

Land, power, and property rights: Conjoint evidence from Sénégal and Côte d'Ivoire

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MOTIVATION



Figure 1: "Attention land predators! No parcel from this site is meant for sale!"

TITLES ARE AVAILABLE ON-DEMAND

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TITLES ARE AVAILABLE ON-DEMAND

These graffiti suggest that households lack other mechanisms to protect their property rights. **But!**



■ Titles available on-demand

41 African countries have made formal land titles available **on demand**: you can apply for a land title if you want one.

FORMAL AND INFORMAL PROPERTY RIGHTS

The form is a 'FICHE DE DEMANDE' (Application Form) for a formal property right. It includes the following sections:

- Header:** Région de Saint-Louis, Département de Dagana, Arrondissement de Ndalye, Commune de Diama.
- Section 1: Demandeur (Applicant)**
 - DATE : [Field]
 - Affectation Décaissement
 - Régularisation Permis d'occuper
- Section 2: Personne physique (Physical Person)**

Nom, prénom	Personne morale
Date et lieu de naissance	Type et dénomination
Sexe	Gélogie social
<input type="checkbox"/> Masculin <input type="checkbox"/> Féminin	Date de création
Numéro de CIN	Type de numéro
_____	<input type="checkbox"/> NCI <input type="checkbox"/> NINCA <input type="checkbox"/> Autre
Numéro de	Numéro
Lieu de résidence / Adresse :	Contact principal
	Adresse
Téléphone	Téléphone
Autre(s) renseignement(s)	
- Section 3: Localisation (Location)**

Secteur / Zone	Usage :
Quartier / Village	<input type="checkbox"/> Production <input type="checkbox"/> Commerce
Surface demandée (Ha)	<input type="checkbox"/> Habitat <input type="checkbox"/> Commerce
Référence cartographique	<input type="checkbox"/> Liner / Trousses <input type="checkbox"/> Autres, à préciser
- Section 4: Signature (Signature)**

Signature du demandeur
- Avec l'appui technique et financier du Projet de Développement inclusif et Durables de l'Agriculture au Sénégal (PDED)

Formal rights are registered with state institutions. They demonstrate some claim to the land and they carry legal weight.

Informal rights are not registered and are only rarely written. They are often managed by customary elites such as village chiefs.

Figure 3: Application form for a Sénégalese délibération foncière

WHY CARE ABOUT TITLES?

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Increased security allows households to make agricultural investments, like using fertilizer or planting trees.

“The délibération changes our behavior because without one, you’re always under threat of land grabs from those with means... You couldn’t plant trees on your parcel if you didn’t have a délibération.”

NEVERTHELESS, TITLING REMAINS RARE

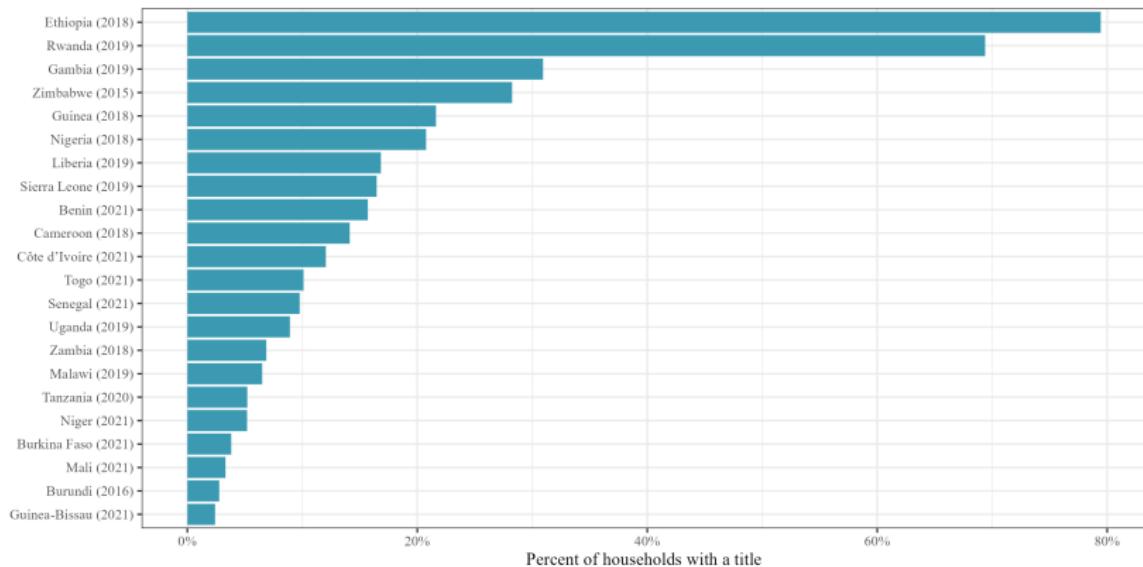


Figure 4: Average titling rates by country

Data from the most recent rounds of LSMS or DHS data collection; all average use survey weights.

THESE GRAFFITI POINT TO AN EMPIRICAL PUZZLE:



Land titles are available on-demand in 41 African countries.

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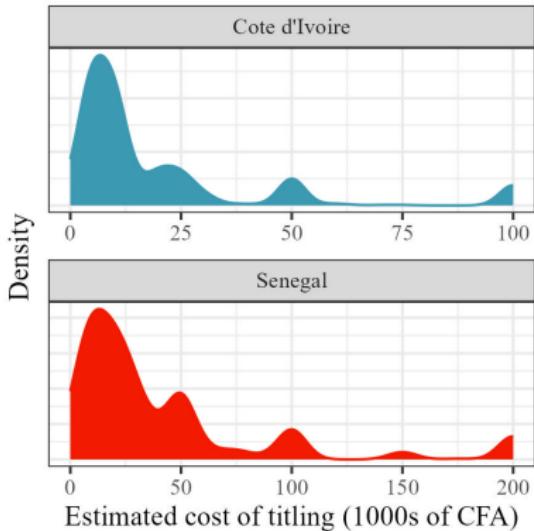
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Why?

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THEORY

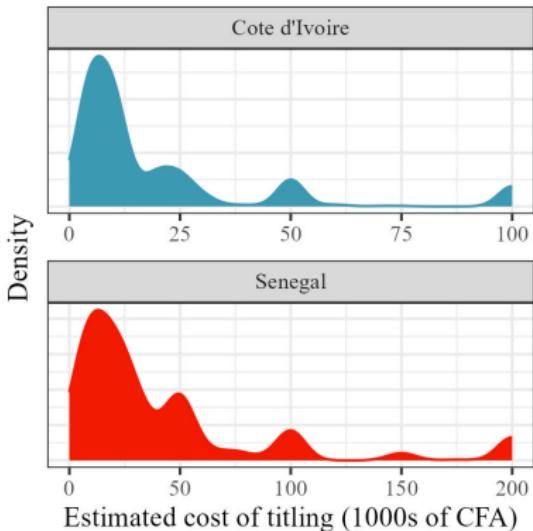
COSTS OF TITLING



Households weigh costs and benefits when deciding whether to pursue formalization.

Figure 6: How much do you think it would cost (in FCFA) to acquire a [land certificate] for one of your parcels?

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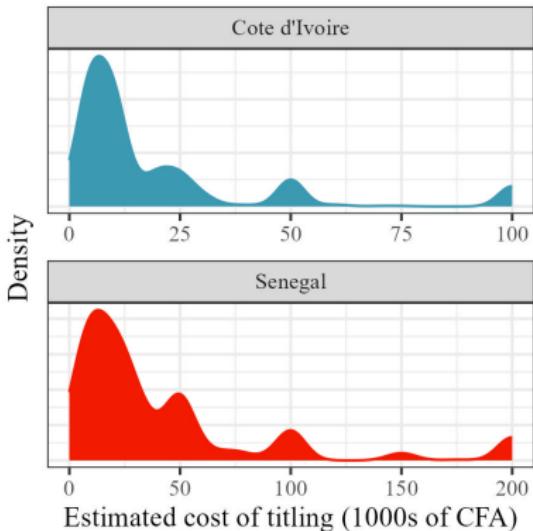


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Land titling is not a 1:1 mapping of existing usage onto paper—there will be winners and losers, and households run a risk of losing land (Boone 2018; Delville and Moalic 2019). Survey evidence

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- Land titles increase tenure security—you’re less likely to lose your land (Albertus 2021; Goldstein et al. 2019; Higgins et al. 2018; Lawry et al. 2017).
- When your property rights are secure, you’re better able to make investments (Besley and Ghatak 2010; Goldstein and Udry 2008; North and Weingast 1989).

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Chiefs often do a decent job administering property rights; households may perceive customary justice to be more fair, more transparent, and cheaper (Acemoglu et al. 2020; Chaara, Falisse, and Moriceau 2022; Lund 2008; Winters and Conroy-Krutz 2021).

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Low state capacity, malfeasance by government actors, or perceived bias against certain groups would limit the extent to which households value formal land titles (Albertus 2021; Deininger and Goyal 2024; Scott 1998).

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These factors imply some variation in the extent to which households perceive land titles as useful. More specifically:

- H1. Individuals who are socially proximate to customary leaders will perceive land titles to be less useful in a dispute.
- H2. Individuals with more confidence in formal institutions will perceive land titles to be more useful in a dispute.

DESIGN

RESEARCH DESIGN

I use a mixed method strategy to show how confidence in institutions and social proximity to chiefs affects the perceived utility of land titles in resolving disputes.

- A forced-choice paired conjoint design administered via an in-person field experiment to 1,164 households across 75 villages in Sénegal and 801 households across 80 villages in Côte d'Ivoire.
- A structural topic model on free response answers to "what would happen in this dispute."
- Qualitative interviews with village chiefs, farmers, and government officials.

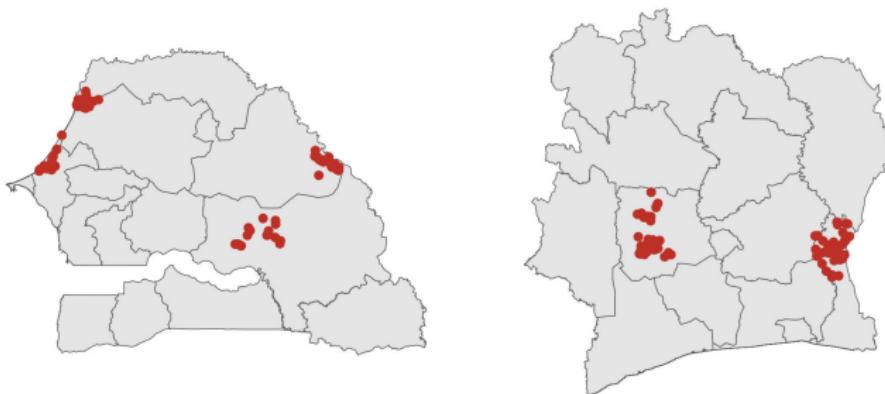
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RESEARCH DESIGN

Figure 7: Survey areas for field conjoint



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Each respondent was presented with two fully randomized profiles of parties to a land conflict. The profiles varied randomly across six variables:

- The sex of the party,
- The value of the party's land,
- Whether the party was a farmer or a herder,
- Whether the party has improved the land,
- Whether the party had given the chief a gift, and
- Whether the party possessed a land title (*délégation foncière* in Sénégal, *certificat foncière* in Côte d'Ivoire) for their land.

Outcome variable: "who do you think would win this land dispute?"

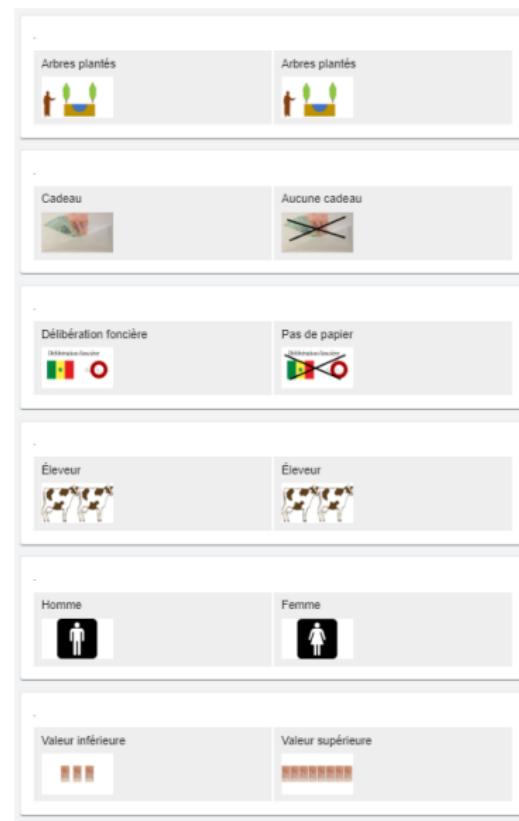
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- Each respondent saw five unique conjoint pairs.
- I use marginal means for hypothesis testing: the probability a profile wins given it has feature level α .
 - Because each of my variables has two profiles, the marginal means are centered at $MM = \frac{1}{2}$.
 - Marginal means are distributed on the interval $MM \in [0.125, 0.875]$.
- The sixth pair was the inverse of the first pair. I use this repeat to calculate the probability of switching error, and apply the appropriate corrections (Clayton et al. 2023).
 - Specific corrections
 - Survey weights

RESULTS

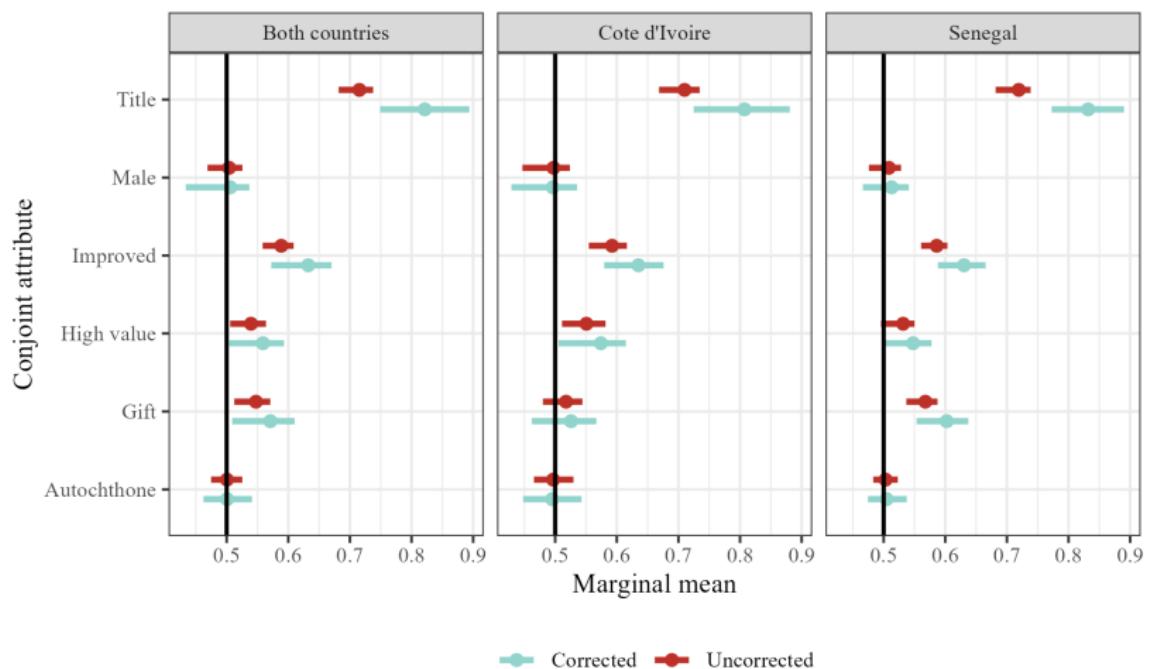


Figure 8: Overall marginal means

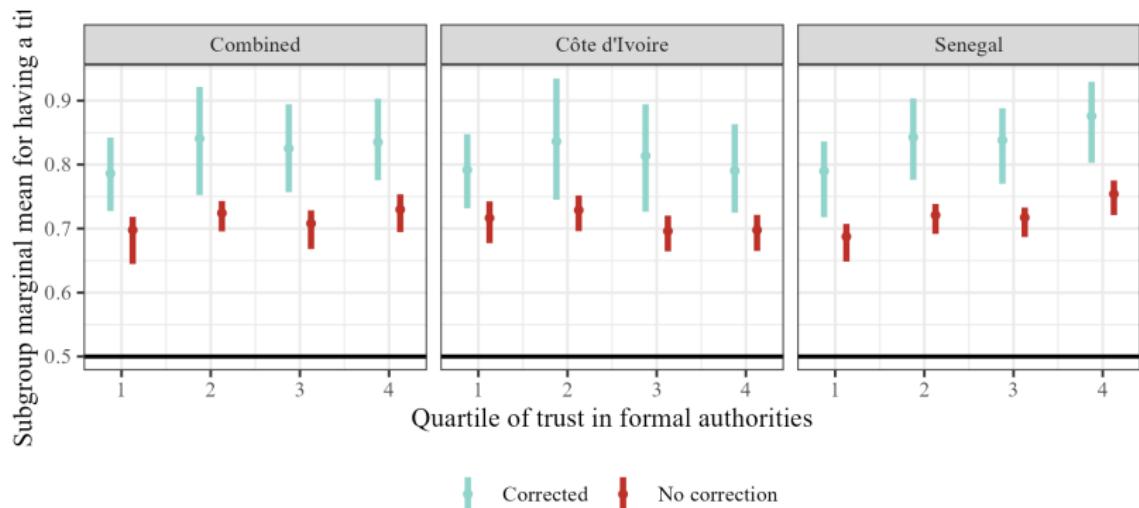


Figure 9: Marginal means by confidence in formal institutions

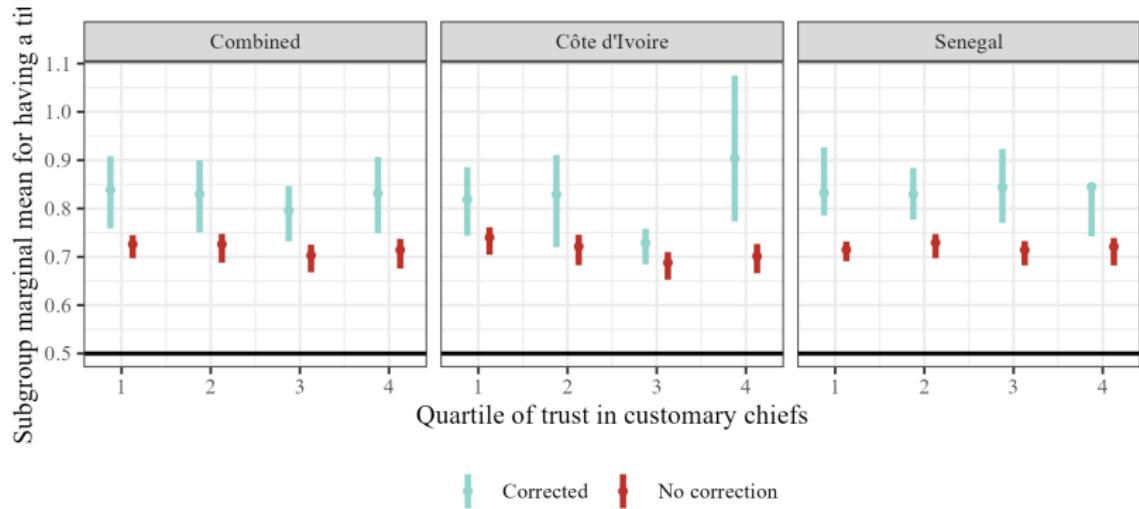


Figure 10: Marginal means by quartile of confidence in customary chiefs

Other results:

- When I ask respondents directly “do you think somebody with a title would be more likely to succeed in a land dispute?” we see some differences in marginal means. MM by direct questions
- Results are similar in a single-profile conjoint experiment in Côte d’Ivoire where I asked how likely the state would be to succeed in appropriating land. Single profile conjoint
- When titling does not distinguish between profiles, respondents rely on who invested in the parcel. Structural topic model

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Why?

RESULTS

I (don't) answer this question using a field conjoint experiment administered to 1,965 respondents in Sénegal and Côte d'Ivoire:

- Respondents selected between 71 and 87 percent of profiles with a title to win the hypothetical dispute—which approaches the theoretical maximum of the estimator.
- This fraction was consistent across different levels of trust in customary chiefs and trust in formal institutions.
- These results suggest that variation in households' confidence in their local institutions does not drive variation in the uptake of land titling.

This research forms one chapter of my broader book project, which looks to explain variation in the uptake of land titling across Africa.

- One chapter uses a novel geospatial measurement of land values and the returns to agricultural investment to show that households title when the returns to titling are higher.
 - Where land tenure administration is devolved, strong chiefs **facilitate** land titling.
 - Where land tenure administration is centralized, strong chiefs **impede** land titling.
- A third chapter leverages granular variation in the strength of customary chiefs in Côte d'Ivoire to illustrate how strong chiefs can capture land titling.

CONTRIBUTION: COMPARATIVE POLITICS

- I speak to a broader literature about how and when sub-national elites support or impede state-building (Baldwin 2016; Baldwin and Ricart-Huguet 2023; Henn 2023).
- I also speak to enduring questions about how local elites structure rural political life in the developing world (Bates 1983; Berry 2001; Lust 2022; Mamdani 1996; Popkins 1979).
- Most previous research explores when states and elites supply property rights, but the variation I document requires a pivot to explore when households demand property rights (Albertus 2021; Boone 2014; Onoma 2010).



Thank you for listening!

COSTS OF TITLING (2)

- In Sénegal, **32 percent** of respondents worried that they “might lose access to some of [their] land during the formalization process” and **five percent** knew somebody who lost land while attempting to formalize it.
- In Côte d’Ivoire, **36 percent** of respondents worried that they “might lose access to some of [their] land during the formalization process” and **nine percent** knew somebody who lost land while attempting to formalize it.

Back

SURVEY WEIGHTS

$$w = \frac{1}{p_h \cdot p_v \cdot p_c}$$

Where:

- p_h is the probability of a household being sampled (n. of realized surveys per village divided by count of households, as per the 2014 RGPH)
- p_v is the probability of a village being selected, conditional on the set of communes being chosen.
- p_c is the probability of a commune being chosen, taking into account the contiguous selection strategy.

All weights are censored to be within the 5th and 95th percentiles.

Back

For the marginal means, the specific correction is $\tilde{m} = \frac{\hat{m} - \tau}{1 - 2\tau}$ where \tilde{m} is the marginal means estimator corrected for switching error, \hat{m} is the uncorrected estimator, and τ is the estimate of IRR.

For the AMCEs, the correction is $\tilde{\pi} = \frac{\hat{\pi}}{1 - 2\tau}$ where $\tilde{\pi}$ is the AMCE estimator corrected for switching error and $\hat{\pi}$ is the unadjusted estimator.

Back

Marginal means are defined as the fraction of profiles fulfilling condition i which win their disputes: $P(\text{win}|i)$.

Because each variable in this conjoint has two levels, that means that the null hypothesis for each variable is that $MM = 0.5$.

Because I did not exclude the scenario when households possess overlapping property rights, both hypothetical parties will have a title in approximately 25 percent of conjoint draws. In this case, a profile with a title will lose the dispute by definition. Similarly, in 25 percent of cases, zero profiles will have a title, and so a household sans title will win by default.

Back

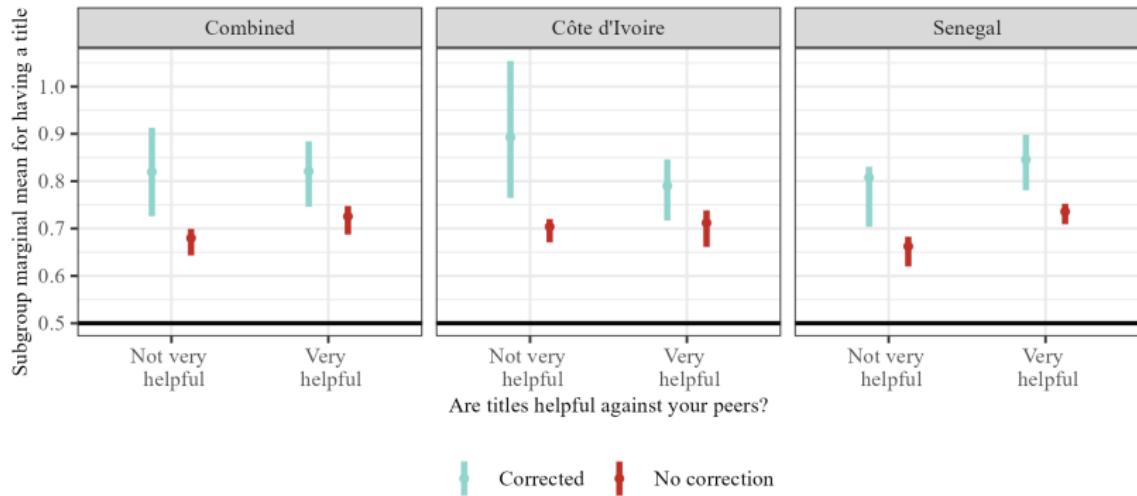


Figure II: Marginal means for having a land title by responses to “do you think somebody with a title would be more likely to succeed in a land dispute?”

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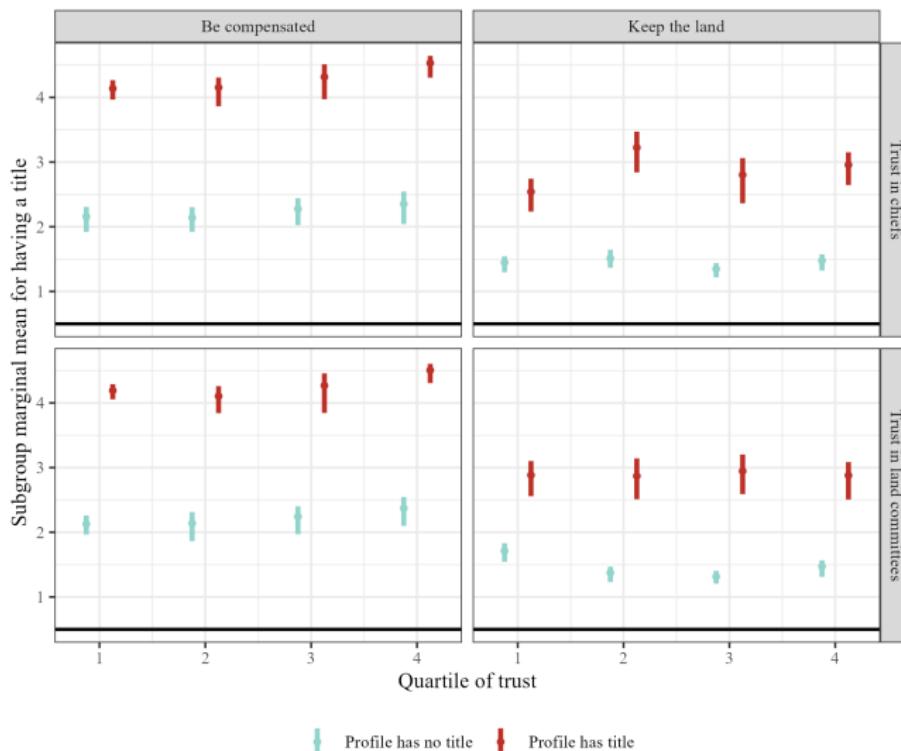


Figure 12: Marginal means for the single profile conjoint by quartile of trust

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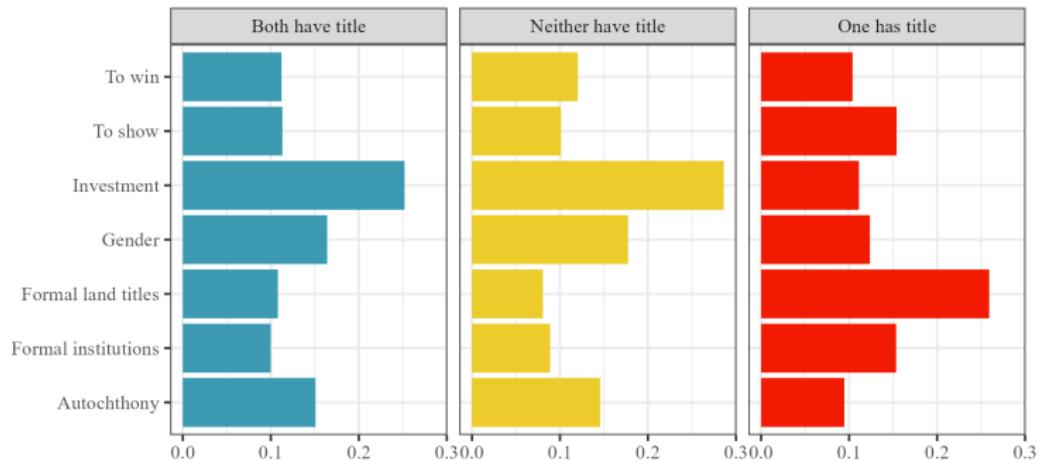


Figure 13: Density of topics from a Structural Topic Model

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