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Food Safety at Makola Shopping Mall: Perspectives from Ghanaian Customers

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Abstract

Food safety at makola shopping mall was explored from the perspective of customers by means of their demographic data, illnesses they had suffered from, types of foods chosen, and factors considered before making food choices. From 20 chosen vendors, 60 customers were obtained by the lottery method (3 customers per a vendor). The findings showed that the age range 18-25 years contained the most customers (35%); those who studies show are relatively inexperienced as regards issues of food safety. Most of those who ate at the mall did so out of some necessity rather than other reasons such as leisure, since 98% of them were employed, 60% were single. A high percentage of them had diseases such as cholera (20%), typhoid fever by Salmonella typhoid (20%). Foods like fufu and banku had patronages of 21.7% and 18.3% respectively; preparation of these involve extensive use of the bare hands by people who may not wash their hands properly. There also exist risks of acquiring diseases through mycotoxins with foods like beans, fufu, banku, and rice (local type) which often contain relatively high percentage of moisture. Patronage of rice and sauce was (50%); these are often served with salads which involve the use of vegetables, for example lettuce which are cultivated using wastewater. Low patronage of some local foods like ampesi and palava sauce, fried plantain and beans may be due to the concerns of adulteration of palm oil with sudan dyes. It was concluded that there were considerable risks associated with the sale of prepared food at the shopping mall.

Key words: Food, Safety, Enterobacter, Bacillus sp, Restaurant

INTRODUCTION

Fast food is quick, convenient, and relatively inexpensive for the amount of food obtained and it appeals to all age groups. However, according to Hedberg, Macdonald and Osterholm (1994), beyond providing nutrients, and gastronomic delights, food is a vehicle for transmission of micro-organisms and their toxic products. Hence the crucial role of consumers in ensuring food safety cannot be overemphasized.

They exercise this role through the choices they make as regards food safety (for example the environment in which a particular food is sold and other considerations and concerns they have which influence their choices) they dictate to a large extent, the attitude of food venders and other relevant entities, in commercial food preparation business, toward food safety. This notwithstanding according to Raspor (2008) food safety means an assurance that food will not cause harm to the consumer when eaten according to its intended use. The food vender therefore has an inherent obligation to ensure that food sold is safe. Hence it is a serious matter when even an unsuspecting consumer contracts a foodborne disease or food poisoning as a result of eating from a fast food restaurant.

The growth of the population of Accra has resulted in a situation whereby some people do not have the time and place to cook hence a large proportion of the population prefer to eat

outside the home. Though there are other reasons why people choose to eat outside their homes the fact still remains that as the population increases the number of consumers will increase. A study conducted in the Greater Accra region, Ghana, found that 75% of all households have at least one woman working (Levin, Ruel, Morris, Maxwell, Armar-Klemensu, Ahiadeke, 1999). This leaves less time for the preparation of food which is reflected in the increases in the consumption of away-from-home foods. However, most of these women are involved in low income jobs which make it an economic imperative that they prepare their own meals at home. This situation is likely to change when the economy of Ghana grows to the extent that the percentage of women in high income jobs increases considerable. There will then be a growth spurt in the demand for commercially prepared food (Veeck & Burns, 2009). The potential for growth in the consumption of commercially prepared foods is also seen in the fact that there are 60,000 street food vendors in Accra with a combined annual turnover of 100 million dollars (Tommlins & Johnson, 2004). Furthermore this potential for growth can be realized in the Korean experience where there was a rapid growth of the fast food industry following the Olympics games (Park, 2004) .

The growth in commercial food preparation enterprises also leads to the growth in urban food needs. Hence, many people are engaged in production and marketing of foods in cities. In Cameroon, West Africa, 32,0000 households are engaged in the production and marketing of traditional leafy vegetables. It has been realized that those who are engaged in year round agriculture can earn, on the average, more than two times the earnings of those engaged in rainfed agriculture. In the whole of West Africa, 20 million people are engaged in different forms of agriculture and 60% to 100% of the perishables consumed are produced within the cities (Dresched, Graefe, Sonou, Coffie, 2012). In Accra, 280,000 dwellers benefit from urban farming everyday (Probst, Houedjofonon, Ayerakwa, Haas, 2012; Obuobie, Keraita, Danso, Amoah, Rashid, Dreschel, 2006); even more profitable is vegetable marketing

In addition to the provision of fresh vegetables, in urban areas, benefits from irrigated cultivation come from the provision of jobs and income for farmers, traders and input suppliers. It also results in realized reduced transportation costs, traffic and produce savings and less packaging; also recycling of solid and liquid wastewater resource, productive use and enhancement of aesthetic appearance of unused plots and protection of open spaces against desertification (Dreschel, Graefe, Sonou, Coffie 2012).

The food items on the shelves of shops and supermarkets in Accra is said to travel an average of 3,700km by air before arriving, some produce like poultry, rice, vegetable oils travel from as far as Malaysia, Indonesia, India, Japan, Thailand, Brazil and Argentina. Hence there are real benefits that are obtained from urban Agriculture; which results in food being obtained relatively, from the doorsteps. Despite the benefits of globalization which has facilitated the rapid transportation of perishable foods, it increases the potential for exposure to pathogens from other parts of the world, at a very fast pace (Altekruse & Swerdlow, 1996).

One of the drawbacks associated with urban farming is the use of methods and inputs other than the traditional ones which basically makes use of hoes and cutlasses in Ghana. One of such inputs is pesticides which can result in grave repercussions, notwithstanding the benefits. It can cause direct human poison to accumulate as residues in foods and environments or lead to the development of resistant strains of pests. In Ghana, there are already some levels of contamination of pesticides in water sediments and crops in areas of intensive vegetable farming. (Ntow, 2008). According to Carvalho (2006) cheap compounds such as DDT and Lindane which are environmentally persistent and which are prohibited for agricultural use in

developed countries, remain popular in developing countries; these contaminate foods and disperse in the environment.

Another issue associated with urban agriculture is the use of polluted water; which is contaminated with pathogens. Ensink, Mahmood, Dalsgaard (2007) found that in many developing countries, as a result of the rapid urbanization, farmers often use wastewater either directly or indirectly from sewage drains. In a study done in Kumasi, Ghana, it was realized that 70% of all farms in the city used polluted streams, 27% used wells and 30% used wastewater from drains. (Amoah, Dreschel, Henseler & Abaidoo, 2007). In a study on the risks associated with wastewater use in Accra, Seidu, Heist, Amoah, Dreshel, Jenssen, Stenstrom (2008) identified on farm soil contamination as the most significant health risk. This poses health hazards since in Ghana fresh salads have now become part of the diet and it is a common supplement to urban fast foods served on streets, canteens and restaurants; 200,000 people consume such supplements in Accra everyday (Amoah, Dreschel, Henseler, Abaidoo 2007). In their study involving Accra, Agyei-Mensah and de Graft Aikins (2010) observed that infectious diseases are major causes of morbidity and mortality. The poor experienced the double burden of infectious disease and a double burden of infectious disease and chronic disease; urbanization, urban poverty and globalization were key contributory factors.

Yeboah–Manu, Kpeli, Ayeh-Kumi & Bimi (2010) in their study of bacteriological quality of ready-to-eat foods sold on and around University of Ghana campus found that 52% of the foods were contaminated with bacteria above acceptable limits and therefore unsatisfactory for consumption. Nine different bacteria were isolated from the sampled foods, which were: Streptococcus sp, Enterobacter, Bacillus sp, Pseudomonas aeroginase, Staphylococcus aureus, proteus sp Streptococcus, agalactiae, Enterococcus Faecalis, E. coli and Klebsiella Pneumoniae. It is not hard to see a major contributory factor to this level of contamination since studies indicate that irrigation water used in cultivation in Accra is often polluted to such levels and with similar pathogens (Akrong, Danso, & Ampofo, 2012). In his study in Kumasi, Amponsah-Doku, Obiri-Danso, Abaidoo, Andoh, Dreschel, Kondrasen (2011) found that on-farm water and water in which lettuce were kept, to maintain their freshness in the market, were sources of contamination of lettuce.

The proliferation of pathogens as a result of use of wastewater and other factors is a pivotal factor in the transmission of diseases notably, cholera. According to unicef more than 28900 cholera cases were reported in Ghana in 2014; about 70% of these cases were in the Greater Accra region. For the months of January 2015, 366 cases were reported in Ghana. Cholera has been a foodborne disease in Ghana since the 1970s. According to Ofori-Adjei and Koram (2014) cholera in Ghana is largely, an urban problem which is usually due to the unprecedented growth of urban areas and lack of access to clean potable water. Furthermore, according to the above author it has become endemic due to the manner in which the initial outbreaks were handled. It has been noted that, apart from the above, infected food handlers play a crucial role in the transmission of food borne diseases, for example cholera. In Korea, in a study of the cause, magnitude, and route of a cholera outbreak, it was noted that a restaurant was the cause of it and more than one employee contaminated food which was served at the restaurant. (Lee, Lim, Kim, Lee, 2002). Furthermore Islam and Ullah (2010) in their study in Nigeria found (37%) of the restaurants in Benin city to be contaminated with pathogens, notably Bacillus cereus and Staphylococcus aureus. Only (42%) of the food handlers in the above study knew that micro-organisms could contaminate food. This should affect consumers' choice of restaurants and their consideration of food handlers when they are purchasing food.

On March 23, 2014 World Health Organization (WHO) was notified of an Ebola outbreak in Guinea which spread to Liberia and Sierra Leone. By April 8, 2015 barely a year after it started, the CDC reported that there had been a total of 25, 591 cases which had resulted in 10,602 deaths. Such a contagion calls for alertness, of all relevant authorities in the West African Sub-region as far as the commercial food vending is concerned, since according Farrar & Piot (2014) it killed more than all the previous epidemics combined. It affected the entire territories of three countries and it was feared to have the potential of spreading to other parts of Africa. In the light of the above issues it cannot be overemphasized that consumers should be armed with the knowledge to make well informed choices as far as food safety is concerned especially, in urban areas in West Africa.

Perspectives as regards food safety could be deduced from the age, age group, sex, educational level, and other demographic factors since there are differences among their perceptions of food safety. Melkis, Hilmi and Mustapha (2014) noted that there is a significant difference in the perception of fast food restaurant of single and married customers and also customers from different age groups have a significant difference of satisfaction and price of food bought at fast food restaurants (Islam & Ullah, 2010; Goyal & Singh, 2007). Roseman (2007) and Roseman and Kurzynske, (2006) showed that self reported safety perceptions and behavior were statistically different by marital status, location, age, gender, household, level of education, and ethnicity, employment.in the food industry and household income. It was also realized that in general those who perceived higher food safety risks exhibited safer food handling behaviors.

According to Chan (2014), the international community has given substantial but less visible attention to ensuring the safety from infection and contamination of food that is produced, traded and eaten. Dosman, Adamowicz, Hrudey (2001) have observed the complex nature of individual and societal perception of food-related health risks which was observed to be multidimensional with politics and economics interacting with technological factors. According to Van Rijswijk and Frewer (2008) though consumers believe that both food quality and food safety are important they pay more attention to quality than safety when purchasing food. Collins (1997) has noted that consumers are more interested in convenience and savings than in the proper handling and preparation of food. Furthermore, Verbeke, Frewer & De Brabander (2007) have noted that consumers are generally uncertain about the safety and quality of their food and their risk perceptions may differ substantially from that of experts. Hence, according to Wilcock, Pun, Khanona, and Aung (2004) there exists the need for professional assistance for consumers regarding food safety issues. Nonetheless, Fellows (1997) has noted that in the long run the only way a company can survive is if consumers are satisfied that a product meets their expectations. In the final analysis, they are at the end of the food supply chain hence they play an important role in promoting and ensuring food safety (WHO, 2015).

In the light of the following, the study was with the objectives of obtaining food safety perspectives from demographic characteristics of the consumer, the application of their knowledge of food safety through the factors they considered before making their choice to eat at such places. Perspectives of food safety from the food poisoning and foodborne diseases they have had since they started eating away from home.

METHODOLOGY

Sixty customers were obtained through the lottery method from twenty (20) vendors, who were chosen from a list of 100 registered customers, through the lottery method. Hence three customers were chosen from each vendor. Questionnaires were used to obtain responses to

questions. Responses to the questions were obtained through interviews with regard to illiterate customers. Questions asked included: their age, sex, marital status, most important factor they considered before they eat at a restaurant, most serious disease they suffered from since they started eating away from home.

Number of Customers

Range of Number of Customers	Frequency	Percentage %
50-100	9	50
100-200	6	33.3
200-300	2	11.1
300 and above	1	5.6

Number of customers

The number of customers of vendors' ranged from 1750 to more than 3,000 representing average customers ranging from 97 to 126 respectively. Hence, potentially it is a significant source of employment and income. It also provides meals for a large number of people who may not be able to cook due to lack of time, utensils, equipment; cost and convenience. However, such numbers also represent a potential source of transmission of food poisoning and foodborne diseases, for example the spread of foodborne diseases by polluted irrigation water (Dreschel, Graefe, Sonou, & Cofie, 2007).

Sex of Customers

Sex	Frequency	Percentage %
Female	24	40
Male	36	60

Sex of customers

Sixty percent of customers were males and forty percent (40%) were females. Morse and Driskel (2009) found that the frequency of eating at fast food restaurants differs significantly between the sexes. Also this is in agreement with Driskell, Meckna, and Scales (2006). Furthermore Van Zyl, Steya, and Morais (2010) found in their studies that a significantly higher percentage of men than women typically ate at fast food restaurants, at least once a week.

The area selected for the study is situated in a vicinity where there is a high concentration of women, which is obvious to even the casual observer, who engage in petty trading; the percentage of men could have been higher, had it been, in an area where white colour or blue colour jobs were predominant or where the proportion of women to men was more reflective of that of the general population.

Age of Customers

Age Groups	Frequency	Percentage %
18-25	21	35
26-34	18	30
35-42	11	18.3
43-50	3	5.0
Above 50	7	71.7

Age of Customers

Eighty-three (83%) of customers fell in the age range of 18-43. Mohr, Wilson, Dunn, Bindal, and Wittert (2007) found that predictors of more frequent consumption of fast food and take-away foods; and to a lesser extent, eat-in foods included lower age (especially under 45 years), relative indifference to the health consequences of one's behavior, greater household income, lesser allocation of time for eating, greater allocation of time for entertainment and exposure to advertising. Rydell, Harnock, Oakes, Story, Jeffrey and French (2008) also noted the motivation for eating at fast food restaurants differs somewhat with age, sex and other factors. Gurudansani and Sheth (2009) noted in their study that 60% of consumers at various food service establishments fell in the age group 18-35 years, the modal age group (the age distribution at makola shopping mall is in a similar vein). This age group is made up of people who are economically active but may not have been able to accumulate enough funds to be able to afford the convenience and other benefits that are associated with preparing their own meals and carrying them to their work places in their own means of transport. They therefore find that it saves time and it is also relatively convenient for them to purchase food from such places.

Marital status of customers

Marital status	Frequency	Percentage
Single	36	60
Married	20	33.3
Divorced	1	1.7
Widowed	0	0
Separated	1	1.7

Marital status of customers

The results showed that 60% of respondents were single, while 33% were married. Studies have shown that marital status influences patronage of commercially prepared foods (Dave, An, Jeffrey, Ahluwalia, 2009), the ratings of attributes for restaurants selection (Rauf & Butt 2012) fast food preferences (Ozcelik, Akan & Surucusglu, 2007). It came to light in the study of

Kroshus (2008) that per capita expenditure on commercially prepared food varied by marital status and gender: Households headed by unmarried men spent more than their married peers. Households headed by never married men spent more than those headed by never married women on commercially prepared foods. Households headed by divorced or separated men spent more than those headed by divorced or separated women. It can be deduced from this study that women and the married are less likely to eat at fast food restaurants than men and the unmarried.

Status of Employment	Frequency	Percentage %
Retired	1	1.7
Employed	54	90
Students	5	8.3

Employment Status of Customers

Most (90%) of those who ate at the place were employed in one way or the other. Roberts (1995) has observed that in these days of ever changing lifestyles and ever increasing demands on the consumer's time and energy, the consumer is left with little time. Rydell, Harnock, Oakes, Story Jeffrey and French (2008) have also noted that the motivation for eating at fast food restaurant appears to differ with employment status and other factors such as age, sex and education.

Further to this, Van Zyl, Steya, and Marais (2010) have found that it is not just the fact that one is employed which determines one's inclination to patronize fast food; it is also determined by one's type of employment and specifically according to their studies, by one's socio-economic status.

Most important reason considered by customers for patronizing food

Reason	Frequency	Percentage %
Fatigue	2	1.7
Time factor	23	38.3
For change in taste	5	8.3
Cannot cook	2	3.3
Convenience	21	35.3
Save money	1	1.7

Most Important Reasons for Eating Food

The reason which constituted the modal one was time factor (38.3%), next was convenience (35.30%), followed by change in taste (8.35%); inability to cook, saving of money and fatigue

in decreasing order of importance. Glanz, Basil, Mailbach, Goldberg and Synder (1998) in their study found that respondents chose taste as the most important consideration which influences their food choice, followed by cost. In this study 8.3% choose a change in taste as the most important reason for eating at the place.

The fact that only 1.7% of the respondents choose saving money, may not necessarily mean that it was not important, it may rather be an indication of a sense of hopelessness on their part as respect this factor, since Omemu and Aderoju (2008) also found that in certain instances, volume and prices of foods purchased by vendors are considered more than freshness and cleanliness when purchasing raw materials. This may be as a result of the importance that consumers place on the price relative to other consideration.

Rydell, Harnock, Oakes, Story, Jeffery & French (2008) in their study noted that consumers who chose quick and easy to get foods as reasons for patronizing fast foods comprised 92% and 80% respectively. Morse and Driskell (2009) have also shown that the predominant reasons for eating at fast food restaurant were the facts that consumers had limited time; they enjoyed the taste; they were able to eat with family and friends; it was inexpensive and economical. In consonance with the above study, time factor predominated (38.3%) among the list of reasons for patronizing fast foods; similar reasons like cost and convenience were also chosen in the study.

Most Important Factor Considered by Customers before Patronizing

Factors	Frequency	Percentage %
Nutrition	11	18.3
Environment	9	15%
Quality of service	8	13.3%
Price	7	11.7
Deliciousness	5	8.3
Aroma	5	8.3
Appearance of vendors	5	8.3

The most important factor considered by customers before patronizing fast foods.

The study found that the environment was chosen by the largest number of customers as the most important factor they considered before choosing a place to eat from. It is prudent for customers in developing countries to rank the environment very high in the list of factors for consideration since often places where foods are sold in Sub-Saharan Africa and other tropical countries have a poor environment which do not meet the expectations of hygienic standards of most customers. Ghosh, Wahi, Kumar & Ganguli (2007) found that samples of foods from food stalls in New Delhi, India were highly infested with Staphylococcus aureus and Shigella spp. The vendors lacked access to portable water and toilet facilities; and they operated under poor hygienic conditions. The foods sold were potential vehicles for food borne diseases. Nutrition, environment, quality of service, price and deliciousness is the list in decending order

of the most important factor considered by customers before patronizing foods. Glanz, Basil, Maibach, Goldberg and Synder (1998) found that the following factors influence what customers ate: taste, cost, convenience and weight-gain. OIsen, Rheinlander, Bakang, Takyi, Konrandsen & Samuelson (2008) also noted that in Kumasi, Ghana, selection criteria such as aesthetic appearance of food stands, appearances of food vendors; price and accessibility of food were prioritized instead of food safety.

Roberts (1995) has also noted that prevention and control of food safety risks at consumer level represents the weakest link in the chain of food protection systems, knowledge and practices in food handling have not kept pace with cultural and scientific changes. Gurudansani & Sheth (2009) have identified a paucity of consumer knowledge as far as food safety is concerned. It came to light that notwithstanding the fact that most of them had a positive attitude towards hygiene, most of them did not know about the carriers of typhoid, gastroenteritis and amoebiosis. According to Raspor (2008) consumer behavior and attitudes towards food safety have shown that their levels of understanding, motivation and trust need to be cultivated.

Most serious ailment suffered by customers since they started eating away home.

Ailment	Frequency	Percentage
Never suffered from any disease	21	35%
Diarrhea	6	10%
Typhoid	12	20%
Stomach upset cholera	6	20%
Cholera	12	20%
Diabetes	1	20%
Hypertension	2	3.3%

Most serious ailment suffered by customers

It is noteworthy that 70% of the respondents suffered from foodborne diseases, food poisoning or stomach upset i.e typhoid, 20%, Diarrhea, 10% cholera, 20% and stomach upset 20%.

Cholera is a violent infection of the intestinal tract especially, the small intestines which results in the passage of rice-water stools containing flakes of mucus and desquamated epithelial cells. Dehydration, collapse and toxemia are marked features of it. It can results in death in ten hours after the onset of the symptoms. It is caused by bacterium vibrio cholera. Hence it is worrying that 20% of respondents have suffered from it. Studies have raised concerns about the safety of commercially prepared foods for example 26% of samples of ready-to-eat foods from street-food sellers were contaminated with Bacillus Cereus (Umon & Odoba, 1999). In Brazil, a similar study found that 35% of the samples were unsuitable for consumption and Bacillus cereus posed the greatest percentage risk among the pathogens. (Hanshiro, Morita, Matte, Matte, Toires 2005) . The relevance of food workers is also seen here in that a study showed that

many of the food workers were asymptomatic shedders or their family had infected members and/or used improper hygienic practices. The most frequent scenario included worker causing an outbreak by directly infecting patron, infected worker facially contaminating food leading to outbreak (Todd, Greig, Bartleson & Michaels, 2007).

Foods Patronized by customers

Food	Frequency	Percentage
Fufu and goat light soap	13	21.7%
Rice/ fried rice and chicken sauce with or without salad	30	50%
Banku and okra sauce with meat	11	18.3 %
Ampesi (plantain/yam) and palava sauce	3	5%
Gari and boiled beans with red palm oil with or without Fired plantain	2	3.3&
Snacks	1	1.6%

Foods patronized by customers

Dave, Ann, Jeffrey and Ahluwalia (2009) found that the frequency of fast food intake was significantly associated with the percentage unhealthiness of food. In consonance with this relatively healthier foods like ampesi and palava sauce had patronages of (5%) and (1.7%) respectively, while fried rice had a patronage of (50%). Salads contained green leafy vegetables and other vegetables which have a higher risk because of the likelihood of contamination from pesticides, and other chemicals (Ntow, 2008) and micro organisms (Amoah, Dreschel, Henseler, & Abaidoo, 2007; Adu-Gyamfi & Nketsia-Tabiri 2007). Because salads involve multi-ingredients, and vegetables are usually uncooked they often pose a high food safety risk. A study on the outbreaks of forborne disease showed that in general salads were the foods most frequently involved in larger out breaks. The foods were contaminated with nor virus, Salmonlla, Shigella and Streptococcus spp (Todd, Greig, Bartleson, & Michaels, 2007).

Most typical traditional Ghanaian foods carried the risks of extensive use of the bare hands during processing, examples are banku, fufu, tuo-zaafi, akpler (Kordylas, 1991). This may lead to the transmission of micro-organism and oral-fecal parasites (Ayeh-Kumi, Quarcoo, Kwakye-Nuako, Kretchy, Osafo-Kantanka, Mortu, 2009). These foods are also almost invariably eaten with soups which have been found to be contaminated with high levels of E. coli; they are usually prepared a day before consumption hence improper heating is a cause of microbial

multiplication (Mensah, Yeboah-Manu, Owusu-Darko, & Ablordey, 2002) The need for caution on the part of customers is seen in the fact that a study conducted by Todd, Greig, Bartleson, and Michaels (2007) into food outbreaks where food workers have been implicated in the spread of foodborne disease showed that the most frequently reported factor was bare hand contact with the food followed by improper washing of the hands. The low patronage of some local dishes for example, boiled beans, red palm oil, gari and fried plantain and palava sauce (Mayhew & Penny, 1988) and ampesi may be due to the use of red palm oil which many customers may fear could have been adulterated. (Di Anibal, Odena, Ruisanchez, & Callao, 2009).

CONCLUSION

The results showed that (60%) of the customers were men and 40% were female. Meer and Misner (2000) have shown that women scored significantly better than men on food safety parameters and practice test parameters than men. Those within the age range 18 to 35 constituted (35%) of consumers. Studies have shown young consumers' knowledge to be insufficient as regards food safety(Sanlier, 2009) and older ones above the age of 50 perform better than younger ones (Meer and Misner, 2000; Miles, Brenan, Sharon, Kuz, 2004) since they would usually have acquired through experience or other sources knowledge on food safety and practices. Those older than 50years were (11.6%) and will therefore, be a good influence on the others.

Ninety percent of customers were employed, 8.3 were students, (60%) were single, these categories of people have many reasons why they will eat at fast food restaurants like time factor, inability to cook, lack of utensils and equipment to cook; these therefore are the ones most likely to relegate food safety to the background rather than make it a priority.

The patronage of certain local foods like fufu, banku, had implications for food safety risks associated with microorganisms and aflatoxins because the methods of preparation which involve extensive use of the bare hands in mixing and turning. Fried rice is usually served with salads which involve the use of vegetables which are cultivated by the use of wastewater. The patronage of some relatively safe ones like palava sauce and gari and beans were small (5 %) and (3.3%) respectively, because of customer's concerns of the use adulterants in palm oil. Twenty percent have suffered from cholera and also from typhoid fever (Salmonella typhi) these are foodborne disease which have serious consequences and implications for health.

On the whole there is the need for customers to be aware of food safety risks associated with eating at the place which is considerable given the above food safety perspectives.

References

Adu-Gyamfi, A. & Nketsia-Tabiri,J (2007). Microbiological studies of macaroni and vegetable salads in waakye a local street food. African Journal on line 47, 3-39.

Akrong, M. J., Danso, S. K. A., & Ampofo, J. A. (2012). The quality and health implications of urban irrigation water used for vegetable production in the Accra Metropolis. Journal of Earth an Environmental Sciences, 3 (11).

Agyei-Mensah, S., & de Graft Aikins, A. (2010) Epidemiological transition and the double burden of diseases in Accra, Ghana. Journal of Urban Health 87(5) 879-897

Amoah, P., Dreschel, P., Abaidoo, R. C., & Ntow, W. J. (2005). Pesticides and pathogen contamination of vegetables in Ghana's urban markets. Archives of Environmental conamination and Toxicology 50(1), 1-6.

Amoah, P., Dreschel, P., Henseler, M., & Abaidoo, R. C. (2007) , Journal of Water Health 5 (3) 455- 466

Amponsah-Doku, F., Obiri-Danso, K., Abaidoo, R. C., Andoh, L. A., Dreschel, P., & Kondrasen, F. (2011). The bacterial contamination of lettuce and associated risk factor of product sites, markets and street food and restaurants in urban and periurban Kumasi, Ghana. Journal of Scientific research and essays 5 (2) 217-223

Ayeh-Kumi, P. F., Quarcoo, S., Kwakye-Nuako, G., Kretchy, J. P., Osafo-Kantanka, A., & Mortu, S. (2009). The prevalence of intestinal parasitic infections among vendors in Accra, Ghana.

Carlvalho, F .A. (2006). Agriculture pesticides food security and food safety. Environmental Sciences and Policy, 9, 7-8.

Chan, M. (2014). Food safety must accompany food and nutrition. The Lancet, 384 (958), 1910- 1911.

Collins, J. E. (1997). Impact of changing consumer lifestyles on the emergence/re-emergence of food borne pathogens. Emerging infectious Diseases 3 (4), 471-479

Dave, J. M., An , L. C., Jeffrey, R. W., & Ahluwalia, J. S. (2009). Relationship of attitude toward fast food and frequency of fast food intake in adults. Obesity, 17(6) 1161-1170.

Di Anibal, C. V., Odena, M., Ruisanchez, I., & Callao, M. P. (2009). Determining the adulteration of spices with sudan dyes by visible spectroscopy and multivariate classification techniques. Talenta, 79(1), 887-892

Dosman, D. M., Adamowicz, W. K. & Hrudey, S. E. (2001). Socioeconomic determinants of Health and food safety related risk perception. Risk Analysis 21(2) 307-317

Dreschel, P., Graefe, S., Sonou, M., & Coffie, O. O. (2012). Informal irrigation in urban West Africa: An overview report 102 for International Water Management Institute IWMI.

Driskel, J. A., Meckna, B. D., & Scales, N. E. (2006). Differences exist in the eating habits of university men and women of fast food restaurant. Nutrition Research, 26(10) 524-630.

Ensink, J. H. K., Mahmood, T., & Dalsgaard, A. (2007). A waste water irrigation vegetables handling versus water quality. A European Journal of Tropical Medicine and international Health 12, 2-7.

Farrar, J. J., & Piot, P.(2014). The ebola emergency-immediate action, ongoing strategy. The New England Journal of Medicine,37, 11545-1546.

Fellows, P. (1997). Traditional Foods Processing for Profit. London: ITDG publishers.

Ghosh, M., Wahi, S., Kumar, M., & Ganguli, A. (2007). Prevalence of enterotoxigenic Staphylococcus aureus and shigella spp in some raw street vended India foods. International Journal of Environmental Health Research, 17(2), 151-156.

Glanz, K., Basil, M., Mailbach, E., Goldberg, J., & Synder, D. (1998). Why Americans eat what they do: Taste, nutrition, cost, convenience. Journal of the Academy of Nutrition Dietetics, 98(10), 1118-1126

Goyal, A. & Singh, N. P. (2007). Consumer perception about fast food in India: An exploratory study. British Food Journal 109(2), 182-195.

Gurudansani, R. & Sheth, M. M. (2009). Knowledge and attitude of consumers of various food establishments. Journal of Food Safety, 29 (3) 364-386

Hanashiro, A., Morita, M., Matte, M. H., & Toires, E .A. R. S. (2005). Microbiological quality selected street foods from a restricted Sao Paulo City. Brazil, Food Control, 3

Hedberg, C. W., Macdonald, K. L., & Osterholm, M. L. (1994). Changing epidemiogy of food borne diseases: A Minnesota perspective. Clinical Infectious Disease, 18(5), 671-680

Islam, N., & Ullah, S. G. M, (2010). Factors affecting consumer preferences on fast food items in Bangladesh. The Journal of Applied Research, 26(4), 131-146

Kordylas, J. M. (1991). Processing of and preservation of tropical and subtropical crops. London: MacMillan.

Kroshus, E. (2008). Gender, marital status and commercially prepared food expenditure.

Journal of Nutrition Education Behavour, 40(6) 355-360.

Levin, C. E., Maxwell, D. G., Amar-Klemensu, M., Ruel, M. T., Moris, S. S., & Ahiadeke, C.

(1999). Working women in urban setting: traders, vendors and food security in Accra. World Developments, 27(11) 1977-1991

Mayhew, S., & Penny, A. (1988). Tropical and Subtropical foods. London: Macmillan Publishers Limited.

Meer, R. R. & Misner, S. L. (2000). Food safety knowledge and behavior of expanded food and nutrition education programme in Arizona. Journal of food protection, 12, 1168-176

Melkis, M., Hilmi, M. F., & Mustapha, Y. (2014). The influence of marital status and age on the perceptions of fast food consumers in an emerging market. International Journal of Business and Innovation, 1(3), 33-42

Mensah, P., Yeboah-Manu, D., Owusu-Darko, K., & Ablordey, A. (2002) Street foods in Accra, Ghana: How safe are they? Bulletin of World Health Organisation 8(7).

Mohr, I., Wilson, C., Dunn, K., Brindal, E., & Wittert, G. (2007). Personal and lifestyle characteristics predictive of the consumption of fast foods in Australia. Public Health Nutrition, 10(12), 1456-1462.

Morse, K. & Driskel, J. A. (2009). Observed sex differences in fast food consumption and nutrition, self assessments and beliefs of college students. Nutrition Research 29(3), 173-179.

Ntow, W. J. (2008). Dissertation submitted in fulfillment of the Academic Board of Wageningen University, UNESCO institute of water , for a Ph.D

Obuobie, E., Keraita, B., Danso, G., Cofie, O.O., Raschid, S. L., & Dreschel, P. (2006).

Irrigated urban vegetable production in Ghana: Characteristics, benefits and risks, IWMI-RUAF-CPWF, Accra/ Ghana.

Ofori-Adjei, D., & Koram, K. (2014). Of cholera and ebola virus disease in Ghana. Ghana Medical Journal, 3(4) 471-479

Olsen, M., Rheinlander, T., Bakang, J. A., Takyi, H., Konrandsen, F., & Samuelson, H. (2008). Keeping up appearances: Perceptions of street food safety in Urban Kumasi. Ghana, Journal of Urban Health 85(6) 952-956

Omemu, A. M. & Aderoju, S. T. (2008). Food safety knowledge and practices on street food vendors in the city of Abeokuta, Nigeria, Food Control, 19(4), 396-402

Ozcelik, A. O., Akan, L. S.,& Surucuglu, S. (2007). An evaluation of fast-food preferences according to gender. Humanity Social Science Journal, 2(1), 43-50

Probst, L., Houedjofonon, E., Ayerakwa, H. M., & Haas, R. (2012). Will they buy it? The potential for marketing organic vegetables in the vending sector to strengthen vegetable safety: A choice experiment study in three West African cities. Food Policy, 37, 296-308

Raspor, P. (2008). Total food chain safety: How goog practices can contribute. Trends in Food Science and Technology, 19,(8) 405-412

Rauf, A.A., & Butt (2012). Consumer perceptions of foreign fast-food restaurants in an emerging market. Journal of Leisure and tourism marketing, 3(1), 40-70

Roberts, M. R. (1995). The HACCP program and the consumer in HACCP in Meat Poultry and Fish Processing,. New York: Blackie Professionals.

Roseman, M. G. & Kuzynske, J. (2006). Food safety perceptions and behaviours of Kentucky Consumers. Journal of Food Protection, 69(6), 1412-1421

Rydell, S. A., Harnock, L. J., Oakes, J. M., Story, M., Jeffrey, R. W., & French, S. A. (2008).

Why eat at fast food restaurant? Reported reasons among frequent consumers. Journal of American Dietetic Association, 108(12) 2066-2076

Sanlier, N. (2009). The knowledge and practice of food safety by young and adult consumers. Food Control, 20(6), 538-542

Seidu, R., Heistad, A., Dreschel, P., Jenssen, P. D., & Stenstrom, M. (2008). Quantification of the health risk asociated with wastewater reuse in Accra, Ghana: A contribution towards local guidelines. Journal of Water and Health, 6(4), 461-471

Todd, E. C., Greig, J. D., Bartleson, C. A., & Michaels, B. S. (2007). Outbreaks where food workers have been implicatedin the spread of food borne diseases. Part 3 Factors contributing to food borne diseases. Journal of Food Protection, 7, 2199-2277

Tommlins, K., & Johnson, P., (2004). Crop harvest programme developing food safety strategies and procedures through reduction of food hazards in street-vended foods to improve food security for consumers, street food

vendors and input supplies project final report Umon, V. J. & Odoba, M. B. (1999). Safety and quality evaluation of street foods sold in Zaria, Nigeria. Food Control, 10(1), 9-14.

Van Rijswijk, W., & Frewer, L. J. (2008). Consumer perceptions of food quality and safety and their relation to traceability. British Food Journal, 110(10), 1034-1046

Van Zyl, M. L., Steya, N. P., & Marais, M. L. (2010). Characteristic factors influencing fast food intake of young adult consumer in South Africa. South African Journal, 23(3), 124-138

Veeck, A., Yu, H., & Burns, A. C. (2009). The proper meal and social capital in urban China.

Advances in Consumer research, 36, 636-637

Verbeke, W., Frewer, L. J., Scholderer, J., & DeBonder, H. F. (2007). Why consumersbehave as they do with respect to food safety and risk information. Analytica, Chimica Acta, 586(1-2), 2-7

Wilcock, A., Dun, M., & Khanona, J. (2004). Consumer attitudes, knowledge and behaviour: a review of food safety issues. Trends in Food Science and Technology, 15(25), 56-66

Yeboah-Manu, P., Kpeli, G., Akyeh, M., & Bimi, L. (2010). The bacteriological quality of ready-to-eat foods sold around University of Ghana. Campus.