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RESPONSES AND ATTITUDES

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**CONSUMER TRUST ON CURRENT FOOD
SAFETY ISSUES: THEIR RESPONSES
AND ATTITUDES**

LIM HUI SAN

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HONOURS (FOOD SCIENCE AND NUTRITION)**

**SCHOOL OF FOOD SCIENCE & NUTRITION
UNIVERSITI MALAYSIA SABAH
2010**

DECLARATION

I hereby declare that the material in this thesis is my own except for quotations, excerpts, equations, summaries and references, which have been duly acknowledged.

14 June 2010



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Lim Hui San

14 June 2010

ABSTRACT

The main objective of this study is to evaluate consumers trust and attitudes towards the safety of the food supply in general, to identify the food safety issue concerned by the consumers and identify consumer trust towards the food chain actors. The respondents of this study is consists of 400 consumer from Kota Kinabalu, Sabah. The results obtained shows that the mean level of current food safety was 3.33 ± 0.73 indicating that the safety level is under the halfway point of the safety level scale, just over the "neither safe nor not safe" category. However, there are 31.0% of the consumer feel that the food they eat now are safe and 5.4% of them feel it is very safe. These customers are very positive towards the current food system. The ranking for the seven purchasing criteria are: safety, nutritional level, taste, price, brand, appearance and convenient. There are 94.5% of the consumers were concern on the origin of the food, 89.3% of the consumers willing to pay more for higher quality food and 70.3% of the consumers have personal brand preference while purchasing food. The consumers in this study show major concern towards physical issues (4.29), followed by microbiological issues (4.24), chemical issues (3.99) and novel measures (3.43). The results shows that consumer trust most in the food safety authorities ($\mu=3.93$).

ABSTRAK

KEPERCAYAAN PENGGUNA TERHADAP ISU-ISU SEMASA KESELAMATAN MAKANAN: RESPON DAN TINGKAH LAKU

Objektif utama kajian ini adalah untuk menilai kepercayaan dan tingkah laku pengguna terhadap keselamatan sumber makanan secara am, mengenalpasti isu-isu keselamatan makanan yang diambil berat oleh para pengguna dan mengenalpasti kepercayaan pengguna terhadap pelaku rantai makanan. Responden untuk kajian ini adalah terdiri daripada 400 orang pengguna dari Kota Kinabalu, Sabah. Keputusan yang diperolehi menunjukkan min tahap keselamatan makanan semasa adalah 3.33 ± 0.73 , di mana ia menunjukkan bahawa tahap keselamatan adalah lebih sedikit daripada skala pertengahan, iaitu hanya melepasi kategori 'selamat pun tidak, tidak selamat pun tidak'. Namun, terdapat 31.0% pengguna yang merasai makanan yang dimakan sekarang adalah selamat dan 5.4% rasa adalah sangat selamat. Pengguna sebegini adalah sangat positif terhadap system makanan semasa. Susunan untuk tujuk criteria semasa membeli makanan adalah: keselamatan, nilai nutrisi, rasa, harga, jenama, rupa bentuk dan kemudahan untuk diperolehi. Terdapat 94.5% pengguna yang prihatin terhadap asal pengeluaran makanan, 89.3% yang sanggup membayar lebih untuk mendapat makanan yang berkualiti dan 70.3% yang mempunyai jenama tertentu semasa membeli makanan. Pengguna dalam kajian ini menunjukkan keprihatian ke atas isu-isu fizikal (4.29), diikuti dengan isu-isu mikrobiologi (4.24), isu-isu kimia (3.99) dan isu-isu khas (3.43). Keputusan juga telah menunjukkan bahawa pengguna percaya terhadap penguatkuasa ($\mu=3.93$).

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LIST OF ABBREVIATION

FAO	Food and Agricultural Organization of the United Nations
MOH	Ministry of Health
WHO	World Health Organization
USA	United States of America
GDP	Gross Domestic Product
IUFoST	International Union of Food Science and Technology
CDC	Centres for Disease Control and Prevention

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LIST OF SYMBOLS

°C	Degree Celsius
g	Gram
pH	Acidity
%	Percentage
χ^2	Pearson Chi-Square value
μ	Mean
df	Degree of freedom
P	Significant level

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Food is important for living as it function to yield energy, provide nutrients needed to maintain life and allow growth. However, food can also transmit disease from person to person as well as act as a growth medium for bacteria that can cause food poisoning. Every year, there are millions of people become ill and many die due to eating unsafe food (FAO and WHO, 2002). World Health Statistics 2009 done by WHO shows that there are 177,963 cases of Cholera reported globally in the year of 2007. In the same report had shows that in 2004, there are 1.5 million (16.8%) of children aged less than 5 years old died due to diarrhea. WHO (2007a) also reported that in the year of 2005, there are 1.8 million people died from diarrheal diseases. Although foodborne illness occurs daily in all countries, but yet, most of the cases are not reported. Therefore, the true dimension of the problem is unknown (WHO, 2007).

The incidence of foodborne illness is rising in developing countries, as well as in the developed world (Redmond and Griffith, 2004). Foodborne disease is closely related to the safety of the food. However, the access to a safety food supply has been recognized as a major problem globally. In developing countries, diarrheal disease is the most common foodborne illness. This is due to the shortage of clean water for drinking, cooking and cleaning. Whereas for developed countries such as France and USA have been reported with outbreaks of *Listeria Monocytogenes*, which is caused by contaminated pork tongue and hot dogs respectively (WHO, 2002). Worldwide, around 1 billion people lack of access to improved water and 2.5 billion have no access to basic sanitation (WHO, 2009).

Foodborne illness not only affects the patient's health, but also cause the reduce of economic productivity, causing pain and suffering, increased medical cost, income lost due to absence from work, loss of leisure time and reduced individual productivity (WHO, 1999). Besides that, it also caused enormous social and economic burden on communities and their health systems. WHO (2005) reported that in the United States of America, an estimated 1.4 million non-typhoidal *Salmonella* infections, resulting in 168,000 visits to physicians, 15,000 hospitalizations and 580 death annually. The total cost associated with Salmonella is US\$ 3 billion annually. In Denmark, the annual estimated cost of foodborne salmonellosis is US\$ 15.5 million (2001), which representing approximately 0.009% of its GDP.

In Malaysia, Country Health Information Profile 2007 by the Ministry of Health reported that, food poisoning is in the list of Top Five noticeable disease, with the incidence rates of 52.6 per 100,000 populations. This rate had doubled the value in 2006 which is 26.0 per 100,000 populations. Most cases of food poisoning in Malaysia are from common bacteria such as *Staphylococcus*, *Salmonella* species or *Escherichia coli*. Food poisoning tends to occur at picnics, school cafeterias, and large social functions because these are the situations where the food are left unrefrigerated too long or unclean food preparation techniques (Disease Control Division, 2007). Other than those high risk groups, Meftahuddin (2002) reported that the school age group is always more affected than the general population.

Generally, consumers are to believe that the food supply is safe (Brewer and Prestat, 2002). However, for the past few years, consumer had been alerted with many cases of food related issues. For example, *Salmonella* in Cadbury chocolate, melamine in milk powders and related products, mercury in seafood and pesticides in fruits and vegetables. These food-related incidents had attracted media attention and raise consumer concern. Traditional methods such as smell,

taste or other physical attributes are no longer efficient in assessing the risk in food (Lobb *et al.*, 2007).

Further more, consumers are always been exposed to the information about food hazard form variety of sources, such as mass media, government, retailers, manufacturers, public authorities and consumer organization (Lobb *et al.*, 2007). Based on Verbeke (2005), mass media is probably the most important source of information for the consumer about the food safety issue. De Boer *et al.* (2005) also support this by saying media is a powerful tool for increasing food risk awareness. Badrie *et al.* (2006) shows that mostly the consumers received information on food safety from television (70%), followed by newspaper (54.5%), radio (47.5%) and 3.5% from others such as magazines, internet and school. The media attentions that focus on food safety can influence the consumer to have wrong perceptions towards a particular food and perceive it as risky (De Jonge *et al.*, 2004).

In order to compensate with the lack of knowledge about the food source, consumer have to rely on trust they have towards actors in the food chain to provide safe food (Lobb *et al.*, 2007; De Jonge *et al.*, 2008). These actors include farmers, retailers, manufacturers and regulators. However, the concept of 'Trust' is diffuse and complex to be measured because it is based on feeling (Berg, 2004). Berdahl (2001) indicated that the consumer trust is potentially and important factor that influence the consumers behavior. Therefore, consumer trust can be measured from their response and attitudes.

Consumer's attitude and response will differ based on their level of trust towards certain issue. Those with higher level of trust in the food system will be less concerned with risk and vice versa (Knight and Warland, 2005). For example, the spread of the H5N1 Avian Influenza (AI) virus that had been received much attention from media, have a big impact on consumer trust towards the safety of

consuming poultry. As a result, consumer had respondent with reduce or stop the consumption of poultry. There is a significant drop in the poultry consumption level in number of countries at the time the virus was spreading fast (FAO, 2006).

After being exposed to different kinds of information on food related issue, do the consumers still trust in the food they eat? How do they react on these food safety issues? There was a similar study done on Kota Kinabalu consumers to evaluate their behavior and response towards food safety issues. It was found that most of the consumers agreed that the food safety issue was one of the most important issues of their concern (Mohamad Suhaime, 2000).

With the advancement technology, the consumers' response and attitudes towards food safety issues may or may not have changed. Therefore, the present study was to investigate the consumers' trust towards current food safety issues and what are their response and attitude on this issue. The aim of this study is to evaluate the trust, attitude and response of the consumer in Kota Kinabalu, Sabah, towards current food safety issue. The specific objectives are:

- a) To evaluate the consumers attitudes towards the safety of the food supply in general.
- b) Identify the food safety issue concerned by the consumers.
- c) Identify consumer trust towards the food chain actors.

CHAPTER 2

LITERATURE REVIEW

2.1 Consumer Trust

Consumer trust is a diffuse and complex concept to measure (Berg, 2004). Some models have been suggested to evaluate consumer trust on food safety by relate it to their risk perception, level of confidence, level of concern, attitude and purchasing intention (De Jonge *et al.*, 2008a; Lobb, *et al.*,2004). Berg (2004) reported that consumer trust in food depends on an implicit mix of trust in how the food market functions and how the public authorities control this food market. A consumer trust topology is developed by Berg (2004) based on the trust-distrust dimension and a reflexivity dimension and had differentiated the consumer in Belgium, Britain and Norway into four main types. The dimension of trust-distrust is based on the consumer's feeling of confidence related to food.

Figure 2.1 shows the model suggests by Berg (2004), which illustrate the four consumer types and how they related to individual praxis and external force. From the model, it shows that consumer's trust not only determine by the external forces, which are actors and institutions in the food market and public authorities control, but also determined by the consumer's own praxis related to food. Berg (2004) found that the food scandals such as dioxins in food in Belgium and the detection of mad cow disease in Britain, does affect the consumer trust in food and had cause more consumers fall in the category of skeptical and denying in their personal praxis. This research also found that female consumers in the three countries often have a reflexive relation to food as compare to the male consumer.

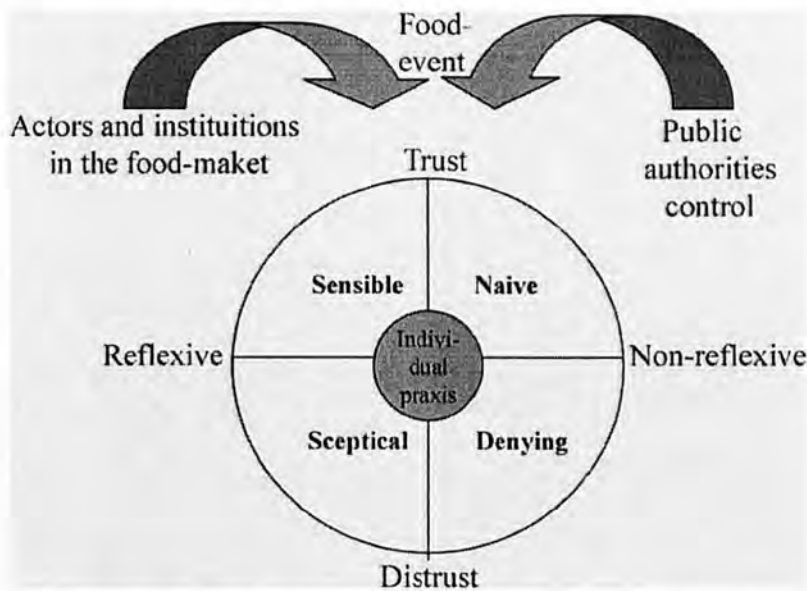


Figure 2.1: Four Consumer Types; (i) Naïve, (ii) Sensible, (iii) Skeptical and (iv) Denying

Source: Berg, 2004.

2.1.1 Relationship between Consumer Trust and Consumer Confidence

Consumer trust has a proportional relationship with consumer confidence. From the finding on De Jonge *et al.* (2008a), it indicates that the higher level of trust is associated with a higher level of confidence. General consumer confidence in the safety of food is defined by De Jonge *et al.* (2008), as the extent to which consumer perceive that food is generally safe. The framework that is used in the study of De Jonge *et al.* (2008) to evaluate the consumer confidence in the safety of food in Canada and the Netherlands had identified factors that may influence general consumer confidence. Figure 2.2 shows the framework of consumer confidence in the safety of food. There are five factors that are identified by De Jonge *et al.* (2008). They are: consumer recall of food safety incidents and food risk, perceived product safety based on previous experience, consumer concern on food production, trust in institutions and individual differences.

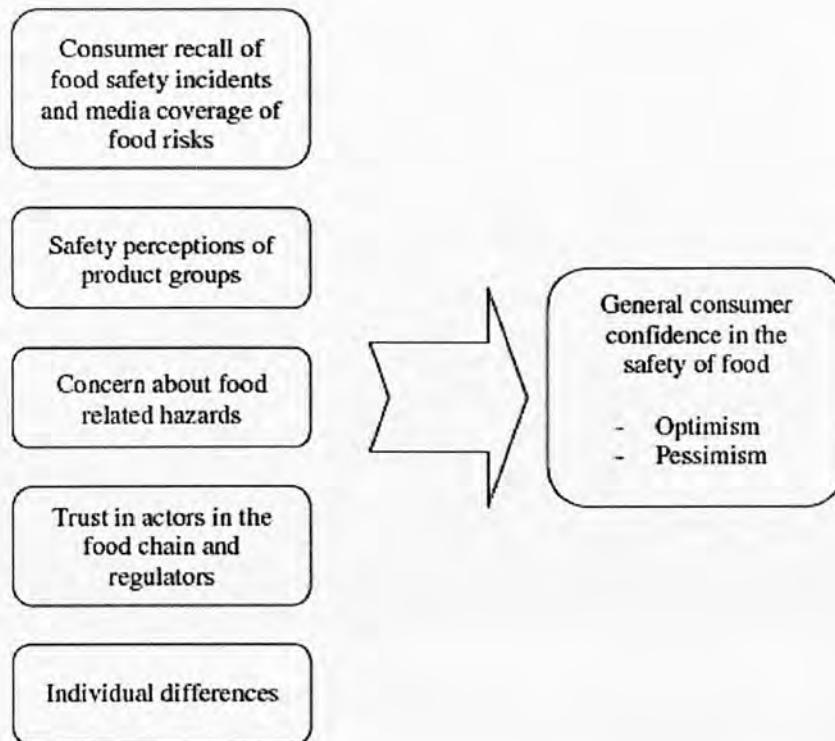


Figure 2.2: Framework of Consumer Confidence in the Safety of Food.

Source: De Jonge *et al.* (2008a)

2.1.2 Relationship between Consumer Trust and Consumer Purchasing Intention

There is a relationship found between consumer trust and consumer purchasing intention. Consumer degree of trust in food safety information that they received can affect their buying behavior. From the finding of Lobb *et al.* (2007), trust in food safety information as provided by media, alternative sources and independent authorities significantly reduces the likelihood to purchase. When a food scare occurs, trust in information provided by media amplifies the negative effects of likelihood to purchase, while trust in public authorities moderates the scare impact (Lobb *et al.*, 2007). Figure 2.3 the SPARTA modeling strategy that shows the factors that will influence the consumer's purchasing intention.

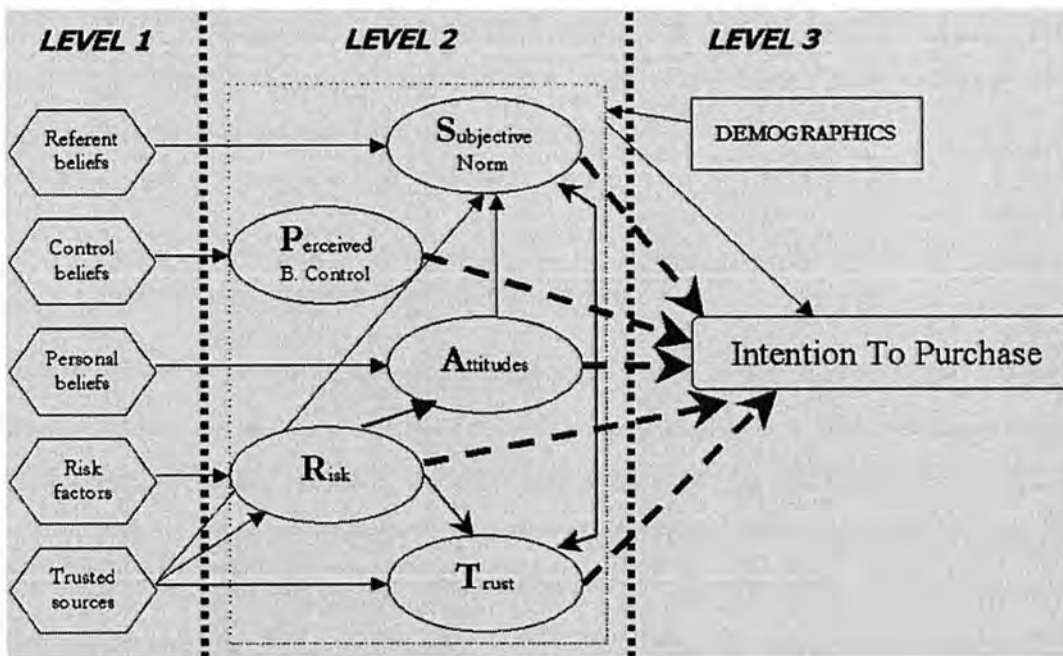


Figure 2.3: The SPARTA modeling strategy.

Source: Lobb *et al.*, 2007.

Bonne and Verbeke (2008) had study on the trust in the relevant information sources related to *Halal* meat of Belgian Muslims. Each segment has different degree of trust towards different actors. The study shows that the consumer only will buy *Halal* meat from the source that is most trust by them. Among the *Halal* meat source, they show great trust in Islamic butcher, especially that family butcher, with whom the consumers have personal contact.

A study was done by Siegrist *et al.* (2008) to examine the factors that will influence the Switzerland consumer in their willingness to buy functional foods. One of the most important factors identified is the consumer trust. The reason is because the health benefits delivered by the functional foods cannot be directly experienced. Therefore, consumer only can rely on the producer claims that their products deliver certain health benefits. Those who have trust in the food industry are more likely to buy functional foods. Another study which is done by Siegrist *et*

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