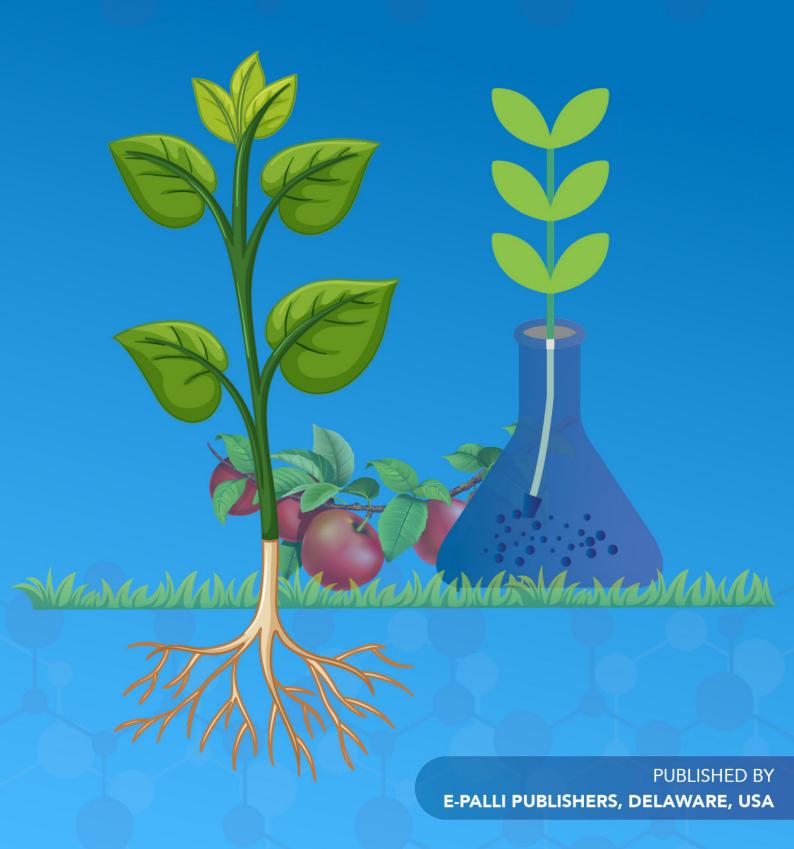


# AMERICAN JOURNAL OF FOOD SCIENCE AND TECHNOLOGY (AJFST)

ISSN: 2834-0086 (ONLINE)

**VOLUME 3 ISSUE 2 (2024)** 



DOI: <a href="https://doi.org/10.54536/ajfst.v3i2.2792">https://journals.e-palli.com/home/index.php/ajfst</a>

# The Street Food Microenterprises in Bangladesh: Situational Analysis Based on the Trends and Needs

Md. Abu Shehen1\*

#### **Article Information**

**Received:** April 06, 2024 **Accepted:** May 08, 2024

Published: November 21, 2024

## Keywords

Bangladesh, Enterprise, Food, Hygienic, Street

## **ABSTRACT**

This paper tried to explore the current conditions and future needs of the street food microenterprises in Bangladesh. This paper is entirely shaped by a qualitative approach based on where KII and FGD methods were used for data collection. However, the study reveals that most street food vendors are male proprietors from small and nuclear families, operating self-owned restaurants, fast foods, and taverns. These businesses are predominantly non-AC conditions, with ten to thirty customer capacities. They are located on roadsides, crowded places, and commercial areas, with poor infrastructure and weak plinth conditions. Most enterprises have five to fifteen carts and more than two hundred customers regularly buy food. Entrepreneurs typically get lease permission from landowners, market management, and city corporations, most renting from different authorities. Most entrepreneurs pay a mentionable amount of taka as rent per month. Most entrepreneurs contribute to monthly savings, with ninety percent savings. Most enterprises lack government-registered legal status, but sixty percent are members of homogenous associations. Training initiatives for employees are underrated, and the working environment is unhygienic, unsafe, and not environmentally friendly. The study suggests prioritizing financial assistance, business expansion, and training for the betterment of the enterprises.

#### INTRODUCTION

Similar to their informal sector counterparts, street food enterprises are small-scale, dependent on conventional food processing techniques, and have minimal initial startup costs, making them accessible to newcomers (Tinker & Fruge, 1982). Most people in this field are urban poor, and some have found innovative ways to deal with their inability to enter more formal job structures. However, as Atkinson (1992) points out, this viewpoint was formed amid an economic boom in the 1970s; the macroeconomic climate of the 1990s is much different, and assistance to the unorganized sector shouldn't be seen as a panacea for the urban poor (Draper, 1996). In contrast to formal dining places or well-known restaurants, street food refers to the range of cuisines that are frequently found in public spaces like streets or neighborhood cafes. The FAO idea, wfocus highly focus on-site preparation and selling, is reminiscent of this strategy. In 1989, the Food and Agriculture Organization defined street meals as prepared foods and drinks that are served by street vendors and hawkers, usually in streets and similar public areas. The fact that street foods are sold "on the street" is their most notable feature as noted here (Draper, 1996). Food from "pushcarts, baskets, or balance poles, or from booths or stores with less than four fixed walls" (Tinker, 1987) is required to be sold on the street in order to differentiate street sellers from formal sector food facilities such as restaurants. The food industry's centrally processed products may be used by street food vendors or other small-scale processors, or they may process the items directly on the spot. The prepared food items that local Bangladeshi sellers sell on

the streets or in public areas are referred to as "street food" in this paper. Moreover, a universally accepted definition of a microenterprise does not exist. Microenterprises are small firms run by a family, a single self-employed person, or a very small number of employees (less than five) (Terry, 1999). According to Jayachandran (2020), a microbusiness is "loosely defined as those with fewer than five employees or none at all." He called the owners of these companies' micro-entrepreneurs and these companies microenterprises. Microenterprises are defined by the ADB's Microenterprise Development Project as commercial entities that invest between Tk 40,000 and Tk 1.5 million, excluding the land and structures that are used for the enterprise. Microenterprises are defined by the Bangladesh Bureau of Statistics as companies with 10-24 people or fewer, or fixed assets worth between Tk 0.5 million and Tk 5 million, excluding land and buildings (ADB, 2018). Businesses that employ one to five persons full-time are referred to as micro-enterprises (Business Finance for the Poor in Bangladesh, 2017). According to Alam et al. (2010), micro-entrepreneurship is defined as entrepreneurship that falls under the informal sector and is characterized by low-level, labor-intensive technology, small-scale operation, ease of entry, family ownership and control, and the acquisition of skills outside of formal education in an environment with an unregulated competitive market structure. MEs are the individuals that create and market street food in the study region. In addition, they focus on labor-intensive but low-level technology, run the company on a small scale, are its owners and managers, acquire skills outside of the conventional education system, and operate in an

<sup>&</sup>lt;sup>1</sup> University of Rajshahi, Bangladesh

<sup>\*</sup> Corresponding author's e-mail: <a href="mailto:shahen.sw@gmail.com">shahen.sw@gmail.com</a>



unregulated, competitive market structure.

#### Food Safety and health issue of Street Food

Today, food-related disorders affect millions of people globally, and thousands of them pass away as a result (Pilling et al., 2008). According to Canet and N'Diaye (1996). the rise in street food appeal has increased the urgency of health and safety concerns. In addition to being erratic, street food has been linked in a number of nations to food-borne illnesses (Biswas et al., 2010; Omemu and Aderoju, 2008; Nunes et al., 2010; Mamun et al., 2013). One of the things causing food-borne illness outbreaks is street food sellers' poor knowledge of food safety (Ceyhum & Sanlier, 2016). Moreover, a number of studies conducted in different nations discovered deficiencies in the laws governing food safety, food preparation procedures, street food vendors' expertise, and standards for hygiene and sanitation. In addition to the fact that street food is not governed by laws, other factors that raise the risks associated with food safety include inadequate sanitation, difficulties obtaining clean water, failing to remove waste, and other environmental issues (Rheinlander et al., 2008); (Abdalla et al., 2009); FAO, 2011; WHO, 2010; Kealesitse & Kabama, 2012; Choudhury et al., 2011). Depending on the type of food, foodborne illnesses are regarded as a health concern during the food preparation and protection stages. Food processing companies, restaurants, food vendors, schools, and families are all connected to the rise in foodrelated illnesses, claim Abibo and Lowatt (2015). Street food safety is also influenced by other factors, such as the quality of the raw materials, food preparation and storage, and other process processes. These goods are stored in hazardous and unclean conditions in addition to being manufactured using inferior raw materials. For street food vendors, there is insufficient infrastructure for waste management, chilling ice cream, hand washing, disinfection, and safe drinking water (Ceyhum & Sanlier, 2016). Water storage is usually required because water does not always flow from the tap. Ceyhum and Sanlier (2016). state that this type of water is not suitable for drinking, cooking, or dishwashing. It has issues with pollution as well. Furthermore, street food is exposed to several environmental factors as air pollution, pests, rodents, pets, and other animals (Hanashiro et al., 2005; Lucca & Torres, 2006). Muyanja et al. (2011) reported that 87.6% of the 225 street vendors in Uganda were women without formal education. They washed items with soap and cold water on a regular basis and served food in non-recyclable plates and glasses. The bulk of street food vendors (54 percent), according to Choudhury et al. (2011), had meagre daily revenues and prepared food for small cafes. Only 8-11 percent of them were aware of food contamination, according to Ceyhum and Sanlier's (2016) research, whereas 30–37 percent were aware of the need of using hygienic practices when preparing meals. A different study conducted in China found that as the threat to food safety has grown, so too have consumers'

concerns about the safety and quality of food. The main concerns of customers are attitude, behaviour, and accurate information regarding food safety. It was also discovered that, despite their awareness of food safety, consumers did not closely read labels and had a limited comprehension of the topic. The tags' descriptions of safe foods were insufficient. Furthermore, it was shown that consumers were willing to pay more for food goods that were safe (Liu et al., 2013). Additionally, a research (Buscemi et al., 2011) found that street food has social and cultural implications because it represents historical origins. It is also emphasised that, despite the fact that fast food consumption is rising in the present era. The relationship between their intake and health, obesity, and related illnesses is yet unclear. A number of epidemiological studies involving street food and conditions have been related to (Bryan et al, 1997; FAO, 2010; Muinde & Kuria, 2005) because a number of hazardous bacteria were removed from samples of food served on the streets. Inadequate storage (50 percent), reheating and storing under unsanitary conditions (45 percent), and cross-contamination (39 percent) are the main causes of the rise in foodborne illness rates (Bean & Gryphon, 1990). It's well knowledge that the circumstances surrounding the production, presentation, and consumption of street food serve as ideal habitats for contamination (Muinde & Kuria, 2005). Between 1983 and 1992, street snacks were connected to 691 incidents of food illness and 49 fatalities in China (Rane, 2011). Research revealed that food sources were linked to 14 deaths in Malaysia and 300 illnesses in Hong Kong following street food consumption (FAO, 1990). People who ate tainted street food got pathogen microorganisms, which caused serious illnesses like cholera to develop (Abdussalam & Kaferstein, 1993). To keep out flies and other insects that can spread illness, a lot of food served on the streets isn't refrigerated. Time and temperature are two other essential elements in the development of harmful bacteria and the generation of toxins. The failure to consider the pathogen microorganisms that could have contaminated these foods during preparation, cooking, and other procedures, as well as the storage temperatures of these foods prior to sale, puts public health at risk (Ceyhun & Şanlıer, 2016). Salmonella typhi, Bacillus cereus, Staphylococcus aureus, Clostridium per fringe, E. coli, and Pseudomonas species have all been identified in street food items, according to several studies on the hygiene quality of this food (Ghosh et al., 2007; Harvani et al., 2008; Abdallah & Mustafa, 2010; Gordon, 2011). It was discovered that bacteria, including S. typhi and Ecoli, were present in more than 70% of the Indian street meals, including Ragda-Petis, Bhel, and Panipuri (Garode & Waghode, 2012). Biswas et al. discovered E. Coli infection in 37 out of 50 food samples (74%) (2010). Vegetable-containing foods had the highest percentage of contamination (91%) of any type. These microorganisms were also discovered in fish, meat, and cereal samples, indicating that food sellers might be



harbouring illnesses that have food-related causes. According to Liu et al. (2015), outbreaks of Vibrio parahaemolyticus disease were common in China. Lucca and Torres (2006) found that the processing of fries, chicken meat, and beef constituted a major health risk, and that 30% of Sao Paulo establishments providing hotdogs lacked basic hygienic measures. Inadequate hygienic conditions impact public health problems during food preparation and a lack of basic knowledge about food processing. Walker et al. (2003) found that only 16 percent of 444 food processors knew that refrigerators should be kept at 180 degrees Celsius or lower, despite the fact that 57% of them were aware that food might be contaminated with bacteria that cause food poisoning, odour, and taste problems. Concerns over the safety of the food are heightened by the fact that most street food sellers operate in unclean conditions and do not receive enough hygiene and sanitation training (Mensah et al., 2002; Lues et al., 2006). In addition to their disdain for sanitary regulations, street vendors are also to fault for food poisoning since they fail to put the knowledge they have learned into practice (Ehiri & Morris, 1996). Research has indicated a correlation between inadequate attitudes towards food hygiene and insufficient understanding of food hygiene (Luby et al., 1993; Howes et al., 1996). Only 31% of street food vendors in Nigeria possess a valid annual medical health certificate, according to research by Omemu and Aderoju (2008). Just 12% of the participants had received university instruction in food preparation (Omemu & Aderoju, 2008). Chukuezi (2010) discovered that while street food is necessary for urban dwellers to achieve their nutritional needs, it also poses a variety of health hazards, with 23.8% of female street vendors preparing food in an unsanitary manner. Furthermore, he stated that food safety and health education for street sellers must be completed. According to Ackah et al. (2011), sales made up eighty percent of the income for eighty percent of street food sellers in Accra, Ghana, who were primarily between the ages of twentyfive and fifty. Furthermore, according to Ceyhun and Sanlier (2016), the bulk of the vendors lacked a health certificate and had insufficient competence with food processing applications. According to Rahman et al. (2012), street merchants in Malesia were experiencing issues with applications and a lack of information. The street vendor needed to be educated on food safety, hygiene, and foodborne illnesses. According to research by Sani and Siow (2014), the majority of the 112 employees in Malaysia Kebangsaan University's food services department were ignorant of the right storage temperatures for the food they produced as well as the specifics of disease-causing bacteria. According to Ceyhun and Sanlier's (2016) research, staff personnel in the food service division should receive continuous, highquality training in order to ensure food safety. According to Liu et al. (2015), 171 food processors who worked at 22 food facilities along the coast were oblivious to the disease agent that is frequently present in seafood as well as the

maximum amount of time food could be kept at room temperature. Moreover, they noticed that the food processor mixed the raw and cooked ingredients in the same containers (Ceyhun & Sanlier, 2016). Choudhury et al. (2011) reported that after completing their education, the average knowledge level of 80 Indian street food vendors rose from 24.4 percent to 66.2 percent. They showed an increase in responsiveness to hygiene applications, going from 37.5 to 50.8 percent. During the production and distribution of food, food processors are essential in preventing food poisoning (Ceyhun & Sanlier, 2016). These people have the potential to contaminate both raw and processed foods as a result of poor food preparation and storage (Abdulla et al., 2009; Ehiri & Morris, 1996). Food sellers can lessen the spread of bacteria that cause foodborne illnesses by keeping themselves clean and using appropriate food applications (Evans et al., 1998; Medeiros et al., 2004). The face, skin, and faces are important places for the transmission of germs in addition to hands, which are important in disease infections. When it comes to the formation of foodborne hazards, Salmonella, Tembekar et al. (2011), E. Coli, Shigella, Campylobacter, and S. aureus are a few of the bacteria that are crucial for consumers. To reduce the risk of cross-contamination, food processors should get training on proper handwashing, cleaning, and sanitation techniques (Sneed et al., 2004). A study conducted in Haiti by Samapundo et al. (2015) found that 65% of foodborne illnesses were caused by a lack of safe drinking water, while 60% of them were caused by flies and other animals. Additionally, they discovered that 70% of vendors served food with their bare hands, did not freeze prepared food, and did not wash their hands after handling cash. According to Silva et al. (2014), 22.6 percent of street food vendors in Brazil did not wash their hands after working, and 80.2 percent of them handled money and food at the same time. As they noted in their study, many street vendors operate in filthy conditions, and the street food industry is important socioeconomically (Silva et al., 2014). Furthermore, newspapers, nylon bags, and aluminium covering are commonly used in the sale of food and drinks that are produced on the streets (Adiloglu, 2009). According to Muinde and Kuria (2005), equipment and raw materials from Kenya were not regularly sanitised. Prepared food was stored in pitchers, buckers, and open plastic cases. According to Ceyhun and Sanlier (2016) and Muinde and Kuria (2005), they also noted that food vendors disregarded the hygiene of their staff, that food containers were dirty, that 85% of food serving locations were close to trash cans, and that food servers did not wear gloves, aprons, or caps. In recent years, street food has become an unlawful sector in some countries due to factors such as urbanisation and population growth (Omemu & Aderoju, 2008; Chukuezi, 2010). Food contamination can occur throughout the manufacturing, processing, and preparation stages. Several nations' national authorities have passed legislation to limit contamination during the food manufacturing and



processing stages, according to (Ceyhun & Sanlier, 2016). Furthermore, there are no explicit legal requirements for those who sell these goods (Muinde & Kuria, 2005; Omemu & Aderoju, 2008). Nguyen et al. (2010) found that 88% of street food manufacturers used ineffective food safety procedures, and 95% of them lacked access to adequate information. Furthermore, additional research revealed that food merchants lacked sufficient knowledge on illnesses (Askarian et al., 2004; Gomes et al., 2011). According to Liu et al., inefficient audits, lowquality raw materials, inadequate infrastructure at areas where street food is sold, and street food sellers' ignorance of hygienic practices are among the issues related to food safety (2014). The need for a nationwide initiative to increase street food vendors' knowledge of food safety was underlined. To assist local governments, the Food and Agriculture Organisation (FAO) published an extensive report on the safety and quality of street food (Ceyhun & Sanlier, 2016). FAO steps in because a lot of street vendors operate in filthy, hazardous environments and lack even the most basic understanding of food hygiene and sanitation. It was discovered that these folks were receptive to learning (Ceyhun & Sanlier, 2016). In an effort to support these efforts, FAO and WHO have implemented safety guidelines (WHO, 1996), the five standards for safe food (WHO, 2007), HACCP-based sanitation solutions (FAO, 2009), and educational programmes (WHO, 2010). In addition, the FAO has launched several programmes to strengthen local governments' capacity to control food quality (FAO, 2011). However, the purpose of this paper is to examine the project's potential and current business model, as well as the product's accessibility, people's perceptions of it, the technical know-how of its workers and producers, the current state of the environment and health issues, and the opinions of the MEs regarding the project. The availability of safe drinking water, raw materials, PPE, and appropriate food covering and storage at the proper temperature were all specifically examined in this paper. Other topics included the environmental and hygienic conditions of the currently available street foods, including the personal hygiene of street food vendors, and the state of waste management and occupational health and safety facilities.

#### Street food microentrepreneurs

Street food microentrepreneurs play a significant role in various economies, particularly in developing countries. Studies have highlighted the challenges and success factors faced by street food vendors. For instance, research in Malaysia emphasizes the importance of supporting traditional street food businesses through guidelines to enhance hawkerpreneurship (Chong & Stephenson, 2020). Additionally, studies in South Africa suggest that providing training, microfinance, and promoting food safety can improve the business skills of street food vendors (Mahopo *et al.*, 2022). Furthermore, the impact of street food vendors goes beyond economic considerations.

Street food vending can serve as a strategic tool to create a destination image and attract tourists, as seen in India (Gupta et al., 2019). However, challenges such as poor hygiene practices and a lack of sanitation knowledge among vendors have been identified, emphasizing the need for interventions to ensure food safety (Soon, 2019; El-Latief & Abouelenein, 2020). Furthermore, the socioeconomic significance of street food enterprises is notable, with their contributions to household income being substantial in some regions (Mahopo et al., 2022). Understanding street food enterprises' operational characteristics and value chain analysis can provide insight into the actors involved in these businesses and their interactions (Mahopo et al., 2023). Despite the benefits, street food vendors face various challenges, including hygiene maintenance, as highlighted in studies focusing on Dhaka and Cairo (Habib, 2016; Rifaat et al., 2022). Addressing these challenges is crucial to ensuring the safety of street food consumers and preventing the transmission of diseases. Additionally, initiatives often overlook the unique obstacles posed by the informal nature of street food vending (Arifen, 2023). Specifically, street food microentrepreneurs are vital components of urban economies, providing livelihoods for many individuals. While they offer economic opportunities and contribute to local cultures, addressing challenges such as hygiene, training, and infrastructure support is essential to sustaining and enhancing the street food sector.

In Bangladesh, street food microentrepreneurs face significant challenges in terms of food safety and hygiene. Studies have highlighted the manual preparation and processing of street foods in Bangladesh, often leading to microbiological contamination (Noor, 2016). Research has shown that there is a lack of knowledge and awareness among street food vendors regarding food safety practices (Abid et al., 2022). This emphasizes the importance of improving the operating conditions of street food stalls, including access to clean water and proper waste disposal systems (Mamun et al., 2020). The presence of enteric bacteria in street foods poses a significant risk to consumers, particularly in densely populated areas like Dhaka city (Tanjia et al., 2019). Studies have indicated a high prevalence of antibioticresistant bacteria in the hands of street food vendors, highlighting the need for better hygiene practices and education (Hassan et al., 2018). Furthermore, Hossain et al. (2019) have linked the consumption of street foods to foodborne illnesses, highlighting a pressing public health concern. Furthermore, Shaibur et al. (2021) have identified inadequate water quality in food stalls as a contributing factor to food contamination in Bangladesh. The socioeconomic impact of street food vendors, especially during crises like the COVID-19 pandemic, has been a subject of study, shedding light on the challenges faced by these microentrepreneurs (Janah & Adinugraha, 2021). However, addressing the food safety and hygiene practices of street food microentrepreneurs in Bangladesh is crucial to safeguarding public health. Improving



knowledge, providing training, and implementing better infrastructure are essential steps to enhance street food safety and protect consumers from potential health risks.

#### Socio-economic and environmental problems

The studied areas' MEs dealt with a variety of environmental and socioeconomic issues. It was noted that there was a negative social attitude towards street food vendors. Many of the street food vendors were unable to attend the social functions that the affluent members of society were able to. The street food merchants' financial situation was precarious. Many of the street food vendors were unable to adequately support their families. Because of their high living expenses and the price of necessities, they were unable to save a significant portion of their income. In addition, a sizable percentage of the MEs struggled with maintaining the high quality of raw materials, high transportation costs, and fair pricing for raw materials. In addition, they had to deal with a lack of adequate demands, fluctuating market demand, difficulties gaining access to the credit market, unfavorable attitudes, and slow service provider responses. Customers consumed more unclean food because there was a severe lack of a preservation mechanism in place in street food and restaurant businesses. It was noted that the proprietor of the fast-food restaurant planned to repurpose leftover food and ingredients from unsold goods and foods in the research regions. Environmental restrictions included bad weather, difficulties from natural disasters including heat waves and cold waves, and a lot of rain. The survey also discovered that MEs had to deal with a lack of support for natural catastrophe mitigation and undue pressure from the government. In addition, market management challenges like a lack of distributors and buyers, unlawful occupancy, and high production costs were faced by MEs in the research area. Specifically, a significant percentage of street food and restaurant proprietors experienced harassment from local government members and political pressure from the community. It was observed that a relatively small percentage of MEs obtained certificates of registration to conduct business in the studied locations. The MEs also pushed for measures to lessen harassment when obtaining pourashava and City Corporation certification for their businesses. They further accused the responsible personnel of being corrupt and of putting off the process of obtaining certificates from Pourashava, the City Corporation, and government offices.

#### MATERIALS AND METHODS

The author developed a qualitative approach to address the objective of this paper. The following research steps were followed during the development of this article: a) literature compilation and desk review (for secondary data collection); b) focus group discussions in targeted communities; c) interviews with key stakeholders; and d) in-depth interviews. Precisely, five KIs were interviewed, and two FGD sessions were conducted to collect the qualitative data. Moreover, twenty in-depth interviews with microenterprises were conducted. To maintain the reliability of the data, the authors followed ethical principles during data collection and analysis.

#### RESULTS AND DISCUSSION

#### Nature of microenterprise and food items

Based on the food products they manufacture, it is discovered that there are several types of street food vendors. The variety of teas, along with Parata, Singara, Samucha, Piyaju, Jilapi, Jhalmuri, Chhola, Bundia, Rice, Curry, and Juice; additionally, there are the various varieties of Kebab, Spiced Fruit, Kotkoti, Fuchka, Chatpati, Burgers, French fries, and pickles. The Bangladesh Food Safety Authority's food safety officer states, "There are many kinds of street food vendors or businesses. These businesses manufacture various food products. They make pickles, spicy fruits, French fries, Chinese food, fast food, and more." "Street food includes the spicy food items such as fuchka, chatpati, chap, jhalmuri, samacha, puri, jilapi, kebab, fruit juice etc." said another KI from the Bangladesh Food Safety Authority, Bogura. However, based on the food items they create, FGD data revealed that different types of street food businesses exist. They consist of several tea varieties, as well as Parata, Singara, Samucha, Piyaju, Jilapi, Jhalmuri, Chhola, Bundia, rice, curry, and juice, as well as various kebab, spiced fruit, Kotkoti, Fuska, Chatpati, burgers, and bakery biscuits. According to the report, the majority of street food vendors worked only on their businesses. A small percentage of entrepreneurs spend the initial part of the day working in another industry. They essentially work as day laborers in building sites or agricultural fields.

# Legality and Growth

A company's legal standing is crucial, but it's especially critical for food manufacturers. Because of this, the entrepreneur can be held accountable for guaranteeing the standard of food and raw materials, as well as for maintaining sanitation, environmental policies, labor benefits, and a wide range of customer services. In addition, entrepreneurs can support the nation by paying VAT according to their legal standing. But in the case of street food businesses, it appears that nobody is officially registered with the government. Most powerful people give them permission to conduct business. In certain instances, they honor the local government. Entrepreneurs that own restaurants and sell street food have their own organizations in various locations. "To operate an enterprise, every ME should follow different rules, laws, and implications provided by the government, environmental authority, and others related to the sectors," said a KII participant on this topic. However, a tiny percentage of business owners might be registered with the government. Additionally, some people who belong to their own association have a maximum rate of 30 to 40 percent. Moreover, taste, pricing, and attraction are the main factors influencing the growth rate of various kinds





of street food enterprises. The KII respondents claim that the growth rate of items like fuchka, chatpati, chap, kebab, etc. has increased significantly. because it is cheaper to establish a business, great food can be found, there are more customers, raw materials are easily found, and businesses are more profitable. A BSTI participant named KI said, "In actuality, the rate of growth of street food businesses differs from location to location. However, it is a well-known fact that chatpati and fuchka businesses always have a high rate of growth. I believe that the test, spiciness, appealing appearance, and accessibility of these food items are the main causes of this." Furthermore, the FGD data showed that the people's priority choices, tests, prices, and appearances all influence how quickly these street food businesses flourish. People like to eat tasty cuisine and light snacks on a daily basis, according to FGD. These consist of chotpoti, fuchka, spiced fruit, tea, and biscuits. These are growing at a far faster rate. Thus, these are more favored by the public.

#### Ownership and workers

The paper found that the ownership status of restaurants and street food businesses is diverse. For instance, food carts, mobile food stores, and tea stalls are all owned and operated by single people. In certain cases, hotel and restaurant operations are managed through sole ownership or shared ownership. Many street food shops are run by women, the study also found. Both men and women are employed by these street food vendors and eateries. There are both independently and collectively run street food companies there, according to KI participant from BSTI. While some of these carts or stores are stationary, the bulk are movable. Additionally, the results of the FGD showed that street food and restaurant businesses have a mixed ownership structure. A single proprietor is in charge of the tea stall, food stalls, mobile food shops, etc. Businesses of the hotel and restaurant varieties are sometimes owned by a single owner as well as via shares. The investigation also discovered a large number of street food businesses run by women. The proprietor of a tea and snack stand claimed, "My husband, my son, and I run this family business." It was noted that these street food and restaurant establishments employ both men and women.

#### Impact on Family Income

Growing family income is significantly influenced by the enterprise's earnings. Male and female street food vendors and processors send a large portion of their earnings home to support their families. The only source of income for MEs who make street food products is their company. They are powerless to assist themselves. The majority of the time, the business helps the owners cover all or some of the cost of their families' salaries and costs. The Bangladesh Food Safety Authority's Food Safety Officer said, "The enterprise's profits have a significant impact on their family's income. They use this income, in my opinion, to support their family; they

don't do it any other way." The most important factor to take into account when starting a business, according to FGD studies, is increasing revenue so that the enterprise can better manage household expenses. The researcher wanted to know how the MEs' income affected family incomes and expenses, so she asked the baseline survey. The results of the FGD demonstrate that the growth of family income as a whole is significantly impacted by an enterprise's or job's earnings. Their family's spending is influenced by the enterprise's profits. It significantly impacts the rise of household income. They utilize the money to build homes and purchase land. In Padma Garden, Rajshahi, for example, a curt owner said, "I am dependent on this business to meet my needs and the needs of my family, as well as to cover all other expenses." Since I wouldn't have any other way to make money without it."

# Training for the MEs and Employees

Training is a crucial component that improves expertise in a certain area. It is essential for enhancing one's ability to carry out specific duties correctly. For street food vendors, certain types of training—such as those covering proper food preparation, waste and pollution control, and health protection—are crucial. Workers from several eateries and street food vendors in Rajshahi and Bogra have received training on hygienic practices, safe food manufacturing, and health. The owners and staff of Street Food Enterprise have received some training from NGOs, according to a Bangladesh Food Safety Authority officer. But eventually, people stop practicing these trainings, so they have to be done again. More instruction is required, particularly in hygienic practices and safe food preparation. The benefits of providing street food sellers with varied training to advance their businesses and enhance their working environments were also investigated by the FGD data. The training can cover topics such as food processing, food safety, hygiene maintenance, food preservation, environmental protection, sustainable environmental practices, market development, achieving legal status, and more. All of these topics would help them increase their revenue by providing customers with higher-quality services. Furthermore, a summary of the KII data showed that the food quality and preservation system's current state is not suitable. The majority of food stores, according to the key informants, disregard the guarantee of food quality and appropriate storage. "Another major reason for the deterioration of food quality is that they do not have a healthy preservation system," a BFSA food safety officer stated. They store food in hazardous plastic containers that are dangerous for anyone to handle. Food that is not sold is preserved in an unhealthy manner and sold the following day, while some business owners now keep food and essential ingredients in refrigerators.

#### The environmental conditions

Environmental issues are crucial since pollution and



inappropriate waste disposal contribute to climate change and have a number of detrimental health effects. The results of KIIs indicate that MEs may not be completely aware of risks to their health and the environment. A KI participant from the Bangladesh Food Safety Authority said, "I've observed that between 40 and 50 percent of street food businesses use trash cans. Food preparation dirty water is poured down open drains, filling the air with unpleasant odors. "The general status of the environment at enterprise in terms of Air, Water, Soil Pollution, and Waste Management is unsatisfactory," said a second KII participant from the Bangladesh Food Safety Authority. They attempt to dispose of their waste in the trash or open sewers, which pollutes the air and water. When discussing their health and cleanliness with the consumer, I have to admit that while many of them observe hygiene regulations, many do not. I have observed employees in numerous grocery stores donning net caps on their heads and hand gloves. This is a very small amount, nevertheless. Approximately 50% of store owners don't follow appropriate trash management procedures. Furthermore, FGD research showed that pollution leads to climate change and has numerous detrimental effects on people's health, making environmental issues essential for any business. The results of focus group discussions (FGDs) indicate that the MEs are cognizant of health and environmental issues. They reserve safe drinking water for their own health and the safety of the food for customers, utilize dustbins for waste management, and put on hand gloves and a cooking apron.

#### Impact of Covid-19 on the Enterprise

The virus known as COVID-19 has spread around the world. The government of Bangladesh enforced social isolation and a lockdown to stop the virus from spreading. Consequently, many microbusinesses have suffered severe economic harm. The purpose of the study was to determine how the pandemic would impact cash flow, product sales, and employment for MEs. In Bangladesh's Bogura and Rajshahi districts, ME earnings, sales, and output have been significantly impacted by the nationwide rise of Covid-19. The baseline assessment states that almost every organisation was significantly impacted by the COVID-19 virus. "All business activity was halted during the shutdown in Bangladesh, and shops and malls remained shuttered," said a KI participant from BSTI. Because of this, the company's product was never sold, and the owner had to cut staff and headcount. In particular, the micro-entrepreneur was severely harmed by the Covid-19, and it will be challenging for them to recover from these effects. Furthermore, the COVID-19 virus has proliferated globally. The government of Bangladesh enforced social isolation and a lockdown to stop the virus from spreading. These microbusinesses' economics have suffered greatly as a result. The goal of the study was to ascertain how the pandemic will affect cash flow, product sales, and employment for MEs. ME profits, sales, and output have been greatly impacted by

the Covid-19's statewide growth in Bangladesh's Bogura and Rajshahi districts. Nearly every firm was found to have been severely harmed by the COVID-19 virus during the baseline examination. "Our employment and activities were affected by the Covid-19 virus and lockdown, but hardly anyone went to buy the food or product from us due to the coronavirus," said an FGD participant. At the time, we were struggling to keep track of our family's spending."

#### **COVID 19 Assistances and Supports**

Particularly for those with low incomes, micro-enterprises offer employment possibilities and a more affordable range of goods and services. The vulnerability of microenterprises has increased due to the COVID-19 issue. In addition to pandemics, they face operating risks because, in comparison to larger companies, they have comparatively less money. It's critical in this situation to be aware of the resources for help and support. It has been noted in this study that the only government support that is noteworthy comes from NGOs. In order to address the issue posed by a pandemic or economic downturn, the entrepreneur obtains loans or borrows money from many sources. Most MEs in the research area reported receiving financial and technical help from nongovernmental organizations (NGO), especially ESDO. An FGD participant said, "The majority of us did not receive financial assistance or subsidies from government sources. An organization gave us training, knowledgesharing sessions, and—above all—a loan or other form of financial support to enable us to continue operating our street food company during slow times."

#### Problems in the Credit Market

Without sufficient funds, it is challenging to launch or grow any business or enterprise. It is too crucial for microbusiness management. In this study, researchers used KIIs to try and identify the problems inside the credit business. It has been shown that the MEs have trouble getting loans from financial organizations. The main problem is the highest interest rate. The second most significant problem is the drawn-out process of applying for and receiving a loan from the banks. Compared to loans from other institutions, loans from NGOs are simpler to get. An BFSA officer stated, "Getting a loan from a bank is a hard and time-consuming process. They demand a high output level, which is initially unattainable for a small business owner. "The bank wants them to provide a ton of evidence and papers, which takes a lot of time and makes it seem like they are only applying for a large loan," stated an additional KII member. This made it impossible for MEs to get a loan for an unforeseen need. When working with non-governmental organizations, bear in mind that their protocols are less complicated than those of banks.

#### **Future Needs**

The need analysis is essential to the company's potential



growth and productivity. Finding out more about the evolving needs and future development of MEs was the aim of the study. The results show that trade licenses, a fixed site supplied by a city or municipality authority for setting up their stand or shop, and large-scale financial help with minimal service charges are the top requests made by the MEs. Additionally, they asked for numerous sources of training on food preparation and safety issues for both owners and employees. Additionally, a Rajshahibased FGD participant said, "We require a permanent location for opening our stores. We are unable to set up our businesses properly without this certification that this space is designated for my shop, and the authority has the right to expel us at any time and without warning." The need analysis is essential to the growth and development of the company in the future. The purpose of this study was to learn more about the needs for future expansion and development of the MEs. The results indicate that trade licenses, a fixed location approved by the city or municipality authorities for setting up their stall or shop, and large-scale financial assistance with affordable service fees are the main requests made by the MEs. further providing owners and employees with training on many food safety and food preparation topics.

#### **CONCLUSION**

The street food industry in Bangladesh is expanding rapidly. The street food business owners operated various grocery stores, including restaurants, hotels, street food sellers, etc., according to the data. Singara, mocha, chap, burgers, lassi, tea, coffee, and cold drinks are among the light snacks that they sell. Burgers are the most easily accessible cuisine, with the dominance of heavier fastfood items coming in second. The restaurant and street food vendors offered a selection of pre-made items, based on the field data. Food grains and cereals made about 14% of these. The majority of the food stores and restaurants, based on the field data, were situated along the side of the road, indicating that this was where they were most frequently found. The businesses' plinth conditions were subpar, and the majority of food establishments had subpar infrastructure, including filthy floors and automobile fume-filled interiors, according to this survey. Field statistics showed that fully terraced storefronts and terraced with tin roofs made up the majority of food stores. Of those surveyed, over half indicated their enterprises were run independently, and the other half said they recruited staff on a contract basis. The legal statuses of the enterprises were not particularly noteworthy, as almost two-thirds of them lacked either government registration or VAT registration. However, a sizable portion of the participants lacked a comprehensive comprehension of environmental contamination. It was concerning how little the responders adhered to good hygiene management practices. The findings showed that only slightly more than two-thirds of respondents claimed they were indifferent to maintaining a clean and safe environment. Most respondents ensured that

generated food was covered and that food and raw materials were kept apart. Field data showed that over 70% of supermarkets stocked plastic, which harmed the environment. Generally, the majority of respondents stated that they made sure their stores were cleaned on a regular basis and that they had efficient trash disposal procedures in place. Calculated statistics indicate that at least some respondents claimed to wear face masks every day. According to estimates, 90% of businesses were affected by the COVID-19 pandemic. The majority of them acknowledged that, throughout the COVID-19 outbreak, they did not receive any government assistance. The survey also determined that in order for their businesses to thrive now and in the future, they would require grants, loans, financial aid, and infrastructural upgrades.

#### Publisher's Note

All claims expressed in this article are solely of the author and does not necessarily represent those of his affiliated organization, or of the publisher, the editors and the reviewers.

#### REFERENCES

Ababio, P. F., & Lovatt, P. (2015). A review on food safety and food hygiene studies in Ghana. *Food Control*, 47, 92–97. https://doi.org/10.1016/j.foodcont. 2014.06.041

Abdalla, M. A., Suliman, S. E., & Bakhiet, A. O. (2009). Food safety knowledge and practices of street foodvendors in Atbara City (Naher Elneel State Sudan). *African Journal of Biotechnology, 8*(24), 6967–6971. https://doi.org/10.4314/ajb.v8i24.68783

Abdussalam, M., & Käferstein, F. K. (1993). Safety of street foods. *PubMed*, 14(2), 191–194. https://pubmed.ncbi.nlm.nih.gov/8185771

Abid, M. T., Banna, M. H. A., Hamiduzzaman, M., Seidu, A., Kundu, S., Rezyona, H., Disu, T. R., Akter, N., Khaleduzzaman, M., Ahinkorah, B. O., & Khan, M. M. A. (2022). Assessment of food safety knowledge, attitudes and practices of street food vendors in Chattogram city, Bangladesh: A cross-sectional study. *Public Health Challenges*, 1(3). https://doi.org/10.1002/puh2.16

Ackah, M., Gyamfi, E. T., Anim, A. K., Osei, J., Hasnsen, K. J., & Agyemang, O. (2011). Socioeconomic profile, knowledge of hygiene and foodsafety practices among street-foodvendors in some parts of Accra-Ghana. *Journal of Food Safety*, 13, 191–197.

Adiloğlu, A. (2009). Sokakta Satılan Yiyecekler Açık Tehdit, Somuncu Baba, 84-85.

Alam, M. M., Molla, R. I., & Hossain, M. M. (2010). Microentrepreneurship Development in Bangladesh: Achievements and Shortcomings, LAP Lambert Academic Publishing: Saarbrucken, Germany.

Arifen, Z. N. Z., Haron, H., Harun, Z., Harun, Z., Michael, V., You, Y. X., Manaf, Z. A., Majid, H. A., Chia, Y. C., He, F. J., Brown, M. K., & MacGregor,





- G. A. (2023). Perceptions, Barriers, and Enablers on Salt Reduction in the Out-of-Home Sectors in Malaysia (MySaltOH) from the Perspective of Street Food Vendors, Caterers, and Consumers. *Public Health Nutrition*, 27(1). https://doi.org/10.1017/s136898002300277x
- Asian Development Bank (2018). Microenterprise Development Project: Report and Recommendation of the President. The Asian Development Bank. https://www.adb.org/projects/documents/ban-51269-001-rrp
- Askarian, M., Kabir, G., Aminbaig, M., Memish, Z. A., & Jafari, P. (2004). Knowledge, Attitudes, and Practices of Food Service Staff Regarding Food Hygiene in Shiraz, Iran. *Infection Control and Hospital Epidemiology,* 25(1), 16–20. https://doi.org/10.1086/502285
- Atkinson, S. J. (1992). Food for the cities: Urban nutrition policy in developing countries. Urban Health Programme, Health Policy Unit, Dept. of Public Health and Policy, London, 1992, https://search.worldcat.org/title/27241144
- Biswas, S. K., Parvez, M. M., Shafiquzzaman, M., Nahar, S., & Rahman, M. M. (1970). Isolation and characterization of escherichia coli in ready-to-eat foods vended in Islamic University, Kushtia. *Journal* of Bio-science, 18, 99–103. https://doi.org/10.3329/ jbs.v18i0.8783
- Bryan, F. L., Jermini, M., Schmitt, R., Chilufya, E. N., Michael, M., Matoba, A., Mfume, E., & Chibiya, H. (1997). Hazards Associated with Holding and Reheating Foods at Vending Sites in a Small Town in Zambia. *Journal of Food Protection*, 60(4), 391–398. https://doi.org/10.4315/0362-028x-60.4.391
- Buscemi, S., Barile, A. M., Maniaci, V., Batsis, J. A., Mattina, A., & Verga, S. (2011). Characterization of street food consumption in palermo: possible effects on health. *Nutrition Journal*, 10(1). https://doi.org/10.1186/1475-2891-10-119
- Business Finance for the Poor in Bangladesh. (2017, February). Diagnostics of Micro-enterprise Lending by MFIs in Bangladesh: Opportunities and Challenges. Institute for Inclusive Finance and Development (InM) for the Business Finance for the Poor in Bangladesh (BFP-B) Project. https://aidstream.s3.uswest-2.amazonaws.com/documents/BFP-B-Policy-Brief---Microenterprise-study-20171221111206.pdf
- Canet, C., N'Diaye, C. (1996). Street foods in Africa. Food Nutrition and Agriculture, 17(18), 4-13.
- Chong, K. L., & Stephenson, M. (2020). Deciphering Food Hawkerpreneurship: Challenges and success factors in franchising street food businesses in Malaysia. *Tourism and Hospitality Research*, 20(4), 493–509. https://doi.org/10.1177/1467358420926695
- Choudhury, M., Mahanta, L. B., Goswami, J. S., & Mazumder, M. D. (2011). Will capacity building training interventions given to street food vendors give us safer food?: A cross-sectional study from India. Food Control, 22(8), 1233–1239. https://doi.

- org/10.1016/j.foodcont.2011.01.023
- Chukuezi, C. O. (2010). Food Safety and Hyienic Practices of Street Food Vendors in Owerri, Nigeria. *Studies in Sociology of Science, 1*(1), 50–57. https://doi.org/10.3968/j.sss.1923018420100101.005
- Da Silva, S. A., De Cássia Vieira Cardoso, R., Góes, J. Â. W., Santos, J. N., Ramos, F. P., De Jesus, R. B., Vale, R. S. D., & Da Silva, P. S. T. (2014). Street food on the coast of Salvador, Bahia, Brazil: A study from the socioeconomic and food safety perspectives. Food Control, 40, 78–84. https://doi.org/10.1016/j.foodcont.2013.11.022
- Draper, A. (1996). Street Foods in Developing Countries: The Potential for Micronutrient Fortification. London School of Hygiene and Tropical Medicine. London School of Hygiene and Tropical Medicine. https:// pdf.usaid.gov/pdf\_docs/PNACJ872.pdf
- Ehiri, J. E., & Morris, G. (1996). Hygiene training and education of food handlers: Does it work? *Ecology of Food and Nutrition/Ecology of Food and Nutrition*, 35(4), 243–251. https://doi.org/10.1080/03670244.1996.9991494
- El-Latief, M. A., & Abouelenein, R. E. (2020). The Effect of Street Foods Vendors Practices on the Spread of Pollutants under the Covid-19 Pandemic in Aswan Governorate in Egypt. *International Journal of Tourism and Hospitality Management*, 3(2), 371–405. https://doi.org/10.21608/ijthm.2020.134278
- FAO (1989). Street foods. A summary of FAO studies and other activities relating to street foods. Rome: FAO.
- Food and Agriculture Organization (2009). Good hygienic practices in the preparation and sale of street food in Africa: tools for training. Nutrition Division, FAO, Rome, Italy, ISBN 978-92-5-105583-0, Pages 186. https://openknowledge.fao.org/handle/20.500.14283/a0740e
- Food and Agriculture Organization (2011). The place of urban and peri-urban agriculture (UPA) in national food security programmes. Rome (Italy). Technical Cooperation Dept. Available at http://www.fao.org/docrep/014/i2177e/i2177e00.pdf
- Garode, A. M., & Waghode, S. M. (2012). Bacteriological status of Street-Vended foods and Public Health Significance, A Case study of Buldana District, MS, India. *ISCA Journal of Biological Sciences, ISSN 2278-3202, 1*(3), 69-71
- Ghosh, M., Wahi, S., Kumar, M., & Ganguli, A. (2007). Prevalence of enterotoxigenic *Staphylococcus aureus* and *Shigella* spp. in some raw street vended Indian foods. *International Journal of Environmental Health* Research, 17(2), 151–156. https://doi.org/10.1080/09603120701219204
- Gordon-Davis, L. (2011). The Hospitality Industry Handbook on Hygiene and Safety for South African Students and Practioners South Africa. Juta and Company Ltd. https://books.google.com.bd/books/about/The\_Hospitality\_Industry\_Handbook\_on\_



- Hyg.html?id=203I\_oV9XeQC&redir\_esc=y
- Gupta, V., Sajnani, M., & Gupta, R. K. (2019). Street foods: contemporary preference of tourists and its role as a destination attraction in India. *International Journal of Culture, Tourism and Hospitality Research*, 14(1), 136–154. https://doi.org/10.1108/ijcthr-07-2018-0092
- Habib, K. R. (2016). Understanding challenges faced by street food vendors to maintain street food hygiene in Dhaka City. *Journal of Food and Nutrition Sciences*, 4(4), 78. https://doi.org/10.11648/j.jfns.20160404.11
- Hanashiro, A., Morita, M., Matté, G. R., Matté, M. H., & De Torres, É. M. (2005). Microbiological quality of selected street foods from a restricted area of São Paulo city, Brazil. *Food Control*, 16(5), 439–444. https://doi.org/10.1016/j.foodcont.2004.05.004
- Hassan, M., Chakrabarty, R. P., Siddique, M. A., & Rahaman, M. (2018). Prevalence of antibiotic resistant enteric bacteria in the hands of street food vendors in Dhaka city. *Bangladesh Journal of Microbiology*, *34*(1), 33–38. https://doi.org/10.3329/bjm.v34i1.39603
- Hossain, B., Mahbub, N. D. B., Chowdhury, M. K., & Rahaman, M. (2019). Molecular Characterization of Enterobacter and Escherichia coli Pathotypes Prevalent in the Popular Street Foods of Dhaka City and their Multidrug Resistance. Bangladesh Journal of Microbiology, 34(2), 67–72. https://doi.org/10.3329/bjm.v34i2.39614
- Howes, M., McEwen, S., Griffiths, M. W., & Harris, L. J. (1996). Food handler certification by home study: measuring changes in knowledge and behavior. *Dairy, food and environmental sanitation*, 16, 737-744.
- Hs, E., Madden, P., Douglas, C. A., Gk, A., O'Brien, S., Djuretic, T., Pg, W., & Stanwell-Smith, R. (1998). General outbreaks of infectious intestinal disease in England and Wales: 1995 and 1996. *PubMed*, 1(3), 165–171. https://pubmed.ncbi.nlm.nih.gov/9782630
- Janah, S. P., & Adinugraha, H. H. (2021). Analysis of Behavior and Sosio-Economic impact of relocation of street vendors during the COVID-19 Pandemic. *Al-Masharif : Jurnal Ilmu Ekonomi Dan Keislaman/Al-Masharif, 9*(2), 220–234. https://doi.org/10.24952/masharif.v9i2.4763
- Jayachandran, S. (2020). Microentrepreneurship in Developing Countries. National Bureau of Economic Research. https://doi.org/10.3386/w26661
- Kealesitse, B., & Kabama, I. O. (2012). Exploring the influence of quality and safety on consumers' food purchase decisions in Botswana. *International Journal of Business Administration*, 3(2). https://doi.org/10.5430/ijba.v3n2p90
- Liu, R., Pieniak, Z., & Verbeke, W. (2013). Consumers' attitudes and behaviour towards safe food in China: A review. Food Control, 33, 93-104.
- Liu, S., Liu, Z., Zhang, H., Lu, L., Liang, J., & Huang, Q. (2015). Knowledge, attitude and practices of food safety amongst food handlers in the coastal resort of Guangdong, China. Food Control, 47, 457–461. https://doi.org/10.1016/j.foodcont.2014.07.048

- Liu, Z., Zhang, G., & Zhang, X. (2014). Urban street foods in Shijiazhuang city, China: Current status, safety practices and risk mitigating strategies. *Food Control*, 41, 212–218. https://doi.org/10.1016/j. foodcont.2014.01.027
- Luby, S. P., Jones, J. L., & Horan, J. M. (1993). A large salmonellosis outbreak associated with a frequently penalized restaurant. *Epidemiology and Infection*, 110(1), 31–39. https://doi.org/10.1017/s0950268800050652
- Lucca, A., & Da Silva Torres, E. A. F. (2006). Street-food: The hygiene conditions of hot-dogs sold in São Paulo, Brazil. *Food Control*, 17(4), 312–316. https://doi.org/10.1016/j.foodcont.2004.11.005
- Lues, J., Rasephei, M. R., Venter, P., & Theron, M. M. (2006). Assessing food safety and associated food handling practices in street food vending. *International Journal of Environmental Health Research*, 16(5), 319–328. https://doi.org/10.1080/09603120600869141
- Mahopo, T. C., Nesamvuni, C., Nesamvuni, A., De Bruyn, M., & Van Niekerk, J. (2022). Socioeconomic characteristic of street food vending enterprises in the Vhembe district, Limpopo province. *Technium Social Sciences Journal*, 29, 419–437. https://doi. org/10.47577/tssj.v29i1.5944
- Mahopo, T. C., Nesamvuni, N. C., Nesamvuni, A. E., & Van Niekerk, J. (2023). Value chain analysis of the street food enterprises in the rural towns of Vhembe district, Limpopo province. In *IntechOpen eBooks*. https://doi.org/10.5772/intechopen.110398
- Mamun, M. A., Rahman, S. M. M., & Turin, T. C. (2013). Microbiological quality of selected street food items vended by school-based street food vendors in Dhaka, Bangladesh. *International Journal of Food Microbiology*, 166(3), 413–418. https://doi.org/10.1016/j.ijfoodmicro.2013.08.007
- Mamun, S., Alam, S., Zaher, M. A., & Huq, A. O. (2020). Food safety knowledge, attitudes and behavior of street food vendors and consumers in Dhaka City. *Bangladesh Journal of Microbiology, 37*(2), 48–51. https://doi.org/10.3329/bjm.v37i2.51210
- Medeiros, L. C., Hillers, V. N., Chen, G., Bergmann, V., Kendall, P. A., & Schroeder, M. E. (2004). Design and development of food safety knowledge and attitude scales for consumer food safety education. *Journal of the American Dietetic Association*, 104(11), 1671–1677. https://doi.org/10.1016/j.jada.2004.08.030
- Mensah, P., Yeboah-Manu, D., Owusu-Darko, K., & Ablordey, A. (2002). Street foods in Accra, Ghana: how safe are they? *PubMed, 80*(7), 546–554. https://pubmed.ncbi.nlm.nih.gov/12163918
- Muinde, O. K., & Kuria, E. (2005). Hygienic and sanitary practices of vendors of street foods in Nairobi, Kenya. *African Journal of Food, Agriculture, Nutrition and Development, 5*(8), 01–14. https://doi.org/10.18697/ajfand.8.1060
- Mustafa, N., & Abdallah, M. (2011). Bacteriological quality of street-vended UM-jingir: A traditional Sudanese food. *African Journal of Food, Agriculture, Nutrition and*



- Development, 11(5). https://doi.org/10.4314/ajfand.v11i5.70447
- Muyanja, C., Nayiga, L., Brenda, N., & Nasinyama, G. W. (2011). Practices, knowledge and risk factors of street food vendors in Uganda. *Food Control*, 22(10), 1551–1558. https://doi.org/10.1016/j. foodcont.2011.01.016
- Nguyen, M. H., Nguyen, T. H. M. & Le, T. G. (2010), Food Safety Status of Public Kitchen in Company Enterprise at Ho Chi Minh City and Solution to Prevent Food Poisoning. *HCMC Medical Journal*, 14 (1), 88-94. https://www.sciepub.com/reference/327065
- Noor, R. (2016). Microbiological quality of commonly consumed street foods in Bangladesh. *Nutrition & Food Science*, 46(1), 130–141. https://doi.org/10.1108/nfs-08-2015-0091
- Nunes, B. N., Da Cruz, A. G., Faria, J., Ana, A. S. S. ., Silva, R., & Moura, M. R. L. (2010). A survey on the sanitary condition of commercial foods of plant origin sold in Brazil. *Food Control*, 21(1), 50–54. https://doi. org/10.1016/j.foodcont.2009.03.016
- Omemu, A. M., & Aderoju, S. (2008). Food safety knowledge and practices of street food vendors in the city of Abeokuta, Nigeria. *Food Control*, *19*(4), 396–402. https://doi.org/10.1016/j.foodcont.2007.04.021
- Pilling, V. K., Brannon, L. A., Shanklin, C. W., Howells, A. D., & Roberts, K. R. (2008). Identifying specific beliefs to target to improve restaurant employees' intentions for performing three important food safety behaviors. *Journal of the American Dietetic Association*, 108(6), 991–997. https://doi.org/10.1016/j.jada.2008.03.014
- Rahman, M., Taha, A. M., Kamaluddin, B., & Tambi, Z. (2012). Food safety knowledge, attitude and hygiene practices among the street food vendors in northern kuching city, sarawak. *Borneo Science*, *31*. http://ir.unimas.my/id/eprint/15859/
- Rane, S. (2011). Street vended food in Developing World: hazard analyses. *Indian Journal of Microbiology/Indian Journal of Microbiology*, 51(1), 100–106. https://doi.org/10.1007/s12088-011-0154-x
- Rheinländer, T., Olsen, M. F., Bakang, J. A., Takyi, H., Konradsen, F., & Samuelsen, H. (2008). Keeping up Appearances: Perceptions of street food safety in Urban Kumasi, Ghana. *Journal of Urban Health*, 85(6), 952–964. https://doi.org/10.1007/s11524-008-9318-3
- Rifaat, A. A., Moustafa, Y. M., & Elazzazy, M. M. F. (2022). Latest street food vending organization attempts in Cairo: an evaluation of the "Street 306" model. *Engineering Research Journal*, 173(0), 16–36. https://doi.org/10.21608/erj.2022.222581
- Samapundo, S., Climat, R., Xhaferi, R., & Devlieghere, F. (2015). Food safety knowledge, attitudes and practices of street food vendors and consumers in Port-au-Prince, Haiti. *Food Control*, *50*, 457–466. https://doi.org/10.1016/j.foodcont.2014.09.010

- Sani, N. A., & Siow, O. N. (2014). Knowledge, attitudes and practices of food handlers on food safety in food service operations at the Universiti Kebangsaan Malaysia. *Food Control*, *37*, 210–217. https://doi.org/10.1016/j.foodcont.2013.09.036
- Sezgin, A. C., & Şanlıer, N. (2016). Street food consumption in terms of the food safety and health. *Journal of Human Sciences*, 13(3), 4072. https://doi.org/10.14687/jhs.v13i3.3925
- Shaibur, M. R., Hossain, M. K., Khatun, S., & Tanzia, F. K. S. (2021). Assessment of drinking water contamination in food stalls of Jashore Municipality, Bangladesh. *Applied Water Science*, 11(8). https://doi. org/10.1007/s13201-021-01470-w
- Sneed, J., Strohbehn, C., Gilmore, S. A., & Mendonça, A. F. (2004). Microbiological evaluation of foodservice contact surfaces in Iowa assisted-living facilities. *Journal of the American Dietetic Association*, 104(11), 1722–1724. https://doi.org/10.1016/j.jada.2004.08.026
- Soon, J. M. (2019). Rapid Food Hygiene Inspection Tool (RFHiT) to assess hygiene conformance index (CI) of street food vendors. *Lebensmittel-Wissenschaft* + *Technologie/Food Science & Technology, 113*, 108304. https://doi.org/10.1016/j.lwt.2019.108304
- Street foods. Report of an FAO Expert Consultation, Jogjakarta, Indonesia, 5-9 December 1988. (1989). *FAO food and nutrition paper*, 46, 1–96. https://pubmed.ncbi.nlm.nih.gov/2767251
- Tambekar, D. H., Kulnari, R. V., Shirsat, S. D., & Bhadange, D. G. (2011). Bacteriological quality of street vended food Panipuri, A case study of Amravati city (MS) India. Bioscience Discovery, 2: 350-354. https://jbsd.in/Vol%202%20No3/Tambekar\_63\_67.pdf
- Tanjia, N., Akhter, N., Roy, A. K., Akhter, M. S., Ahmed, M., & Islam, S. (2019). Bacteriological status of street foods in different university premises of Dhaka City, Bangladesh. *Bangladesh Journal of Microbiology*, 36(1), 45–47. https://doi.org/10.3329/bjm.v36i1.44282
- Terry, M. E. (1999). The economic and social significance of the handicraft industry in Botswana. https://doi.org/10.25501/soas.00028824.
- Walker, E., Pritchard, C., & Forsythe, S. (2003). Food handlers' hygiene knowledge in small food businesses. *Food Control*, 14(5), 339–343. https://doi.org/10.1016/s0956-7135(02)00101-9
- World Health Organization. (2007). A Guide on Safe Food for Travelers. FAO Publication. https://www.who.int/publications/i/item/9789241597661
- World Health Organization. (2010). Basic steps to improve safety of street-vended food. FAO, International Food Safety Authorities Network (Infosan), Infosan Information Note No. 3/2010-Safety of street-vended food. https://www.who.int/foodsafety/fs\_management/No\_03\_StreetFood\_Jun10\_en.pdf