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If Street Food Disappears — Projecting the Cost for Consumers in Bangkok

Jorge Carrillo-Rodriguez and Sarah Orleans Reed

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Abstract

Bangkok is renowned for its street food, but since 2014 the Bangkok Metropolitan Administration (BMA) has embarked in the removal of tens of thousands of street vendors, including a significant number of street food vendors. Our study focuses on the role of street food as a source of affordable and convenient meals for Bangkok residents. Two surveys were conducted: (a) a consumer survey to determine frequency of street food consumption, and (b) a price survey to determine the price differential between street food and non-street food. The results of the two surveys were combined to project the difference in food expenditure for an individual consumer in the absence of street food, according to income levels. Our findings confirm that, regardless of their income level, Bangkok residents consume street food on a regular basis and, therefore, the extra expenditure they would incur in its absence could have a detrimental impact on their expenditure and consumption pattern, particularly in the case of low-income households.

1. Introduction

In 2017, CNN Travel declared Bangkok the world's number one street food city. This was no great surprise; the city had earned the same distinction the previous year, and its vendors' abundant savoury dishes – *mi krub*, *pad krapao*, *phadthai* – feature regularly in the Guardian, BBC, and the New York Times, among others. Paradoxically, since 2014, the Bangkok Metropolitan Administration (BMA) has embarked in the removal of tens of thousands of street vendors. This includes the removal of both licensed and unlicensed food vendors, demolition of historical and iconic markets, and restrictions on hours of vending.

Bangkok's street food is so renowned that when city officials announced their plan to remove all street vendors by the end of 2017, an outcry ensued. A range of stories criticizing the decision appeared in local and international news outlets. In Bangkok, the media backlash prompted Tourist Authority officials to announce the exclusion of some tourist destinations from their eviction campaign. Unfortunately, Bangkok's main consumers of street food – local residents who do not necessarily live or work near the exempted tourist areas – have not received the same level of consideration from policymakers, the media, or academia. They have continued to lose access to familiar purveyors of food, household goods, and clothing since the campaign's launch in 2014.

Globally, there is growing awareness of the role the informal sector plays in cities. The emerging picture shows informality as crucial not only for the functioning of many cities in the developing world but also, and more importantly, as a key component of those cities' future development, including their competitiveness, productivity, and resilience (see for example, CDIA 2011, Brown et al. 2014). One aspect that has started to receive attention is the relationship between informal street food and urban food security. This reflects a shift in food security studies away from a sole focus on food production and toward food access, especially in urban areas (Cohen and Garret 2010, Crush and Frayne 2011a). Much of the research has focused on African cities. Low-income, urban households' dependence on informal traders (including street vendors) is “a resounding theme” in recent urban food security literature for Sub-Saharan Africa (Skinner 2016). Skinner and Haysom (2017) attribute

this to informal retailers' spatial accessibility, low price, appropriate quantity, spatial food geographies, and access to credit.

As Skinner (2016) highlights for sub-Saharan Africa, few studies quantify the contribution of the informal sector to meeting consumption needs. A small number of studies focus specifically on consumption of street foods, which are “ready-to-eat foods and beverages prepared and/or sold by vendors or hawkers especially in the streets and other similar places” (FAO 2009). In a review of 23 studies on street food primarily from African cities, Steyn et al. (2013) find that 13-50 per cent of daily energy intake for adults and 13-40 per cent for children came from street food.

Recent studies have explored various dimensions of street vending in Bangkok, including policy and governance (Kusakabe 2014, Tangworamongkon 2014, Yasmeen and Nirathron 2014, Bonnet and Batréau 2016, Boonjubun 2017), and urban livelihoods (Yasmeen 2006, Nirathron 2006, Nirathron 2017). This study adds to a smaller body of work focusing on the role of street food in providing affordable and convenient meals for Bangkok residents and workers.

In Bangkok, affordable prepared food from small traders and restaurants has long supported local consumption (Yasmeen 2006). In 2007, the average Bangkok household spent 56 per cent of its food expenditure on prepared foods; this came to 62 per cent by 2013 and 54 per cent in 2015 (NSO 2013, 2015). The availability and accessibility of affordable prepared food also has important social dimensions, as highlighted by Yasmeen (2006). Many housing blocks in Bangkok do not have cooking facilities, as developers assume that residents can easily order meals or eat out.¹ Particularly for women, the “spatial and economic accessibility” of prepared food in Bangkok “lessens the burdens of domestic work related to shopping, cooking, and cleaning up” (Yasmeen 2006).

Several studies have looked at the consumption of street food in particular:

- A 1994 study by Hutabarat finds that “street foods contributed as much as 40 per cent of the total energy intake, 39 percent of the total protein intake and 44 percent of the total iron intake for city residents” (Hutabarat 1994, as cited in Dawson et al. n.d.).
- A 2005 survey of 385 buyers in Klongtoey and Dingdaeng districts found that more than half of respondents purchased from vendors at least once per day and nearly half spent over 60 THB (1.90 USD)² per day on street food (Nirathron 2006).
- A 2017 survey of 200 consumers in Bang Rak, Pathum Wan, Phra Nakhon, and Samphanta-wong districts finds that 87 per cent purchase food or other items from street vendors, 65 per cent purchase from vendors three times or more per week, and nearly 27 per cent purchase every day. Half of the sample purchased more than 100 THB worth of goods from vendors daily (Nirathron 2017).

With regard to the income profile of vendors, Nirathron's 2017 study demonstrates that low-income Bangkok residents do indeed depend on street vendors. A third of her sample earned approximately

¹ Yasmeen (2006) highlights that, in the 1990 housing survey, over 20 per cent of housing stock in the 1990 Household Socioeconomic survey are “room or rooms” (68) and describes the common practice of apartment residents purchasing food from small shops that deliver to their apartments.

² One Thai Bhat was equivalent to USD .0320331, converted at a mid-market rate at www.xe.com on April 12, 2018. Currency exchanges provided in this document are rounded to the nearest dollar.

the minimum wage or lower (9,000 THB per month, approximately 285 USD) and another third earned between 9,000 and 15,000 THB (USD 475). But street food consumption is not by any means limited to lower income groups or “people of humble backgrounds” (Nirathron 2006, Yasmeen 2006). Reed et al. (2017) observe that street vendors in two outer districts of Bangkok organize their days around the schedules of white-collar office workers, who constitute their most important clientele.

Despite its importance for Bangkok’s urban food system, street food holds a precarious position. The city’s flexible legal framework makes vending vulnerable to sudden changes in policy. Since the BMA was established in 1972, policies towards vendors have modulated between accommodating and restrictive, with sporadic crackdowns or removal campaigns (Yasmeen and Nirathron 2014, Tangworamongkon 2014). The current “Return the footpath” campaign is the most sustained and far-reaching effort to reduce the number of vendors in recent history (Angsuthanasombat, forthcoming).

In this context, policymakers should not focus solely on the impact for tourism or for the vendors themselves, though both are important. They need to consider what the impact would be on consumers if street food disappeared. This would include the cost in terms of time for busy commuters, who often travel several hours to work; the cost in terms of nutrition if affordable healthy options disappear; and the monetary cost if consumers dependent on prepared food are forced to spend more by purchasing from formal enterprises.

This study focuses on this latter proposition. It seeks to project the difference in food expenditure for an individual consumer in the absence of street food, according to income levels. To do this, it uses a consumer survey similar to those described above. In addition, this study includes a component not often researched: a comparison of prices between street food and non-street food. Such cost comparison between informal and formal food sources has been identified as a gap in global research on informal sector contribution to urban food security (Skinner 2016).

1.1 Purpose:

This study seeks to estimate in monetary terms the importance of street food for Bangkok’s consumers. Specifically, *it projects the difference in food expenditure for an individual consumer in the absence of street food according to income levels*. It develops this projection based on:

1. Consumer survey of nearly 500 street food consumers in 5 locations, focused on frequency of purchase of meals (breakfast, lunch, dinner)
2. Price comparison of 140 food items (meals) from street vendors and non-street food sources in 6 locations, used to develop an average price differential between street food and non-street food

The frequency of consumption and price differential between street food and non-street food are used to project the possible difference in expenditure among consumers in the sample.

2. Methodology

The methodology was designed to produce information on consumption of meals and a comparable price differential that was unavailable from any existing source.

2.1 Consumer survey

The goal of the consumer survey was to estimate the weekly frequency of street food consumption among consumers of different income levels in Bangkok. It employed convenience sampling at 5 different areas of Bangkok.

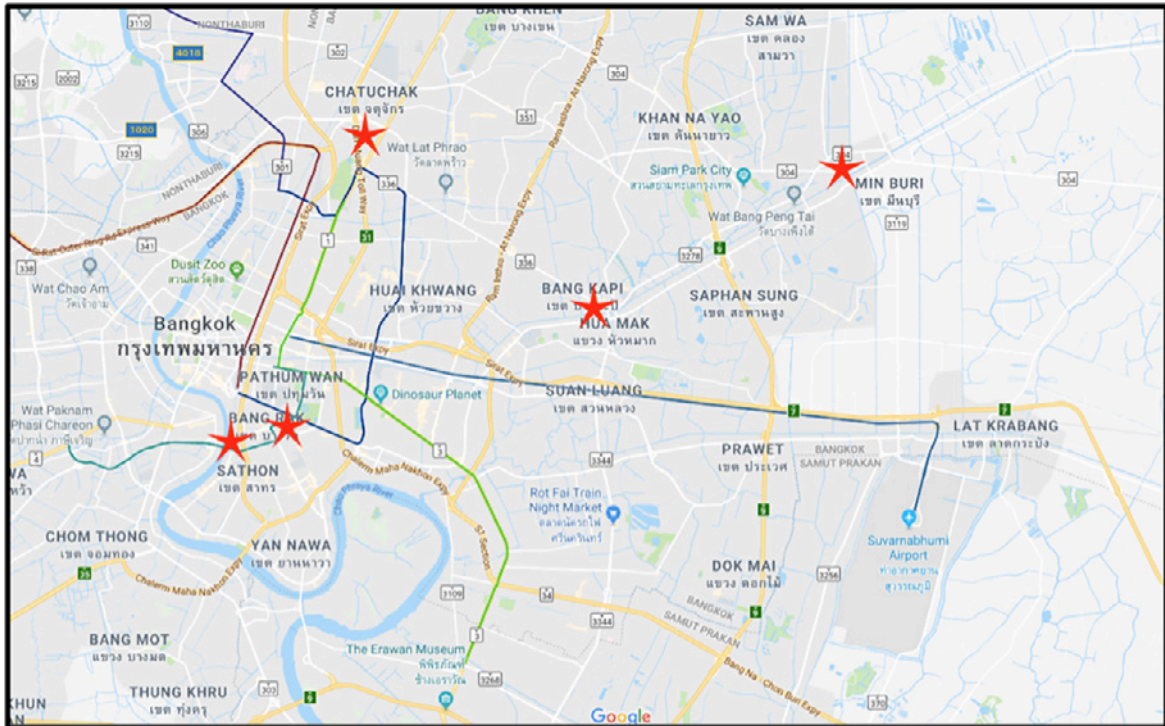
The survey targeted clearly identifiable street food consumers. Researchers approached only those in the process of purchasing street food, eating street food, or carrying take-away bags of street food.

Locations were chosen with the primary goal of capturing consumers of varying income levels. They include therefore two central locations intended to capture white-collar office workers (Silom, Saphan Taksin), and two more residential areas with a greater presence of blue-collar workers (Min Buri and Bang Kapi). Following the first four surveys, we decided to conduct an additional survey on Vipawadee Soi 11 to capture a greater number of respondents in lower-income brackets. Unlike the previous locations, the final location was facilitated by introductions from a local liaison known to the researchers. Sample sizes in each location differed, as shown below.

Table 1: Locations of consumer surveys

Location	Description	Time of day	Sample
Silom	Central Bangkok, central commercial area	11:30 a.m. - 1 p.m.	121
Saphan Taksin	Central Bangkok, mixed commercial and residential area	11:30 a.m. - 1 p.m.	120
Bang Kapi	Inner Bangkok, transit hub, mixed commercial and residential	11:30 a.m. - 1 p.m.	120
Min Buri	Outer Bangkok, transit hub	5:00 p.m. - 6:30 p.m.	62
Vipawadee	Inner Bangkok, residential	8:30 a.m. - 10:30 a.m.	90

Figure 1: Map of consumer survey locations



Researchers were instructed to survey no more than two consumers in a given line or table at one time. The survey was one page long, and respondents were requested to write it themselves, in the interest of privacy for the sensitive question of income. In only a few instances, participants were uncomfortable with writing the answers themselves and asked the researchers to fill in the form on their behalf. The survey was composed of closed and open-ended questions, as below.

Table 2: Survey questions

Closed-ended questions	Description
<ul style="list-style-type: none"> • Gender • Age • Province of residence • District of residence, if Bangkok as Province • Monthly income, broken down in brackets of: <ul style="list-style-type: none"> - 0-4500THB - 4500-7500THB - 7500-10000THB - 10000-15000THB - 15000-20000THB - 20000-30000THB - More than 30000THB • Number of street food breakfasts consumed in the last week (situated on a numerical 0-7 range) • Number of street food lunches consumed in the last week (situated on a numerical 0-7 range) • Number of street food dinners consumed in the last week (situated on a numerical 0-7 range) 	<ul style="list-style-type: none"> • Occupation • Aside from street food, where do you usually buy food?

Street vendors in Bangkok sell a great variety of food items ranging from fruits and drinks to snacks and full meals. Measuring frequency of purchase by number of “meals” rather than other food items allowed us to generate findings based on necessary daily consumption. It also allowed comparison with food items generally considered to constitute breakfast, lunch, or dinner in the price survey (see below).

Respondents were asked to identify their individual income brackets. Individuals with an income of 10,000 THB (317 USD) or less are most likely receiving minimum wage or lower compensation. The current minimum wage for a worker in Bangkok is 325 THB (10.31 USD) per day, effective since April 2018. Assuming a worker is employed between 25 and 31 days per month, they will make between 8,125 THB and 10,075 THB (257 USD to 319 USD).

The average wage for a worker in Bangkok in 2016 was 20,000 THB (634 USD) per month (NSO 2017 – Labour Force Survey Q1-Q3).

2.2 Price differential

The aim of the “price differential” is to reflect the difference in price between prepared food from a street food provider and the next cheapest alternative within walking distance. The aim of calculating the price differential is not to predict consumer behaviour (since consumers may have other alternatives to eating street food), but rather to assess the difference in price between street food and the same meal that does not impose other types of costs on the consumer (e.g. time, nutrition, travel).

For instance, if a consumer eats *pad krapao* at a stall next to their office, the comparative data point for price differential would be an indoor food court in her office building or in a restaurant next door, where she would eat the same meal with the minimum inconvenience or additional cost.

Price differential indices were calculated for each area as the average difference between the price of each food item, as sold by street vendors, and the cheapest formal option within walking distance (approximately 5 minutes).

Defining formal versus street food: Recognizing that there is no clear criteria for informal versus formal food providers,³ the following types of enterprises were considered as *street food*:

- Mobile vendors operating on public or private property outdoors
- Regular vendors in outdoor markets, on pavement or footpath, or on privately rented space. They may have a roof but no outdoor walls.

The following types of enterprises were considered as *formal*:

- Indoor food courts located in shopping malls, department stores, etc.
- Shophouses,⁴ including those that spill onto public sidewalks or other public space
- Indoor hawker centers with a roof and three walls

Selection of location and timing: Price information was collected in six locations in Bangkok. Locations were selected based on:

- The presence of both street food vendors and formal alternatives
- A diversity of income levels and a contrast between central, inner, and outer Bangkok
- Where possible, price differentials were selected to coincide with location of consumer surveys

Survey method: In each area, researchers aimed to identify the maximum number of data points: common food items available from both formal and informal street food vendors within walking distance of each other. Researchers initiated the data collection by visiting a formal food location (generally a food court, except in Silom where only shophouses and formal restaurants were present) and recording an exhaustive price list of all available meals. Next, the researcher collected a similarly exhaustive price list of all available meals from street food vendors. In several cases, researchers were able to visit a second street vendor location and/or formal enterprise to compare prices or add additional data. Wherever a given item was available from multiple sources, researchers recorded the lowest price.

Six locations were used for the price survey location, with a total of 140 data points.⁵ This included 18 data points in Silom, 21 in Won Wian Yai, 19 in Saphan Taksin, 21 in Siam, 29 in Min Buri, and 32 in

³ Variations in employment status, type of enterprise, location on private versus public land, status of license with BMA all make it impossible to establish a clear definition of “informal street food”.

⁴ A shophouse is a narrow multi-storey building with a shop on the ground floor opening to the sidewalk. Upper floors are commonly used as a residence by the shop owners.

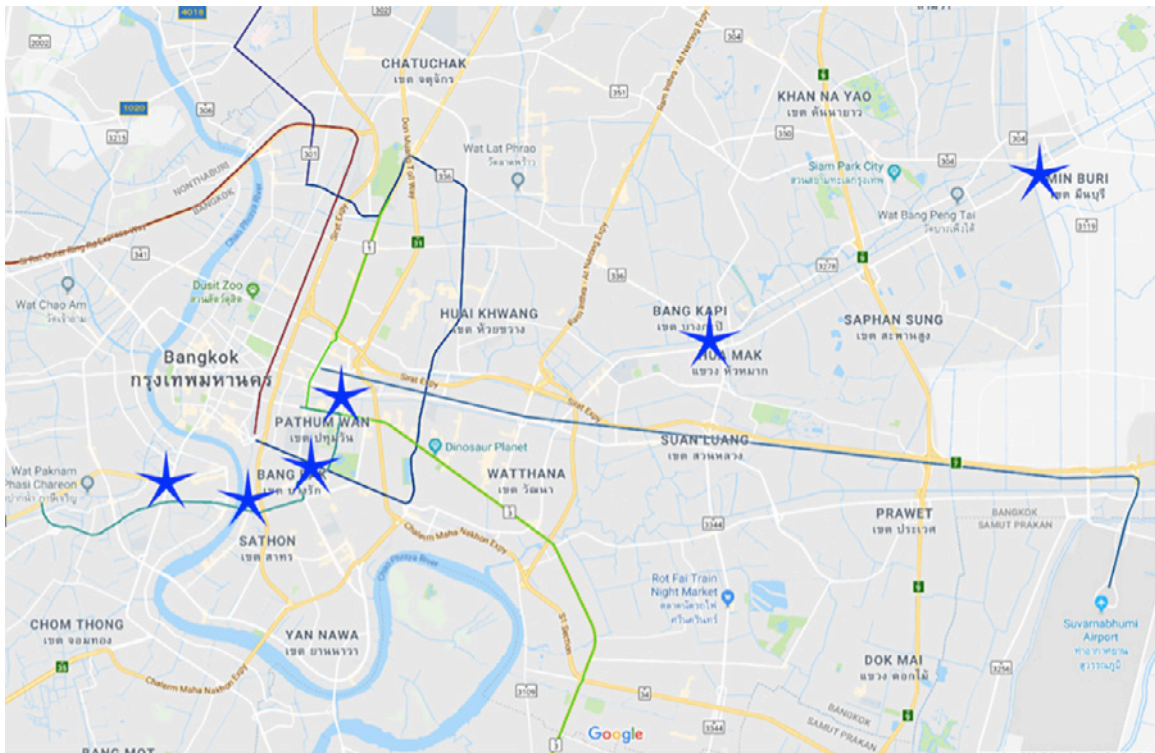
⁵ Here, a data point means one comparative price difference between the same food item sold by a street vendor and at a formal enterprise within walking distance of each other at the same location. For instance, the difference between a *phadthai* from a vendor on the sidewalk in Siam and a *phadthai* at the nearby Big C food court is one data point.

Bang Kapi. Many of the same items were available across several locations – for instance, in five out of six locations *khao khai jiew* (omelet rice) was an available data point. Because there was no single item available at all six locations (reflecting the diversity of Thai cuisine in Bangkok), it was not possible to create a comparative price index across six locations. Rather, researchers assigned an individual price differential for each location based on the exhaustive basket of food items in each location.

In each location, the differential between formal and informal street food prices was calculated for each item. In most cases, the price of street food was lower than the price of formal food, although in some cases we found a negative difference. These were then averaged among all food items to compute an average absolute value for each location. Researchers also calculated the ratio of street food items as compared to formal items and vice versa, similarly creating an average ratio for each location. This shows the percentage of price paid for the same food items at street food enterprises as compared to formal enterprises and vice versa.

Table 3: Locations and timing of price differential data collection

Area	Location	Street food	Formal food	Time of day	Number of data points
Siam	Central	Street vendors on public sidewalk	Food Court at Big C Supercenter; Food Court at Central World Mall	Lunch hour (11:00-1:30)	21
Saphan Taksin	Central	Street vendors on public sidewalk, parking lot	Robinsons Food Hall, Shophouses, Bang Rak Food Hall	Lunch hours (11:00 - 1:30)	19
Silom	Central	Street vendors on public sidewalk	Shophouses, formal restaurants	Lunch hours (11:00-1:30)	18
Bang Kapi	Inner	Street vendors and covered food court	The Mall at Bang Kapi Food Hall	Lunch hours (11:00-1:30)	32
Won Wian Yai	Inner	Street vendors on public sidewalk	Mall	Evening hours (4:30-6:00)	21
Min Buri Market	Outer	Street vendors and covered market vendors	Tesco Lotus Food Hall and Big C Food Hall	Evening hours (4:30-6:00)	29

Figure 2: Map of price survey locations

2.3 Challenges

Field researchers observed that some customers – particularly older and possibly lower income individuals – were less inclined to complete the survey than others. In Min Buri, consumers were generally less receptive to taking the survey. As noted above, we took a different approach to the survey in Vipawadee than in other areas and visited Min Buri and Vipawadee at dinner and breakfast times rather than at lunch.

The terminology for street food has potentially created ambiguity. There are a number of different Thai expressions used to describe street and market vendors and other small restaurants. Based on a short survey and discussions with additional researchers, it was determined that the term *ahaankhang thang* (“food beside the street”) would be the most appropriate to capture the selected criteria (street and market vendors operating outside of three walls). Nevertheless, this term is vague and may mean different things to different consumers.

With regard to the price differential, the methodology does not account for portion sizes, which do vary.

Other methodological suggestions for future work are described in the Annex.

3. Findings

3.1 Description of consumer survey data

The full data set analyzed here includes 488 respondents from 5 locations. The number of respondents per location is illustrated in Table 1. The original dataset included 514 respondents. The following respondents were removed:

- Eleven respondents who responded that they did not eat street food, which means they are not part of the survey's target group
- One respondent who did not respond to the number of meals consumed per week, the main variable of interest
- Fifteen respondents who did not specify their income, which was the primary frame of research analysis⁶

In other cases, respondents did not reply to questions about age, gender, area of residence, occupation, or alternatives to street food. These data points were nevertheless used in the full dataset.

Table 4: Number of consumer survey respondents per survey location

Location of consumer survey	Respondents
Bang Kapi	115
Min Buri	83
Saphan Taksin	117
Silom	117
Vipawadee	56
Total	488

Gender and age

The sample is composed of 307 women and 173 men; 8 respondents did not respond to the question about their gender. Women respondents considerably outnumber men in all study locations except for Vipawadee Soi 11, where men outnumber women by just over twice as much.

The average age of survey participants is 34.6. The oldest participant was 71 and the youngest was 16. 80 per cent of participants (391 total) were between the ages of 22 and 45. Only 18 are younger than 22 and 89 are over 45. The average age is similar across study locations, except for Vipawadee 11, where the average age is 40.2

Occupation

The survey question about occupation was open-ended. Most participants gave a general description

⁶ One of the respondents fell into two of these categories, neither consuming street food nor responding to the income question.

of their occupation status – for instance, as an office worker, student, or day worker. The largest of this group described themselves as *phanakngaan* (employee), *phanakngaanboorisat* (company employee), *phanakngaanoffit* (office employee), or *ratchagaan* (government employee). This normally indicates a white-collar profession. Some respondents referred to themselves as *naksuksa* (students) and others as *rap jang*, which normally indicates informal, manual, and/or day labour.

The remaining participants responded to the question with specific descriptions of their occupation, such as salesperson, merchant, nurse, hair-dresser, etc. A very small number of participants described themselves as unemployed, housewives, or retirees.

Income of participants

The single largest percentage of survey participants (30.5 per cent) all had an income of over 30,000 THB (951 USD) per month. The second largest group fell under the fifth bracket (15,000-20,000 THB per month (21.5 per cent) 476-634 USD).⁷ The combined three lowest brackets (10,000 THB or less – 317 USD) represent 15 per cent of the total sample. For the remainder of the analysis, the three lowest income brackets will be considered as one category. This group will thus include people under the poverty line (3,132 THB per month, approximately 100 USD) and minimum wage earners (325 THB per day, or approximately 8,450 THB per month⁸ – approximately 268 USD).

Table 5: Composition of sample - Income bracket

Income bracket	Sample size	Proportion of total sample
0-04,500 THB	19	3.9%
04,500-07,500 THB	13	2.7%
07,501-10,000 THB	41	8.4%
10,001-15,000 THB	66	13.5%
15,001-20,000 THB	105	21.5%
20,001-30,000 THB	95	19.5%
More than 30,000 THB	149	30.5%
Total	488	100.00%

Place of Residence

Of the 481 participants who responded to a question about their place of residence, 413 said they live within Bangkok. Forty-nine out of Bangkok's 50 districts are represented, with the greatest number of participants coming from Bang Kapi (70), Bang Rak (23), Chatuchak (33), Min Buri (59), and Lat Prao (22). Out of the remaining 68 participants who live outside of Bangkok, 50 reside in the Greater Bangkok Metropolitan area (Samut Prakan, Nonthaburi, and Pathum Thai), 9 others live in neighbouring provinces, and 9 indicated that their place of residence was a distant province.

⁷ The income level shows that this survey reached a different demographic from that covered by the survey of consumers by Nirathon (2017), in which a third of the sample earns less than 9,000 THB (285 USD) monthly. This likely reflects the concerted effort by Nirathon (2016) to reach mostly low-income consumers (pers. comm. Narumol Nirathon). In contrast, our survey targeted consumers at a range of income levels.

⁸ Based on 26 working days per month.

In three out of the five areas (Bang Kapi, Min Buri, and Vipawadee), the majority of respondents live in the same district that the survey was given. This number was 60 per cent in Bang Kapi, 67 per cent in Min Buri, and 62 per cent in Vipawadee (Chatuchuk district). In contrast, respondents in Silom and Saphan Taksin mostly reside outside of the area where the survey was administered.

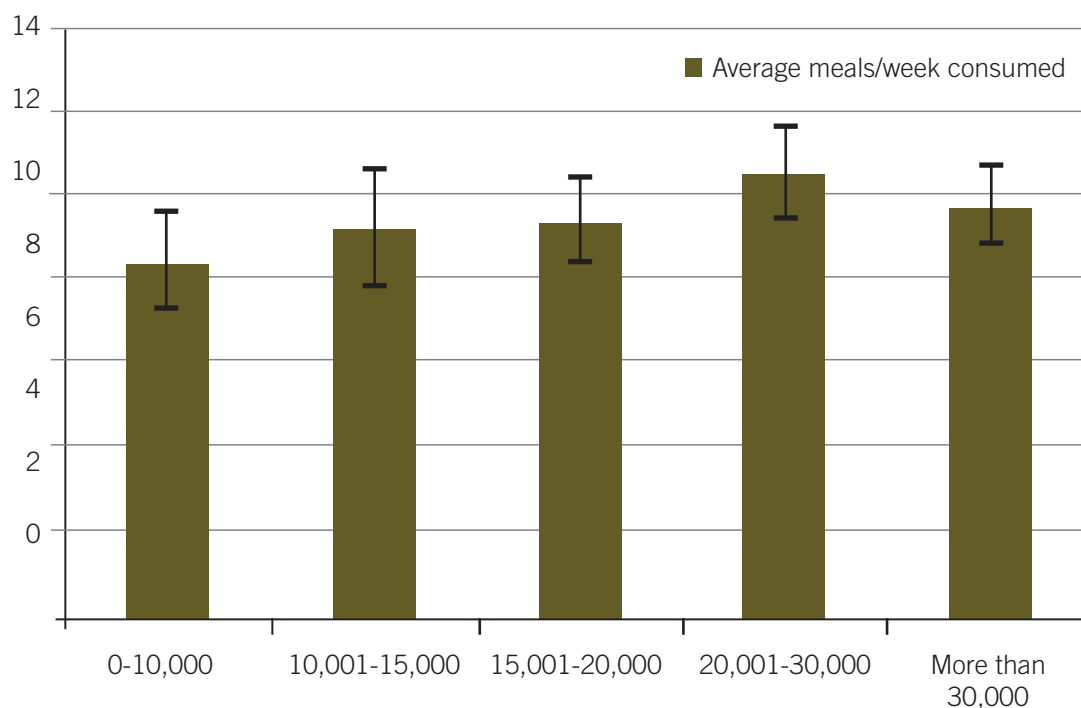
3.2 Consumption of street food

Across locations and income levels for the entire sample, the average number of street food meals consumed per week is 9.58. The table below provides the average number of meals consumed per week by income for the full sample.

Table 6: Average number of street food meals consumed per week by income bracket

Income bracket	Sample size	Street food meals per week average	Street food meals per week median
0-10,000 THB	73	8.44	7
10,001-15,000 THB	66	9.24	8
15,001-20,000 THB	105	9.41	9
20,001-30,000 THB	95	10.55	11
More than 30,000 THB	149	9.78	10
Total	488	9.58	9

Figure 3: Average meals/week consumed by income level with confidence intervals⁹ (across full sample)



⁹ Confidence intervals at 95 per cent confidence are 1.28, 1.38, 1, 1.09, and .88 for each income group respectively.

The lowest income bracket consumes the lowest average number of street food meals per week, at 8.44. The second highest income bracket consumes the highest at 10.55, a difference of roughly two meals per week as compared to the lowest earning group. Confidence intervals shown in the bar graph suggest that the difference between these two groups could be as little as 0.25 meals or as much as 4.5 meals, however. The average number of street food meals consumed across groups per week is 9.58.

This number is roughly similar across location, from 8.42 in Bang Kapi to 9.96 in Silom. Vipawadee has a higher average at 11.43.

Table 7: Average meals/week consumed by location, full sample

Location all income	Average street food consumed
Bang Kapi	8.42
Min Buri	9.75
Saphan Taksin	9.59
Silom	9.96
Vipawadee	11.43
Average	9.58

3.3 Alternatives to Street Food

The question “Where do you source your meals when not from street vendors” was open-ended. 72 participants did not respond to the question, while many others provided more than one answer. Responses were analyzed by coding responses into 32 categories. Where respondents wrote more than one alternative food source (e.g. “7-Eleven, market, shopping mall”), each of these alternatives were counted as one mention. These were summarized into the categories shown in Table 8 below.

Table 8: Responses to “Where do you source your meals when not from street vendors”

Category of food source	Number of mentions
Mall	121
Market	51
Supermarket	38
Formal restaurant	123
<i>Food court</i>	20
<i>Shophouse</i>	37
<i>Chain restaurant</i>	6
Homecook	62
Canteen/cafeteria	13
Convenience store	125
<i>7-Eleven</i>	98
<i>Other/unspecified</i>	27
Department store/superstore	20
Other	6
Total mentions	559

“Malls” likely indicates purchase of food at formal restaurants or food courts within malls. Department store/superstore likewise suggests a food court. If we categorize these two as formal restaurants, the total number of mentions for formal restaurants is 264, slightly less than half the total number of mentions.

Convenience stores are the next more important alternative food source, and most respondents specifically mention 7-Eleven. Home cooking and markets/supermarkets have the next highest mentions, although it is not always clear whether “market” refers to purchase of cooking ingredients or prepared. The number of respondents who mentioned purchasing food from canteens or cafeterias is relatively low at 13 mentions.

3.4 Price differential

Because each of the locations has a different set of food items, the price difference between street and formal food based on absolute average values based on the sets is not useful for comparative purposes. However, the price data does indicate that an average street food meal in Bang Kapi is cheaper than all other places while Silom is the most expensive.

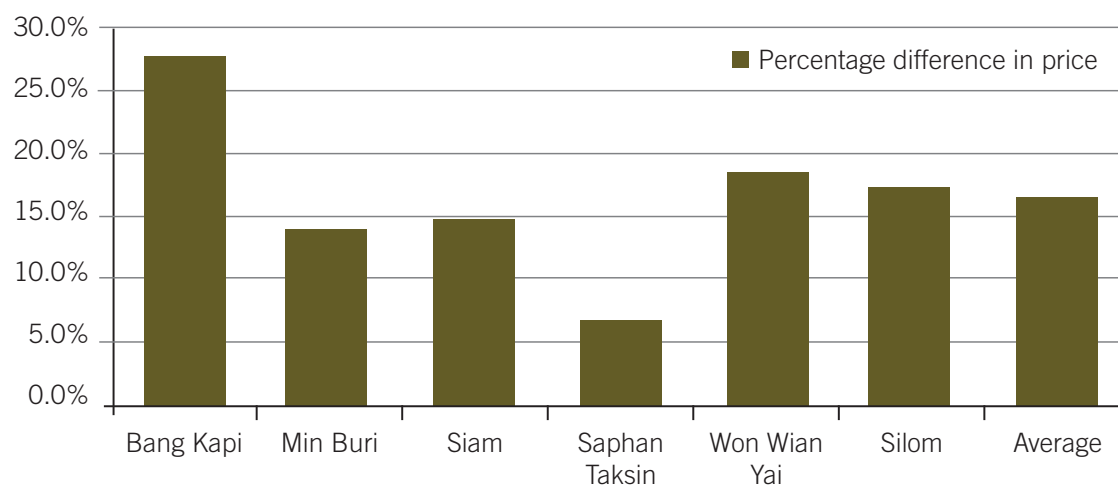
Table 9: Average price for one street meal in six price survey locations

	Average price per street food meal – THB	Average price difference between street and formal meals (absolute value – THB)	Proportion of price difference to street food meal
Bang Kapi	34.84	13.79	39.58%
Min Buri	37.41	12.33	32.96%
Siam	38.57	9.67	25.07%
Saphan Taksin	38.68	2.63	6.80%
Won Wian Yai	37.75	9.25	24.50%
Silom	40.83	12.67	31.03%

With regard to the price differential for the full set in each location, Bang Kapi and Saphan Taksin represent extreme high and low differentials, at 27.8 per cent and 6.7 per cent respectively, while Min Buri, Siam, Won Wian Yai, and Silom are much closer to each other with price differences ranging from 13.9 per cent to 18.4 per cent.

Table 10: Price differential in six price survey locations

	Average price difference (street food and formal – absolute value – THB)	Percentage difference in price
Bang Kapi	13.79	27.8%
Min Buri	12.33	13.9%
Siam	9.67	14.8%
Saphan Taksin	2.63	6.7%
Won Wian Yai	9.25	18.4%
Silom	12.67	17.3%
Average (6 locations)	9.33	16.5%
Median	10	

Figure 4: Percentage difference in price between non-street food and street food, by location

3.5 Projected difference in weekly expenditure

This section projects possible differences in weekly expenditure, by taking the product of meals per week and the price differential.

“Matching” the data collected through the consumer survey and data collected in the price survey raises a number of issues. At first glance, it appears logical to compare the consumer surveys only with price surveys conducted in the same location. However, many street food consumers are commuters and likely consume street food in different parts of the city throughout the day. As described below, a significant portion of respondents were surveyed outside of their place of residence; this indicates that many consumers would be purchasing street food in more than one location throughout the day or week.

We estimated possible change in expenditure in the absence of street food based on average weekly street food consumption for each income bracket (Table 6) and created projections using average (derived from the whole sample), highest (Bang Kapi), and lowest (Saphan Taksin) price differentials, as shown in Table 11. The projected difference is the product of the price differential and average number of meals consumed.

Table 11: Price differential ranges

Price differential reference	Absolute value of price differential (THB)
Average (weighted, all locations)	9.33
High (Bang Kapi)	13.79
Low (Saphan Taksin)	2.63

Table 12: Projected difference in weekly expenditure – absolute value in THB for full consumer sample, by income groups

	High	AVG	Low
0-10,000 THB	116	79	22
10,001-15,000 THB	127	86	24
15,001-20,000 THB	130	88	25
20,001-30,000 THB	145	98	28
More than 30,000 THB	135	91	26
Average	132	89	25

Using this sample, the average difference in absolute weekly expenditure for the total sample is 89 THB (2.82 USD), with a possible range of 25 to 132 THB (0.48-4.19 USD). Among income levels, the second highest income bracket (20,000-30,000 THB, approximately 634-951 USD) sees the highest increase (98 THB per week, approximately 3.11 USD), with a possible range of 28-152 THB (0.89-4.82 USD).

Table 13: Projected difference in monthly (four weeks) expenditure – absolute value in THB for full consumer sample

	High	Average	Low
0-10,000 THB	466	315	89
10,001-15,000 THB	510	345	97
15,001-20,000 THB	519	351	99
20,001-30,000 THB	582	394	111
More than 30,000 THB	539	365	103
Average	528	357	101

The projected average difference in weekly and monthly expenditure for the entire sample is 89 THB (weekly, 2.82 USD) and 357 THB (monthly, 11.32 USD). For those making 10,000 THB (321 USD) or less per month, the projected change in weekly and monthly expenditure is 79 THB (weekly, approximately 2.51 USD) or 315 THB (monthly, 10 USD).

3.6 Main findings and discussion:

The objective of our study was to provide an examination of the role street food plays in the life of the inhabitants of Bangkok. As such, it could offer a reference for policymakers when they consider the importance of street food for individual workers, consumers, and households in the city. Given the size of Bangkok,¹⁰ our sample of 488 consumers and six price survey locations cannot be considered representative of the whole population; however, our findings do provide clear indications that street food is important for individual consumers and, possibly, for the economy of the city.

¹⁰ The metropolitan area alone (managed by BMA) covers 1,500 sq. km and has over 8 million inhabitants.

Frequency of street food consumption:

Our findings reaffirm that street vendors are a crucial source of food for Bangkok citizens. The average number of street food meals consumed weekly by a sample of street food consumers is 9.58 with a median of 9. Assuming that most people eat 21 meals per week, this means that consumers in this sample buy 45 per cent of their meals from street vendors.

A breakdown by income brackets shows a variation between 8.44 and 10.55 meals per week. Interestingly enough, consumers in the lowest income bracket (earning under 10,000 per month, approximately 317 USD) appear to consume fewer street food meals (8.44) than the other income categories. This result echoes other studies in showing that street food in Bangkok is important for all consumers regardless of their income level.

Price difference between street food and non-street food

The average difference in price between street food and non-street food across six locations is 16.5 per cent. In four out of the six locations the difference ranges from 13.9 per cent to 18.4 per cent (Table 10). The other two locations, Bang Kapi and Saphan Taksin, fall out of this range with price differentials of 27.8 per cent and 6.7 per cent respectively. It is possible that these figures indicate a high degree of variation in prices across the city. Indeed, Bang Kapi's high differential could be partially explained by having the lowest average cost for street food when compared to all other locations (see Table 9). In contrast, the low differential in Saphan Taksin may reflect a unique situation of shophouses in the area: many of them prepare food in street carts on the sidewalk. Thus, although in our analysis we classify shophouses as "formal", if these shophouses were to be reclassified as "street food", the price difference would jump to 12.9 per cent. This figure would be much closer to that of the other locations. It is also possible that, since our survey covered only six locations, more extensive research would reveal high levels of variation across different parts of the city.

Projected change in expenditure

Our study indicates that, in the absence of street food, the average consumer in our sample would need to spend 357 THB (11.32 USD) more per month in order to purchase equivalent pre-prepared meals elsewhere. This assumes that they would purchase the next cheapest available source of prepared food from formal establishments like food courts, restaurants, and shophouses, which indeed, based on our survey, are the most popular alternatives to street food.

Household expenditure: In 2015, households in the Greater Bangkok Municipal Area¹¹ spent an average of 8,477 THB (269 USD) on food and beverages per month (NSO 2016). Considering that the average household size was 2.9, the expenditure per household member would be 2,923 THB (93 USD) per month (NSO 2016). More specifically, out of the total household food expenditure, 4,605 THB (146 USD) were spent on 'prepared food' (i.e. food taken home from outside or eaten away from home). Another point of comparison from the 2015 Household Survey is expenditures related to other critical services, like education and healthcare. Monthly household expenditures on health and education were 507 THB (16.08 USD) and 823 THB (26.10 USD) respectively (Table 14).

¹¹ Bangkok Metropolis plus the surrounding provinces of Nonthaburi, Pathum Thani, and SamutPrakan.

An increase of 357 THB (11.32 USD) for one or more household members is clearly significant when compared against these figures.

Table 14: Selected household expenditure items in Bangkok (NSO 2016)

Item	THB/month
Household expenditure on food and beverages per member	2,923
Household expenditure on prepared food per member	1,588
Household expenditure on health	507
Household expenditure on education	823

Under 10,000 THB (317 USD) per month: As shown in Table 13, people earning 10,000 THB or lower would need to spend 315 THB (10 USD) more per month if they did not have access to street food. Although lower income consumers in our survey eat street food less frequently than higher income consumers, the projected change of 315 THB in expenditure represents a significant part of their overall income. As noted above, the current minimum wage for Bangkok is 325 THB (10.31 USD) or roughly 8,450 THB (268 USD) per month. This means that a minimum wage earner would need to spend the equivalent of a day's wage **more** (3.7 per cent of their monthly income) in order to buy the same number of equivalent meals.¹²

Similarly, for individuals making less than the minimum wage – for instance, 6,591 THB (209 USD) per month, which is the average wage earned by informal workers across Thailand in 2016 (NSO 2016) – 315 THB represents 4.8 per cent of their income. Given that the literature on poverty in Thailand recognizes 'food poverty' as 54 per cent of the poverty line (Isvilanonda and Bunyasiri 2009, NESDB 2016), that is 1,692 THB (54 USD) per month per person, the projected increase of 315 THB could push some of them into poverty and make their situation even more precarious. The impact of the projected increase on low-income earners can be further judged by comparing it with a few items relevant to their situation.

Welfare card: This card was issued by the government in 2017. People earning less 100,000 THB (3,171 USD) per year are eligible. The food component is 300 THB (9.51 USD) per month for people earning less than 2,500 THB (79 USD) per month and 200 THB (6.34 USD) per month for people earning 2,500-8,333 THB (79-264 USD) per month.

Social security: Article 40 of the Social Security Act includes a voluntary package targeting informal workers. It is partly subsidized by the Government, and it has three schemes that cost the worker between 70 and 300 THB (2.22-9.51 USD) per month, depending on the type of benefits received.¹³

Thus, the projected increase could have an impact not only in terms of food expenditure but also in other dimensions of well-being. Furthermore, a decrease in access to street food may drive people to consume cheaper food with less nutritional value or reduce consumption, which would affect their health, particularly for children.

¹² There is no available information on the components and weights (e.g. for food consumption) used to calculate the minimum wage because, although in principle the National Wage Committee uses nine indicators to adjust the minimum wage, in practice the decision is negotiated between unions and employers (Paitoonpong et al. 2005, Del Carpio et al. 2014).

¹³ These new packages were announced in 2017 but at the time of writing had not yet been implemented by the Social Security Office.

4. Conclusions

This study affirms what is already known about street food: that it plays an important role for consumption in Bangkok and that there is a high level of reliance on it to feed both white collar and blue collar workers. The study offers a unique perspective by combining data on frequency of street food purchases with a price survey to estimate the difference between street food and non-street food. Based on these two findings, it provides simple projections for additional expenditures that consumers would incur in the absence of street food. These figures – 357 THB monthly for the sample as a whole and 315 THB for the lower income bracket – are not insignificant when compared to important household expenditures in Bangkok, for instance for education and healthcare. They are clearly more important for low-income households.

Many of the participants of this study are white-collar workers whose earnings put them in the middle class. It should be noted that the consumer price index for Bangkok has risen steadily over this period, while the average wage in Bangkok has not recovered fully since its dip in 2013-2014 (author's calculations, NSO 2016 and Ministry of Commerce 2018). Thus, an increase of 357 THB per month in personal food expenses, may, at the aggregate level, contribute to growing pressure on salary scales. Easy access to inexpensive street food is among one of the factors that allows the formal sector to maintain relatively low salaries (i.e. an entry level salary for a newly graduated professional in Thailand hovers around 16,000-18,000 THB (507-571 USD) per month (Adecco, 2018)).¹⁴

The clear policy recommendation emerging from this study is for the Bangkok Metropolitan Administration and other urban actors to consider the important role of street food in providing affordable meals, particularly for its workforce in commercial and commuter areas. Whereas most research and public commentary has focused on the role of street food for vendors' livelihoods or international tourism, this study argues that local consumption is a critical consideration for urban management policies.

As a secondary result, the study used an experimental methodology by combining a consumer and price survey. It therefore yields recommendations for replication and/or further research on street food consumption in Bangkok or elsewhere (see Annex for recommendations for future work).

¹⁴ Data was corroborated by the human resources offices of two companies through private communication.

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Annex: Methodological suggestions for future work

- Commuters versus non-commuters: A future consumer survey could compare the role of street food for commuters versus non-commuters, by asking survey participants whether they leave their home district for work/distance of commute.
- Personal and household income data: A study that links personal and household income data with street food consumption patterns and expenditure.
- Convenience store items: Update of price comparison analysis to include convenience stores, which are popular alternatives to street food according to our survey, but taking into consideration the nutrition value of food items offered.
- Qualitative research on street food consumption: As noted above, not all impacts associated with the loss of street food can be quantified monetarily. Nutrition is highlighted in previous studies for instance. A qualitative study would, for example, help to assess the costs of time for workers and businesses when street food is not available. It may also elucidate additional benefits or disadvantages of street food from a consumer perspective.
- Natural experiment: Whereas this study projects change in expenditure based on current consumption and current price difference, a natural experiment in one or more locations would provide empirical data on the impact for consumers. This approach would require conducting consumer surveys and price differentials in areas where removal of vendors is planned and announced by authorities, followed by an update to the surveys (excluding the street food price data collection) after the removal.
- Office survey: A consumer survey in a single office would have several advantages. From a methodological perspective, it would improve randomization of the survey sample and prevent biases associated with convenience sampling. It would also allow researchers to compare projected difference in expenditure with known salaries and given salary structure. An office survey should focus only on lunch-time meals and conduct a price survey in the surrounding area.

About WIEGO: Women in Informal Employment: Globalizing and Organizing is a global research-policy-action network that seeks to improve the status of the working poor, especially women, in the informal economy. WIEGO builds alliances with, and draws its membership from, three constituencies: membership-based organizations of informal workers, researchers and statisticians working on the informal economy, and professionals from development agencies interested in the informal economy. WIEGO pursues its objectives by helping to build and strengthen networks of informal worker organizations; undertaking policy analysis, statistical research and data analysis on the informal economy; providing policy advice and convening policy dialogues on the informal economy; and documenting and disseminating good practice in support of the informal workforce. For more information visit: www.wiego.org.



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