

## **Street foods safety in Yangon: A case study on street food vendors' socio-economics and production aspects**

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### ***Abstract***

*Street foods vending offers economic benefits to vendors and nutritious foods for urban dweller, especially in developing countries. In Myanmar, Yangon City Development Council-YCDC is mainly responsible for controlling food stalls. The aim of this study are to investigate the authority's controlling aspects of street foods towards safety, to investigate vendors' understanding on proper practices for safety and also to find out constrains that prevent them following proper handling practices. Interviews with the authority from the health department of YCDC were conducted. A total of seventy two (n=72) street food vendors from downtown area included. Demographic profiles of vendors, their food safety knowledge, constraints in proper handling practices etc. were assessed by using semi-structured questionnaire. It found that YCDC had already established five key components of food control system for controlling food stalls, however, street foods was not under control if comparing with other stationary food stalls. That situation prevented the opportunity to educate vendors. Lack of availability of clean water source and self-reported food safety knowledge weakness are two main constraints in practicing proper handling practices among other results. This study could assist policy makers for improving the street food safety.*

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**Key words:** food control, food safety, awareness, practice

**JEL Classification:** Q 18, I 18, R19, C91

## **1. Introduction**

Street foods vending offers economic benefits to vendors; however most of street foods vendors are often with poor knowledge on food safety(Khairuzzaman et.al.,2014).The

contribution of street food vendors to the economies of developing countries was vastly underestimated and neglected (Winarno and Allain, 1991). It is an unimpressive artisanal business; still it serves food for 2.5 billion people every day in the world (FAO, 2007). Food safety aspects of this informal food business receive insufficient attention by authority concerned and it often faces precarious working condition (Etzold, 2014).

Street foods had become an indispensable part of both urban life and urban diets. Street food vending is one of the tourist attractions with varieties of local foods (WHO, 1997). One Yangon based experienced tour guide said that tourists like to see the vendors to try foods and to mingle with the locals during in Yangon (Aung and Thaw, 2011). It, however, has some public health risks associated with consumption of street food in developing countries (Ackah et. al., 2011).

Hazards and violations of good practices can occur easily at every stage of street foods productions (Barro et. al, 2007). The place of preparation, utensils for cooking and serving, raw materials, time and temperature abuse of cooked foods and the personal hygiene of vendors are major sources contributing to contamination (Rane, 2011). The need to reduce food contamination through education and provision of sanitary facilities at vending is required, as vendors do not put their awareness in practice, according to a street food study of Uganda (Ackah et. al., 2011). Codex Alimentarius Commission CAC has adopted 2 regional guidance documents on street foods, based on regional code of practices to be adopted by each country and enforced by local authority (FAO, 2002).

## **2. Literature Review**

In late 2011, a study on the effectiveness of food safety training program to street food vendors was conducted by a group of researchers of the University of Public Health Yangon, Myanmar. They examined the comparative study of vendors' knowledge, attitude and practice (K, A, P) scores before and after the food safety training intervention. In the post intervention, the improvement of knowledge, attitude scores found higher; however no significant improvement in practice was found while checking the fecal coliform count result of vendors' food samples (Maung et. al, 2012). This study concluded that the food safety training program improved food safety Knowledge and Attitude only. Therefore, it suggested that health educations as well as supportive measures such as financial assistance, continuous monitoring, etc. are necessary to improve the vendors' food safety practices and personal hygiene.

In managing street foods business, authority concerned may choose one of the following governance steps such as (1) repression or eviction for hawkers' encroachment on the crowded streets-side (2) temporary approval within the limited timeframe (with or without registration fees, within or without zoning area) and (3) the official recognition of the street

foods existence and the protecting the selling right of hawkers (at public place) along with the corrective rules to be abided by vendors. Rane (2011) mentioned that Malaysia, Philippines and India are the three countries which have regulations for protecting street vendors. India and Thailand have developed hygienic practices for street vendors so as to upgrade hygiene and quality of street foods (Dawson, 1996).

A range of personal, social, and environmental factors influence food handlers practices and thus these factors need to be addressed in order to change food handlers' behavior (Gul, 2012). A year after an FAO-supported street foods quality improvement campaign, food vendors in one area of Bangkok announced that sales were up 20 percent (FAO, 2002). It shows the necessity to assist the improvement of street foods quality, from controlling perspective. Authority must elucidate a policy aimed at assisting, controlling and maintaining the street food sector (WHO, 1997) it can be achieved through better communication with vendors.

### **3. Methodology**

#### **3.1 Research Questions**

This study has three research questions: the first one is to investigate the authority's controlling aspects of street foods towards safer food production, secondly to investigate health and personal hygiene knowledge of vendors and thirdly to find out constrains that prevent them following proper handling practices.

#### **3.2 Data**

The study was conducted during August-September, 2013, in Downtown Yangon, Myanmar. A total of seventy three respondents contributed towards the accomplishment of this study. Two respondent groups, street food authority (n=1) and vendors (n=72), comprised in this study.

By using semi-structured questionnaires, interviews with the authority from the health department of Yangon City Development Council YCDC were conducted, after getting approval from one of the cabinet members of YCDC Committee. The investigation of food control system for food stalls was compiled for the first time to identify the street food control governance administered by YCDC. Food legislation, food control management, inspection service, laboratory service and information, education and communication IEC activities are five key components in the system for controlling street food.

Seventy two street food vendors (n=72) from downtown area were included. Vendors' respondents were requested to take part in surveys with the structured questionnaires. Revision of the questionnaires was made until it could be answered and clearly understandable. Pre-testing was performed randomly with some vendors. Simple random sampling technique was used to access three major themes such as demographic profiles of

vendors, their food safety knowledge and constraints in proper handling practices. Majority of the questions for vendors, except some demographic facts, are designed just to select from a given set of options so as to save the time consumed for survey during their busy business hours.

### **3.3. Statistical Analysis**

Information and secondary data were collected since April 2013 from various sources such as government offices, research organizations to make review of the governing regime. The collected data were examined during and after collection. Only fully answered sheets were entered in computer for analysis. SPSS Statistical package for Social Science, version 16 was used to carry out the analysis. Simple descriptive analysis was employed to analyze frequency, percentage and standard deviation. Face to face interviews were carried out to get in depth knowledge.

## **4. Results and Discussion**

### **4.1. Governance of street food in Yangon**

To Myanmar, street foods is the foods and beverages prepared and / or sold by vendors in streets and other public places for immediate consumption or consumption at a later time without further processing or preparation (Nwe,2011).In Yangon, the health department of Yangon City Development Council YCDC is mainly responsible for safety and controlling food establishments that are with or without license. Street food stalls are regarded as the informal business run without license, but under the control of YCDC.

According to interview, the temporary selling approval has been allowed for the duration of 3 pm to 8 pm, without registration fees and zoning limit. YCDC has its own definition for street foods.

### **4.2. Food Control system for food stalls**

#### **4.2.1 Food legislation**

As regard with the food legislation in controlling food stalls, the National Food Law of 1997, the City of Rangoon Municipal Act of 1922 and the City Development Committee By-law of 1999 exist for preventing the public from consuming unsafe food. The City Development Committee Health By-law of 1999 comprised of eight Chapters with forty six Sections. With the aim of ensuring safe food production, the detail descriptions of the role and responsibilities of committee, the responsibility of food producers, approval and denial of food production license and selling permission, etc. are provided in Chapter II and III of the Yangon City Development Committee Health By-law (1999).

The definition of road-side stalls including street foods stalls is mentioned in Section 2 of Chapter II of the Yangon City Development Committee Management By-law of 1999. In Section 18 of Chapter VI: tax payable by road-side sellers is mentioned however, the collecting tax in vending was no longer effective during the survey period (Aye, 2013).

#### **4.2.2 Food Control Management**

Controlling, monitoring and surveillance activities of the governing authority are crucial for the effectiveness of food control system. Licensing for food stalls, issuing health certificates for handlers and surveillances activity are conventional steps in operational level of street food safety. Ackah (2011) suggested that one of the common ways of regulating street vended food in the developing countries is through medical examination of food vendors.

According to YCDC, food sectors are generally divided into four categories such as markets and stores, food production factories, slaughter houses and prepared foods selling shops. Among them, street food shops are under prepared foods selling shops category together with the restaurants and schools food stalls. Restaurants and schools food stalls are under supervision of YCDC, Food and Drug Administration FDA and regional health department, in terms of licensing, issuing health care certificate and conducting training courses for food handlers. However, street food stalls were still excluded from these steps then (Aye, 2013), even though YCDC is responsible for sanitation of street foods in Yangon, according to the City Development Committee Management By-law (1999).

The health department of YCDC issued a statement comprised of ten rules about the sanitary requirements for street food stalls (YCDC).

#### **4.2.3 Inspection Service**

Food and Drug supervisory committee at central, state, district and township levels carried out the inspection for prepared foods selling shops in cooperation with the Department of Health of the Ministry of Health, the Departments of City Development Committees (CDCs). The authority said that every 32 township in Yangon has its own inspectors who are physicians, midwives, and health care professions assigned at the township medical administrative offices. Food handlers and foods with its utensils are two common elements to be inspected. Deworming the food handlers and the nasal swab tests are carried out by the authority during the inspection process (Aye, 2013).

In this inspection service, it was found that inspectors' roles and responsibility were pre-determined and designated for the inspection process. However, their duty for inspection is an additional task that is attached to their main health care professional job. Frequency, effectiveness and follow-up action after the inspection are still questionable for managing the successful inspection procedures. Above of all, restaurants or food shops that need to apply the registration for applying license to YCDC are eligible for this inspection steps. Street foods still excluded then.

#### **4.2.4 Laboratory Service**

YCDC has its own laboratory starting from March, 2013; it is, however, technically under FDA's laboratory supervision. Food control laboratories are the essential part by providing

the scientific information that helps decision making process in dealing with the food safety problems (FAO, 2006).

#### **4.2.5 IEC activity**

Food safety education is most effective when messages are targeted toward changing behaviors for preventing food borne illness (Medeiros et.al., 2001). In IEC activity, YCDC played an active role in conducting trainings for inspection personals and training for food handlers since 1996. These were carried out 4 times a year, with 2 days training course for 50 participants per batch (Aye, 2013).It also provides training manual including safe food handling.

It was found that YCDC had already established five key components of food control system for controlling food stalls, however, street foods was not under control if comparing with other stationary food stalls. That situation prevented the opportunity to educate vendors.

During the past, selling permission on the road side was often evicted by the authority. There were a lot of discussions (Aung and Thaw, 2011) on how vendors should be allocated and about the existance of this infomal business in lively downtown. They were often criticized by the authority due to their encroachment on the public place of the crowded Yangon. Nevertheless, after the political tranformation of 2012, vendors have been allowed doing their business without fees to the authority, but within the time frame of 3pm to 8 pm, out of consideration for the socio-economic welfare of vendors.

### **4.3. Demographic profiles of respondents**

Table 1: Demographics of Vendors-respondents

<b>Variables</b>	<b>n</b>	<b>%</b>
Sex ( 72)		
Males	23	31.9
Females	49	68.1
Household-size (72)		
Up to 3	42	58.3
3 to 5	23	31.9
more than 5 persons	7	9.7
Marital Status(72)		
Single	22	38.6
Married	49	60.0
Widow	1	1.4
Age years (72)		
< 20	-	0
21-30	16	22.2
31-40	16	22.2
41-50	21	29.2
>50	19	26.4

Education (72)		
up to Elementary Level	11	15.3
up to Secondary Level	18	25
up to High School Level	32	44.4
up to University Level	11	15.3
Higher than University Graduate	-	0

Demographic profiles of the street food vendors are shown in table 1. The result revealed that most of the vendors (68%) are women<sup>1</sup>. That result is not varied so much with the previous study result of 59% reported by (Maung et.al, 2012).According to FAO, women employment represents from 70% to 90% of the street food vendors (2002). 58% of them had 3 family members and more than 30% had three to five family members<sup>2</sup>.

15% of the respondents had at least primary school education and 25% was up to secondary school level. It is in agreement with the previous study (Maung et.al, 2012) result 33% who passed the primary level.

As regard with the established years, nearly half of the respondents started their businesses more than seven years ago and about 10% started less than a year. Two third of respondents were married. More than 70 % of them were born in Yangon and less than 30% was migrated<sup>3</sup> to Yangon and engaged in street-foods vending then. More than 80% have their own trash bin and the great majority of them (88.9%) throw trash into YCDC garbage bins.73% used public toilet, other used toilet from kith and kin and 80% of these toilets had facilities for hand washing.

#### **4.4. Health and Personal hygiene knowledge of Vendors**

Health and personal hygiene knowledge of the vendors are mentioned in table 2. Most of them (> 95%) knew that used plates and glasses cannot be washed by just quick rinsing in a pail of water and washing in tub with the oily and or soapy reused water. Al most all knew that soap and water are required cleaning utensils however, two third didn't know that rinsing with hot water and drying with clean clothes should be done after washing the utensils.

The majority of respondents 94% replied that they had heard of the word food borne illness. Al-most all responded that they were aware of that food borne diseases might be associated with the consumption of contaminated foods. Among the respondents, 22% of vendors' respondents attended the food safety trainings conducted by the authority. A food safety training program was launched in this study area during 2012 for conducting the research mentioned in the literature review. Personal hygiene knowledge found rather high as a result of that intervention. No vendors had health certificate.

<sup>1</sup> The sex ratio is 98.9males per 100 females at national level (Aye et.al.2010).

<sup>2</sup> Total fertility rate TFR at National level is standing at 2.03 and Marital fertility is 4.7 children per married and the trend has been decreasing (Aye et.al.2010)

<sup>3</sup> One in ten people in Myanmar moves from their residents' states at least once in their life time and internal migration from rural to urban exceeds that of urban to rural. Yangon sends and receives migrants from every state in substantial numbers (Aye et.al.2010)

Nearly half of them (47.2%) had no idea that it is necessary to wash their hand after touching money. Wearing hair restraint was understood by majority of respondents (86%). It is higher than 72% positive responses of wearing apron. All respondents demonstrated that they could not handle food safely while suffering from Diarrhea. Half of the respondents (50%) knew that rings are a source of contaminants. This finding is not contradicted with the study result (60%) conducted in Ghana by Ackah (2011).Insufficient hand washing throughout the day was understood by most of the respondents (88.9%).

Table 2: Health and persoanl hyigene knowledge of Vendors (n=72)

Questions	No of positive responses	%
Types of food contaminants include		
- Worms and Parasites	67	93.1
- Invisible germs in foods	66	91.7
- Unpermitted Food coloring(industrial used dyes),contaminated flavoring and spices	65	90.3
- Insects and/or their droppings	68	94.4
- Dust and dirt	71	98.6
Hand washing is necessary for street food vendors		
- after trip to toilet	71	98.6
- after touching money	38	52.8
- even when handkerchief is used for sneezing	37	51.4
- even when hands are not yet wet, sticky and visibly dirty during continuous food handling	69	95.8
While vending, Street food vendors		
- Should wear hair restraints	62	86.1
- Should wear aprons	52	72.2
- Should not wear jewelries (especially-ring) in their hands and arms as a sources of contaminations	36	50.0
Street food vendors cannot safely handle foods, while suffering sick with		
- diarrhea	72	100
- Typhoid	67	93.1
- Hepatitis	68	94.4
- Food poisoning	66	91.7
- Helminthiasis	67	93.1
- Communicable diseases	70	97.1
- when they have an open wound in the hands even if it is fully bandaged	65	90.3
- sick of family members	41	56.9
It is not safe to eat food		
- That has been exposed to pests like rats ,cockroaches and flies even if there is no visible evident of gnawed parts or pest larvae	71	98.6
- Which come in contact with dirty surface	71	98.6
- Found containing hairs or staple wire provided these were removed prior to consumption	72	100



Faults that reduce personal Hygiene of Vendor		
- Touching food with bare hands during serving	57	79.2
- Allowing buyers touching foods with bare hands	53	73.6
- Speaking while serving	43	59.7
- Using food-preparing-hand to exchange money	52	72.2
- Insufficient hand-wash throughout the day	64	88.9

The constraints cited by the vendors include lack of availability of clean water source (66.7%), unfavorable condition for good practices and lack of awareness on good handling practices (63.9%), lack of price competency 58.35%, lack of access to clean toilet facilities and weak in food-safety knowledge 58.3%, lack of timely support for garbage disposal system (55.8%), due to high mobility 54.25%. Barro et. al, pointed out that vendors need better premises with proper infrastructures such as access to running water , sewage system and drainage system,etc.(2007).

According to table 2 result, it could be found that most of the vendors were aware of health and personal hygiene knowledge. The same type of finding was found in the Philippines’ street food study conducted by Azana et.al. (2005) and in Accra-Ghana’s street food study done by Ackah et.al.,(2011).

## **5. Conclusions and Recommendations**

YCDC, the authority responsible for controlling food stalls, established all key components of the food control system for food stalls. However, street foods stalls are not under control if comparing with the registered stationary food stalls. Vendors didn’t need to pay tax, however, their existence was not acknowledged legally like other neighboring developing countries such as Thailand, India, and Malaysia. Under the supervision of YCDC, street food stalls should be registered and the sanitary condition street food production should be monitored. Most of the vendors possessed good knowledge of health and personal hygiene. They still need to put their knowledge into practice. For making sure of that, authority-supported awareness raising training programs and periodic monitoring should be introduced to street food vending in Yangon.

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