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## **Socioeconomic and cultural drivers of women's formal work in rural Ghana**

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**Abstract:** We study socioeconomic indicators of female labour force participation in off-farm formal employment in a subsistence agriculture setting in northern Ghana, where a new commercial farm provides a positive demand shock for low-skilled labour. We use a set of quantitative and qualitative data examining determinants of female labour force participation, the social effects arising from it, and the influence on female decision-making power in their households. In line with other micro-studies, we find that education is not a driver of female labour participation in low-skilled jobs. Women from wealthier households and those with young children have a significantly lower probability of starting off-farm work. Polygamy and male dominance reduce women's labour force participation. Women who earn off-farm income are strengthened in their intra-household decision-making position and can spend more money on themselves.

**Key words:** female labour participation, Ghana, intra-household decision-making, off-farm work, polygamy

**JEL classification:** I31, J10, J20

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## 1 Introduction

About 60 per cent of the population of sub-Saharan Africa lives in rural areas and relies on subsistence farming (AGRA 2014; Diop 2016). Between 24 and 50 per cent of the agricultural labour is provided by women in Africa (Palacios-Lopez et al. 2017). Women are generally presumed to be deprived and lack access to basic amenities (NEPAD 2013). They are usually considered vulnerable due to cultural and traditional norms that limit women's access to economic resources and their ability to take up formal employment outside family farms and domestic work (Contreras and Plaza 2010; Giuliano 2019).

Active labour force participation and the earnings thereof are critical to women's empowerment and their role in decision-making in the household (Majlesi 2016). For women in rural farm households in developing countries, supplemental income from off-farm work serves as an essential buffer against shocks to regular household income from farming activities. However, socioeconomic constraints and cultural practices limit women's ability to actively work in the formal sector (Contreras and Plaza 2010; Giuliano 2019). Young women and girls are orientated to early marriage and to taking care of their children and homes (Ampofo and Boateng 2009).

Constraints on women's participation in the labour market differ across countries and time. However, they can be summarized into three main dimensions according to the macroeconomic literature: female education, marriage, and fertility (Bargain et al. 2012; Bloom et al. 2009; Gehringer and Klasen 2017; Ince 2010; Klasen 2019; Totouom et al. 2018). These factors drive female labour force participation (FLFP) differently across regions and over time. Micro-studies look into more details of country-specific determinants of changes in FLFP (Klasen et al. 2019).

We investigate a sample in northern Ghana, where farming is the primary source of household income. FLFP in the area is characterized as women doing off-farm or off-household work. This usually involves trading and vending activities or handcrafts (e.g. tailors or hairdressers). Due to the construction of a commercial farm, new employment opportunities became available to the local (female) population. The commercial farm sought workers from the local villages. Women turned out to be more reliable and hardworking than men and, therefore, 98 per cent of the casual workers were female. This led us to question what drives FLFP in remote rural areas, and what social and cultural characteristics determine whether a woman starts working as a casual worker for the new commercial farm? Do social norms influence women to work outside the household—in this instance on the commercial farm? An understanding of drivers and constraints will inform effective policy formulation to promote FLFP in developing countries, and specifically in remote rural areas like northern Ghana.

This study contributes to the existing micro-literature by looking at the impact of a positive labour demand shock (opening a commercial farm looking for casual workers) in a rural setting in a developing country where subsistence farming is the common means of income generation. Studying drivers of women's decisions to engage in off-farm and off-household activities in rural areas will further deepen our understanding of the dynamics of women's work, and support the formulation of policies to improve the lives of women and their households in remote areas of developing countries. In this study, we investigate the effect of various socioeconomic and cultural indicators on FLFP. Further, we study the role of polygamy in the decision to enter the labour force. Polygamous marriage is a common practice, and gender roles in the household and one's choices are shaped by both cultural norms and sex, as well as the woman's rank in the household (Agadjanian and Ezeh 2000). As a subsequent outcome of FLFP, we analyse the effect of women's

off-farm employment on intra-household decision-making concerning food expenditure, assets, crops, sales, landholding, school expenditure, and use of the household head's income.

In line with former literature, we do not find any statistically significant effect of education on FLFP. Polygamy has a negative effect on the woman's chances of doing off-farm work. The empirical analysis of the effect of FLFP on women's decision-making power shows that working on the commercial farm has limited effects on women's bargaining power. Results from focused group discussion revealed that, among other things, women spend their earnings on their own needs, such as clothes or schooling and apprenticeships for their children. They also save part of the salary for unexpected circumstances such as funerals. Women do not necessarily contribute to the household expenditure, and therefore also the decision-making is not influenced.

The remainder of the paper is organized as follows. Section 2 presents a review of the related literature. Sections 3 and 4 contains the methodology and findings of the study, respectively. Section 5 presents the descriptive statistics, while Section 6 reports the quantitative and qualitative results. Section 7 concludes.

## **2 Literature review**

The main determinants of FLFP found in macro-studies are female education, marriage, and fertility (Bargain et al. 2012; Bloom et al. 2009; Gehringer and Klasen 2017; Ince 2010; Klasen 2019; Totouom et al. 2018). However, there exist considerable differences in the constellation of these factors and the expected level and trend of FLFP between regions (Gaddis and Klasen 2014; Klasen and Pieters 2015).

Micro-studies usually apply reduced-form models using household characteristics like education, children, household income, age, and market circumstances as independent variables to explain FLFP rates. Studies find different reasons why the determinants of FLFP are diverging across regions.

The effect of education on FLFP can be positive, but mainly in lower middle-income countries when women are more educated and have a higher attachment to the labour market (Klasen and Pieters 2015; Klasen et al. 2019). Education has a low or even negative effect in poorer societies where women enter the labour market on a needs basis and in low-skilled jobs. Overall, poverty is a driver of higher FLFP. The effect of fertility on FLFP is generally rather negative, but larger in developed than in less developed countries. Further, micro-studies show that FLFP is counter-cyclical, thus increasing in times of crisis, and that certain jobs are labelled as women's work (e.g., health, education, and social services (see Klasen (2019) for an overview of the micro-literature)). Thus, understanding the role of family arrangement is vital in studying the dynamics of women's work.

Social norms and traditional social arrangements can also pose barriers to the labour market for women. In this line, we want to look at the role of polygamy (especially polygyny, where a man has multiple wives) as a determinant of FLFP because, so far, the evidence on the effect of polygamy is mixed (Agadjanian and Ezech 2000; Cudeville et al. 2017). In West Africa, polygyny is still widespread, reported to be practised by 30–50 per cent of households (Cudeville et al. 2017; SWAC/OECD 2019). Societies in which the level of polygyny is high are characterized by higher gender inequality and women's dependency on husbands (Agadjanian and Ezech 2000).

There are also a few studies on the effect of polygyny on FLFP in Africa (Agadjanian and Ezeh 2000; Cudeville et al. 2017; Jacoby 1995). Theoretically, women in polygamous households should be better off under polygamy because the demand for wives is higher and, thus, the price increases (Becker 1974, 1991). Where agriculture is the predominant activity and family and communal lands are allocated to men, as in parts of Ghana, women in polygamous marriages are more likely to work on family farms because it allows the husband to extract all the marital surplus and increase household productivity (Jacoby 1995; Kaunza-Nu-Dem et al. 2016; Yaro 2010). Agadjanian and Ezeh (2000) found that women in high-polygyny areas are less likely to work outside the home compared to those in low-polygyny areas of Ghana. In contrast, Cudeville et al. (2017) found that polygamy increases the hours a woman works because of sharing tasks among the women in the household. In Senegal, hours worked by women in polygamous households in urban areas are higher than those in rural areas.

We extend the above-described findings on drivers of FLFP and examine the effect of a positive labour demand shock on FLFP in a rural area where subsistence farming is predominant. As explaining factors, we rely on indicators used in former studies, including education, wealth, and fertility, but also traditional norms such as polygamy. The next section will shed light on the background of the study.

### **3 Background of the study**

A farm project started in 2015 in a remote rural area in northern Ghana, and established an irrigation scheme covering 400 ha. About 150 ha of the irrigated land belongs to a donor-funded project for small-scale farmers. The remaining 250 ha belongs to a commercial farm where some of the women in our sample are employed. Additionally, donor-funded farmer field schools on conservation agriculture were conducted in the area. For the impact evaluation of the donor-funded project, a sample comprising 30,000 individuals and 1,400 households in 49 communities was collected. The sampling procedure was based on two-stage clustered random sampling. In the first stage, clusters were at the village level, and in the second stage at the household level. Two rounds of data were collected, the first in February/March 2015 and the second in February/March 2018.

The study setting fits Boserup's (1970) description of a pre-industrial or pre-mechanized environment. All households live in a remote rural area in northern Ghana, and agriculture (usually as subsistence farming) is the primary source of livelihood. Ninety-seven per cent of households have and use hoes, while only 5 per cent have a plough or tractor. Men usually do the physically demanding work on the fields (e.g. ploughing), while women do the menial work (e.g. planting and weeding). The demand for labour stems from farming households supplied by own-family workers. A few jobs exist for commonly needed tasks concerning artisan or vending activities.

In 2015, the commercial farm, which uses irrigation and a mechanized agriculture process, was established on 250 ha of land. The commercial farm looked for casual workers in the three surrounding villages, which are also part of the impact evaluation. In this study, we want to examine the specific employment effect of the commercial farm component and not the donor-funded component of smallholders on irrigated fields and the farmer field schools.

The construction of the commercial farm caused a positive labour supply shock, suddenly creating an additional employment opportunity for the population. While the farm uses tractors for ploughing and other demanding tasks, it uses manual labour for activities such as planting, weeding, harvesting, and sorting. In the surrounding communities, these tasks can be performed

equally by men and women because agriculture is the primary economic activity of the area. The first choice of the commercial farm was to hire men. This was not successful as most of the men preferred to work on their own farms, so the commercial farm switched to hiring women instead. During data collection in 2018, we noticed that the majority, 98 per cent, of the casual workers at the company were women.

This fact motivated us to do an additional qualitative study on the female labour force of the commercial farm. Hence, we collected qualitative data with a small semi-structured questionnaire from 200 women who were regular workers for the commercial farm. The questionnaire covered questions on basic demographic characteristics, experience with the commercial farm, and a decision-making and a financial instrument to analyse the use of the earned money. Additionally, we conducted a voluntary focus group discussion with around 30 women. We connected this to the more extensive household survey, which covers several dimensions, including education, household composition, wealth, farming, and employment history.

We assume women self-selected into the workforce of the commercial farm. We further assume that this decision was not made by women alone but also depended on certain household factors—for example the education of the household head, household composition, wealth, polygamy, and other drivers of FLFP participation. We analyse the drivers of this decision using similar explanatory indicators as in the earlier studies discussed above. Finally, we also analyse the effect of employment on the role of women in intra-household decision-making.

The sample of the three villages bordering the commercial farm comprises 210 households with 499 women aged 15–70, which we consider to be the female working-age population.

## **4 Empirical strategy**

To estimate the effect of sociocultural individual and household characteristics on female employment we use two variables for women’s off-farm work. First, we measure the determinants of general female employment in off-farm work. We define off-farm work as doing some work outside the household or family’s farm (e.g., traders, vendors, tailors, artisans). Second, we measure the determinants of being employed on the commercial farm. Women who are employed on the commercial farm are considered as employed in off-farm work. We exclude students from the sample as they have not entered the labour force, although they are older than 15. About 7 per cent of the women in our sample are casual workers on the commercial farm. We support the quantitative empirical findings with qualitative data stemming from the focus group discussions and semi-structured questionnaires conducted with the female workforce of the commercial farm.

This paper adopts panel data techniques to analyse the effect of various household characteristics and social norms on FLFP generally and FLFP in the new employment options presented by the commercial farm. To deal with time-invariant unobserved heterogeneities, we use an individual fixed effects model. The focus of our study is to explore the role of sociocultural variables in women’s participation in off-farm activities.

### **4.1 Effects on FLFP**

We employ panel data analysis using a reduced-form linear probability model (LPM) (Equation 1). We explain the probability of doing off-farm work or being employed on the commercial farm by the education status, age, polygamy, and other individual and household control variables:

$$FLFP_{it} = \phi_i + \alpha_0 + \beta_1 Education_{it} + \beta_2 Polygamy_{it} + \beta_3 Education * Polygamy_{it} + \theta Age_{it} + \gamma'HH_{it} + \delta_{it} \quad (1)$$

*FLFP* is an indicator variable that takes the value of 1 if individual *i* is engaged in off-farm work or is employed by the commercial farm. We define off-farm work as working outside the household or family's farm. Women who are employed in the commercial farm are considered to be employed in off-farm work. The commercial farm employs these women for various activities—weeding, planting, harvesting, and sorting. We consider women 15–70 years old to be the working-age population of interest.  $\phi$  is the individual fixed effects, while  $\beta$ ,  $\theta$ , and  $\gamma$  are coefficients to be estimated.

As an indicator of education, we use the information on a person's ability to write in English. This indicator also captures the quality of education (Glewwe and Kremer 2006) because measuring only school enrolment does not give information about people's academic achievements. About 6 per cent of women indicate that they can write in English; the variable is coded 1 for writing and 0 otherwise. We measure polygamy, *Polygamy*, as a dummy variable that indicates whether the woman has or is a co-wife or not. *Age* is the age of the woman in years, and the *HH* vector contains the number of the woman's children who are under five years of age, women and men in the household, asset holding, and age and education status of the household head.  $\delta$  is the error term of the model. Household wealth is measured by an asset-ownership index that was constructed by using principal component analysis.

## 4.2 Effects on female empowerment

To understand the impact of employment on female empowerment, we estimate the following generic regression model for a set of six decision participation equations:

$$Decision_{ij} = \phi_i + \lambda_0 + \lambda_1 FLFP_i + \lambda_2 School_i + \lambda_3 Age_i + \lambda_4 Polygamy_i + \Pi'HH_i + \xi_i \quad (2)$$

*Decision<sub>j</sub>* is a vector of decision-making indicators,  $j = \{\text{food expenditure, crop choice, crop sales, asset holdings, schooling of children, and use of household head's earnings}\}$ ; *FLFP*, *School*, *Age*, and other household characteristics are defined as in Equation (1), and  $\xi$  is the error term of the model.  $\phi$  is the individual fixed effect;  $\lambda$  and  $\Pi$  are the coefficients to be estimated. The dependent variable measures whether a woman is taking part in the decision-making process on certain topics. We asked households which members are involved in the decision and listed these members.

## 5 Descriptive statistics

Table 1 contains descriptive statistics of the sub-sample of 210 households from the three communities bordering the commercial farm. In 2015 about 8.5 per cent of the women worked in the labour force. Formal education seems very low; on average, about 6 per cent of the women said they could write in English. While the coefficient is similar for reading, the value is about 15 per cent for women being ever enrolled in school. Only 5 per cent of the sample completed primary school (six years). The average age of women in our sample is 36 years old. About 55 per cent of women live in polygamous households. Participation rate in household decisions is lowest for the choice of crop to plant (about 40 per cent) and highest for schooling and food expenditure (about 54 per cent). The reading score is significantly higher for women who are working than for those who are not working.

Only 4 per cent of the women are the heads of their respective households, and 22 per cent of the household heads said they have ever been to school. The average household head was about 46 years old in the first round in 2015.

Table 1: Descriptive statistics 2015

	All women		Not working (mean)	Working (mean)	Mean difference
	Mean	SD			
FLFP	0.085	0.279			
Write in English	0.060	0.237	0.044	0.235	-0.192*
Polygamy	0.557	0.497	0.565	0.471	0.095
Age of the women	35.72	12.63	35.95	33.21	2.745
Marital status	0.831	0.375	0.829	0.853	-0.024
Number of children under five years	0.575	0.734	0.576	0.559	0.017
Woman takes part in decisions on:					
Food expenditure	0.542	0.499	0.541	0.559	-0.019
Land use	0.418	0.494	0.432	0.265	0.167*
Crop choice	0.396	0.490	0.402	0.324	0.079
Crop sale	0.473	0.500	0.467	0.529	-0.062
Asset purchase	0.445	0.498	0.457	0.324	0.133
Schooling	0.542	0.499	0.535	0.618	-0.082
Use of head's income	0.480	0.500	0.486	0.412	0.075
No. men in household	3.614	2.268	3.663	3.088	0.575
No. women in household	4.485	2.562	4.552	3.765	0.787
Female head	0.040	0.196	0.041	0.029	0.011
Household head ever school	0.219	0.414	0.209	0.324	-0.11
Age of household head	46.81	13.64	46.93	45.44	1.491
Household asset index	0.272	0.095	0.273	0.270	0.003
Observations	402	402	368	34	402

Note:  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' calculations based on survey data.

## 6 Results

One of the most exciting findings of the study is also its motivation: farm managers reported in 2018 that casual workers working on the farm are 98 per cent female. This was unexpected. After the farm was running for a while, it turned out that women are much more reliable and willing to work on a permanent basis for the company than are men. In total, more than 500 casual workers were registered with the commercial farm, but men showed up for work less steadily because they are also responsible for farming their own fields. In the last farming season (2017), the commercial farm employed approximately 200 casual workers daily, of which 98 per cent were women.

Workers had an eight-hour workday and received GHC10 per day, slightly higher than the national daily minimum wage (GHC8 in 2017). Attendance—checking in and out of workers—was recorded daily. In all cases, payment was made to an account at the local community bank. This was easier and more secure for the commercial farm than dealing with cash amounts each day. The farm managers also arranged public transport for the workers to achieve regular working hours. Based on these observations, we designed the study on FLFP in the area and connected it to the impact on the empowerment of women in the intra-household decision-making process.



There was a huge increase in FLFP from 2015 to 2018. In 2015, the FLFP rate was 8.5 per cent, while in 2018 it was 23 per cent. Of this increase, 43 per cent (10 percentage points) can be attributed to the construction of the commercial farm. Most of the women who signed up to work on the farm had not been working in 2015. The commercial farm created an attractive opportunity for regular extra income for the population.

## 6.1 Determinants of employment

First, we analyse determinants of FLFP and the female labour force at the commercial farm (FLFCF) as in Equation (1), then we turn to female empowerment and intra-household decision-making as in Equation (2). Table 2 explores the relationships between age and education of the woman, polygamy and legal status, asset stock of the household, age and sex composition of the household, and FLFP. The table has two groups of results: columns (1) and (2) present results for general FLFP and columns (3) and (4) for FLFCF.

Women's off-farm work in the three communities largely centres on agriculture and petty trading. We do not find any statistically significant relationship between the education measure of writing in English and FLFP in the four models. Herewith we set a higher standard of education because we also include the quality of education (Glewwe and Kremer 2006). This result runs contrary to an a-priori theoretical expectation that education is a significant determinant of FLFP. However, these results are in line with former literature that shows that in low-education environments education is not necessarily a driver of FLFP (Klasen 2019). This result is confirmed from a discussion with the farm managers, who reported that most of the female casual workers had to thumbprint their work contract because they could not sign as they lack writing ability. As a robustness check we re-estimated Equation (1) with enrolment rate, reading rate, and primary education completion rate in separate models (results not shown, but they are similar).

Concerning the wealth position of the household, we can also support former findings that women of poorer households tend to enter the labour market (Klasen 2019; Klasen and Pieters 2015). The coefficient of the asset index is negative and significant in all regressions, showing that women in wealthier households rather have a lower probability of joining the labour force. This finding is supported by the answers of the women in the qualitative study. Ninety per cent of women said they started working for the commercial farm because they needed extra income. The other 10 per cent indicate that they had a bad harvest, no land, or were unemployed before.

With regard to household composition and fertility, we find that, as expected, young children decrease the probability of working because women have to take care of their children. For FLFCF, the analysis shows that living with more men in the household (i.e. higher male dominance) is associated with lower participation, while living with more women tends to increase the probability of employment.

Within the context of the household composition, we look at the traditional system of polygyny and its impact on off-family work. More than 50 per cent of women live in polygamous households. As expected, women who live in polygamous households tend to participate less in employment. The average woman in the area living in a polygamous household has a 10–13 per cent lower chance of engaging in off-farm work. Theoretical models would assume that women work on the family farm because more cheap labour can increase household productivity. The empirical literature finds that women in polygamous marriages are less empowered (Doepke et al. 2012; Tertilt 2006), but there is no clear effect for FLFP. Hence, we conclude that the lower rate of employment among these women may be due to the lack of empowerment. This gives cause to examine whether education (often considered as a good source of empowerment) mitigates the effect of polygamy on labour force participation. As described earlier, the hypothesis is that the

negative effect of polygamy should be smaller for women who have been to school. Columns (2) and (4) include the interaction of the dummies of writing ability and polygamy as additional explanatory variables. However, we do not estimate a significant effect of the interaction term on labour force participation.

Table 2: Fixed effects LPM: determinants of women's work

	(1)	(2)	(3)	(4)
	FLFP	FLFP	FLFCF	FLFCF
Age of the women	0.00 (0.01)	0.00 (0.01)	0.01* (0.01)	0.01* (0.01)
Married	-0.02 (0.13)	-0.02 (0.13)	0.11 (0.09)	0.11 (0.09)
Polygamy	-0.13* (0.07)	-0.13* (0.07)	-0.10** (0.05)	-0.10** (0.05)
Number of children under five years old	-0.08** (0.04)	-0.08** (0.04)	-0.08*** (0.03)	-0.08*** (0.03)
No. men in household	0.00 (0.02)	0.00 (0.02)	-0.02** (0.01)	-0.02** (0.01)
No. women in household	0.02 (0.02)	0.02 (0.02)	0.03*** (0.01)	0.03*** (0.01)
Female head	-0.07 (0.13)	-0.07 (0.13)	0.12 (0.08)	0.11 (0.08)
Household head ever school	0.05 (0.06)	0.05 (0.06)	0.04 (0.05)	0.03 (0.05)
Age of household head	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Household asset index	-0.55*** (0.20)	-0.55*** (0.20)	-0.31* (0.16)	-0.31* (0.16)
Write in English	-0.01 (0.04)	-0.01 (0.07)	-0.02 (0.03)	-0.01 (0.06)
Write in English # polygamy		0.01 (0.09)		-0.03 (0.07)
Constant	-0.02 (0.29)	-0.02 (0.29)	-0.46** (0.21)	-0.46** (0.21)
<i>N</i>	774	774	774	774
<i>R</i> <sup>2</sup>	0.08	0.08	0.14	0.14

Note: robust standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Dummy control variables: ever school (no school = 0); read in English (no = 0); write in English (no = 0); Household head ever school (no = 0).

Source: authors' calculations based on survey data.

## 6.2 Effect of employment on decision-making

Employed women make earnings independent of the household farm. Intra-household bargaining literature predicts higher bargaining power for employed women (Antman 2014). This is supposed to enable women to actively take part in household decision-making. The dependent variables measure whether a woman is taking part in the decision-making process regarding a certain topic. We asked households who is involved in the decision-making and whether the decision is made together or individually by the household head.

Table 3 examines the relationship between female FLFP and household decision-making. We present results for seven different household decision items: food expenditure, land purchases and sales, which crops to plant, crop sales, asset acquisition and disposal, schooling of children, and

expenses of the household head. We find statistically significant evidence that women who work outside the household take part in decisions relating to household expenditure in their households. The probability of taking part in household food expenditure decisions is about 24 per cent higher for women who are employed outside the household farm. About 97 per cent of women interviewed report that their role in the household in making general and financial decisions changed because they now earn their own salary. This shows that increasing women's financial power also increases their decision-making power. Employed women also take part in household decisions on asset acquisition and disposal.

The results further show that women in polygamous households tend to have a lower participation rate in certain kinds of household decisions. Women in polygamous households have a 17 per cent lower probability of deciding on matters of land purchase and sale. They are also less likely to be involved in deciding on how the income of the household head is spent (21 per cent lower probability).

The results show a positive association between the age of the woman and her involvement in the household's decisions. For instance, an additional year of age is associated with about 2 percentage points greater likelihood that women will solely or partly make decisions on land, crop sales, and the schooling of children in the household. Age can also be seen as a proxy for experience or a factor of seniority. In traditional societies, often elderly household members have more power and this seems also to hold for women.

The presence of male dominance in the area is confirmed by the diminishing decision-making powers as the number of men in the household increases. An additional male household member significantly decreases women's chances of taking part in decisions on food expenditure, crops, and schooling. However, participation in land and asset decisions has a positive and significant association with the number of women in the household.

The results are insignificant if we replace FLFP with FLFCF (see Table A1). Working at the commercial farm does not change the role of women in household decision-making, while FLFP in other jobs does, at least for certain topics. During our focus group discussion with the women who worked on the commercial farm we sought to find out how they spend their earnings. The response of this group may not be representative of the expenditure pattern of the women in the area since this is a selected sample of workers from the commercial farm. Aside from helping to pay school-related expenses, some of the women spend on items such as own clothing or on funerals. Fifty-six per cent of women reported that they used the money to buy clothes, 40 per cent reported that they bought agricultural inputs (fertilizer, herbicides, or pesticides), and 29 per cent paid school fees for their children.

Some of the women also joined a credit union in their community to provide self-support in times of need. After the women joined the commercial farm, they formed a credit union where they contribute part of their monthly salary. Usually, the funds from the contribution are used to support members in cases of emergencies, funerals, or ceremonies.

Additionally, the women have owned bank accounts since they joined the commercial farm. The focus group confirmed this during our discussion. An unintended effect of this is that they almost unanimously agreed that they never withdraw all of their salaries from their accounts. Seventy-five per cent of women were not able to save any of their earnings, but 25 per cent report that they accumulated savings. These savings are mainly kept to pay for possible household shocks (agricultural or social) or to a lesser extent to buy clothes, pay school fees, or for funerals and ceremonies. First, these items are not analysed here because they are more personal decisions and we are interested in household decisions. Second, this observational finding may explain why

labour force participation is less important than expected in our decision models. If women have the chance to earn their own money and keep it in their own bank account, they can also spend the money on desired things, not necessarily for the whole household but also for themselves. Thus, working has encouraged saving among women and given them authority over their own income.

This notwithstanding, some of the women explained during the focus group that they could now more actively participate in cropping and farming decisions in the household. They attributed this to the experience they have gained from working with the commercial farm, which has introduced them to some basic improved farming techniques. The women are therefore equipped with some skills of modern farming, which they transfer to their own farms, and which the men maybe do not have.

Table 3: Effect of employment on female empowerment

	(1) Food expenditure	(2) Land (rent, purchase)	(3) Crops to plant	(4) Sale of crops	(5) Asset	(6) School expenditure	(7) Use of head's income
FLFP	0.24** (0.10)	0.08 (0.11)	0.08 (0.12)	0.09 (0.11)	0.20* (0.12)	0.10 (0.11)	0.11 (0.11)
Polygamy	-0.03 (0.10)	-0.20* (0.11)	-0.09 (0.11)	-0.12 (0.10)	-0.16 (0.12)	-0.01 (0.10)	-0.21** (0.10)
FLFP # polygamy	0.02 (0.15)	0.05 (0.17)	-0.06 (0.18)	0.05 (0.16)	-0.22 (0.16)	0.10 (0.14)	-0.02 (0.15)
Age of the women	0.01* (0.01)	0.02** (0.01)	0.02** (0.01)	0.01 (0.01)	0.01 (0.01)	0.02** (0.01)	0.00 (0.01)
Marital status	-0.01 (0.13)	0.17 (0.12)	-0.04 (0.12)	-0.04 (0.12)	0.09 (0.15)	0.09 (0.14)	0.14 (0.11)
Write in English	-0.27 (0.22)	-0.24 (0.21)	-0.53*** (0.18)	-0.52*** (0.18)	-0.26 (0.20)	-0.10 (0.22)	-0.36** (0.15)
No. children under five years old	0.01 (0.04)	-0.01 (0.05)	0.07 (0.05)	0.06 (0.05)	-0.02 (0.06)	0.04 (0.05)	-0.02 (0.04)
No. men in household	-0.06** (0.03)	-0.02 (0.03)	-0.06** (0.03)	-0.07** (0.03)	-0.02 (0.03)	-0.06** (0.02)	-0.03 (0.02)
No. women in household	0.00 (0.02)	0.04* (0.03)	0.02 (0.02)	0.01 (0.02)	0.05** (0.03)	-0.03 (0.02)	0.04 (0.02)
Female head	0.15 (0.14)	0.29* (0.16)	0.28* (0.16)	0.21 (0.16)	0.29* (0.15)	-0.06 (0.18)	0.25* (0.15)
Household head ever school	-0.15 (0.10)	-0.19* (0.10)	-0.20* (0.10)	-0.15* (0.09)	-0.14 (0.11)	-0.26*** (0.08)	-0.12 (0.10)
Age of household head	-0.01*** (0.00)	-0.01** (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.01*** (0.00)	-0.01** (0.00)
Household asset index	0.15 (0.33)	0.24 (0.37)	0.68** (0.35)	0.87** (0.35)	0.43 (0.38)	-0.08 (0.31)	0.50 (0.33)
Constant	0.62* (0.32)	-0.04 (0.35)	-0.20 (0.35)	0.19 (0.35)	0.06 (0.39)	0.56* (0.33)	0.60 (0.37)
<i>N</i>	774	774	774	774	774	774	774
<i>R</i> <sup>2</sup>	0.10	0.07	0.09	0.10	0.05	0.10	0.08

Note: standard errors in parentheses are clustered at the household. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' calculations based on survey data.

## 7 Conclusion

Women in rural areas in developing countries often live in circumstances that make them vulnerable compared to men. The lack of employment opportunities, low education, social norms, and traditions often limit the ability of women to meaningfully engage in off-farm work. In this paper, we study a positive labour demand shock by the construction of a commercial farm and other sociocultural drivers on female employment such as education, polygamy, wealth, and family composition. Further, the study investigates the effect of female employment on household decision-making. We employ both quantitative panel data and qualitative primary data analysis from a rural area in Ghana.

Due to the construction of the commercial farm, there was a large increase in FLFP between 2015 and 2018. The female labour force increased from 8 to 22 per cent, a 10 percentage point increase resulting from the new employment opportunity. The analysis further shows that FLFP is driven by the expected factors of fertility and wealth. Women with more children under the age of five years and women from wealthier households have a lower probability to work. Education does not play a significant role. This result has to be brought into a wider perspective as the earlier literature shows. In a low-education setting, as is the case in this study, women usually work in low-skilled jobs on a needs basis or as family workers on subsistence farms. Women living in polygamous marriages have a lower probability to participate in the labour force because they are working on family farms or in the household.

On the effect of employment on female empowerment, we see that women participating in the female labour force are more likely to be involved in various decisions in the household. From the focus group discussion and the semi-structured interviews, we observed that all women working for the commercial farm opened a bank account at the newly established community bank. Women earned, on average, GH¢400 during the months November 2017 to April 2018. About 97 per cent of the female casual workers report that their role in the household in making general and financial decisions has changed because they now earn their own salary. This shows that increasing women's financial power also increases their decision-making power. This is confirmed by the quantitative results, which show that working women participate in decisions on food expenditure and assets. We do not see an effect for the women working on the commercial farm.

We draw two conclusions from the study: (1) creation of casual worker jobs in rural areas could serve as an effective means of promoting FLFP and empowerment; and (2) polygamy and higher male dominance in the household decrease labour force participation and empowerment. We therefore recommend that governments in developing countries intensify their effort at providing employment opportunities for girls and women, especially in rural areas. Also, access to financial infrastructure, such as bank accounts, empowers women. Although education is not a significant determinant of FLFP in our case, we see that the writing and reading rate is higher among working women. Improving access and quality of education will advance women's job opportunities and responsibilities in the household decision-making process.

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## Appendix

Table A1: Effect of employment in the commercial farm on female empowerment

	(1) Food expenditure	(2) Land (rent, purchase)	(3) Crop	(4) Sale of crops	(5) Asset	(6) School expenditure	(7) Use of head's income
FLFCF	-0.03 (0.12)	0.01 (0.13)	0.00 (0.15)	-0.12 (0.13)	0.04 (0.13)	-0.10 (0.12)	0.07 (0.11)
Polygamy	-0.01 (0.10)	-0.14 (0.10)	-0.14 (0.11)	-0.18* (0.10)	-0.15 (0.12)	0.03 (0.10)	-0.20** (0.10)
FLFCF # polygamy	0.30* (0.18)	0.21 (0.22)	0.07 (0.21)	0.23 (0.15)	0.27 (0.20)	0.49*** (0.18)	0.25 (0.21)
Age of the women	0.01 (0.01)	0.01 (0.01)	0.03*** (0.01)	0.02* (0.01)	0.00 (0.01)	0.02* (0.01)	0.00 (0.01)
Marital status	-0.29 (0.22)	-0.28 (0.20)	-0.5*** (0.18)	-0.50*** (0.17)	-0.27 (0.20)	-0.12 (0.22)	-0.37** (0.14)
Write in English	-0.05* (0.02)	-0.03 (0.03)	0.04 (0.03)	0.03 (0.02)	-0.02 (0.03)	-0.04 (0.02)	0.01 (0.03)
No. children under five years old	-0.06** (0.03)	-0.02 (0.03)	-0.05* (0.03)	-0.06** (0.03)	-0.02 (0.03)	-0.06** (0.03)	-0.03 (0.02)
No. men in household	-0.01 (0.02)	0.03 (0.03)	0.03 (0.02)	0.02 (0.02)	0.04 (0.03)	-0.05* (0.02)	0.04 (0.02)
No. women in household	0.16 (0.16)	0.23 (0.16)	0.27* (0.16)	0.22 (0.15)	0.25 (0.16)	-0.08 (0.17)	0.18 (0.15)
Female head	-0.12 (0.10)	-0.18* (0.10)	-0.20* (0.11)	-0.15* (0.09)	-0.13 (0.11)	-0.24*** (0.09)	-0.13 (0.10)
Household head ever school	-0.01*** (0.00)	-0.01** (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.01*** (0.00)	-0.01* (0.00)
Age of household head	0.15 (0.34)	0.26 (0.38)	0.55 (0.35)	0.71** (0.34)	0.41 (0.39)	-0.07 (0.32)	0.43 (0.33)
Household asset index	0.92*** (0.31)	0.35 (0.35)	-0.40 (0.37)	-0.03 (0.35)	0.36 (0.38)	0.93*** (0.32)	0.76** (0.35)
Constant	777.00 0.08	777.00 0.07	777.00 0.08	777.00 0.10	777.00 0.05	777.00 0.11	777.00 0.08

Note: standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' calculations based on survey data.