicates that Israeli culture is characterized by higher uncertainty avoidance than German culture. Considering the data that supports the nexus between national culture and attitudes toward crime (Chun-Tung Lowe and Corkindale 1998), we assume that residents of countries with high uncertainty avoidance will perceive food fraud more negatively than residents of countries with low uncertainty avoidance scores.

H₂: There is a significant positive association between the country's score on the uncertainty avoidance dimension and the level of concern regarding food safety.

Self-Labeling As a Victim

One of the central disagreements between victimological approaches refers to the term 'victim.' According to Positivist Victimology, 'victim' is an objective term, and people who were harmed by a criminal act are victims (Ben-David 2000; Miers 1989). Thus, positivist victimology may suggest that people who have experienced foodborne diseases are victims of

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food fraud or food-related negligence. However, even the dictionary definition of the term 'victim' includes both the harmful event and individual self-perception following a harmful event (e.g., "Victim," 2018). Similar to this definition, Normative Victimology/Victim's Victimology (Ben-David 2000) emphasizes the critical role of subjective self-identification as a victim. Hence, only by focusing on the victimized individual's perspective is it possible to understand why some individuals who experienced criminal victimization consider themselves as victims and others not (Glenn and Byers 2009; Levy and Eckhaus 2020). Although (some) consumers might perceive that they have been deceived, they do not necessarily identify themselves as victims.

There is no research on self-labelling as a victim of food fraud, while much of the work on self-labelling centres around victims of sexual assault and harassment. The research on rape victims indicates that women who had experiences matching the legal classification of rape do not necessarily define themselves as rape victims (Kahn et al. 2003), and more than half (60.4%) do not acknowledge that they were raped (Wilson and Miller 2016). In the case of stalking, 46.4% of survey respondents who reported events that meet stalking criteria did not acknowledge themselves as victims of stalking (Baum et al. 2009). Hence, some people have experienced stalking and even such harmful and invasive acts as rape and still do not label themselves as victims of rape; it is possible to assume that there are people who experienced foodborne diseases that do not see themselves as food fraud victims. Furthermore, in foodborne diseases, the link between the harmful consequences and the harmful event may be less clear than in violent crimes and harder to detect or prove.

Victim Self-Label, Culture and Food Safety Concerns

Considering that victim labelling occurs in a cultural context (Van Dijk 2020), we suggest that collective victimization (objective state) and collective victimhood (subjective state)

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(Vollhardt 2020) may account for self-labelling as a victim on a personal level. Collective victimization is a process or collective experience of violence caused by another group or groups (Bar-Tal et al., 2009), including inter alia wars, violent conflicts, terrorism, and genocide (Suedfeld 1999). On the national level, collective victimization and victimhood manifest in shared beliefs (Daniel Bar-Tal 2000) and a master narrative of collective victimization promoted through education, media, political speeches and such (D. Bar-Tal and Salomon 2006). Collective victimization has a powerful impact on the collective members' emotions and beliefs, even when it was not experienced personally, and even when the events occurred decades or centuries ago (Daniel Bar-Tal et al. 2009; Halperin et al. 2008).

An emphasis on collective victimization characterizes Israeli culture. The perception of the Holocaust as a cultural and collective trauma has been deeply rooted in Israeli identity (Alexander 2004). Additionally, a long history of Jewish suffering has promoted a Jewish cultural and emotional mindset of the "eternal victim" (Lumsky-Feder 1997). Consequently, Israeli society as a collective has elevated the victimization identity to its premier status (Yurman 2008). Such a narrative does not exist in Germany (Hirschberger 2018), and, therefore, it may be that Germans, in general, are less accustomed to using this term. Considering that the saliency of collective victimization on a national level may influence the way individuals assess threats and understand social processes and interaction (Noor et al. 2017), it is possible to hypothesize that:

H₃: There is a significant positive association between collective victimization and self-labelling as a food fraud victim: Participants from a country whose national cultural identity includes collective victimization (e.g., Israel) will be significantly more inclined to label themselves as victims of crimes, including food fraud, than participants from countries whose national cultural identity does not include collective victimization (e.g., Germany).

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As for the association between self-labelling as a victim and food safety concerns, the research comparing those who label themselves as victims (labellers) and those who do not (non-labellers) indicates that labellers in the case of rape report a lower risk of re-victimization (Littleton, Axsom, and Grills-Taquechel 2009), but more severe emotional reactions (Kahn and Andreoli Mathie 2000). In the case of stalking, self-acknowledgement increases the prevalence of stalking (Spitzberg 2017). A similar pattern emerges regarding victimization due to bullying at the workplace: when victims label themselves as such, they tend to recognize more cases of bullying than non-labellers (Dawn, Cowie, and Ananiadou 2003). Thus, self-labelling as a victim may be associated with higher risk perception and higher safety concerns. Therefore, we hypothesize that:

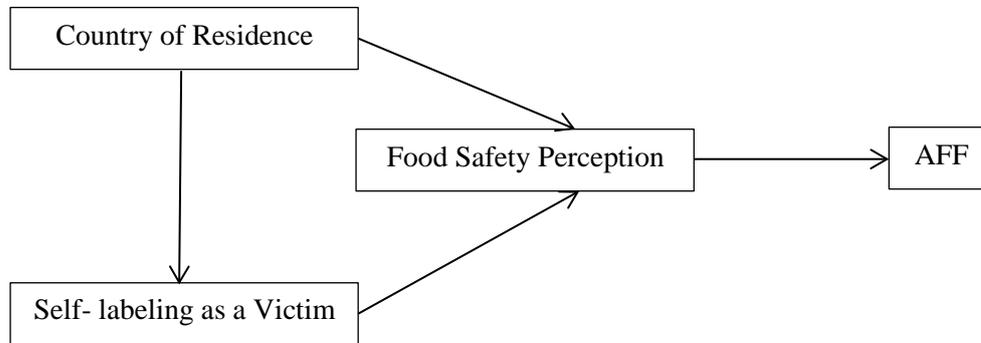
H₄: Self-labeling as a victim will positively predict food safety concerns.

The Current Research

This study aims to identify the relationships between AFF, concerns about food safety, cultural differences and self-labelling as a victim of foodborne disease. This study is unique in several ways. Firstly, it focuses on food fraud attitudes, the under-researched aspect of food fraud. Secondly, this study addresses the literature gap on the association between self-labelling as a victim of food fraud, food safety concerns, and AFF. Thirdly, the national culture theoretical framework (de Mooij and Hofstede 2011; Geert Hofstede 2011) allows us not just to compare Germany and Israel but also to further understand the differences between countries with high and low uncertainty avoidance scores. Furthermore, this study explores the association between the national narrative of victimization and the individual tendency for self-labelling as a victim.

Figure 1

The Theoretical Model for Predicting AFF through Country of Residence, Self-labeling as a Victim, and Food Safety Concern.



Finally, this research explores a model for the prediction of AFF through concerns about food safety, self-labelling as a victim and the country of origin. This model (Figure 1) suggests that cultural differences between German and Israeli participants in uncertainty avoidance and internalization of a collective narrative of victimization will be associated with a higher tendency for self-labelling as a victim and food safety concerns, while the food safety concerns will predict AFF.

Method

Participants

The current study included 469 participants: Israeli ($n=363$, 77.4%) and German ($n=106$, 22.6%). The majority were female (75%) and the age range was 18-84 ($Mean = 31.44$, $S.D. = 12.76$). Most participants were single (48.3%), 32.3% were married, 16.2% lived with a partner, 3% were divorced or separated, and 0.2% were widows. The majority of the participants defined themselves as secular (47%), 28% as traditional, and 25% as religious.

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Measures

Demographic Characteristics: This part of the questionnaire gathered information about participants' country of residence, gender, age, religiosity (secular, traditional, religious), educational level (high school/ B.A. / M.A. and PhD), marital status (single/ married/ alone: divorced or widowed) and relative income level (lower than average income/ average income/ higher than average income).

Attitudes toward Food Fraud (AFF): To examine attitudes toward food fraud, we used 14 items from Kerschke-Risch's (2014) survey on food and nutrition. The items describe food frauds, including such cases as "an organic farmer uses fertilizer or spray that is forbidden" and "a merchant knowingly sells regular food as organic." The respondents addressed food fraud cases regarding the question "How do you personally judge the following behaviour?" on a 4-point Likert-type scale, from "1" (*not negative at all*) to "4" (*very negative*). Scale reliability was .80.

Food Safety Concerns: To examine participants' perceptions of food practices-related risks, we used 14 items from Kerschke-Risch's (2014) survey on food and nutrition. The scale describes food industry practices, including flavour enhancers, genetically engineered food, food containing colouring agents, etc. The respondents rated each practice by its potential dangerousness on a 5-point Likert-type scale, from "1" (*not dangerous at all*) to "5" (*very dangerous*). Scale reliability was .79.

Exposure to Foodborne Diseases (FBD): To explore exposure to FBD, we asked the participants whether they experienced one or more of the following symptoms (stomach pain/colic, diarrhoea, allergic reaction, vomiting, food poisoning, etc.) as a result of food consumption. The answers were: 0=no, 1=yes.

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Self-labelling as a Victim: The participants who answered that they experienced symptoms of FBD were asked whether they label themselves as a victim: "If you have experienced the above-listed outcomes, would you define yourself as a "victim"?" The responses to this question ranged from "1" (no, of course not) to "5" (yes, of course).

Procedure

The study is based on respondent self-reports through an online survey. The University Ethics committee provided ethical approval. The sample was a convenience sample, and the link to the online survey was distributed via social media outlets (e.g., Facebook, WhatsApp and email). The questionnaire stated that participation was anonymous and confidential and that the participants did not have to answer any question that made them uncomfortable and could stop answering at any point. All participants gave their informed consent to participate in this study. There were two versions of the questionnaire for participants from each country of origin: 1) German and 2) Hebrew.

Statistical Analyses

The statistical analyses were conducted using SPSS Version 25 and AMOS 17. SEM analysis was used to test the model. The data were normally distributed, and, therefore, we used the maximum-likelihood estimation (Schreiber et al. 2006). At first, we conducted a few post-priory analyses to explore the differences between the samples and identify background factors that may influence research variables. The demographic differences between German and Israeli samples were assessed through t-test and chi-square. Then, to examine the differences in food safety concerns and AFF by participant demographic characteristics, we conducted several t-tests and Pearson correlations. We also examined the association between exposure to foodborne disease symptoms and self-labelling as a victim using chi-square. For this analysis, we divided the sample into three groups: 1. Victims - Participants who defined

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themselves as victims, 2. Non-victims - Participants who did not define themselves as victims, 3. Undecided - Participants who answered "yes and no." However, there were no significant differences between "victims" and "undecided" in all research variables, and we re-coded the "yes and no" response as a positive response to the question of self-labelling as a victim and included these respondents within the "victims" group. Finally, based on the post-priory analyses, we decided to include in our model gender and exposure to poisoning and colic pains.

Results

Descriptive Findings – Post-priory Analyses

Demographic Characteristics and Country of Residence. The analysis indicated significant differences in age by country of residence [$t(137.74)=3.96$, *Cohen's d*=.47, $p=.001$]: Israeli participants were significantly younger [$Mean=29.96$, $S.D.=11.32$] than German participants [$Mean=36.49$, $S.D.=15.85$]. Also, there was a significant association between educational level (high school/ academic) and country of residence [$\chi^2(1)=39$, $p<.001$, *Cramer's v*=.29]. Among Israeli participants, academic education was more frequent (86%) than among German participants (57%). There was also a significant association between family status and country of residence [$\chi^2(2)=19.50$, $p<.001$, *Cramer's v*=.20]. About half (51%) were unmarried among Israeli participants, and 49% were married. Among German participants, only 39% were unmarried, and 61% were married. There was no significant association between the country of residence and religiosity [$\chi^2(2)=5.89$, $p=.05$, *Cramer's v*=.11] and gender [$\chi^2(1)=0.43$, $p=.51$, *Cramer's v*=.03].

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Table 1

Frequency of Foodborne Diseases (FBD) in German and Israeli Samples

FBD Symptoms		Germans n= 106	Israelis n= 363	Sample N=469	χ^2	Cramer's V
Colic pains	No	21.7%	16%	17.3%	1.89	.06
	Yes	78.3%	84%	82.7%		
		100%	100%	100%		
Diarrhea	No	12.3%	27.8%	24.3%	10.80**	.15**
	Yes	87.7%	72.2%	75.7%		
		100%	100%	100%		
Allergic Reaction	No	65.1%	90.6%	84.9%	41.65***	.29***
	Yes	24.9%	9.4%	15.1%		
		100%	100%	100%		
Vomiting	No	58.5%	67.8%	65.7%	3.13	.08
	Yes	41.5%	32.2%	34.3%		
		100%	100%	100%		
Poisoning	No	80.2%	88.4%	87.4%	4.79*	.10*
	Yes	19.8%	11.6%	12.6%		
		100%	100%	100%		

* $p < .05$, ** $p < .01$, *** $p < .001$

FBD Exposure, Country of Residence and Self-Labeling As a Victim. Table 1 shows that the most frequent symptoms were colic pains and the least frequent was poisoning. In the second place was diarrhoea, in the third vomiting, and fourth allergic reaction. Also, there is a significant association between the reports of some of the symptoms and the country of residence. German participants reported significantly more diarrhoea cases, allergic reactions and poisoning than Israeli participants, whereas there was no significant association between colic pains and vomiting and the country of residence. It appears that there is an overlap between the symptoms. Only 4.5% did not report any FBD symptoms, 22% reported one symptom, 34.8% two symptoms, 27.7% three symptoms, 10% four, and 1% experienced all five. The mean number of symptoms was 2.2 ($S.D.=1.06$, 0-5). As for the association between the number of FBD symptoms and self-labelling as a victim, the correlation was significant, positive, but weak [$r(469)=.11$, $p < .05$].

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Table 2

The Association between Self-Labeling As Victim and Experiences of Foodborne Diseases and National Culture

		Self-labeling -%		χ^2	Cramer's V
		Non-victim n= 149	Victim n= 320		
<i>FBD Symptoms</i>					
Colic pains	No (n=81)	42.0	58.0	4.70*	.10*
	Yes (n=388)	29.6	70.4		
Diarrhea	No (n=114)	35.1	64.9	0.77	.04
	Yes (n=355)	30.7	69.3		
Allergic Reaction	No (n=398)	31.9	68.1	0.02	.01
	Yes (n=71)	31.0	69.0		
Vomiting	No (n=308)	33.4	66.6	1.16	.05
	Yes (n=161)	28.6	71.4		
Poisoning	No (n=406)	33.7	66.3	5.43*	.11*
	Yes (n=63)	19.0	81.0		
<i>National Culture</i>					
	Germany (n=106)	48.1	51.9	16.88*	.19***
	Israel (n=363)	27.0	73.0		

* $p < .05$, *** $p < .001$

Table 2 indicates a significant association between self-labelling as a victim and colic pains and poisoning. Participants who reported colic pains and participants who reported poisoning labelled themselves as victims more frequently than those who did not experience colic pains and poisoning. Reports on diarrhoea symptoms, allergic reaction and vomiting were not significantly associated with self-labelling as a victim.

Demographic Characteristics, AFF and Food Safety Concerns. The mean score on AFF was 3.57 ($S.D.=0.36$, Range=2-4), the mean score on the food safety concerns scale was 3.89 ($S.D.=0.36$, Range=2.14-5), and the mean score on the self-labelling score as a victim was 1.97 ($S.D.=0.36$, Range=0-4). Thus, it seems that participants expressed relatively negative AFF and deep concern regarding food safety, as well as a middle level of self-labelling as a victim. Before examining the hypotheses, we explored whether the variables associated with the country of residence are also associated with AFF, food safety concerns and self-labelling as a

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victim. There was no significant correlation between age and AFF [$r(469)=.06, p=.22$], food safety concern [$r(469)=.04, p=.36$], and self-labeling as a victim [$r(469)=-.04, p=.35$]. There were no significant differences by family status in AFF [$t(466)=1.00, p=.32$], food safety concern [$t(466)=0.96, p=.34$], and self-labeling as a victim [$t(466)=0.33, p=.74$]. Also, there were no significant differences by educational level in AFF [$t(463)=-0.36, p=.72$], food safety concern [$t(463)=-0.93, p=.46$], and self-labeling as a victim [$t(463)=-1.18, p=.24$]. Thus, there was no need to control for these variables. We also explored gender differences. The results indicated that there were significant differences by gender in AFF [$t(167.20)=-3.51, p<.01$] and in food safety concern [$t(467)=-3.28, p<.01$], but not in self-labeling as a victim [$t(467)=-0.18, p=.86$]. Women expressed more negative AFF [$Mean=3.61, S.D.=0.33$] and higher concern about food safety [$Mean=3.94, S.D.=0.54$] than men [$Mean=3.46, S.D.=0.42, Mean=3.76, S.D.=0.54$; respectively].

Table 3

Correlations among the Study Variables

	1	2	3	4	5	6	7	8	9	10
1. AFF	1									
2. Food Safety Concern	.49***	1								
3. Self-labeling as Victim	.17***	.29***	1							
4. Country of Residence	.17***	.26***	.21***	1						
5. Gender	.18***	.15**	.01	.03	1					
6. Colic pains	.12*	-.03	.04	.06	.10*	1				
7. Poisoning	-.07	-.01	.13**	-.06	-.04	-.05	1			
8. Diarrhea	-.05	-.08	.04	.15**	.01	.28***	.05	1		
9. Allergic Reaction	-.03	-.03	.02	.29**	.01	.07	-.00	.12*	1	
10. Vomiting	.01	.07	.06	-.08	.09	.12*	.08	.21***	.15**	1

* $p<.05$, ** $p<.01$, *** $p<.001$

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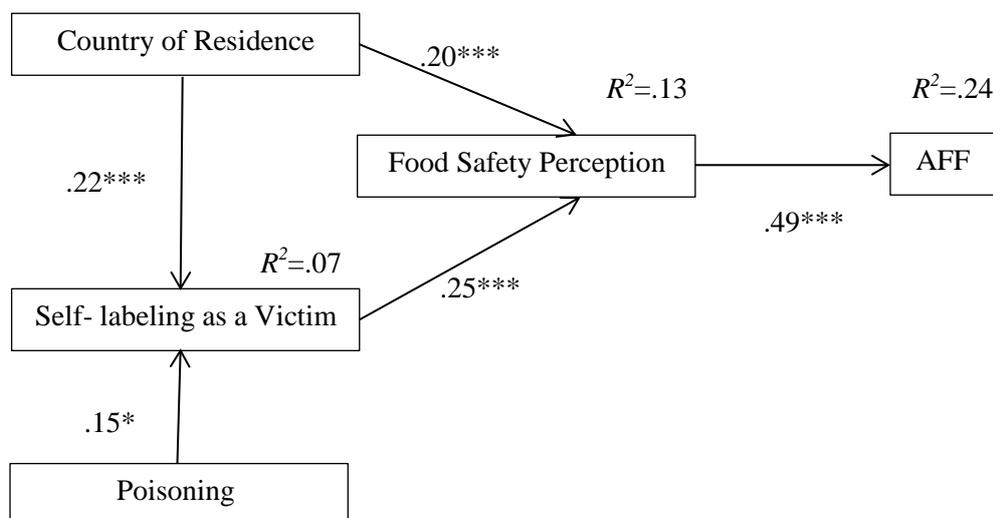
SEM for Prediction of AFF- Priory Analyses

Structural equation modelling (SEM) was used to test if the hypothesized model presented in Figure 1 was concordant with the collected data. The variable correlations are presented in Table 3, and it appears that the correlations among variables are consistent with the expectations.

Since gender was significantly associated with AFF and food safety concerns, we included it in the model. We also included the two symptoms related to self-labelling as a victim: colic pain and poisoning. This model was not a good fit [$\chi^2(14)=30.27, p=.01, \chi^2/df=2.16, NFI=0.88, CFI=.930, RMSEA=0.05$]. We excluded exposure to colic pains due to a nonsignificant association with self-labelling. The second model's indices appeared to fit the data better [$\chi^2(9)=15.48, p=.07, \chi^2/df=1.72, NFI=0.94, CFI=.97, RMSEA=0.04$], but the third model without gender was a significantly better fit [$\chi^2(5)=7.37, p=.20, \chi^2/df=1.47, NFI=0.97, CFI=.99, RMSEA=0.03$].

Figure 2

SEM for Prediction of AFF through Country of Residence, Self-labeling as a Victim, Food Safety Concern and Poisoning



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All the regressions and correlations in the last model were significant [Figure 2]. As predicted, the model presented a positive association between country of residence (0= Germany; 1= Israel) and self-labelling as a victim. Israeli participants labelled themselves as victims more than German participants. Also, participants who reported poisoning had a higher tendency to label themselves as a victim. The combination of self-labelling as a victim and country of origin accounts for 13% of food safety concern variance. Israeli respondents and those who defined themselves as victims reported deeper concern about food safety than German respondents and those who did not define themselves as victims. Additionally, food safety concern accounts for 24% of AFF variance. There is a strong and positive correlation between food safety concern and AFF, and the higher the perceived risk is, the more negative the AFF are.

Discussion

This study examined the association between country of residence, self-labelling as a victim, food safety concern, experiences of FBD and attitudes toward food fraud. Our findings indicate that people who experience FBD do not necessarily label themselves as victims, and only some of the FBDs are associated with self-labelling as victims. The country of residence and self-labelling as a victim positively predict food safety concerns, while food safety concerns account for the AFF.

One of the key findings in this study indicates a significant relationship between the country of residence and self-labelling as a victim. As we hypothesized, Israeli participants were more likely to label themselves as victims than German participants. These findings support the notion that self-labelling as a victim depends on a social context (Van Dijk 2020) and collective victimization on cultural identity (e.g., D. Bar-Tal and Salomon 2006; Halperin et al. 2008; Yurman 2008). Following the Holocaust, and due to multiple experiences of military conflicts, wars (Alexander et al., 2004; Lumsky-Feder, 1997), and a chronic state of terrorism (Cohen-

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Louck and Levy 2020), the narrative of victimization has become an integral part of Israeli culture (Yurman, 2008). Our findings imply that this cultural context is associated with self-labelling as a victim of food fraud since Israelis are more conditioned to identify themselves as victims. This is not the case with Germans, whose current culture is not built around victimization experiences (Hirschberger 2018).

Thus, this absence of a collective victimization narrative within German cultural identity may account for the fact that German participants were less prone to label themselves as victims despite reporting more FBDs than Israelis. Moreover, the weak association between the number of symptoms and self-labelling, as well as the absence of significant association between specific symptoms (e.g., colic pains, allergic reaction) and self-labelling, further support our suggestion that self-labelling as a victim is not associated with an objective exposure to FBD, but with subjective factors. This pattern corresponds with the findings regarding victims of severe crimes such as stalking and sexual assault (e.g., Baum et al. 2009; Wilson and Miller 2016), indicating that individuals who experienced victimization do not necessarily consider themselves as victims. Future studies should explore which additional cultural and personal factors may be associated with self-labelling as food fraud victims and whether national differences in the existence of collective victimization may account for differences in attitudes and perceptions regarding crimes other than food fraud.

Another set of intriguing findings indicates that country of residence and self-labelling as a victim predict food safety concerns linked to AFF. As we hypothesized, Israeli participants expressed deeper concern about food safety than German participants. These findings correspond with the notion that national culture is critical to understanding individual beliefs regarding food safety and food fraud (Nyarugwe et al. 2016). The findings also support our claim about the association of national uncertainty avoidance (de Mooij and Hofstede 2011; Hofstede Gert Jan 2015) and food safety concerns.

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The positive association between self-labelling and level of food safety concern also matches our hypotheses. It corresponds with prior findings on victims of stalking (Spitzberg 2017) and bullying (Dawn, Cowie, and Ananiadou 2003) that 'labellers' tend to identify and report more cases of victimization. These findings further support the significance of subjective perception instead of exposure and agree with the findings on the effects of exposure to negative and traumatic events such as terrorism. For example, according to (Shechory-Bitton 2013), a subjective sense of fear has a greater impact on the response to terrorism than exposure. As for future studies, an issue to consider may be personal factors that predict self-labelling as a food fraud victim and their association with food safety concerns.

Finally, our model indicates that higher food safety concern is associated with more negative AFF. This finding agrees with prior conclusions on the positive connection between high-risk perception of food technologies and low trust (Eiser, Miles, and Frewer 2002) and negative attitudes toward street food (Choi, Lee, and Ok 2013). Further research is needed to gain a deeper understanding of food safety concern's AFF nexus. Thus, contrary to prior studies that indicated that food safety concern is associated with gender and education (Adebowale and Kassim 2017; Liu and Ma 2016), our findings showed that food safety and AFF did not vary by educational level, with the model for prediction of AFF fitting the data much better when we excluded gender.

Limitations and Future Studies

This study is not without limitations. Firstly, since the data is based on a convenience snowball sampling in Israel and Germany, the samples are not representative and random. Such sampling limits the external validity of our findings. Future studies should map food safety concerns and AFF in representative and random samples. Secondly, our data is cross-sectional; therefore, further research is needed to understand the causal pathways between the country of residence, self-labelling as a victim, food safety concern, and AFF. Future studies may also

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include additional types of food fraud, such as additions, tampering, etc. Moreover, to expand on the association between cultural context and self-labelling as a victim and food safety concerns, future studies should explore our model in additional countries and cultural contexts.

Conclusions

In summary, this novel study shows that cultural context and self-labelling are linked to food safety concerns that are associated with attitudes toward food fraud. From the theoretical point of view, our study expands the knowledge on the relationship between cultural context and individual beliefs and perceptions. Our model implies that the cultural context of collective victimization is associated with individual self-labelling as a victim, and the national level of uncertainty avoidance is associated with high food safety concerns. Our research also provides further support to the saliency of subjective perception of victimization. As for the practical contribution, our study draws attention to the critical issue of food-related victimization and, therefore, may increase awareness of food fraud practices and promote commitment to further developing solutions that will minimize and prevent food fraud. These solutions should consider cultural context and the consumer tendency to acknowledge its own victimization.

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