FOOD-RELATED LIFESTYLE AND TRUST-IN-FOOD-SAFETY TYPOLOGY IN TAIWAN

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Abstract: Though previous studies have closely examined public perceptions of various types of food hazards as well as trust and risk communication issues, no adequate attention has been directed to understanding an individual's trust-in-food-safety typology in terms of reflexive–non-reflexive and trust–distrust praxis associated with food-related lifestyles (FRL) regarding the assessment, preparation, and actual consumption of food products. The aim of this study is to understand if people with different trust-in-food-safety typologies will have different food-related lifestyles so as to improve food risk management and communication practices. Some suggestions for the food policy makers and the marketers of the food industry are also provided here.

INTRODUCTION

In recent years, lifestyle factors have increasingly been taken into account in describing how consumers make food decisions (Senauer *et al*., 1991). Lifestyles describe how people seek to express their identity in many areas, including food selection. Brunsø and Grunert (1995; 1998) propose a food-related lifestyle definition, which is consistent with the means–end approach to consumer behavior (Olson & Reynolds, 1983) and with its hierarchical cognitive structure formulation (Grunert & Grunert, 1995). The food-related lifestyle instrument (FRL; Brunsø & Grunert, 1995; 1998; Grunert *et al*., 1997) consists of five distinguished components: ways of shopping, quality aspects, cooking methods, consumption situations, and purchasing motives. The construct validity of the food-related lifestyle dimensions has been cross-nationally tested to an extensive degree, indicating that the factorial structures are remarkably stable across cultures and over time (Scholderer *et al*., 2004). Since the food-related lifestyle can be seen as a means of using food to achieve personal life values (Brunsø *et al*., 2004a), the concept of the food-related lifestyle has been applied widely in food research with satisfactory results (e.g., Brunsø *et al*., 2004a; 2004b; Brunsø & Grunert, 1998; de Boer *et al*., 2004; Grunert & Ramus, 2005; Hoek *et al*., 2004; Kennedy *et al*., 2005; Kesic & Piri-Rajh, 2003; Nijmeijer *et al*., 2004; O'Sullivan *et al*., 2005; Scholderer *et al*., 2004; Shim & Lotz, 2001).

In the context of modern systems of industrial food production, consumers can no longer always judge for themselves if the food is safe to eat and have to place their trust in 'abstract systems' of regulations and in those who enforce them (Berg *et al*., 2005; Green *et al*., 2003; Shapiro, 1987). This 'abstract systems' concept is also described as 'structural' or 'system oriented' trust (Kjærnes & Dulsrud, 1998). Consumer concerns about food safety and health risks thus become a feature of modern industrial society (Adam, 1999). With the occurrence of a series of food safety incidents as well as the associated extensive media coverage of these incidents, public concerns about the safety of food are increasing (Frewer *et al*., 2002; Liu *et al*., 1998; Pennings *et al*., 2002; Verbeke, 2001; Verbeke & Viaene, 1999) and public trust in the government and regulatory institutions as well as farmers, manufacturers, and retailers is in decline (Frewer & Salter 2002). The level of public trust in such actors and institutions involved in the food supply chain may undermine the level of consumer confidence in the safety of food in general.

'Trust', however, is a diffuse and complex concept to measure. Previous studies have indicated that the consumer's perceptions of food-related hazards and new food technologies are often grounded on his or her emotions such as worry, concern, and fear (Barnett & Breakwell, 2001; Baron *et al*., 2000; Laros & Steenkamp, 2004; Setbon *et al*., 2005). Food events like the dioxine scandal and mad cow disease represent bad experiences at the societal level which are expected to generate reflected worries and affect consumers' trust in food safety (Beck, 1992). Thus, trust can be conceptualized as being a combination of rational thinking (cognitive process) and feelings, instinct, and intuition (affective influences), and is often dependent on past experience (Lewis & Weigert, 1985). A simpler but broader definition of trust can be seen as ''the extent to which one believes that others will not act to exploit one's vulnerabilities'' (Morrow *et al*., 2004).

Individuals differ in the extent to which they are concerned about food-related hazards (Dosman *et al*., 2001; Verbeke & Van Kenhove, 2002; Williams & Hammitt, 2001) and food safety in general (de Jonge *et al*., 2004; Miles *et al*., 2004). Some individuals

can have a naïve, unconscious, and blind trust in food, while others can base their trust in food on conscious and reflexive praxis, taking special precautions in order to ensure that the food they consume is fit to eat. Berg (2004) employs two dimensions (i.e., reflexive–non-reflexive and trust–distrust) to differentiate between different orientations towards food safety among consumers in the food system. By these two dimensions are diagrammed, they form four types of consumer trust: 'sensible (reflexive trust) consumers', 'skeptical (reflexive distrust) consumers', 'naïve (non-reflexive trust) consumers', and 'denying (repressed distrust) consumers'.

While there is a body of research that examines public perceptions of various types of food hazards as well as trust and risk communication issues (Eiser *et al*., 2002; Fife-Schaw & Rowe, 1996; Frewer *et al*., 2003; Hunt & Frewer, 2001; Miles & Frewer, 2001; Slovic *et al*., 1980), much less attention has been directed to understanding an individual's trust-in-food-safety typology in terms of reflexive–non-reflexive and trust–distrust praxis associated with food-related lifestyles. The overall aim of this study is to understand if people with different trust-in-food-safety typologies will have different food-related lifestyles. Insights into a consumer's trust typology in food safety and his/her food-related lifestyle can improve food risk management and communication practices.

FOOD-RELATED LIFESTYLE AND TRUST-IN-FOOD-SAFETY TYPOLOGY

CONSUMER'S FOOD-RELATED LIFESTYLE

The lifestyle construct is first introduced by Lazer (1964) and is mainly measured by ''activities, interests, and opinions'' items (AIO; Wells & Tigert, 1971) to describe how consumer segments differ from one another. But it has been argued that people's lifestyles need not be consistent across different life domains; lifestyles should therefore be restricted to certain life domains such as food (van Raaij & Verhallen, 1994). Brunsø and Grunert (1995; 1998) have proposed the concept of a domain-specific lifestyle, the food-related lifestyle, which clearly breaks with the AIO tradition. The framework of Brunsø and Grunert (1995; 1998) is consistent with the means-end approach to consumer behavior (Olson & Reynolds, 1983), especially with its hierarchical cognitive structure formulation (Grunert & Grunert, 1995; Gutman, 1982). Brunsø and Grunert (1995, 1998) have further developed a survey instrument to measure the food-related lifestyle (FRL). This 69-item questionnaire measures 23 lifestyle dimensions which fall under the following five domains that involve the assessment, preparation, and actual consumption of food products.

1. Ways of shopping. How do people shop for food products? Is their decision making characterized by impulse buying or by extensive deliberation? Do they read labels and other product information, or do they rely on the advice of experts, like friends or sales personnel? How do they do their shopping--one-stop shopping versus specialty food shops?
2. Importance of quality aspects. This refers not to concrete attributes of individual products but to attributes that may apply to food products in general such as health, nature, freshness, and taste.
3. Cooking methods. How are the purchased products transformed into meals? How much time is used for preparation? Is preparation characterized by efficiency or by indulgence? Is it a social activity, or is it characterized by family division of labor? To what extent is it planned or spontaneous?
4. Consumption situations. How are meals spread over the day? How important is eating out?
5. Purchasing motives. What is expected from a meal, and what is the relative importance of these various consequences? How important are social aspects, hedonism, tradition, and security?

Among the five food-related lifestyle domains described, the ways of shopping, cooking methods, and consumption situations domains measure individual differences in the habitual use of scripts and skills. The importance of quality aspects domain measures a generalized schema for the evaluation of product attributes. The purchasing motives domain measures individual differences in the importance attached to food-specific instantiations of personal values.

CONSUMER'S TRUST IN FOOD SAFETY AND TYPOLOGY

Elster (1989) describes trust as a social lubricant, "without which the wheels of society would soon come to a standstill." Trust can be described as relying on those with responsibility for managing public health and safety (Siegrist *et al*., 2000). Moreover, it has been suggested that conferring trust onto actors in the food supply chain, such as farmers, retailers, and manufacturers of food products, as well as regulatory institutions responsible for the management of hazards, might help consumers to compensate for their lack of knowledge about the cultivation and production process of foods (Siegrist & Cvetkovich, 2000; Van Kleef *et al*., 2006). Beck (1992) contends that distrust is related to uncertainty, risk, and fear. Previous research has indicated that trust in institutions and the food industry is negatively related to perceived risks regarding food safety hazards (Saba & Messina, 2003; Siegrist *et al*., 2000; Williams & Hammitt, 2001).

Just like the distribution of trusting and distrusting members will be a distinguishing feature of a society, the level of trust and distrust felt by an individual is crucial for his/her satisfaction and well-being. Some never think of health risks connected to food consumption, while others are quite worried and take a lot of precautions in order not to eat unhealthy foods. Such differences can partly be explained by different individual attributes (e.g., gender and education level) and praxis (e.g., food provision responsibility) as well as common reference frames shared by a region or nation (e.g., food events) (Berg, 2000; Fagerli & Wandel, 1999; Finucane *et al*., 2000a; Finucane *et al*., 2000b; Slovic, 2000a,b: 397). Other research has shown that safety is only one of a number of considerations in decision-making around food, with additional factors including pleasure, convenience, and health (Green *et al*., 2003). Holm and Kildevang (1996) highlight the fact that food choices are not always a reflection of preferences, the practical compromises have to be made if consumers lack time and money. Moreover, people's understandings and practices related to food, health, and safety are always balanced against the other criteria such as habit, practicality, and identity (Macintyre *et al*., 1998). Berg (2004) employs two dimensions (i.e., trust–distrust and reflexive–non-reflexive) to point out various orientations towards food safety among consumers. By crisscrossing the two dimensions of reflexive–non-reflexive and trust–distrust, four main consumers' trust typologies are obtained as follows:

1. Sensible consumers (reflexive trust): those who endeavor to choose healthy foods for their everyday diets so they can feel confident that the foods they eat are not harmful to themselves or their families.
2. Skeptical consumers (reflexive distrust): those who are concerned about choosing healthy foods for their everyday diets but are still fearful that the foods they eat can be harmful to themselves and their families.
3. Naïve consumers (non-reflexive trust): those who are not concerned about choosing healthy foods for their everyday diets but are still confident that the foods they eat are not harmful to themselves or their families.
4. Denying consumers (repressed distrust): those who fear that the foods they eat are harmful to themselves and their families but nevertheless do not endeavor to choose healthy foods for themselves or their families.

In a normative interpretation of the two praxes reflexive--non-reflexive and trust--distrust, it is more comfortable to be trusting than distrusting, and being reflexive is a more independent and mature position to hold than being non-reflexive (Berg, 2004).

METHODOLOGY

Data Collections and Sample

The primary data were collected in Taiwan by means of a national self-administered consumer questionnaire survey in 2008. To ensure the representativeness of the national-wide surveyed sample, a stratified sampling based on the administrative area classification (there are four regions and 22 counties (cities) in Taiwan Island) was conducted. The sampling unit was the household and the questionnaire was rated by the respondents who were bearing the main responsibility of food purchases and cooking. General socio-demographics (e.g., gender, age category, marriage, and education levels) were also collected. Of a total of 1500 questionnaires sent out, 592 were found useful for this empirical analysis after excluding incomplete responses. The successful response rate was 39.5%. There was a large prevalence of female subjects (65.5%) and an overall dominance of married respondents (78.9%). The age range of 20 to 29 constituted the minority (13.7%), but that of 40 to 49 made up the majority (32.4%). Across the overall sample, most people (74.8%) completed senior high school education. The sample profile regarding the total respondents is described in Table 1.

Table 1. Sample profile of the respondents

Demographics	Item	Total (*n*=592)	Denying (*n*=271)	Naive (*n*=51)	Skeptical (*n*=120)	Sensible (*n*=150)
Gender	Male	204	104	16	34	50
	Female	388	167	35	86	100
Age	20-29	81	43	9	16	13
	30-39	149	82	8	28	31
	40-49	192	84	15	39	54
	50+	170	62	19	37	52
Marriage	Single	125	65	11	23	26
	Married	467	206	40	97	124
Education Level	Elementary School	62	31	4	12	15
	Junior High School	87	33	11	18	25
	Senior High School	189	89	16	40	44

Junior College	139	67	5	28	39
University	100	43	12	20	25
Graduate School	15	8	3	2	2

Measures

The FRL instrument (Brunsø and Grunert, 1995; 1998) is a 69-item questionnaire measuring 23 lifestyle dimensions in five major domains, including ways of shopping (six subscales), importance of quality aspects (six subscales), cooking methods (six subscales), consumption situations (two subscales), and purchasing motives (three subscales). Each of these 23 subscales consists of three items. All items were measured on a seven-point Likert scale ranging from (1) 'completely disagree' to (7) 'completely agree'. The score on a subscale was the sum of the scores on three individual items belonging to that subscale (scores on a dimension therefore ranged from 3 to 21). By the same token, the score on a dimension was the sum of the scores on the subscales falling under that dimension. The detailed items of the food-related lifestyle instrument were shown in the Appendix.

Consumers' trust typology is segmented based on two reported praxes proposed by Berg (2004) in an attempt to understand if different consumer trust typologies have different food-related lifestyles, including (1) whether the praxis related to food is reflected or not (reflexive--non-reflexive); (2) whether an expressed feeling of trust/distrust is related to food consumption (trust--distrust). Both of the two reported praxes were measured in a rather neutral and broad way. The reflexivity was measured by questioning whether the praxis related to food is influenced by reflections on health. The question was posed as: To what extent do you choose foods that you consider to be healthy in your everyday diet? The trust was measured by the consumer's feeling of confidence related to food, which refers to the food purchase situation and not the eating situation. The question was posed as: To what extent are you confident that the foods you buy are not harmful to yourself or your family? By crisscrossing the reflexive–non-reflexive and trust–distrust dimensions, four main consumer trust typologies can be obtained (Berg, 2004). In this study, the consumer's trust in food typology is classified by the medians of the two reported praxes, reflexive--non-reflexive and trust--distrust ($Median_{\text{Reflexivee}}$ =5; $Median_{\text{Trust}}$ =5). The sample profiles of each trust-in-food-safety typology are described in Table 1.

DATA ANALYSIS RESULTS

Reliability can reflect the internal consistency of the indicators measuring a given factor or construct. Thus, the reliability of the measurement scales including all of the food-related lifestyle dimensions and sub-dimensions adopted in this study should be verified first. The general requirement of reliability for the research instrument should exceed 0.7 (Cronbach, 1951). After deleting seven items in the original food-related lifestyle instrument including six reverse items (indicated in the Appendix), most of the food-related lifestyle dimensions and sub-dimensions achieve a satisfactory reliability level in the same research field (e.g., Hoek *et al*., 2004). The Cronbach's alpha values of all dimensions and subscales are shown in Table 2.

Table 2. Descriptive statistics and overall reliability of the constructs

Construct and Indicators	Mean	S.D.	Cronbach's α
Ways of Shopping			**0.73**
Importance of product information	5.65	1.03	0.80
Attitudes to advertising	4.99	1.19	0.77
Enjoyment from shopping	4.26	1.30	0.59
Specialty shops	5.02	1.07	0.58
Price criteria	5.25	1.04	0.74
Shopping list	5.19	1.18	0.79
Quality Aspects			**0.74**
Health	5.67	1.02	0.81
Price/quality relation	5.58	0.99	0.76
Novelty	4.57	1.12	0.67
Organic products	5.30	1.00	0.75
Taste	5.27	1.09	0.77
Freshness	5.93	0.92	0.80
Cooking Methods			**0.53**
Interest in cooking	3.30	1.31	0.74
Looking for new ways	5.15	1.03	0.81
Convenience	4.03	1.44	0.83

Whole family	4.88	1.15	0.76
Planning	4.60	1.23	0.57
Woman's task	4.06	1.63	0.72
Consumption Situation			**0.77**
Snacks versus meals	4.25	1.43	0.82
Social event	4.52	1.17	0.74
Purchasing Motives			**0.66**
Self-fulfillment in food	5.02	0.98	0.58
Security	4.88	1.08	0.74
Social relationships	5.32	0.96	0.67

One-way ANOVAs, followed by a Tukey's multiple comparisons test, were first performed on the five major food-related lifestyle domains to investigate whether or not consumers who are classified under different trust-in-food-safety typologies have different food-related lifestyles in those five major food-related lifestyle domains. Table 3 shows the mean scores and standard deviations for the five major food-related lifestyle domains across the four types of respondents who are classified under different trust-in-food-safety typologies. The same superscripts in the same row indicate that mean difference between each pair-wise comparison is significant at the 0.05 level by Tukey's HSD test (*T*-test). The results shown in Table 3 reveal that the respondents who are classified under different trust-in-food-safety typologies indeed have divergent food-related lifestyles in these five major food-related lifestyle domains except for the consumption situations domain. The results further indicate that Denying respondents obtain the lowest scores in relation to ways of shopping, importance of quality, cooking methods, and purchasing motives. Moreover, compared with those of the three other types of respondents, the Sensible, the Skeptical, and the Naïve, the mean scores of Denying respondents are significantly lower in ways of shopping, importance of quality, and purchasing motives. In the aspect of cooking methods, the mean scores of Denying respondents are significantly lower than Naïve and Sensible respondents. But the lifestyle expressed in consumption situations regarding snacks versus meals and social events are quite similar among these four types of respondents.

Table 3. ANOVA tests of the FRL dimensions among four types of consumer who have different degrees of trust in food safety

FRL Dimensions	**Denying** (*n*=271)		**Naïve** (*n*=51)		**Skeptical** (*n*=120)		**Sensible** (*n*=150)		***F-Value***	***Pr>F***
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.		
Ways of Shopping	4.89^{abc}	0.71	5.16^{c}	0.77	5.18^{b}	0.68	5.24^{a}	0.74	9.46	<.0001
Importance of product information	5.37^{abc}	1.02	5.72^{c}	1.18	5.81^{b}	0.95	6.01^{a}	0.91	14.59	<.0001
Attitudes to advertising	4.96	1.10	4.98	1.24	4.93	1.34	5.08	1.19	0.44	0.7243
Enjoyment from shopping	4.23	1.18	4.51	1.42	4.19	1.33	4.29	1.43	0.82	0.4847
Specialty shops	4.79^{abc}	1.04	5.15^{c}	1.06	5.27^{a}	1.02	5.20^{b}	1.10	8.34	<.0001
Price criteria	5.08^{ab}	1.00	5.30	0.94	5.43^{a}	1.12	5.40^{b}	1.02	4.81	0.0026
Shopping list	4.92^{abc}	1.19	5.27^{c}	1.14	5.43^{b}	1.09	5.47^{a}	1.14	9.61	<.0001
Importance of Quality Aspects	5.22^{abc}	0.67	5.45^{c}	0.68	5.58^{a}	0.55	5.52^{b}	0.69	11.33	<.0001
Health	5.45^{bc}	1.04	5.61^{a}	0.95	6.00^{ab}	0.93	5.83^{c}	0.97	10.44	<.0001
Price/quality relation	5.42^{ab}	0.99	5.69	0.97	5.82^{a}	0.87	5.64^{b}	1.06	5.10	0.0017
Novelty	4.48^{a}	1.07	4.80	1.10	4.49	1.15	4.73^{a}	1.18	2.54	0.0553
Organic products	5.03^{bd}	1.02	5.20^{ac}	1.02	5.66^{ab}	0.79	5.52^{cd}	0.97	15.34	<.0001
Taste	5.17	0.99	5.48	1.13	5.32	1.14	5.35	1.20	1.76	0.1544
Freshness	5.78^{ab}	0.98	5.91	1.08	6.17^{a}	0.74	6.03^{b}	0.83	5.92	0.0006
Cooking Methods	4.23^{bd}	0.68	4.56^{ab}	0.66	4.25^{ac}	0.71	4.53^{cd}	0.71	8.42	<.0001
Interest in cooking	3.27	1.16	3.36	1.56	3.23	1.25	3.37	1.51	0.36	0.7825
Looking for new ways	4.94^{acd}	0.99	5.42^{a}	0.94	5.16^{bd}	1.02	5.41^{bc}	1.05	8.64	<.0001
Convenience	4.06	1.33	4.19	1.42	3.81	1.53	4.11	1.57	1.34	0.2611
Whole family	4.67^{abc}	1.10	5.12^{b}	0.99	4.92^{c}	1.26	5.14^{a}	1.15	6.59	0.0002
Planning	4.44^{b}	1.18	4.71	1.20	4.52^{a}	1.26	4.91^{ab}	1.25	5.16	0.0016

Woman's task	3.98[a]	1.51	4.55[ab]	1.54	3.85[b]	1.71	4.20	1.75	2.86	0.0361
Consumption Situations	4.37	1.04	4.57	1.26	4.27	1.25	4.44	1.28	0.97	0.4054
Snacks versus meals	4.23	1.24	4.46	1.49	4.17	1.58	4.30	1.58	0.57	0.6362
Social event	4.52	1.06	4.69	1.32	4.36	1.26	4.58	1.22	1.2	0.3091
Purchasing Motives	4.91[abc]	0.77	5.28[a]	0.74	5.11[c]	0.73	5.26[b]	0.77	8.36	<.0001
Self-fulfillment in food	4.83[bd]	0.93	5.33[ab]	0.99	4.97[ac]	1.01	5.30[cd]	0.98	9.55	<.0001
Security	4.79	1.01	5.01	1.17	4.91	1.16	4.97	1.09	1.34	0.2620
Social relationships	5.12[abc]	0.97	5.49[b]	0.97	5.46[c]	0.88	5.51[a]	0.94	7.59	<.0001

Note: The same superscripts in the same row indicate that the mean difference between each pair-wise comparison is significant at the 0.05 level by Tukey's HSD test (*T*-test).

In order to have a better understanding of the sub-dimensions composed of the divergent food-related lifestyles among the four types of respondents who have different degrees of trust in food safety (i.e., ways of shopping, importance of quality, cooking methods, and purchasing motives); one-way ANOVAs, followed by a Tukey's multiple comparisons test, were further performed on the sub-dimensions of the above-mentioned divergent food-related lifestyles. With regard to ways of shopping, Table 3 shows that the mean scores of the six sub-dimensions differ except for attitudes toward advertising and enjoyment from shopping among the four types of respondents who have different degrees of trust in food safety. In other words, there are no differences among these four types when the lifestyle is expressed in their attitudes toward advertising and enjoyment from shopping. Denying respondents obtain the lowest scores in relation to the following four sub-dimensions: importance of product information, specialty shops, price criteria, and shopping lists. Sensible respondents show the highest level of interest in the importance of product information and the shopping list but Skeptical respondents show the highest level of interest in specialty shops and price criteria.

As for the importance of quality aspects, Table 3 shows that the mean scores of the six sub-dimensions differ except for taste among the four types of respondents who have different degrees of trust in food safety. In other words, the importance of taste is true for all of the respondents. Skeptical respondents obtain the highest scores in the following four sub-dimensions: health, price/quality relation, organic products, and freshness. Denying respondents obtain the lowest scores in all six sub-dimensions subsumed under the domain of the importance of quality aspects.

In regard to cooking methods, Table 3 shows that the mean scores of the six sub-dimensions differ except for interest in cooking and convenience among the four types of respondents who have different degrees of trust in food safety. This means that interest in cooking and convenience are true for these four different types of respondents. Sensible respondents have the highest scores in whole family and planning, but Naïve respondents have the highest scores in looking for new ways and woman's task. Denying respondents obtain the lowest scores in the following three sub-dimensions: looking for new ways, whole family, and planning. Skeptical respondents obtain the lowest scores in woman's task.

As regards purchasing motives, Table 3 shows that the mean scores of the three sub-dimensions differ except for security among the four types of respondents who have different degrees of trust in food safety. This means that the importance of security is true for these four different types of respondents. Naïve respondents have the highest scores in self-fulfillment in food and Sensible respondents have the highest scores in social relationships. By contrast, Denying respondents obtain the lowest scores in both self-fulfillment in food and social relationships.

DISCUSSIONS AND CONCLUSIONS

As expected, the results of the present study indicate that each trust-in-food-safety typology indeed has different food-related lifestyles in this Taiwan's case. Generally speaking, the mean scores difference tests by means of ANOVAs results reveal that there are in total four major food-related lifestyle domains and 15 sub-dimensions that achieve statistical significance at the 0.05 level among the subjects. Denying respondents constituted the majority of the sample (n=271) and always obtained the lowest scores in both the major domains and the subscales of FRL scale except for the sub-dimension of woman's task. This kind of consumers is really worried about food-related issues and even troubled by inner anxieties; however, they opt for the denying strategy to escape their own insecurity and fear. That is why in most of the food-related lifestyle major dimensions and sub-dimensions they obtained the lowest scores in the self-reported survey questionnaire. In other words, this kind of consumer conduct their praxis as if they have trust in food safety but in fact have their worry deep in their hearts. From both society's and the individual's points of view, it is undesirable to be classified as

Denying consumers because they have repressed distrust in the food supply system (Berg, 2004). Though their praxis may look trustful by appearance, they have inner anxiety. Obviously, there is no congruence between the praxis and the actual negative understanding of the food situation. They may fear that the foods they eat are harmful to themselves and their families, but they nevertheless do not endeavor to choose healthy foods for themselves or their families. Unfortunately, Denying respondents constituted the majority of the sample (n=271) under study. Therefore, it is an important task for the actors and the institutions involved in the food supply system to have good communication with these Denying consumers so that they will have real confidence in food safety rather than just continue spurious trust praxis.

Naïve respondents, who constituted the minority of the sample (n=51), obtained the highest scores not only for woman's task but also for looking for new ways and self-fulfillment in food. In other words, Naïve respondents not only recognize that cooking is woman's task but also enjoy looking for new ways and feel self-fulfillment in food. Naïve respondents basically do not think too much about whether or not the foods are safe to eat. Having a quite optimistic attitude toward food safety, they do not think they have to take any precautions in food safety matters. They conduct their praxis in a very trustful manner. They even like to try new recipes, prepare unusual meals, and experiment with some other culinary traditions. Moreover, they think good cooking can raise their self-esteem and treat eating just like a sensational journey. Furthermore, most of the Naïve respondents also recognize that cooking is a woman's task, this may be due to a high proportion of female respondents 67% (=35/51). From an individual's point of view, it might be more pleasant to be a naïve consumer, who leaves the worries and food safety work to others. However, once the optimistic consumers lose their trust it is the most difficult to re-establish it (Berg, 2004). Therefore, the actors and institutions involved in the food supply system should make efforts to let Naïve consumers retain their good faith in the food supply system. As a result, they can always live a life without too much concern about how to choose healthy foods for their everyday diets but still have confidence that the foods they eat are not harmful to themselves or their families.

Skeptical respondents (n=120) obtain the highest scores for specialty shops, price criteria, health, price/quality relation, organic products, and freshness but the lowest score for woman's task. In other words, theses respondents do express high interests in certain sub-dimensions of the food-related lifestyle but do not recognize that cooking is woman's task. Skeptical respondents basically hold a skeptical attitude toward food safety. To ensure the foods are safe to eat, they will be more cautious and vigilant than ordinary people. In conducting their praxis, they always keep a watchful eye. That is why they show more interest in specialty shops and organic products, and always check price and emphasize health, freshness, and price/quality relations. But Skeptical respondents do not believe that the kitchen is the woman's domain, nor do they think that it is the woman's responsibility to keep the family healthy by serving a nutritious diet. However, from the perspective of the community as a whole, Skeptical consumers serve as watchdogs of the actors and institutions involved in the food supply system. They are concerned about choosing healthy foods for their daily diets, but they are still apprehensive that the foods they eat can be harmful to themselves and their families (Berg, 2004). Skeptical consumers think they live in such a risky society that they often hold a skeptical attitude toward the food supply system and are always on the alert. The existence of such consumers is really a blessing to the whole community because they are just like the guardians of the food supply system. They not only enhance food safety but also help prevent the deterioration of food safety.

Sensible respondents (n=150) obtain the highest scores for importance of product information, shopping list, whole family, planning, and social relationships. In other words, Sensible respondents express high interest in the above-mentioned sub-dimensions of the food-related lifestyle. Sensible respondents hold precautious and sensible attitudes to make sure that the foods are safe to eat. They repeatedly seek and choose the most beneficial option to feel safe and secure. They conduct their praxis in a precautionary manner. That is why they think product information is very important to them to help food purchase decision making. Moreover, since dining with friends is an important part of social life and cooking needs to be planned in advance, they often have a shopping list for food purchase. Furthermore, they hope family members could help in the kitchen. From a food-policy point of view, the more sensible consumers the better. These sensible consumers have developed simple and often routine-like food safety strategies and precautionary measures to reduce the complexity of choices in modern life (Berg, 2004). With the precautious and sensible praxis, they are eager to choose healthy foods for their daily diets and they also have confidence in the foods they eat are not harmful to themselves or their families. Therefore, the food policy makers should observe Sensible consumers closely because their trust in food safety will become an indicator and their reflexive praxis often has substantial influences on other people.

It is also worth noticing that whatever trust-in-food-safety typology that consumers belong to, their food-related lifestyle in the main domain of consumption situations are quite similar, meaning that their snacks or normal meals and social events make no difference among these four types of consumers despite their different degrees of trust in food safety. Moreover, their attitudes toward advertising, their enjoyment from shopping, and their interests in cooking are similar. This implies that for all their different degrees of trust in food safety, they will have more confidence in food products if these products have seen advertised and they believe that information from advertising helps them to make better buying decisions. So advertising might be a good vehicle for the marketers of the food-related industry to inspire consumers' confidence in foods. The shopping atmosphere and physical environment may also increase consumers' enjoyment from shopping. Furthermore, taste, convenience, and security are all important among these four types

of consumers despite their different degrees of trust in food safety. In other words, the importance of these sub-dimensions of the food-related lifestyle makes no difference among these types of consumers. But this does not mean that these sub-dimensions of the food-related lifestyle are not important to consumers' trust in food safety. On the contrary, it is from different perspectives that these four types of consumers with different degrees of trust in food safety emphasize and attach the same weight to the taste of foods, the convenience of cooking methods, and the security of purchasing motives. Based on the findings, the marketers of the food-related industry should make efforts to enhance the taste and strengthen the security of foods as well as provide convenience for cooking to adapt to consumers' food-related lifestyle.

Though the concept and the instrument of the food-related lifestyle have been applied widely to food research with impressive results, this study, to the best knowledge of this researcher, represents one of the first attempts to administer the food-related lifestyle instrument in Taiwan's culture setting. This study also contributes to a better understanding of consumers' trust in food safety by associating it with their food-related lifestyles. The empirical results and findings from this study are helpful for the food policy makers and the marketers of the food-related industry in making effective communication by relating different typologies of trust in food safety to consumers' different food-related lifestyles.

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APPENDIX

Dimensions	Items
Ways of Shopping	
Importance of product information	To me product information is of high importance. I need to know what the product contains.
	I compare labels to select the most nutritious food.
	I compare product information labels to decide which brand to buy.
Attitudes to advertising	I have more confidence in food products that I have seen advertised than in unadvertised products.
	I am influenced by what people say about a food product.
	Information from advertising helps me to make better buying decisions.
Enjoyment from shopping	**Shopping for food does not interest me at all.** ***(R)***
	I just love shopping for food.
	Shopping for food is like a game to me.
Specialty shops	**I do not see any reason to shop in specialty food stores.** ***(R)***
	I like buying food products in specialty stores where I can get expert advice.
	I like to know what I am buying, so I often ask questions in stores where I shop for food.
Price criteria	I always check prices, even on small items.
	I notice when products I buy regularly change in price.
	I look for ads in the newspaper for store specials and plan to take advantage of them when I go shopping.
Shopping list	Before I go shopping for food, I make a list of everything I need.
	I make a shopping list to guide my food purchases.
	Usually I do not decide what to buy until I am in the shop. ***(R)***
Quality Aspects	
Health	I prefer to buy natural products, i.e., products without preservatives.
	To me the naturalness of the food that I buy is an important quality.
	I try to avoid food products with additives.
Price/quality relation	I always try to get the best quality for the best price.
	I compare prices between product variants in order to get the best value for money.
	It is important for me to know that I get quality for all my money.
Novelty	I love to try recipes from foreign countries.
	I like to try new foods that I have never tasted before.
	Well-known recipes are indeed the best.
Organic products	I always buy organically grown food products if I have the opportunity.
	I make a point of using natural or ecological food products.
	I don't mind paying a premium for ecological products.

Taste	I find taste in food products important.
	When cooking, I first and foremost consider the taste.
	It is important to choose food products for their nutritional value rather than for their taste. *(R)*
Freshness	I prefer fresh products to canned or frozen products.
	It is important to me that food products are fresh.
	I prefer to buy meat and vegetables fresh rather than pre-packed.
Cooking Methods	
Interest in cooking	**I like to have ample time in the kitchen.**
	Cooking is a task that is best over and done with. ***(R)***
	I don't like spending too much time on cooking. ***(R)***
Looking for new ways	I like to try out new recipes.
	I look for ways to prepare unusual meals.
	Recipes and articles on food from other culinary traditions make me experiment in the kitchen.
Convenience	Frozen foods account for a large part of the food products I use in our household.
	We use a lot of ready-to-eat foods in our household.
	I use a lot of mixes, for instance baking mixes and powder soups.
Whole family	The kids or other members of the family always help in the kitchen; for example they peel the potatoes and cut the vegetables.
	My family helps with other mealtime chores, such as setting the table and doing the dishes.
	When I do not feel like cooking, I can get one of the other members of my family to do it.
Planning	**What we are going to have for supper is often a last-minute decision. *(R)***
	Cooking needs to be planned in advance.
	I always plan what we are going to eat a couple of days in advance.
Woman's task	I consider the kitchen to be the woman's domain.
	It is the woman's responsibility to keep the family healthy by serving a nutritious diet.
	Nowadays the responsibility for shopping and cooking ought to lie just as much with the husband as with the wife. *(R)*
Consumption Situation	
Snacks versus meals	I eat before I get hungry, which means that I am never hungry at meal time.
	I eat whenever I feel the slightest bit hungry.
	In our house, nibbling has taken over and replaced set eating hours.
Social event	Going out for dinner is a regular part of our eating habits.
	We often get together with friends to enjoy an easy-to-cook, casual dinner.
	I enjoy going to restaurants with my family and friends.
Purchasing Motives	
Self-fulfillment in food	Being praised for my cooking adds a lot to my self-esteem.
	Eating is to me a matter of touching, smelling, tasting and seeing, all the senses are involved. It is a very exciting sensation.
	I am an excellent cook.
Security	I dislike anything that might change my eating habits.
	I only buy and eat foods which are familiar to me.
	A familiar dish gives me a sense of security.
Social relationships	Dining with friends is an important part of my social life.
	When I serve a dinner to friends, the most important thing is that we are together.
	Over a meal one may have a lovely chat.
Reflexive/Non-reflexive	To what extent do you choose foods that you consider to be healthy in your everyday diet?
Trust/Distrust	To what extent are you confident that the foods you buy are not harmful for yourself or your family?

*Note: **(R)** denotes items requiring reverse scoring.*

Note: The bold items are deleted in the subsequent analysis.

REFERENCES

Adam, B. (1999). Industrial food for thought: Timescapes of risk. *Environmental Values*, 8, 219-238.

Barnett, J., & Breakwell, G. M. (2001). Risk perception and experience: Hazard personality profiles and individual differences. *Risk Analysis*, 21, 171-177.

Baron, J., Hershey, J. C., & Kunreuther, H. (2000). Determinants of priority for risk reduction: The role of worry. *Risk Analysis*, 20, 413-427.

Beck, U. (1992). *Risk Society: Towards A New Modernity*. Translated by Mark Ritter. London: Sage Publications.

Berg, L. (2000). Trust in food in Europe—focus on consumer trust in Norway, England and Belgium. Working paper No. 15. Oslo: Sifo.

Berg, L. (2004). Trust in food in the age of mad cow disease: A comparative study of consumers' evaluation of food safety in Belgium, Britain and Norway. *Appetite*, 42, 21-32.

Berg, L., Kjaernes, U., Ganskau, E., Minina, V., Voltchkova, L., Halkier, B., & Holm, L. (2005). Trust in food safety in Russia, Denmark and Norway. *European Societies*, 7, 103-129.

Brunsø, K., & Grunert, K. G. (1995). Development and testing of a cross-culturally valid instrument: Food-related lifestyle. *Advances in Consumer Research*, 22, 475-480.

Brunsø, K., & Grunert, K. G. (1998). Cross-cultural similarities and differences in shopping for food. *Journal of Business Research*, 42, 145-150.

Brunsø, K., Scholderer, J., & Grunert, K. G. (2004a). Closing the gap between values and behavior: A means-end theory of lifestyle. *Journal of Business Research*, 57, 665-670.

Brunsø, K., Scholderer, J., & Grunert, K. G. (2004b). Testing relationships between values and food-related lifestyle: results from two European countries. *Appetite*, 43, 195-205.

de Jonge, J., Frewer, L., van Trijp, H., Renes, R. J., de Wit, W., & Timmers, J. (2004). Monitoring consumer con.dence in food safety: An exploratory study. *British Food Journal*, 106(10/11), 837-849.

de Boer, M., McCarthy, M., Cowan, C., & Ryan, I. (2004). The influence of lifestyle characteristics and beliefs about convenience food on the demand for convenience foods in the Irish market. *Food Quality and Preference*, 15, 155-156.

Dosman, D. M., Adamowicz, W. L., & Hrudey, S. E. (2001). Socioeconomic determinants of health- and food safety-related risk perceptions. *Risk Analysis*, 21, 307-317.

Eiser, J. R., Miles, S., & Frewer, L. J. (2002) Trust, perceived risk and attitudes toward food technologies. *Journal of Applied Social Psychology*, 32, 2423-2433.

Elster, J. (1989). *Nuts and Bolts for the Social Sciences*. Cambridge: Cambridge University Press.

EU Commission. (2000). White paper on food safety. Bruxelles: Commission of the European Communities (COM, 1999, 719 final). FAO/WHO (1996). In Report of the 12th session of the Codex Committee on general principles. Paris, France 25-28 November 1996, Codex Alimentarius Commission. Rome: FAO.

Fagerli, R. A., & Wandel, M. (1999). Gender differences in opinions and practices with regard to a healthy diet. *Appetite*, 32, 171-190.

Fife-Schaw, C. and Rowe, G. (1996). Public perceptions of everyday food hazards: A psychometric study. *Risk Analysis*, 16, 487-500.

Finucane, M. L., Alhakami, A., Slovic, P., & Johnsom, S. M. (2000a). The affect heuristic in judgments of risks and benefits. In *The Perception of Risk*. London: Earthscan Publication Ltd.

Finucane, M. L., Slovic, P., Mertz, C.K., Flynn, J., & Satterfield, T. A. (2000b). Gender, race and perceived risk: the white male effect. *Health, Risk and Society*, 2, 159-172.

Frewer, L. J. (2001). Environmental risk, public trust and perceived exclusion from risk management. *Environmental Risks: Perception, Evaluation and Management*, 9, 221-248.

Frewer, L. J., Miles, S., & Marsh, R. (2002). The media and genetically modified foods: Evidence in support of social amplification of risk. *Risk Analysis*, 22, 701-711.

Frewer, L. J., & Salter, B. (2002). Public attitudes, scientific advice and the politics of regulatory policy: The case of BSE. *Science and Public Policy*, 29, 137-145.

Frewer, L. J., Scholderer, J., & Bredahl, L. (2003). Communicating about the risk and benefits of genetically modified foods: The mediating role of trust. *Risk Analysis*, 23, 1117-1133.

Green, J. M., Draper, A. K., & Dowler, E. A. (2003). Short cuts to safety: Risk and 'rules of thumb' in accounts of food choice. *Health, Risk & Society*, 5, 33-52.

Grunert, K. G., & Grunert, S. C. (1995). Measuring subjective meaning structures by the laddering method: theoretical considerations and methodological problems. *International Journal of Research in Marketing*, 12, 209-225.

Grunert, K.G., Brunsø, K., & Bisp, S. (1997). Food-related lifestyle: Development of a cross-culturally valid instrument for market surveillance. In L. Kahle, & C. Chiagouris (Eds.), *Values, Lifestyles, and Psychographics* (pp. 337-354). Mahwah, NJ: Erlbaum.

Grunert, K. G., & Ramus, K. (2005). Consumers' willingness to buy food through the internet: A review of the literature and a model for future research. *British Food Journal*, 107, 381-403.

Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing*, 46, 60-72.

Hoek, A. C., Luning, P. A., Stafleu, A., & de Graaf, C. (2004). Food-related lifestyle and health attitudes of Dutch vegetarians, non-vegetarian consumers of meat substitutes, and meat consumers. *Appetite*, 42, 265-72.

Holm, L., & Kildevang, H. (1996). Consumers' views on food quality: A qualitative interview study. *Appetite*, 27, 1-14.

Hunt, S. and Frewer, L. J. (2001). Trust in sources of information about genetically modified food risks in the UK. *British Food Journal*, 103, 46-62.

Kennedy, J., Jackson, V., Cowan, C., David, I. B., & Bolton, M. D. (2005). Consumer food safety knowledge: segmentation of Irish home food preparers based on food safety knowledge and practice. *British Food Journal*, 107, 441-452.

Kesic, T., & Piri-Rajh, S. (2003). Market segmentation on the basis of food-related lifestyles of croatian families. *British Food Journal*, 105, 162-174.

Kjærnes, U., & Dulsrud, A. (1998). Consumption and mechanisms of trusts. Paper presented at The ESA subgroup '*The Sociology of Consumption*', University of Milan, Sept. 16-17.

Laros, F. J. M., & Steenkamp, J.-B. E. M. (2004). Importance of fear in the case of genetically modified food. *Psychology & Marketing*, 21, 889-908.

Lazer, W. (1964). Lifestyle concepts and marketing. In S. A. Greyser (Ed), *Towards Scientific Marketing*. Chicago (IL): American Marketing Association, pp. 424-38.

Lewis, J. D., & Weigert, A. (1985). Trust as a social reality. *Social Forces*, 63, 967-985.

Liu, S., Huang, J.-C., & Brown, G. L. (1998). Information and risk perception: A dynamic adjustment process. *Risk Analysis*, 18, 689-699.

Macintyre, S., Reilly, J., Miller, D., & Eldridge, J. (1998) Food choice, food scares and health: The role of the media. In A. Murcott (Ed.) *The Nation's Diet: The Social Science of Food Choice*. London: Longman.

Miles, S., Brennan, M., Kuznesof, S., Ness, M., Ritson,C., & Frewer, L. J. (2004). Public worry about specific food safety issues. *British Food Journal*, 106, 9-22.

Morrow, J. L., Hansen, M. H., & Pearson, A. W. (2004). The cognitive and affective antecedents of general trust within cooperative organizations. *Journal of Managerial Issues*, 16, 48-64.

Nijmeijer, M., Worsley, A., & Astill, B. (2004). An exploration of the relationships between food lifestyle and vegetable consumption. *British Food Journal*, 106, 520-533.

Olson, J. C., & Reynolds, T. J. (1983). Understanding consumers' cognitive structures: Implications for advertising strategy. In L. Percy, & A. G. Woodside (Eds.), *Advertising and Consumer Psychology*. Lexington, MA: Lexington Books.

O'Sullivan, C., Scholderer, J., & Cowan, C. (2005). Measurement equivalence of the food related lifestyle instrument (FRL) in Ireland and Great Britain. *Food Quality and Preference*, 16, 1-12.

Pennings, J. M. E., Wansink, B., & Meulenberg, M. T. G. (2002). A note on modeling consumer reactions to a crisis: The case of the mad cow disease. *International Journal of Research in Marketing*, 19, 91-100.

Saba, A., & Messina, F. (2003). Attitudes towards organic foods and risk/benefit perception associated with pesticides. *Food Quality and Preference*, 14, 637-645.

Scholderer, J., Brunsø, K., Bredahl, L., & Grunert, K. G. (2004). Cross-cultural validity of the food-related lifestyles instrument (FRL) within Western Europe. *Appetite*, 42, 197-211.

Senauer, B., Asp, E., & Kinsey, J. (1991). *Food Trends and the Changing Consumer*. Eagan Press, St. Paul, MN.

Setbon, M., Raude, J., Fischler, C., & Flahault, A. (2005). Risk perception of the "mad cow disease" in France: Determinants and consequences. *Risk Analysis*, 25, 813-826.

Shapiro, S. P. (1987). The social control of impersonal trust. *American Journal of Sociology*, 93, 623-658.

Shim, S., & Lotz, K. G. S. (2001). Export implications for the Japanese fruit market: fruit-specific lifestyle segments. *International Journal of Retailing and Distribution Management*, 29, 298-314.

Siegrist, M., & Cvetkovich, G. (2000). Perception of hazards: The role of social trust and knowledge. *Risk Analysis*, 20, 713-719.

Siegrist, M., Cvetkovich, G., & Roth, C. (2000). Salient value similarity, social trust and risk/benefit perception. *Risk Analysis*, 20, 353-362.

Slovic, P., Fischhoff, B., & Lichtenstein, S. (1980) Facts and fears: Understanding perceived risk. In R. C. Schwing, & W. C. Albers (Eds.), *Societal Risk Assessment: How Safe is Safe Enough?* New York: Plenum.

Slovic, P. (2000a). *The Perception of Risk*. London: Earthscan Publication Ltd.

Slovic, P. (2000b). *Trust, Emotion, Sex, Politics and Science*. In *The Perception of Risk*. London: Earthscan Publication Ltd.

van Raaij, W. F., & Verhallen, T. M. M. (1994). Domain-specific market segmentation. *European Journal of Marketing*, 28, 49-66.

Van Kleef, E., Frewer, L. J., Chryssochoidis, G., Houghton, J. R., Korzen-Bohr, S., Krystallis, T., Lassen, J., Pfenning, U., & Rowe,G. (2006). Perceptions of food risk management among key stakeholders: Results from a cross-European study. *Appetite*, 47, 46-63.

Verbeke, W., & Viaene, J. (1999). Consumer attitude to beef quality labelling and associations with beef quality labels. *Journal of International Food and Agribusiness Marketing*, 10, 45-65.

Verbeke, W. (2001). Beliefs, attitude and behaviour towards fresh meat revisited after the Belgian dioxin crisis. *Food Quality and Preference*, 12, 489-498.

Verbeke, W., & Van Kenhove, P. (2002). Impact of emotional stability and attitude on consumption decisions under risk: The coca-cola crisis in Belgium. *Journal of Health Communication*, 7, 455-472.

Wells, W. D., & Tigert, D. J. (1971). Activities, interests and opinions. *Journal of Advertising Research*, 11, 27-35.

Williams, P. R. D., & Hammitt, J. K. (2001). Perceived risks of conventional and organic produce: Pesticides, pathogens, and natural toxins. *Risk Analysis*, 21, 319-330.