

Colonial (Dis)Integration: Concession Companies and Human Development in Mozambique

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1. Introduction
2. Contribution to the literature
3. Data
4. Estimation and preliminary results
5. Summary

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1. Introduction: motivation

- ▶ Former African colonial territories emerged from the colonial experience with distorted and dislocated economies. In Mozambique:
 - ▶ “The north, the centre, and the south are still as disconnected from each other as they were during the first half of the 20th century” (Newitt and Tornimbeni 2008).
 - ▶ “A map of Mozambique at large had become much like a patchwork quilt” (Allina 2012).
 - ▶ The “threefold” reality of Mozambique (Alexopoulou and Juif 2015).

1. Introduction: research questions

- ▶ Is historical exposure to the rule of concession companies important for understanding the relative under development of parts of Mozambique?
- ▶ Do individuals living inside former concessions have different levels of wealth and education when compared to those living outside former concessions?

1. Introduction: identifying assumptions

- ▶ Boundaries of the *Companhia do Nyassa* and *Companhia de Moçambique* were defined using salient geographic characteristics - rivers and river basins.
- ▶ Their rule lasted for a long period of time in an epoch of early state formation - 35 and 50 years, respectively.

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2. Contribution to the literature

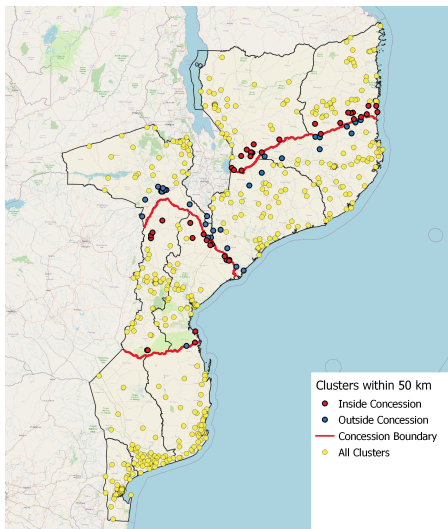
- ▶ Institutional legacies of colonial rule in Africa.
(Hall and Jones 1999); (La Porta et al. 1999); (Acemoglu et al. 2001); (Glaeser et al. 2004); (Gennaioli and Rainer 2007); (Nunn 2008); (Huillery 2011); (Michalopoulos and Papaioannou 2014); (Alsan 2015).
- ▶ Extractive institutions, forced labour, indirect rule, and violence on contemporary development outcomes.
(Nzula et al. 1979); (Banerjee and Iyer 2005); (Dell 2010); (Acemoglu et al. 2014); (van Waijenburg 2015); (Juif and Frankema 2018); (Rodney 2018).
- ▶ Concession system on contemporary development outcomes.
(Lowe and Montero 2021); (Chiovelli, et al. work in progress).

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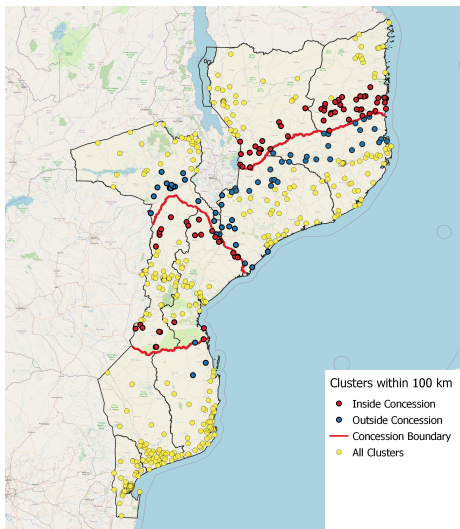
3. Data

- ▶ Maps from *Companhia do Nyassa* and *Companhia de Moçambique*
 - ▶ Appendix: Map *Companhia do Nyassa*
 - ▶ Appendix: *Companhia do Nyassa*
 - ▶ Appendix: Map *Companhia de Moçambique*
 - ▶ Appendix: *Companhia de Moçambique*
- ▶ Demographic and Health Surveys (DHS) data for Mozambique (2011).
 - ▶ 17,780 respondents (13,745 women and 4,035 men) across 21 stratum living in 611 clusters.
- ▶ Vector and raster data of geographic, precolonial, colonial, and infrastructure and population variables.

3. Data: DHS data



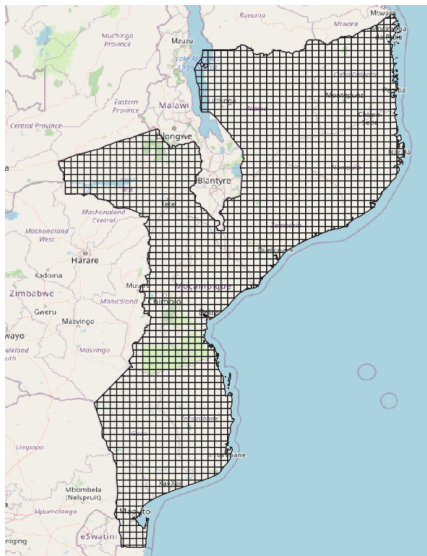
3. Data: DHS data



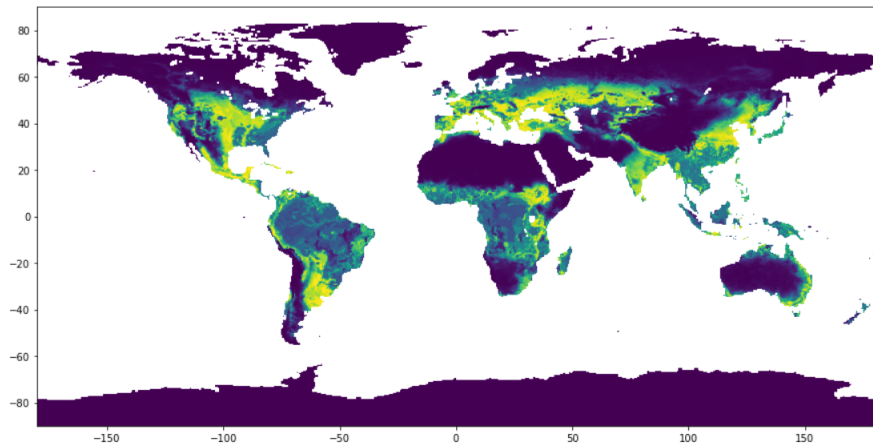
3. Data: vector and raster data

- ▶ Geographic data and variables
 - ▶ Elevation, precipitation, temperature, land suitability, ruggedness, rivers and river density, malaria suitability, tsetse fly suitability, distance to Maputo, distance to the coast.
- ▶ Precolonial data and variables
 - ▶ number of slaved individuals during the slave trade, ethnolinguistic diversity, precolonial data such as population density, political centralization, hereditary local headman selection and polygynous.
- ▶ Colonial data and variables
 - ▶ missionary stations in 1903, missionary stations in 1924.
- ▶ Infrastructure and population data and variables
 - ▶ nighttime luminosity, roads and road density.

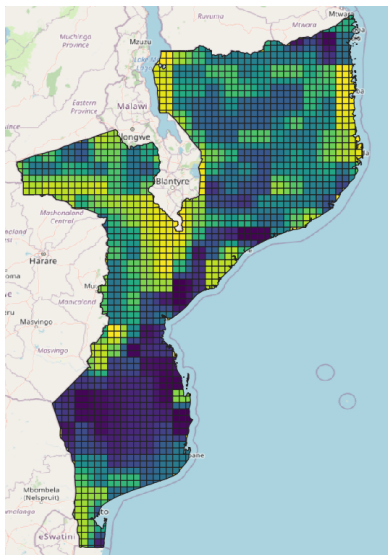
3. Data: grid of Mozambique



3. Data: land suitability



3. Data: land suitability



Road Map

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4. Estimation and preliminary results

$$Y_{i,c,g} = \alpha + \beta \text{Concession}_{c,g} + f(\text{distance})_c + \delta X_i + \gamma \Phi_g + \varepsilon_{i,c,g} \quad (1)$$

$Y_{i,c,g}$: outcome of interest of individual “ i ” living in cluster “ c ” in grid “ g ”.

Concession_c : dummy variable that equals 1 if cluster “ c ” in grid “ g ” is located inside the former concession boundary.

X_i : vector of covariates for individual “ i ”.

Φ_g : vector of geographic and infrastructure and population covariates in grid “ g ”.

$f(\text{distance})_c$: regression discontinuity (RD) polynomial which controls for smooth functions of the geographic location of cluster “ c ”.

4. Estimation and preliminary results

Concessions and Human Development. Grid cell level

	Educational attainment (1)	Years of education (2)	Literacy (3)	Wealth Index (4)	Wealth Factor Score (5)
Nyassa Company: Lurio River					
Within 50 km					
Inside concession	-0.0926 (0.070)	-0.2227 (0.312)	-0.0225 (0.051)	-0.0849 (0.110)	0.0539 (0.056)
Observations	947	947	947	947	947
R ²	0.333	0.401	0.265	0.349	0.426
Within 100 km					
Inside concession	-0.1206 ** (0.057)	-0.2944 (0.263)	-0.0003 (0.042)	0.002 (0.094)	0.0374 (0.049)
Observations	2306	2306	2306	2306	2306
R ²	0.319	0.384	0.258	0.405	0.49
Mozambique Company: Zambezi River					
Within 50 km					
Inside concession	0.0456 (3.419)	0.393 (0.350)	0.0709 (0.056)	0.9318 *** (0.153)	0.4152 *** (0.077)
Observations	1182	1182	1182	1182	1182
R ²	0.451	0.528	0.427	0.57	0.641
Within 100 km					
Inside concession	0.0063 (0.061)	0.1353 (0.274)	0.0346 (0.042)	0.5093 *** (0.110)	0.2368 *** (0.058)
Observations	1611	1611	1611	1611	1611
R ²	0.433	0.503	0.422	0.522	0.604

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Summary

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- ▶ Is historical exposure to the rule of concession companies important for understanding the relative under development of parts of Mozambique?
- ▶ Do individuals living inside former concessions have different levels of wealth and education when compared to those living outside former concessions?
- ▶ Preliminary results point to different outcomes in education in *Companhia do Nyassa* and wealth in *Companhia de Moçambique*.

Thank you