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# TRANSACTION COSTS AND AGRICULTURAL HOUSEHOLD SUPPLY RESPONSE OF SWEETPOTATO FARMERS IN KWARA STATE OF NIGERIA

by

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## Presentation outline

- Background to the Study
- Objectives of the study
- Literature review
- Sampling procedure
- The model
- Results and discussions
- Conclusion
- Lessons



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**“Itakun lati bo’le, Owo lojade”**

**“We plant vine, we reap Money”**



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## Background to the Study

- Transaction costs?
- Transaction costs vary by individual, leading to heterogeneous market behaviours. This paper looked into the relationship between transaction costs and household supply response among sweetpotato farmers in Kwara State.



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## Objectives of the study

The main objective of this study is to investigate the role of transaction costs in determining sweetpotato supply response of farmers in Kwara State.

### *Specifically the study :*

- analyze the socio-economic characteristics of sweetpotato farmers;
- identify variables associated with transaction costs;
- determine the magnitude and the direction to which the level of transaction costs influence changes in sweetpotato supply in the area; and
- estimate the elasticity of sweetpotato supply in the study area.



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## Literature review

- Most of previous research focuses on price and effect on agricultural supply response.
- Askari and Cummings (1977) looked into agricultural supply response to price.
- Ahmed and Rustagi (1987) looked at marketing and price incentives in African and Asian countries while Mamingi (1996 and 1997) measured the impact of prices and macroeconomic policies on agricultural supply
- Ajetomobi et al., (2006) carried out a supply analysis for food crops in Oyo state - own price factor.
- Abebe (2005) measures supply response with respect to own price and across price of cereals in Ethiopia.
- Murova et al., (2001) and Leaver (2003) measured responsiveness of agricultural output for Ukrainian and Zimbabwean farmers respectively to price but did not consider any market factors.
- Farayola (2006) estimated supply response of Nigeria agricultural export crops at both aggregate and individual levels; and found out that all crops considered are price responsive.
- There now exist gap in examining agricultural supply response that takes into account both the farmers' production and market participation decisions.



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## Population, Sampling Procedure and Sample Size

- Multi-stage random sampling technique was employed to select 120 sweetpotato farmers which account for 10% (20 villages) of sweetpotato household from in the study area.
- In the second stage, 50% from Oyun and 50% from Offa Local Government Areas were randomly selected.



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## The model

$$\ln Q = \beta_0 + \sum_{i=1}^9 \beta_i \ln X_i + \sum_{i=1}^9 \sum_{j=1}^9 \beta_{ij} \ln X_i \ln X_j$$

Linearized,

$$\text{Log } Q = b_0 + b_1 \text{Log } X_1 + b_2 \text{Log } X_2 + b_3 \text{Log } X_3 + b_4 \text{Log } X_4 + b_5 \text{Log } X_5 + b_6 \text{Log } X_6 + b_7 \text{Log } X_7 + b_8 \text{Log } X_8 + b_9 \text{Log } X_9 + b_{10}$$

Where:

- Q = Quantity of sweetpotato supplied in (kg); X<sub>1</sub> = Area of land cultivated to sweetpotato (Ha); X<sub>2</sub> = Market price for sweetpotato (N); X<sub>3</sub> = Harvest Cost (N); X<sub>4</sub> = Storage Cost (N); X<sub>5</sub> = Cost of Transport (N); X<sub>6</sub> = Assemblage Cost (N); X<sub>7</sub> = Negotiation/Bargaining Cost (N); X<sub>8</sub> = Agent Fee (N); and X<sub>9</sub> = Transaction Land rent (N).





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## Results and Discussions

### Socioeconomic characteristics

- Majority of household heads interviewed were males (81%)
- The large percentage (63%) that is the modal age (41-60 years).
- 94% of the respondents were married and reflected in the family size, because 73% of the households had between 6 to 15 house members.
- 82% of the farmers were educationally informed.
- 65% have farming as their main occupation; with 25 years average farming experience and 80% of them have been planting sweetpotato for the past 11 to 40 years.



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- Socioeconomic characteristics Cont'd

	Frequency	Percentages
<b>Sources of Land</b>		
Inherited	64	53
Leasehold	20	17
Freehold	08	06
Purchased	14	12
Other Source	14	12
<b>Farm Size</b>		
< 1	47	39
1 – 2	63	53
3 – 4	10	08
>4	00	00
<b>Source of Planting Materials</b>		
Own farm	65	54
Friends and relatives/own farm	47	39
Purchased	08	07



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- Socioeconomic characteristics Cont'd

	Frequency	Percentages
<b>Source of Capital</b>		
Personal saving	85	71
Friends and relatives	17	14
Cooperative society	18	15
<b>Source of Planting Materials</b>		
Own farm	65	54
Friends and relatives/own farm	47	39
Purchased	08	07
<b>Source of Capital</b>		
Personal saving	85	71
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## Distribution of Respondents Sweetpotato Transaction Costs

TC Variables	Minimum	Maximum	Mean	SD	Variance
Harvest Cost	720	51,480	5,143.94	334.746	11,120,529
Storage Cost	360	27,440	2,798.06	1,857.502	3,450,313
Cost of Transport	960	68,540	7,035.38	4,604.020	21,196,667
Assemblage Cost	120	8,580	929.20	573.199	328,557
Negotiation/Bar gaining Cost	230	6,220	761.66	434.677	188,944
Agents Fee	300	7,780	956.78	546.069	298,190
Transaction Land rent	300	10,360	1,242.38	729.800	532,607

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## Regression Result (Dependent Variable: Q; n = 120)

Independent Variable	Coefficient	t-value
Constant Term	3.753	2.766
Log (AREA)	1.051	16.526***
Log (PRICE)	0.717	2.071**
Log (HARVEST)	-0.482	1.039
Log (STORAGE)	0.120	0.826
Log (TRANSPORT)	0.146	0.402
Log (ASSEMBLAGE)	-0.079	-0.570
Log (NEGOTATION)	0.100	0.310
Log (AGENT)	1.340	3.664***
Log (RENT)	-0.927	-2.417**



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## Elasticity of Supply Response Sweetpotato Transaction Costs

Independent Variable	Elasticity of Supply Response (%)
Area of Land cultivated	10.5
Market Price	7.2
Harvest Cost	4.8
Storage Cost	1.2
Transportation Cost	1.5
Assemblage Cost Negotiation	0.8
Agents Fee	13.4
Transaction Land rent	9.3



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## Conclusion

- Sweetpotato supply responses to transaction costs in the study area were statistically significant.
- Sweetpotato supply responses positively to market price and area of land cultivated in the study area.
- Market factors as well as non-market factors significantly affect agricultural household supply response in the study area.
- Contrary to the a-priori expectation, marketing agents' role and services are important and positive in the study area.



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## Recommendations

- The effects of institutional deficiencies on the functioning of markets should be addressed.
- The quality of vine determine production.
- The quality of road infrastructure should be improved as this is expected to reduce transport costs significantly.
- Agricultural households should strengthen themselves financially by forming cooperative groups.





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THANKS FOR LISTENING



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17



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