

Christians in Colonial Africa

by

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Overview

- Project examines the long-term impact of missionary activities (Protestant and Catholic) during the colonial period within Africa.
- Large pre-existing literature documenting the long-term impacts of missionary activity on education, attitudes about gender, democracy, and income (e.g., Grier, 1997; Woodberry, 2004; Gallego and Woodberry, 2009; Woodberry and Shah, 2009).

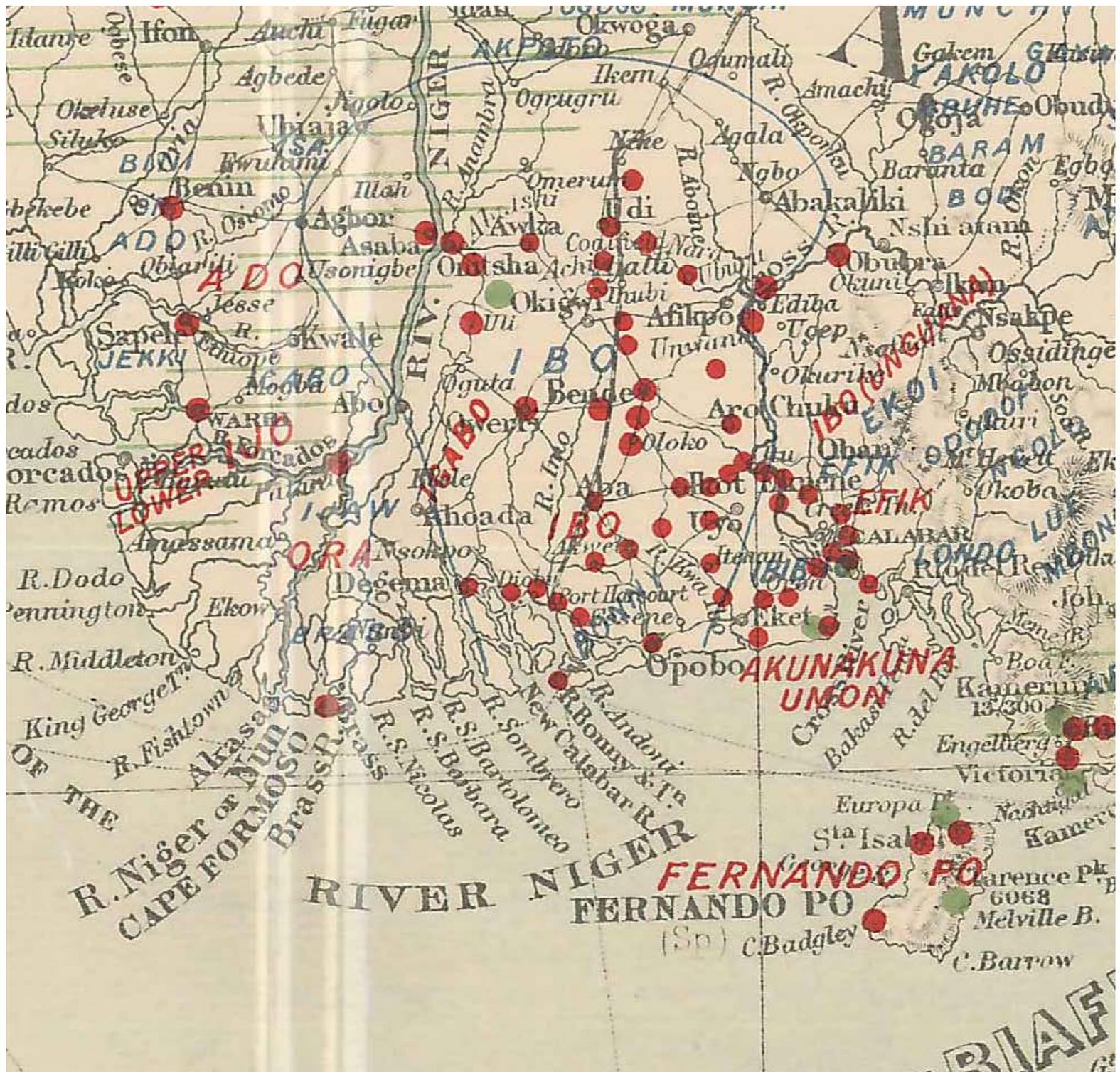
- Intended contribution is to examine mechanisms, and to distinguish between:
 1. influence of missionaries on norms, beliefs and values (which are internal to the individual).
 2. influence of missionaries on institutions and governance (which are external to the individual).
- Identification relies heavily on the internal vs. external distinction.

Missionary Data, 1924

- Data are from a map titled “Ethnographic Survey of Africa: Showing the Tribes and Languages; also the Stations of Missionary Societies” published by J.W. Roome in 1924.
- Map provides information on:
 - The location of Catholic and Protestant foreign mission stations.
 - The location of BFBS Bible depots.
 - Information on which African languages the Bible was translated into.

Missionary Data, 1902

- Dennis' (1902) *Centennial Survey of Foreign Missions*.
- The survey includes the following information for Protestant missions:
 1. Locations of missions.
 2. Funding missionary society.
 3. Date created.
 4. Type of educational facilities at the missions (e.g., universities, theological schools, boarding schools, industrial training schools, etc).
 5. Male and female student enrollments.
 6. Medical facilities and patients.



NORTH
ATLANTIC
OCEAN

SOUTH

ATLANTIC OCEAN

ETHNOGRAPHIC SURVEY OF AFRICA

Showing the tribes and languages also the patterns of Minority Nationalities

BY
Wm. A. M. BEAVER, M.C.A. 1903
Surgeon R.F.C. 1898-1903

- TRIBES
- LANGUAGES
- RELIGION
- ETHNIC GROUPS
- BOUNDARIES OF TRIBES
- ISLAND GROUPS
- TRIPY COLONIES

GULF OF GUINEA

SOUTH

INDIAN OCEAN



NORTH
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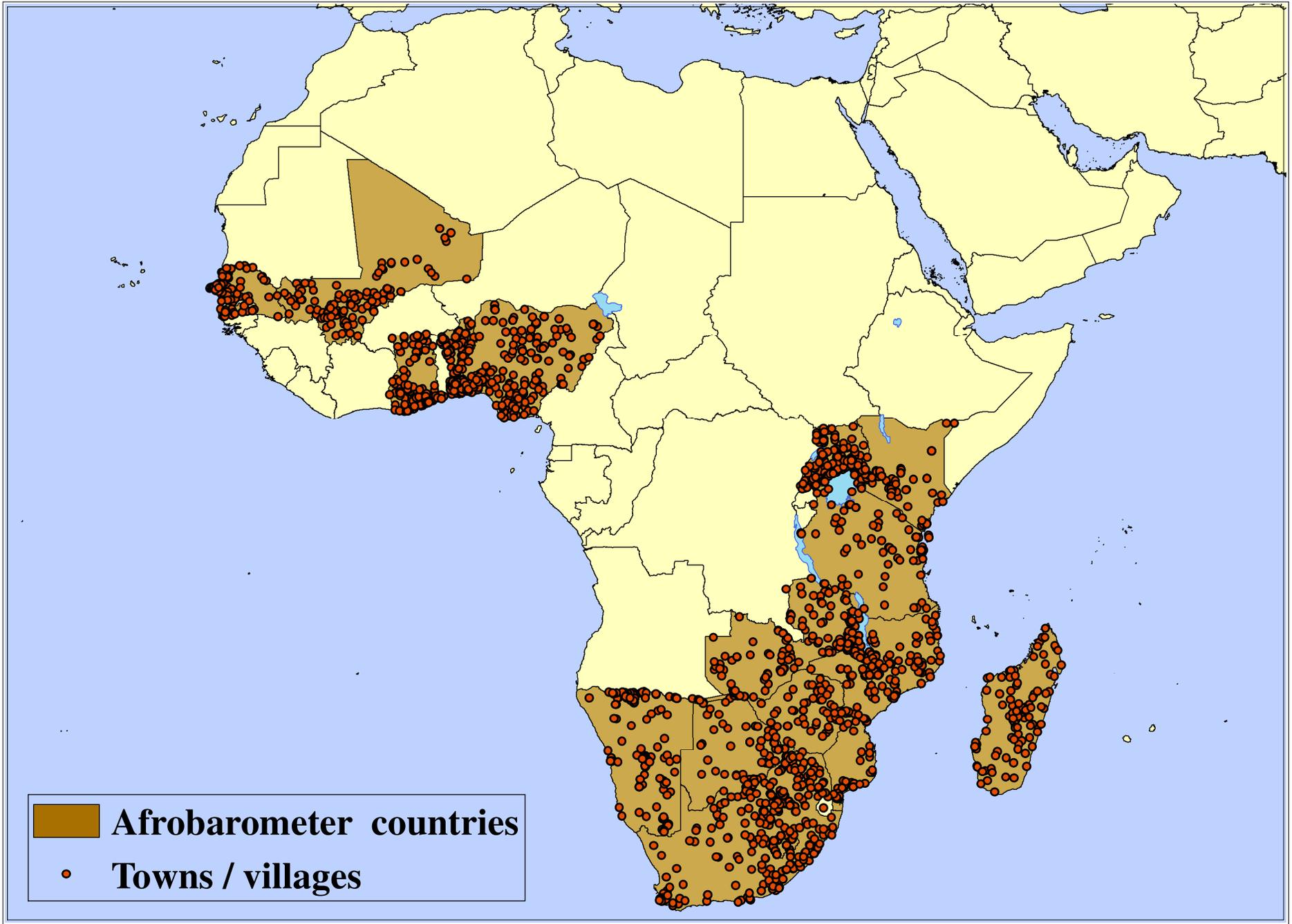
- TRIBES
- LANGUAGES
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INDIAN OCEAN

Afrobarometer Surveys (Round 3)

- Survey data collected from 17 sub-Saharan African countries in 2005.
- In each country 1,200 or 2,400 citizens of voting age were randomly sampled.
- The survey records individual-level characteristics, such as gender, education, occupation, income proxies, religion, etc.
- Also recorded is the village of each respondent and their ethnic identity.



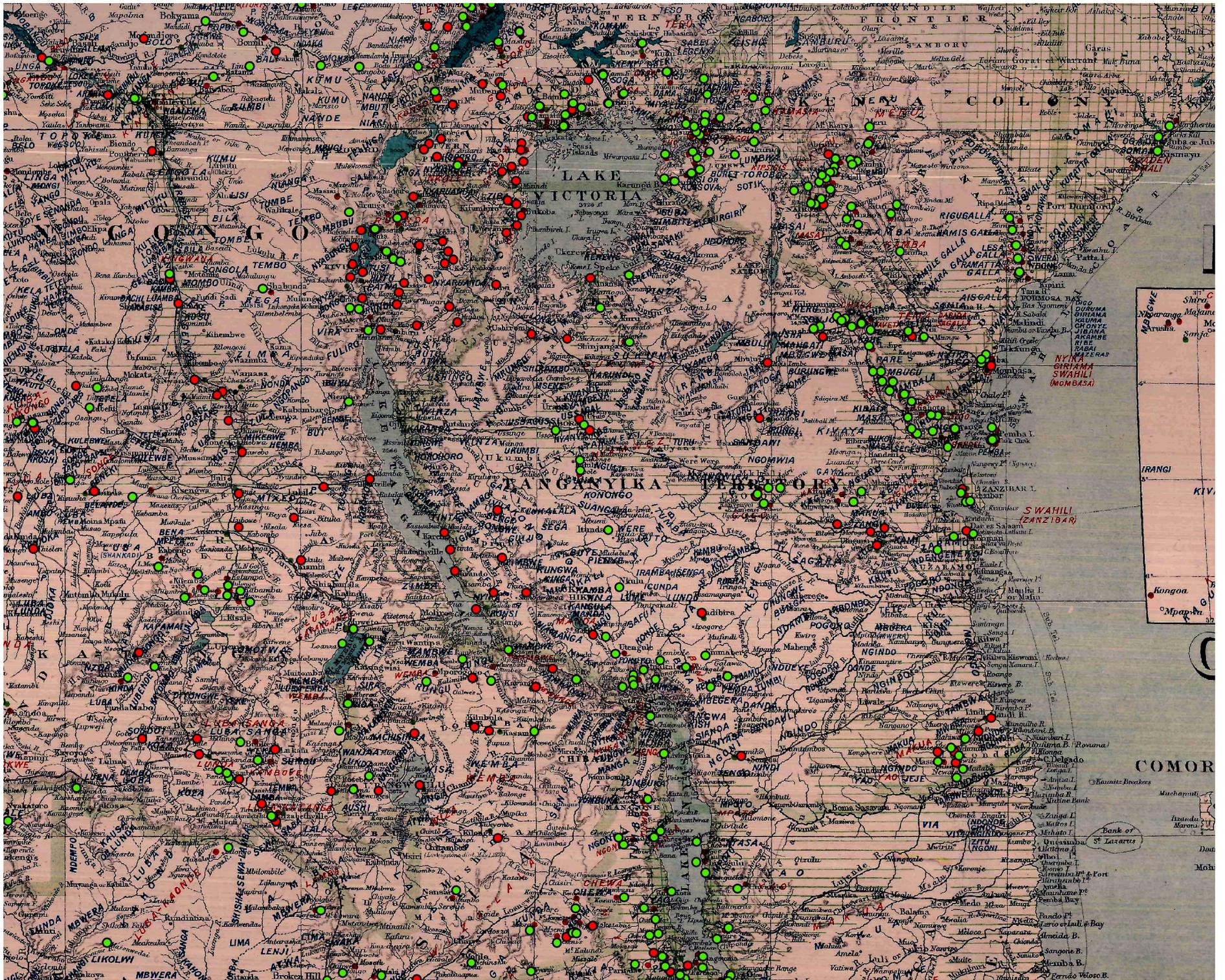
An Example: Religious Conversion

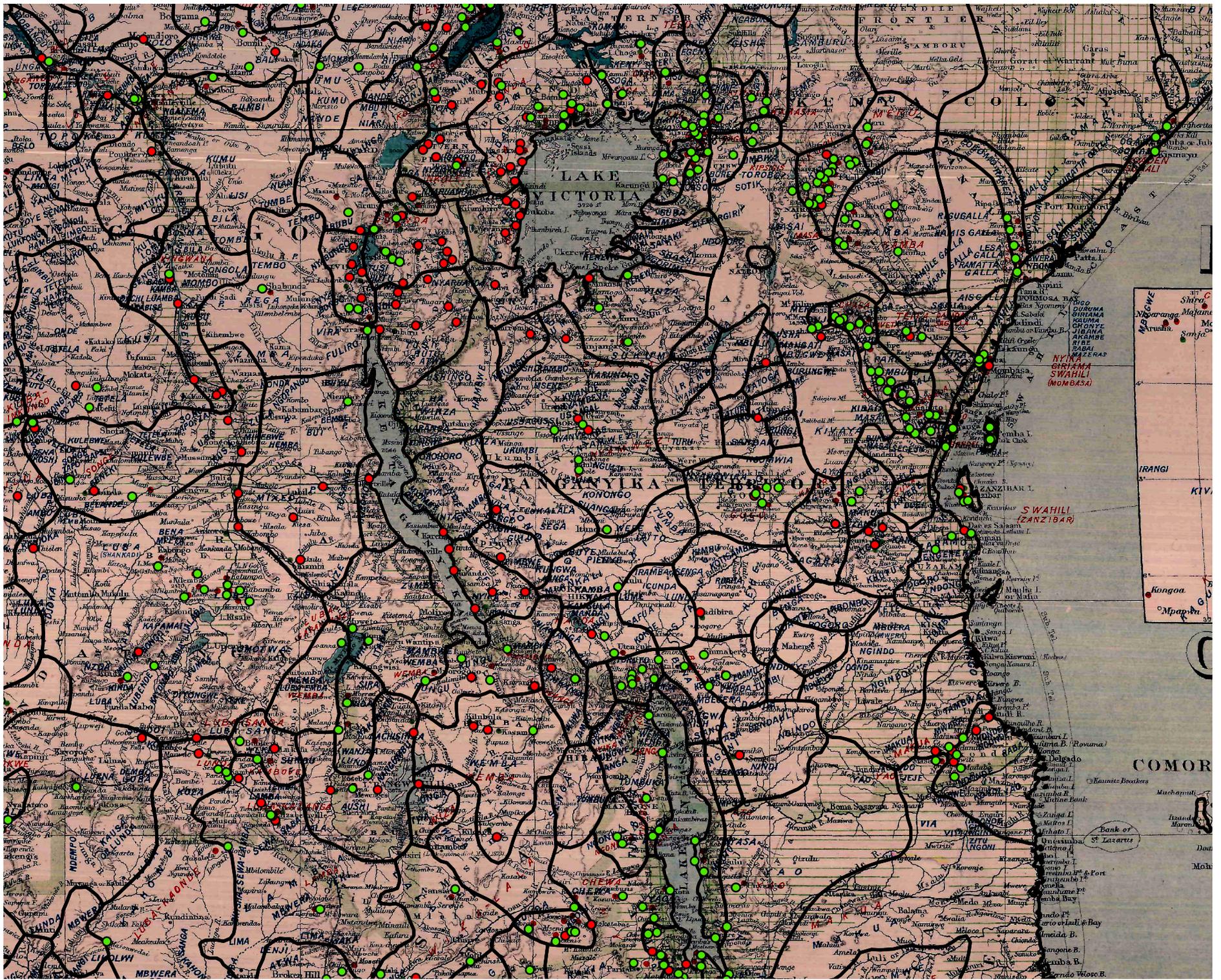
$$I_{i,e,v,c}^R = \alpha_c + \beta M_e + \gamma M_v + \mathbf{X}_i \Gamma + \mathbf{X}_e \Lambda + \mathbf{X}_v \Phi + \varepsilon_{i,e,v,c}$$

- i denotes an individual, e an ethnicity, v a village, and c a country.
- $I_{i,e,v,c}^R$ is an indicator for the self-identified religion of respondent i .
- α_c denotes country fixed effects.
- \mathbf{X}_i includes gender, age, age squared, occupation fixed effects, living condition fixed effects, and an urban indicator variable.
- M_e , M_v are ethnicity and village-level measures of historic missionary exposure.

Missions Variables

- M_e measures the historic prevalence of missionary activity among individual i 's ancestors.
 - The 'effect' is assumed to be geographically mobile, vertically transmitted, and internal to the individual.
 - E.g., beliefs, culture, or norms.
- M_v measures the historic prevalence of missionary activity in individual i 's village.
 - The 'effect' is assumed to be geographically fixed.
 - E.g., institutions or local governance structures.





An Example: Religious Conversion

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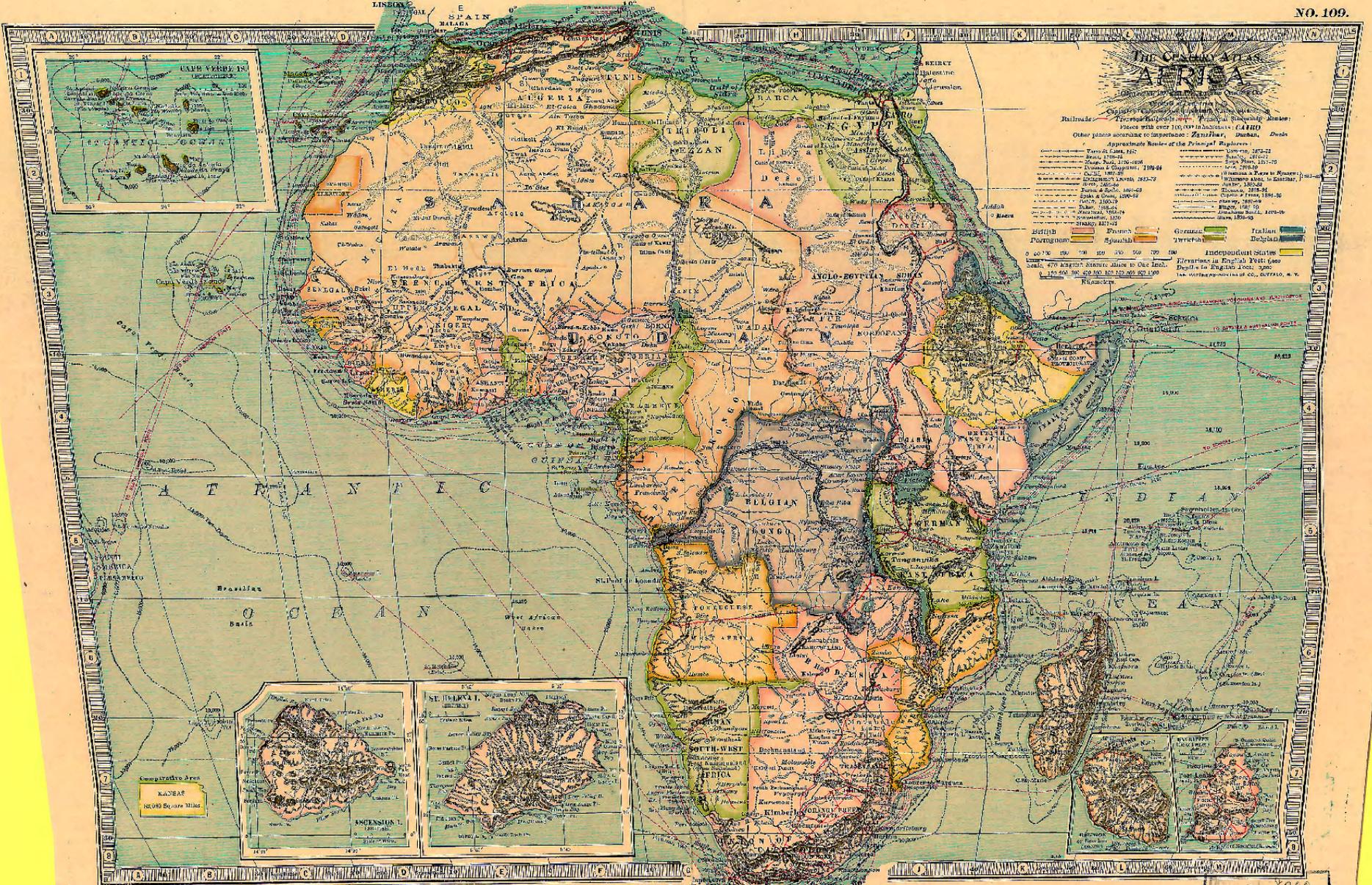
Determinants of Mission Locations

Johnson (1967) provides the best study of the determinants of mission locations within Africa.

- Access to a water source.
- Climate/soil suitable for cultivation.
- Proximity to pre-existing missions or trading posts.
- Historic prevalence of slavery.
- Ability to obtain permission from indigenous authorities.

Village- and Ethnicity-Level Control Variables

- Fraction of land of ethnic group / village that is suitable for cultivation (FAO GAEZ database, 2002).
- Fraction of ethnic group / village within 100km of a fresh water source (DCW).
- Historic intensity of the slave trade (Nunn and Wantchekon, 2010).
- Indicator for whether ethnic group / village was ‘connected’ to the colonial railway network (Century Company, 1897).
- Indicator for whether an ethnic group / village ‘contacted’ a pre-colonial European explorer (Century Company, 1897).



THE CONTINENT OF AFRICA
 Political Boundaries
 Railroads
 Major Cities
 Other places according to importance: Zanzibar, Durban, Deeds
 Approximate Number of the Principal Railways:
 British, Portuguese, Spanish, German, Italian, French, Belgian, Independent States
 Elevations in English Feet (Sea Level) in English Feet: 5000, 10000, 15000, 20000, 25000, 30000, 35000, 40000, 45000, 50000, 55000, 60000, 65000, 70000, 75000, 80000, 85000, 90000, 95000, 100000, 105000, 110000, 115000, 120000, 125000, 130000, 135000, 140000, 145000, 150000, 155000, 160000, 165000, 170000, 175000, 180000, 185000, 190000, 195000, 200000, 205000, 210000, 215000, 220000, 225000, 230000, 235000, 240000, 245000, 250000, 255000, 260000, 265000, 270000, 275000, 280000, 285000, 290000, 295000, 300000, 305000, 310000, 315000, 320000, 325000, 330000, 335000, 340000, 345000, 350000, 355000, 360000, 365000, 370000, 375000, 380000, 385000, 390000, 395000, 400000, 405000, 410000, 415000, 420000, 425000, 430000, 435000, 440000, 445000, 450000, 455000, 460000, 465000, 470000, 475000, 480000, 485000, 490000, 495000, 500000, 505000, 510000, 515000, 520000, 525000, 530000, 535000, 540000, 545000, 550000, 555000, 560000, 565000, 570000, 575000, 580000, 585000, 590000, 595000, 600000, 605000, 610000, 615000, 620000, 625000, 630000, 635000, 640000, 645000, 650000, 655000, 660000, 665000, 670000, 675000, 680000, 685000, 690000, 695000, 700000, 705000, 710000, 715000, 720000, 725000, 730000, 735000, 740000, 745000, 750000, 755000, 760000, 765000, 770000, 775000, 780000, 785000, 790000, 795000, 800000, 805000, 810000, 815000, 820000, 825000, 830000, 835000, 840000, 845000, 850000, 855000, 860000, 865000, 870000, 875000, 880000, 885000, 890000, 895000, 900000, 905000, 910000, 915000, 920000, 925000, 930000, 935000, 940000, 945000, 950000, 955000, 960000, 965000, 970000, 975000, 980000, 985000, 990000, 995000, 1000000

8200
 1911.3



8200
1911.3

Reported Religions in the Afrobarometer Surveys

	Number	Percent
Catholic	5,415	26.43%
Protestant (mainstream)	3,281	16.02%
Protestant (Evangelical/Pentecostal)	2,732	13.34%
Christian (general/other)	2,346	11.45%
Jehova's Witness	198	0.97%
Seventh Day Adventist	547	2.67%
African independent church (AIC)	702	3.43%
Traditional religion	546	2.67%
Hindu	10	0.05%
Muslim, Sunni	2,561	12.50%
Muslim, Shiite	307	1.50%
Muslim (general/other)	602	2.94%
Muslim , Tijane	583	2.85%
Muslim, Mouride	406	1.98%
Muslim, Layene	6	0.03%
Muslim, Khadre	66	0.32%
Agnostic	16	0.08%
Atheist	37	0.18%
Other	125	0.61%
Total	20,486	100.00%

Notes : The table reports the categories of religions reported in the Afrobarometer 2005 survey, and the number of respondents for each category.

Christian Missions and Conversion

	Dependent variable: Protestant/Catholic indicator variable, $I_{i,e,v,c}^R$					
	Full sample			Non-Muslim sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Mission stations among ethnic group, M_e	0.036***		0.144***	0.025**		0.131***
	(0.011)		(0.044)	(0.011)		(0.044)
Mission stations in village, M_v		0.021***	0.033***		0.083***	0.070
		(0.006)	(0.032)		(0.032)	(0.044)
Individual-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity-level controls	Yes	No	Yes	Yes	No	Yes
Village-level controls	No	Yes	Yes	No	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	20,755	20,755	20,755	7,969	7,969	7,969
Number of clusters	185	2,693	185 / 2,693	70	1,160	70 / 1,160
Pseudo R -squared	0.28	0.28	0.29	0.31	0.32	0.32

Notes : The table reports logit estimates where the unit of observation is an individual. Coefficients are reported, with clustered standard errors in brackets. All regressions include country fixed effects. Individual-level controls include age, age squared, a gender indicator variable, five living condition fixed effects, 25 occupation fixed effects, and an indicator for whether the respondent lives in an urban location. Ethnicity-level controls include an indicator variable that equals one if the ethnicity was contacted by a European explorer prior to the colonial period, an indicator variable that equals one if a railway line dissected the land inhabited by the ethnicity during the 19th century, a measure of the fraction of land suitable for cultivation, and the fraction of land within ten kilometers of a water source, and the log normalized number of slaves exported during the Atlantic and Indian Ocean slave trades. The village-level controls include the same set of control variables, but measured at the village level. ***, ** and * indicate significance at the 1, 5 and 10% levels.

Magnitude of the Estimated Impact of Mission Stations

- Using the estimates from column (3):
- Ethnicity level:
 - The s.d. of M_e is 2.25; mean is 4.0.
 - A 1 s.d. increase in M_e increases the probability of being Christian by .32 or **32 percentage points**.
- Village level:
 - The s.d. of M_v is 1.39; mean is 0.83.
 - A 1 s.d. increase in M_v increases the probability of being Christian by .046 or **4.6 percentage points**.
- (The mean of the Protestant/Catholic indicator variable is 0.58 or **58 percent**.)

Education

	Dependent variable: Years of Education		
	(1)	(2)	(3)
Mission stations among ethnic group, M_e	0.061*** (0.021)		0.050** (0.021)
Mission stations in village, M_v		0.057*** (0.010)	0.037*** (0.013)
Individual-level controls	Yes	Yes	Yes
Ethnicity-level controls	Yes	No	Yes
Village-level controls	No	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Number of observations	20,914	20,914	20,914
Number of clusters	185	2,693	185 / 2,693
<i>R</i> -squared	0.34	0.34	0.34

Education (by Religion and Gender)

	Dependent variable: Years of Education			
	(1)	(2)	(3)	(4)
Catholic missions among ethnic group	0.031** (0.016)	0.056*** (0.019)		
Catholic missions among ethnic group x Female		-0.052* (0.027)		
Protestant missions among ethnic group	0.050** (0.021)	0.013 (0.023)		
Protestant missions among ethnic group x Female		0.072*** (0.025)		
Catholic missions in village			0.037*** (0.010)	0.055*** (0.012)
Catholic missions in village x Female				-0.035*** (0.012)
Protestant missions in village			0.035*** (0.011)	0.018 (0.013)
Protestant missions in village x Female				0.035*** (0.011)
Country FEs & Individual-level controls	Yes	Yes	Yes	Yes
Ethnicity-level controls	Yes	Yes	Yes	Yes
Village-level controls	No	No	No	No
Number of observations	20,914	20,914	20,914	20,914
Number of clusters	185	185	2,693	2,693
<i>R</i> -squared	0.34	0.34	0.34	0.34

Conclusions

- Historic missionary activity within Africa provides a natural laboratory to examine ‘exogenous’ historical shocks that affect both institutions/governance and beliefs/culture.
- With the use of GIS and statistical analysis, we can begin to separately identify these two two causal mechanisms.