16a. Productivity Of Smallholder Producers In Northern Ghana: Gender Comparison

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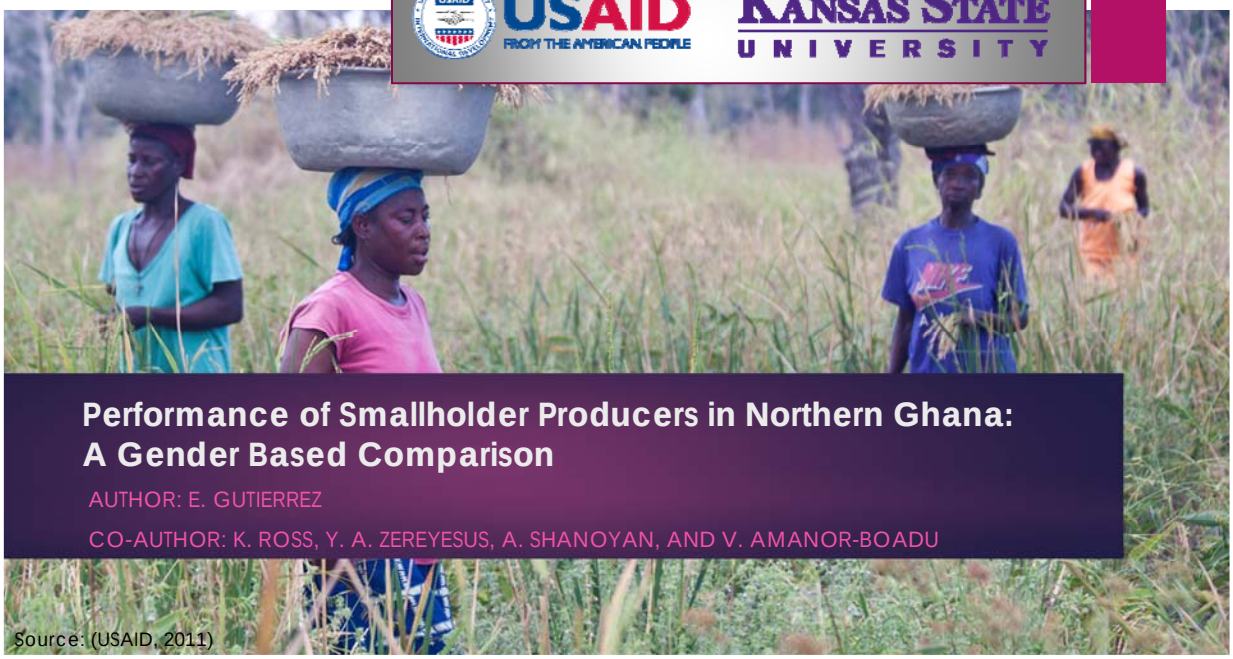
Abstract/Summary

Gender differentials are particularly true in the agriculture sector, which is concerning because of the central role that women play in this sector. Women play an important role in the agricultural sector in developing countries. In fact, women represent 43 percent of the agricultural labor force in developing countries and they perform activities in crop production and livestock production at subsistence and commercial levels. Even though women are involved in a variety of agricultural activities, they have limited access to resources and restricted decision-making power compared to their male counterparts. These limitations and restrictions are likely to have a significant effect on women's performance levels compared to men. This study examines and measures the performance differences between male and female producers in northern Ghana. Evidence from this study confirms the existence of gender differential in performance of smallholder's farmers in Northern Ghana. This study proves that there is a statistically significant gap of 51 percent between male and female performance and suggests that if males and females have equal access to resources, significant differences still exist between their performances.



Performance of Smallholder Producers in Northern Ghana: A Gender Based Comparison

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Source: (USAID, 2011)

OUTLINE

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Source: (USAID, 2011)

Agriculture: driver of economic development

- **29 percent** on average **of GDP** in countries where economy depend of agricultural activities.
- Source of **income of 86 percent** of rural people.
- **2.5 billion** rural inhabitants **involved agriculture** in their households

Source: World Bank, 2007

Source: (USAID, 2011)

Women in Agriculture

- **43 percent of agricultural labor force** in developing countries. (FAO, 2011)
- Food security of their household.
- Perform the vast majority of **unpaid care work**.
- Women are willing to **share a larger portion** of their incomes on the **health** and **nutrition of their children**. (Duflo,2000)

Northern Ghana

- Rural areas experience extreme poverty and food insecurity.
- Half of the land surface of Ghana
- Agriculture represents 25 percent of its Gross Domestic Product. (Wood, 2013)

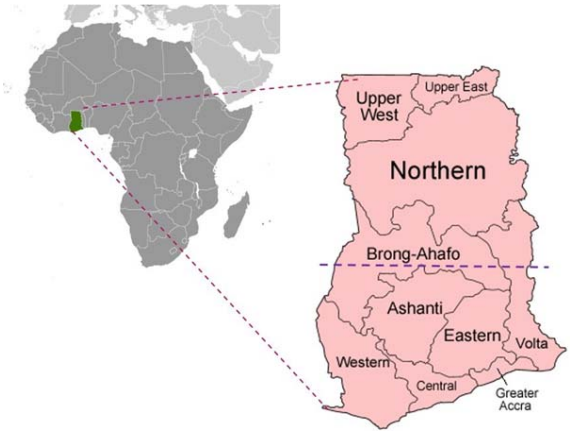

Figure 1. Map of the regions of Ghana
Source: Author adaptation of Golbez (2005)

Research Objectives

- Examines and measures the performance differences between male and female smallholder farmers of maize, rice, and soybean in northern Ghana.
- The specific objectives are to:
  - Identify factors that can influence the performance levels of smallholder farmers.
  - Estimate the gender-based performance differences

Data

- Dataset from USAID funded Agriculture Production Survey conducted in northern Ghana.
- Data collected from 527 smallholder farmers across 25 districts in northern Ghana.
- Agricultural-related activities performed by the farmer in regards to three main crops.



Method

The analysis uses Oaxaca-Blinder (Blinder 1973, Oaxaca 1973)(O-B) decomposition method to measure the differences in agricultural performance between male and female smallholder farmer decomposed in two components.

"Explained part" or endowment effect

"Unexplained part" or structural effect

In linear regression context, the mean outcome difference in performance for Group $\epsilon\{F, M\}$ can be written as:

$$\mathrm{R} = E(Y_m) - E(Y_f)$$

Variables-Summary Statistics

Table 1. Summary Statistics of variables used in the model

Independent Variables	Female		Male		Differences	
	Mean	Standard Deviation	Mean	Standard Deviation		
Gross Margin	463.22	619.17	939.62	1137.44	-476.40	***
Crops produced	1.78	.64	1.79	.69	-.01	
Child Dependency Ratio	1.93	2.09	1.31	8.70	.62	***
Log Labor	6.31	.94	6.26	.92	.05	
Log Land Area	.40	.93	1.07	.86	-.66	***
Agrochemical	.30	.43	.47	.45	-.17	***
Fertilizer	.68	.42	.54	.42	.14	**

***<0.01 , **<0.05

Variables - Summary Statistics

Table 1 (Cont')

Independent Variables	Female Mean	Male Mean	Differences	
Level of education	.08	.13	-.05	
Intercropping	.21	.15	.06	
Type of seed	.15	.13	.02	
Tractor service	.28	.55	-.26	***

***<0.01

Table 2. Performance Differentials

Variables	Pooled Model	Male's Model	Female's Model
Level of education	254.45* (148.59)	295.14* (159.67)	-224.64 (329.38)
Crops Produced	197.74** (88.15)	165.28* (95.28)	527.80** (194.00)
Intercropping	122.76 (140.94)	63.25 (154.76)	380.72 (276.85)
Child Dependency Ratio	.10 (.45)	.10 (.59)	-.27 (.48)
Log Labor	-41.08 (56.50)	-36.24 (62.25)	-236.70** (107.79)
Log Land Area	192.70*** (73.17)	231.47*** (82.37)	57.69 (113.20)
Type of seed	-150.68 (141.80)	-150.44 (155.60)	-515.36 (322.03)
Tractor service	132.78 (108.24)	96.71 (118.52)	527.06* (264.30)
Agrochemical	3.02*** (1.14)	3.62*** (1.24)	-4.75* (2.79)
Fertilizer	-.32 (1.16)	.-34 (1.26)	-.21 (2.29)
	N=506	N=454	N=52

***<0.01, **<0.05, *<0.1

Preliminary Analysis

POOLED	MALE	FEMALE
Positive effect (+) • **Level of education** • **Number of crops produced** • **Land area** • Tractor service • **Agrochemical use**	Positive effect (+) • **Level of education** • **Number of crops produced** • **Land area** • Tractor service • **Agrochemical use**	Positive effect (+) • **Number of crops produced** • Land area • **Tractor service**
Negative effect (-) • Labor	Negative effect (-) • Labor	Negative effect (-) • Level of education • **Labor** • **Agrochemical use**

Variables in bold are statistically significant

Aggregate decomposition

Table 3. Aggregate Oaxaca Decomposition

Mean Gender Differential			
Male Gross Margin	951.49***		
	(53.79)		
Female Gross Margin	468.94***		
	(85.95)		
Difference in Gross Margin	482.54***		
	(101.39)		
	50.71%		
Aggregate Decomposition	**Endowment Effect**	**Male Structural Advantage**	**Female Structural Disadvantage**
Total	228.72***	253.82**	1.14e-13
	(79.19)	(113.17)	(75.9819)
	47.40%	52.60%	

***<0.01, **<0.05

Table 5. Oaxaca-Blinder Detailed Decomposition

Variables	Endowment Effect	Male Structural Advantage	Female Structural Disadvantage
Level of education	10.69	4.84	36.85
	-12.55	-3.05	-28.30
Crops Produced	4.26	-58.12 *	-583.95
	-18.93	-35.23	-411.35
Intercropping	-7.85	-8.78	-54.57
	-12.26	-5.34	-59.56
Child Dependency Ratio	-6.63	0.06	72.89
	-21.07	-30.56	-92.96
Log Labor	1.15	30.31	1231.73
	-5.96	-121.49	-953.77
Log Land Area	130.40 **	41.79 *	54.19
	-62.18	-22.59	-46.18
Type of seed	2.60	0.03	56.11
	-8.32	-3.52	-47.20
Tractor service	35.11	-19.94	-113.73
	-27.15	-14.40	-89.48
Agrochemical	54.17 **	29.17 ***	235.47 **
	-26.89	-11.17	-105.04
Fertilizer	4.82	-0.96	-7.77
	-16.23	-13.82	-161.22

***<0.01, **<0.05, *<0.1

Source: (USAID, 2011)

Conclusions

- Existence of gender differences in performance levels.
- Statistically significant gap of 482.54 Ghanaian cedi between male and females.
- If women had the same resources as men, there would still be difference in gross margin.

THANK YOU!

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Source: (USAID, 2011)

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