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## **Determinants of Fresh Vegetable, Fresh Fruit and Peanut Products Expenditure in Urban Households in Ghana**

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# Determinants of Fresh Vegetable, Fresh Fruit and Peanut Product Expenditure in Urban Households in Ghana

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## INTRODUCTION

Consumer health is closely associated with consumption of some specific foods including fresh vegetables, fruits, and peanut products. Dietary fiber and vitamins in fresh vegetables and fruits play a crucial role in the prevention of chronic and lifestyle diseases (Uusiku et al., 2010; Low et al., 2007), nuts may reduce the risk of heart disease (Mattes et al., 2008). While peanuts are a source of protein and have a desired fatty acid composition, they can be contaminated with aflatoxin, a potential carcinogen.

However, the consumption of fresh vegetables and fruits are far below the dietary recommendation level, especially in African countries (WHO, 2004; USDA, 2004). Although peanut products are of great importance to diets in sub-Sahara Africa, few papers study peanut product consumption in this area.

## OBJECTIVE

Identify the determinants of the expenditure on specific foods such as fresh vegetables, fresh fruits, and peanut products in Ghana's urban households.



Source: <http://www.hillcountry.org/vegetables-vegetables-graham.html>  
<http://www.gardenofeatin.com/2010/04/10/vegetable-fruit.html>  
<http://www.burtonstockphoto.com/wp-content/uploads/2010/04/peanuts.jpg>

## MOTIVATION

Food distributors/marketers in the agri-food system demand the profiles of consumers of these specific foods in order to facilitate marketing strategy choices.

Public sector decision-makers concern about food nutrition and disease prevention, and require valuable information on households with low fresh vegetables and fruits consumption, or households with high peanuts consumption (potentially exposed to the aflatoxin contamination).

## DATA AND METHOD



Source: <http://www.gha-cia.com/gha-cia-location-maps.html> and <https://www.cia.gov/library/publications/the-world-factbook/geography.html>

2011 survey data collected in three large cities (Accra, Tamale and Takoradi). Respondents were asked about their food shopping and preparation habits, food spending, and personal information including age, gender, occupation, household income, and household composition.

The respondent's average age is 39.2 years, and among them, 75.4 percent are married. In the month preceding the survey, the average income is 645.5 Ghanaian cedis (\$1 = 1.4965 Ghanaian Cedi on May 1st, 2011).

Considering cross-equation correlations, the combined Seeming Unrelated Regression and Tobit model (SUR-Tobit model) is employed in this study.

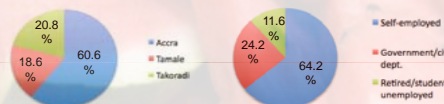


Figure 1: Location and employment status of the surveyed households

Table 1: Descriptive statistics summary

Food category	Percentage of zero expenditure	Mean of positive expenditure in cedis
Fresh vegetables	1.21%	12.9
Fresh fruits	7.53%	5.7
Peanut products	6.41%	3.5

## RESULTS

Table 2: Estimation results of specific food expenditures

Variable / Coef (std err.)	Vegetables	Fruits	Peanuts
Intercept	2.33363 (2.082)	-56252 (1.020)	-77722 (.591)
Demographic factors			
Married*	2.17212** (.880)	83668* (4.34)	-01857 (250)
Age, in years	-.12973*** (.037)	-.04880*** (.018)	-.01309 (.011)
Number of children (4-12 years old)	-.22747 (.353)	-.04830 (.173)	-.09698 (.103)
Number of adults (19-60 years old)	-.27454 (.223)	-.18355*** (.108)	-.18986 (.063)
Number of elders (>61 years old)	-.07614 (.762)	-.52798 (.384)	-.18986 (.210)
Socio-economic factors			
Income, in cedis	-.00411*** (.001)	-.00195*** (.000)	-.00037*** (.000)
Self-employed*	-.01152 (.1196)	-.01860 (.588)	-.26608 (.339)
Government/civil employed*	-.52179 (1.380)	-.13881 (.670)	-.05264 (.395)
Secondary or higher education level*	2.07131** (.854)	2.28092*** (.422)	.66904** (.243)
Location			
Tamale*	-1.34589** (.1042)	-.00195 (.512)	2.67663*** (.305)
Takoradi*	-2.14175** (.967)	-.17855 (.478)	-.98069*** (.286)

Note: \*, \*\* and \*\*\* denote significant at 10%, 5%, and 1% levels, respectively. Standard errors are in parentheses. \* Indicates a binary variable.

**Fresh vegetables.** Tamale and Takoradi households have significantly lower expenditure on fresh vegetables than Accra households. Married households spend more on fresh vegetables than households of respondents with other marital status, and it appears that married households tend to have healthier diets. It is not surprise to find that income has a positive effect on fresh vegetable expenditure, but the confirmation of such effect is very important. As income increases, households are able to afford balanced diets. Also, a secondary or higher education has a positive influence on fresh vegetable expenditure.

**Fresh fruits.** Married households have higher fresh fruit expenditure than the counterparts. Fresh fruit expenditure increases as age, since as age increases, consumers know more about the importance of balance diets. A large household has higher fresh fruit expenditure than a small household. Most importantly, income is found to be a significant factor of fruits expenditure. In addition, a household with respondents having a secondary or higher educational attainment level spends more on fresh fruits.

**Peanut products.** Households in Tamale and Takoradi have higher expenditure on peanuts products than Accra households. It is notable that this finding is opposite from the results of fresh vegetables. Also, household size is statistically determining the expenditure on peanut products. Moreover, a high-income household spends more on peanut products than household with less income. Finally, education is also found to have a positive influence in peanut product expenditure.

## CONCLUSIONS

The study provides a comprehensive picture of the expenditure on special foods such as fresh vegetables, fresh fruits, and peanut products in Ghana's urban households.

The results suggest food marketers need to focus their promotion of fresh vegetables and fruits on the high-income and well-educated married households in more developed areas, while promoting peanut products to educated households with large household size in the Northern Region.

The public sector concerned about food security and nutrition needs to provide more education/training opportunity, supply specific food aid (i.e., fresh vegetables and fruits) to low-income and low-educated households, and strive to assure that households with high peanut product expenditure face low risk of aflatoxin exposure from peanut products.

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