

Urbanization and Pattern of Urban Food Consumption in Ashanti Region, Ghana: Implications for Food Security

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Abstract

The study assesses the influence of rapid urbanization on urban consumption pattern and food security of the urban dweller using primary data collected from urban households in Ashanti region of Ghana. The food security index was estimated based on a minimum daily calorie requirement of 2900Kcal. The consumption pattern indicates that yam, cassava and rice are gaining importance in urban household diet in the region. The expenditure share also shows that food constitutes 74.6% of urban household budget. The estimated food security index of the region is 0.66, implying that on average urban households in the region are food insecure. The results further show that 78.5% of the respondents are food insecure while 34.2% are affected by severe food insecurity. The study therefore recommends that government and other stakeholders should promote the consumption of local foods by branding local foods. Also, creation of alternative livelihood activities in urban areas could increase household income and increase their access to food.

Keywords: Urbanization, Consumption pattern, Food security, Urban Households

1. Introduction

One of the basic necessities of life is food. However, due to poverty, population growth and constraints on food production, food availability and access continue to be a challenge, globally. Estimates by the Food and Agriculture Organization of the United Nations (2010), show that approximately one billion people worldwide are affected by chronic hunger of which a third lives in Sub-Saharan Africa.

Although the number of food insecure globally reduced marginally according to the IFAD/WFP/FAO (2011), the figure remained at 925 million, which is unacceptably high. This cut across people of varying socio-economic backgrounds; and of these 925 million people who go to bed hungry, a child dies every six seconds from hunger-related causes. With increases in natural disasters, conflict and bushfires, the future of food and its security in the world would be difficult to predict, and food insecurity largely would intensify.

Crush and Frayne (2010) further argue that by 2030, over half of Africa's population will reside in urban areas and this would produce an 'invisible crisis' of urban food security. According to the UN- HABITAT (2001), approximately 34% of the population currently lives in urban areas in sub-Saharan Africa. The UN-HABITAT (2008) further stresses that 95% of the world's urban population growth over the next four decades will occur in cities in developing countries. Despite this rapid population growth and urbanization, Africa has seen no radical transformations in industrialization and agricultural productivity (Clarke, 1993).

Ghana like most African countries is also faced with the phenomenon of rapid urbanization. Whereas only 9.4% of the total population lived in urban settlements in 1931, the proportion of the population living in urban areas increased to 50.9% in 2010 (Ghana Statistical Service, 2012). As shown in Figures 1 and 2, since 1950, virtually all the growth in the total population has occurred in urban areas as migration out of the rural areas has offset natural population growth in rural areas.

Also, within the period of 1950 to 2000, urban population increased by 1,116% whereas rural population increased by only 262% (Figure 1). The percentage share of rural population in national population is gradually declining as more and more people now live in urban areas (see Figure 2).

But the national trends hide striking regional trends in urbanization. Although Ashanti Region was the third most urbanized region in 1960 as shown in Table 1, as of 1970, the region had risen to be the second most urbanized in Ghana. Also, within the period of 1960 and 2000, the urban population of the region increased more than two folds reaching 53.2%, a sign of rapid urban population growth in the region. The region therefore offers a contemporary case study for understanding the impact of urbanization on urban consumption pattern and food security in developing countries including Ghana.

According to the proponents of the modernization and urbanization theory, urbanization is not bad in itself, since it is an integral element of a healthy social and economic development process (Jacob, 1984; Clarke, 1993). Bertinelli and Strobl (2007) further argue that urban areas may 'foster Marshallian externalities', serving as growth poles for subjacent areas.

However, the speed at which it is occurring in Ghana in recent decades, poses new challenges to food security and nutrition policies as urbanization is likely to eat up the productive land, pushing food production farther and

further away. This means that the urban low income working class and the poor would have to devote large but variable proportions of their total incomes to procurement of food (Tabatabai, 1993; Gebre, 1993), which to a large extent means that poverty is manifested as food insecurity.

Urbanization involves some form of westernization and modernization, leading to shifts in consumption patterns. Thus, changing urban lifestyle influence urban household food choices and taste with eventual changes in the pattern of food consumption. Also, as population grows food demand also grows. With increasing income and urbanization, demand for food not only increases, but also shifts in consumption patterns as well increases in food prices (Osei-Asare and Eghan, 2013). Even in the absence of qualitative changes in food consumption, the mere increase in the volume of food requirements from largely non-food-producing urban consumers' places increased pressure on local food production and distribution. The tendency for certain urban consumers to move away from local food has a potentially adverse effect on rural production and income.

It is therefore important to understand which foods are consumed by urban consumers, when as well as their food security status, as urban food consumption patterns and their evolution are not uniform world-wide. Also, understanding consumer motivations and knowing the relative importance of various food items in urban consumer diet are essential to the development and promotion of local food products. Besides helping to promote local food products, an understanding of the consumption pattern should help improve processing, marketing and distribution of urban consumers' foods.

2. METHODOLOGY

2.1 Theoretical Framework

The central theory underlining this study is the theory of urbanism. According to the theory, social interaction among heterogenous groups in the urban milieu tends to break down the rigidity of primary relationship among family members and kin. Primary relationship is therefore replaced with secondary relationship such as relationships among neighbors, religious groups, commuters, co-workers, shoppers and others in urban society (Wirth, 1938; Alsayyad, 2004). This secondary relationships lead to changes in life style of the individual including the pattern of consumption. Changing consumption pattern, spatial imbalance such as loss of agricultural lands, movement of the energetic youth from agriculture; pollution, unemployment and poverty associated with rapid urbanization also has fundamental effect on food security (Schellhuber *et al*, 2010).

The level of food security can be gauged empirically with the food security index (Foster- Greer – Thorbecke, 1984). This involves estimating the households' food entitlement or calorie availability relative to a minimum level of nutrition necessary to maintain a healthy and active lifestyle (calorie requirement). The food security index can be specified as:

$$F_i = \frac{A_i}{R_i} \quad (1)$$

Where:

F_i = food security index of the i^{th} urban household;

A_i = actual daily calorie availability of the i^{th} urban households; and

R_i = the recommended daily calorie requirement of the i^{th} urban household.

When $F_i \geq 1$; it implies that the household is food secure, but if $F_i < 1$ it implies that the household is food insecure (Thomson and Metz, 1998).

2.2 Model Estimation Method

The household food availability or entitlement was estimated by aggregating the kilograms of own production, market-purchased, and gift food items of five major staples (maize, rice, cassava, plantain and yam) consumed by households per week. The kilograms of each of the five staples the household consume per week were then converted into calorie equivalent using the milling ratios and calorie conversion scale shown in Table 2.

The composite value of the calorie content of these five major staples consumed by households was then computed and this gives the total household calorie availability per week. This was divided by seven to obtain household's daily calorie availability. To determine the household's daily calorie requirement, the International Food Policy Research Institute (IFPRI) (2000) standard of 2900Kcal daily per capita as used by Ghana Statistical Service (2008) was used.

The number of household members falling in the age range 0-5, 6-17 and above 18 was calculated and the number in each category multiplied by its corresponding adult equivalent conversion ratio in Table 3 to obtain the adult equivalent household size or adjusted household composition. The composite value of the adult equivalent household size was then multiplied by the recommended minimum calorie requirement to obtain the household's daily calorie requirement. The food security index as specified in equation (1) was used.

2.3 Data

The approach to the study was through the use of qualitative and quantitative methods. Qualitative methods

included extensive literature review of the subject matter, Key Informant (KI) interviews and content analysis of primary documents.

The quantitative method involved use of structured questionnaires. A multi-stage sampling technique was used in selecting respondents (household heads) for the study. The first stage involved the selection of districts and urban communities. Cluster and purposive sampling techniques were used in the initial stage to select the districts. This initial stage involved zoning Ashanti region into two clusters based on vegetation cover: moist-semi-deciduous forest zone and transitional guinea savanna zone. Three municipal and two district assemblies were then selected purposively, consisting of one municipal and one district assembly from the transitional guinea savanna zone and two municipal and one district assembly from the moist-semi-deciduous forest zone. The communities in the selected cluster were then stratified into urban and rural communities based on the Ghana Statistical Service, (2000) definition of rural (population of less than 5000) and urban communities (population of above 5000). Fourteen (14) urban communities were then randomly selected. The second stage involved selection of respondents from the urban communities. House numbers were used to randomly select households. In all 116 urban households were interviewed.

2.4 Characteristics of the Study Area

The Ashanti Region is the third largest of the ten administrative regions of Ghana, occupying a total land area of 24,389 square kilometers, representing 10.2 per cent of the total land area of Ghana. The region is located in the middle belt of Ghana, sharing boundaries with four of the ten political regions of Ghana, Brong-Ahafo Region in the north, Eastern Region in the east, Central Region in the south and Western Region in the south-west. The region lies between longitudes 0.15W and 2.25W, and latitudes 5.50N and 7.46N. The region is also made up of twenty seven (27) Metropolitan, Municipal and Districts Assemblies (MMDAs) with Kumasi as its capital.

The population density of the region is 148.1 persons per square kilometer, the third highest in the country after Greater Accra and Central Regions. It is the most populous and the second most rapidly growing region in the country. The region's population growth rate also increased from 2.9 per cent per annum in 1970 to 3.4 per cent per annum in 2000, which was the second highest in the country after Greater Accra Region (4.4 per cent) and also above the national average of 2.7 per cent per annum. More people reside in the urban areas (51.3 per cent) than the rural areas (48.7 per cent) and the region is currently the second most urbanized in the country after Greater Accra region (87.7 per cent). Rural dwellers mostly are farmers whereas those in urban areas are mainly into sales and manufacturing. Rural-urban migration is a predominant factor contributing to the rapid population growth of the region.

More than half of the region lies within the wet semi-equatorial (moist-semi-deciduous) forest zone. However, due to deforestation, much of the north-eastern part has been reduced to savanna zone. The region has a bimodal rainfall distribution with an average annual rainfall of 1270mm. The region also experiences the harmattan season between December and February. The region is predominantly Asantes (Ashanti's) with about 80 per cent of the population being Christians. The study was conducted in three municipal and two district assemblies out of the 27 MMDAs, namely Obuasi municipal, Bekwai municipal, and Adansi South district, all in the southern part of the region; and Mampong municipal and Ejura-Sekyer-Dumasi district, both of which are located in the northern guinea savanna zone of the region.

3. Results and Discussions

3.1 Socio-Economic Characteristics of Sampled Households

The gender distribution of households presented in Table 4 indicates that majority of the households sampled (82.4%) are headed by men. Most of the urban respondents have either completed junior high school or have no formal education. Vocational or technical education has fewer numbers of respondents, reflecting the overall importance attached to vocational education in the region. However, the educational trend of the respondents in the region is not different from that of the national trend with more people dropping off as one climbs the educational ladder. As indicated from the table, only 8.6% of the overall respondents have completed tertiary education.

Major expenditure items that make inroads into households' expenditure per annum are food (74.6%), education (5.8%), communication (5.8%), toiletries and hygienic articles (3.3%) and transportation (3.1%). Food and education are the most important items. However, food budget share constitute more than half of household total budget, implying rising urban food prices. The result violates the findings of Ghana Statistical Service (2008) that households in Ghana spend 40.4% of their income on food. Rather, the result confirms the findings of Tabatabai (1993) and Gebre (1993) that urban households devote 60-80 of their income on food.

3.2 Diet Diversity and Consumption Patterns

Across the region, there are wide disparities among communities with reference to what they eat and the proportion of each staple in their weekly food budget or meal. These differences emerge base on differences in cultural backgrounds, socio-economic status, lifestyles, and major staples produced in the community (Quaye,

2008). The pattern of consumption of the five major staples in the region is shown in Figure 3. From the figure, yam, maize and rice form the highest proportion of urban household's diet in the region, together constituting 64.3% of household's total consumption. Although it was expected that cassava and plantain will dominate urban household food consumption in the region since both food items are used in preparing fufu, the traditional meal of the Ashanti's. However, the results is contrary to the expectation, showing a gradual shift in the pattern of consumption in the region

3.3 Consumption Frequency

Consumption frequency defined as how many times per week the staples are consumed is shown in the table below. From the result, rice is the most frequently consumed staple in urban households, probably due to the busy urban lifestyle. The least frequently consumed food in urban households is yam, consumed 1.3 times per week on the average. Thus, urban households consume large quantities of yam per week infrequently. On the hand, rice is consumed frequently by urban households but in relatively low quantities.

3.4 Food Security Status of Urban Households

The food security status of sampled households is shown in Table 4.8. From the table, the average food security index (FSI) of urban households 0.66. This result suggests that urban households are on average deficient in calories (food insecure). The head count ratio (HCR) measures the incidence of food insecurity. From the study 78.5% of the respondents were food insecure. This means that on average 78.5% of urban households respectively are not able to meet the stipulated minimum calorie requirement.

The food insecurity gap (F) measures how much food insecure households are below the food poverty line. The result from the study revealed that on average 54% below the recommended calorie requirement. To put differently, this means that urban households in the region are only able to meet 46% of their calorie requirement respectively.

According to Sen. (1981), one of the drawbacks of the squared food insecurity gap is the difficulty in interpretation (F_{sq}). However, it gives more weight to the average income shortfall of the most food insecure households by measuring the squared proportional shortfall below the food poverty line. This depicts the severity of food insecurity in the area and the result indicates that 34. 2% of the respondents are affected by severe food insecurity.

The surplus index (ρ) for urban households is 0.37. This means that on average, food secure households in urban households 37% above the food poverty line.

4. Conclusion

Although urbanization presents market opportunities for Ghana's local economy (Osei-Asare and Eghan, 2013), the spate of urbanization in Ghana is rather parasitic (Clarke, 1993). Consumption pattern of urban households are gradually evolving. People now frequently consume rice probably due to the ease of preparation. Urban households also virtually spend three-quarters of their income on food, which is unacceptably high showing rising food prices. Urbanization also has deleterious effect on urban food security in the region with 78.5% of the urban households affected with food insecurity and 34.2% locked in severe food insecurity. It can be concluded that efforts to minimize shifting consumption pattern and urban food insecurity should be directed to minimizing rapid urbanization in the region.

The study therefore makes following recommendations. First, government and other stakeholders should create job opportunities and improve rural infrastructure to minimize rural-urban migration. Second, government should also subsidize some major production inputs such as fertilizers, insecticides and others to help reduce production cost and consequently reduce prices of food. This will also increase food availability and accessibility of urban households. Also, policy makers should create alternative livelihood opportunities for urban households to increase their income and also increase their access to food. Finally, efforts should be made by government through the Ministry of Education, Trade, Chieftaincy and Culture, and Tourism as well as other private organizations to promote the consumption of local traditional staples. Local foods should also be branded or packaged and labeled.

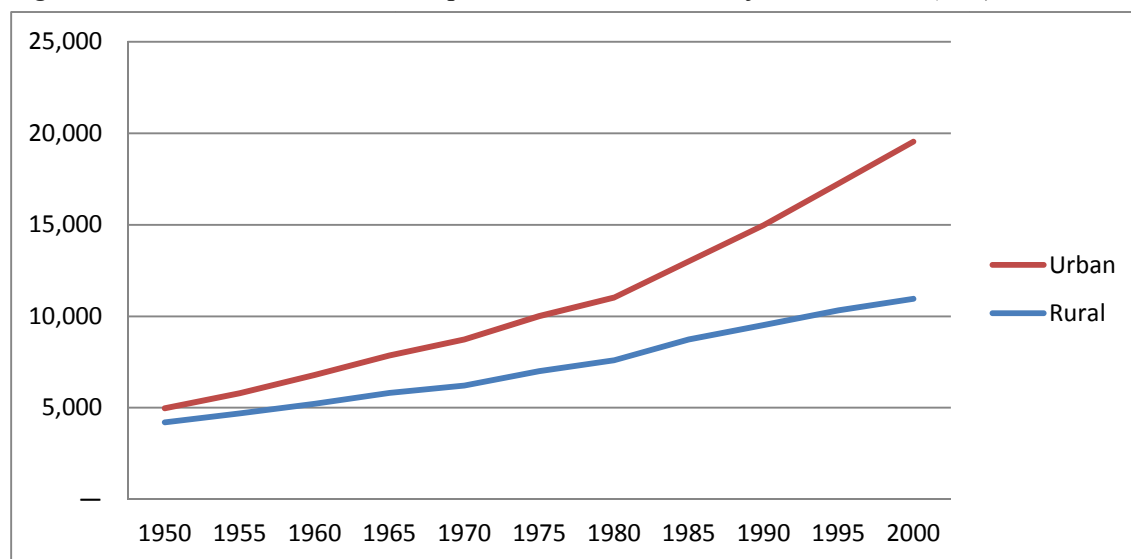
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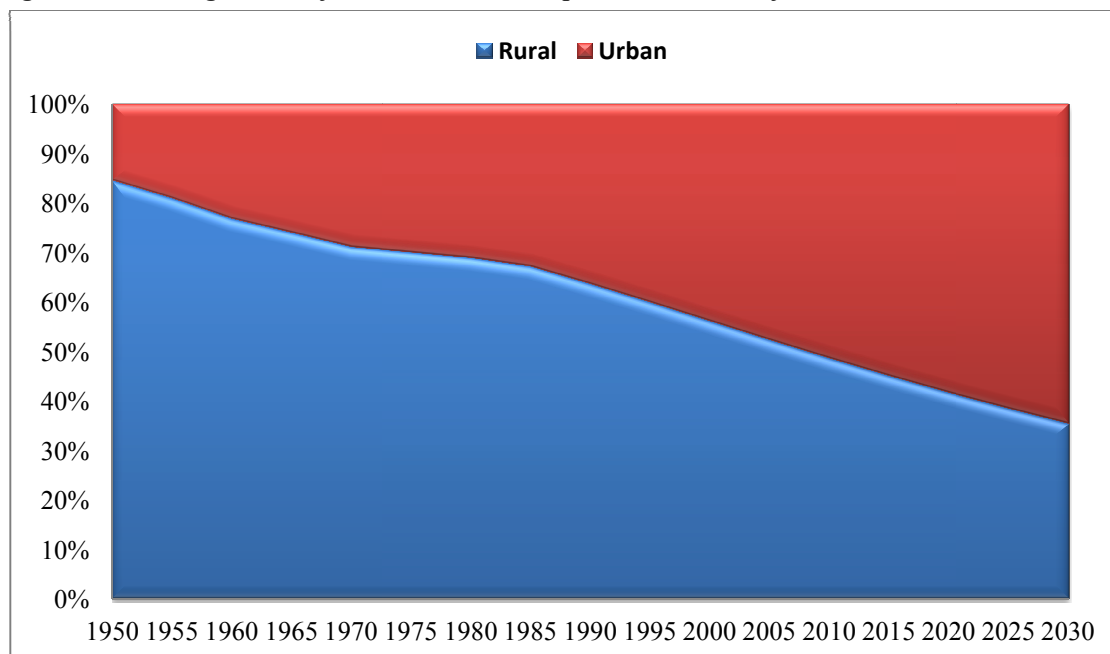
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Figure 1: Trend in Rural and Urban Population Growth in Ghana from 1950-2000 ('000)



Data Source: United Nations, Department of Economic and Social Affairs, Population Division. World Urbanization Prospects: The 2009 Revision. File 3&4

Figure 2: Percentage Share of Rural and Urban Population in Ghana from 1950 -2030



Data Source: United Nations, Department of Economic and Social Affairs, Population Division. World Urbanization Prospects: The 2009 Revision. File 3&4

Table 1: Urban Population as a Percentage of Total Population by Region

Regions	Percentage of urbanization			
	1960	1970	1984	2000
<i>National</i>	23.0	28.9	31.3	43.9
Western	24.7	27.6	22.8	34.9
Central	28.0	28.5	26.5	37.1
Greater Accra	78.8	85.3	83.5	87.4
Eastern	20.2	24.6	26.7	34.7
Volta	13.2	16.0	20.7	26.6
Ashanti	25.0	29.7	32.1	53.2
Brong-Ahafo	15.6	22.1	26.6	37.4
Northern	13.0	21.2	24.7	27.0
Upper West	5.0	6.7	10.8	17.5
Upper East	3.9	5.8	8.5	15.1

Source: 1984 Population Census of Ghana, Preliminary Report, p. 58; 2000 Population & Housing Census, Ghana Statistical Service, Dec. 2001, Table 1.

Table 2: Calorie Conversion Ratios for Major Staples

Food crop	Calories/Kg edible portion	Milling ratio
Maize ^a	3,630	0.85
Rice ^a	3,340	0.65
Cassava ^a	1,460	
Plantain ^b	1,350	
Yam ^a	1,050	

Source: ^a Okigbo (1991); ^b Latham (1969)

Table 3: Conversion Factor for Adult Equivalent Ratios

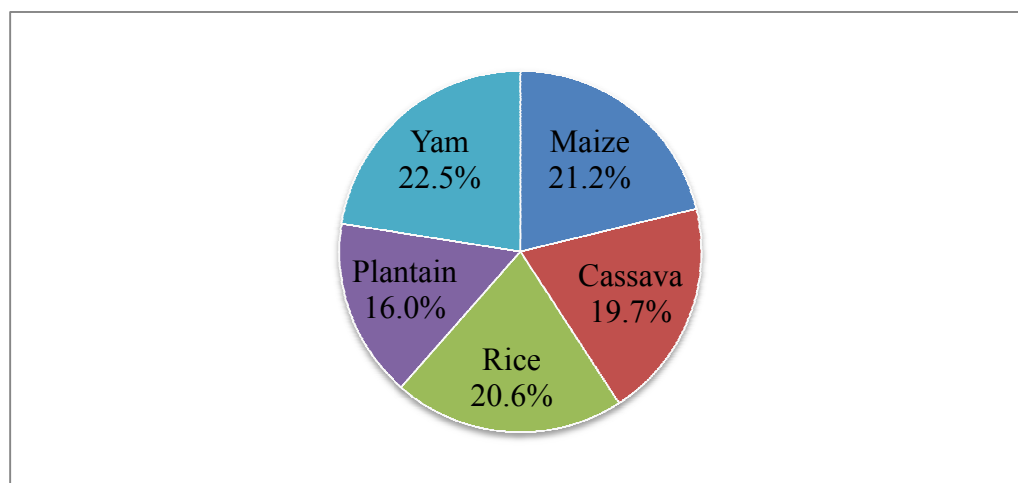
Age groups (years)	Average energy allowance per day	Equivalent scale
Children (< 6yrs)	1150	0.4
Children (6 -17yrs)	2250	0.7
Adult (≥ 18)	2900	1

Source: Ghana Statistical Service (2000)

Table 4: Socio-Economic Characteristics of Households

Variables	Percentages
<i>Gender</i>	
Female	25
Male	75
<i>Educational level</i>	
None	18.1
Primary	14.7
JHS/MSLC	40.5
Vocational/Technical	0.9
SHS/O/A Level	12.9
Tertiary	12.9
<i>Expenditure pattern</i>	
Food	74.6
Communication	5.8
Educational level	5.8
Transportation	3.1
Funerals and social events	2.2
Hygienic articles	3.3
Utility	2.1
Clothing	1.3
Health	0.7
Rent	1.1
Farming equipment	0.1
Total	100

Figure 3: Consumption Pattern of Respondents



Source: Computed from Field Survey, 2011.

Table 5: Consumption Frequency of Major Staples in Households.

Major staple	Mean frequency/ week	Std. dev.
Maize	2.8	1.84
Cassava	3.1	2.52
Rice	3.2	2.44
Plantain	1.7	2.11
Yam	1.3	1.74

Source: Computed from Field Survey, 2011.

Table 6: Food Security Status of Urban Households

Indices	Mean
Food security index	0.6555
Head count ratio ^a	78.45
Surplus index	0.3712
Food insecurity gap	-0.5412
Squared food insecurity gap	0.3415

NB: ^a is the total head count ratio. Source: Computed from Field Survey, 2011.

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