

CONSUMER ATTITUDES AND PREFERENCES FOR PEANUT PRODUCT ATTRIBUTES IN SUB-SAHARAN AFRICA: AN EVIDENCE FROM GHANA

Florkowski, W.J.,¹ Heboyen, V.,¹ Sarpong, D.,² Resurreccion, A.V.A.,³ and Chinnan, M.S.,³

¹Department of Agricultural & Applied Economics, University of Georgia, ²University of Ghana, Legon, and ³Department of Food Science and Technology, University of Georgia

INTRODUCTION

- Peanuts are grown primarily in the northern regions and Tamale is the center of peanut trade
- About 2/3 of households in northern region and one third of households in all Ghana eat peanuts and peanut products regularly
- Regional differences in intensity of eating peanuts and peanut products create marketing opportunities
- The popularity of roasted peanuts eaten as a snack or as a part of a meal (accompanying such items as roasted plantain or yam) and the ease of preparation of roasted peanuts in a household may differ across regions
- Understanding household consumption characteristics and factors impacting consumption choices is essential to local producers and marketers, but also policy makers

OBJECTIVES

- To investigate the attitudes of Ghanaian households towards roasted peanut consumption based on product characteristics
 - Causes behind household roasted peanut consumption
 - Household attitude towards roasted peanuts derived from product's individual attributes; and
 - Whether they are interested in increasing their consumption based on the perceived attributes of this product.

DATA

- Face-to-face interviews conducted in households in Tamale and Takoradi, Ghana
 - Feb – April 2011
 - 446 completed questionnaires
 - Survey support
 - Ghana's National Statistical Service
- Respondents are asked
 - Whether they like roasted peanuts.
 - If they would like to eat roasted peanuts more often than they currently do?
 - To reveal own attitudes toward attributes of roasted peanuts.
- The strong preference for roasted peanuts suggests opportunities for food manufacturing and distribution because roasted peanuts can be sold as natural, salted, spiced (e.g., chili), or flavored (e.g., honey roasted) product.

MODEL 1

- Logit model of roasted peanut consumption
- Dependent Variable:
 - Do you like roasted peanuts?
 - Yes/No
- Explanatory Variables
 - Demographics
 - Socio-economic
 - Product attributes

RESULTS OF THE ROASTED PEANUT CONSUMPTION MODEL

Variable	Coef.	Std. Err.
Location (Takoradi=1)	2.8830 ^a	1.7421
Income (per capita)	-0.0007	0.0190
Expenditures on vegetables	0.2012 ^a	0.1038
Expenditures on fruits	0.1246	0.3335
Age	0.3302	0.2129
Age ²	-0.0025	0.0022
Marital status (married=1)	3.6296	2.8306
Education (high school=1, no educ.=0)	1.5364	1.2449
Education (above high school=1, no educ.=0)	6.3085 ^c	1.8315
Employment (government=1, unemployed=0)	-7.0215 ^b	3.0739
Employment (self=1, unemployed=0)	-1.9014	1.4151
Taste is good (yes=1)	5.7064 ^c	0.9853
Inexpensive (yes=1)	0.8990	1.0854
Easy to prepare (yes=1)	-1.9115 ^b	0.8606
High fat content (yes=1)	1.5142 ^a	0.8861
Good for kids (yes=1)	1.2391 ^a	0.6665
Bad experience: rancid flavor (yes=1)	-2.1661 ^b	1.0716
Bad experience: looked bad (yes=1)	3.9584 ^b	1.9205
Constant	-12.5944 ^a	7.0967

^ap<0.1; ^bp<0.05; ^cp<0.01

MODEL 2

- Multinomial logit model of roasted peanut consumption
- Dependent Variable:
 - Would you like to eat roasted peanuts more often than you currently do?
 - Yes/No/Not sure
- Explanatory Variables
 - Demographics
 - Socio-economic
 - Product attributes

WOULD YOU LIKE TO EAT MORE?

Variable	1=Yes; 0=No (base outcome)		2=Not sure; 0=No (base outcome)	
	Coef.	Std. Err.	Coef.	Std. Err.
Location (Takoradi=1)	1.0949 ^b	0.4435	3.4274 ^c	1.2575
Income (per capita)	-0.0115	0.0117	0.0271	0.0183
Expenditures on vegetables	-0.1226 ^c	0.0243	-0.0495	0.0407
Expenditures on fruits	0.0289	0.0455	-2.0214 ^c	0.4027
Age	0.0007	0.0876	0.2865	0.3776
Age ²	0.0000	0.0010	-0.0044	0.0051
Marital status (married=1)	0.6524 ^a	0.4008	-0.8488	1.0911
Education (at least high school=1, no educ.=0)	-0.3803	0.4394	-0.3845	0.8827
Employment (government=1, unemployed=0)	-0.6453	0.6451	20.6225 ^b	8.8558
Employment (self=1, unemployed=0)	-0.0008	0.5820	20.5242 ^b	9.0368
Taste is good (yes=1)	0.3137	0.2507	-1.5701 ^a	0.8442
Inexpensive (yes=1)	-0.1610	0.1489	0.5975	0.5904
Easy to prepare (yes=1)	0.0386	0.1456	-0.4632 ^b	0.2248
High fat content (yes=1)	0.1898	0.1591	0.3765	0.2779
Good for kids (yes=1)	0.2268	0.1692	0.5934	0.3852
Children 13-18 years of age	0.1164	0.1208	0.0285	0.3616
Bad experience: rancid flavor (yes=1)	0.6305	0.3960	2.3842 ^c	0.9305
Bad experience: looked bad (yes=1)	-0.1516	0.3262	-0.3096	0.7569
Constant	-0.4367	2.1410	-22.0960	

^ap<0.1; ^bp<0.05; ^cp<0.01

MODEL 3

- Ordered probit model for Consumer Attitude toward Roasted Peanuts
- Dependent Variable:
 - How do you like roasted peanuts?
 - Dislike very much → ... Neutral → ... Like very much
- Explanatory Variables
 - Demographics
 - Socio-economic
 - Product attributes
- Strongly disagree → ... Neutral ... → Strongly agree
 - Taste
 - Inexpensive
 - Easy to prepare
 - Looking good
 - Source of fat
 - Good for kids
 - Good for health
 - Source of fiber
 - Source of protein

DATA SUMMARY-ATTITUDE TOWARDS ROASTED PEANUTS

Variable	Tamale		Takoradi		Total	
	Count	%	Count	%	Count	%
Dislike very much	0	0	0	0	0	0
Dislike	4	2	4	2	8	2
Neutral	7	3	6	3	13	3
Like	83	38	88	38	171	38
Like very much	120	56	132	57	252	57
Don't eat	0	0	0	0	0	0
No answer	2	1	0	0	2	0
TOTAL	216	1	230	1	446	1

CONSUMER ATTITUDE TOWARD ROASTED PEANUTS

Variable	Coef.	Std. Err.
Taste is good (yes=1)	0.5333***	0.1246
Inexpensive (yes=1)	-0.1775***	0.0633
Easy to prepare (yes=1)	0.0388	0.0625
High fat content (yes=1)	0.4310***	0.0994
Good for kids (yes=1)	0.0161	0.0626
Taste is good (yes=1)	-0.0742	0.0787
Are healthy	-0.0050	0.0999
Source of fiber	-0.0619	0.0571
Source of protein	0.1342*	0.0813
Income (per capita)	-0.0107**	0.0051
Age	-0.0125	0.0429
Age ²	0.0001	0.0005
Marital status (married=1)	-0.0249	0.1726
Education (high school=1, no education=0)	-0.0127	0.2028
Education (professional (univ.)=1, no educ.=0)	-0.1033	0.2541
Education (advanced=1, no educ.=0)	0.1568	0.2232
Employment (government=1, unemployed=0)	-0.0838	0.2723
Employment (self=1, unemployed=0)	0.1729	0.2214
Location (Takoradi=1)	0.0741	0.1620
Intercept 1	0.8167	1.1036
Intercept 2	1.2105	1.0979
Intercept 3	2.8679	1.0994

*p<0.1; **p<0.05; ***p<0.01

CONCLUSIONS AND IMPLICATIONS

- Results highlight that major determinants of roasted peanut consumption in Ghanaian households are its attributes and taste
 - Positive impact
 - Is tasty
 - Source of fat
 - Good for kids
 - Source of protein
 - Negative impact
 - Bad experience: rancid flavor
 - Income: implying roasted peanuts may be perceived as inferior goods in Ghana
- Regional differences are real; Takoradi residents would like to eat more peanuts as compared to Tamale residents; it may pay for growers and traders to ship additional volume of peanuts to Takoradi
- Additional analysis is needed to discern reasons why Takoradi residents were also more likely 'not to be sure' if they want to eat more peanuts; an inclusion of the data from the survey in Accra can shed additional light on the existence of regional differences
- Future analysis may explore possibilities for market segmentation within and across regions and address the safety of supplied peanuts and peanut products



PROJECT SUPPORTED BY
PEANUT COLLABORATIVE
RESEARCH SUPPORT PROGRAM



PAPER PRESENTED AT THE
FOOD DISTRIBUTION RESEARCH SOCIETY, ANNUAL CONFERENCE
PORTLAND, OREGON
OCTOBER 15-19, 2011