

Women Entrepreneurship in West Africa: The Cowpea Street Food Sector in Niger and Ghana.

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Abstract

Women entrepreneurship in the informal sector, such as street food vending is important for economic development and poverty alleviation in West Africa. The street food sector provides employment for women and inexpensive and nutritious food for the urban poor. In this paper, we determine the importance of the cowpea street food sector, evaluate the determinants of successful enterprises and ascertain the impact of economic, cultural and religious and geographic differentials between enterprises in Niamey, Niger and Kumasi, Ghana. Data were collected via in-person interviews with 114 and 122 women street food entrepreneurs in the respective countries in 2009. Results revealed that women entrepreneurs engaged in the cowpea street food sector can earn incomes 4 times and 16 times higher than the minimum legal wage in Niamey and Kumasi, respectively. Incomes earned from these entrepreneurial activities contribute directly to health, education and needs of their families. OLS regressions results indicate that lack of financial resources, business location and religious beliefs are important entrepreneurial success factors. Cross-country comparisons revealed enterprises in Kumasi are larger and more successful than those in Niamey.

Keywords: Women entrepreneurship, Informal sector, Street food sector, West Africa.

1. Introduction

Street food trade is a universal and a growing urban phenomenon in West Africa (Tinker, 2003). Street foods can be found everywhere from the congested markets of Accra to the streets of Dakar reflecting the way of life in West African cities. They are a central part of the culture and survival strategy adopted by the poor in West African cities. In cities like Niamey, Niger and Kumasi, Ghana almost all individuals, regardless of their age, ethnic or socio-economic status, consume street foods (Ag Bendeche et al., 2000; IFPRI, 2000; Ndoye 2001). In West African cities street foods range from small snacks such as cowpea fritters, wheat beignets and plantain chips to more substantial full meals including boiled rice with sauce, and roasted fish with yams.

Street food vending is a critical part of the informal sector that employs on average 37.8 percent of the labor force, and contributes about 38 percent to total GDP (Charmes, 1998) in Africa. In West Africa, the majority of women entrepreneurs are part of the informal sector and the activity of which they have a virtual monopoly is street food trade (Hugon, 1989; Tinker, 1997; Ibro et al, 2006; Konayuma, 2006). A survey by Charmes (1998) indicated that in 1992, street vendors accounted for 81% of all economic units in urban Benin, with over 75% owned and operated by women. Despite the economic development implications of women street food enterprises, women entrepreneurship in terms of the informal sector in Africa has remained largely unexplored by researchers (Charmes, 2000; Chen, 2001; Losby and Edgcomb, 2002). The lack of research on informal women entrepreneurship has grossly underestimated the contribution of these enterprises to African economies (Xaba, 2002; Verick 2006).

The significance of the street food sector in poverty alleviation and economic development cannot be overemphasized (Martins and Anelich, 2000). Street food trade is important on at least three fronts. First, street food vending is an important entrepreneurial activity and income source for both the urban and rural poor, particularly women who are often the first victims of heightened poverty (Hugon, 1989; Tinker 2003). Second, it supplies inexpensive and nutritional foods for the urban poor who often can only afford to buy small quantities of food at a time (IFPRI, 2000). Finally, it promotes domestic

agriculture as significant amounts of locally-grown crops such as cowpeas are used in the preparation of street foods (Fulton, 2006).

Much of Africa's economic activity is in the hands of women (UNIDO, 2008). Statistical sources indicate that between one-quarter and one-third of the formal sector businesses in Africa are owned and operated by women, with the share of women-owned informal enterprises even greater (IFC/GEM, World Bank 2007). Development strategies to spur growth in the private sector via the promotion and economic advancement of women enterprises have, however, been largely ineffective due to their emphasis on formal sector enterprises, neglecting an integral part of the economy – the informal sector, where the majority of African women earn a livelihood.

Thus there is great potential in addressing poverty alleviation via the growth in the private sector through enterprise development. However the success of these activities is dependent upon utilizing proactive measures to alleviate market barriers to women-specific enterprises such as street food enterprises. The focus of this paper is on cowpea-based street food enterprises. Cowpeas, also known as black-eyed peas are an important crop in West Africa. Referred to as “poor man's meat”, cowpeas provide an inexpensive source of protein for poor households and complement the high carbohydrate content of most West African diets. Cowpeas are a major ingredient in street foods. One especially common cowpea-based street food is kossai, a deep-fat fried fritter made from ground cowpea. Kossai is also referred to as “akara” in some languages used in the coastal areas in West Africa. In this region, women entrepreneurs use traditional skills and small amounts of capital to start and operate their business enterprises, using the business income for family needs such as food clothing, education and health care (Ibro et al, 2006).

The objectives of this research are: (1) To determine the importance of the cowpea-based street food sector in Niger and Ghana. (2) To evaluate internal and external factors that drive the success of cowpea-based street food enterprises. (3) To conduct a cross-country comparison to determine the impact of religious, cultural, income and geographic differences on the success of women entrepreneurs selling cowpea-based street foods.

The following section of this paper presents the rationale for this study and reviews the literature focusing on the link between the street food sector (entrepreneurship), gender and poverty. Section 3 outlines the methodology and the manner in which the primary data was collected. The results are presented in Section 4. The final section contains conclusions and suggestions for further study.

2. Rationale and Literature Review

2.1 Importance of the informal sector – Street food enterprises

Informal sector entrepreneurship has great potential to contribute to economic development. It is a significant source of employment for many people; from individuals of mass lay-offs attributable to firm closures and mergers (Maxwell, 2000) to low-skilled rural-urban migrants unable to secure formal employment due to the unprecedented urban growth in most developing countries. This seems to be the conclusion independent of the country or type of economy (Konayuma, 2006; Delmar, 2003; Chen, 2001). In particular, self-employment in the informal sector is the sole-option for African women who have low educational levels and other challenges that result in them having fewer opportunities than men for wage income. Meagher (1995) estimates that the informal sector generates 60% of total female employment in the majority of West African cities. In particular, informal activity such as street food trade is growing rapidly in many African countries like Ghana and employs 20% of female labor force in that country (Maxwell et al 2000). Charmes (1998) shows women entrepreneurs have been drawn to this informal activity because of the possibility of earning higher incomes when compared to minimum government wages. His study revealed that the urban street food trade in Niamey, Niger in 1982 provided incomes 4.2 times higher than the legal minimum wage; with similar results found in Benin, Nigeria, Morocco and Uganda. Martins and Anelich (2000) suggest that in the Durban metropolitan area in South Africa, an estimated 18 million Rand was spent on street food outlets in 1998, further confirming the potential for informal activity in the economic development of African countries.

2.2 Informal Sector Participants: Entrepreneurial or Survivalist?

An interesting question associated with the street food vending component of the informal sector is whether these businesses are entrepreneurial or survivalist and thus the potential for sustainability and growth. One line of argument is that the informal sector is incapable of playing any developmental role, asserting that the people in this sector are destined to remain marginal to the rest of the economy (Sethuraman, 1981; Manning, 1993). Under this trend of thought the businesses in the informal sector are classified as survivalist enterprises that will not drive economic growth in developing countries and in fact will disappear over time as the formation of official firms increase to stimulate growth in the formal sector (Todaro, 1969; Sethuraman, 1981; Rogerson, 1997; Ruel et al., 1998 – IFPRI Discussion Paper). They contend that income generated from these activities usually falls well below a minimum income standard and thus is unable to sustain a basic living. They also note that these businesses have owners with limited skill training, little capital investment which oftentimes translates into limited opportunities for growth into a viable business (UNDP, 2007).

On the other hand, advocates of informal sector entrepreneurship propose that these activities are far from being marginal and that views of opponents are purely based on misguided assumptions and not empirical data (Tinker, 1997; Gray et al. 1997; Miller and Levin 1993). They argue that the scarcity of statistics not only down plays the significance of women's entrepreneurship in the informal sector but poses a problem in quantifying with any precision the economic contribution of these activities to the economy of developing countries, particularly in Africa (Tinker, 1997; Sardier, 2003; Verick, 2006). The omission of informal activities from economic accounting estimates significantly underestimates gross domestic product and overestimates the share of population living below the national poverty line (UNESCAP, 2008). Disproving much of the early development literature, recent statistics indicate that “the informal sector has not only persisted but actually grown in many developing countries, particularly in Africa where it dominates the economy both in terms of output and employment” (page 2; Verick, 2006).

Moreover, they claim that the topic of women in entrepreneurship has been largely neglected in society due to the perception that enterprises (primarily service and informal activity such as street food trade) chosen by women are less important to economic development and growth than “high-technology and manufacturing related enterprises” (OECD, 2004). An OECD report concludes that “mainstream research, policies and programs tend to be “men streamed” and too often do not take into account the specific needs of women entrepreneurs and would-be women entrepreneurs” (page 5; OECD, 2004).

Thus, unless gender-based approaches are incorporated into enterprise development strategies, the objective to achieve sustainable poverty reduction will not be possible. There is still a lack of complete understanding of the role of street food vendors and the informal sector as well as an interesting on-going debate about whether the businesses are entrepreneurial or survivalist. Better quantitative data and statistics and qualitative information are required to profile women street food vendors will shed important light on these issues.

2.3 Internal and External Characteristics of Street Food Enterprises

Development agencies are giving more prominence to programs of poverty alleviation and employment creation (World Bank, 2005). Although many of them promote income-generation and small enterprise development as a means of achieving these objectives, there is a general lack of awareness of on factors that drive informal enterprises to be successful, particularly women-owned businesses.

Although the entrepreneurial process may be the same in many developing countries, specific constraints faced by women entrepreneurs vary in dimension and magnitude (Tinker 2003; Tambunan, 2009).

Literature delineates two categories of business success factors as: internal (e.g. cultural norms, educational level, business experience and demographics-family size and external factors (e.g. access to financial and physical capital, technology, malfunctioning legal systems and market access).

2.3.1 External Factors

External factors affecting business success are associated with access to capital and access to markets. Financial capital is an important component to any successful business. The enterprise

development literature notes the lack of access to financial capital or credit to be a significant limiting factor to small enterprise development and sustainability, whatever the country surveyed (Richardson, 2004; Miller and Levin, 1993). This has been attributed to the aversion of formal lending institutions to financing smaller loans due to the relatively high administration and information costs in the absence of collateral. Mayoux (1995) asserts that these perceptions are often compounded by gender discrimination especially in Sub-Saharan African countries. Particularly true for women entrepreneurs engaged in informal activity such as street food trade, this hypothesis has been consistently confirmed in Africa, Asia, Latin America or any developing country (Tedd et al., 2007; Goheer, 2003; Hiemstra, 2006; Richardson, 2004; Ostgaard and Birley, 1996; Honig, 1998; Acho-Chi, 2002).

Accessing credit through the formal credit system can be extremely difficult and often impossible for women entrepreneurs. Interest-free loans, though rare, come from family members and in some cases traditional rotating savings groups. Women entrepreneurs are thus left to rely on informal sources of finance such as moneylenders and pawnbrokers, rotating savings and credit associations, and friends, relatives, suppliers and shopkeepers (Lycette and White 1989; Ardener and Burman 1995; Gray et al. 1997). The dependence on volatile and unreliable sources of financial capital restricts enterprise performance and expansion. And to quote El Namaki (1990), women enterprises in developing countries typically “start with under capitalization, continue with bad management of working capital (especially inventory and receivables) and culminate into delayed search for solutions including essential additional capital input”.

Access to markets is the second key external factor. Location is the “be-all and end-all” of street food trade (Cohen, 2000). As with any business, location may be a critical factor influencing success. Held responsible for the filth on the pavements and street congestions, street food entrepreneurship is not promoted in some African countries (Tinker, 1997). For these reasons among others, Cohen and Tinker (1985) argue that most street food vendors operate in hostile environments and lack permanent market locations to conduct business. This obligates street food vendors to change business locations regularly, affecting their accessibility to potential market populations and losing regular customers to other

businesses. Consistent with street vendors in Lusaka, Zambia, Miller (1993) showed that the lack of permanent business locations negatively affected the distribution and sales of their products, in turn influencing their profit margins. He noted that 67 percent of the respondents operated their business from home, although only 51 percent preferred it as an outlet. He found that they were operating from home because marketplace stalls were unavailable. Tinker (2003) asserts that the lack of market space and governmental support in terms of creating a conducive environment for food traders may be the most significant determinant to street food enterprise performance in Africa.

Entrepreneurs have been known to take advantage of other marketing factors related to location to improve business success. Larger population bases are typically associated with a higher demand density. Thus, street food enterprises located in areas of high economic activity such as transportation yards, market places, schools are expected to be more successful. However, if these higher demand density areas have a correspondingly larger number of vendors selling similar or identical products the increased competition will result in lower profits. Chan (2008) notes that the copycat mentality of entrepreneurs in developing countries, particularly true for street vendors, remains a significant limiting factor to enterprise performance as this creates a highly competitive environment, reducing demand and profit margins. Thus, the effects of the geographic concentration of street food enterprises may “wash-out” the positive influence of high demand density locations on enterprise performance. On the other hand, Tinker (1997) argues that given that street food entrepreneurship is not promoted in some African countries and national regulations and frequent street cleaning campaigns are designed to displace the women vendors, street food entrepreneurs may congregate to protect their interests in order to maintain their chosen business location.

2.3.2 Internal Factors

Internal factors affecting success relate to education, business experience, economic status, employment opportunities and cultural norms. The business literature has consistently associated higher levels of education with greater success (Ayadurai, 2004). It is asserted that education builds the entrepreneurial, managerial and technical skills of entrepreneurs which are all imperative for successful

enterprises. The lack thereof not only affects the operations of the businesses but contributes significantly to the ability of an entrepreneur acquiring formal financial support (Ostgaard and Birley, 1996; Honig, 1998). Berger and Buvinic (1991) explain that the lack of education limits an entrepreneur's ability to understand the terms and conditions of loans. The majority of women street food vendors in Africa are illiterate and so might be expected to have more difficulty with business operations, especially loans. However, Honig (1998) argues that for street food enterprises, basic literacy and numeracy are sufficient for day-to-day operations. Thus, a higher educational level may not necessarily be a significant factor that drives business performance but rather individuals with higher educational levels could be waiting for better opportunities and have no incentive to invest and expand their businesses.

Business experience has been cited as a critical internal factor that influences success for women enterprises (Darroch, 2005). In particular, informal enterprises largely depend on long-term relationships built with clients. Thus, an entrepreneur, who has been in business for a longer period of time, has the advantage of an assured clientele in comparison to an entrepreneur who has been in business for a shorter length of time. We expect women street food vendors with more business experience to be more successful.

Religious, cultural and traditional values and prejudices are among key determinants that influence the success of women enterprises (Cohen, 2000; Tinker, 2003). Full participation of women entrepreneurs may be constrained by their multiple roles within the family and community. Richardson (2004) asserts that the balancing of time between their entrepreneurial venture and family along with inefficient production systems has a strong negative influence on business success. Berger (1991), on the other hand, argues that most informal enterprises in developing countries depend on the family unit, providing free or at least cheap labor to the business and reducing the workload of women entrepreneurs. Thus, in some cases, women enterprises associated with larger family units may have lower production costs and in turn, be more successful.

Furthermore, religious beliefs can set the boundaries within which some women entrepreneurs – street food vendors operate, in countries such as Tunisia, Bangladesh and Egypt (Cohen, 2000). In

particular, Islamic-based norms can have a strong influence on the operation of women enterprises, particularly in cases where these women entrepreneurs operate home-based enterprises instead of working in central or open markets because their cultural norms prevent them from leaving their residence without a male companion (Cohen and Tinker, 1985). These rules of seclusion sometimes result in lower returns for these women entrepreneurs as they are obligated to delegate sale activities to employees or family members or simply conduct their business activities from their homes, restricting their access to potential clients. This is consistent with results from Cohen's study (2000) which compared women street enterprises in Ziguinchor, Senegal and Bangladesh. She concluded that differences in returns could be attributed to cultural variations that influenced access to markets and customers. Understanding the dynamics and functioning (demographic information, barriers to start-up and growth) of these enterprises will assist in promoting awareness of the role of women entrepreneurs in the economy.

3. Data and Methodology

3.1 Data

Data were collected from Niamey, Niger and Kumasi, Ghana. Niamey is the largest city and capital of Niger; and Kumasi is the largest city in the southern central region in Ghana (Figure 1). Both of these cities are major urban areas with cowpea street food enterprises widely available in all socio-economic areas. It is worthy to note that in both Ghana and Niger, there are various kinds of value-added cowpea foods. This research specifically focuses on one type of cowpea-based street food called *kossai*¹. The research began in Kumasi and followed with Niamey in the fall of 2009. The sources of information for this study include direct primary data and secondary data from governmental institutions and websites.

In both Kumasi and Niamey primary data were collected via in-person interviews with the women entrepreneurs. The cowpea-based street food sector – *kossai* vending is almost entirely a women's enterprise throughout West Africa. The women were selected using a stratified random sampling approach to ensure that all socio-economic regions of the city were covered. These interviews were conducted by the researchers with local translators to ensure use of local language and complete

comprehension by the women. In total, data from 114 women entrepreneurs in Kumasi and 122 women entrepreneurs in Niamey were included in this study. Primary data were collected on variables of business experience, profitability, capital acquisition, scale of production, sources of input procurement, demographics, location of business, market segment, language of the vendor and products produced. Additional secondary data on minimum wages and population of selected zones were obtained from government and research agencies. In this paper, we are able to conduct valid cross-country comparisons using a unique data set based on similar data collection methodologies and time frame in both cities, ensuring reliability of the data.

(Insert Figure 1)

3.2 Methodology

In addressing objective 1, we provide an overview of the economic status of the cowpea street food sector in Niamey and Kumasi and examine the composition and economics of this sector. We compare the minimum wage in the formal sector set by the government to the incomes earned by the women vendors as one measure of the importance of the cowpea street food sector. Additional measures of the importance of cowpea street enterprises include employment capabilities, market linkages (local input usage) and official tax payments.

For the second objective, OLS regressions are used to investigate factors that drive cowpea-based street food enterprises (kossai businesses) to be successful. Business success has been defined by both subjective and economic factors such as profitability of firm, size of firm, longevity of operation and entrepreneurs' perception of growth (Orser et al. 2000; Rodriguez et al. 2003; Hiemstra et al. 2006). In this paper, we employ two different measures of business success defined as profits of enterprise and size of enterprise and estimate the following regressions for data from both Ghana and Niger:

Regression 1: Size of Enterprise = f (internal factors, external factors)

Regression 2: Profit = f (internal factors, external factors)

In regression 1, size of enterprise is measured by the quantity of cowpeas (the major input) that the street food vendor uses per day. Cowpeas are the main ingredient for kossai production and there is a direct

relationship between the amount of cowpeas used and the level of kossai production and the size of the operation. For regression 2, profits are the measure of performance, with high profits being associated with high enterprise performance or more successful businesses. The descriptions and codes of the variables examined in this paper are provided in table 1.

(Insert Table 1)

4. Data Analysis

4.1 Economics of Cowpea Street Food Sector

4.1.1 Characteristics of Cowpea Street Food Sector in West Africa

In this section we present descriptive statistics related to the cowpea street food vendors in order to set the stage for the interpretation of the OLS regression results. Table 2 presents the personal characteristics of the cowpea street food entrepreneurs that were surveyed in Niamey and Kumasi. Street food vending is an activity performed by women of many different ages. The average age for kossai vendors in both Niamey and Kumasi is 39 with values for the standard deviations ranging between 11.3 and 12.3. While the average family size was 6 and 7 members in Niamey and Kumasi respectively, the range for family size was large ranging from 1 person to 20 people. The average number of years that the kossai vendors had been in business was 8 years in Niamey and 10 years in Kumasi. Once again, the standard deviations are high, at 6.6 to 9.2, denoting significant variation among the entrepreneurs. This result alludes to the fact that not only are new entrepreneurs that are constantly entering the street food industry but street food enterprises have longevity contrary to the assumption that these informal enterprises will disappear over time with the formation of official firms. Ghana in the past decade has experienced significant economic growth in the formal sector; however this has been accompanied by an equally burgeoning informal sector.

(Insert Table 2)

As shown in figure 2, the majority of entrepreneurs (between 45 and 55 percent) in both cities reported having no formal education. This supports research that found high illiteracy rates among the

majority of street food entrepreneurs. With lower levels of education than their male counterparts, African women have a narrower range of employment choices and oftentimes have the sole option of self-employment typically in the informal sector. In both cities just over one-third of the entrepreneurs reported some primary education, with even lower secondary education levels.

(Insert Figure 2)

From figure 3, we observe that 73 and 67 percent of the entrepreneurs in Kumasi and Niamey respectively are married. This supports findings that women entrepreneurs in Africa engage in productive activities concentrated in enterprises that are conformed to their traditional gender roles such as food processing. Gakure (2004) notes that most women entrepreneurs in Africa tend to draw upon their domestic skills in their enterprises, which in turn, determines their choice of enterprise. More of the vendors in Niamey are single, at 17 percent, compared to those in Kumasi. The percentage of divorced and widowed entrepreneurs is, however, fairly equal in both cities.

(Insert Figure 3)

4.1.2 Developmental Potential of the Informal Sector: Importance of Cowpea-Based Street Food Enterprises for Economic Development

Street vending of cowpea-based foods is an income-generating activity especially for women (Cohen and Tinker, 1985; Fulton, 2006) and contributes significantly to the urban economy. We observe from table 3 that average earnings of a vendor in Niamey is four times more than the minimum wage and these average earnings reported here are often times comparable to the wages of skilled laborers employed in the formal sector. This result confirms Charmes' (1998) findings that the urban street food trade in Niamey, Niger provides incomes higher than the legal minimum wage and that women entrepreneurs are drawn to this informal activity because of the possibility of earning higher incomes. In Kumasi, differences between vendor earnings and formal sector living standards are even more significant, with average vendor earnings almost 16 times higher than the official minimum wage.

Although kossai vending is often assumed to be a marginal activity, the figures for aggregate yearly sales by cowpea street food enterprises refute that assumption. The average daily earnings of vendors in Niamey easily translate into an annual total equivalent of US\$ 4.53 million. These results support parallel studies in other African cities (Tinker, 1997; Martins and Anelich, 2000) and clearly disprove the school of thought that posit that informal activities will not drive economic growth in developing countries.

(Insert Table 3)

Table 4 illustrates that women street food entrepreneurs play an important role in the entrepreneurial economy, both in their ability to create jobs for themselves and to create jobs for others. In Kumasi, about 28% of cowpea-based street food enterprises hire on average 3 workers in addition to the cheap or free labor provided by family members. In contrast, in Niger, only 3 enterprises have hired assistance. This may be the effect of larger enterprises in Kumasi compared to the latter or a higher opportunity cost of women's time in Kumasi compared to Niamey. In Kumasi the women have alternative opportunities and so to leverage their time they use hired employees. In many cities in West Africa, the street food sector is a significant source of employment for many people, particularly women who are quite often the first victims of heightened poverty. This result supports the idea that informal activities such as street food vending acts as an unemployment absorber that cannot be ignored (Tinker, 2003). Though not accounted for in the urban economy, street food enterprises contribute directly via employment generation and tax payments to the city. We observe from table 4 that each entrepreneur in Niamey and Kumasi pay daily tax fees of \$0.11 and \$0.13, respectively; with additional monthly payments of \$2.10 per entrepreneur in Kumasi. An estimated aggregate annual tax payment of US\$ 56560ⁱⁱ for kossai vendors in Niamey alone shows the significance of this sector for economic development.

Furthermore, cowpea street food enterprises – kossai enterprises – create important market linkages via the promotion of domestic agriculture. Significant amounts of cowpea grains are used in the preparation of kossai which implies an important source of cowpea demand and thus income for the local

farmers who grow cowpeas. This demand for locally produced agricultural product is another factor leading to economic development. With an average daily use of 2.5kg of cowpeas in Niamey, an estimate of 1.285 millionⁱⁱⁱ kg of cowpeas will be demanded by kossai vendors each year in Niamey alone.

(Insert Table 4)

Kossai production provides income for the women entrepreneurs, which they spend directly on their families for savings, food, clothes, health care, and school for the children. Figure 4 presents the results of the entrepreneurs' response to the question of what they spend the money on that they earned from selling kossai. The interviewer was instructed to check all of the categories that the women noted so the numbers add up to more than 100 percent. As shown in figure 4, over 90% of the entrepreneurs in Niamey and Kumasi use the money for more immediate expenditures to help the family (pay for health care, clothes and food). This confirms the idea that most informal enterprises in developing countries are first and foremost geared toward creating security for their families and not profit maximization (Gray et al., 1997). A significant percentage of the entrepreneurs paid for their children's education from their earnings. In fact our data revealed that the majority of the vendors had very limited education, they stated that sending their children to schools and ensuring that they got an education was a high priority. About 80 percent of entrepreneurs in Niamey are using income earned from sales for some saving, which they do through a Tontine^{iv}. In Kumasi, on the other hand, only 57 percent of the entrepreneurs reported using the money earned for savings. This may be explained from the re-investment decisions made by entrepreneurs in Kumasi. Kossai enterprises often operate from basic facilities in open air; with no-cost or very low-cost and rudimentary seating facilities. In this instance, entrepreneurs will invest in the construction of a fixed structure with a roof such as a kiosk to provide shade and comfort for themselves as well as their customers. We note that about 26% of entrepreneurs in Kumasi re-invest earnings in their businesses whilst only 5% do so in Niamey. Thus, entrepreneurs in Kumasi may not be able to save as much if there are re-investing in their businesses.

Undoubtedly, the street food sector enables poor urban households to maintain a basic standard of living and ward off poverty by creating employment for women and generating income in West African

cities (Cohen and Tinker, 1985; Fulton, 2006). Although some of these businesses are characterized as survivalist and transient, hundreds of thousands of West African women generate significant income higher than the basic standard of living through informal entrepreneurship, operate successful businesses with potential for growth and actively pursue these opportunities to generate a sustainable livelihood. Thus, whether survivalist or entrepreneurial, businesses in the informal sector such as street food enterprises have significant economic development implications for West Africa.

(Insert Figure 4)

Despite the economic implications of street food vending, these women entrepreneurs, however face challenges that affect how successful they can be. Respondents were asked what factors were constraining for their business with the interviewers checking off all of the factors that each woman noted. Therefore the numbers will add up to more than 100 percent. We observe in figure 5 that over 70% of entrepreneurs in Kumasi identified lack of financial resources as a limiting factor to business performance, while 62% of the entrepreneurs in Niamey identified this as a limiting factor; consistent with studies by Goheer (2003) and Acho-Chi (2002). While over 65% of entrepreneurs in Niamey noted that purchase of inputs as a constraint, only 13% of the entrepreneurs in Kumasi identified this as a constraint. One would think that given the financial constraint identified by almost all entrepreneurs in both cities, purchasing inputs as a constraint would apply across countries. The significant contrast is that in Kumasi over 75% of the entrepreneurs purchase their inputs on credit from suppliers whilst in Niamey entrepreneurs did not have this advantage. Between 10% and 11% of entrepreneurs identified lack of capital equipment as a constraint. This rather low percentage can be explained by the fact that these enterprises require basic equipment and facilities which can usually be found in the women's own kitchen and home. Processing and preparation of kossai is very labor-intensive and creates a challenge for these street vendors (Ibro et al, 2006). Between 23 and 41% of entrepreneurs identified processing of their outputs as a constraint.

As noted previously, location is the “be-all and end-all” of street food vending (Cohen, 2000). Entrepreneurs need stable business locations. In the instance where these entrepreneurs are required to

relocate constantly then location becomes a key constraint. This is because, they lose relationships they have built with their clients and may have to operate from locations that limit access to potential customers, reducing distribution and sales. None of the entrepreneurs in Niamey identified location as a constraint, in contrast to Kumasi where 14% identified location as a constraint.

(Insert Figure 5)

4.2 OLS Regression Analysis

4.2.1 OLS Estimation Results with Size of Enterprise as a Measure of Business Success

The results of the OLS regression with size as the measure of business success are reported in table 5 for Kumasi and Niamey. Between 27 and 36 percent of the variation in the business success measure is explained by the regression equations. In the Niamey regressions, there was no variation in the NATURE_ENTRP, ATL_EMP and LOCAT_CONST variables and thus were excluded from the models. Enterprises in Niamey operated from a fixed location all the time, with none of the entrepreneurs identifying location as a business constraint. Furthermore, the women indicated that this informal activity was the sole source for employment. In regards to the religion variables, data was not collected for these variables in Niger, but it is known that the vast majority of Nigeriens are Muslim (over 90%) and thus there may have been little to no variation in the variable for Niamey. Furthermore, no “strictly observant Muslim” entrepreneur (OBS_MUSLIM) was interviewed in the Niger sample. The “strictly observant Muslim” women entrepreneurs are Muslim women who are required to wear distinctive head coverings as a sign of their faith. They are distinctively different from other Muslim women as in addition to their faith, they observe rules of seclusion, which prevents them from leaving their residence without a male companion. They are obligated to operate home-based enterprises or delegate sale activities to employees or family members. In model 1 for both Kumasi and Niamey, we estimated a regression model with all the variables. In Kumasi, statistically significant variables defining external factors included: FINAN_CONST, LOCAT_CONST, PROCESS_CONST, GEOG_CONC, HIGH_INC NEIGH, MID_INC NEIGH; and internal factors were SEC_EDUC, BUSEXP, ATL_EMP, MARR AND

OBS_MUSLIM. On the other hand, there were 7 statistically significant variables for the Niamey model: HIGH_INC NEIGH, GEOG_CONC, BUSEXP, CAPT_CONST, FINAN_CONST, SEC_EDUC and MARR.

External Factors: A statistically significant and negative coefficient for FINAN_CONST for both cities indicates that entrepreneurs identifying lack of financial resources as a constraint were less successful than to their counterparts who did not identify a lack of financial resources. This idea has been widely proven particularly among informal and small-scale enterprises in developing countries (Tedd et al., 2007; Goheer, 2003; Hiemstra, 2006; Acho-Chi, 2002) given the reluctance of formal lending institutions to finance smaller loans due to high administration costs and risk levels. Dependence on volatile informal sources of finance restricts enterprise performance and expansion as smaller amounts of investment capital limit the acquisition of minimal capital outlays, tools and equipment. Entrepreneurs in Niamey identified capital equipment as an important constraint to doing business. The negative statistically significant CAPT_CONST coefficient implies that entrepreneurs who identify capital equipment as an important constraint to doing business have smaller enterprises. With capital restrictions (raw inputs, equipment), these enterprises are less successful. This same reasoning applies to the PROCESS_CONST variable which is statistically significant for the Kumasi model only. The result suggests that an entrepreneur who identifies the processing and preparation of the kossai as a challenge will be less successful. This makes intuitive sense because given labor-intensive processing techniques; an entrepreneur may be obligated to utilize smaller quantities of raw materials given processing challenges.

Furthermore, our results report the coefficient for the LOCAT_CONST variable is statistically significant for the Kumasi model, implying that an entrepreneur who identifies securing a fixed location as a challenge is less successful. Street food enterprises in Kumasi face constant pestering from government officials. Given that location of business is critical to enhance distribution and sales, the lack of a stable location will affect business returns and in turn how successful they can be.

The coefficients for GEOG_CONC, though statistically significant in both cities have different signs. The positive coefficient of 0.246 for Kumasi indicates that enterprises located in an area with a geographic concentration of other street food entrepreneurs use, on average, 0.246kg of cowpeas more than an enterprise that is not. This may be due to the fact that despite national regulations and frequent street cleaning campaigns in Kumasi, these women entrepreneurs are able to organize and protect their interests, and thus maintain their chosen business locations. In Niamey, however, the GEOG_CONC coefficient is negative implying that less successful enterprises are located in areas of geographic concentration of other street food vendors. This may suggest that the concentration of street vendors creates a highly competitive environment which may reduce sales by the individual entrepreneur and in turn, lower returns.

The HIGH_INC NEIGH variable, denoting that the enterprise operates in a high-income level neighborhood, is positive and statistically significant for Niamey and Kumasi respectively. This implies that enterprises operating in high-income neighborhoods will be more successful than the enterprises operating in low-income neighborhoods (which is the reference group). This may be because on average, entrepreneurs in high-income neighborhoods sell their products at a higher unit price than entrepreneurs in low-income neighborhoods. This observation has been consistent in both Kumasi and Niamey. The MID_INC NEIGH variable is statistically significant and positive in the Kumasi model. This result implies that entrepreneurs operating in middle-income neighborhoods are more successful than the reference group (LOW_INC NEIGH).

(Insert Table 5)

Internal Factors: Variables denoting entrepreneurs who have some secondary education and are married, SEC_EDUC and MARR respectively, were found to be statistically significant and negative for models in both Kumasi and Niamey. The result for the education variable suggests that entrepreneurs with secondary education have lower-performing enterprises than entrepreneurs with no education. This result is unexpected as higher levels of education have positive implications for business performance. One explanation for our result could be that entrepreneurs with higher levels of education have other potential

employment opportunities and are only engaged in street food vending as a short term activity until other employment opportunities are realized. These individuals have no incentive to expand the size of their operations. This supports Honig's (1998) findings that showed a negative relationship between micro-entrepreneurs with higher educational levels and business performance. He found that individuals with only primary education fared better than those with secondary education. He argues that basic literacy and numeracy are important for day to day operations, and individuals with higher educational levels could simply be waiting for a better opportunity.

We further observe that married women have less successful enterprises in comparison to the reference group: single entrepreneurs (SINGLE). This may be attributable to the multiple roles that married women play, leaving less time for the business activities. Additionally, in some communities, cultural norms prevent married women from conducting business outside of their homes. Restricted to conducting business from their residence, their access to potential customers is greatly limited. This is evident from the negative and statistically significant coefficient of the OBS_MUSLIM variable in the Kumasi model. This implies that "strictly observant Muslim" entrepreneurs in Kumasi have smaller enterprises and thus less successful than Christian entrepreneurs (reference group). Furthermore, our results indicate that there is no statistically significant difference in firm size between the Christian entrepreneurs and the Muslim entrepreneurs (MUSLIM) who do not wear the distinctive head covering and do not observe the rules of seclusion. Religion plays a great role in determining the operation of enterprises. For the "strictly observant Muslim" women in Kumasi, there is typically a division of labor as married women are not allowed to leave their homes without a male companion. Thus the women prepare the cowpea food product and are forced to delegate sale activities to daughters, sons, other family members or hired help.

As expected, the coefficients for BUS_EXP are positive and statistically significant for both the Kumasi and Niamey models, indicating more successful enterprises for street food vendors with more business experience (as measured by years in operation). Most informal enterprises in Africa are based on

relationships built with clients over time. Thus, entrepreneurs that have built these relationships have the advantage of an assured clientele.

For models 2, marital status and education level variables were excluded. The signs and statistical significance for the variables in models 2 for Kumasi and Niamey are the same with the exception of the PROCESS_CONST variable for Kumasi which is no longer statistically significant and the HIGH_ECONACT variable for Niamey which is now statistically significant. Denoting the presence of high economic activity, a positive coefficient for the HIGH_ECONACT variable suggests higher-performing enterprises if business is located in an area with high economic activity. This result may be attributable to increased demand for street food product from increased access to potential customers.

4.2.2 OLS Estimation Results with Profits of Enterprise as a Measure of Business Success.

Table 6 reports the results of the OLS regression with profits as the measure of business success. The statistically significant variables for Model 1 for Kumasi and Niamey are the same as for the regressions with size as the business success measure, with the exception of the HIGH_ECONACT coefficient and PROCESS_CONST coefficient which are now significant for both Kumasi and Niamey; and Niamey only respectively. Statistically significant variables have the same signs. A positive coefficient for the HIGH_ECONACT variable indicates that, an enterprise located in an area with high economic activity realizes a profit of US\$2.514 and US\$1.870 more than an enterprise that is not in a high economic activity area for Kumasi and Niamey, respectively. Other statistically significant variables such as BUS_EXP follow a similar reasoning. A one year increase in business experience of an entrepreneur increases their profits by US\$0.713 and US\$1.762 in Kumasi and Niamey respectively. We observe that in model 1 for Kumasi, GEOG_CONC and PROCESS_CONST are no longer statistically significant. However, the coefficient for the PROCESS_CONSTR variable in the Niamey model is negative and statistically significant. This implies that an entrepreneur who identifies the processing and preparation of

kossai as a challenge realizes lower profits by US\$0.52 than an entrepreneur who does not. In Models 2, we excluded the marital status and education variables as in the analysis in table 5.

A positive and statistically significant HOUSEHOLD_SZ variable suggests that women entrepreneurs with larger household sizes realize higher profits than their counterparts with smaller family size. This may be because family members provide free or inexpensive labor reducing production costs. We find that although we used different variables as measures of business success, results from the different models are similar.

(Insert Table 6)

4.3 Cross-Country Comparison of Economic, Social, Religious and Geographic Differentials between Cowpea-Based Street Food Enterprises.

4.3.1 Economic differences

Cowpea street food enterprises are viable businesses providing incomes to women entrepreneurs significantly higher than the average minimum wage. Our results reveal significant differences between the average earnings per enterprise in Kumasi and Niamey. Statistically significant t-test indicates that at US\$28.9, daily average earnings per enterprise in Kumasi are significantly higher than that of US\$8.8 in Niamey. Similarly, average input use of 6.3 kg of cowpeas in Kumasi was higher than that of 2.5kg in Niamey. Given a significant t-test statistic, we can conclude that there is a significant difference between the size of cowpea-based street food enterprises in Kumasi and Niamey, implying larger enterprises in Kumasi than Niamey. We observe that women entrepreneurs in Kumasi create jobs for themselves but also create jobs for others, hiring on average 3 workers per enterprise in addition to the cheap or free labor provided by family members. In contrast, in Niger, only 3 enterprises had hired assistance. This may be the effect of larger enterprises or a higher opportunity cost of women's time in Kumasi compared to Niamey.

Regression results further indicate that the type of neighborhood in which an entrepreneur operates determines how successful an enterprise can be. We find this to be consistent in both cities where an entrepreneur operating in a high-income neighborhood earns higher profits than an entrepreneur operating from a low-income neighborhood. Lack of financial resources was identified as a major constraint to business performance by 63% and 76% of the entrepreneurs in Kumasi and Niamey, respectively. Despite the larger percentage in Niamey, a Z-test statistic of 2.58 at a 1% significance level proved that there is no significant difference between the percentages of entrepreneurs identifying lack of financial resources as a business constraint.

4.3.2 Social differences

Women's participation in the street food sector varies widely across countries due to social, cultural and religious norms (Tinker, 2003). Street food enterprises are mainly individual or family enterprises often using inexpensive or free family labor (Tinker, 2003). In both Kumasi and Niamey, most enterprises had family members involved in activities from the procurement of inputs to food preparation and sales. The concept of enterprise dependency on the family unit is even more pronounced for "strictly observant Muslim" entrepreneurs in Kumasi. Based on religious beliefs, striking differences have been observed amongst the operation of street food enterprises in Muslim, Christian and animist areas in Africa (Cohen, 2000). We observe striking differences between street food enterprises run by "strictly observant Muslim" enterprises and those operated by Christian enterprises in Kumasi, where the former realizes lower profits than the latter. As previously noted, rules of seclusion may result in lower returns for women entrepreneurs as they are obligated to operate home-based enterprises which oftentimes limits access to clients. This is particularly true for entrepreneurs with new ventures whom do not have the advantage of an established clientele base.

Though conformed to their traditional gender roles, street food vending is not considered just part of the traditional economic and social life but it is viewed as an occupation to alleviate urban poverty (employment and food for urban poor) in Niamey and Kumasi. Cowpea street food enterprises are first

and foremost geared toward creating security for their families with over 90% of the entrepreneurs in Niamey and Kumasi allocating earnings for more immediate expenditures to help the family (pay for health care, clothes and food).

4.3.3 *Geographic differences*

Our results indicate that street food enterprises can be found in every socio-economic neighborhood in Kumasi and Niamey. Obtaining a secure and fixed business location is an important factor that drives business success in Kumasi. However, this did not prove to be an essential success factor to cowpea street food enterprises in Niamey. Further analyses showed the effects of geographic concentration of street food enterprises on business performance to be significant. This factor boosts business success in Kumasi, but however, had opposing effects on street food enterprises in Niamey. A geographic concentration of enterprises selling similar or identical products within very close proximities of each other may create a highly competitive environment and in turn lowers business returns. As noted by Chan (2008), the copycat mentality of entrepreneurs in developing countries, particularly true for street vendors remains a significant limiting factor to enterprise performance. On the other hand, in cities where this informal activity is not promoted, street food entrepreneurs may congregate to protect their interests in order to maintain their chosen business location.

5. Conclusions and Further Research

Street food trade, an integral part of the informal sector, is a universal and growing phenomenon in urban areas in West Africa. Though conformed to the traditional gender roles of women, street food vending is not just considered part of the traditional economic and social life but it is an activity that has significant implications for economic development and poverty alleviation. Marginalized, illiterate but hard-working, cowpea street food vendors find this activity to be one that they can survive on. They spend the income earned from their businesses directly on their families' needs. These women street food vendors are micro-entrepreneurs rather than dependent workers, providing employment not only for

themselves but also others. This study reveals that street food entrepreneurs' average income is substantially higher than the official minimum wage in the cities of Kumasi and Niamey.

Cowpea-based street food enterprises in Kumasi and Niger have similar characteristics. Street food vending is an activity performed by women of many different ages. Family support is central to the operation of most street food enterprises, particularly for “strictly observant Muslim” families who often limit married women to home-based businesses or require the delegation of sale activities to other family members. Our results indicate that these women entrepreneurs operate businesses that were smaller in size and earn lower profits than the reference group – Christian entrepreneurs. We also note that business size and profits are lower for women with secondary education, who may be using street food vending only to earn money while looking for other employment opportunities. Cross-country comparisons indicate that enterprises in Kumasi are larger in size and earn higher profits than those in Niamey. This may have been attributable to a higher demand for the cowpea-based product in Kumasi which explains the higher daily input usage, in turn leading to higher earnings per enterprise.

Understanding the factors that contribute to the success for these women entrepreneurs is important for economic development. Lack of financial resources, lack of secure and stable business locations to conduct business, geographic concentration of street food vendors were key factors found to affect business success. In order to improve the livelihoods of street food entrepreneurs, support to expand and diversify their businesses can be achieved through access to credit. Where credit has been accessible to street food entrepreneurs, there has been an “enviable record of success” in their enterprises (Cohen, 2000). However, presently, there are very few African countries where NGOs have made efforts to give working capital loans to street vendors. Laws and regulations such as mandating interest-rate caps create barriers to microfinance providers. Thus, there is a need for a government intervention to create a conducive environment for microfinance institutions and market space for food traders.

An important question about informal enterprises relates to their potential and ability for growth. Our study finds that some women entrepreneurs re-invest in their businesses via increased input use and construction of more fixed structures. Our study, however only provides a snapshot of potential enterprise

growth. Research examining the dynamics of street food enterprises and how they change and grow over time will provide pertinent information to further justify their contribution to economic growth.

Informal sector activity has been typically studied as one large homogeneous entity; failing to recognize the wide range and diversity of activities within the sector. This paper contributes to the literature by the specificity to a particular informal activity – cowpea-based street food vending. This creates an opportunity to further examine organizational structures, the position and role of different people (owners, apprentices) in these enterprises; and also examine implications of market linkages between these cowpea street food enterprises and other economic sectors (such as other cowpea processors and farmers).

This paper brings new insights to the nature of women entrepreneurship in West Africa. Our conclusions can contribute towards more appropriate policy-making to improve the income of women street food entrepreneurs themselves and influence public policy to recognize the value of this informal sector activity.

6. Non-Technical Summary

Women entrepreneurship in the informal sector, such as street food vending is important for economic development and poverty alleviation in West Africa. The street food sector provides employment for women, who are often the first victims of heightened poverty and provides inexpensive and nutritious food for the urban poor. Despite the economic development implications of women street food enterprises, women entrepreneurship in terms of the informal sector in Africa has remained largely unexplored by researchers, in turn grossly underestimating the contribution of these enterprises to African economies. The lack of a complete understanding of the role of street food vendors and the informal sector has ensued in an interesting on-going debate about whether these businesses are entrepreneurial or survivalist and thus the potential for sustainability and growth.

Thus, the aim of this paper is: (1) to determine the importance of the cowpea-based street food sector in Niger and Ghana, (2) to evaluate internal and external factors that drive the success of these enterprises and (3) to conduct a cross-country comparison to determine the impact of religious, cultural, income and geographic differences on the success of women entrepreneurs selling cowpea-based street foods.

Primary data were collected via in-person interviews with the women street food entrepreneurs in Niamey, Niger and Kumasi, Ghana in 2009. To assess the importance (examine the composition and economics of the cowpea street food sector), we compare minimum wages in the formal sector set by the government to the incomes earned by the women. Additional measures of the importance of cowpea street enterprises include employment capabilities, market linkages (local input usage) and official tax payments. OLS regressions were further used to determine entrepreneurial success. In this paper, we employed two measures of business success defined as size of the enterprise and profits of the enterprise. Statistical tests were used to examine cross-country differentials.

Our results revealed that:

- Women entrepreneurs engaged in the cowpea street food sector can earn income significantly higher than the minimum legal wage in Niamey and Kumasi. These vendors are micro-entrepreneurs rather than dependent workers, providing employment not only for themselves

but also for other people. Incomes earned from these entrepreneurial activities contribute directly to health, education and needs of their families.

- A lack of financial resources as well as factors related to market access (business location, geographic concentration of enterprises, high density areas) are important entrepreneurial success factors.
- Higher educational levels are not associated with more successful enterprises which is contrary to much of the business literature. The reasoning for this phenomenon is that these individuals may be involved in street food vending as a temporary activity while they search for better employment opportunities and have no incentive to invest and expand their businesses.
- Family support is central to the operation of most street food enterprises, particularly where religious beliefs dictate the manner in which women entrepreneurs conduct their business.
- Cross-country comparisons revealed that enterprises in Kumasi are larger and more successful (earning higher incomes) than those in Niamey. Religious beliefs influence business success in Kumasi where seclusion rules result in “strictly observant Muslims” entrepreneurs earning less income than Christian entrepreneurs.

Women street food enterprises are important avenues for employment and income generation.

Enterprise development strategies geared at poverty alleviation in West Africa should include proactive measures that alleviate market barriers specific to informal women entrepreneurship such as street food vending.

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Tables

Table 1: Variable names and descriptions

Variables	Descriptions
Dependent variables	
SIZE	Size of enterprise as measured by daily input use of cowpeas (kg)
PROFIT	Average Daily Profits ¹
Independent Variables	
<u>External Factors:</u>	
FINAN_CONST	Dummy Variable equal to one if the vendor identified lack of access to financial resources as a constraint and zero otherwise
CAPT_CONST	Dummy Variable equal to one if the vendor identified the lack of capital equipment as a constraint and zero otherwise
LOCAT_CONST	Dummy Variable equal to one if the vendor identified securing a fixed location to operate her enterprise as a constraint and zero otherwise
HIGH_ECONACT	Dummy Variable equal to one if there is high economic activity present and zero otherwise
GEOG_CONC	Dummy Variable equal to one if there is a geographical concentration of other cowpea street food enterprises and zero otherwise
NATURE_ENTRP	Dummy Variable equal to one if the street food enterprise operates from a fixed location everyday and zero otherwise
HIGH_INC NEIGH	Dummy Variable equal to one if enterprise is located in a ‘high-income’ neighborhood and zero otherwise
MID_INC NEIGH	Dummy Variable equal to one if enterprise is located in a ‘middle-income’ neighborhood and zero otherwise
LOW_INC NEIGH	Dummy Variable equal to one if enterprise is located in a ‘low-income’ neighborhood and zero otherwise
<u>Internal Factors:</u>	
NO_EDUC	Dummy Variable equal to one if vendor has no formal education and zero otherwise
PRIM_EDUC	Dummy Variable equal to one if vendor has primary education and zero otherwise
SEC_EDUC	Dummy Variable equal to one if vendor has secondary education and zero otherwise
RELIG_EDUC	Dummy Variable equal to one if vendor has religious education and zero otherwise
BUSEXP	Number of years in street food business
ATL_EMPL	Dummy Variable equal to one if the entrepreneur has an alternative source of employment and zero otherwise
HOUSEHOLD_SZ	Size of household
SINGLE	Dummy Variable equal to one if vendor is single and zero otherwise
MARR	Dummy Variable equal to one if vendor is married and zero otherwise

¹ Average profits per enterprise in each country was converted to US\$ at the following rate. Local currency: Ghana – Ghanaian cedi, \$1= GHC 1.42 (Source: http://www.exchange-rates.org/history.aspx?iso_code=GHS&base_iso_code=USD&mode=T) Niger – CFA Franc, \$1 = 450CFA (Source: [Data_Obj1.xls](#))

DIVC	Dummy Variable equal to one if vendor is divorced and zero otherwise
WIDW	Dummy Variable equal to one if vendor is widowed and zero otherwise
AGE	Age of the street food entrepreneur
CRIST	Dummy Variable equal to one if vendor is a Christian and zero otherwise
MUSLIM	Dummy Variable equal to one if vendor is a Muslim and zero otherwise
OBS_MUSLIM	Dummy Variable equal to one if vendor is a “strictly observant Muslim” and zero otherwise

Table 2: Personal Characteristics of Kossai Vendors

	Kumasi	Niamey
Age (years)	39 (12.3)	39 (11.3)
Family Size (number of people)	7 (3.7)	6 (2.1)
Business Experience (years)	10 (9.2)	8 (6.6)

^aValues are averages and those in parenthesis are standard deviations.

Table 3: Economics of Cowpea Street Food Trade

	Kumasi	Niamey
Average Legal Minimum Wage ²	1.83	2.07
Average Daily Earnings per Enterprise ³	28.9	8.8
Minimum Earnings per Enterprise	1.4	4.4
Population in 2009 ⁴	-	898798
Number of Cowpea-Based Street Food Enterprises in 2009 ⁵	-	1648
Establishments per Population in 2009 ⁶	-	1:545
Estimated Aggregate Yearly Sales (million US\$) ⁷	-	4.53

² Minimum wage – Ghana: (Source: <http://www.mofep.gov.gh/news060409.htm>). Minimum wage – Niger: (Source: <http://www.state.gov/g/drl/rls/hrrpt/2009/af/135969.htm>).

³ Value is calculated from primary data collected in Kumasi and Niamey. Average daily and minimum earnings per enterprise in each country was converted to US\$ at the following rate. Local currency: Ghana – Ghanaian cedi, \$1= GHC 1.42 (Source: http://www.exchange-rates.org/history.aspx?iso_code=GHS&base_iso_code=USD&mode=T) Niger – CFA Franc, \$1 = 450CFA (Source: [Data_Obj1.xls](#))

⁴ Population estimates were calculated based on an average annual urban population growth rate of 3.8% (Source: http://www.unicef.org/infoycountry/niger_statistics.html).

⁵ Statistics for Niamey was obtained from Ibro et al. (2006), where a census was conducted in 2006. Results indicate that the number of cowpea-based street food enterprises, specifically kossai enterprises is 1305. Based on literature, the number street food enterprises increases at a rate of 6% in urban areas in developing countries and thus, the 1305 enterprises was adjusted to reflect entry of new entrepreneurs in industry. Data was unavailable for Kumasi.

⁶ This is calculated as the ratio of number cowpea-based street food enterprises (kossai enterprises) to city population.

⁷ On average, cowpea-based street entrepreneurs work 6 days a week. This value was calculated as the product of the average daily earnings per enterprise, number of days worked per week, number of weeks per year and the total number of enterprises.

Table 4: Characteristics of Street Food Enterprises⁸

	Kumasi	Niamey
Number of Enterprises with Hired Employees	32 (28.1)	3 (2.5)
Number of Hired Employees per Enterprise	3 (1.9)	1 (0)
Number of Working Hours	4 (3.5)	5 (2.2)
Daily Tax Fees paid by entrepreneurs (US\$)	0.13	0.11
Additional Monthly Tax Fees paid by entrepreneurs (US\$)	2.10	N/A
Estimated Annual Tax Payments (US\$)	-	56560
Daily Input Use (Cowpea Purchased per day in kg)	6.3 (6.2)	2.5 (1.4)
Estimated Annual Use of Cowpeas by Entrepreneurs (kg)	-	1285440

⁸ Values are averages and those in parenthesis are standard deviations with the exception of 'Number of Enterprises with Hired Employees' which are absolute values and values in parenthesis are percentages.

Table 5: OLS Estimation Results of Factors Affecting Cowpea-Based Street Food Enterprises with Size of Enterprise as Measure of Enterprise Performance.¹

Variables	KUMASI		NIAMEY	
	Model 1	Model 2	Model 1	Model 2
Constant	6.096***	6.120***	2.012**	2.025**
HIGH_INC NEIGH	1.257**	1.243**	0.031***	0.029***
MID_INC NEIGH	0.389*	0.372*	0.467	0.236
HIGH_ECONACT	0.514	0.782	0.178	0.185*
GEOG_CONC	0.246*	0.215*	-0.640**	-0.678**
NATURE_ENTRP	0.055	0.102	N/A	N/A
BUSEXP	0.118***	0.114***	0.323***	0.318***
ATL_EMPL	-3.475*	-2.820*	N/A	N/A
CAPT_CONST	-0.058	0.062	-0.040*	-0.052
FINAN_CONST	-1.032***	-1.056***	-0.085***	-0.338***
PROCESS_CONST	-0.468*	-0.257	-0.081	-0.625
LOCAT_CONST	-1.493*	1.213*	N/A	N/A
HOUSEHOLD_SZ	0.330	-0.079	0.042	0.157
PRIM_EDUC	1.622		0.039	
SEC_EDUC	-0.357*		-0.548**	
RELIG_EDUC	0.004		-0.091	
MARR	-0.593*		-0.456**	
DIVC	0.298		-0.629	
WIDW	-0.601		-0.863	
AGE	-0.017	-0.231	0.002	-0.684
MUSLIM	2.788	1.829	N/A	N/A
OBS_MUSLIM	-1.113*	-1.109*	N/A	N/A
R ²	0.348	0.355	0.275	0.272
Adj. R ²	0.331	0.317	0.287	0.290
Durbin Watson	2.140	1.950	1.989	2.005
Number of observations	114	114	122	122

¹ Significance at the 1, 5 and 10% level is denoted by ***, **, and *, respectively.

Table 6: OLS Estimation Results of Factors Influencing Cowpea-Based Street Food Enterprise with Profits of Enterprise as Measure of Enterprise Performance¹

Variables	KUMASI		NIAMEY	
	Model 1	Model 2	Model 1	Model 2
Constant	26.096*	26.152**	8.95***	2.025***
HIGH_INC NEIGH	7.225**	7.120**	2.035***	2.549***
MID_INC NEIGH	5.522*	5.144*	1.524	3.498
HIGH_ECONACT	2.514*	0.915	1.870*	1.855*
GEOG_CONC	7.0995	-2.190	-1.540**	-1.562**
NATURE_ENTRP	1.26	0.540	N/A	N/A
BUSEXP	0.713***	0.717***	1.762***	1.831***
ATL_EMPL	-7.192*	-7.005*	N/A	N/A
CAPT_CONST	-3.660	5.496	-1.562**	-1.532*
FINAN_CONST	-8.982**	-8.62**	-1.670	-2.840*
PROCESS_CONST	-3.889	-0.257	-0.156*	-0.253*
LOCAT_CONST	-3.482*	3.230*	N/A	N/A
HOUSEHOLD_SZ	1.149	0.079*	0.532	1.073*
PRIM_EDUC	7.330			
SEC_EDUC	-1.175**		-0.548**	
RELIG_EDUC	-0.352		-7.182	
MARR	-0.593*		-2.620**	
DIVC	-0.298		-4.062	
WIDW	-0.601		-1.648	
AGE	-0.032	-0.561	-1.500	0.812
MUSLIM	-5.065	1.829	N/A	N/A
OBS_MUSLIM	-5.970*	-5.109*	N/A	N/A
R ²	0.315	0.326	0.283	0.285
Adj. R ²	0.300	0.319	0.279	0.281
Durbin Watson	1.925	1.930	1.990	2.015
Number of observations	114	114	122	122

¹ Significance at the 1, 5 and 10% level is denoted by ***, **, and *, respectively.

Figures



Figure 1: Map of West Africa, depicting the cities of Niamey, Niger and Kumasi, Ghana.

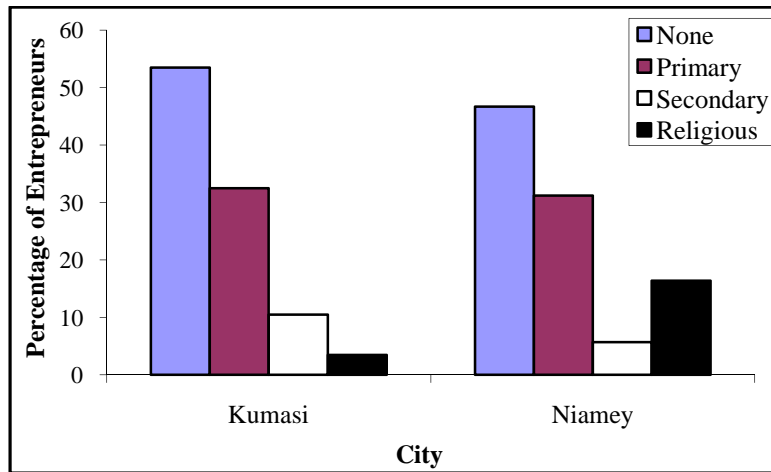


Figure 2: Education Level of Kossai Vendors

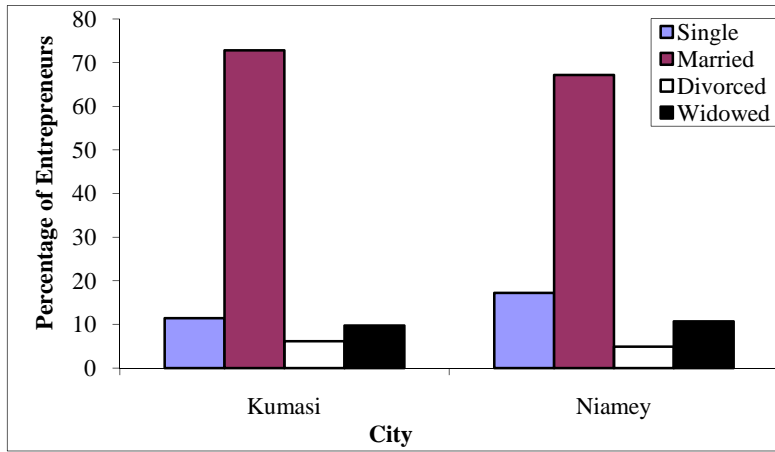


Figure 3: Marital Status of Women Street Food Entrepreneurs

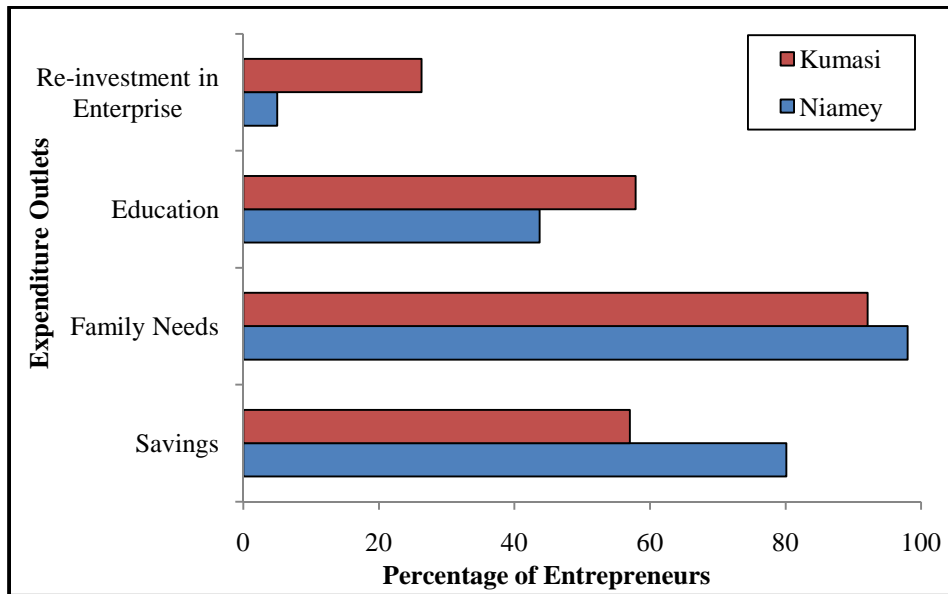


Figure 4: Expenditure Outlets by Cowpea-Based Street Food Entrepreneurs

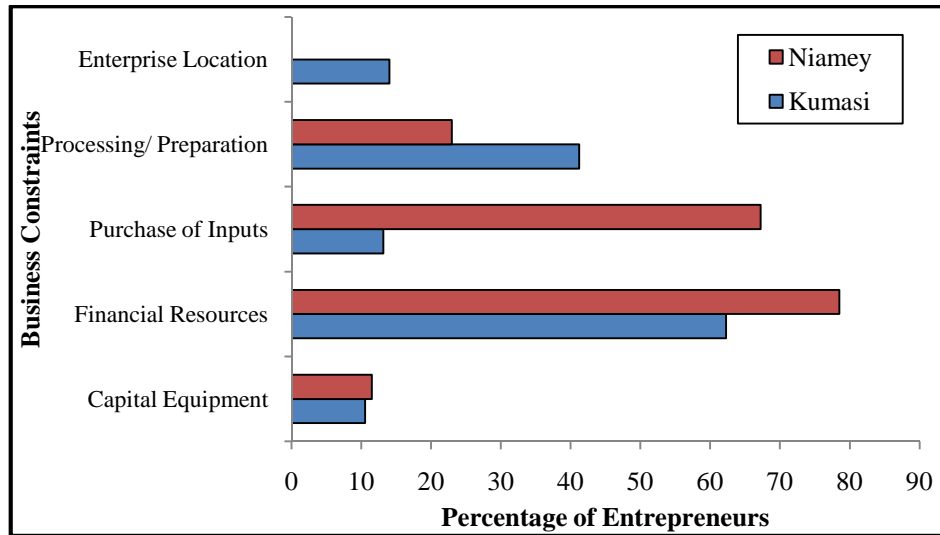


Figure 5: Business Constraints Identified by Vendors

Endnotes

ⁱ Kossai (also called “akara” in languages used in coastal areas) is a deep-fat fried fritter made from cowpeas. Kossai is made from a batter of wet milled cowpea, which women then cook in hot oil over an open wood fire or a small gas stove from their street-side vending location. It can be found first thing in the morning as customers are acquiring their breakfast of kossai and in the late afternoon/early evening when kossai is consumed as a snack between lunch and dinner.

ⁱⁱ On average, cowpea-based street entrepreneurs work 6 days a week. This value is calculated as the product of the daily tax fees paid by each entrepreneur, number of days worked per week, number of weeks per year and the total number of enterprises. This is equal to $\$0.11 * 6 * 52 * 1648 = \56559.36

ⁱⁱⁱ On average, cowpea-based street entrepreneurs work 6 days a week. This value is calculated as the product of the average daily input use by each entrepreneur, number of days worked per week, number of weeks per year and the total number of enterprises in Niamey. This value is: $2.5\text{kg} * 6 * 52 * 1648 = 1285440\text{kg}$.

^{iv} Tontines are a form of customary and rotating savings groups.