Incentives for Joint Land Titling: Experimental Evidence from Uganda

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Abstract

We report results from a randomized field experiment assessing the effectiveness of conditional price subsidies and information in improving women's access to formal land tenure. We do so in the context of an ongoing land titling intervention in rural Uganda. We find that the intervention generated high demand for titling, as well as for co-titling with the husband and wife. We find that both policy instruments further increased demand for co-titling, but had no effect on overall household demand for titling. Both instruments were therefore relatively more potent when offered in isolation. Our analysis is important given increasing policy attention to land rights institutional reforms and women's empowerment in Sub-Saharan Africa.

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1. Introduction

Property rights over land play a critical role in economic development by governing the allocation of a fundamental productive resource. African governments are increasingly adopting land formalization reforms, often in the context of traditional customary systems of land tenure that limit women's ownership of land (Byamugisha 2013). There is thus a concern that these efforts could disempower women by potentially crystalizing or even exacerbating gender gaps in land tenure (Lastarria-Cornhiel 1997). These gaps can yield adverse welfare consequences, including foregone productivity from allocative inefficiencies (Goldstein and Udry 2008) and lower human capital investment (World Bank 2011). It is therefore important to identify policy instruments that encourage female land ownership when implementing land formalization programs.

It is in this direction that we contribute by providing novel evidence from a randomized experiment assessing the effectiveness of two policy instruments, implemented alone or jointly, in improving women's access to formal land titles. The experiment takes place in the context of a land titling intervention offering fully-subsidized freehold land titles for untitled rural households in Uganda. The first policy instrument makes the subsidy conditional on including the wife's name on the land title. The second instrument provides households with information about the benefits of joint titling using an educational video.

Quasi-experimental evidence from Rwanda suggests that the mandatory co-titling of land jointly between spouses can increase women's documented land ownership (Ali, Deininger, and Goldstein 2014). However, very little is known about how to nudge households into these arrangements, particularly in rural settings where customary law holds sway. Ali et al. (2016) experimentally varied subsidies for joint titles in an urban setting in Tanzania in which primarily men held *de facto* ownership rights. They find that small conditional price incentives effectively expanded women's co-ownership of land without depressing overall title demand. Yet questions remain about which constraints bind for the decision to co-title, whether conditional incentives are effective in a setting with strong customary norms, and whether information (when combined or in isolation) can change household preferences around co-titling.

This paper contributes to our understanding of these questions. Our main findings are as follows. First, our core intervention, which offered fully-subsidized land titles, successfully generated high overall demand for titling, as well as for co-titling. Second, imposing the gender conditionality on the subsidy in isolation further raises demand for co-titling, without dampening overall demand for titling. Third,

providing additional gender information in isolation also further raises demand for co-titling, though not as much as the conditionality, and has no impact on demand for titling. Fourth, the two instruments are relatively more potent when implemented in isolation instead of jointly. This result is driven by the fact that both instruments induce households to shift from solo titles toward co-titles, not by an overall increase in the demand for titles.

The rest of this note is organized as follows. Section 2 describes the experimental design. Section 3 presents the empirical results. Section 4 concludes.

2 Context and Experimental Design

2.1 Context

As in many countries in Sub-Saharan Africa, customary land makes up the large majority of rural land in Uganda.[1] Estimates from the 2013/14 Uganda National Panel Survey reveal that 84% of rural parcels in Uganda are held under unregistered customary tenure (Ali and Duponchel 2018). In such settings, a woman's access to and control over land is typically conditioned on her relationship to a male spouse or relative and she receives secondary use rights rather than ownership rights (Rugadya 2010). Moreover, these rights can quickly disappear in the event of marital dissolution or widowhood, with the woman losing her claim to the spouse's land altogether.

In contrast to customary law, Uganda's statutory law is considerably more gender equal. For example, Uganda's 1995 Constitution and the 1998 Land Act grant women and men equal rights to own land and other property as individuals or jointly, and a clause in the Land Act mandates spousal consent in any transactions with family land. However, Ugandan law does not mandate co-ownership, and the few rights available to women are weakened by limited awareness and prevailing customary practices (Deininger, Ali, and Yamano 2008).

Meanwhile, the levels of freehold title ownership in Uganda, estimated at 2 percent of the country's land, are very low (World Bank 2015). Factors such as costs – including transaction costs associated with a complex, bureaucratic procedure – and limited information on titling's benefits may contribute to these

[1] Uganda's Constitution and 1998 Land Act recognize four types of land tenure: customary, which is held by families or clans under customary law; freehold, which offers full ownership and transfer rights; leasehold, with land transferred during a fixed period and under agreed-upon terms to a tenant; and mailo, a special category of tenure linked to the Buganda Kingdom that accords perpetual rights (World Bank 2015). The large majority of households in the study area in southwestern Uganda have land under customary tenure.

low adoption levels. For example, property registration in urban Kampala requires approximately 10 steps, taking 42 days on average, and costing approximately US$830 (World Bank 2018). While corresponding figures for rural areas are not available, the costs and processing steps are similar in magnitude.

Similarly, despite women's high level of involvement in household land management in Uganda (Doss et al. 2015), their documented levels of joint (let alone sole) title registration are small. While precise recent estimates are lacking, a detailed review from 2003 found that only 3% of titles held in Uganda were registered jointly to married couples (Doss et al. 2015 citing Sebina-Zziwa et al. 2003). Efforts to address the cost and information constraints of titling, as well as sticky norms around co-titling, offer the potential to reduce within-household inequality and improve socio-economic welfare.

2.2 Intervention

Our experiment was implemented by Associates Research Trust, in collaboration with the Government of Uganda's Ministry of Lands, Housing, and Urban Development. Associates Research is an applied research and implementation organization in Uganda with a depth of experience in land rights and gender. The intervention started in 2017, targeting about 1,090 households from 253 villages across four districts (Mbarara, Sheema, Buhweju, and Isingiro) in the Western Region of Uganda. Within each village, an average of 4 eligible households were randomly selected for the intervention. Those households with a married (or cohabitating) couple owning at least one unregistered parcel of land were deemed eligible for the intervention.

The core intervention offers fully-subsidized freehold land titles to rural households in Uganda. It entails four door-to-door household visits. During the first visit, households are provided with information about costs and benefits of titling, and offered the opportunity to receive a fully-subsidized freehold title for one parcel of land (or a randomly-selected parcel for households with multiple parcels). At the end of this visit, households are asked whether they accept the offer, and if so which names they want to be listed on the title. During the second visit, parcel boundaries for households that accept the offer are defined in the presence of neighbors and local government officials, and the households are assisted with completing the land title application forms. At this visit, households have the option to revise their original decisions made during the first visit. Core land demarcation and surveying activities take place at the third visit to

households. During the fourth visit, the freehold land titles are delivered to the households after being processed by the Government of Uganda.[2]

2.3 Treatment Arms

The goal of this cluster-randomized experiment is to assess the effectiveness of conditional price subsidies and information, in isolation or jointly, in improving women's access to formal land. To do so, the 253 study villages were randomized into the following two treatments, fully crossed with each other and stratified by parish.

Conditional Subsidies vs. Unconditional subsidies. All households were offered a fully-subsidized freehold title for an eligible parcel of land. We varied the conditionality of the subsidy as follows: (i) half of the households received the subsidy conditional on registering the wife as a co-owner of the land; and (ii) the other half received the subsidy unconditionally. This allows us to isolate the impact of the gender conditionality over and above the impact of the subsidy.

Gender Information vs. General Information. All households were shown a short educational video clip. We varied the content of the video clip as follows: (i) half of the households were shown general information about titling (such as benefits, legal implications, and prices); and (ii) the other half were additionally shown information on the benefits of co-titling.

2.4 Data

For this experiment, we draw mostly on intervention monitoring data, systematically captured during each household visit, to record household decisions and other indicators related to the intervention. We also use data from two household surveys conducted prior to the intervention in July-September 2015 and February-March 2017[3], which elicited information from both spouses on socio-demographic characteristics, landholdings and investment, plot-level agricultural production, and intra-household bargaining and decision-making.

[2] On average, the second household visit takes place about twelve days after the first visit, and it takes approximately one month per household to complete the first three visits.

[3] To establish the sampling frame, a village-level listing was conducted in 2015 in all study villages. Households had to correspond to the following criteria to be eligible for the study: i) household has a married cohabiting couple; and ii) household owns at least one unregistered parcel of land that is eligible for a freehold title. Household selection was stratified by monogamous and polygamous marital status.

The main outcomes of interest are: (i) whether the household accepts the land title offer; and (ii) if so whether the household registers the wife as a co-owner of the land. We examine these household decisions at two different points in time: on the day when the educational video was shown and the offer was first presented to the household (during the first household visit), and on the day when the land title application form was filled (during the second household visit). This time lapse allows us to provide some tentative evidence on the effect that providing households with additional time for reflection could have on take-up rates for these complex interventions.

Appendix Table A1 presents summary statistics for a selected set of baseline characteristics. We note that there are no systematic significant differences across treatment arms.

3. Results

3.1 Descriptive Evidence

We first present descriptive evidence of the main findings. Figure 1 shows the share of households accepting the land title offers, by type of title (solo or joint), in each of the four subsidy-information treatment arms, separately for the first visit (Figure 1A) and the second visit (Figure 1B).

The following points are of note. First, demand for titling and demand for co-titling are high: 91% of households assigned to the core intervention (which offered land titles unconditionally and provided general information about titling) accepted the land title offers on the first visit, and 62% decided to co-title.

Second, while imposing the gender conditionality and providing additional gender information in isolation both further increase demand for co-titling, adding a condition is particularly effective: with the probability of co-titling increasing to 89% under the condition, relative to 76% with gender information.

Third, implementing the conditionality and the information jointly does not improve their stand-alone effectiveness in increasing co-titling: in fact, imposing the conditionality appears to be more potent *in the absence of* gender information, and the gender information only makes a difference without the conditionality.

Fifth, neither the conditionality nor the gender information, in isolation or jointly, affects overall household demand for titling: titling take-up rates on the first visit remain high at around 90% across the

four experimental arms. Sixth, when comparing Figures 1A and 1B we see a reduction in overall household demand for titling between visits: titling take-up rates decrease to 69-75% on the second visit, compared to 89-91% on the first visit.

3.2 Treatment Impact Estimates

To examine more formally the impact of imposing the conditionality and providing gender information, in isolation or jointly, we estimate the following linear probability specification for household h in village v and parish p, using data from households in treatment communities, separately for the first and second visits,

$$y_{hvp} = \alpha + \beta_C C_{hvp} + \beta_I I_{hvp} + \beta_{C\times I}\left(C_{hvp} \times I_{hvp}\right) + \delta \mathbf{x}_{hvp} + \lambda_p + \varepsilon_{hvp}. \quad (1)$$

y_{hvp} is one of two dummies: (i) whether the household accepts the land title offer ("titling"); (ii) whether the household includes the wife's name on the title application ("co-titling"). C_{hvp} is a dummy for whether the household was assigned to be offered land titles conditional on registering the wife as co-owner of the land or unconditionally. I_{hvp} is a dummy for whether the household was assigned to receive additional information around gender equality and co-titling or general information about land titling only. $\mathbf{x}_{hvp}$ controls for baseline characteristics of the parcel and household to improve the precision of the estimates. λ_p is a stratum (i.e., parish) fixed effect. The error term ε_{hvp} is clustered by village, the unit of randomization.

The omitted category in Equation (1) comprises households assigned to the core intervention treatment arm, in which households were offered land titles unconditionally and provided with general information about titling only. The parameters of interest are: β_C and $\beta_C + \beta_{C\times I}$, measuring the impact of imposing the gender conditionality on the land title offer for gender uninformed and gender informed households, respectively; β_I and $\beta_I + \beta_{C\times I}$, the impact of providing gender information for households that are offered land titles unconditionally and conditionally, respectively; and $\beta_{C\times I}$, the complementarity/substitutability effect between the gender conditionality and the gender information.

Table 1 presents the results. Focusing first on the first visit, Columns 1 and 2 show that the conditionality and the information do not affect overall household demand for titling, but they substitute each other in increasing demand for co-titling. Imposing the conditionality significantly raises the co-titling probability by 31 percentage points among the gender uninformed households (a 50 percent increase relative to the

core treatment arm), and by 14 percentage points (21 percent) among the informed households. Providing gender information significantly raises the co-titling probability by 16 percentage points (25 percent) among households offered titles unconditionally, and has no impact among the households offered titles conditionally. The coefficient on the interaction term ($\beta_{C\times I}$) is negative and statistically significant.

Focusing next on the second visit, Columns 3 and 4 show a similar qualitative pattern to that observed during the first visit, although the magnitudes of the coefficients decrease relative to those estimated for the first visit due to the reduction in overall demand for titling between visits.

4. Discussion

We report results from a randomized field experiment assessing the effectiveness of price subsidies and information in improving women's access to formal land tenure. We do so in the context of an ongoing land titling intervention in rural Uganda.

The results indicate that the core intervention, which offered unconditional fully-subsidized land titles and provided households with general information about titling can be successful at formalizing land tenure *and* improving women's formal land ownership. This finding casts some doubt on the concern that land titling programs in the context of customary systems of land tenure can disempower women by crystalizing or even exacerbating underlying gender gaps in land tenure. The high level of co-titling even within the core intervention arm is perhaps less surprising when one considers women's stronger land rights in Uganda relative to other countries in Sub-Saharan Africa.[4]

Our evidence shows that making the subsidy conditional on the wife being registered as a co-owner of the land and providing additional information about the benefits of co-titling further increase the demand for co-titling, without affecting overall household demand for titling. The evidence that imposing the conditionality does not dampen demand for titling is encouraging in light of a concern that a redistribution of property rights within the household could trigger anticipatory feelings of conflict between husbands and wives. This finding from a rural customary setting is surprisingly consistent with evidence from urban

[4] For example, Doss et al. (2015) examined the Living Standard Measurement Study's Integrated Surveys on Agriculture (LSMS-ISA) data across six Sub-Saharan African countries and found relatively high levels of joint land ownership in Uganda, with approximately 42 percent of household land area being owned by both spouses (with or without documentation).

Tanzania – a markedly different context – in which conditional subsidies for co-titling did not depress overall demand (Ali et al. 2016).

We also find that the two policy instruments substitute each other in improving women's access to formal land titles: imposing the gender conditionality is relatively more effective without gender information, and vice versa. This result is driven by the fact that both instruments induce households to shift from solo titles toward co-titles, without changing the overall demand for titles. While the information treatment was not as effective as the condition in influencing the co-titling decision, sharing information on its benefits increased co-titling levels by a quarter at an almost negligible marginal cost.

Finally, we observe that households revise downwards their willingness to title over time during the course of the intervention. This provides suggestive evidence that providing households with additional time for reflection can have important effects on take-up rates for these complex interventions.

Moving forward, the next step in the analysis will explore the rich baseline household survey data to analyze heterogeneity in the main impacts reported in this note to identify potential mechanisms driving the results.

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Figure 1: Take-Up Results

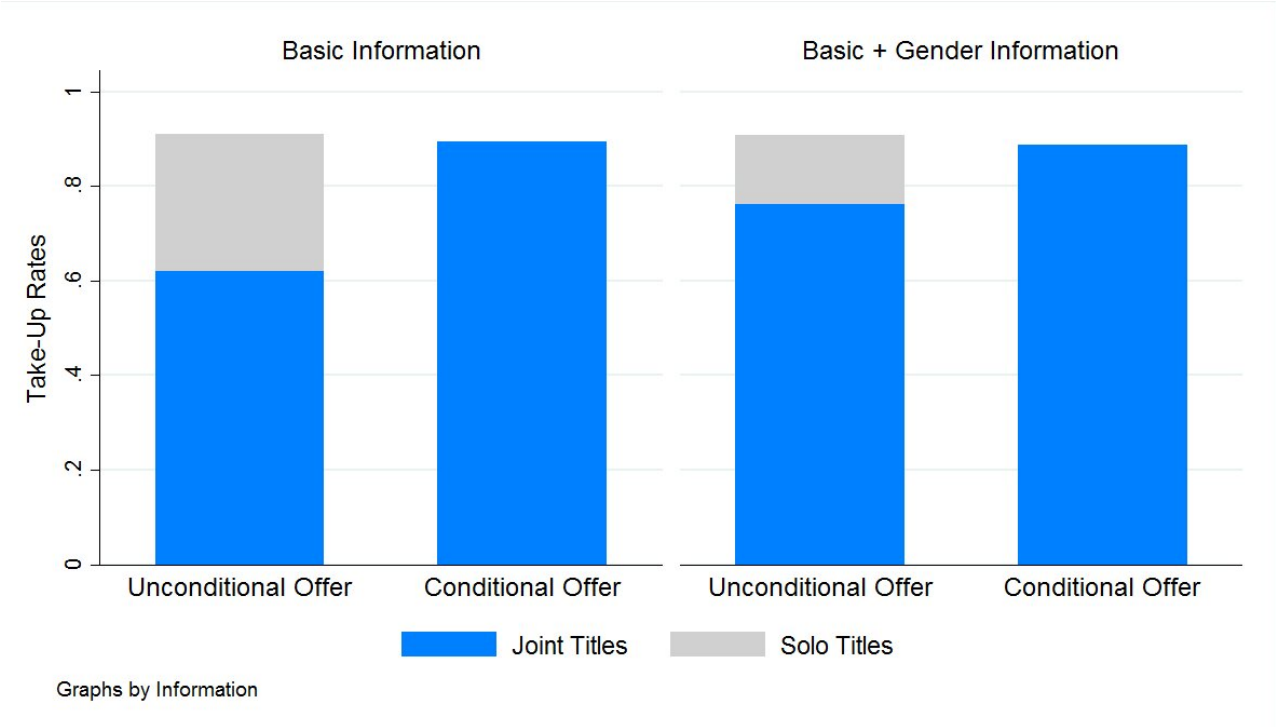

Figure 1A: First Household Visit

Figure 1B: Second Household Visit

Table 1. Treatment Effects on Titling Decisions

OLS regression coefficients, standard errors reported in parentheses clustered by village

	First Visit		Second Visit	
	Titling (1)	**Co-Titling (2)**	**Titling (3)**	**Co-Titling (4)**
Conditionality [β_C]	.004	.312***	-.026	.178***
	(.026)	(.039)	(.049)	(.048)
Information [β_I]	-.001	.158***	-.004	.084**
	(.023)	(.039)	(.043)	(.040)
Conditionality x Information [$\beta_{C\times I}$]	-.016	-.177***	-.001	-.085
	(.033)	(.049)	(.066)	(.065)
Conditionality + (Conditionality x Information) [$\beta_C + \beta_{C\times I}$]	-.012	.135***	-.027	.093**
	(.023)	(.032)	(.049)	(.047)
Information + (Conditionality x Information) [$\beta_I + \beta_{C\times I}$]	-.017	-.019	-.005	-.002
	(.024)	(.029)	(.050)	(.050)
Observations	1,087	1,087	1,087	1,087
R-squared	.137	.229	.198	.218
Control Mean [Core Treatment Arm]	.909	.620	.746	.551

Notes: *** denotes significance at 1%, ** at 5%, and * at 10%. OLS regression estimates are presented, where standard errors clustered by village. The outcome variable in Columns 1 and 3 is a dummy for whether the household accepts the land title offer. The outcome variable in Columns 2 and 4 is a dummy for whether the household registers the wife as co-owner of the land. In all specifications we include strata (i.e. parish) fixed effects and the following controls (as measured at baseline): a dummy for whether the wife is de facto owner of the parcel, the number of parcels owned by the household, the first principal component of total household, farm, and livestock assets owned by the household, and a dummy for whether the household is polygamous. The control means correspond to the mean of the outcome variable for households assigned to the core treatment arm, where households were offered land titles unconditionally and provided with general information about titling only.

Table A1: Descriptive Statistics

Means and standard deviations in curly brackets reported in Column 1
OLS coefficients and standard errors in parentheses reported in Columns 2-4
P-values on joint test of equality reported in Column 5

	Control/Core Treatment (1)	Gender Conditionality (2)	Gender Information (3)	Conditionality + Information (4)	P-value on joint test (5)
Household/spousal characteristics					
Household size	6.74 {2.91}	.112 (.228)	.246 (.233)	.232 (.240)	[.697]
Household assets [0-15 score]	5.41 {1.75}	.048 (.178)	-.233 (.168)	.004 (.204)	[.287]
Polygamous household [yes=1]	.185 {.389}	-.003 (.019)	-.031 (.019)	-.029 (.018)	[.198]
Wife decision-making power index [0-6 score]	3.27 {1.83}	-.341* (.176)	-.000 (.178)	-.276 (.174)	[.090]
Quality of spousal relationship index [0-7 score]	4.86 {2.02}	-.228 (.173)	-.102 (.170)	-.126 (.191)	[.622]
Farm characteristics					
Total number of parcels	3.15 {2.04}	-.297 (.193)	-.156 (.196)	-.210 (.193)	[.481]
Transformed total land size [log acres]	1.31 {1.06}	-.018 (.126)	-.070 (.108)	.085 (.115)	[.624]
Transformed farm yields [IHS USD/Acres]	5.49 {1.25}	-.263 (.208)	-.209 (.205)	.039 (.157)	[.367]
Farm assets [0-10 score]	3.38 {1.33}	-.090 (.132)	-.166 (.122)	-.098 (.142)	[.602]
Livestock assets [0-9 score]	2.28 {1.90}	.111 (.179)	.025 (.171)	.159 (.182)	[.789]
Parcel characteristics					
Transformed parcel area [log acres]	.211 {1.20}	.069 (.135)	.015 (.115)	.094 (.121)	[.857]
Transformed parcel yield [IHS USD/Acres]	4.71 {2.28}	-.383 (.287)	-.360 (.255)	-.172 (.237)	[.433]
Parcel was purchased [yes=1]	.558 {.498}	-.041 (.045)	-.062 (.043)	.022 (.045)	[.254]
Wife is de facto owner of parcel [yes=1]	.587 {.493}	-.055 (.061)	.026 (.061)	-.029 (.063)	[.556]
Parcel grows a cash crop [Yes=1]	.319 {.467}	-.007 (.051)	.0007 (.052)	-.011 (.050)	[.995]

Notes: *** denotes significance at 1%, ** at 5%, and * at 10%. Column 1 reports means and standard deviations for households assigned to the core intervention, which offered unconditional fully-subsidized land titles and provided general information about titling. Columns 2-4 report OLS coefficients and standard errors (clustered by village) obtained from regressing the corresponding variable on a dummy for whether the household was assigned to conditioning the subsidy on registering the wife as co-owner of the land, a dummy for whether the household was assigned to additional information on benefits of co-titling, and a dummy for the household was assigned to both the gender conditionality and the gender information. Household assets is the sum of 15 dummies indicating ownership of: house, other buildings, furniture, television, radio, generators, electric inverters, bicycle, motor cycle, motor vehicle, jewelry, watches, mobile phone, computer, and internet access. Wife decision making power index is the sum of 3 dummies for whether the wife has a say (either alone or jointly with the husband) on: (i) which food to buy, (ii) buying an house asset, and (iii) bringing a sick child to the health facility. Quality of spousal relationship is the sum of 7 dummies indicating whether the husband: (i) is not jealous or angry if wife talks to other men, (ii) does not frequently accuses the wife of being unfaithful, (iii) permits his wife to meet with female friends, (iv) does not limit contact with family, (v) does not insist on knowing where his wife is at all times, (vi) does not humiliate his wife in front of others, and (vii) dies not physically harm his wife. Farm assets is the sum of 10 dummies indicating ownership of: hoes, pangas, animal-drawn carts, wheel barrows, tractors, fork hoes, slashers, ploughs, and sprayers. Livestock assets is the sum of 9 dummies indicating ownership of calves, bulls, oxen, heifers, cows, goats, sheep, pigs, and poultry (chickens, turkeys, ducks, etc.). IHS in transformed yields denotes the inverse hyperbolic sine transformation. Cash crops include coffee, cocoa, sugarcane, tea, and tobacco.