

**Consumers' Decision Making in Street Food Purchasing and Food Safety in Nakhon Si Thammarat Province, Thailand**

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Nakhon Si Thammarat (NST) province is one of the largest cities in Thailand and offers various types of food in the city. However, the number of street vendors that pass the food safety certification is very low, but there are many consumers who are still purchasing street food because of their lifestyle, so there is a high food safety risk to the consumers in the province. Therefore, this research aims to evaluate how consumers are concerned about the food safety of street food. The main objectives of this research are to identify the consumers' individual factor influences consumers' decision making process, to examine effects of each variables on stages of consumers' decision making process from need recognition to purchasing, to evaluate the effectiveness of food safety certification on consumers' purchasing, and to examine the differences of consumers' purchasing behavior on street food and food safety among the varying of consumer demographic. Firstly, observation and in-depth interview technique will be used in the preliminary section of the study to explore the street food characteristic in this province. Next, a quantitative method will be used to examine the influence of various factors on decision-making process, and as well as to compare the differences of consumers' demographic on street food purchasing behavior. Structure Equation Model (SEM) will be applied to predict the effect of purchasing process factors. The study identifies the factors that influences consumers' decision-making process related to food safety. Moreover, the local authority can utilize the finding to be the basis information to create the food safety strategy and policy of street food in this province.

**Keywords:** consumer, purchasing decision-making, food safety, street food

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## **Introduction**

Street food is playing an important role for food system in developing countries, and the importance tend to be further increased in this 21<sup>st</sup> century parallel with the expanding of urbanization (Tinker, 1999). The types of street food that are current available such as push-carts, balance-pole, basket, small stalls or even a mat lies on the ground with common food; for example, main courses, snacks, drinks or fruits. Many consumers are interested in street food consumption because it is cheap, tasty and convenient. The food can be served either as an addition diet or replacement the whole of home food preparation, so the groups of consumer will be variety depends on the pattern of consumption. Students and middle class people may buy street food because of their food preferences while the most important for workers or laborers is the food price which is the price they can access to an adequate daily diet. Street food becomes a source of inexpensive ready-to-eat food for consumers in every class and occupation, today (Tinker, 1999). However, a rise in amount of street food consumption can arise a challenge of food safety risk for consumers (Bohle et al., 2008).

## **Food Safety in Street Food**

Although street food is the important source of daily diet and traditional local culture with for the local population and tourist, food safety is also one of the issues that the consumers will concern when they are selecting street food because it can cause food- borne illness. The WHO have mentioned about global street food stalls are the places of unhygienic practice, and contribute to people's food borne illness (WHO, 2002). Food hygiene also has been the weakest point of the street food in Thailand, even though; there is a law to control the food practice of vendors, but many of them do not pay attention on it (Nirathron, 2006). Bureau of Epidemiology (2013) reported there are many patients suffer from diarrhea every year, and there are seven cases of mortality in 2013.

Citizen and especially tourists feel difficult to decide which stalls reach the food sanitary standard when they need to patronage unfamiliar food, as a result to the investment of food safety program under "Clean Food Good Taste" (CFGT) by Thai Ministry of Public Health together with the Ministry of Tourism. This program aims to against consumers from unsafe food, and be suffer from food borne illness. The local authority will provide CFGT logo to vendors who pass CFGT regulations, and the

consumers will consider that logo when they decide to choose the food stalls (Burusnukul et al., 2011). The meaning of presence logo is “safe” for consumption, on the other hand “unsafe” if there is no evidence of certificate in front of the food stalls.

Every twice of the year, street food vendors must be required to have food safety inspection under CFGT regulation by the local authority. The vendors who cannot pass the inspection means their foods are unsafe for consumption. However, they can still operate their business regularly. According to the national target number for each province, the overall food stalls that achieve CFGT certificate should be higher than 80%, which province has the total number less than 80%, that province is considered to fail. The results in 2012 showed that there are only five provinces from the total 77 provinces fail from CFGT regulation. These five provinces are Narathiwat (52.46%), Nakhonsawan (75.17%), Nakhon Si Thammarat (NST) (77.07%), Prachinburi (77.49%) and Roi Et (78.10%).

This study will pay attention only in NST province because the population in this province is the highest, and is the highest in southern Thailand, as a result to the size of street food entrepreneur tends to be increased, and unhygienic problem probably be larger effect to consumers if without any consideration on this problem. From the result of food safety analysis, there is no hazardous chemical found, but the level of pathogenic bacteria is higher than an acceptable level. It can emphasize that the food borne illness can be caused by unhygienic practice of the vendors. Although, the patients who suffer from Diarrhea has been decreased from 2008 (20,981 persons) to 2012 (14,474 persons), Diarrhea still has been the first list in the epidemiology infection disease system, and there are around 954 persons in every 100,000 of total population need to receive medical treatment that means amount of money and working time be lost during their illness. Thus, study about food safety in street food of this province can probably prevent consumers from food borne illness, such as, diarrhea which has been the number one of infection disease in Thailand (The Bureau of Epidemiology, 2013).

### **Statement of Problems and Objectives of the Study**

Eating outside home becomes the new traditional consumption for Thai urbanization today because people have no time in cooking. Consumers usually prefer street food rather than a restaurant because of their rushing lifestyle, low cost food and convenience. The street food in

NST province is determined to be unsafe for consumption according to the number of vendors who passed the inspection is less than 80%. The problem is the consumers in NST province have still purchased street food while there is a potential of unsafe food. It does not matter they know or do not know about this food risk situation, the goal is how to prohibit consumers from buying unsafe food stalls because in Thailand food safety agenda claims that abandon unsafe stalls from consumers can be the important automatically mechanism in pushing the food vendors to improve their hygienic practice, and increase their food safety level. Before finding strategy to encourage consumers to ignore the unhygienic vendors, consumers' decision making should be study first about the opinion of their street food experiences, and how much they concern when they decide to buy street food in this province.

This research purposes to understand how consumers in NST province from four districts: Muang, Tha-sala, Khanom and Chulaporn make a decision before buying street food, and to examine their opinion about food safety that they normally consume. Study of consumers' decision making in street food purchasing under the concerning of food safety can bridge the gap between purchasing unsafe food of consumers and finding strategy to stop consumers from buying unsafe street food, by being basic information to create strategy. Accordingly, the specific objectives are: 1) to identify the consumers' individual factor influences consumers' decision making process, 2) to examine effects of each variables on stages of consumers' decision making process from need recognition to purchasing, 3) to evaluate the effectiveness of food safety certification on consumers' purchasing, and 4) to examine the differences of consumers' purchasing behavior on street food and food safety among the varying of consumer demographic.

### **Significant of the Study**

The finding about consumers' decision on street food purchasing can be the important support information to create strategy in food safety concerning behavior for consumers when they purchase street food.

## **Literature Review**

### **Street Food in Nakhon Si Thammarat (NST) province**

NST province is the largest city in the southern part of Thailand which the number of population is 1,534,887 (Ministry of Interior, 2012), and the number of street food stalls are 2,558 (Ministry of Public Health, 2012). Although, there is scarce of literature about street food or “ready-to-eat food” (FAO, 1997), or “public eating” (Yasmeen, 1996) in detail in this province, the characteristic and consumption pattern of street food is not different from other provinces. For example, the major types of street food vending are also fixed and mobile vending units, the locations are at local market, train station, bus terminal, bazaar, work places or residential areas. Most of customers who purchase street food is female, and the most frequent purchase meal is dinner. Consumers confirmed that the reasons of choosing street food are convenient, time saving and variety of foods (Rajabopal, 2010), nevertheless consumers rarely concern about the hygienic practices and the cleanliness of selling areas (Nirathron, 2006).

### **Food Safety in NST Street Food**

Food safety factors are relevant with biological, physical, chemical and technological aspect, and they can show the evidence of improper food preparation, such as, cross-contamination, unsuitable food holding temperature, insufficient cooking temperature and infected from handlers (Griffith, 2000). The food borne illness problem that population in this province are being confront with is mainly underlined as a cause from pathogenic microorganism that originated in soil, water, air, animal and human (Selamat & Hassan, 2000), so the consideration regarding the standard of hygienic practice of the vender can extremely prevent consumers from the possibility of food borne illness. Practically, consumers can make a judgment about food safety by taking the consideration only physical appearances of cleanliness of food stalls and utensils, personal hygiene, food preparation, and surrounded environment. The survey found that consumers directly link the appearance of food establishment cleanliness with potential of food safety, and they leave those stalls when they realize the stalls look unsanitary (Banotai, 2003). In addition, Thai government implements the food safety certificate to help consumers choose the safe stall, and construct food safety concept in the consumers’ mind every time they buy food.

In NST province, there are two types of food safety logo that are displayed in front of the stalls to give consumers food safety confident. The first type is “Safer Food for Better Health”, this logo is created by NST municipality unit, and has been certified the vending inside NST municipality area, and the second type is CFGT which consumers have known for several years. However, the regulation details of those two certifications are definitely same, and mainly emphasize in cleanliness and hygienic practices of food handlers (NST Public Health Unit, 2013).

About the status of food safety in NST street food as mentioned in the introduction, this province is dealing with high potential of consumers who will get unsafe food because the percent of food stalls who received CFGT certification is 77.07 from the total of 2,558 stalls. Consequently, there are around 590 food stalls unsafe for consumption (Ministry of Public Health, 2012). Food safety aspects that involved in street food are 1) food handlers must be healthy, 2) containers and utensils must be clean, 3) food stall should have good management of waste, washing area and environment surrounded (Tiemmek, 2005). When making consideration in detail, those unhygienic stalls are located in mainly four districts: Muang, Thasala, Khanom and Chulaporn.

Accordingly, study about the decision of the consumers can reveal how consumers select their food, and can evaluate them whether or not they concern on food safety. The main theory is used in this research is the utility function theory which is the base knowledge to explain the consumers' behavior, and it uses some part of psychological individual theory to support the argument. Moreover, decision-making model is the model that concludes the theories into the figure and also be a guideline to scope research framework.

### **Utility Function theory**

Consumers Rational' Choice theory is the big umbrella covers the theories in microeconomics that is combined with the psychology of the individual decision-making and the opportunities available (Browning, 1989). The Rational Choice is defined as the process of determination the preference under consumers' constraint to make them achieve the highest quantity of goods. However, in the realistic, consumers will also consider about the object's value compare with the quantity of goods, so Utility Function can unrestrict the assumption of Rational Theory (Levin & Milgram, 2004).

Utility function theory is the theory under the rational consumers' choice which is derived from Revealed Preference theory of Professor Samuelson. The Utility theory is more sufficient than the existing version of Preference choice theory, and can also explain the consumers' preference (Houthakker, 1998). The Utility theory begins with the idea that consumers will select the particular object by giving its value according to its function, and the higher value will be selected, nevertheless, the consumers have constraint in financial result to the utility function cannot be maximized unconditionally (Theil, 1975). During consumers are making decisions, there are two main factors that influence consumers' choices: major and minor factors.

Utility function theory is the backbone of consumers' decision-making model, and has several factors are independent variables that affect consumers' preference and their choice. The factors can be divided into two main categories: major factors and minor factors. The major factors are about the constraint of consumers which is consumers' income, product's price, and opportunity of consumers that has been mentioned above in the choices' theory part. The second category is minor factors which are national and psychological individual factors (Theil, 1975).

This research, the utility function theory is chosen to explain how consumers make a decision toward the choices under the consideration of food safety in street food. Moreover, base on the theory, consumers decision making model named Egel, Minard and Blackwell (EMB Model) as shown as in Figure 1 is selected to be the theoretical framework model, and adapted into purposive model in Figure 2 in this research.

### **Consumers' Purchasing Decision Making Model**

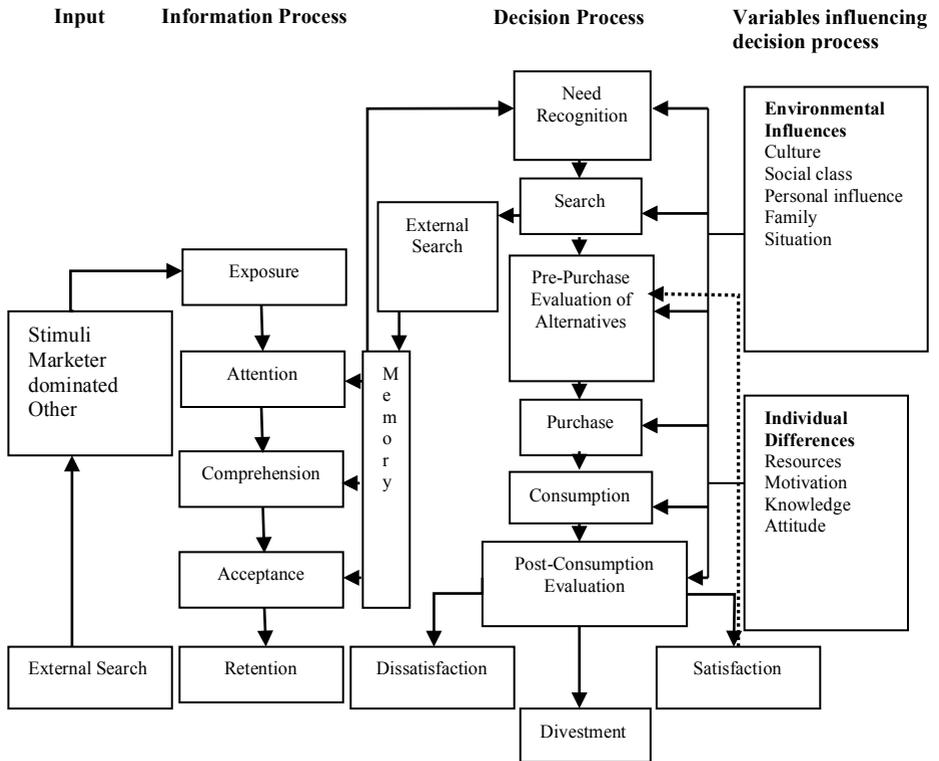
The EMB model was generated from the first developed model called CDP model (the model of consumer decision process), but CDP was remembered under the name EKB model since 1968 by using the name of Engel, Kollat and Blackwell from the Ohio State University. After that, Professor Pual Minard has become in part of research team, so the model was renamed to be EMB model to acknowledge Professor Minard, and the model has been well known until today (Blackwell, 2006).

The elements in the EMB model in Figure 1 are similar with the main idea of utility function theory from the stage of consumer have preference, then evaluate their choices until they purchase the chosen product, and evaluate after consumption. As the same time, during all stages

are processing, there are factors that influence each stage of decision process as a result to produce outcome of consumers' decision. However, there is different from the theory somewhat; EMB model adds the process of information searching, and aims to explain more about consumers will search information before they are going to evaluate their choices under the keyword of individual limitation. More elements that have been added other than presented in the theory are consumption, port-consumption and divestment.

The main structure of the model presents a seven stage of decision process: need recognition or consumers' preference which is mentioned in the choice theory followed by internal and external information searching, the choices evaluation, purchase, post-purchase evaluation, and finally, divestment. Enter to the model, consumers are stimulated, next they have preference, and the problem generated, then it influences them to search information to solve their problem. Normally, the new or complex purchasing will push consumers to search information extensively to avoid the mistake that probably occurs during decision-making. However, the simpler consumption may only retrieve from their previous experiences from their memory to solve their problem. After that, environmental influences and/ or individual differences also interact with consumers' choices evaluation as same as the interaction in first stage of need recognition. As mentioned in Utility Function theory; consumers will evaluate their choices regarding on the utility of product, and have factors affect their judgment. Moreover, the factors are said again to affect consumers' purchasing that probably prohibit consumers from their purchase intention. Finally, consumers evaluate the selected product after consumption stage, and serve a feedback to future purchasing; consequently, the product purchased is disposed after consumption.

The EMB model concludes the interaction of all variable in one figure, and makes the reader easily to comprehend the concept through the process of decision making process, so the EMB model is adapted to develop the purposive model in Figure 2 aims to analyze how consumers in NST province pay attention to the safety of food before they decide to buy the particular food.



**Figure 1** Theoretical Model: Consumer Decision Model (EMB Model)  
**Source:** Blackwell, et al. (2006)

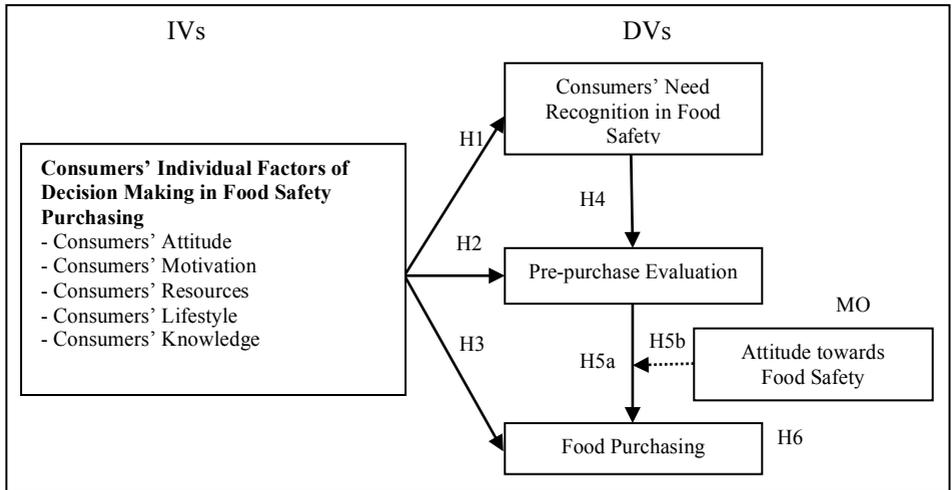
**Purposive Model**

Entry to the purposive model in Figure 2, hungry is the basic of human instinct, so people need food to fulfill their basic need (Maslow, 1970), however within the constraint of consumers, such as, food price, consumers' income, and consumers' situation, the choice of some group of consumers is fallen to street food where is the center of foods, reasonable price and convenient (Tiemmek, 2005), so the preference of food choices at street food occurs, nevertheless, street food is the source of unhygienic food (Ministry of Public Health, 2012). Thus, consumers will protect themselves from food safety risk by using their own evaluation to achieve the highest of

food safety quality (utility) together with the desired food under the constraint of budget. The individual procedure in self protection will not happen if they do not recognize an importance of food safety, so the recognition is a stimulus to produce consumers' need to escape from undesired situation by attempting to get something better than the previous situation. After that, they will evaluate their choices they have which one is the best in food safety quality, and they will decide to buy that choice. However, purchasing decision making is not straightforward from their need and directly finish at food purchasing, the decision process also receive the influence from various factors either major or minor factor even it is the behavior that happens in every day of consumers' life.

Some elements in the theoretical model are eliminated in the research model, such as, the decision process after product purchasing, information search and environmental influence. Firstly, the post consumption process is exempted because in this research would like to focus only how consumer concern in food safety when they buy street food, so the research area scopes until they buy, over that we do not interest. Secondly, information search is not really important for this time of study because buying food behavior is not the complex consumption problem that requests extensive information search from external source (Bleackwell et al., 2006). Lastly, environmental influence, in this study will examine how the individual concern on food safety when they make a decision, so the environmental factor; for example, culture, family or social class, is not the factor that occurs from consumers' mind, and does not directly affect consumers' decision as the individual psychological factor does (Browning, 1989). In addition, consumers' attitude toward food safety certificate is a new variable is attached in the purposive model hopefully it can moderate the strength of safe food purchasing behavior (Burusnukul et al., 2011)

Consequently, this research model can analyze how consumers make a logical and consistency decision under unhygienic problem when select food and it also evaluate how much they concern on food safety by using the cooperation theory between the utility function theory and psychological theory on the base of consumers' decision making (EMB) model.



**Figure 2 Research Purposive Model**

**Individual factors influence purchasing decision-making process**

The effects of individual factor are important to understand consumer behavior by analyzing and explaining the reason why consumers decide differently. These factors are demonstrated in the left side of model Figure2, and divided into two main types: major and minor that will be described next.

**Major factors**

Regarding as the decision maker, they cannot take all relevant number of factors in once decision because the factors are too large. The consumers group them to major and minor, and identify the more important is major factor that is consumers' resources which have a limited number of factors (Theil, 1975).

**Consumers' Resources**

In most situations, time and money are the primary main resources are applied when consumers make a decision. Time is the factor relates with convenience, if consumers have more convenience that is they

can save more time, and they decide to choose the one more convenience choice instead of another. In addition, the distance between a shop or store and the location of consumers being is also referred to time resource because consumers perceive that they must spend time for traveling to the desired shop, so they spend more time if there is longer distance (Blackwell et al., 2006). Such as one incidence, the restaurant was located more than ten mile from the places consumers could access, so the consumers would not patronage that restaurant because they realized the distance was excessively far (Cullen, 2004).

On the subject of money resource, consumers' income is defined as a money resource from a salaries or welfare payments. It plays the important role by limiting what are consumers can buy, but it does not determine what they prefer to buy. For example, consumers who aged between 30-35 years old would not spend their money for unnecessary item because they had the full list of necessary of payment with their limitation income, if they used their money for the needless item, they would not have enough money for the necessary (Cullen, 2004). Taking these points into consideration, if the safe stall is more far or expensive than the safe one, consumer probably not fancy that stall, so time and money will influence consumers' decision making.

### **Minor Factors**

Minor factor is another group of factors that is less important than the first group, however minor factors freely influence decision when the major factors are ignored. In the implementation stage, minor factor is applied under the control of major factor. Four personal minor factors will have a discussion in this research are consumers' attitude, consumers' motivation, consumers' lifestyle and consumers' knowledge. Additionally, one national minor factor: consumers' attitude towards food safety certificate will be discussed as well according to the food safety agenda in Thailand.

### ***Consumers' Attitude***

Attitude is the overall judgments, and it influences consumers' purchasing (Blackwell et al., 2006), however in many cases attitude toward something is opposite with consumers' behavior, so the attitude probably does not predict consumers' behavior sometimes (Solomon, 2012). The relationship between consumers' attitude and their actual behavior is

irreversible by some particular situation (Schiffman & Kanuk, 2009). The consistency of attitude can be changed depends on the forming of foundation attitude; if it is strongly built, the resistance against attitude changing will be strong (Blackwell et al., 2006). Attitude is an important variable because it influences consumers' behavior (Wilcock, 2004). For example, consumers have positive attitude toward eating "clean food", they will intend to buy an organic food (Smith and Paladino, 2010). Thus, this finding can be applied to this research relates with consumers are willing to purchase safe street food if they have positive attitude towards food safety.

### ***Consumers' Motivation***

Motivation is a driving force that produced by tension of needs. People will relieve their tension by seeking the ways to fulfill their needs. The tension will be lightened when the fulfillment approaches nearly the settled goals. Need can be a positive or a negative direction. People possibly feel persuasive with some condition while feel unconvincing with some condition (Schiffman & Kanuk, 2009). From Maslow's hierarchy of needs (Maslow, 1970), generally the lower level will have fulfillment before the upper level. Health consciousness related to the security which is located in the primary level of need, so people need to achieve it. Food safety is under health consciousness is also a motivation factor to secure consumers from food danger (Tikkanen, 2007), and becomes the important factor and quality concerning for many consumers when they select foods (Chen, 2011). Thus, the security from food consumption can motivate consumers in decision-making process to purchase safe street food.

### ***Consumers' Lifestyle***

Lifestyle is the pattern of the way that people live, spend time and money. Consumers' lifestyle will affect their activities, interests and opinions. The lifestyle is capable to change according to the changing of environment (Blackwell et al., 2006).

Today's consumers have no time to cook because of the social alteration; numbers of family member decrease, more women work out side home, the limitation of home space, etc. Thus, the convenience life style tends to be increased, and pattern of food consumption will relate consumers' life style. Pattern of convenience food consumption, which is identified as careless of food, becomes instead of proper meal (Buckley et

al., 2005). Consequently, consumers' lifestyle will influence convenience food purchasing.

### ***Consumers' Knowledge***

Knowledge is the set of information that people have learnt and keep it in memory. After that, people will manage their knowledge into a few of categories, and retrieve them later to understand some situation comprehensively (Hoyer & MacInnis, 2012). Consumers' knowledge is important because it strongly influences decision-making process. Consumers who have better knowledge toward objects; they will be greater to make better evaluation (Blackwell et al., 2006).

Consumers' food safety knowledge has been mentioned as the important factor access to food risk (McCarthy, 2007). In the empirical model linking between risk perception and purchase likelihood of Yeung and Joe (2006) showed that the construct named food safety knowledge directly link to purchasing behavior because consumers' food safety knowledge can help consumers to perceive the food safety risk. Thus, consumers' food safety knowledge will influence the process of decision-making.

### **Hypotheses:**

**H1:** The higher influences from individual factor toward food safety, the higher food safety need recognition of consumers.

**H2:** The higher influences from individual factor toward food safety, the more frequent consumers' pre-purchase evaluation of the food safety.

**H3:** The higher influences from individual factor toward food safety, the more frequent purchase safe street food.

All factors above will affect each step of decision-making process and result to an outcome of purchasing behavior, and can evaluate the highest impact factor of variables influence to consumers' decision. However, the decision making stage itself also affects to next stage of the process; for example, consumers realize their need about food safety, next, they will be required to evaluate their choices which one is safe, finally, they will purchase that chosen choice, the purchasing decision is complete, then. The detail and the process of decision making will be explained below.

### **Consumer Purchasing Decision Making Process**

Everyday, people make decisions several times in daily life without stopping to consider how involvement they are in the decision making process. Decision is defined as the selection of alternative choices that are available at the particular of time. Nevertheless, consumers may be forced to choose when there is “no-choice”, and consumers do not need to make a decision for this situation (Schiffman & Kanuk, 2009).

Purchasing food is considered a routine response behavior that they already have well-established experience, and only need small adding information to evaluate the new category (Schiffman & Kanuk, 2009). As a result, information search is exempted from purposive model, and simply go through three stages of purchasing decision: need recognition, pre-purchase evaluation and purchasing. Furthermore, there is a variable named consumers’ attitude toward food safety certificate which is another minor factor that probably influences consumers’ decision process between evaluation stage and purchasing stage.

#### ***Need Recognition***

Need Recognition is the first stage of decision making process. Need recognition occurs when the difference between desired and actual state meet a threshold, otherwise need recognition will be invisible (Blackwell et al., 2006). Food safety awareness is the need for consumer when eating street food to avoid food borne illness, because safety is the second level in Maslow’s hierarchy (Maslow, 1970), so consumers are pushed to fulfill their safety need. However, before the fulfillment of the need, consumers must evaluate how intensive the need is. It links to the situation about food safety concerning is consumers will check stalls and utensils, food preparation, environmental surrounded and personal hygiene of staff before choosing the eating place because they would like to protect themselves from unsecure situation (Fatimah et al., 2011). As a result, food safety need will influence consumer to be involved in food safety evaluation when they seek food stalls.

#### **Hypothesis:**

**H4:** The higher consumers’ food safety need recognition, the more frequent consumers’ pre-purchase evaluation of the food safety.

### ***Pre-purchase Evaluation***

Consumers will evaluate their choices before finally purchasing the foods. The size of evaluation depends on the size of an alternative set. For instance, consumer has only one choice in their consideration, consequently it is not necessary to decide which one offers them the highest utility, so the size of evaluation in this situation is small (Blackwell et al., 2006; Schiffman & Kanuk, 2009).

Pre-purchase evaluation can also against consumers from food risk. If consumer perceived risk, they try to avoid that risk by 1) stop buying the unsafe foods 2) reduce the purchasing of offending food and 3) shift from one type of food to another similar type. Evidently, if the size of evaluation is small, consumers will have potential to getting risk from purchasing unsafe food (Yeung & Joe, 2001). Therefore, the more frequent pre-purchase evaluation, the more frequent purchase safe food.

### **Hypothesis:**

**H5a:** The more frequent consumers' pre-purchase evaluation of the food safety, the more frequent purchase safe street food.

### ***Consumers' Attitude towards Food Safety Certificate***

Before deciding places to eat, food safety is the important aspect of the choices that consumers have been concerned (Kennedy et al., 2008; Sneed & Strohbehn, 2008). The consideration of food safety relates with the cleanliness of food establishment, hygienic practice of handlers, the presence smell, and appearance of foods (Sienny & Serli, 2010). Nevertheless, it is difficult to make a judgment from physical perspective, and can cause errors from the wrong judgment, sometimes. Food safety certificate can enhance consumers to make a right decision of their attribute regarding the quality of the food establishments (Uggioni & Salay, 2012). The effectiveness of the certificate illustrates that it can significantly influence consumers' purchase decision (Chalak & Abiad, 2012). However, some cases in Thailand, consumers would not select the street food stalls from food safety certificate (CFGT) because they did not have confidence whether it could really guarantee the food safety or not (Burusnukul et al., 2011).

**Hypothesis:**

**H5b:** The more frequent consumers' pre-purchase evaluation of the food safety, the more frequent purchase safe street food with food safety certificate.

***Purchasing***

It is the last stage of this research model. After finishing with the evaluation whether buy or not, they will move to different direction; first if they decide to buy, they will go ahead to buy that certain object, or second, if they decide not to buy, they will stop the process, and fade out from the stalls without any object, or they will return to the evaluation stage again to re-evaluate their required product (Blackwell et al., 2006). Additionally, purchasing pattern also be different by the diverse of consumers' demographic. Although, demographic is the external influences of decision making, it can help to understand the pattern of individual consumption. There was a result showed that demographic of respondents: age, gender, education level and income are important characteristics which make a difference of food purchasing. Respondents who have high income and education level tend to be more interested in food safety purchasing than the lower level. Furthermore, female is more interested in food purchasing than male (Goktolga, 2006).

**Hypothesis:**

**H6:** There are differences on consumers' purchasing behavior when choose safe street food based on demographics.

**Material and Method**

**Preliminary Study**

Two simple types of data collection technique: observation type non participation survey technique and in-depth interview, will be used to explore the characteristic of street food consumption pattern in NST province. Firstly, observation technique, the data will be jotted down in field note while observing, and completed the detail immediately after leaving the field. Moreover, street food image will be taken for expansion the detail later, and for the reference of street food evidence.

Secondly, in-depth interview technique, ten participants who aged between 20 – 60 years old and ever patronage street food no later than

6 months will be selected by using purposive snow ball sampling technique under non-probability sampling. The participants will be asked about their experiences in street food consumption; for example, the location of the eating places, type of foods, and time of the street food operation, etc. The pattern of question is non structural style which is flexible, and be a conversation rather than questions and answers to make respondents feel comfortable during data collecting process. For the duration of interview, respondents will be asked permission to record their voice. The interviewer will jot down briefly the important information through the field note form to be the support information when analyze the data. After that, the recorded voice will be transcribed, categorized into themes, and utilized in report writing. Triangulation technique: observation, in-depth interview and previous research, is determined to do cross check the data for validity and reliability of the finding (Merriam, 2009). Afterward, the finding from this part will be the support information in a questionnaire items construction.

### **Questions development**

After the preliminary study has been conducted, the findings will be used to elaborate items, and support the items that were adopted from previous literatures (Uggioni & Salay, 2012). The questionnaire will be divided in eight main sections; A) individual factors of decision making process B) consumers' food safety need recognition C) pre-purchase evaluation D) consumers' attitude toward food safety need recognition E) consumers' food purchasing behavior F) consumers' food safety knowledge G) consumption pattern and H) socioeconomic characteristic of respondents. Seven points Likert's scale is applied to measure consumers' degree of agreement, degree of important and frequency of pre-purchasing and purchasing behavior (Likert, 1932). For measuring consumers' knowledge, there are three format of answer: true, false and do not know, the answer will be converted to knowledge score. In section of consumption pattern and socioeconomic characteristic of respondents, the questions will present multiple choices, and the respondents can choose one or more answers which depend on the instruction given in each question.

### **Pilot Study: Survey Procedure and Instrument**

Before conducting the actual data, pilot test will be involved to test the quality of the questionnaire, such as, the validity, reliability and

fitting of model. About 10 percent of the actual respondents of the overall study samples will be the target respondents in pilot test.

Cross-sectional designs survey is used in this study (Fink, 2003), and respondent will be sampled by stratify random sampling technique (Frankel et al., 2012) at street foods area in four districts in NST province: Muang, Chulaporn, Thasala and Khanom. The respondents must aged between 20 – 60 years old, live in NST province at least 1 year, and patronage street food in NST province no longer than six months since the data collection date. The respondents will be asked to complete a survey questionnaire by self-administrative survey technique (Bourque and Fielder, 2003). Before the respondents start to answer the questionnaire, they will be explained by staff about the questionnaire contents, and the procedure of answering questions. The survey staff will be around to give the respondents clarify their unclear questions. After that, the data will be check for validity, reliability and overall model fit with SPSS version 20 and AMOS version 20 software. The questionnaire need to be refined until the validity, reliability and the fitting index will be met, the questionnaire will be used for the real study, then (Uggioni & Salay, 2012; Ucar et al., 2012).

#### **Real Study: Survey Procedure and Instrument**

The 1,080 respondents will be sampled conveniently from street food area in four districts: Muang, Chulaporn, Thasala and Khanom. The procedure in collecting data from actual respondents can be referred to the procedure in the pilot study as well. After that, the data will be check for validity, reliability and overall model fit before analyzing data.

#### **Finding Analysis**

Structure Equation Model will be used to analyze data with statistical software: AMOS and SPSS version 20. After finishing with data collection from either pilot test or real respondents test, confirmatory factor analysis will be employed to test the goodness of fit of new measurement model ( $X^2$ ,  $X^2/df$ , RMSEA, GFI, AGFI, CFI) (Ucar et al., 2012; Byrne, 2010; Hair et al., 2006). After every construct, measurement model, and structural model meet the criteria of fit, the structural model will be done the hypotheses testing.

### **Conclusion**

The problem in this research is the consumers prefer to buy street food which is considered to be unsafe for consumption. This study purpose to bridge the gap between the exists situation of there are many consumers potential to patronage unsafe food and finding the strategy to stop consumers from that behavior by examining consumers' decision making behavior when purchase street food relates food safety to evaluate their food safety concern, then the finding can contribute to figure out strategy to protect themselves from food risk through their buying behavior.

### **Contribution of the Study**

This study will develop a model that will be used to measure the consumer decision-making especially in food safety purchasing. Moreover, it can evaluate the consumers' concern toward food safety when purchasing food and could possibly create policy related to consumers' health promotion. Furthermore, the authority can utilize the finding on food safety certificate to formulate strategies to increase the effectiveness of the certification.

### **References**

- Blackwell, R. D., Miniard, P. W., & Engel, J. F. (2006). *Consumer behavior* (10th ed.). Singapore: Thomson South Western.
- Bohle, H. G., Warner, K., Sakdapolrak, P., Hansjurgens, B., Etzold, B., Green, R., Adesina, A., Butsch, C., Carter, R. L., Segura, C. L., Chatterjee, M., Marulanda, M. C., & Singh, R. (2008). Megacities: Resilience and social vulnerability. *Unu-Ehs, 10*.
- Bonatai, A. (2003). The customer is always right. *J. Environmental Health, 65*(9), 49.
- Bourque, L. B., & Fielder, E. P. (2003). *How to conduct self-administered and mail surveys* (2nd ed.). London, England: Sage.
- Browning, R. (1989). The theory of rational choice. In S. Pudney, *Modeling individual choice: The econometrics of Corners, Kinks and Holes* (pp. 7 – 42). Oxford, England: Basil Blackwell.

- Buckley, M., Cowan, C., McCarthy, M., & Sullivan, C. (2005). The convenience consumer and food - related lifestyles in great Britain. *J. Food Products Marketing*, 11(3), 3-25.
- Bureau of Epidemiology. (2013). Diarrhea 2013. Retrieved November/ 1<sup>st</sup>, 2013, from [http://www.boe.moph.go.th/boedb/d506\\_1/ds\\_wk2pdf.php?ds=02&yr=56](http://www.boe.moph.go.th/boedb/d506_1/ds_wk2pdf.php?ds=02&yr=56)
- Burusnukul, P., & Binkley, M. & Sukalakamala, P. (2011). Understanding tourists' patronage of Thailand foodservice establishments: An exploratory decisional attribute approach. *British Food Journal*, 113(8), 965-981.
- Chalak, A., & Abiad, M. (2012). How effective is information provision in shaping food safety related purchasing decision? evidence from a choice experiment in Lebanon. *Food Quality and Preference*, 26, 81-92.
- Chen, M. F. (2011). The joint moderating effect of health consciousness and healthy lifestyle on consumers' willingness to use functional foods in Taiwan. *Appetite*, 57, 253-262.
- Estterik, V. (1992). From marco polo to McDonald's: Thai cuisine in transition. *Food and Foodways.*, 5, 177-193.
- FAO. (1997). *Street foods. meeting in Calcutta, India, 6-9 November 1995*. (Report of an FAO technical meeting on street foods.). Rome: FAO.
- Fatimah, U. Z. A. U., Boo, H. C., Smbasivan, M., & Salleh, R. (2011). Food service hygiene factors the consumer perspective. *International J. Hospitality Management*, 30, 38-45.
- Fink, A. (2003). *How to design survey studies?* (2nd ed.). London, England: Sage.
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). New York, USA: McGraw-Hill.
- Griffith, C.J. (2000). Food hygiene: the worries persist. Conference Proceedings of Food Hygiene Europe 2000. Amsterdam, June
- Houthakker, H. S. (1998). Revealed preference and the utility function. In K. J. Lancaster, *Consumer theory* (pp. 108 – 123). New York, USA: Edward Elgar.
- Hoyer, W. D., & MacInnis, D. J. (2012). *Consumer behavior* (6th ed.). New York, USA: Houghton Mifflin.
- Kanchanakphand. (2002). *Krungthep mua wanni* (4th ed.). Bangkok, Thailand: Sarakadee.

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- Kennedy, J., Worosz, M., Todd, E. C., & Lapinski, M. K. (2008). Segmentation of US consumers based on food safety attitudes. *British Food Journal*, 110(7), 691-705.
- Kongchuntuk, H. (2002). Thailand's food safety project on restaurants and street vendors: The clean food good taste project. *The FAO/ WHO Global Forum of Food Safety Regulations*. Marrakech, Morocco., 1-5, 28-30.
- Levin, J. & Milgrom, P. (2004). *Introduction to choice theory* [Lecture notes]. California, USA: Stanford University.
- Likert, R. (1932). A technique for the measurement of attitude. *Archives of psychology*, 22 (140), 55.
- Maslow, A. H. (1970). *Motivation and personality* (2nd ed.). New York, USA: Harper & Row.
- McCarthy, M., Brennan, M., Kelly, A., Ritson, C., de Boer, M., & Thompson, N. (2007). Who is at risk and what do they know? segmenting a population on their food safety knowledge. *Food Quality and Preference*, 18, 205-217.
- Merriem, S. B. (2009). *Qualitative research* (2nd ed.). San Francisco, USA: Jossey-Bass.
- Ministry of Interior. (2012). Number of Thai population. Retrieved June/ 15th, 2013, from [http:// www. dopa. go. th](http://www.dopa.go.th)
- Ministry of Public Health. (2012). CFGT in 2012. Retrieved June/ 15th, 2013, from [http:// foods. anamai. moph. go. th](http://foods.anamai.moph.go.th)
- Money, R. B., & Crotts, J. C. (2003). The effect of uncertainty avoidance on information search, planning, and purchase of international travel vacations. *Tourism Management*, 24(2), 191-202.
- Nirathron, N. (2005). The business of food street vendors in Bangkok: An analysis of economic performance and success. *Canadian J. of Development Studies*, 16(2), 429-441.
- Nirathron, N. (2006). *Fighting poverty from the street: A survey of street food vendors in bangkok*. Bangkok, Thailand: International Labour Organization.
- NST Public Health Unit, personal communication, May 20, 2013
- Piaseu, N. & Pamela, M. (2004). Household food insecurity among urban poor in Thailand. *J. Nursing Scholarship*, 36(2), 115-121.
- Pranom, S. (1993). *Thai hawker food*. Bangkok, Thailand: Book Promotion and Service.

- Rajagopal. (2010). Street markets influencing urban consumer behavior in Mexico. *Latin American Business Review*, 11, 77-110.
- Schiffman, L. G., & Kanuk, L. L. (2009). *Consumer behavior* (10th ed.). USA: Prentice Hall.
- Selamat, J. & Hassan, Z. (2000). *Food safety in Malaysia: Challenges for the next millennium. Malaysia*. 161-169.
- Sienny, T., & Serli, W. (2010). The concern and awareness of consumers and food service operators towards food safety and food hygiene in small and medium restaurants in Surabaya, Indonesia. *International Food Research Journal*, 17, 641-650.
- Smith, S., & Paladino, A. (2010). Eating clean and green? investigating consumer motivations towards the purchase of organic food. *Australasian Marketing Journal*, 18, 93-104.
- Sneed, J., & Strohbahn, C. H. (2008). Trends impacting food safety in retail. *J. the American Dietetic Association*, 108, 1170-1177.
- Solomon, M. R. (2012). *Consumer behavior* (10th ed.). New York, USA: Prentice Hall.
- Theil, H. (1975). *Theory and Measurement of consumer demand*. Oxford, England: North-Holland.
- Tiemmek, S. (2005). *Consumers' opinion toward street food consumption at Bangkapi market*. (Unpublished Master of Science thesis). Kasetsart University, Bangkok, Thailand.
- Tikkanen, I. (2007). Maslow's hierarchy and food tourism in Finland: Five cases. *British Food Journal*, 109(9), 721-734.
- Tinker, I. (1997). *Street foods: Urban food and employment in development in developing countries*. New York: Oxford University.
- Tinker, I. (1999). Street foods into the 21st century. *Agriculture and Human Values*, 16(3), 327-333.
- Ucar, A., Ozdogan, Y., & Ozelcik, A. O. (2012). Consumer attitude toward food consumption and purchase in turkey. *Ecology of Food and Nutrition*, 51, 492-504.
- Uggioni, P. L., & Salay, E. (2012). Reliability and validity of a scale to measure consumer attitude regarding the private food safety certification of restaurants. *Appetite*, 58, 470-477.
- Wolcoky, A., Pun, M., Khnonax, J., & Aung, M. (2004). Consumer attitudes, knowledge and behavior: A review of food safety issues. *Trends in Food Science & Technology*, 18, 56-66.

*The 10<sup>th</sup> International Postgraduate Research Colloquium*

- World Health Organization. (2002). Food borne diseases, emerging.  
Retrieved June/ 17th, 2013, from [http:// www.who.int/mediacentre/factsheets/fs124/en/](http://www.who.int/mediacentre/factsheets/fs124/en/)
- Yasmeen, G. (1996). *Bangkok's foods cape: Public eating, gender relations and urban change* (Unpublished Ph.D. thesis). University of British Columbia, Vancouver, Columbia.
- Yasmeen, G. (2000). Not from scratch, Thai food systems and public eating. *J. International Studies*, 21(3), 341-352.
- Yasmeen, G. (1999). *Stockbrokers turned sandwich vendors: The economic crisis and small scale food retailing in Thailand & the Philippines*. (development and security in Southeast Asia project No. December). Canada: York University center for international and security studies.
- Yeung, R. M. W., & Joe, M. (2001). Food safety risk consumer perception and purchase behavior. *British Food Journal*, 103(3), 170-186.
- Yeung, R. M. W., & Morris, J. (2006). An empirical study of the impact of consumer perceived risk on purchase likelihood: A modeling approach. *International Journal of Consumer Studies*, 30(3), 294-305.