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Selling at the Farmgate or Market by Small-Holder Cassava Farmers in South-Eastern Nigeria

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Abstract

A multi-stage randomised sampling procedure was used to collect cross sectional data to test sample differences between means and frequencies of selected socio-economic statistics of 211 cassava sellers. The study showed that 166 farmers were off-farm sellers (Market) and 50 on-farm sellers (farm gate). For empirical analysis, the constructs of transaction costs related variables which were derived from observed behaviour was included in the comparative procedure. The study raises issues which, when attended to, might reduce transaction costs, by enhancing access to information, good roads and communication facilities.

Keywords: Farm Gate, Market and Cassava Farmers

Introduction

Promoting market-orientation among agricultural producers, more so the smallholder farmers, in developing countries is pivotal for development of effective agribusiness value chains that could supply adequate food. This will involve improving the production and marketing processes as well as capacity for income generation among resource-poor farmers (Otieno *et al.*, 2009).

One variable that can be used to assess the trend in Cassava commercialization at the rural farm level is the proportion of cassava output that farmers sell after harvest from their fields. Cassava roots can either be sold (in roots or processed form) or consumed at home in the South-South and South-Eastern Nigeria (Ezedinmma *et al.*, 2007).

In developing countries, smallholder farmers find it difficult to participate in markets because of a range of constraints and barriers reducing the incentives for participation, which may be reflected in hidden costs that make access to markets and productive assets difficult (Makhura *et al.*, 2001). Transaction costs, that is, observable and non-observable costs associated with exchange, are the embodiment of access barriers to market participation by resource poor smallholders (Holloway *et al.*, 2000 and Makhura, *et al.*, 2001)

Farmers' decision whether to sell at the farm-gate or to transport their produce to the market has received little attention in the literature. This is surprising from a policy perspective because the livelihood of many poor farmers the world over depends on the sale of agricultural commodities for export.

Methodology

Among those 360 households randomly selected from Anambra, Abia and Enugu States, this paper starts out with 216 cassava producing households. Out of the 216 cassava producing households, 166 and 50 reported selling cassava at the market (off-farm) and farm (on-farm) respectively this study dropped 149 households that are autarkic and buyers. Tests of sample difference were performed to establish any significant differences between means and frequencies (Moore, 2006), for important variables that explain level of market participation among on-farm and off-farm cassava farmers. To establish difference in means of variables analysed, the test statistic for means is given by:

$$Z = \frac{m_x}{\sigma_x} \quad (1)$$

Where m_x is the difference between the means of variables in the on-farm and off-farm sub-samples and σ_x is the joint standard deviation of both sub-samples.

For the percentage frequencies, the test statistic for comparisons will be calculated as:

$$Z = \frac{(p_r - p_u)}{\sqrt{fr + fu}} \quad (2)$$

Where;

$$fr = \frac{pq}{n_r} \quad \text{and} \quad fu = \frac{pq}{n_u}$$

Where p_r and p_u are percentages for variables in the on-farm and off-farm sub-samples respectively, p is the percentage frequency in the pooled sample, and $q=1-p$.

Results and Discussion

The data in table 1 show the sample differences between means and frequencies of selected socio-economic statistics for on-farm and off-farm cassava sellers. The Cassava marketing experience for off-farm sellers was relatively higher than their on-farm seller counterparts at 5.0% level of probability. Farmers who sell off-farm may bargain for better prices compared to their on-farm seller counterparts. The distance from the farm to the market varies significantly at 10.0% between the off-farm (6.19km) and on-farm (12.48km) cassava sellers. Since on-farm sellers have longer distances to the nearest points of sale, they sell their cassava on-farm. Oluwasola *et al.*, (2008) indicated that geographical distance imposes higher transport costs on rural farmers, thereby reducing their ability to sell in better but far-away markets.

The distance to the nearest town also varies significantly between the off-farm (4.12) and on-farm (9.84) cassava sellers. With longer distances to the nearest town, the on-farm sellers may find it difficult to travel and access market information as well as sales. The distance from the house to the farm was also highly significant at 1.0% level of probability. The on-farm seller distance was about 12.6km while off-farm was 4.5km. Long distances to selling points or markets predispose farmers to on-farm sales to reduce transaction costs. Cassava yield was also significant at 1.0% level of probability, implying that the on-farm yields were relatively higher (9.3t/ha) to off-farm yields (4.5t/ha). The on-farm seller quantity sold varies significantly at 10.0% with the on-farm sellers. As expected the on-farm sellers had more farm size and yield. There are no significant differences between on-farm and off-farm sellers in terms of average education,

frequency of extension contact, age, distance from the farm to the market, farming experience, household size, dependency ratio and quantity consumed.

Table 1. Means and Standard Deviations for some factors influencing Marketing among Off-farm and On-farm Cassava Sellers in South-Eastern Nigeria.

Variable	Off-Farm	On-farm	Pooled	T-Statistic
Frequency of Extension Contact	14.76	5.66	12.39	1.03
Education in years	8.63	4.96	8.77	
Age in years	9.48	9.50	9.48	0.004
	5.17	4.29	4.98	
Farming Experience in years	51.19	46.86	50.19	0.53
	7.77	8.15	8.05	
Cassava Marketing experience in Years	27.51	22.96	26.44	0.39
	11.81	9.89	11.53	
Distance from the farm to the market	20.95	7.13	13.37	2.31**
	10.44	4.41	5.55	
Distance to the nearest town (km)	6.19	12.48	6.34	2.03*
	2.34	5.61	3.10	
Distance from house to the market	4.12	9.84	6.22	2.60**
	1.51	3.07	2.20	
Distance from house to the farm	6.48	10.47	7.69	0.56
	2.08	4.24	2.75	1.41
Household Size	4.55	12.66	4.85	3.46***
	1.13	3.94	2.34	
Dependency ratio	5.62	5.51	5.60	0.07
	1.44	1.57	1.47	
Yield (kg/ha)	0.63	0.58	0.63	0.11
	0.49	0.15	0.46	
Quantity Sold (kg)	4,520.39	9,295.84	6,842.55	4.12***
	962.76	2,067.46	1,158.51	
Quantity Consumed (kg)	13,491.70	24,288.95	18,768.37	1.93*
	4,858.65	6,448.58	5,653.31	
	4,051.49	6,163.00	4,261.40	1.40
	1,326.54	2,287.01	1,507.24	

Survey Results 2010. *, ** and * = Significant at 10%, 5% and 1% respectively**

Memberships of cooperative societies, gender of household heads and have a personal means of transport for off-farm and on-farm sellers and is significantly different at 1.0% for on-farm sellers and off-farm sellers (table 2). Over 20% of farmers sampled are male household heads. However, most off-farm seller household heads were male; 52% compared to 24.09% on-farm. About 46 and 28.3% of the on-farm and off-farm sellers are members of cooperative societies respectively. This may indicate why the on-farm sellers got the highest (N102, 013.23) volume of credit among the households sampled. More (46.98%) of the off-farm sellers had personal means of transport to their on-farm

seller (16%) counterparts. There are no significant differences between on-farm and off-farm sellers in terms of average access to communication facilities, native of community, have trust in buyer and road conditions to the nearest town is good.

Table 2: Tests of Sample Differences between Frequencies of Selected Socio-Economic Statistics of On-farm and Off-farm Cassava Sellers.

Variable (%)	Off-Farm	On-farm	Pooled	T-Statistic
Membership of Cooperative/Social Organisation	28.31	46.00	32.40	2.90***
Access to Communication facilities	83.13	76.00	71.48	0.57
Male Respondents	24.09	52.00	30.55	4.59***
Native of Community	78.31	64.00	69.62	1.24
Have trust in buyer	93.10	91.66	92.68	0.14
Have personal means of transport	33.85	16.00	25.74	6.35***
Road conditions to the nearest town is good	46.98	48.00	46.29	0.013

Survey Results 2010. *, ** and * = Significant at 10%, 5% and 1% respectively**

Conclusion

While transactions costs are difficult to measure, understanding the impact they have on behavior is crucial as it can inform policy design aimed at reducing them. Policies that reduce transactions costs through improved transportation, promotion of organizations for marketing and improving rural infrastructure (e.g., access roads) would increase output by both increasing market participation and increasing production for market participants.

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