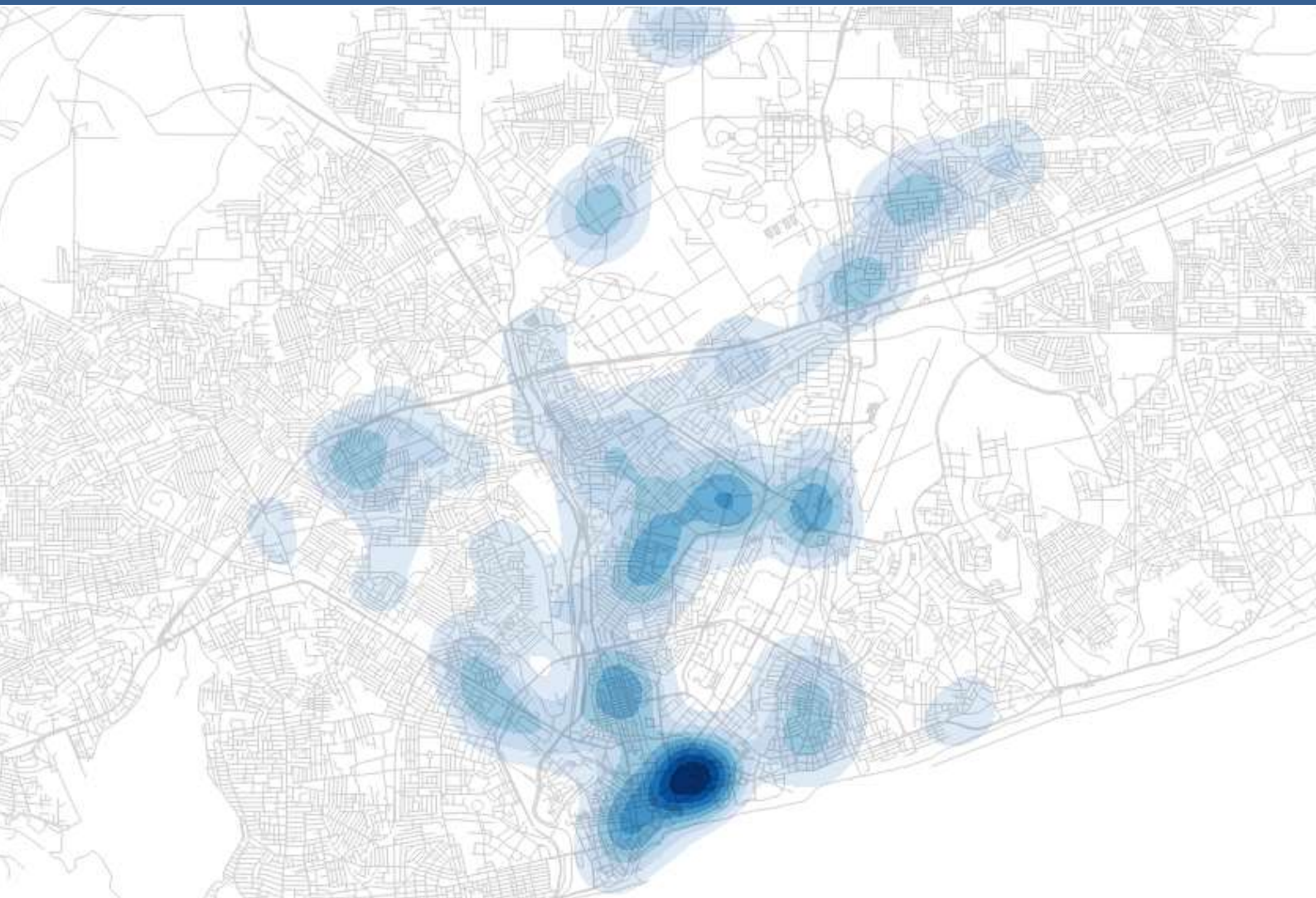




Food and Agriculture Organization
of the United Nations

STREET FOOD VENDING IN ACCRA, GHANA

FIELD SURVEY REPORT 2016



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Field Survey Report 2016

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Food and Agriculture Organization of the United Nations
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FOREWORD

The present report falls within FAO programming towards eliminating hunger, food insecurity and malnutrition, with the intention to provide safe, nutritious and healthy food to the population of Ghana. It is in line with the three-year Country Programming Framework (CPF) agreed upon in 2013 by FAO and the Government of Ghana, which aims at enhancing ongoing efforts at improving good practices among street food vendors with support for raising consumer awareness on food safety.

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For his useful suggestions, we thank Edward Archer, Head of FDA Public Education and Food Borne Disease Surveillance Unit.

ACRONYMS

AMA	Accra Metropolitan Area
BOP	Business Operating Permit
CPF	Country Programming Framework
EDNP	Energy-dense nutrient-poor food
EHSD	Environmental Health and Sanitation Directorate
EHSUs	Environmental Health and Sanitation Units
EPA	Environmental Protection Agency (EPA)
FDA	Food and Drugs Authority
FHS	Food hygiene and safety
GHC	Ghana Cedis (Currency)
GTA	Ghana Tourism Authority
JHS	Junior High School
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Municipal, Metropolitan and District Assemblies
MOH	Ministry of Health
MTDR	Ministry of Tourism and Diaspora Relations
PoG	Parliament of Ghana
PSF	Public space use fee
SFV	Street food vendors
SHS	Senior High School

ABSTRACT

In Africa, street food vending and consumption have proliferated in the last three and a half decades. African national and local authorities, and international organizations agree on the nutritional, economic, social and cultural importance of street food, but they are also aware of the critical safety, nutritional, management issues associated to it.

FAO Regional Office for Africa, in 2016, led an extensive field survey on street food vending within the Accra Metropolitan Area (AMA), in collaboration with the School of Public Health of the University of Ghana. The survey was aimed at gathering updated and policy-relevant information about the sector (e.g. location and type of street food outlets, variety of foods sold, hygienic and safety conditions under which they are prepared, legal status of vendors, economic dimension of the sector) enabling public authorities as well as street food vendors and consumers to take informed and data-driven action towards the development of the sector. The outcomes of the survey are presented in this report.

SUMMARY

In 2016, The FAO Regional Office for Africa led an extensive field survey on street food vending within the Accra Metropolitan Area (AMA) of Ghana in collaboration with the School of Public Health of the University of Ghana. The survey was aimed at gathering updated and policy-relevant information about the sector (e.g. location and type of street food outlets, variety of foods sold, hygienic and safety conditions under which they are prepared, legal status of vendors, economic dimension of the sector) that will enable local authorities as well as street food vendors and consumers take informed and data-driven actions towards the development of the sector. The survey was carried out between April 5th and May 21st 2016. In total, 3,334 street food vendors (SFVs) were identified and mapped across the study area.

SFVs' profile and business management

Nine out of ten SFVs operating in the study area were female. About four fifths (82%) of the SFVs have at least basic level education. SFVs have been engaged in street food vending on average for more than 7 years. More than one half (56.7%) of the SFVs have been engaged in the sector for less than 5 years; with many, starting in 2010, when the unemployment rate in the country had surged compared to the previous five years.

Ownership and workforce

Almost all the activities surveyed (96%) were individual enterprises. Only 3% were owned by two or more partners, and 1% was a franchising. One third of the ventures did not have any employee. Seven out of ten of the SFVs operating the business at the time of the survey were the owners of the business itself; two out of ten were employees, and one tenth were managers. Only very few SFVs (5%) are members of a vendors association or trade union.

Schedule

On average SFVs work about 6 days a week. This equates to 309 days a year. SFVs mostly operate from Monday through Friday with few SFVs working during the weekend. Additionally, it was observed that men tend to work more than women on Saturday and Sunday. During the day, vending activities start gaining momentum at 6 am and reach their peak between 10 am and 3 pm. The number of SFVs then starts decreasing consistently from 4 pm. While women tend to operate mainly between 5 am and noon, male vendors tend to work more than women in the afternoon (after 4 pm) and in the evening into late hours (until 2 am).

Location

Street food is generally at a walking distance all throughout the city. The spatial distribution of SFVs does not seem to depend on the income levels of the population living in a particular neighborhood. Indeed, similar densities of SFVs can be recorded in low, middle and high income neighborhoods. Similarly, the SFVs' distribution in the urban space does not seem to depend on the population density nor on the density of houses. The survey found that a substantial part of SFVs (32%) operate in the vicinity of schools.

Expenditures and sales

On average, SFVs spend GHC 99 per day to buy ingredients and to pay for the variety of overheads that a restaurant implies (cookware, kitchen tools, dishes and cutlery, detergents, fuel, water supply, public transport, staff, etc.). Half of them spend less than GHC 80 per day. Average daily sales amount to GHC 160, with half of the SFVs selling less than GHC 120 worth of food. The result is an average net daily

income of GHC 56, with half of the sample earning less than GHC 36 per day. Besides the owner, an average 3.7 people enjoy the revenues of a single business.

Tax and fees

On the subject of income tax, two thirds declared to paying none. Of those who pay, an average of GHC 135 is paid per year, with 50% paying less than GHC 108. About one third of the SFVs pay the income tax once a year, another one third once every three months, and one out of nine pay every day. Close to 60% (57%) of the SFVs do not pay the fee due local authorities so as to be granted the permit that allows a business to operate (BOP, to be renewed on an annual basis). Of those who declared to pay such fee, an average GHC 57 is paid per year, with 50% paying less than GHC 45. Finally, among the SFVs who answered the question regarding the fee for the use of the space on which they had installed their outlet, about three fourths declared to pay no Public Space Fee (PSF). One fourth declared to be the owner of such space, and thus does not need to pay any fee; a little less than one half operate on a space owned by a private landlord; one remaining fourth operates on public space owned by local authorities. Among those few who pay some fee, the average amount paid is GHC 1.6 per day, with 50% of the SFVs paying less than GHC 1. About half of the SFVs pay for the space on a monthly basis, one sixth on an annual basis, and one out of six on a daily basis.

Ingredients and their sources

Most SFVs (85%) get their ingredients from traditional markets. Seventeen percent of the SFVs get their ingredients from delivery services and less than one-tenth obtain their supplies from retail stores. Very few buy ingredients directly from the producers (farmers or fishermen) or at the supermarket. One out of a hundred grows or breeds its own products.

Food and beverages

Most SFVs sell cooked dishes; mostly foods rich in protein (meat, fish, eggs, beans) and carbohydrates (cereals, tubers), and only to a lesser extent food that contain vegetables (e.g. soups) rich in vitamins and minerals. More than one-quarter of the SFVs sell natural or home-made snacks. Less than one out of eight SFVs sell fruit. Pre-packaged food and snacks are sold by one out of eight SFVs. A daunting fact is that only 6 out of 100 SFVs sell vegetable salads. One fourth sell beverages, either industrial or natural ones. Fruits tend to be sold slightly less near schools than in other places, where, instead, prepackaged industrialized food is sold slightly more.

Food hygiene and safety

Certificates

About one half of the SFVs surveyed provided or declared to have a valid food handler certificate. This figure matches the percentage of SFVs who underwent medical screening within the previous 12 months (43%), to which is added a part of those SFVs (11%) who carried out medical examination between the previous 12 and 24 months. About 40% declared they never underwent medical screening. Although this information may sound daunting, it should be noted that, the percentage of SFVs undergoing medical screening on a regular basis seems to be increasing - compared to the data recorded in the past years.

Inspections

More than one half of the SFVs declared to have never been visited by food inspectors. The frequency of inspections at the selling points by the authorities does not seem to have a significant impact on the hygiene and safety conditions and on the sanitary practices of the SFVs, if not on the tendency to use soaps and hand sanitizer and to wear protective gloves.

Water supply and quality

About 70% of the SFVs in Accra were found to use clean water for washing, both hands and kitchenware: among them, four fifths (80%) kept it in buckets, while one fifth rely directly on running water available on the spot, either from the public water system (15%) or from plastic tanks (5%). Two thirds of the SFVs keep soap and hand sanitizer on the spot. One third of the SFVs were found to use dirty water in buckets or to use no water at all. Nonetheless, two thirds (63%) of these latter ones, as well as two thirds of those who do not have soap on the spot could rely on near-by toilets with running water and soap.

Food storage, preparation and protection

Almost half of the SFVs using meat and/or fish buy such ingredients the same day that they prepare and sell food made with such ingredients; one forth buy them the day before, and one third buy them a few days before. Among these latter ones, as well as among those who sell leftovers from the previous day (that is, one third of the SFVs) four fifths keep ingredients and food in a fridge at home.

The raw meat, fish, or eggs kept on the spot to prepare food are stored in a fridge by one third of the SFVs, 5% keep it in a cooler, and two thirds do not keep it cool. Cooked food that is supposed to be served hot, is actually served at the proper temperature by three fourths of the SFVs, while one fifth serve it warm, and only a few serve it cold. Two thirds of the SFVs protect cooked food adequately from flies and dust.

Most of the SFVs prepare the food (completely or partially) on the spot; one half does it at home, and eight out of a hundred rely on a professional kitchen or shop. Most of those who cook food on the spot use hobs fueled with wood or charcoal, while less than one half rely on electric or gas hobs. No SFV was found to cook using hazardous fuels (e.g. petroleum, tires).

Almost no SFV was found using rusty metal kitchenware (e.g. pots, spoons). Possible biological contamination is thoroughly prevented and eliminated by SFVs who sell vegetable salads, who always wash raw vegetables before preparing them.

Protective clothing

Less than four out of ten SFVs cover their hair, and almost eight out of ten do not wear protective gloves. While hair restraint is important per se since it keeps hair from ending up in the food; it also may deter SFVs from touching their hair. Several experts underline that gloves in and of themselves are not a solution to food contamination; it is their proper selection and use that can help reduce risks associated with food handling. If the gloves are torn or punctured, worn without being changed or sanitized, and the SFVs' hands were not washed before wearing them, then risk is amplified rather than reduced.

Customer service

Almost all the SFVs are able to provide disposable dishes (or containers) to their customers, while half can provide disposable cutlery. Non-disposable dishes and cutlery are available respectively at 55% and 40.5% of the selling points. Three fourths of the SFVs who provide non-disposable dishes and/or cutlery were found to wash in clean water kept in buckets; 14% used running water, either with, or without soap. Only 8 out of a hundred were found to wash non-disposable dishes and cutlery with dirty water.

Tables and chairs are provided by SFVs to their consumers in one third the cases.

Outlets

The majority of the SFVs operate from a stall or table. Many others have a fixed kiosk. The few wheeled vehicles that were mapped during the survey were generally managed by men selling coconuts, and, although they are not always operating from the same location, they usually deploy within a limited area every day. Three fourths of the outlets are built with wood; such material, as we know, coupled with cooking activities, especially when using wood and charcoal as fuel, may become a hazard, especially in market areas. Indeed, one common issue that Ghanaian markets face is the problem of fire outbreaks. Safer outlets can be made of metal (one third of the cases) or concrete/bricks (one fifth).

Two thirds of the outlets have no walls, which translates into less protection of food by environmental contaminants. Only fifteen percent are completely closed by walls and glass windows, and one fifth is partially walled. Sixty percent have a roof; among those with no or partial roof, a hazard is represented by the presence of trees above the outlet (as bird and bats droppings, leaves and resin can fall over the food), which occurs in one fourth of the cases.

In one-third of the cases, the counter on which the food is displayed is less than one meter from the ground. This does not pose a risk of contamination in cases where food on display is adequately protected. Otherwise, the short distance of the food from the ground can facilitate its contamination, especially where the outlet does not have a floor built with bricks or concrete or tiles (this applies to one third of the outlets) that can be cleaned and washed, and where the outlet is surrounded by dirt ground (one fourth of the outlets).

Uncovered organic waste was found near only one SFVs out of ten. Seven SFVs out of ten are careful about collecting waste in garbage cans available on the spot.

Environment

About one half of the outlets are located in areas where car traffic is normal, and one fifth of the SFVs was found in streets with almost no traffic; one third operate in heavily trafficked areas, where pollution becomes a crucial risk for food safety. Although open air drains and sewages are widespread in Accra, most SFVs are careful to install their outlet far enough from them (at least 1 meter). Nonetheless, an overwhelming majority of the SFVs operating at near-by schools are those who stay closer to open air drains and sewers and who keep the food closer to the ground.

Overall food hygiene and safety level

Overall, based on a quantitative analysis, three fourths of the SFVs were found to have a food hygiene and safety score ranging between fair and extremely good: 18% fair, 29% good, 22% very good, and about one out of twelve extremely good. One out of eight had a poor score, only one out of 27 very poor, and less than 2 out of one hundred an extremely poor score. The overall score of the conditions of hygiene and safety of the food and beverages sold by street vendors in Accra is “Good”.

Street food near schools

The share of female vendors operating near schools is slightly lower (87%) than the share within the whole sample. The education level is higher among these SFVs compared to the whole sample: the share of those with no schooling is 1% lower, while the share of those who attended a higher education institute is 1% higher. The length of engagement in the sector of these SFVs (7 years), as well as the average number of employees (1.4), and the working days in a year (309) remain unchanged. The average number of working hours in a day, instead, is lower (10.5).

As you look at the categories of food and beverages sold by SFVs near schools compared to the whole sample, we notice a clear increase in the percentage of those who offer homemade snacks (from 16% to 30.5%), a slight increase of industrial snacks and beverages, and a slight but important decrease in the percentage of those selling fruit and natural drinks.

Compared to the larger sample, the percentage of SFVs near schools operating from a stall is lower (57% compared to 65%), while the share of those operating from safer fixed kiosks with protective walls and roof is higher (47% compared to 41%).

A positive fact is that SFVs with a valid Food Handler certificate are 3.5% more compared to the whole sample; the share of SFVs who attended a Food Hygiene and Safety FHS training course in the last year is 5% higher, while those who were never trained are 5% less; the share of SFVs who underwent a medical screening recently is 3% higher, while those who never carried out a medical examination are 3% less.

Finally, the overall food hygiene and safety score is 0.25 among SFVs operating near schools, that is higher than among the larger sample of SFVs. This increase is mainly due to the higher percentage of SFVs who reach an extremely good level of FHS (+ 5%), and, in the meantime, by the lower share of those who show a poor level (-3%).

1. INTRODUCTION

Street food is any ready to eat food or beverage sold and sometimes prepared in outdoor public spaces (e.g. streets, squares, parks, open-air markets, etc.) by vendors or cooks on the move (hawkers) or stationary, from an outlet with or without indoor space to accommodate consumers (e.g. van, cart, bicycle, stall, kiosk, take-away shop with kitchen overlooking the street).

In Africa, street food vending and consumption have proliferated in the last three and a half decades (Marras, Ag Bendeche 2016). Such phenomenon is strictly linked to urbanization, that is, the combination of increasing urban population (due to both natural growth and migrations from rural to urban areas), and spreading urban boundaries and urban sprawl. Indeed, on one side, a growing number of newcomers are pressing to access the waged labor market, which often does not expand as quickly, generating unemployment especially within those groups who rely on little social and cultural resources (eg. migrants, women). To these people, self-employment becomes the only way to earn a living and street food vending, in particular, represents one of the easiest and viable jobs, as it requires little start-up capital and no formal education. On the other side, the increased commuting distances and the faster living and working pace have accentuated the demand for ready-to-eat, inexpensive, quick and nutritious food near the workplace among the growing urban low and middle working class. Given all the available solutions (e.g. restaurants, fast foods, bars, etc.) street food is the one that best suits the needs of these urban dwellers.

Nowadays, African national and local authorities, and international organizations agree on the nutritional, economic, social and cultural importance of street food. They are also aware of the critical issues associated with it, especially food safety issues and widespread informality of the sector. For this reason, since the 1980s, the Food and Agriculture Organization of the United Nations (FAO) has been promoting the development of the safety and quality of street food as well as of vendors' livelihoods and working conditions in the Region through the implementation of several targeted projects and initiatives (e.g. surveys and assessment studies, training of vendors and health inspectors, workshops, institutional capacity building, etc.).

As part of FAO programming towards eliminating hunger, food insecurity and malnutrition, and support the provision of safe, nutritious and healthy food to the population of Ghana; FAO has a three-fold aim of backing efficient policies, acknowledging and inspiring other vendors, and developing and supporting a deserved positive image of the sector. In 2013, the FAO and the Government of Ghana agreed upon a three-year Country Programming Framework (CPF), to enhance ongoing efforts at improving good practices among street food vendors with support for raising consumer awareness on food safety.

Within this framework, FAO has launched a series of projects that aim to increase the knowledge about the street food sector in Ghana and, at a later stage, to support its development in terms of safety, nutritional quality, entrepreneurship, and policies. Most recently, FAO carried out an in-depth, extensive review of existing literature on the topic analyzing the major findings provided by literature throughout the last two and a half decades, along with the recommendations that the authors made to key stakeholders. The final report "Street food in urban Ghana. A desktop review and analysis of findings and recommendations from existing literature" (Marras & Ag Bendeche, 2016) is available for download at <http://www.fao.org/documents/card/en/c/70640cfe-bde1-4c82-8437-dbe0a7e49810/>

Following this desk work, FAO led an extensive field survey on street food vending within the Accra Metropolitan Area (AMA), in collaboration with the School of Public Health of the University of Ghana. The survey was aimed at gathering updated and policy-relevant information about the sector (e.g. location and type of street food outlets, variety of foods sold, hygienic and safety conditions under which they are prepared, legal status of vendors, economic dimension of the sector) that will enable public authorities as well as street food vendors and consumers take informed and data-driven action towards the development of the sector. The outcomes of the survey are presented in this report.

2. METHODOLOGY

2.1 Questionnaire

A questionnaire, made of 70 questions (see *Annex 1*) was administered to a large sample of street food vendors in Accra, Ghana, with the aim to collect information on:

- street food vendors' profile (e.g. gender, education level, years of engagement);
- business profile (e.g. employees, type of business, location, operating days and hours);
- food and beverages (type of food and beverages sold, sources of ingredients, etc.);
- expenditures (e.g. overheads) and sales
- tax and fees (e.g. amount paid and beneficiaries)
- professional credentials (e.g. training and medical certificates)
- food hygiene and safety practices and conditions (e.g. food storage, protective clothing, water availability, washing, etc.)
- outlets (e.g. type and building material)
- environmental conditions (e.g. traffic level, open-air sewer, etc.)

The questions were arranged in such a way as to make the administration more rapid: Most of those questions that required direct interaction between enumerators and vendors (e.g. "How long have you been engaged in street food vending?") were grouped at the beginning of the questionnaire; the remaining questions (about 30) that did not require any interaction, and could be answered simply by direct observation (e.g. "Level of car traffic in the area") were grouped in the final part of the questionnaire.

Some questions were to be posed only in the event that the vendor gave a specific answer to a previous question. For example, the question "Do you have a refrigerator at home?" was asked only in case the vendor answered "Yes" to the question "Do you sell leftovers?".

One purpose of the questionnaire was to get information which will enable a quantitative assessment of the level of hygiene and safety of street foods. With this aim, each answer to questions specifically concerning food hygiene and safety practices and conditions was assigned a score ranging from -1 (negative) to +1 (positive). For example, "Yes" or "No" to the question "Vegetables used to prepare raw salads on the spot are washed with disinfectant?" score, respectively, +1 and -1. Some specific answers were assigned a score of -2 (very negative) or +2 (very positive). For example, if non-disposable containers and cutlery are washed "with running water and soap", score is +2. On the opposite end, if the food handler has "never gone through medical screening", he/she will score -2. By averaging the responses, it is possible to calculate the level of compliance of vendors with the standards of food hygiene and safety, on a 7-level scale: Extremely good (> 0.7), Very good (0.4 to 0.7), Good (0.1 to 0.4), Fair (0.1 to -0.1), Poor (-0.1 to -0.4), Very poor (-0.4 to -0.7), Extremely poor (<-0.7).

2.2 Survey team

Data collection was carried out by a team of 13 enumerators selected from students at Undergraduate and Masters levels, Ph.D. candidates and Research Assistants at the School of Public Health of the University of Ghana. The involvement of the SPH-UG was meant to enhance the theoretical and practical capacities of future national food inspectors in advanced data collection techniques and methodology. All the enumerators attended a desktop training on "Mobile-Based Data Collection for Monitoring Street Food Vending in Urban Areas", aimed at teaching techniques and methods for collection and analysis of geo-referenced data using mobile devices (e.g. smartphones and tablets) and a special software: KoBoToolbox, a free, open source suite of digital tools for electronic data collection and analysis, developed by the

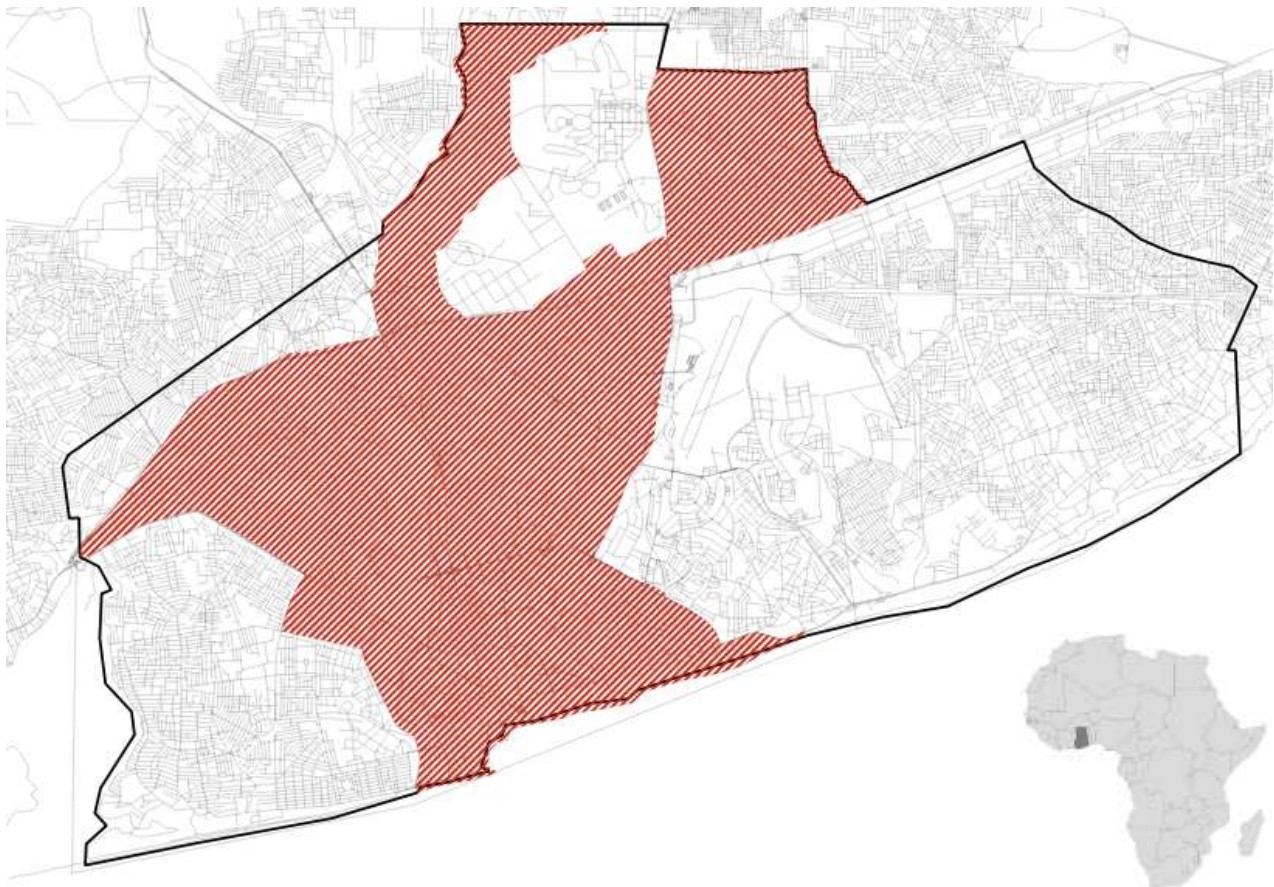
Harvard Humanitarian Initiative and hosted by the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) (<http://kobo.humanitarianresponse.info>). The training lasted 16 hours over 2 days (30-31 March 2016). Once the training was completed, a field mobile-based data collection was carried out by the team of enumerators. The data collection lasted 26 days (6 hours a day) between April 5th and May 21st.

2.3 Sampling method and study area

Since the size or the characteristics of the whole population of street food vendors in Accra were not known, a nonprobability sampling method was used. SFVs were indeed selected in a nonrandom manner, based on convenience sampling (used in exploratory research) and judgment sampling, as we decided to draw the entire sample from one "representative" area of the city, where population is likely present in the whole city.

Within the total Accra Metropolitan Assembly boundaries (approximately 200 square kilometers), a 90-square-kilometer area was selected as the study area that is presumed to be representative of the whole urban area because of its wide extension and far reach along the north-south and east-west directions, from city center to the outskirts, engulfing areas with different population densities (high, medium, low), different income levels (high, medium, low), and varied zoning (residential zones, production industry zones, commercial zones, quaternary sector zones).

Map 1
AMA boundaries (black line) and study area (red hatch fill)



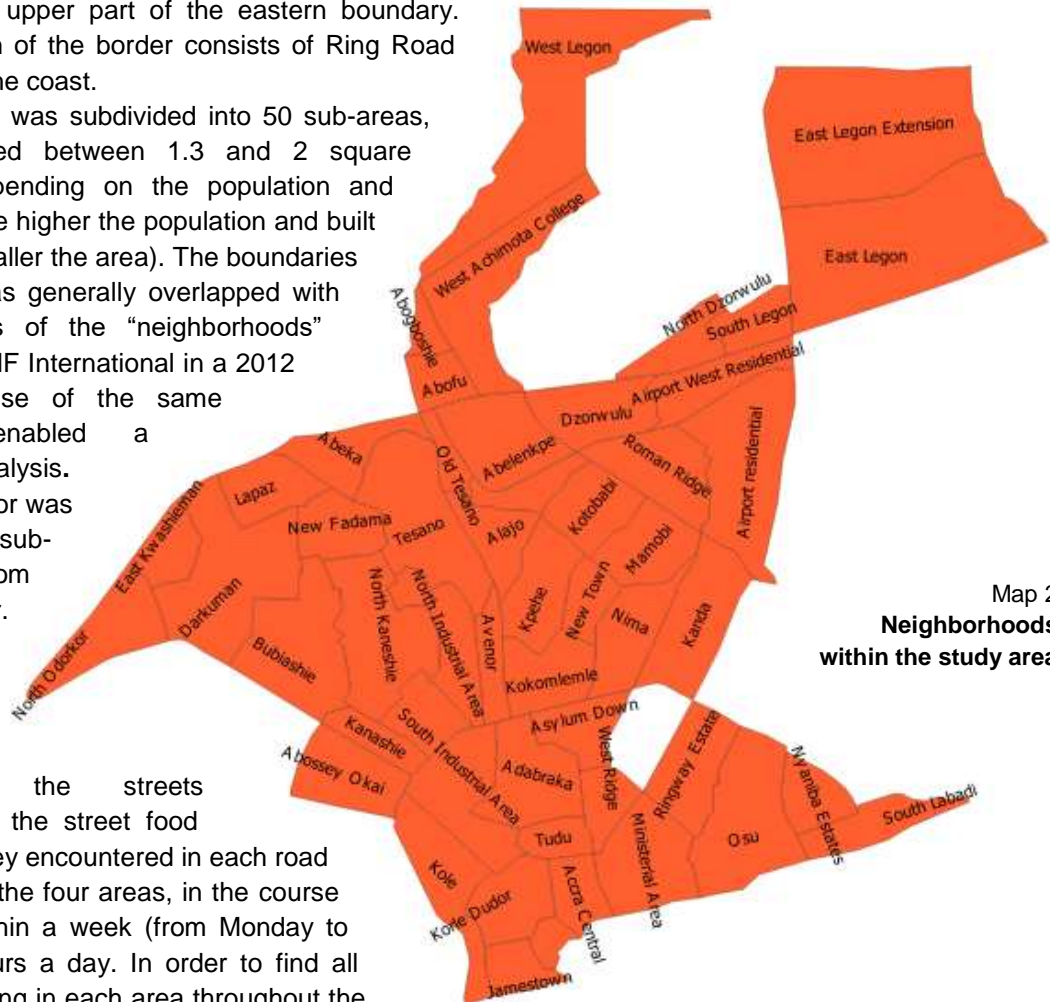
The southernmost boundary of the study area is the stretch of sea that goes from Ring Road West Ring Road East. To the west, the area is delimited by Ring Road West, Oblogo Road, Outer Ring Road, Kpakpo Mankralo Lane, Dansoman Road, Winneba Road until Mallam Junction. The boundary then turns eastward on George W. Bush Highway to Nsawam Road; the border then goes north, skirting Achimota Golf Club, to include Christian Village and West Legon. The northernmost border is marked by Haatso Atomic Road, running along the northern edge of the campus of the University of Ghana, until it joins Boundary Road; from here, it goes down to Accra-Tema Motorway. Going down this road you get to Liberation Road, which constitutes the upper part of the eastern boundary. The last stretch of the border consists of Ring Road East, down to the coast.

The study area was subdivided into 50 sub-areas, each one sized between 1.3 and 2 square kilometers, depending on the population and built density (the higher the population and built density, the smaller the area). The boundaries of the sub-areas generally overlapped with the boundaries of the “neighborhoods” identified by CHF International in a 2012 study.¹ The use of the same boundaries enabled a comparative analysis.

Each enumerator was assigned 4 sub-areas apart from one another. Each enumerator was given the task of walking all the streets interviewing all the street food vendors that they encountered in each road of each one of the four areas, in the course of six days within a week (from Monday to Sunday), 6 hours a day. In order to find all vendors operating in each area throughout the day, enumerators repeatedly visited each same area at different times (morning, afternoon, evening).

Once they finished mapping the 4 sub-areas, each enumerator retraced all of them for two days in order to check that the information collected was correct, and possibly interview vendors who were not found before.

The survey was carried out between April 5th and May 21st 2016.



Map 2
**Neighborhoods
within the study area**

3. FINDINGS

As a whole, 3,334 street food vendors (SFVs) were found and mapped by the enumerators: 3,175 were successfully interviewed, while 159 refused to participate in the survey. In this latter case, only the location of SFVs was recorded. 48 SFVs were interviewed outside of the selected study area, and were therefore excluded from the analysis, although it was found that their inclusion would not have affected the statistics.

Table 1.
Street food vendors count and density by neighborhood

<i>Neighborhood</i>	<i>Area (sqKm)</i>	<i>SFVs</i>	<i>Density (SFVs / sqKm)</i>	<i>Neighborhood</i>	<i>Area (sqKm)</i>	<i>SFVs</i>	<i>Density (SFVs / sqKm)</i>
New Town	0,7	100	134	Kpehe	1,6	51	33
Ministerial Area	2,1	233	113	Avenor	0,8	24	32
Mamobi	1,4	137	97	Ringway Estate	1,6	52	32
Adabraka	1,9	156	81	Abossey Okai	1,6	50	31
Accra Central	0,8	66	79	Abeka	1,2	37	30
Kanashie	0,7	54	76	North Industrial Area	1,5	45	29
North Alajo	0,7	48	67	West Achimota College	2,9	84	29
Tudu	0,6	39	64	New Fadama	1,2	34	29
Korle Dudor	1,3	80	60	Darkuman	3,6	97	27
Jamestown	0,7	41	58	Dzorwulu	1,6	42	26
Lapaz	1,2	69	58	South Labadi	1,1	24	23
Usher Town	0,4	20	56	Kanda	2,2	50	22
Airport residential	3,4	187	56	Abelenkpe	2,0	44	22
Osu	2,9	150	52	Bubiashie	2,8	57	21
Alajo	1,1	56	52	North Odorkor	1,7	35	20
South Legon	0,8	42	50	North Kaneshie	2,7	50	18
Kotobabi	1,3	64	48	East Legon Extension	6,2	109	18
Kokomlemle	1,4	64	45	Nyaniba Estates	0,9	16	17
Abofu	0,7	32	45	East Kwashieman	0,9	14	16
Airport West Residential	1,3	57	42	Awudome	1,0	15	15
Abogboshie	0,4	15	38	West Ridge	0,8	10	13
East Legon	6,3	237	38	Kole	1,9	24	13
Old Tesano	0,5	18	37	Roman Ridge	1,8	22	12
Asylum Down	1,1	38	35	Tesano	3,0	35	12
South Industrial Area	2,1	71	34	North Dzorwulu	0,9	10	11
West Legon	5	166	33	Nima	1,5	15	10

3.1 Street food vendors (SFVs) profile

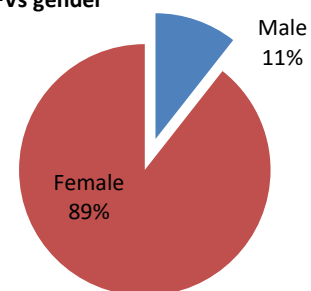
3.1.1 Gender

Nine out of ten SFVs operating in the study area were female. Such figure is in line with the statistics provided in other studies on street food in Ghana published between 2009 and 2015 that show that females account on average for over 90% of SFVs at country level. As already noted by several authors, in West Africa women have a virtual monopoly over street food trade. The important role of women in trade in Ghana is rooted in a cultural construction of gender where economic functions of men and women are separate but complementary. Self-employment in the informal sector is the sole-option for African women who have low educational levels and other challenges that result in them having fewer opportunities than men for wage income. Women must often balance their roles as homemakers, mothers, and income earners using the business income for family needs such as food, clothing, education and health care. This may force women into jobs in which they can work at home. Street food enables them to start and operate their business enterprises by relying on small amounts of capital, traditional skills such as cooking, home equipment, and the help of other family members.

Figures published over the years suggest that there has been an increase in the proportion of males involved in the sector in the capital city of Ghana. This trend actually started in the 1990s, when men increasingly performed tasks associated with food-provision that used to be done primarily by women, such as sitting by the roadside selling small heaps of onions or tomatoes, and helping women cooking and hawking snacks and street food. In the first half of 2000s new male-dominated street food stands known as ‘check-check’ started spreading: fast-food stands (sometimes with seats) serving rice, spaghetti, chicken and salad, and other more modern types of food usually operated (but do not necessarily owned) by young (often well-educated) men.

As we will see later in the report, men also have virtually the monopoly on the street vending of coconuts and coconut water in Accra.

Graph 1
SFVs gender

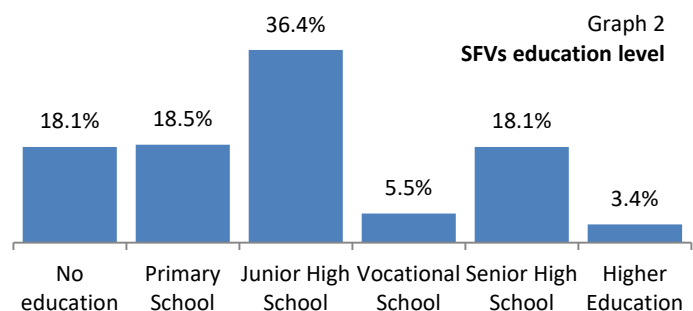


3.1.2 Education level

About four fifths (82%) of the SFVs have at least basic education. One third attended Junior High School (JHS), one fifth completed Senior High School (SHS), and one out of thirty has a university degree. Such figures confirm previous studies that showed that, on average at country level, the majority of SFVs attended at least basic formal schooling. Historical data also show a significant increase of the education level of SFVs operating in Accra compared to 2002.

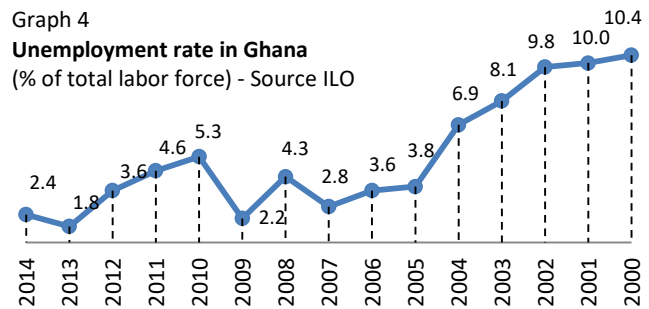
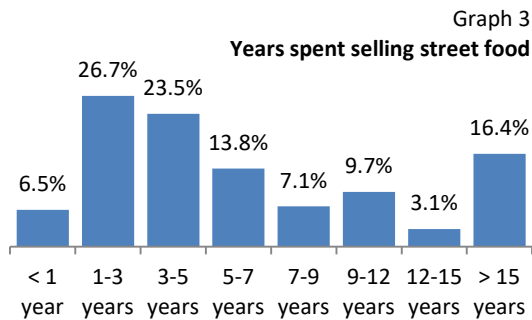
Current data also show that education level is on average higher among male vendors than among females.

Graph 2
SFVs education level



3.1.3 Length of engagement in the sector

Data show that SFVs have been engaged in street food vending on average for more than 7 years, that female vendors tend to have been engaged in the sector longer than men, and that SFVs with a higher level of education have been in the sector for a shorter time. This finding is in line with previous ones that showed an average engagement of 8 years. This is a noteworthy amount of time and it also suggests that the sector does not only represent a temporary source of income but becomes a longstanding professional option.

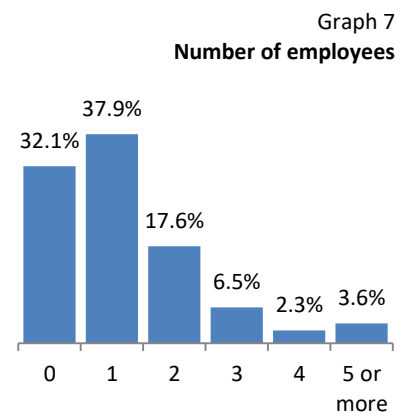
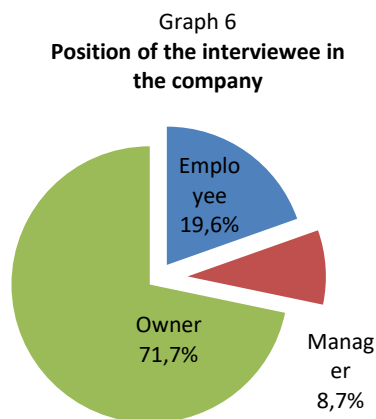
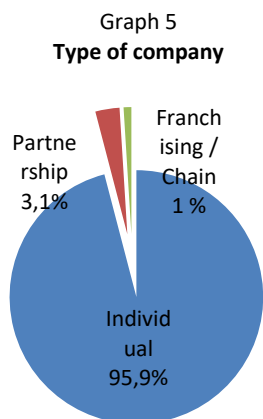


More than one half (56.7%) of the SFVs have been engaged in the sector for less than 5 years, that is, starting from 2010, when the unemployment rate in the country had surged compared to the previous five years. This suggests a close connection between the limited access to the waged labor market, on the one hand, and the growth of self-employment in the street food sector.

3.2 Business management

3.2.1 Type of company, ownership and workforce

Almost all the activities surveyed (96%) were individual enterprises, while only 3% were owned by two or more partners, and 1% was a franchising. On average, each venture employed 1.3 people: one third of the ventures did not have any employee; another one third employed one person; one sixth had two employees; 12.4% had three or more people working for the owner. Seven out of ten of the SFVs operating the business at the time of the survey were the owners of the business itself; two out of ten were employees, and one tenth were managers.



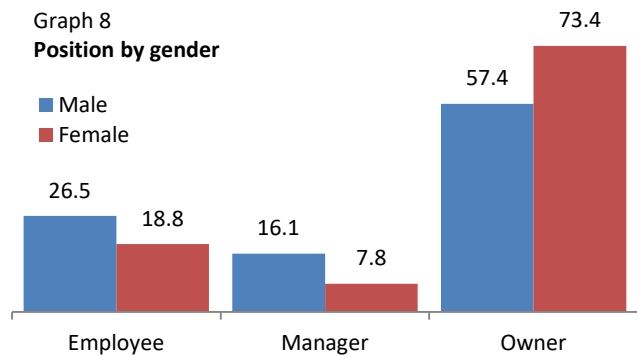
The percentage of female vendors who hold the role of owners (73.5%) is higher than male vendors (57.5%); the latter ones, on the contrary, tend to operate as managers or employees in a higher percentage (respectively 16% and 26.5%) than women (8% and 19%).

This data is quite significant, especially in light of the fact that women tend to be engaged in the sector for longer than men; the different positions that men and women tend to occupy within the company suggest indeed different approaches that the two genders have towards this work: the former, approach it more as a stable employment in which they are willing to invest their own resources; the latter, on the contrary, tend less to be involved on a long term and to invest their own resources, rather preferring to be employed by others (either with simple tasks, or with "managerial" tasks).

Men also show a greater propensity to create partnerships than women (8% versus 2.5%).

Ventures in partnership and franchising tend to have more staff and to be operated to a greater extent by long-time vendors than individual companies.

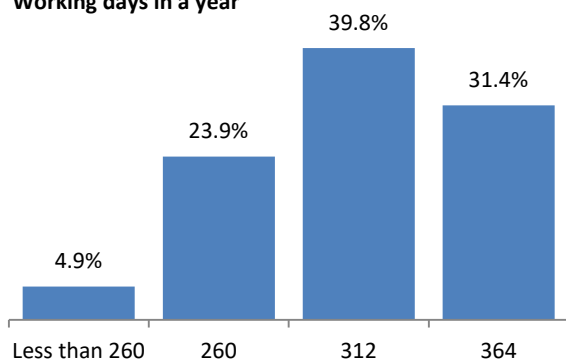
Managers tend to have a higher level of education than employees and owners. The level of education of SFVs is negatively correlated to the duration of their engagement in the sector; in other words, those who have been engaged in this job for less time, on average, tend to have a higher education level. This data confirms what was earlier stated, that the level of general education among SFVs is growing. The ventures in partnership or franchising and those with more staff are operated by vendors with a higher education level. Only very few SFVs (5%) are members of a vendors association or trade union.



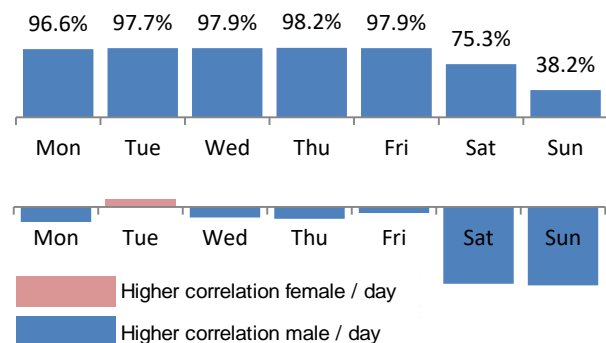
3.2.2 Schedule

On average SFVs work about 6 days a week, equal to 309 days a year. Women work less days a year (308) than men (320). SFVs mostly operate from Monday through Friday. Less SFVs work in the weekend. Men tend to work more than women on Saturday and Sunday. On average, SFVs work 12 hours per day. Women work less hours in a day (12) than men (12.5). During the day, vending activities start gaining momentum at 6 am and reach their peak between 10 am and 3 pm. The number of SFVs starts decreasing consistently at 4 pm. While women tend to operate mainly between 5 am and noon, male vendors tend to work more than women in the afternoon (after 4 pm) and in the evening into late hours (until 2 am).

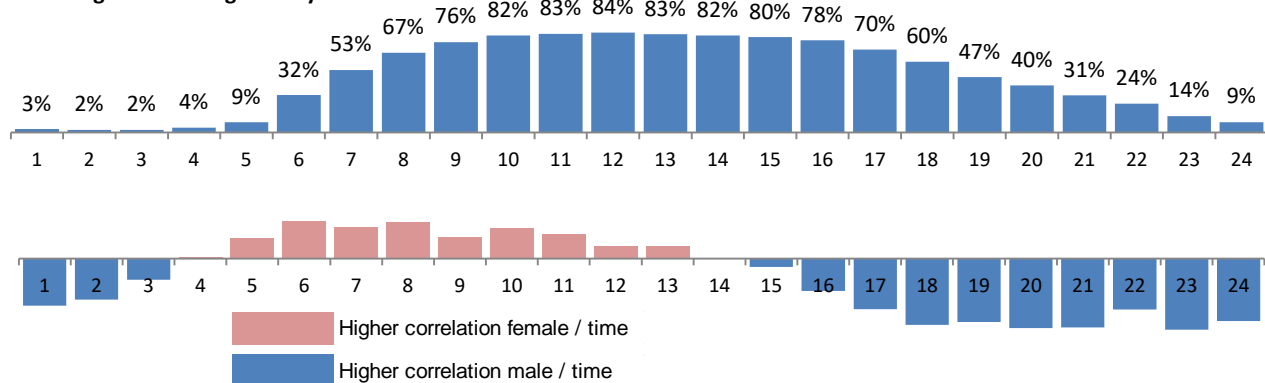
Graph 9
Working days in a year



Graph 10
Working days during the week

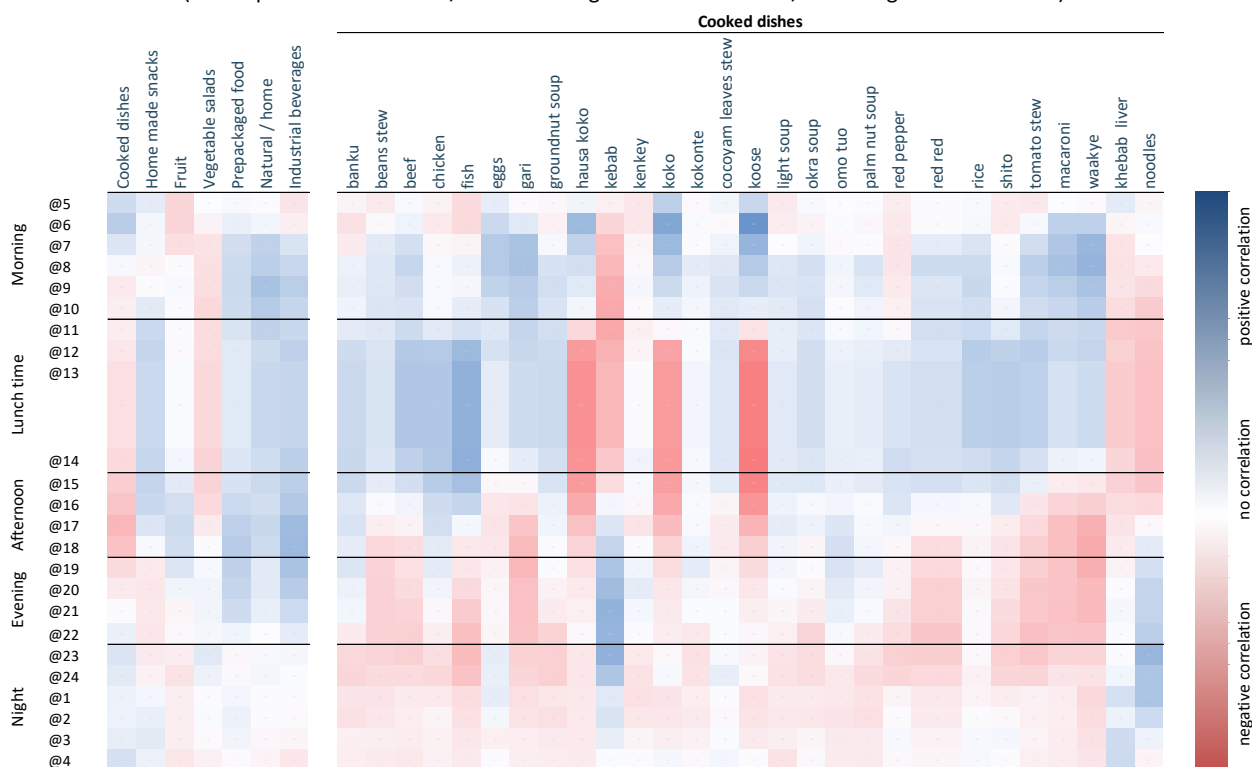


Graph 11
Working hours during the day



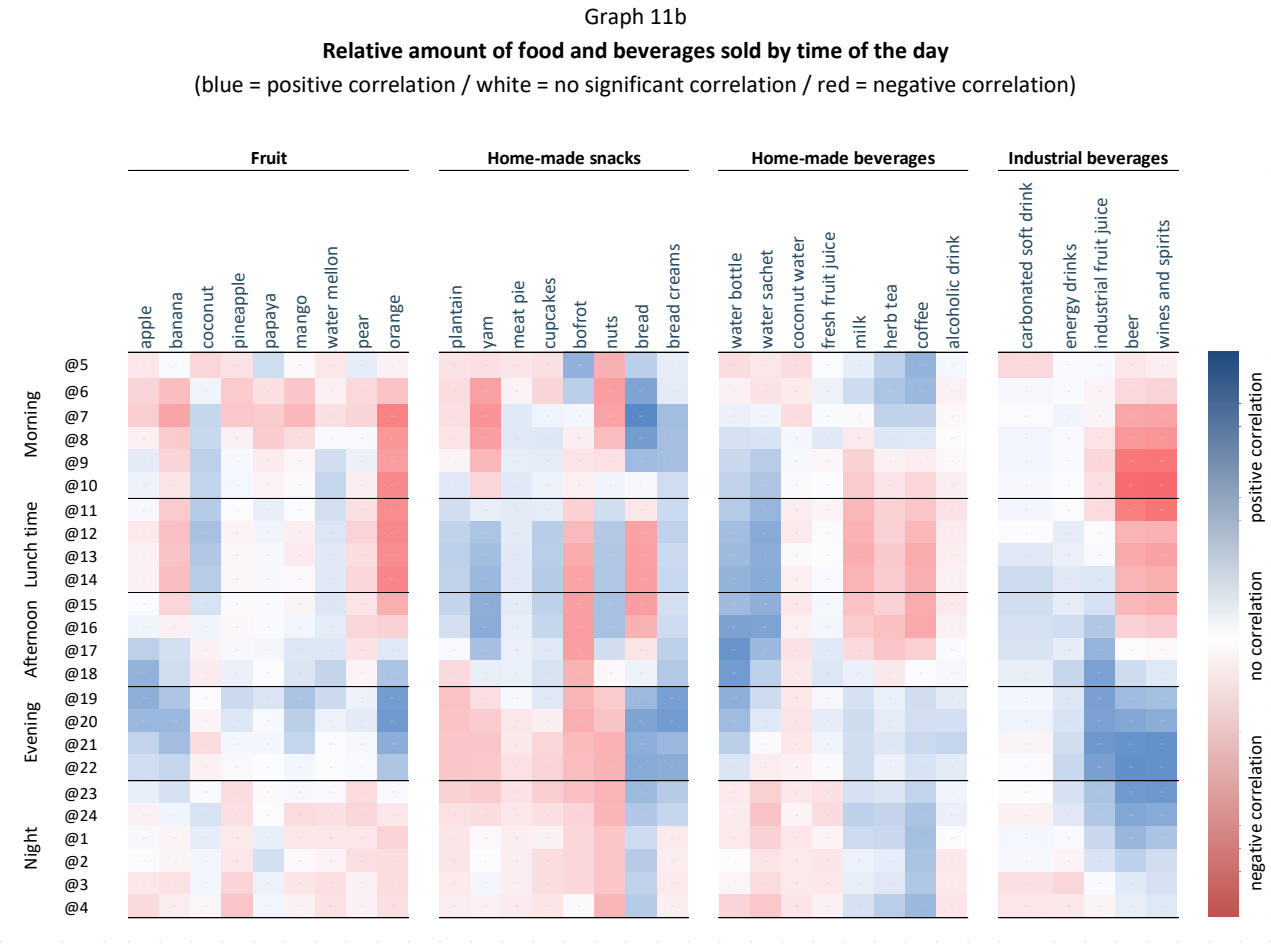
We noticed that some foods are sold more at certain times of the day. For example, if we look at cooked dishes, hausa koko (spicy millet porridge) and koose (deep fried spicy b bean cakes), both traditional Ghanaian breakfasts, are in fact sold especially during the morning, and much less at lunch time and the following hours; at the opposite, kebab (meat on skewers) and noodles tend to be sold more in the evening and at night; chicken, fish, beef, stews, soups and banku are sold throughout the day, a little bit more at lunch time than for dinner.

Graph 11a
Relative amount of food sold by time of the day
(blue = positive correlation / white = no significant correlation / red = negative correlation)



Regarding natural and home-made snacks, we noted that fried or roasted yam and plantain as well as nuts and cupcakes are sold more starting from late morning until the afternoon, and less in the early morning

and evening; on the contrary, bread is sold more in the morning and in the late afternoon, and less in the central part of the day. Among fruits, oranges are sold mainly from the late afternoon through the evening; also, but to a lesser extent, bananas are sold more in the evening. At the opposite, coconut has greater market from early morning until early afternoon.

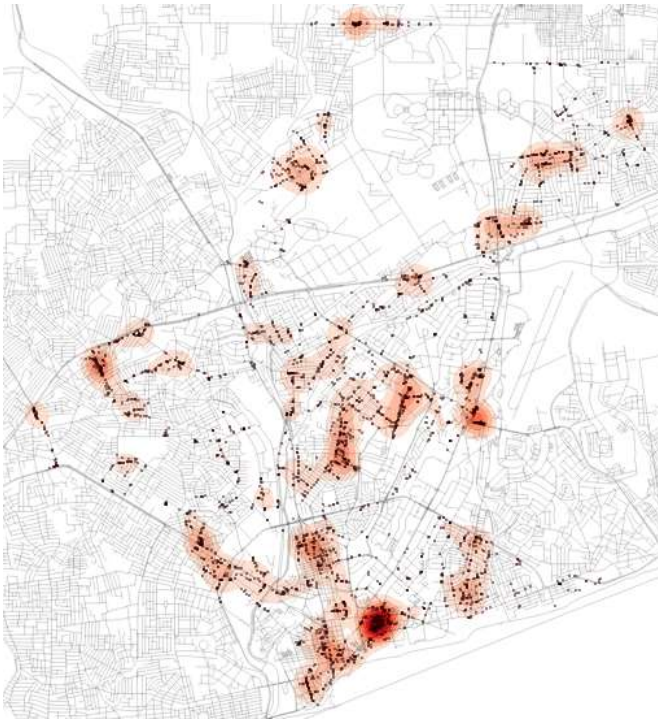


Observing drinks, water is sold from morning to night; milk, teas and coffee are more common early in the morning and in the evening; industrial fruit juices are sold more the whole afternoon through the evening; the sale of beer and other alcoholic beverages concentrates, predictably, in the evening and at night.

3.2.3 Location

Looking at the location of SFVs within the study area, we notice that their distribution is denser in some areas, while other large areas have no or few SFVs. First of all, it should be noted that the lack of SFVs in some areas may be due either to the actual absence of SFVs operating in such locations, or, rather, to missing data on SFVs who operate in such locations but were not found during the field data collection. As noted in the methodology section, enumerators tried to minimize missing data by repeatedly visiting each same area at different times (morning, afternoon, evening) throughout the day during a whole week. The three maps on this page show the density of SFVs from different perspectives. Map 3 shows the location of all SFVs (dots) and clusters, that is, areas with a high density of SFVs (rendered through a heat map with red gradations). Apparently, the areas where street food is not available are many and wide.

Map 3
Clusters of SFVs



Map 4
Areas covered by street food vendors
setting a 500-meter radius from each selling point



Nonetheless, map 4 shows that street food is generally at a walking distance all throughout the city. Let us indeed suppose that each SFV's radius of action (or attracting radius) – that is, the distance within which he/she is able to attract his/her customer base – is approximately 500 meters.¹ By overlapping the areas of action of each SFV, we get a map that highlights the areas that are covered by SFVs (and, by contrast, the areas that are not covered by such a service). In this way we can see that the areas in which consumers cannot find street food at a standard walking distance are just a few, and are located in particular in the north-west of the study area.

Map 5 renders the density of SFVs by neighborhood: Ministerial area and New Town are the denser areas, followed by Adabraka and Mamobi. A quite high density is also recorded in the south-western area within Ring Road, including Jamestown, Korle Dudor, Accra Central, Tudu, and Usher Town; farther north, Kanashie, Lapaz, and North Alajo. Low densities are recorded in a large north-west area and in neighborhoods all along the east side, from South Labadi to North Dzorwulu.

If we compare this data with the data mapped by CHF International in 2012, the distribution of SFVs does not seem to depend on the income levels of the population living in a particular neighborhood. Indeed, similar densities of SFVs can be recorded in low, middle and high income neighborhoods. Similarly, the SFVs' distribution in the urban space does not seem to depend on the population density nor on the density of houses.

Existing literature suggests that the distribution and density of SFVs is shaped by urban zoning, that is, by the prevailing activities taking place in different areas (eg. residential, industrial production, agriculture, commerce, recreation, education, etc.), with a tendency of SFVs to cluster near places busy with those categories of urban dwellers that more than others ask for quick, cheap, tasty and nutritious food., t For example, on weekdays, and by students and workers of the lower and middle classes.

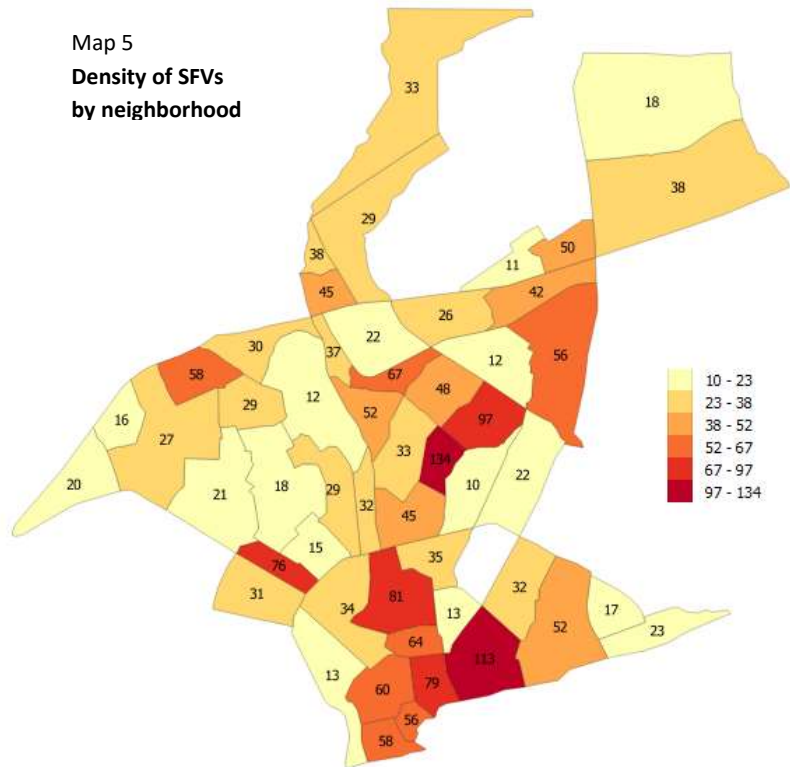
¹ Such distance is deduced from the distance (400m) which, according to several studies, people who live in urban areas are willing to walk to reach a bus stop.

We found that a substantial part of SFVs (32%) operate near schools.² (See paragraph 3.5 specifically focused on SFVs operating near schools)

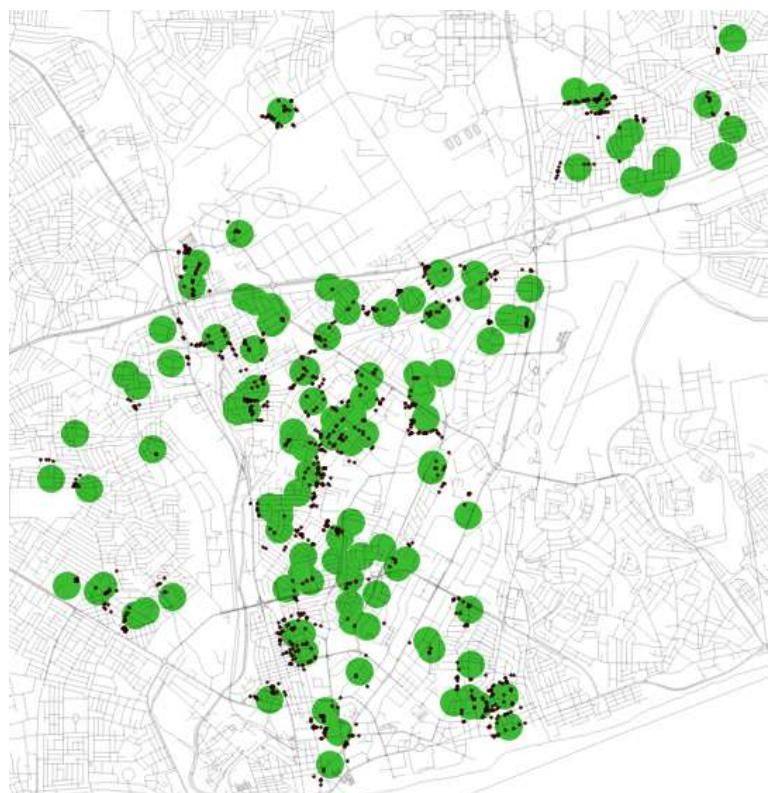
3.2.4 Expenditures and sales

On average, SFVs spend GHC 99 per day to buy ingredients and to pay for the variety of overheads that a restaurant implies (cookware, kitchen tools, dishes and cutlery, detergents, fuel, water supply, public transport, staff, etc.). Half of them spend less than GHC 80 per day. Larger companies (those with more employees) tend to spend more on ingredients and other overheads. Expenditures higher than the average are also recorded among those SFVs who sell cooked dishes that include meat (beef or chicken) or fish, but also groundnut soup, rice, bread with spreads; while those selling kenkey, koko, kosse tend to spend less to supply. SFVs selling fruit or home-made / natural beverages tend to spend less, and among fruit sellers, those selling bananas tend to spend less than those selling watermelon. SFVs selling sachet water, industrial fruit juice, beer and spirits spend more compared to those who sell other beverages, especially home-made ones (e.g. lamuji, asana, sobolo, brukina, fula) and carbonated drinks. Average daily sales amount to GHC 160, with half of the SFVs selling less than GHC 120 worth of food. The result is an average net daily income of GHC 56, with half of the sample earning less

Map 5
Density of SFVs
by neighborhood



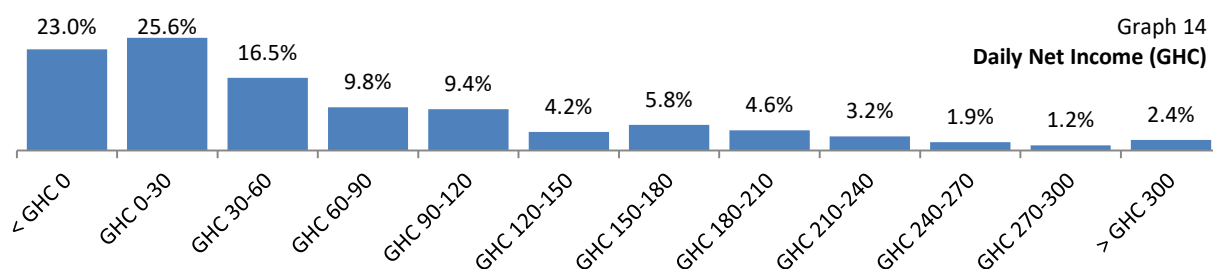
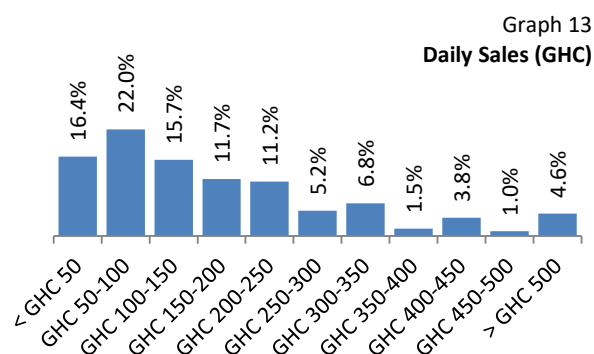
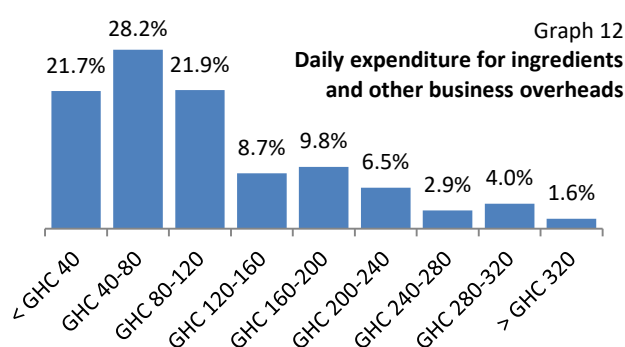
Map 6
Schools within the study area (green dots)
and the SFVs operating near-by (black dots)



Schools' location data source: OpenStreetMapp.com

² We considered to be "near" school those SFVs operating at about 400 meters away from one of the 120 schools that are within the study area (see the complete list of the schools in Annex 2).

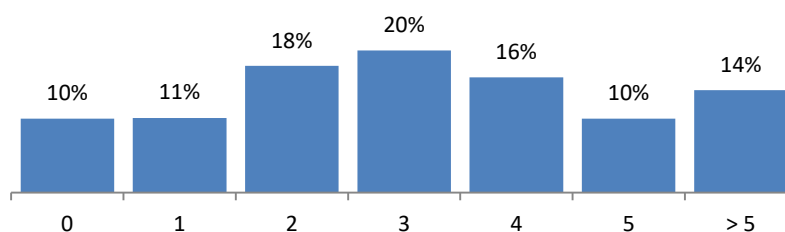
than GHC 36 per day. Dauntingly, about one fourth of the SFVs declared expenditures exceeding the daily earnings, which results in a daily loss. More solid companies – namely those operated in partnership or franchising, and those with larger staff - tend to have a higher net income. SFVs who sell fruit tend to have a lower net income, while those who sell cooked dishes declare the highest earnings and, despite the higher costs, are able to get a higher net income. The net income also increases with the increase in the number of working days. Finally there is a positive correlation between the calculated net earnings, on the one hand, and the reported amount of the annual fee paid for the Business Operating Permit (BOP), on the other; in parallel, the net income turns out to be higher among SFVs who claim to possess a valid Food Handler certificate. These latter two correlations suggest that those who are regularly registered tend to declare higher revenues, while, on the contrary, "informal" SFVs tend to declare lower earnings.



Larger companies based on partnership and those run by a SFV with a higher level of education tend to sell more and to earn more net profits. Higher sales and net profits are also positively correlated to the number of working days and hours a day. Selling cooked dishes, especially chicken, makes more money than average, while selling fruit makes less, except for coconut or grape. Bread with spreads is also a good deal for SFVs. Among beverages, energy drinks are those who bring higher sales and profits.

Besides the owner, an average 3.7 people enjoy the revenues of a single business; therefore, an average 4.7 people are economically dependent on a single street food venture. This number corresponds roughly to the size of an average household in Ghana, which over the last 15 years amounted, according to available sources, between 3.5 and 5 members per family.

Graph 15
Apart from the owner, how many people are economically supported by a single venture?



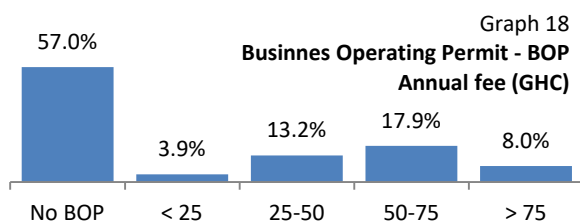
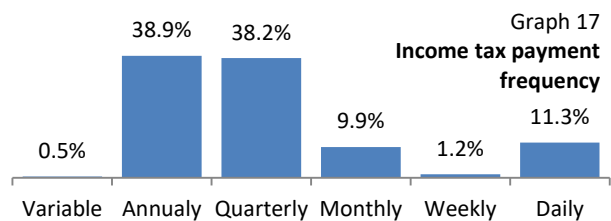
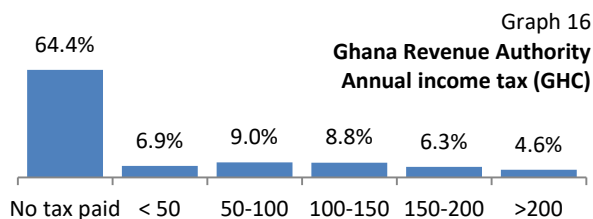
3.2.5 Tax and fees

The questionnaire includes questions regarding three types of tax and fees paid by SFVs: a) the fee for the Business Operating Permit (BOP) paid to the local authorities; b) the income tax paid to the Ghana Revenue Authority; c) the fee for the use of public space (PSF) that can be paid to different parties. The response rate to the questions on BOP and income tax was low, respectively 34.5%, 27.5%; the fact that the respondents did not wish to provide such information may suggest, on the one hand, that SFVs pay such tax and fees but want to keep secrecy on an information that they considered to be sensitive; on the other hand, it may suggest that there is a high rate of tax evasion and of unlicensed SFVs.

Other limits to the analysis are due to the fact that, in many cases, the answers to these specific questions appear unreliable; for example, where a large share of SFVs state that they pay only GHC 1 per year as income tax (12.5% of respondents) or for the BOP (26%). A further limit to the consistency and completeness of the analysis is due to the fact that some respondents provided information on the frequency of payment of tax and fees, but did not release the amount paid.

Once such limits have been highlighted, and bearing in mind that the analysis of such data is not necessarily reliable, some statistics are provided below, based on data cleaned of outliers through statistical methods and personal assessments of the authors of this report. Specifically, we decided to exclude from the analysis those SFVs who declared to pay less than GHC 12 per year or abnormally high figures, both for BOP and income tax.

As for income tax, two thirds declared to pay none. Those who declared to pay it, pay on average GHC 135 per year, with 50% paying less than GHC 108. About one third of the SFVs pay the income tax once a year, another one third once every three months, and one out of nine pay every day.



As for the fee that should be paid to local authorities to be granted the permit allowing to operate (BOP, to be renewed on an annual basis), 57% of the SFVs is found to pay none, while those who declared to pay such fee, pay on average GHC 57 per year, with 50% paying less than GHC 45.

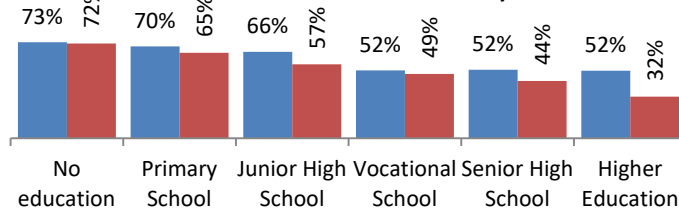
The percentage of SFVs who do not pay income tax or BOP is significantly correlated with their level of

education, the type of outlet, the type of food and beverages that they sell, and the level of food hygiene and safety that they meet. Indeed, the share of SFVs evading tax and BOP is much higher among those with no or a low education (70%) than among those with a higher education (30-50%); among those who sell fruit (80-90%) than those who sell, for example, prepackaged food (20-50%); among those showing an extremely poor level of food hygiene and safety (80-90%) than those with an extremely good level (14-23%). While the type of outlet does not correlate significantly to the income tax paid, it does correlate to the BOP, where SFVs operating from kiosks are more likely to have a permit (41%) than those who sell from stalls (25%), wheeled vehicle (17%), or a take-away shop (11%). Finally, the companies with no employee tend to pay no income tax more (76%) than those with employees (down to 33% in the case of companies with 6 employees).

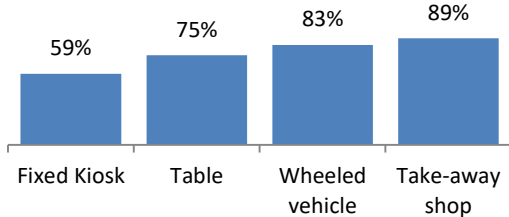
Graph 19
% of SFVs paying no income tax
and no BOP by FHS level



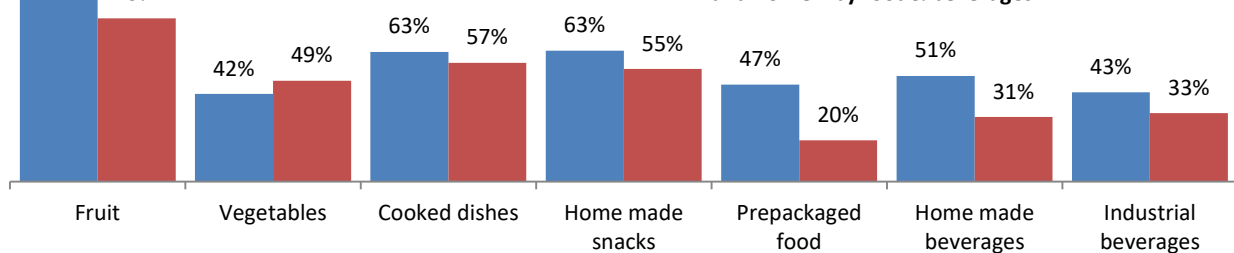
Graph 19b
% of SFVs paying no income tax
and no BOP by education level



Graph 19c
% of SFVs paying no Income Tax
by type of outlet

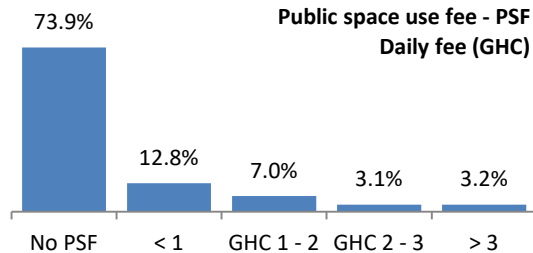


Graph 19d
% of SFVs paying no income tax
and no BOP by food & beverages

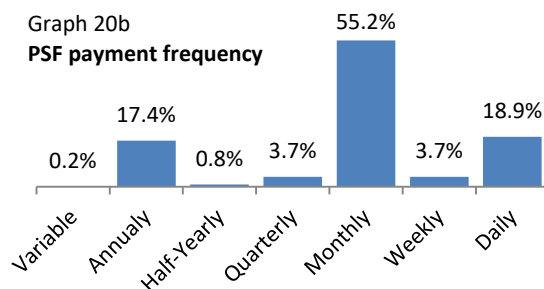


Finally, among the SFVs who answered to the question regarding the fee for the use of the space on which they had installed their outlet, about three fourths declared to pay no PSF. One fourth declared to be the owner of such space, and thus does not need to pay any fee; a little less than one half operate on a space owned by a private landlord; one remaining fourth operates on public space owned by local authorities. Among those few who pay some fee, the average amount paid is GHC 1.6 per day, with 50% of the SFVs paying less than GHC 1. About half of the SFVs pay the space on a monthly basis, one sixth on an annual basis, and one out of six on a daily basis.

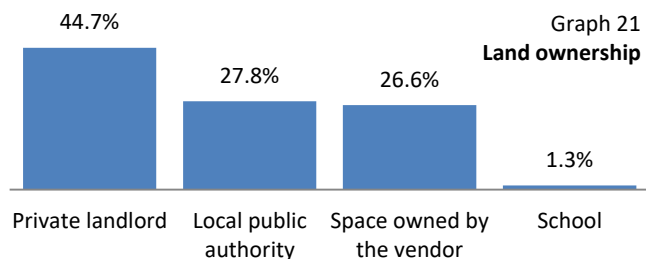
Graph 20
Public space use fee - PSF
Daily fee (GHC)



Graph 20b
PSF payment frequency



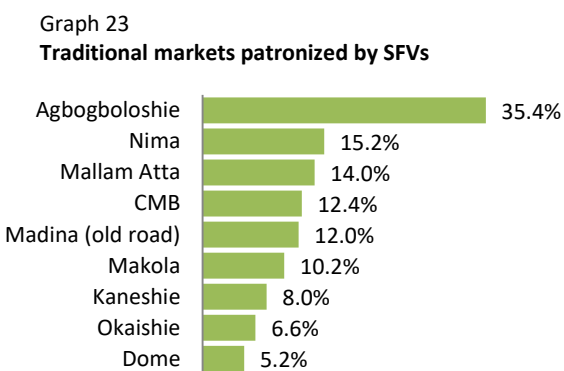
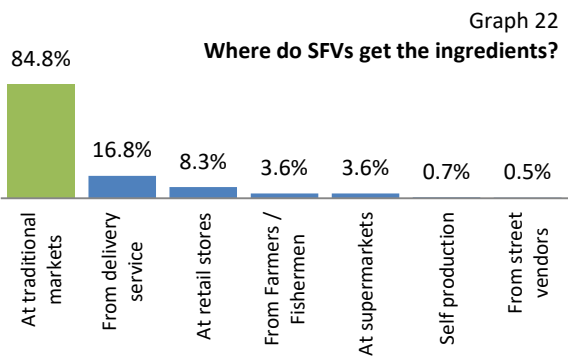
Graph 21
Land ownership



3.3 Food and beverages

3.3.1 Input sources

Most SFVs (85%) get their ingredients from traditional markets. Out of them, one third buy their inputs at Agbogbloshie food market located on the border between Kola and South industrial Area, on the west side of the study area. The food market is within a larger trading centre. A former wetland and suburb of the capital city, it is known as the world's largest e-waste dump, a destination for locally generated used electronics from Accra as well as from industrialized nations. Agbogbloshie is a toxic threat. The burning of e-waste releases toxic fumes that spread throughout the community, threatening city dwellers. The toxic chemical fumes released get into the food market and get inside the soil throughout the area when it rains. Indeed, high levels of toxins have been discovered in soil and food samples, as these chemicals stay in the food chain. Other markets where SFVs mostly buy their inputs are Nima, Mallam Atta, Cocoa Marketing Board (CMB) and Madina (this latter market is located to the north, just outside of AMA, after East Legon).

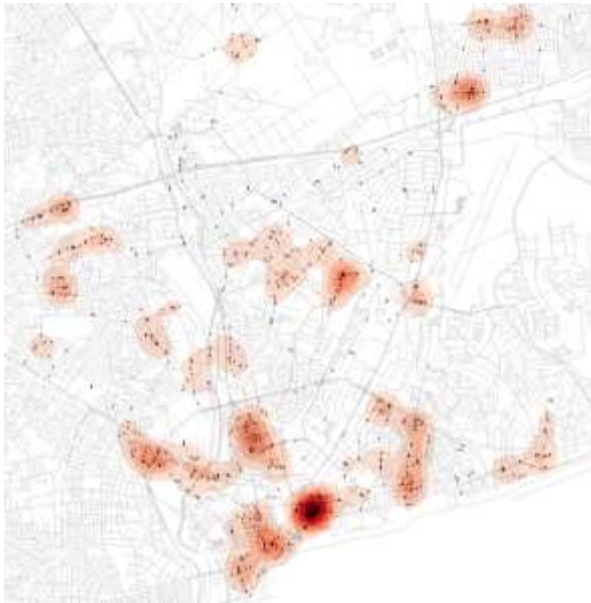


Seventeen percent of the SFVs get their ingredients from delivery services. Less than one out of ten supplies from retail stores. Very few buy ingredients directly from the producers (farmers or fishermen) or at the supermarket. One out of a hundred grows or breeds its own products. Men tend to get products directly from farmers and fishermen more than women.

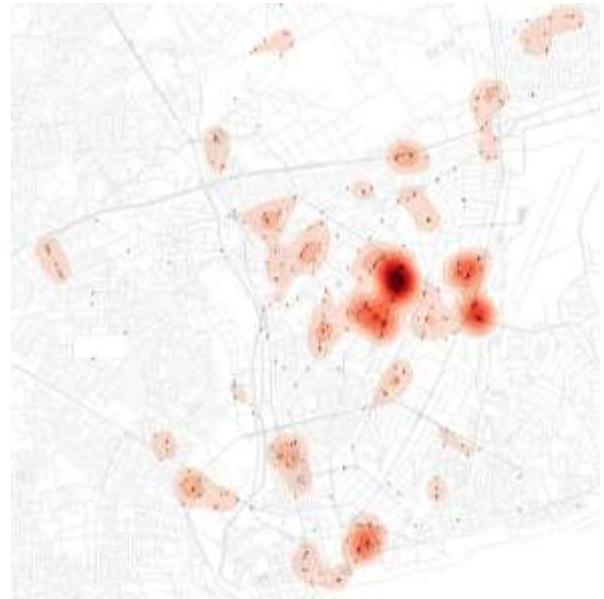


Map 7
Traditional markets patronized by SFVs
(size based on the number of patrons)

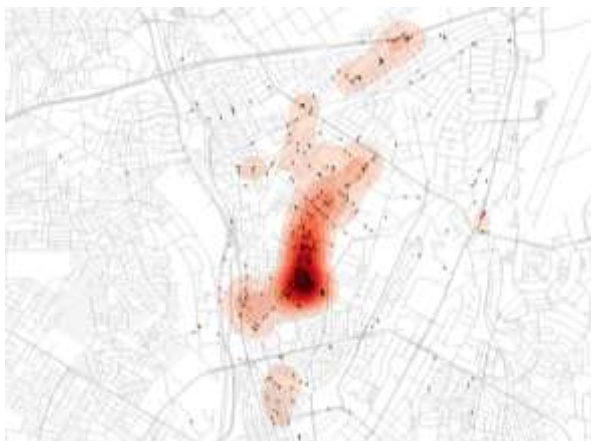
Map 8
SFVs who patronize Agboglobshie market



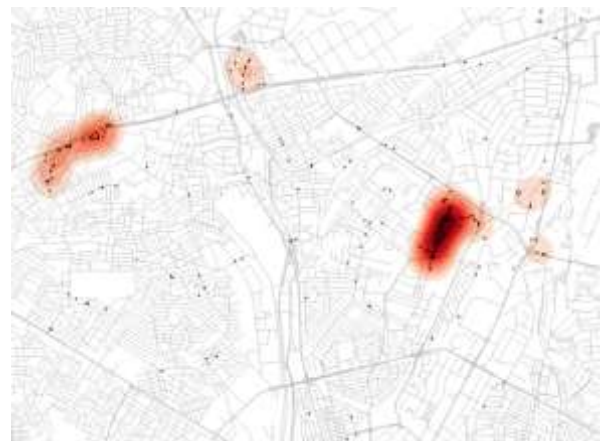
Map 9
SFVs who patronize Nima market



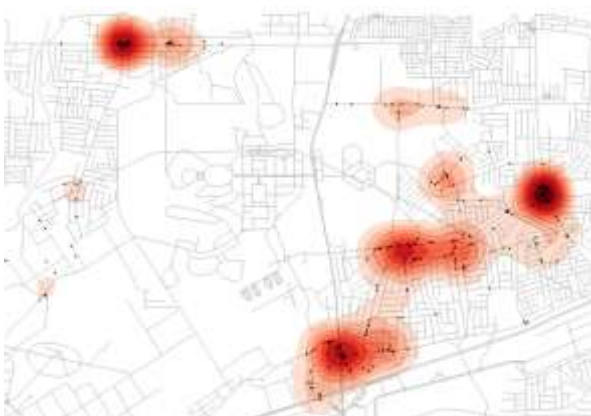
Map 10
SFVs who patronize Mallam Atta market



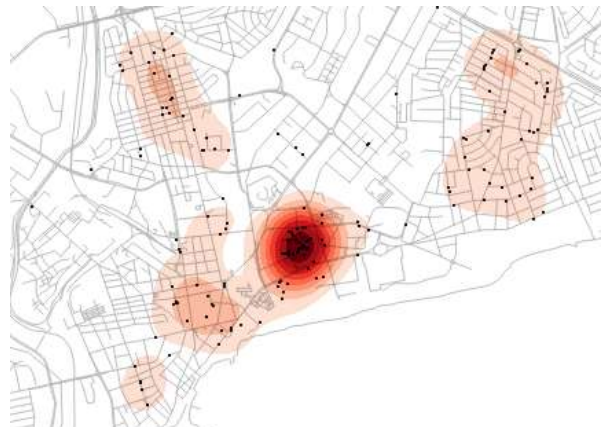
Map 11
SFVs who patronize CMB Market



Map 12
SFVs who patronize Madina Old Road market



Map 13
SFVs who patronize Makola market



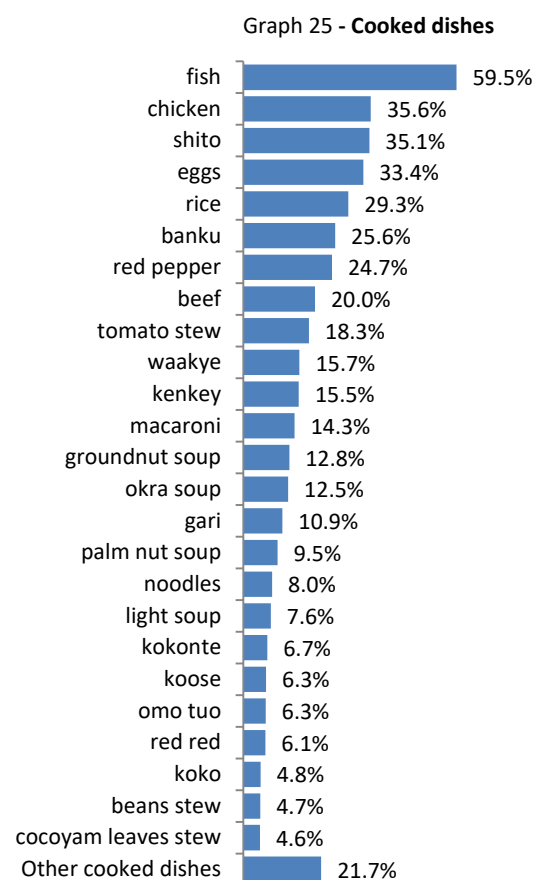
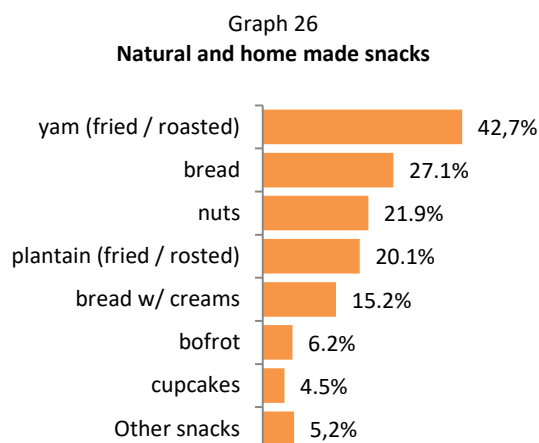
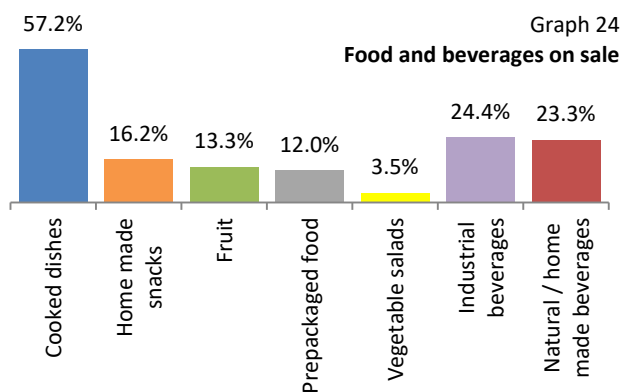
3.3.2 Food and beverages on sale

Most SFVs sell cooked dishes: listing the top ten dishes; fish (either fried, grilled or stewed) takes the podium, followed by chicken (fried, grilled or stewed), eggs (boiled or fried), rice (plain, fried, Jollof), banku (a traditional Ghanaian staple food made of a mixture of fermented corn and cassava dough melted in hot water into a smooth, whitish consistent paste, usually served with soup or stew), beef, tomato stew, waakye (another local dish made of rice and beans), kenkey (traditional food made from fermented maize and sometimes cassava, into dough, served with vegetable stew or soup), and talia (macaroni with hot tomato sauce). Shito (a popular sauce made of blended fish or vegetable oil, ginger, dried fish, prawns, crustaceans, tomatoes, garlic, peppers and spices) and red pepper sauce are often available to spice up several dishes. It is mostly foods rich in protein (meat, fish, eggs, beans) and carbohydrates (cereals, tubers), and only to a lesser extent food that contain vegetables (e.g. in soups) rich in vitamins and minerals.

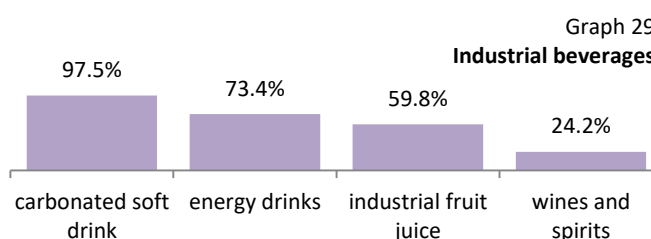
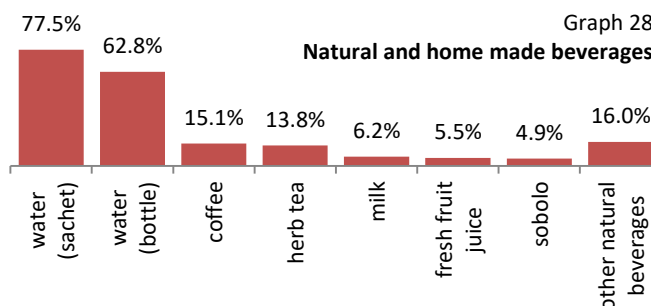
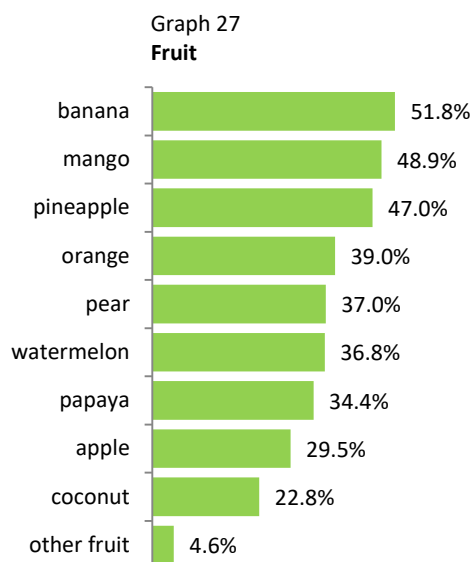
More than one out of four SFVs sell natural or home-made snacks: mostly salty snacks such as fried or roasted yam, bread (with or without spreads such as chocolate, peanut butter, cheese), nuts (e.g. roasted peanuts), fried or roasted plantain. Sweet snacks such as bofrot (traditional African fried snack similar to a doughnut) and cupcakes are less popular.

Less than one out of eight SFVs sell fruit: about one half of them sell banana, mango and pineapple; between 30 and 40% sell orange, pear, watermelon, papaya, apples. One fifth (mostly men operating from push cart of wood and iron) sell coconut.

Prepackaged food and snacks are sold by one out of eight SFVs, while a daunting fact is that only 6 out of 100 SFVs sell vegetable salads.



One fourth sell beverages, either industrial or natural ones. Among those selling this latter kind, three fourths sell water in plastic sachets, two thirds in bottles, 15% sell infusions (e.g. coffee or herb tea), very few offer milk or fruit juices. The most common industrial beverages are carbonated drinks, followed by energy drinks and industrialized fruit juices. Wines and spirits are rarely sold by SFVs.



Some foods show a correlation with the gender of the SFVs. Coconut (and coconut water), most of all, tends to be sold almost exclusively by men, who also focus on kebab, beer and alcoholic drinks.

SFVs' level of education is also correlated to the trade of certain foods, such as industrial beverages that are sold by SFVs with a higher level of education.; This fact may suggest a working strategy adopted by young people with a high-school diploma or even a college degree, waiting to find a job or to pay for more advanced studies, who temporarily decide to trade a product that requires no commitment to preparation and that needs just a simple perch. Bread, with or without a spread, is another product that is easy to trade and that is chosen by SFVs with a medium-high level of education.

Perhaps a truism, which highlights the importance of a discussion on new policies aimed at improving the quality of the nutritional of children and young people, is the fact that fruits tend to be sold slightly less near schools than in other places, while prepackaged industrialized food is sold slightly more.

3.4 Food hygiene and safety conditions

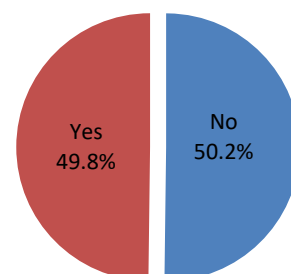
Part of the questionnaire was aimed at recording information about several factors that can determine the higher or lower level of food hygiene and safety: e.g. health certificates and certified food handling skills of SFVs; availability and quality of the water used by SFVs to wash foods and cooking utensils; use of detergents; type of containers and cutlery provided to customers; practices and means to protect and store foods and ingredients; methods and tools for the preparation of food; protective clothing; type and structural features of the outlets; environmental factors.

3.4.1 Certifications and inspections

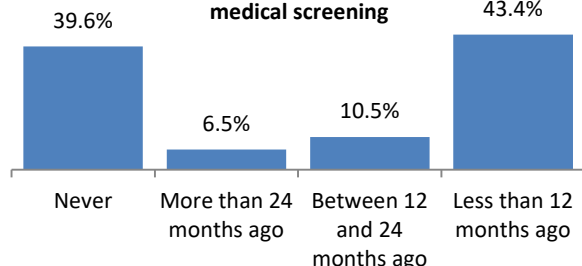
In Ghana, to be granted a BOP, apart from paying the annual fee, SFVs must have a valid food handler certificate, which is issued or renewed only after having undergone a compulsory medical screening. SFVs are expected to carry out complete physical and medical examination for infectious or contagious diseases such as typhoid fever, tuberculosis, cholera, dysentery and other communicable and air-borne diseases, and thus obtain a health certificate issued by the authorized health centers and hospitals. The health certificate is to be kept by the SFV, presented at inspection and renewed annually.³

About one half of the SFVs surveyed provided or declared to have a valid food handler certificate. This figure matches the percentage of SFVs who underwent medical screening within the previous 12 months (43%), to which is added a part of those SFVs (11%) who carried out medical examination between the previous 12 and 24 months. About 40% declared they never underwent medical screening. Although this information sounds daunting, it should be noted that, compared to the data recorded in the past years, the percentage of SFVs undergoing medical screening on a regular basis seems to be increasing.

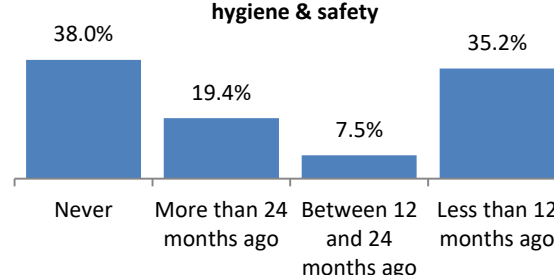
Graph 30
Valid Food Handler Certificate



Graph 31
SFV has gone through medical screening

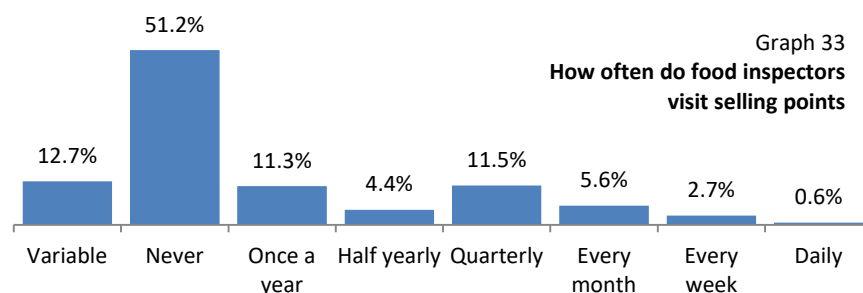


Graph 32
SFV has attended training courses on food hygiene & safety



The percentage of SFVs who have a valid food handler certificate, who attended a FHS training course and who have undergone a medical examination is higher among SFVs who have been operating the longest in the sector, as well as among those who sell cooked dishes, have higher sales and earnings, own the space on which they operate, are part of a professional association or union, and are inspected more frequently by the public authorities. The fact that a SFV has health and professional certifications appears to be positively correlated with his/her tendency to comply with some important hygiene and safety standards: indeed, those who have valid health certificates and have received adequate training tend to have good quality water at their selling point, to use a greater extent of soaps and hand sanitizer, to have a refrigerator at home to store ingredients and foods, to serve food at a suitable temperature, to wear latex gloves and hair cover, to adequately protect food from dust and insects, to operate from kiosks with protective walls and floor covered in

Graph 33
How often do food inspectors visit selling points



to have a refrigerator at home to store ingredients and foods, to serve food at a suitable temperature, to wear latex gloves and hair cover, to adequately protect food from dust and insects, to operate from kiosks with protective walls and floor covered in

³ Ackah, M., Gyamfi, E. T., Anim, A. K., Osei, J., Hansen, J. K., & Agyemang, O. (2011). Socio-economic profile, knowledge of hygiene and food safety practices among street-food vendors in some parts of Accra-Ghana. *Internet journal of food safety*, 13, 191-197.

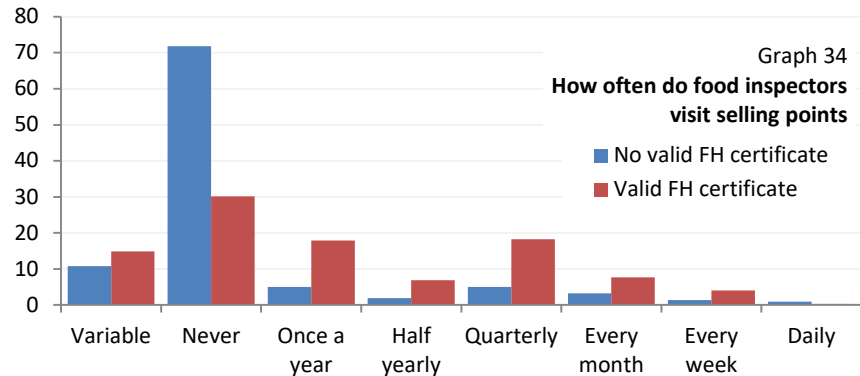
concrete or tiles, and to throw the waste in rubbish bins. However, training courses and certificates do not seem to necessarily affect SFVs on other sanitation practices: indeed, those same SFVs often tend not be to located at a safe distance from open air drains and to place foods on low shelves, next to the ground that is often of dirt in highly trafficked areas.

At institutional level, responsibilities regarding inspection and regulation of the activities of food vendors are shared among the Food and Drugs Authority (FDA), under the Ministry of Health (MOH); the Environmental Health and Sanitation Units (EHSUs) of the Municipal, Metropolitan and District Assemblies (MMDAs),

under Environmental Health and Sanitation Directorate (EHSD) of the Ministry of Local Government and Rural Development; the Ghana Tourism Authority (GTA), under the Ministry of Tourism and Diaspora Relations (MTDR); and the Environmental Protection Agency (EPA), under the Ministry of Environment, Science, Technology and Innovation. At the national level, all the legislations on food hygiene and safety are passed by Parliament of Ghana (PoG) with the assent of the President. Meanwhile, at the local level also, MMDAs are constitutionally recognized as the local authorities and have legal mandate to enact bye-laws regarding food hygiene and safety. Both the FDA and the GTA are mandated to register and inspect catering enterprises while the EHSUs of MMDAs are tasked with the oversight responsibility of protecting public health at the local level. The EHSU therefore, as part of their responsibilities, also conduct food premises inspections and monitor medical examination status of food vendors as part of their work.⁴

More than one half of the SFVs declared to have never been visited by food inspectors. The percentage is higher among those SFVs who do not have a valid food handler certificate, that is, those who are operating outside of the authorities' radars.

The frequency of inspections at the selling points by the authorities does not seem to have a significant impact on the hygiene and safety conditions and on the sanitary practices of the SFVs, if not on the tendency to use soaps and hand sanitizer and to wear protective gloves.



3.4.2 Water availability, quality and use

Water availability, its quality and the ways it is used by SFVs is one of the crucial issues when it comes to food hygiene and safety.⁵

About 70% of the SFVs in Accra were found to use clean water for washing, both hands and kitchenware: among them, four fifths (80%) were found to use clean water kept in plastic buckets⁶, while one fifth relied

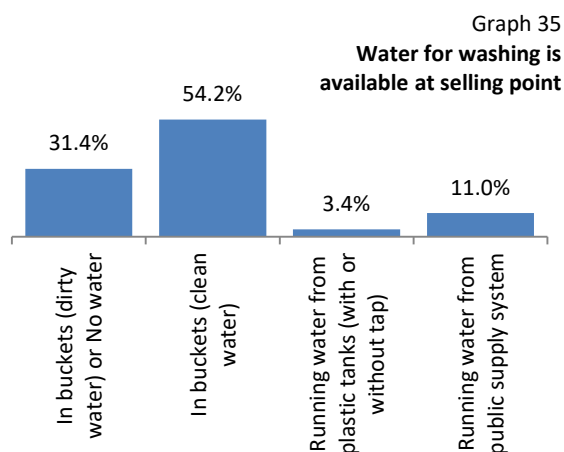
⁴ Monney, I., Agyei, D., Ewoenam, B. S., Priscilla, C., & Nyaw, S. (2014). Food hygiene and Safety Practices among Street Food Vendors: An Assessment of Compliance, Institutional and Legislative Framework in Ghana. *Food and public health*, 4(6), 306-315.

⁵ As specified in the methodological section, some of the questions were asked only if specific answers were given to previous questions. In this case, the question on the availability of water on the spot was asked to SFVs selling fruit, vegetable salads, cooked dishes, natural snacks and natural drinks, not to those selling only industrialized food and beverages.

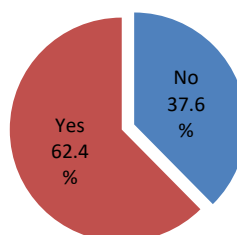
directly on running water available on the spot, either from the public water system (15%) or from plastic tanks (5%). Such figure is in line with recent statistics provided by WHO/Unicef⁷ on the percentage of population with access to improved water sources, that reached 88,7% in Ghana in 2015 (see Graph 38).

Two thirds of the SFVs keep soap and hand sanitizer on the spot.

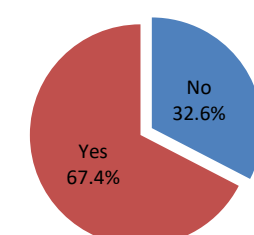
One third of the SFVs were found to use dirty water in buckets or to use no water at all. Nonetheless, two thirds (63%) of these latter ones, as well as two thirds of those who do not have soap on the spot could rely on near-by toilets with running water and soap.⁸



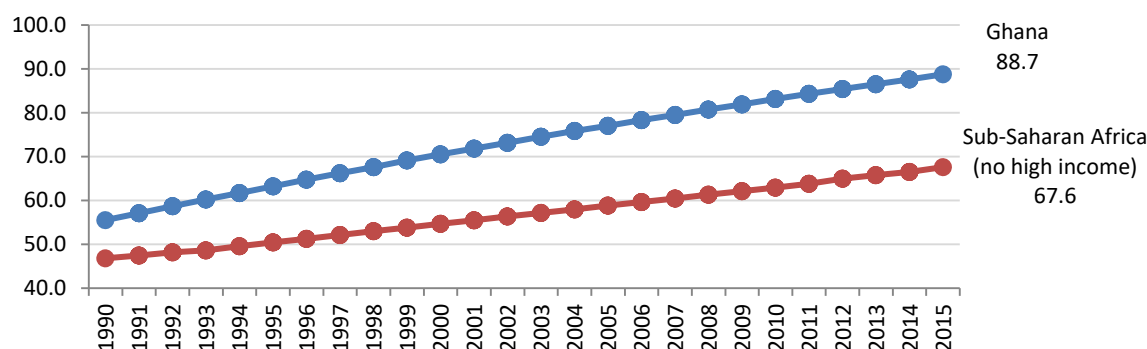
Graph 36
Soap or hand sanitizer available on the spot



Graph 37
FH has access to toilet with running water and soap near by the selling point



Graph 38
Improved water source (% of population with access)



Source: WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (wssinfo.org).

Water availability and quality are greater among SFVs who sell cooked dishes, and minor among those who sell fruits (especially coconut); more and better water is also found among the SFVs who buy ingredients at traditional markets, which is especially positive since it allows SFVs to wash ingredients that in the markets are often treated with poor hygiene, as shown by several studies and surveys. SFVs who have more and better water also rely more on soaps and wash non-disposable cutlery and dishes with care. Finally, SFVs working from a fixed kiosk tend to have better quality water than those who work from other types of outlets.

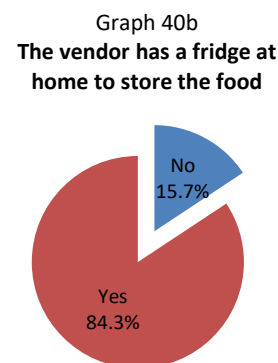
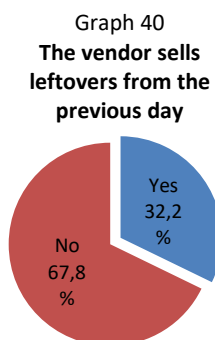
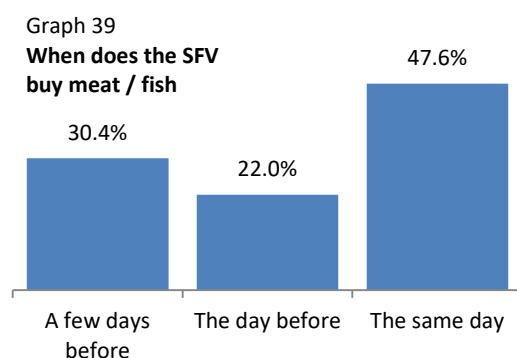
⁶ The cleanness / dirtiness of the water kept in buckets was assessed by the enumerators based on direct visual observation. Water was recorded as “clean” when it appeared transparent or with soap, with no food debris. No biological / chemical / physical test on water samples was carried out in laboratory.

⁷ WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (wssinfo.org).

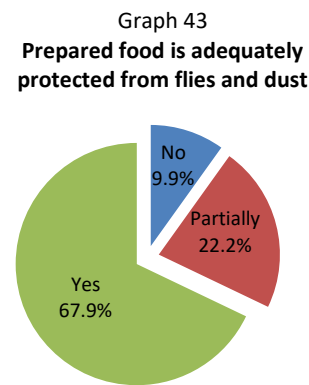
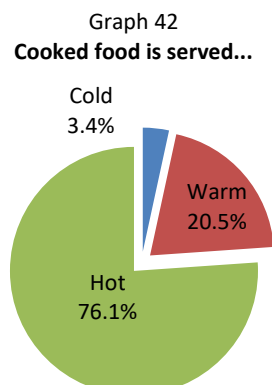
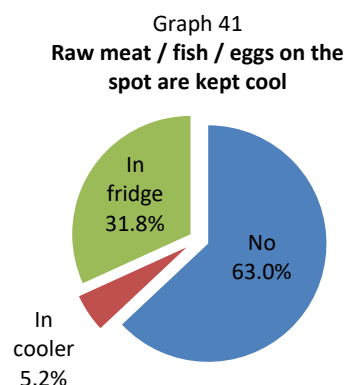
⁸ The question on the accessibility to toilet with soap and running water near-by the selling point was asked only to SFVs who were found to use dirty water in buckets or having no water on the spot, as well as to those having no soap or hand sanitizer on the spot.

3.4.3 Cold chain, food freshness, storage and protection

Almost half of the SFVs using meat and/or fish buy such ingredients the same day that they prepare and sell food made with such ingredients; one forth buy them the day before, and one third buy them a few days before. Among these latter ones, as well as among those who sell leftovers from the previous day (that is, one third of the SFVs) four fifths keep ingredients and food in a fridge at home.



The raw meat, fish, or eggs kept on the spot to prepare food are stored in a fridge by one third of the SFVs, 5% keep it in a cooler, and two thirds do not keep it cool. Cooked food that is supposed to be served hot, is actually served at the proper temperature by three fourths of the SFVs, while one fifth serve it warm, and only a few serve it cold.



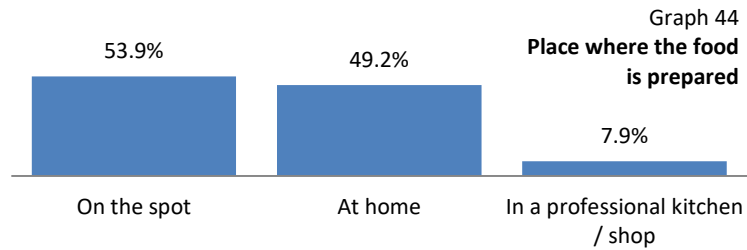
Two thirds of the SFVs protect cooked food adequately from flies and dust. For instance, fruit, kebab skewers, fried fish and chicken are usually displayed in transparent cases of Plexiglas or glass with an aluminum frame; fufu and banku are kept in plastic bags inside of thermal containers; rice, waakye, soups are kept in covered pots. One out of five SFVs protect the food only partially, while only one out of ten do not protect food adequately.

SFVs selling cooked dishes tend to protect food better than those selling fruit. Food protection is more common among SFVs who have a valid food handler certificate.

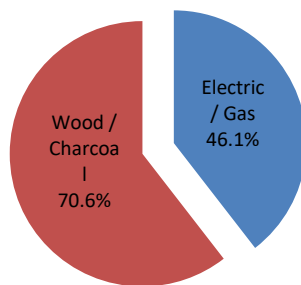
3.4.4 Food preparation

Most of the SFVs prepare the food (completely or partially) on the spot; one half does it at home, and eight out of a hundred rely on a professional kitchen or shop.

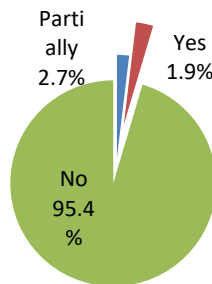
Most of those who cook food on the spot use hobs fueled with wood or charcoal, while less than one half rely on electric or gas hobs. No SFV was found to cook using hazardous fuels (e.g. petroleum, tires). Almost no SFV was found using rusty metal kitchenware (e.g. pots, spoons). This highlights the attention and care that SFVs put in the prevention of chemical and physical contamination of food. Likewise, any possible biological contamination is thoroughly prevented and eliminated. For instance, SFVs who sell vegetable salads, always wash raw vegetables before preparing them. SFVs' tendency to wash raw vegetables is positively correlated to their level of education, but not to having attended training courses in FHS nor to being inspected more frequently by food inspectors. Moreover, vegetable washing is more thorough and frequent among SFVs surrounded by dirt ground. They are also more careful than others to stay far from open air sewers and to keep a rubbish bin on the spot to throw away the abundant organic waste that vegetable preparation usually generate.



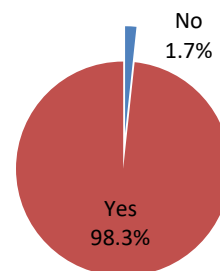
Graph 45
Type of hob on the spot



Graph 46
Kitchenware is rusty



Graph 47
Raw Vegetables prepared on the spot are washed w/ disinfectant

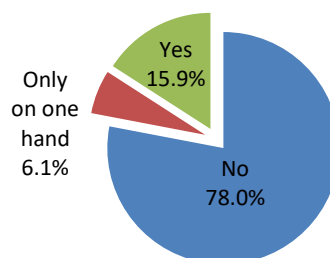


3.4.5 Protective clothing

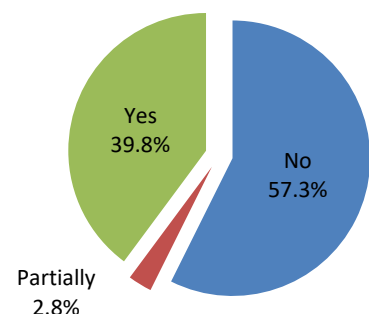
Less than four out of ten SFVs cover their hair, and almost eight out of ten do not wear protective gloves.

While hair restraint is important per se since it keeps hair from ending up in the food and it also may deter SFVs from touching their hair, several experts underline that gloves in and of themselves are not a solution to food contamination; it is their proper selection and use that can help reduce risks

Graph 48
Food handler wears latex or plastic gloves (or plastic sachet)



Graph 49
Food handler has covered hair



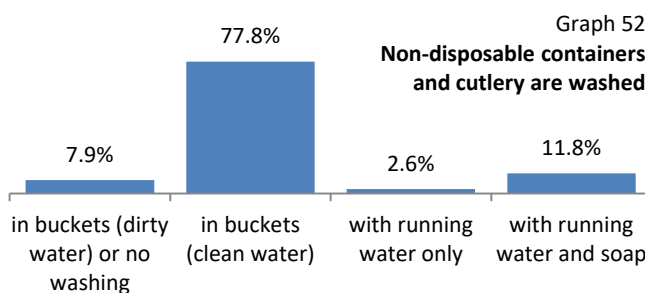
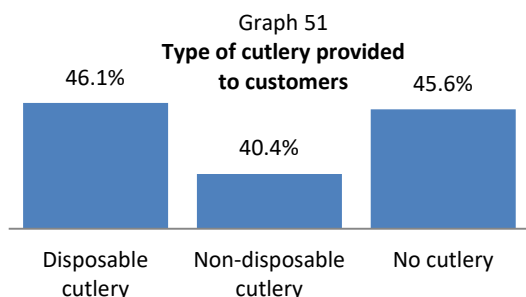
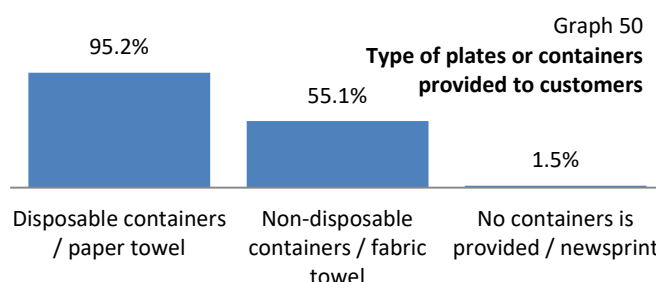
associated with food handling. If the gloves are torn or punctured, worn without being changed or sanitized, and the SFVs' hands were not washed before wearing them, then risk is amplified rather than reduced.⁹ Among the few who meet these two hygienic practices, women are more careful than men when it comes to cover their hair. Gloves are worn more by SFVs who attended FHS training, have a valid food handler certificate and went through medical screening.

3.4.6 Customer service

Almost all the SFVs are able to provide disposable dishes (or containers) to their customers, while half can provide disposable cutlery. Non disposable dishes and cutlery are available respectively at 55% and 40.5% of the selling points.¹⁰

Those SFVs who provide non-disposable dishes and/or cutlery were asked whether and how they washed them. Three fourths were found to wash in clean water kept in buckets;

14% used running water, either with, or without soap. Only 8 out of a hundred were found to wash non-disposable dishes and cutlery with dirty water.



3.4.7 Outlets

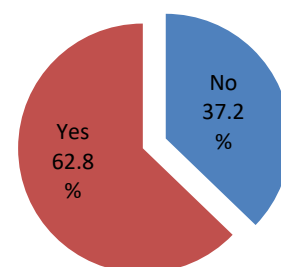
The majority of the SFVs operate from a stall or table. Many others have a fixed kiosk. The few wheeled vehicles that were mapped during the survey were generally managed by men selling coconuts, and, although they are not always operating from the same location, they usually deploy within a limited area every day. Fixed kiosks are more commonly run by SFVs with a higher level of education.

Tables and chairs are provided by SFVs to their consumers in one third the cases.

Three fourths of the outlets are built with wood; such material, as we know, coupled with cooking activities, especially when using wood and charcoal as fuel, may become an hazard, especially in market areas.

Indeed, one common issue that Ghanaian markets face is the problem of fire outbreaks. These are rampant

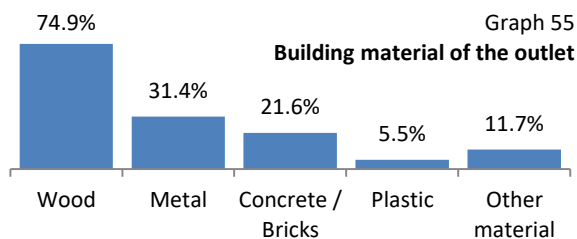
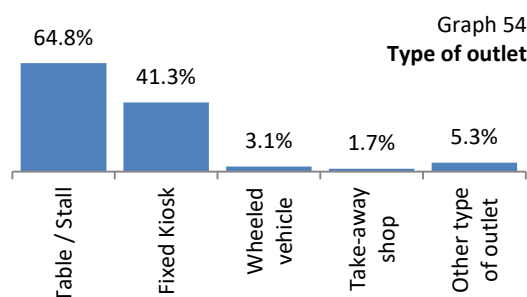
Graph 53
Seats / Tables available for customers



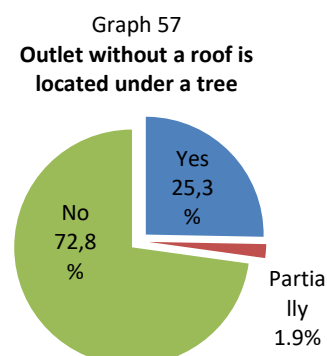
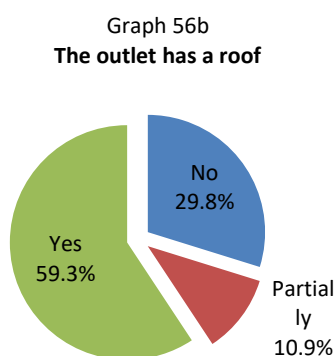
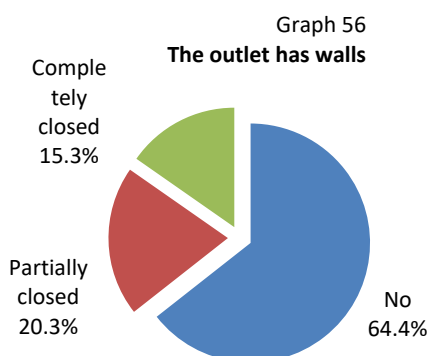
⁹ Michaels, B. (2004). Understanding the glove risk paradigm: Part I. *Food Safety Mag*, 10(3), 24-27.

¹⁰ The questions on dishes and cutlery provided to customers were asked only to SFVs selling fruit, cooked dishes, natural snacks and natural drinks.

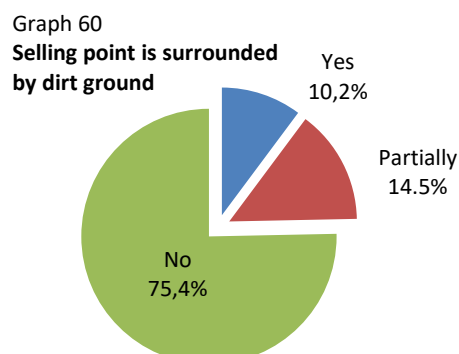
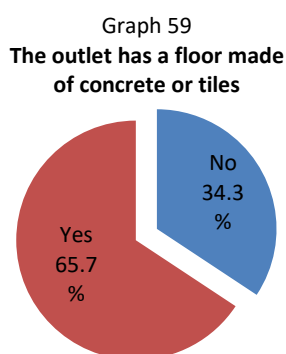
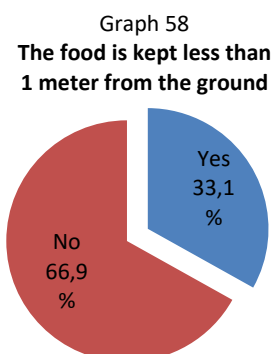
and the effect, typically, is that goods and structures are destroyed. These fire outbreaks may start as a result of an unattended coal pot fire. The problem is always compounded because of congestion. Lanes that fire trucks could use to access the market are converted into stores, and fire hydrants, when installed, are often obscured by stalls. Safer outlets can be made of metal (one third of the cases) or concrete/bricks (one fifth).



Two thirds of the outlets have no walls, which translates into less protection of food by environmental contaminants. Only fifteen percent are completely closed by walls and glass windows, and one fifth is partially walled. Sixty percent have a roof; among those with no or partial roof, a hazard is represented by the presence of trees above the outlet (as bird and bats droppings, leaves and resin can fall over the food), which occurs in one fourth of the cases.



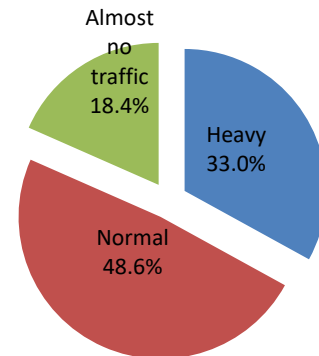
In one thirds of the cases, the counter on which the food is displayed is less than one meter from the ground. This does not pose a risk of contamination in cases where food on display is adequately protected. Otherwise, the short distance of the food from the ground can facilitate its contamination, especially where the outlet does not have a floor built with bricks or concrete or tiles (one third of the outlets) that can be cleaned and washed, and where the outlet is surrounded by dirt ground (one fourth of the outlets).



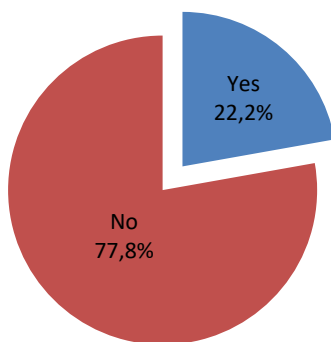
3.4.8 Environment

The hygiene and safety of food sold in the street depends to a great extent on environmental factors such as smog and fine particles produced by cars; presence of open air drains and sewages; presence of waste, in particular organic residues. About one half of the outlets are located in areas where car traffic is normal, and one fifth of the SFVs was found in streets with almost no traffic; one third operate in heavily trafficked areas, where pollution becomes a crucial risk for food safety. Although open air drains and sewages are widespread in Accra, most SFVs are careful to install their outlet far enough from them (at least 1 meter). Nonetheless, a daunting finding shows that SFVs operating near-by schools are those who stay closer to open air drains and sewers and who keep the food closer to the ground.

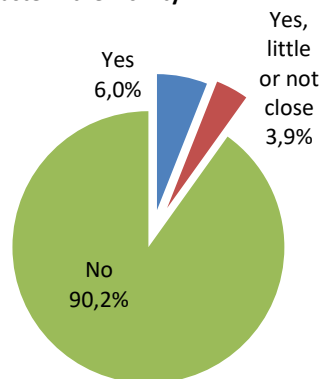
Graph 61
Car traffic in the area



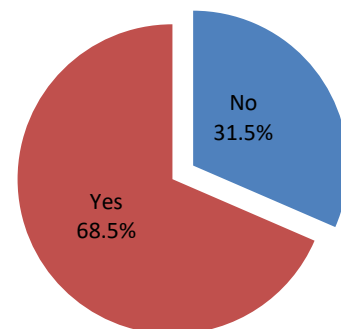
Graph 62
Selling point is less than 1 meter from an open sewer



Graph 63
Presence of uncovered organic waste in the vicinity



Graph 64
Rubbish bin available at selling point

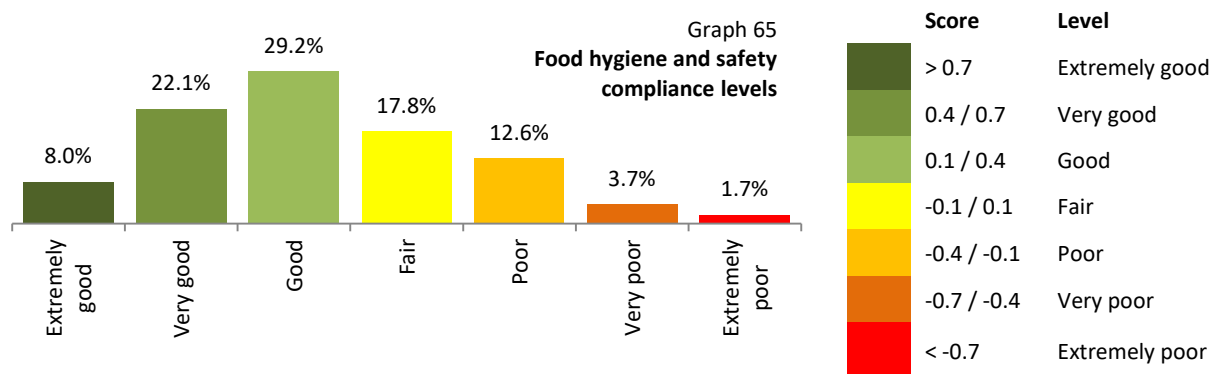


Finally, uncovered organic waste was found near only one SFVs out of ten. Seven SFVs out of ten are careful about collecting waste in garbage cans available on the spot.

3.4.9 Food hygiene and safety level

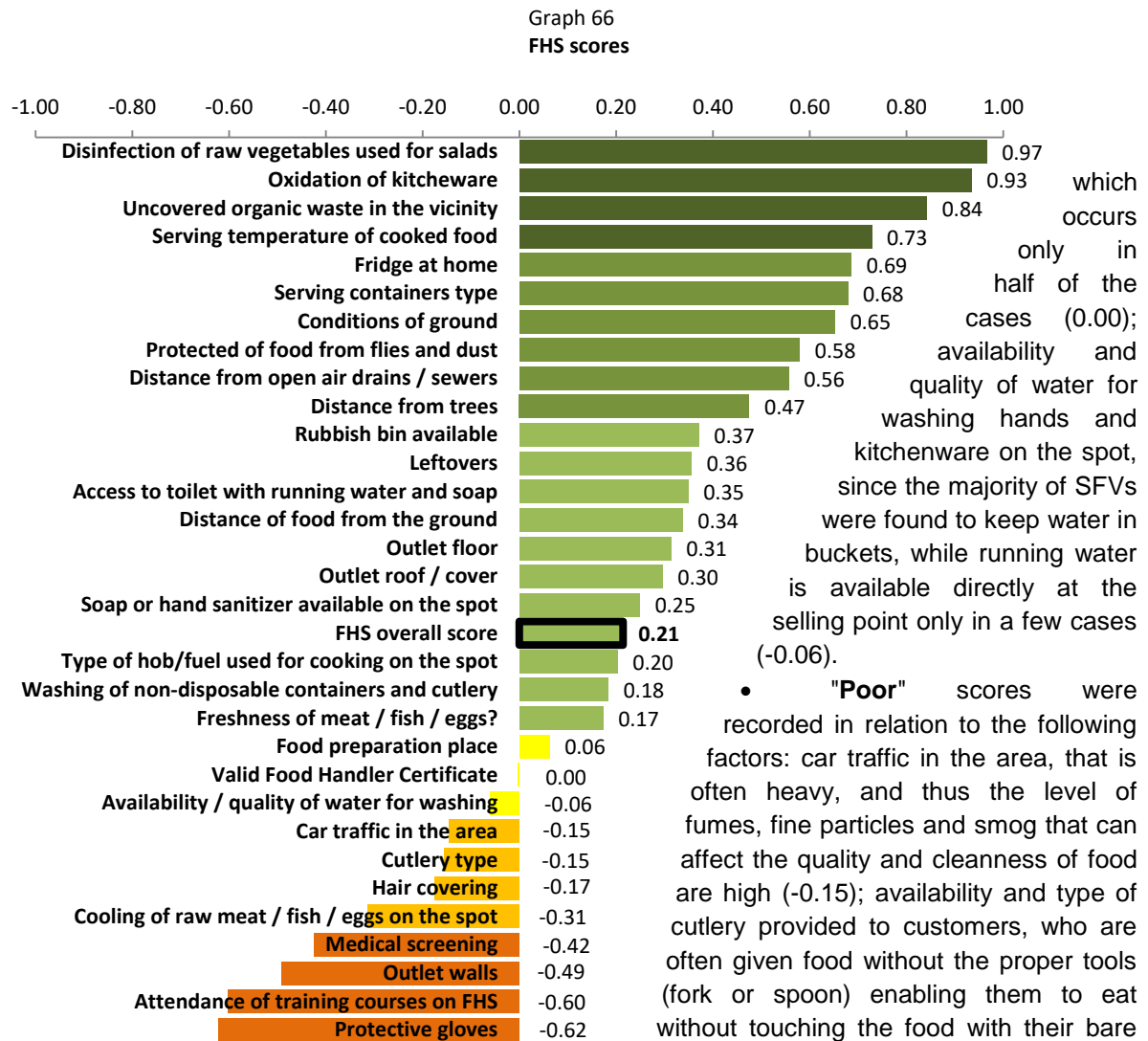
As explained in the methodological section, one purpose of the questionnaire was to get information enabling a quantitative assessment of the level of hygiene and safety of street foods. With this aim, each answer to questions specifically concerning food hygiene and safety practices and conditions was assigned a score ranging from -1 (extremely poor) to +1 (extremely good). Some specific answers were assigned a score of -2 or +2. By averaging the scores of responses, it has been possible to determine the scores of hygiene and safety conditions on a 7-level scale: Extremely good (> 0.7), Very good (0.4 to 0.7), Good (0.1 to 0.4), Fair (0.1 to -0.1), Poor (-0.1 to -0.4), Very poor (-0.4 to -0.7), Extremely poor (< -0.7).

It came out that three fourths of the SFVs had a score ranging between fair and extremely good: 18% fair, 29% good, 22% very good, and about one out of twelve extremely good. One out of eight had a poor score, only one out of 27 very poor, and less than 2 out of one hundred an extremely poor score.



The overall score of the conditions of hygiene and safety of the food and beverages sold by street vendors in Accra is equal to 0.21, that is “Good”.

- If we look at the individual factors that determine such an overall score, topping the charts is the practice of disinfection of raw vegetables used to prepare salads, with a score of 0.97 (**“Extremely good”**). It should be noted in this case that the score is calculated only on vendors who prepare vegetable salads, that is 3.6% of the total sample. “Extremely good” scores are obtained by the following factors as well: the oxidation conditions of kitchenware (eg. Pots, spoons etc.), that very rarely show some rust (0.93); the amount and distance of organic waste, which are found in a minimum quantity and/or at a safe distance from the outlets (0.84); the temperature of cooked foods when served, which are in most cases hot or at least warm (0.73).
- A **“Very good”** score is obtained by the following factors: availability of a refrigerator at the SFVs’ home, in which to store ingredients purchased in advance or any leftovers (0.69); type of dishes and containers used to serve food and drinks to customers, which in many cases are disposable (0.68); conditions of the ground around the outlets, that in a minority of cases is dirt soil (0.65); food protection against insects and dust, as SFVs mostly keep food inside glass cases, thermal container, covered pots (0.58); distance of the outlets from drains and open sewers, which are mostly at least one meter (0.56); the distance trees where the outlets do not have a roof, where most of the sellers avoids placed under the plants from which they could fall leaves and excrement of birds or bats.
- **“Good”** scores were recorded for the following factors: availability of rubbish bins at the selling point (0.37); leftovers, that are sold by a minority of SFVs (0.36); accessibility to toilets with running water and soap near-by the selling points (0.35); distance from the ground and the counter where food is displayed, that is generally higher than 1 meter (0.34); the floor of the outlet, that is often covered with bricks or tiles or concrete (0.31); the covering of the outlets, that in most cases have a roof (0.30); availability of dish soap, hand soap or hand sanitizer on the spot (0.25); type of hob used to cook food on the spot, as SFVs mostly use non-hazardous fuels (e.g. wood, charcoal, gas, electric hob) (0.20); the quality of the water used to wash non-disposable dishes and cutlery provided to the customers (0.18); freshness of meat, fish, or eggs, that are mostly bought the same day or the day before being cooked (0.17).
- A **“fair”** score, that is, around zero, has been assigned to the following factors: appropriateness and safety of the place where food is prepared; usually the preparation (complete or partial) takes place directly at the selling point, in the street (place where contamination risks are higher), or at home (a place that the authorities in charge of food control are unable to survey and where hygiene of food handling may be unsafe, especially in those cases of SFVs who belong to lower classes and live in informal urban settlements where sanitation facilities and drinking water supplies are poor), while only in rare cases cooking takes place in places that are properly meant for professional food preparation, that is, restaurant kitchens or food shops (0.06); possession by the SFVs of a valid food handling certificate,



do not cover their hair either with a hat or with a scarf (-0.17); cooling of raw meat or fish or eggs kept on the spot, since they are usually kept at air temperature, and are rarely kept in a fridge or in a cooler (-0.31).

- The safety of some factors got a **"Very poor"** score: SFVs health is often unchecked as most of them did not undergo medical screening (-0.42); likewise, the overall formal certification of SFVs professional skills is low, since only a minority of them attended a FHS training course (-0.60); finally, protective gloves were worn by very few SFVs (-0.62). A positive fact is that no factor got an "Extremely poor" score.

As we look at correlations, we note that women get higher scores than men. Better hygiene and safety conditions are also found among SFVs who have higher level of education and in companies with more employees. Higher scores are recorded among those who sell cooked dishes that contain meat or fish or eggs, while those who sell fruit, especially coconut, get the lowest scores. Those who rely more on delivery services show safer conditions and practices compared to those who purchase ingredients directly from farmers and fishermen. Better conditions and practices are also positively correlated to the amount of sales and net earnings. SFVs working on a private land show safer conditions compared to those who work on public land. Finally, SFVs operating from a fixed kiosk rather than those who have a simple stand get higher hygiene and safety scores.

3.5 Street food near schools

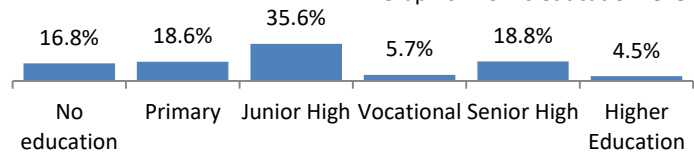
The share of female vendors operating near schools is slightly lower (87%) than the share within the whole sample. The length of engagement in the sector of these SFVs (7 years), as well as the average number of employees (1.4), and the working days in a year (309) remain unchanged. The average number of working hours in a day, instead, is lower (10.5).

The education level is higher among these SFVs compared to the whole sample: the share of those with no schooling is 1% lower, while the share of those who attended a higher education institute is 1% higher.

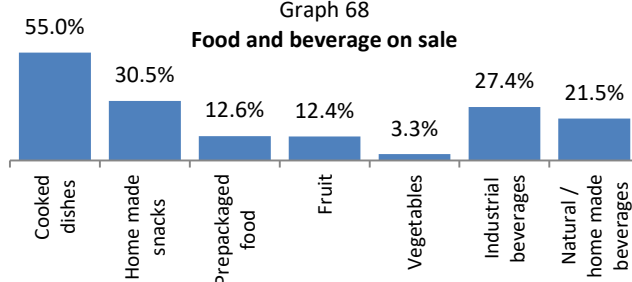
As you look at the categories of food and beverages sold by SFVs near schools compared to the whole sample, we notice a clear increase in the percentage of those who offer homemade snacks (from 16% to 30.5%), a slight increase of industrial snacks and beverages, and a slight but important decrease in the percentage of those selling fruit and natural drinks.

Compared to the larger sample, the percentage of SFVs near schools operating from a stall is lower (57% compared to 65%), while the share of those operating from safer fixed kiosks with protective walls and roof is higher (47% compared to 41%).

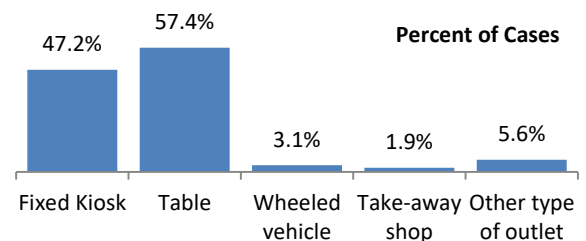
Graph 67 - SFVs education level



Graph 68
Food and beverage on sale

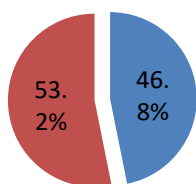


Percent of Cases

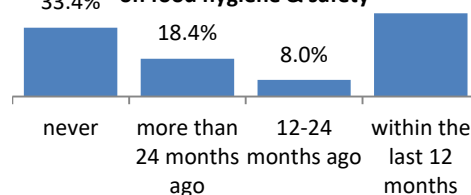


A positive fact is that SFVs with a valid Food Handler certificate are 3.5% more compared to the whole sample; the share of SFVs who attended a FHS training course in the last year is 5% higher, while those who were never trained are 5% less; the share of SFVs who underwent a medical screening recently is 3% higher, while those who never carried out a medical examination are 3% less.

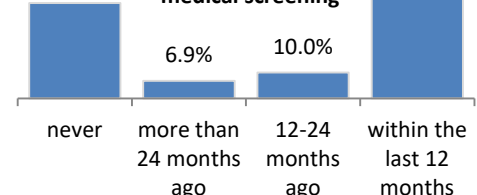
Graph 69
Valid Food Handler Certificate



Graph 70
SFV has attended training courses on food hygiene & safety

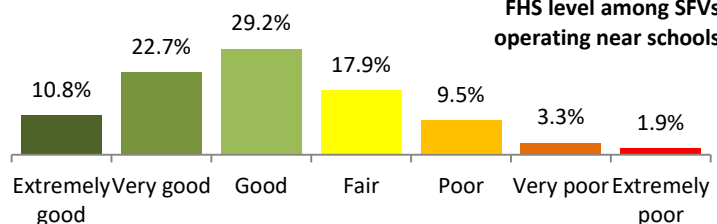


Graph 71
SFV has gone through medical screening



Finally, the overall food hygiene and safety score is 0.25 among SFVs operating near schools, that is higher than among the larger sample of SFVs. This increase is mainly due to the higher percentage of SFVs who reach an extremely good level of FHS (+ 5%), and, in the meantime, by the lower share of those who show a poor level (-3%).

Graph 72
FHS level among SFVs operating near schools



5. CONCLUSION AND RECOMMENDATIONS

The survey revealed both positive and negative aspects of street food vending in Accra, Ghana. One of the key positive finding is that, the overall level of food hygiene and safety, is good – assessed using indicators such as availability and quality of water used by SFVs, food protection from polluting factors, the use of non-hazardous fuels, etc.

Some problematic issues, nonetheless, arose, suggesting the need for further interventions to foster the development of the sector. First of all, although national and local authorities have been growingly shown committed to training SFVs on food hygiene and safety standards, still a large share did not attend any training, and those who did often **cannot rely on infrastructures on the spot** (e.g. running water sources) that are needed to enable them to put acquired knowledge into practice. Also, vending outlets, mostly **underdeveloped stalls**, should be developed into protective kiosks with walls and roofs.

Another major issue is the **nutritional quality** of menus; most SFVs tend to sell energy-dense nutrient-poor (EDNP) food (e.g. meat, sauces rich in oil, starchy food) over micronutrient-rich foods (e.g. fruit and vegetable).

A third important issue is the **widespread informality** of SFVs, as most of them are unlicensed. This is mainly due to cumbersome licensing procedures and lack of benefits clearly envisioned for the SFVs. Informality translates into **lack of data and public revenues** (due to tax large evasion), limiting public bodies' ability to efficiently manage, monitor, and develop the sector, and thus, in a vicious circle, further reducing the interest of SFVs to formalize their status.

To address the existing gaps, FAO recommends policy-makers, urban planners, development programme managers involved in the street food sector in Accra, Ghana, to implement a plan to achieve a three-fold aim:

- a) **further improve** the safety of street food through major structural and infrastructural interventions;
- b) **stimulate** the sale and consumption of ready-to-eat fruit and vegetables;
- c) **motivate** and facilitate the registration of street food vendors, to enable their monitoring.

ANNEX 1 – Questionnaire used for data collection

N	Question	Answer	Score	Option	Asked only if
1	Location	<ul style="list-style-type: none"> • GPS 			
2	Your position	<ul style="list-style-type: none"> • Owner • Manager • Employee 		Single choice	
3	Vendor's Gender	<ul style="list-style-type: none"> • Female / Male 		Single choice	
4	The vending point is located next to a school	<ul style="list-style-type: none"> • Yes / No 		Single choice	
5	Length of engagement in SF (years)	<ul style="list-style-type: none"> • Number 			
6	Apart from the owner, how many people work in this business?	<ul style="list-style-type: none"> • Yes / No 		Single choice	
7	Type of Business	<ul style="list-style-type: none"> • Individual • Partnership • Chain / Franchising 		Single choice	
8	Working days	<ul style="list-style-type: none"> • Mon / Tue / Wed / Thu / Fri / Sat / Sun 		Multiple choice	
9	Opens at	<ul style="list-style-type: none"> • Hour 			
10	Closes at	<ul style="list-style-type: none"> • Hour 			
11	Food on sale	<ul style="list-style-type: none"> • Fruit • Vegetable Salad • Cooked dishes • Snacks (Natural/Home-made and Pastries) • Snacks (Prepackaged industrial) • Beverages (Natural and Home-made) • Beverages (Industrial) 		Multiple choice	
12	Ingredients include Meat or Fish or Eggs	<ul style="list-style-type: none"> • Yes / No 		Single choice	Food_on_sale = 'cooked_dishes' or 'home_made_snacks' or 'beverages_natu'
13	Fruit	<ul style="list-style-type: none"> • Apples • Banana • Coconut • Pineapple • Papaya • Mango • Grape • Water Mellon • Pear • Orange 		Multiple choice	Food_on_sale = 'fruit'
14	Cooked dishes	<ul style="list-style-type: none"> • Akyeke • Banku • Beans stew • Beef (fried, stewed, grilled) • Chicken (fried, stewed, grilled) • Fish (fried, grilled, dried) • Chofi • Eggs • Fufu 		Multiple choice	Food_on_sale = 'cooked_dishes'

		<ul style="list-style-type: none"> • Garden egg stew • Gari (or garri) (dry or wet) • Groundnut soup • Hausa koko (millet porridge) • Khebab (meat) • Khebab (soya) • Kenkey • Ice kenkey • Koko • Kokonte • Kontomire or nkontomre (cocoyam leaves) stew • Koose • Light soup • Meat pie • Nkatebe soup • Nkatenkonto soup • Nkatenkontobe soup • Okra soup • Omo tuo • One man thousand • Palm nut soup • Red pepper • Red red • Rice (plain, fried, jollof, curry, brown) • Rice porridge (rice water) • Shito • Tom brown (corn porridge) • Tomato stew • Tuo zaafi • Talia (macaroni) • Waakye • Plantain (fried, roasted) • Yam (fried, roasted) • Sweet potatoes (fried) • Khebab (liver) • Noodles 			
15	Pastries and home-made snacks	<ul style="list-style-type: none"> • Cupcakes • Bofrot • Nuts • Pop Corn • Nkate Cake (Peanut Brittle) • Bread • Bread with creams 		Multiple choice	Food_on_sale = 'home_made_snacks'
16	Home-made and Natural Beverages	<ul style="list-style-type: none"> • Bottled Water • Sachet Water • Coconut water • Fresh fruit juice • Animal milk • Vegetable milk • Herb tea • Coffee • Wines and Spirits • Brukina • Sobolo • Asana • Lamuji • Fula 		Multiple choice	Food_on_sale = 'beverages_natu'
17	Industrial Beverages	<ul style="list-style-type: none"> • Carbonated Soft Drinks • Energy drinks 		Multiple choice	Food_on_sale = 'beverages_indust'

		<ul style="list-style-type: none"> • Industrial fruit juice • Beer • Wines and Spirits 			
18	Where do you get the ingredients / or products?	<ul style="list-style-type: none"> • Self production • From Farmers / Fishermen • From street vendors • At traditional markets • At retail stores • At supermarkets • From delivery service 		Multiple choice	
19	In which markets	<ul style="list-style-type: none"> • Abeka • Achimota • Adabraka • Agbogboloshie • Arena • Association Goat Production Project • Bodwease • Chantan • CMB • Dansoman • Dome • Fadama Night Mkt • Haatso Yam Mkt • Kaneshie • Kasoa Market • James town harbour • La Market • Lapaz/Nii-Boi • Lascale • London market • Madina (old road) • Makola • Malam • Mallam Atta • New town • Nima • Novotel market • Nungua • Obroni Vegetable Mkt • Odawna • Odon market • Okaishie • Salanga • Taifa • Tema fishing harbour • Tema station • Teshie • University of Ghana Night Mkt 		Multiple choice	Where_do_you_get_the_ingredients = 'at_markets'
20	Expenditure for ingredients and other business overheads (Average GHC)	<ul style="list-style-type: none"> • Number 			
21	Frequency	<ul style="list-style-type: none"> • Daily • Weekly • Monthly 		Single choice	
22	Business Operating Permit - BOP (GHC per year)	<ul style="list-style-type: none"> • Number 			
23	Public space fee - PSF (GHC)	<ul style="list-style-type: none"> • Number 			
24	PSF frequency	<ul style="list-style-type: none"> • Daily • Weekly • Monthly 		Single choice	

		<ul style="list-style-type: none"> Quarterly Half-yearly Annually Variable 			
25	PSF beneficiary	<ul style="list-style-type: none"> Own space Public authority Private land owner School property Other beneficiary 		Multiple choice	
26	Ghana Revenue Authority Tax	<ul style="list-style-type: none"> Number 			
27	Income tax frequency	<ul style="list-style-type: none"> Daily Weekly Monthly Quarterly Half-yearly Annually Variable 		Single choice	
28	AMA Income Tax	<ul style="list-style-type: none"> Number 			
29	Income tax frequency	<ul style="list-style-type: none"> Daily Weekly Monthly Quarterly Half-yearly Annually Variable 		Single choice	
30	DAILY Sales (Average GHC)	<ul style="list-style-type: none"> Number 			
31	Apart from you, how many people are supported by your work?	<ul style="list-style-type: none"> Number 			
32	FH has attended training courses on food hygiene & safety	<ul style="list-style-type: none"> Less than 12 months ago Between 12 and 24 months ago More than 24 months ago Never 	1 0 -1 -2	Single choice	
33	Does FH possess a valid Food Handler Certificate?	<ul style="list-style-type: none"> Yes / No 		Single choice	
34	FH has gone through medical screening	<ul style="list-style-type: none"> Less than 12 months ago Between 12 and 24 months ago More than 24 months ago Never 	1 0 -1 -2	Single choice	
35	How often do food inspectors visit you to assess food hygiene and safety?	<ul style="list-style-type: none"> Never Yearly Half-yearly Quarterly Monthly Weekly Daily Variable 		Single choice	
36	Water for washing is available at selling point	<ul style="list-style-type: none"> Running water from public supply system Running water from plastic tanks (with or without tap) In buckets (clean water) In buckets (dirty water) or No water 	2 1 0 -1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
37	Soap or hand sanitizer are available on the spot	<ul style="list-style-type: none"> Yes No 	1 -1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
38	FH has access to toilet with	<ul style="list-style-type: none"> Yes 	1	Single	Soap_or_hand_sanitize

	running water and soap near by the vending point	<ul style="list-style-type: none"> No 	-1	choice	r_on_site = 'No' or Water_is_available_on_site = 'In buckets (dirty water) or No water'
39	Where do you prepare / cook the food?	<ul style="list-style-type: none"> In a professional kitchen / laboratory On the spot At home 	1 0 0	Multiple choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
40	When do you buy meat / fish / eggs?	<ul style="list-style-type: none"> The same day The day before A few days before 	1 0 -1	Single choice	meat_fish_eggs = 'yes'
41	Raw meat / fish / eggs on the spot are kept cool	<ul style="list-style-type: none"> In fridge In cooler No 	1 0 -1	Single choice	preparation_site = 'on_the_spot') and meat_fish_eggs = 'yes'
42	Do you sell leftovers?	<ul style="list-style-type: none"> Yes No 	-1 1	Single choice	Food_on_sale = 'cooked_dishes') or 'home_made_snacks')
43	Do you have a fridge at home?	<ul style="list-style-type: none"> Yes No 	1 -1	Single choice	When_you_buy_meat_fish_eggs = 'The day before' or 'A few days before' or Do_you_sell_leftovers = 'Yes'
44	Cooked food is served hot	<ul style="list-style-type: none"> Yes Warm No 	1 0 -1	Single choice	Food_on_sale = 'cooked_dishes'
45	Food is served in containers or wrapping towel	<ul style="list-style-type: none"> Disposable containers / paper towel Non-disposable containers / fabric towel No container is provided / newsprint 	1 0 -1	Multiple choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
46	Cutlery is provided	<ul style="list-style-type: none"> Disposable cutlery Non-disposable cutlery No cutlery 	1 0 -1	Multiple choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
47	Non-disposable containers and cutlery are washed	<ul style="list-style-type: none"> With running water and soap With running water only In buckets (clean Water) In buckets (dirty water) or no washing 	2 1 0 -1	Single choice	serve_with_containers_wrapping = ' Non-disposable containers / fabric towel' or Cutlery_is_provided = ' Non-disposable cutlery'
48	Vegetables prepared on the spot are washed with disinfectant	<ul style="list-style-type: none"> Yes No 	1 -1	Single choice	preparation_site = 'on_the_spot' and Food_on_sale = 'vegetable_sala'
49	Type of hub/fuel used for cooking on the spot	<ul style="list-style-type: none"> Electric / Gas Wood / Charcoal Hazardus materials 	1 0 -1	Multiple choice	preparation_site = 'on_the_spot' and Food_on_sale = 'cooked_dishes'
50	Education	<ul style="list-style-type: none"> None Primary JHS Vocational / Technical SHS Middle School Leaving Certificate Tertiary 		Single choice	
51	Are you a member of vendors association / union?	<ul style="list-style-type: none"> Yes / No 		Single choice	
52	The food is cooked / prepared /	<ul style="list-style-type: none"> Yes 	-1	Single	Food_on_sale = 'fruit')

	kept in rusty containers and/or with rusty tools	<ul style="list-style-type: none"> Partially No 	0 1	choice	or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
53	Food handler (FH) has covered hair	<ul style="list-style-type: none"> Yes Partially No 	1 0 -1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
54	FH wears latex or plastic gloves (or plastic sachet)	<ul style="list-style-type: none"> Yes Only on one hand No 	1 0 -1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
55	Prepared food is adequately protected from flies and dust	<ul style="list-style-type: none"> Yes Partially No 	1 0 -1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
56	Type of selling point	<ul style="list-style-type: none"> Fixed Kiosk Table Wheeled vehicle Take-away shop with kitchen overlooking the street Other type of outlet 		Single choice	
57	Selling point building material	<ul style="list-style-type: none"> Concrete / Bricks Metal Wood Plastic Other material 		Multiple choice	
58	The selling point has walls	<ul style="list-style-type: none"> Completely closed Partially closed No 	1 0 -1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
59	The selling point has a roof / cover	<ul style="list-style-type: none"> Yes Partially No 	1 0 -1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
60	The selling point has concrete or tiles floor	<ul style="list-style-type: none"> Yes No 	1 -1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
61	Seats / Tables available for customers	<ul style="list-style-type: none"> Yes / No 		Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
62	Selling point is surrounded by dirt ground	<ul style="list-style-type: none"> Yes Partially No 	-1 0 1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
63	The food is kept less than 1 meter from the ground	<ul style="list-style-type: none"> Yes No 	-1 1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
64	Selling point is less than 1 meter from an open sewer	<ul style="list-style-type: none"> Yes No 	-1 1	Single choice	
65	Car traffic in the area is	<ul style="list-style-type: none"> Heavy 	-1 0	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or

		<ul style="list-style-type: none"> • Normal • Almost no traffic 	1		'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
66	Selling point is located under a tree	<ul style="list-style-type: none"> • Yes • Partially • No 	-1 0 1	Single choice	The_selling_point_has_a_roof} = 'No' or 'Partially'
67	Presence of uncovered organic waste in the vicinity	<ul style="list-style-type: none"> • Yes, in decomposition • Yes, fresh waste • No 	-1 0 1	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
68	Rubbish bin available at selling point	<ul style="list-style-type: none"> • Yes • No 	1 0	Single choice	Food_on_sale = 'fruit') or 'vegetable_sala') or 'cooked_dishes') or 'home_made_snacks') or 'beverages_natu'
69	Picture	<ul style="list-style-type: none"> • Picture 			
70	Additional comments	<ul style="list-style-type: none"> • Text 			

ANNEX 2 – Schools within the study area

The following list of schools is drawn from OpenStreetMapp.com

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|---|--|
| 1. Abelenkpe 2 Basic / Junior High School | 52. Golden Age School |
| 2. Abibiman Complex School | 53. Golden Mission Int. School |
| 3. Abofu Presby Basic School | 54. Goshen school |
| 4. Accra Academy | 55. Gray Memorial School |
| 5. Accra Girls Secondary School | 56. Immanuel Restoration School |
| 6. Accra High School | 57. Iqra Educational Center |
| 7. Accra New Town Experimental School | 58. Islamic Training Institute |
| 8. Accra Polytechnic | 59. Jack & Jill School |
| 9. Accra Technical Training College (ATTC) | 60. Jerusalem Basic School |
| 10. Achimota Preparatory | 61. John Haavad Primary & JHS |
| 11. Aggrey Memorial International School | 62. Joyful Home Academy |
| 12. Ahtoo Montessori School | 63. Kanda Career Training Institute |
| 13. All Saints Anglican Kindergarten | 64. Kaneshie 2 Methodist Primary JHS |
| 14. Al-Rayan International School | 65. Kaneshie Awodome T JHS |
| 15. Alsyd Academy | 66. Kaneshie Cluster of Schools |
| 16. American International School | 67. Kay Billie Klaer Academy |
| 17. Ann's Preparatory JSS | 68. Kinbu Technical School |
| 18. Apenkwa Presbyterian Junior High School | 69. King of Kings International School |
| 19. Association International School | 70. Kings College Int. |
| 20. Atchor Mem. Int. School | 71. Kokomlemle Cluster Of Schools |
| 21. Babess International School | 72. Kotobabi |
| 22. Baobab Academy | 73. Kotobabi 3 Junior High School |
| 23. Benas Preparatory & Junior High School | 74. Kwame Nkrumah Memorial School |
| 24. Bluecrest College | 75. LA-Bawaleshie JHS & Primary School |
| 25. Bright Brains Int. Academy | 76. Liberty American School |
| 26. British International School | 77. Lincoln Community School |
| 27. Cables & Wireless Cluster of Schools | 78. Little Hands International School |
| 28. Canadian Independent College | 79. Little Treasures Montessori School |
| 29. Daarul Arqam Academy | 80. Majomar Montessori Academy |
| 30. Dannaks Senior High School | 81. Mary Mother of Good Counsel School |
| 31. De Youngster's Int. School (RBC Branch) | 82. MCS International High |
| 32. Dzokson Business College | 83. Mercy School |
| 33. Dzorwulu Junior High School | 84. Merton International School |
| 34. Dzorwulu Primary A & B School | 85. Mount Zion School |
| 35. Dzorwulu Special School | 86. Neupert School |
| 36. E-Language Laboratory | 87. Nima Cluster of Schools |
| 37. Emando Memorial Int. School | 88. Nursery School Training centre |
| 38. Emily Otiboe School | 89. Osu Salem 1 Primary School |
| 39. Englebert School | 90. Osu Salem J.S.S |
| 40. Fanida International School | 91. Pig Farm Primary |
| 41. Flag Staff House Basic School | 92. Precious One School |
| 42. Forster Int. & JHS | 93. Presby Senior High School Osu |
| 43. Fountain of Youth International | 94. Presbyterian Private Basic School Nima |
| 44. French School | 95. Queen's International School |
| 45. Galaxy International School | 96. Ronsard School |
| 46. German Swiss International School | 97. Salem Senior High School |
| 47. Ghana Institute of Journalism | 98. School 1 |
| 48. Ghana Labour College | 99. School 2 |
| 49. Ghana School of Law | 100. School 3 |
| 50. Gingerbread House International School | 101. School 4 |
| 51. Global Call Academy | 102. Springboard Montessori School |

103. Springwell School
104. St Joseph Anglican JHS
105. St. Catherine's School
106. St. Francis Xavier Senior High School
107. St. John's A.N.T JHS
108. St. Joseph R/C Basic School Adabraka
109. St. Paul's Lutheran School
110. St. Peters R/C JHS
111. Teacher Adam Memorial School
112. Tender Sprout International School
113. The institute of chartered accountants Ghana
114. The Roman Ridge School
115. Three Bears School
116. Tina Roses Creche & Daycare
117. Tiny Flower Academy
118. Toddlers'Inn & Victoria Grammar School
119. Vaidhehis Nursery School
120. WAMEC College of Engg & Tech



In Africa, street food vending and consumption have proliferated in the last three and a half decades. African national and local authorities, and international organizations agree on the nutritional, economic, social and cultural importance of street food, but they are also aware of the critical safety, nutritional, management issues associated to it.

FAO Regional Office for Africa, in 2016, led an extensive field survey on street food vending within the Accra Metropolitan Area (AMA), in collaboration with the School of Public Health of the University of Ghana. The survey was aimed at gathering updated and policy-relevant information about the sector (e.g. location and type of street food outlets, variety of foods sold, hygienic and safety conditions under which they are prepared, legal status of vendors, economic dimension of the sector) enabling public authorities as well as street food vendors and consumers to take informed and data-driven action towards the development of the sector. The outcomes of the survey are presented in this report.