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**Development of food establishments to ensure compliance  
with food safety standard  
Pom Prap Sattru Phai District, Bangkok**

**Chawsithiwong and Dendara**

**Abstract:**

Objectives of this survey research were: 1) to determine compliance with food safety standard of food establishments in the Pom Prap Sattru Phai District, Bangkok 2) to analyze the factors associated with compliance with food safety and 3) to investigate problems, obstacles and guidelines for the development of food establishments in the studied area. Data Collection by a questionnaire of samples from a population of between April –June, 2013 was accomplished. The computer statistical analysis of t-test, F-test, and Pearson's Correlation Coefficient was performed. The results showed that approximately percent of food establishments could comply to food safety standard. The rest failed with various reasons such as wastewater treatment, waste disposal, improperly cleaning of equipments and utensils. Hypothesis testing found that there were statistical significant ( $p = .05$ ) relationships of educational level of the operator and the type of food establishments with the compliance with food safety standards.

**Keywords:**

Food safety, food establishments. Pom Prap Sattru Phai district.

**Citation:**

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## 1.Introduction

Pom Prap Sattru Phai District is a densely populated commercial area in Bangkok. Approximately percent of population are doing businesses. There are total of food establishments in this area. The food sanitation records during the year - showed that the percentage of food establishments which met the food safety standard equivalent to .0, .0 and .8, respectively. The district office recognized the gradually decline in food sanitation and therefore has set plans for development of food establishments for the years , and . The target of this three year plan is to meet with the food safety standard at .0, .0 and .0 percent, respectively. Pom Prap Sattru Phai District Office, The researcher as a district food sanitation authority is interested in study of the causes and factors that food business operators cannot comply with the food safety standard. The results of this study may be useful in the improvement of food establishments to ensure compliance with food safety standard for the studied areas and may also be applied to other districts in Bangkok as well.

The objectives of this research are three folds: 1)to determine compliance with food safety standard of food establishments in the Pom Prap Sattru Phai District, Bangkok 2) to analyze the factors associated with compliance with food safety and 3) to investigate problems, obstacles and guidelines for the development of food establishments in the studied area.

## 2.Materials and Methods

### 2.1 Conceptual Framework (see figure 1)

#### Independent variables Dependent variable

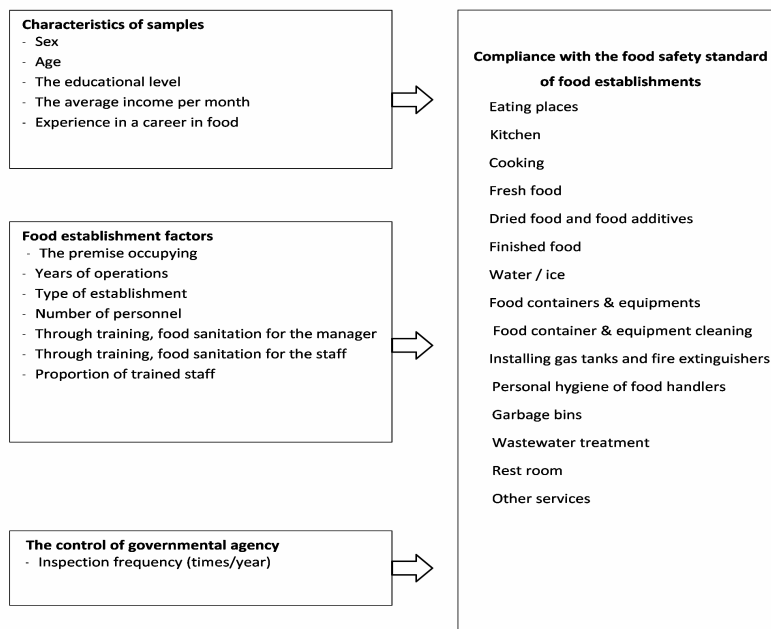


Fig. I Conceptual Framework

## 2.2 Variables

From figure 1, independent variables are a) **Characteristics of samples** including gender, age, education, income, and experience in a career in food. B) **Food establishments** including food establishments occupying the premises, Operations time, types of food establishments, number of establishments, trained manager, trained personnel and ratio of training staff and 3) **Control of the governmental agency** especially inspection frequency (times/year). For the dependent variable, including compliance with food safety standards of food establishments in the area Pom Prap Sattru Phai, Bangkok which includes criteria as indicated in the Figure I.

## 2.3 Population and Sample

The population of this study are 168 food establishments as of March , which have officially registered at the Pom Prap Sattru Phai district office. A total of 120 samples calculated by the Yamane formula are appropriate (Yamane, . The hypothesis testing with the statistical significance of 0.05 ( $p=0.05$ ) was accomplished. Stratified simple random sampling was applied. Random samples from each of four categories of food establishments by a random lottery have been shown in table I.

**Table I Population and sample of food establishments(places)**

Group	Types of food establishments.	Population	Sample
1	Available in hotel.	8	5
2	Restaurant	15	11
3	General food establishments	129	92
4	Café	16	12
Total		168	120

## 2.4 Validity and Reliability

A questionnaire as an instrument for data collection had been IOC (Index of Content Congruency) verified by three experts and was revised according to the expert's recommendations. Then, reliability of questionnaire was checked by the trial in a nearby area with 20 food establishments. The data from trial were then used in computing the alpha Cronbach's Coefficient (Kitpredaborisuth, 2549). It showed the acceptable reliability of questionnaire at the alpha Cronbach's Coefficient of 0.8968.

## 2.5 Data Analysis

Statistical computer package for analysis of t-test, F-test and Pearson's Correlation Coefficient was utilized.

## **2.6 Assumptions**

There are three hypotheses of this study as follow:

- a) there are relationships between characteristics of samples ( gender, age, education, average income per month and experience in a career in food and compliance with the food safety standard of food establishments in the study area
- b) there are relationships between food establishment factors. (the premise occupying, years of operations, number of personnel, training of operators. and the proportion of staff trained) and compliance with the food safety standard of food establishments in the study area
- c) there is a relationship between the control of government agency or frequency of inspections and compliance with the food safety standard of food establishments in the study area

## **3. Results**

The study found that approximate 93 percent of food establishments in the study area could be carried out in compliance with food safety standards. Problems and obstacles of noncompliance were unacceptable practices of solid waste management, wastewater treatment and equipment & utensil cleaning.

The results of hypothesis testing revealed the relationships between types of food establishments, educational level of the food business operators and compliance with the food safety standard in the Pom Prap Sattru Phai district, Bangkok at the significant level of 0.05 (see Table II).

**Table II Results of the hypothesis testing**

<b>The independent variables.</b>	<b>P – value</b>	<b>Significance at 0.05 (Two-tailed)</b>
<b>characteristics of samples</b>		
- Sex	0.309	Not sig.
- Age	-0.109	Not sig.
- The educational level of food business operators	0.029	Sig.*
- Average income per month	0.393	Not sig.
- Professional experience in food business	-0.294	Not sig.
<b>Factors of food establishments.</b>		
- Occupying the premises	0.124	Not sig.
- Years of operations.	-0.620	Not sig.
- Types of food establishments	0.000	Sig.*
- Number of staff	0.385	Not sig.
- Through training, food sanitation	0.240	Not sig.
- manager	0.102	Not sig.
- staff	0.282	Not sig.
- Proportion of staff trained in food sanitation		
<b>Control of government agency.</b>		
- Frequency of inspection (times/year).	0.269	Not sig.

Investigation of problems, obstacles and guidelines for the development of food establishments.

In the studied area has found that the some problems of incompliance are solid waste management, wastewater treatment and improperly equipment and utensil cleaning. There is a major obstacle in Thai language deficiency of foreign workers such as Burmese and Cambodian workers in food establishments. Lacking of Thai language skill especially reading and writing has caused some communication abilities in training regarding food sanitation. Guidelines for the development of food establishments provided by the samples are the fair treatment of officials to all food establishments with equality. Moreover, the local government should support the insect capture equipments to all food establishments in the city.

#### **4.Discussions and Recommendation**

The result of hypothesis testing in Table II has shown the relationship between the education level of the operators and the compliance with the food safety standard of food establishments in the study area with a statistical significance at  $p = .05$  This finding corresponds to the study of Skulniyomporn( on the cooperation in the implementation of food safety standards of food vendors in the Chanthaburi market,

Chanthaburi province. Another hypothesis testing has shown the relationship between types of food establishments and the compliance with the food safety standard of food establishments in the study area with a statistical significance at  $p = .05$ . This finding is consistent with the study Komonsirisuk., et.al., ( on the factors influencing the implementation of the principles of food sanitation of food vendors in Suphanburi Province as well as the study of Srinoen.,et.al. ( , on the factors associated with the satisfaction of a restaurant operators with Bangkok's food security .

This study reveals that most of food establishments in the area Pom Prap Sattru Phai, Bangkok can comply to the food safety standard, however, this study would suggest that consumers and foreign tourists should buy food from food establishments in hotels and restaurants which all of them have received the food safety certificates of the Bangkok Metropolitan. The purchase of food from the general food establishments should always buy only from a store that has the food sanitation certificate. Such certificate attached to the wall of the restaurant and the most of food establishments should be noticed before making a purchase. Results of this study will be presented to the district office to take advantage of the next campaign on food safety.

Finally, researchers would like to recommend that problems and obstacles should be solved by the food establishments themselves. The food business operators should support the foreign workers to engage in studying the Thai language anytime available to them. The food business operators shall also learn to improve their weaknesses by themselves with the financial and technical support mechanisms in the environmental fund provided by the Ministry of Natural Resources and Environment. The city officials should provide the best assistance to them in contacting with the sources of financial and technical supports.

## **5.Acknowledgement**

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