

Online Appendix to the Paper:
The Long-Term Effects of the Printing Press
in Sub-Saharan Africa

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A Data

A.1 Data on Mission Centers Location and Investments

The *Geography Atlas of Protestant missions*, published in 1903, was the result of an extensive work of localizing all the missionary stations around the world and reporting all the activities they were investing in. Of all the reports, conducted in 1896, 1903, 1911 and 1925, this one (1903) is the most precise and extensive version as investments, denomination, number of students, teachers (both native and foreign) and missionaries are reported for each mission localized on the maps.

The Atlas contains maps of all the regions in the world and locates all the missions active in 1903. Figure A.2 provides an example of these maps. All the missions are uniquely identified in a statistical index providing detailed information on the type of infrastructure available and the number of workers and students. Figure A.1 shows a section of this statistical index.

A

Abaco, see **Great Abaco Island**
Abadiyeh, 12-Palestine Inset. — **FFMA** (1899) m w 3-N 2-n 3-x=c s 2-v D
Abasa, ? Gold Coast, Plate 14. — **WMS** m 64-Nn 64-O 684-x=10-c 7-s 8-v
Abbotsbad, 11-D1. — **CEZMS** (1894) 3-W n=160 senana pupils
CMS (1899) 2-m w (p) (l) N 9-x=D
Abefify, 14-D7. — **B** (1876) 2-m 2-w 20-N n 17-O 731-x=s 15-v K (Abetifi)
Abeth, very near **Beakloen**, 12-Palestine Inset. — See **Mt. Lebanon**, work of **FM**
Abokuta, 14-E7. — **CMS** (1846) 2-m w 2-W 24-N 5-n 1122-x=c 17-v T D L
SBC (1856) m w 2-N n 2-O 26-x=c s v
WMS 2-m 30-Nn 22-O 264-x=7-c 7-s 3-v
Aberdeen, 13-C1. — **BFSS** (1874) 2-m
Abetifi, see **Abefify**
Abo, see **Aboa**
Aboa, 14-F8 Inset. — **MGB** (1900) m=c v (Abo)
Abokobi, see **Agbogba**
Abors, corner of Tibet, China and Assam, north of **Dibru-garh**, 10-H1. — **MPA** (1900) 2-m (l)=D
Aburah, 14-D7. — **WMS** m 49-Nn 75-O 545-x=10-c 10-s 5-v
Aburi, 14-D7. — **B** (1847) 3-m 2-w W 14-N 4-n 9-O 716-x=10-v K
WMS 3-m W 93-Nn 18-O 644-x=15-c 13-s 14-v h
Acca, see **Acre**
Accra, or **Akra**, 14-D7. — **NBC** (1900) m 50-x=c s
WMS 3-m 34-Nn 30-O 532-x=4-c 7-s 2-v
Achampatti, 12-E6. — **CMS** N
Achena, ? Ind. Ter., 3 and Inset. — **FMH** (1887) N 26-x=c s
Acre, **Akha**, or **Accho**, 12-Palestine Inset, 13-L7. — **CMS** (1890) 2-m 2-w 4-W (p)=D H (Acca)
Acton Homes, 18-E5. — **WMBA** 29-N 12-O 297-x=2-c 3-s 2-v
Aleppo, 12-K9, 13-M6. — **PCEJ** (1895) 2-m (p) 3-N n=s B v D
Alert Bay, 2-16. — **CMS** (1878) 2-m 2-w 2-W N n 22-x h I
Alessandria, 13-EF4. — **MEN** N O 61-x=s
Alexandria, 12-I10, 13-Ks, 15-G1. — **AJM** No statistic
BFBS 2-m 3-N=B
CEJ 4-m 3-w 3-W=4-v
DAK (1857) 13-W=H
EMB (1898) 7-m
IU (1898) m w=home of rest
LAFGJ No statistics
NAM (1892) 2-m 2-w 2-W N n=c v
UP (1857) 2-m w 2-W=B
WMS m 2-N 45-x=s
Algiciras, 13-B8, 7. — **SSM** (1890) m w N n=c v
Algiers, 13-D8, 14-E1. — **BFBS** (1882) m w 6-Nn=B
FSEJ m
NAM (1892) 2-m 2-w 2-W (l)=2-s
FB m w W
PCFI No statistics
SMF (1887) m w=c s
TM (1888) 5-W
Aligarh, 11-FG5. — **CMS** (1863) m w 3-W 21-N 10-n 8 82-x=c 10-v
MEN 4-m 2-w W 14-N 16-n 720-x=2-c 32-s S 15-v I
Aliwal North, 17-G7, 18-E7. — **PMMS** (1870) 2-m 2-w 5 9-O 1188-x=c s 2-v 2-T I t
Allahabad, 10-A2. — **BFBS** m=B
CMS (1859) 9-m 6-w 12-N n 300-x=c 5-v T
MEN 2-m w 9-N 9-n 67-x=c 27-s S 13-v f o
PN (1836) 4-m 2-w 5-W (p) 18-N 8-n 2-O 150-x=3-c 6-v 3-h D H
WU (1868) 2-W N 31-n=6-s B 14-v Rescue work, and special services for beggars
YMCA (1900) m=Y
ZEM 6-W N 19-n=5-v h o 260 senana pupils
Aleppie, see **Alleppey**
Allanva, 12-E2 — **WMS** (1812) — — (l) 10-v 8-c 5-c 0

Notes: This Figure is a reproduction of part of Statistical index from the *Geography Atlas of Protestant missions*. Abbreviations are used in this index for the different characteristics and investments of the missions.

Figure A.1: Parta of the Statistical index from the *Geography Atlas of Protestant missions*, 1903

- A = Anti-opium society.
- a = Anti-foot-binding society.
- B = Bible, or tract and book-room.
- b = Blind school, or special work for the blind.
- C = College, or university.
- c = Church building, or chapel.
- D = Dispensary.
- d = Deafmute school, or work for deaf and dumb.
- F = Foundling asylum, or nursery mission.
- f = Female helper training class.
- H = Hospital.
- h = High, or boarding school.
- I = Industrial school.
- i = Insane asylum.
- K = Kindergarten.
- L = Leper asylum, or special leper work.
- l = Literary worker.
- M = Medical, or nurses class, or school.
- m = Male foreign missionary.
- N = Native male teacher, catechist, or pastor.
- n = Native female teacher, or religious helper.
- Nn = Total number of native workers of both sexes.
- O = Outstation.
- o = Orphanage.
- P = Printing press.
- p = Physician.
- R = Refuge for opium victims.
- r = Rendezvous for training new missionaries.
- S = Society of young people.
- s = Sunday-school.
- T = Theological class, or school.
- t = Temperance society.
- V = Village, or day-school.
- W = Woman who is unmarried, or is a widow.
- w = Wife of a missionary.
- X = White Cross Society.
- x = Christians in native church.
- Y = Young Mens Christian Association.



Figure A.2: Plate Representing all the Missionary Stations in 1903, West Africa (*Geography Atlas of Protestant missions*, 1903)

A.2 Afrobarometer Data

We use data from the Afrobarometer survey, rounds 3 and 4 (resp. 2005 and 2008), which are a comparative series of national surveys on attitudes towards democracy, markets, and civil society in Africa. Surveys contain representative information at the individual level of attitudes towards political and social outcomes as well as individual evaluations of living standards. Table A.1 gives a brief description of all the variables from the Afrobarometer used in our analysis.

A precise description of the survey, variables and sampling methods is available on the Afrobarometer website, <http://www.afrobarometer.org>. Similarly, all the questionnaires used for the construction of the dataset are available on the <http://www.afrobarometer.org/survey-and-methods/questionnaires> website. Table A.1 describes the questions used to construct the outcomes in the analysis.

Table A.1: Variables from Afrobarometer, Description

Variable	Original Question in the Survey	Construction
Read News	How often do you get news from the newspapers? Every day, a few times a week, a few times a month, less than once a month, never, don't know	BV, true if at least once a month or more
Listen News	How often do you get news from the radio? Every day, a few times a week, a few times a month, less than once a month, never, don't know	BV, true if at least once a month or more
Watch News	How often do you get news from the TV? Every day, a few times a week, a few times a month, less than once a month, never, don't know	BV, true if at least once a month or more
Trust	How much do you trust the other [Ghanaians/Kenyans/etc.] Not at all, just a little, somewhat, a lot, don't know	BV, true if somewhat or more
Register	Understanding that some [Ghanaians/Kenyans/etc.] were not able to register as voters for the [20xx] elections, which statement is true for you? You were registered to vote, You did not want to register, You could not find a place to register, You were prevented from registering, You were too young to register, Did not register for some other reason, Don't Know/Can't remember.	BV, true if "You were registered to vote"
Turnout	With regard to the most recent nationale election, which statement is true? You were not registered or too young, you voted in the election, you decided not to vote, you could not find the polling station, you were prevented from voting, you did not have time to vote, you did not vote for some other reason, you could not find your name in the register, don't know	BV, true if "you voted in the elections"
Actions	Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year. If not, would you do this if you had the chance: attend a community meeting; go together with others to raise an issue; attend a demonstration or protest march.	BV, true if says yes to any of the options
Education	Level of education from none (0) to graduate studies (9)	DI
Health	[Is there a health clinic] in the primary sampling area or within easy walking distance?	BV, true if yes

A.3 Controls

Historical Characteristics

- **Cities 1400:** indicator variable that equals one if there was a city located on the land inhabited by each ethnic group. **Source:** Nunn and Wantchekon (2011) using data from Chandler (1987) on the location of African cities with more than 20,000 inhabitants in year 1400.
- **Distance to 1400 City:** the distance is computed by the authors using ArcGIS. **Source:** The information on the location of cities in 1400 is from Nunn and Wantchekon (2011).
- **Distance to 1800 City:** the distance is computed by the authors using ArcGIS. **Source:** The information on the location of cities in 1800 is from Nunn and Wantchekon (2011).
- **Distance to Catholic mission in 1889:** the distance is computed by the authors using ArcGIS. **Source:** The information on the location of missions in 1889 is from Nunn (2009). He geocoded the original map from Béthune (1889).
- **Explorer contact:** indicator variable that equals one if a European explorer traveled through land historically occupied by the ethnic group (the variable captures exploration routes between 1768 and 1894). **Source:** Nunn and Wantchekon (2011) using information on the location of railway lines in the first decade of the twentieth century from Company (1911).
- **Initial population density:** The average population density estimate in the 18th Century in a buffer of 10 km around each location. From the HYDE 3.1 database.
- **Malaria ecology of the land:** Malaria stability index. The index takes into account the prevalence and type of mosquitoes endemic to a region, their human biting rate, their daily survival rate, and their incubation period. It has been constructed for 0.5-degree-by-0.5-degree grid-cells globally. **Source:** Kiszewski et al. (2004).
- **Railway contact:** indicator variable that equals one if any part of the railway network was built on land historically inhabited by the ethnic group. **Source:**

Nunn and Wantchekon (2011) using information on the location of railway lines in the first decade of the twentieth century from Company (1911).

- **Slave exports, per capita:** estimates of the number of slaves taken from each ethnic group disaggregated at the ethnicity level. These estimates were constructed by combining data on the total number of slaves shipped from all ports and regions of Africa with data on the slaves' ethnic identities. The estimates cover Africa's transatlantic and Indian Ocean slave trades between 1400 and 1900. **Source:** Nunn (2008).

Geographic Characteristics

- **Annual precipitation level:** the annual precipitation level data refers to total yearly precipitation. The model used to build this data has been applied considering the baseline period 1961-1990. A detailed description of calculation procedures used to build this data can be found in the GAEZ v.3.0 Global Agro Ecological Zones - Model Documentation (Fischer et al., 2000). **Source:** Global Agro-Ecological Zones data.
- **Average elevation:** in meters. **Source:** Nunn (2008) using data from Parker (1997).
- **Distance to the capital:** the distance is computed by the authors using ArcGIS.
- **Distance to the coast:** the distance to the coast is identified by the authors using the Proximity Utility in ArcGIS.
- **Number of agriculture growing days per year:** number of days during the year when temperature regime and moisture supply are conducive to crop growth and development. This period is also termed the "length of the growing period" (LGP). It is a proxy for the agroclimatic potential productivity of land. The LGP is determined based on prevailing temperatures and water balance calculations for a reference crop. **Source:** Global Agro-Ecological Zones data.
- **Population density in 2005:** population density of the respondent's neighborhood. **Source:** Afrobarometer (2005).
- **Share of land within 10 km of water:** in percent. **Source:** Nunn (2010) using data from the Digital Chart of the World (DCW).

- **Suitability for rainfed crops:** rainfed suitability has been calculated for nine crop groups that are important to most farming systems in developing countries, namely cereals, fibre crops, oil crops, pulses, roots and tubers, stimulants, sugar crops, tree fruits and vegetables. The algorithm examines in each gridcell all the crop types belonging to a particular crop group. Among these it determines the crop type that maximizes agronomic suitability. **Source:** Global Agro-Ecological Zones data.

A.4 Newspaper Market

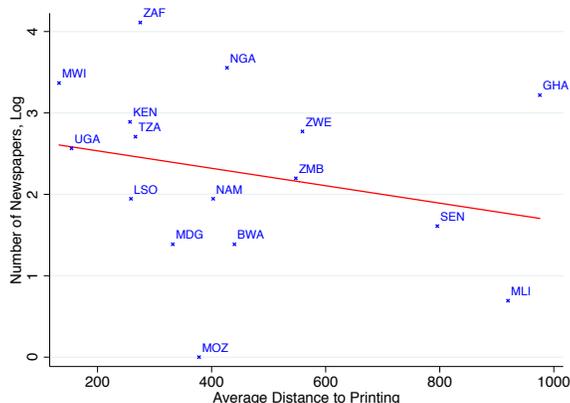
Newspaper Data The cross-country newspaper dataset we build relies on various sources:

- **Tudesq (1995)**: *Feuilles d’Afrique: étude de la presse de l’Afrique sub-saharienne*.
- **Daubert (2009)**: *La presse écrite d’Afrique francophone en question: essai nourri par l’essor de la presse française*.
- The **Standing Conference on Library Material on Africa (SCOLMA)**: it provides an inventory of the available African newspapers in archives collected in 1973.
- The ***Directory of African Media*** (Maja-Pearce, 1996): digitized by the authors.
- The ***African book world and press: a directory*** (Zell, 1980): digitized by the authors.
- The ***Willings press guide*** (Redman and Group, 1993, 2003, 2012): digitized by the authors (one issue every ten years).
- **ICON**: using a web-spider, we collect all the data from the *Icon database* which provides information (first and last date published, title and frequency) on newspapers around the world. This information comes from all the records available in a precise set of institutions: the British Library, the Center for Research Libraries, Harvard University, the Library of Congress, the Library and Archives of Canada, the New York Public Library, the New York State Library, the Online Computer Library Center Inc., the University of Florida, the University of Illinois at Urbana-Champaign, the University of North Carolina at Chapel Hill, the University of Southern California, the University of Washington.
- **Readex**: We collect the summary data from the *Readex database*. Over several decades, Readex has published many of the most widely used collections of primary source research materials in academic libraries, first as Readex Microprint

Corporation and since 1984 as a division of NewsBank. These digital collections include information for 40 African newspapers from 1800 to 1922.¹

We merge the information from all these datasets/books together to build a consistent database of African newspapers through history. This dataset is a panel from 1800 to 2012 with the number of newspapers published each year in each sub-Saharan country and their date of creation. One caveat of this dataset is that some newspapers (especially small local newspapers) may be missing. However we think that it provides an interesting overview of the state of the newspaper market and of its evolution over time.

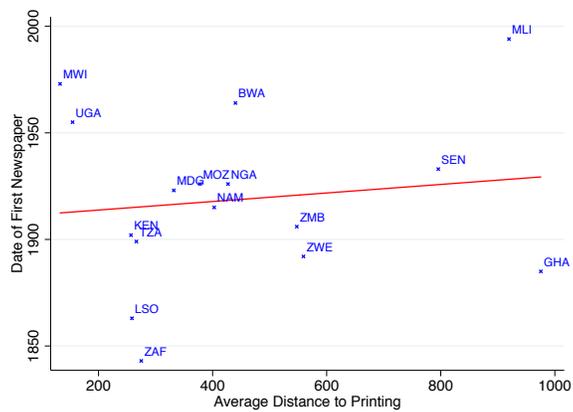
Suggestive evidence Figure A.3 shows the cross-country correlation between the number of newspapers that have existed and the average distance of the cities surveyed in the Afrobarometer to the closest historical mission settlement with a printing press. The figure displays a negative correlation between the average distance to the printing press and the total number of newspapers recorded. Figure A.4 shows the correlation between the date of publication of the first newspaper and the average distance of the cities surveyed in the Afrobarometer to the closest historical Protestant mission station with a printing press. We observe a positive correlation between the distance to the printing press and the publication date of the first newspaper: the closer a location is to a historically attested printing press, the sooner the first newspaper is recorded.



Notes: The x-axis represents the country average distance of Afrobarometer to the closest mission with printing press. The y-axis represents the country total number of newspapers in the dataset.

Figure A.3: Distance to the Printing Press and Number of Newspapers

¹<http://www.readex.com>



Notes: The x-axis represents the country average distance of the villages in the Afrobarometer to the closest mission with a printing press. The y-axis represents the publication date of the first newspaper in the country.

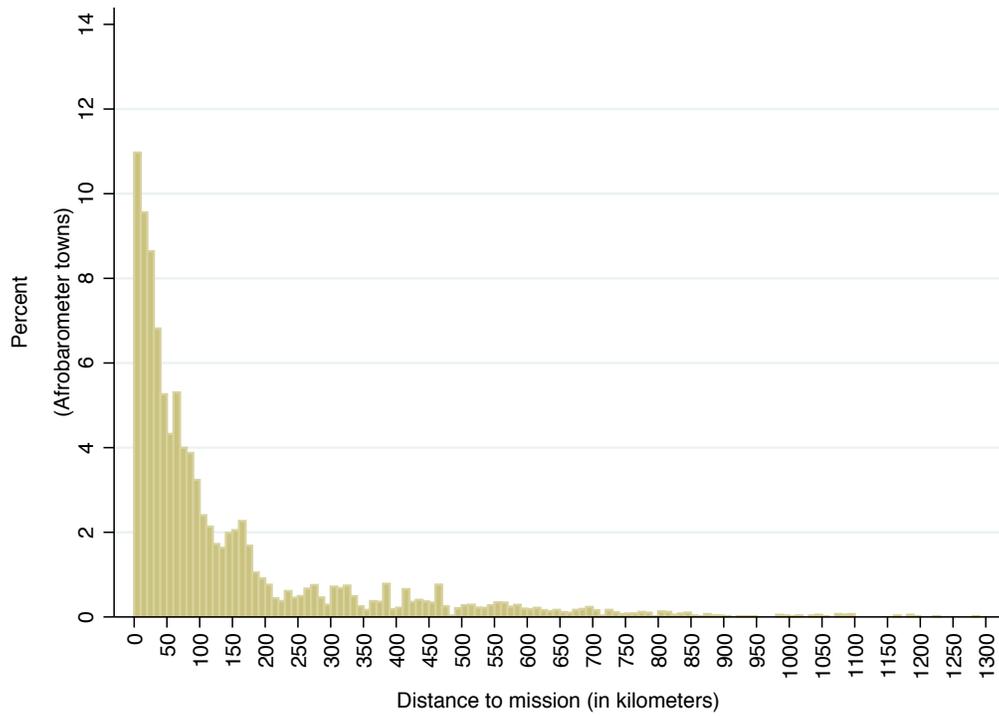
Figure A.4: Distance to the Printing Press and Publication Date of the First Newspaper

A.5 Descriptive Statistics

Table A.2: Summary statistics: Distance of the Afrobarometer towns to the closest mission and to the closest mission with a printing press.

	Mean	sd	Median	Min	Max
Distance to mission	140	184	68	0.16	1,286
Distance to printing press	439	308	362	1.27	1,676
Observations	47,456				

Notes: The Table gives summary statistics for the distance of Afrobarometer towns to Protestant missions. Values for distances are in kilometers.



Notes: The Figure plots the distribution of the distance of the Afrobarometer towns to the closest mission (with 10 km bins). Values for distances are in kilometers.

Figure A.5: Distribution of the distance of the Afrobarometer towns to the closest mission

Table A.3: Summary statistics: Afrobarometer data

	All sample	100km
Outcomes: Social and civic capital		
News	0.33 (0.47)	0.38 (0.49)
Trust	0.42 (0.49)	0.38 (0.49)
Turnout	0.72 (0.45)	0.72 (0.45)
Registration	0.80 (0.40)	0.81 (0.39)
Actions	0.24 (0.43)	0.23 (0.42)
Other outcomes		
Education	3.11 (2.02)	3.41 (1.92)
Clinic	0.57 (0.50)	0.56 (0.50)
Controls		
Female	0.50 (0.50)	0.50 (0.50)
Age	36.35 (14.54)	36.49 (14.71)
Observations	47,456	29,411

Notes: The Table gives summary statistics for the characteristics of the individuals surveyed in the Afrobarometer. Column 1 presents the statistics for the entire sample. Column 2 presents the statistics for the individuals living in towns located less than 100 km away to the closest mission.

Table A.4: Historical and Geographical Characteristics of Printing Presses With and Without a Publication Record

	(1)	(2)	(3)
	No Printing	Printing	Diff
Geographical Characteristics			
Number of Growing Days (%)	51.393	66.541	-15.148 (9.434)
Suitability for Rainfed Crops	5.750	4.000	1.750** (0.704)
Average Precipitation per Day (over year)	3.607	3.928	-0.320 (0.838)
Distance to 2000 city (100km)	2.497	2.773	-0.275 (0.855)
Distance to the Coast (100km)	1.307	3.828	-2.521** (1.102)
Malaria Ecology	7.618	12.302	-4.685 (3.609)
Historical Characteristics			
Slave Exports, per capita	0.058	0.032	0.026 (0.047)
Railway Contact	0.083	0.125	-0.042 (0.122)
Explorer Contact	0.250	0.312	-0.062 (0.179)
Initial Population Density / 100	17.611	10.872	6.739 (8.418)
Distance to 1400 City (100km)	6.097	7.624	-1.527 (1.678)
Distance to 1800 City (100km)	8.963	12.010	-3.047 (3.203)
Observations	12	16	28

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The table compares geographical and historical characteristics of missions with a printing press depending on whether they had a publication record in 1923 or not. Column 1 presents the results for missions with no publication record. Column 2 presents the results for missions with a publication record. In Column 3 we perform a t-test on the equality of means (standard errors in parenthesis). Variables are described in the Online Appendix.

Table A.5: Investments of Printing Presses With and Without a Publication Record

	No Printing	Printing	Diff
Arrival Date	1866	1876	-10 (10)
Bible Society	0.583	0.188	0.396 (0.229)
Number of Native Workers	2.583	1.188	1.396 (2.615)
Total Population	431.167	400.188	30.979 (229.650)
Schools	2.333	1.125	1.208 (0.937)
Number of Students	408.333	389.000	19.333 (227.537)
Schools per Student (%)	2.522	0.471	2.051 (1.439)
Teachers per Student (%)	12.435	24.002	-11.566 (15.442)
Health Facilities	1.667	1.312	0.354 (0.679)
Physicians per Capita (%)	0.045	1.633	-1.588 (1.808)
Health Facilities per Capita (%)	0.496	3.657	-3.160 (3.598)
Observations	12	16	28

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The table compares investments of missions with a printing press depending on whether they had a publication record in 1923 or not. Column 1 presents the results for missions with no publication record. Column 2 presents the results for missions with a publication record. In Column 3 we perform a t-test on the equality of means (standard errors in parenthesis). Variables are described in the Online Appendix.

B Matching: Additional tables

Table B.1: Estimation of the propensity score (logit)

	(1)	(2)	(3)
	PP	School	Health
	b/se	b/se	b/se
Geographic Characteristics			
Number of Growing Days (%)	-0.028 (0.031)	-0.012 (0.011)	0.021 (0.018)
Suitability for Rainfed Crops	-0.237 (0.190)	0.057 (0.109)	-0.009 (0.093)
Average Precipitation per Day (over year)	2.284** (0.961)	-0.007 (0.078)	-0.404 (0.535)
Distance to 2000 city (100km)	-0.202 (0.252)	-0.038 (0.106)	0.283*** (0.104)
Distance to the Coast (100km)	0.023 (0.106)	-0.317*** (0.095)	-0.129** (0.055)
Malaria Ecology	0.123** (0.062)	0.022 (0.028)	-0.024 (0.030)
Historical Characteristics			
Slave Exports, per capita	-3.137 (12.498)	-0.549 (0.387)	0.485** (0.211)
Railway Contact	-0.971 (0.709)	-0.384 (0.602)	-1.310*** (0.457)
Explorer Contact	-1.204 (1.270)	1.357* (0.703)	0.936* (0.517)
Initial Population Density / 100	-0.045** (0.017)	-0.011*** (0.004)	-0.003 (0.005)
Distance to 1400 City (100km)	0.150 (0.100)	-0.059 (0.078)	0.009 (0.042)
Distance to 1800 City (100km)	-0.048 (0.052)	-0.041 (0.052)	-0.056*** (0.019)
Mission Characteristics			
Arrival Date	-0.005 (0.021)	0.001 (0.013)	0.012 (0.009)
Bible Society	-2.045 (1.504)	1.177 (1.304)	0.373 (0.852)
Native Workers	-0.372** (0.184)	-0.070 (0.083)	-0.385*** (0.105)
Total Mission Population	0.308*** (0.102)	0.082 (0.069)	0.376*** (0.106)
Number of Students	-0.308*** (0.102)	-0.081 (0.069)	-0.376*** (0.106)
Physician	2.610 (1.621)	-0.276 (0.877)	3.860** (1.570)
Observations	311	393	441
Country FE	Yes	Yes	Yes
Clusters (Society)	41	45	53
Pseudo R2	0.507	0.383	0.505

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports the first stage of the matching strategy. This first stage estimates the propensity score at the mission-level. The propensity score is the estimated probability of importing the printing press from the logit regression of the binary variable indicating whether a mission imported the printing press on mission's historical and geographical characteristics as well as mission investments.

Table B.2: Propensity score matching: Balancing test (Printing Press)

	No Printing Press	Printing Press	Diff/se
Geographic Characteristics			
Number of Growing Days (%)	66.652	60.232	6.420 (7.118)
Suitability for Rainfed Crops	4.400	4.654	-0.254 (0.540)
Average Precipitation per Day (over year)	5.007	3.812	1.196 (1.581)
Distance to 2000 city (100km)	2.788	2.684	0.105 (0.540)
Distance to the Coast (100km)	2.072	2.655	-0.583 (0.940)
Malaria Ecology	11.945	10.212	1.733 (2.832)
Historical Characteristics			
Slave Exports, per capita	0.479	0.046	0.433 (0.309)
Railway Contact	0.200	0.115	0.085 (0.103)
Explorer Contact	0.240	0.231	0.009 (0.121)
Initial Population Density / 100	13.683	14.746	-1.063 (6.303)
Distance to 1400 City (100km)	7.898	7.234	0.664 (1.334)
Distance to 1800 City (100km)	10.872	10.966	-0.094 (2.433)
Mission Characteristics			
Arrival Date	1872.160	1871.760	0.400 (6.439)
Bible Society	0.200	0.308	-0.108 (0.158)
Native Workers	0.000	1.923	-1.923 (1.401)
Total Mission Population	434.520	443.077	-8.557 (224.025)
Number of Students	424.920	427.000	-2.080 (222.933)
Physician	0.200	0.308	-0.108 (0.136)
Observations	51		

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table compares geographical and historical characteristics of missions with a printing press and the missions matched using the propensity score. Column 1 presents the results for missions without a printing press. Column 2 presents the results for missions with a printing press. In Column 3 we perform a t-test on the equality of means (robust standard errors in parenthesis). Variables are described in more details in the text.

Table B.3: Propensity score matching: Balancing test (School)

	No School	School	Diff/se
Geographic Characteristics			
Number of Growing Days (%)	58.684	55.155	3.529 (4.348)
Suitability for Rainfed Crops	5.212	5.000	0.212 (0.298)
Average Precipitation per Day (over year)	3.606	4.271	-0.665 (1.220)
Distance to 2000 city (100km)	2.407	2.269	0.138 (0.293)
Distance to the Coast (100km)	2.275	1.533	0.742* (0.373)
Malaria Ecology	10.162	7.456	2.705 (1.584)
Historical Characteristics			
Slave Exports, per capita	0.376	0.025	0.350* (0.152)
Railway Contact	0.242	0.185	0.057 (0.068)
Explorer Contact	0.136	0.210	-0.074 (0.063)
Initial Population Density / 100	9.634	17.899	-8.266 (8.218)
Distance to 1400 City (100km)	6.899	7.868	-0.969 (0.815)
Distance to 1800 City (100km)	11.228	12.228	-1.000 (1.405)
Mission Characteristics			
Arrival Date	1874.561	1873.463	1.098 (3.690)
Bible Society	0.197	0.235	-0.038 (0.079)
Native Workers	0.773	3.481	-2.709 (1.809)
Total Mission Population	510.030	663.358	-153.328 (178.616)
Number of Students	503.273	650.988	-147.715 (177.331)
Physician	0.076	0.123	-0.048 (0.054)
Observations	147		

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table compares geographical and historical characteristics of missions with a school and the missions matched using the propensity score. Column 1 presents the results for missions without a school. Column 2 presents the results for missions with a school. In Column 3 we perform a t-test on the equality of means (robust standard errors in parenthesis). Variables are described in more details in the text.

Table B.4: Propensity score matching: Balancing test (Health)

	No Health	Health	Diff/se
Geographic Characteristics			
Number of Growing Days (%)	54.301	51.990	2.312 (3.767)
Suitability for Rainfed Crops	5.100	5.286	-0.186 (0.268)
Average Precipitation per Day (over year)	2.918	2.861	0.057 (0.244)
Distance to 2000 city (100km)	2.123	2.511	-0.388 (0.252)
Distance to the Coast (100km)	2.606	2.288	0.318 (0.464)
Malaria Ecology	8.783	8.032	0.751 (1.258)
Historical Characteristics			
Slave Exports, per capita	0.168	0.100	0.069 (0.101)
Railway Contact	0.230	0.170	0.060 (0.056)
Explorer Contact	0.160	0.208	-0.048 (0.054)
Initial Population Density / 100	19.044	19.676	-0.632 (7.381)
Distance to 1400 City (100km)	6.930	6.409	0.520 (0.676)
Distance to 1800 City (100km)	8.565	9.977	-1.412 (1.085)
Mission Characteristics			
Arrival Date	1886.300	1880.861	5.439* (2.430)
Bible Society	0.100	0.236	-0.136* (0.059)
Native Workers	6.260	3.094	3.166 (3.478)
Total Mission Population	335.300	367.160	-31.860 (124.555)
Number of Students	324.130	354.821	-30.691 (123.244)
Physician	0.010	0.255	-0.245*** (0.047)
Observations	206		

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table compares geographical and historical characteristics of missions with a health facility and the missions matched using the propensity score. Column 1 presents the results for missions without a health facility. Column 2 presents the results for missions with a health facility. In Column 3 we perform a t-test on the equality of means (robust standard errors in parenthesis). Variables are described in more details in the text.

C Using selection on observables to assess the bias from unobservables: Technical details and results

Suppose there is a set of unobservable explanatory variables W' . Since these variables are unobserved, they are not included in regression (1). The *proportional selection assumption* (PSA) states that $\delta C_{WX} = \frac{C_{W'X}}{V_{W'}}$. X is the treatment variable (here distance to the printing press), W is the set of observed covariates, $C_{W'X}$ is the covariance of W' and X and $V_{W'}$ is the variance of W' . δ is a measure of the relationship between C_{WX} and $C_{W'X}$. The PSA assumption is key in the approach as it states that the relationship between the observed covariates W and the treatment X is informative about the relationship between the unobserved covariates W' and X , from which the bias is coming.

Consider the following three regressions:

$$\text{News} = \gamma X + W + W' + \varepsilon_{\max} \quad (\text{M-max})$$

$$\text{News} = \xi X + M + \varepsilon_1 \quad (\text{M-1})$$

$$\text{News} = \Lambda X + W + \varepsilon_2 \quad (\text{M-2})$$

Let R_{\max} be the R-squared of the full model regression (M-max). R_2 is the R-squared of the regression (M-2) including all the observed covariates. R_1 is the R-squared of regression (M-1) including only a restricted set of covariates M . M is a set of observed controls that do not have a related unobserved component and are orthogonal to W and W' (Oster, 2013).

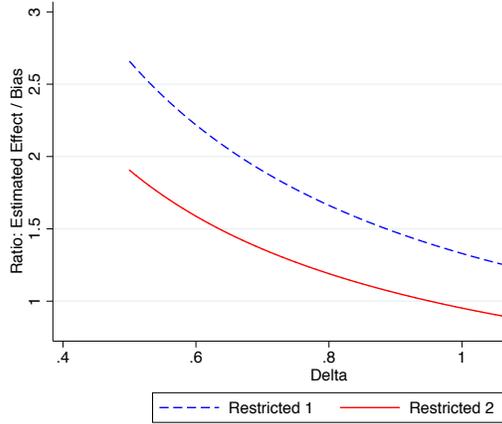
According to Oster (2013), under the PSA and when δ is close to one, $B(\delta) = \delta \frac{(\xi - \Lambda)(R_{\max} - R_2)}{R_2 - R_1}$ is (i) equal to the unobserved bias if $\delta = 1$; (ii) a close upper bound on the bias if $\delta < 1$; (iii) and a close lower bound on the bias if $\delta > 1$.²

We can compute the bias due to unobserved variables from the movements in the treatment effect due to the added controls using the ratio $B(\delta)$. However, to compute the ratio it would be necessary to know the true value of R_{\max} . Because there is probably some randomness in the movements of the outcome, it is unlikely that R_{\max} is equal to one. Oster (2013) uses the R-squared from different randomized experiments

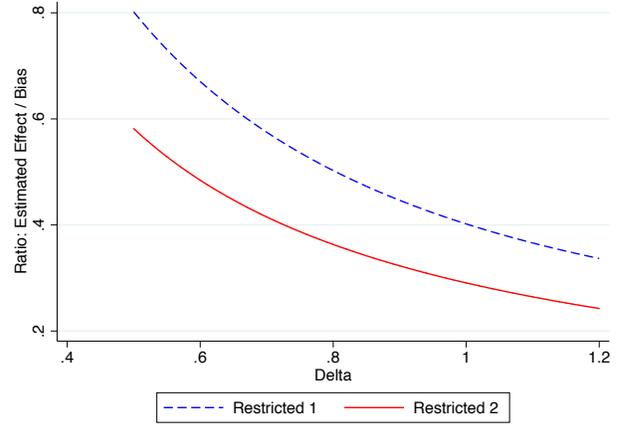
²If W is selected randomly from $\{W, W'\}$, then $\delta = 1$. If W is the most important set of controls from $\{W, W'\}$ then $\delta < 1$.

as a measure of R_{\max} . We cannot use the same approach because we analyze historical events. In the literature of the long-term consequences of historical events, in particular of Protestantism (Becker and Woessmann, 2009) and the diffusion of the printing press (Dittmar, 2011) the R-squared rarely exceed 0.65 and are usually close to 0.5. In our regressions, the R-squared never exceed 0.5. Thus, in our computations we choose 0.6, a conservative value of R_{\max} .

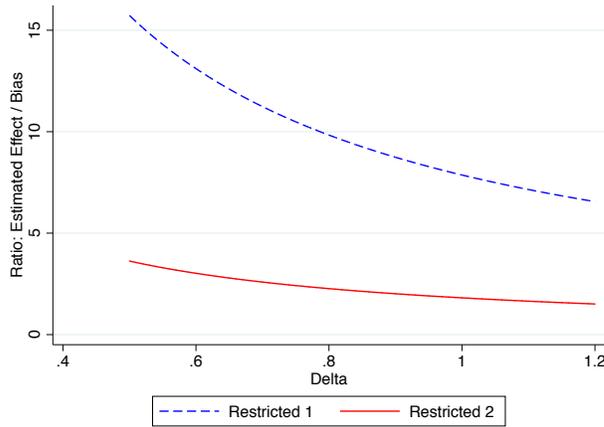
Figure C.1 plots the ratio of the treatment as given in Table ?? over the bias $B(\delta)$ for different values of δ with $R_{\max} = 0.6$. In each graph, two different restricted sets of controls M are chosen. The first set only includes country fixed effects; the second one includes country fixed effects, age, age squared, gender, distance to the closest mission, and distance to the capital city. All the regressions restrict the sample to villages located in 100-km radius of a mission. For newspaper readership and education, the ratio of the treatment over the bias $B(\delta)$ is higher than one. These results make it unlikely that the entire estimated effect of the distance to the printing press is driven by unobserved variables.



(a) Newspaper Readership



(b) Trust



(c) Education

Figure C.1: Magnitude of the Treatment Relative to the Bias for Different Values of δ , for $R^2 = 0.6$

Notes: Each graph plots the ratio of the treatment over the bias $B(\delta)$ using two different sets of restricted controls M . The first set (“Restricted 1”) only includes country fixed effects. The second set (“Restricted 2”) includes country fixed effects, age, age squared, gender, distance to the closest mission, and distance to the capital city. The value $R_{\max} = 0.6$ is used to compute $B(\delta)$.

D Additional Results

Table D.1: Distance to mission investments and Radio and Television, OLS estimation (100km restriction)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Radio	Radio	Radio	Radio	Television	Television	Television	Television
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Distance to printing press	-0.012* (0.006)			-0.013** (0.007)	-0.021* (0.012)			-0.021* (0.012)
Distance to health		-0.005 (0.009)		-0.006 (0.009)		0.008 (0.015)		0.006 (0.015)
Distance to school			-0.006 (0.007)	-0.007 (0.006)			-0.002 (0.012)	-0.003 (0.011)
Observations	28,751	28,751	28,751	28,751	28,661	28,661	28,661	28,661
Country and Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clusters	2,213	2,213	2,213	2,213	2,213	2,213	2,213	2,213
R-sq	0.08	0.08	0.08	0.08	0.26	0.25	0.25	0.26

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates. The unit of observation is an individual. Dependent variables are contemporary outcomes described in more details in the text. Standard errors in parentheses are clustered at the town-level. Controls are the individual-, town-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement.

Table D.2: Distance to missionary societies and Contemporary outcomes, OLS estimation (100km restriction)

	(1)	(2)	(3)
	News	Trust	Education
	b/se	b/se	b/se
Distance to society with printing press	-0.015*	0.003	-0.027
	(0.009)	(0.010)	(0.031)
Distance to health	0.002	0.005	0.026
	(0.017)	(0.013)	(0.064)
Distance to school	0.004	-0.004	-0.057
	(0.012)	(0.010)	(0.039)
Observations	28,590	15,511	28,720
Country and Wave FE	Yes	Yes	Yes
Clusters	2,213	917	2,212
R-sq	0.18	0.11	0.24

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates. The unit of observation is an individual. Dependent variables are contemporary outcomes described in more details in the text. Standard errors in parentheses are clustered at the town-level. Controls are the individual-, town-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement.

Table D.3: Proximity to a printing Press and Contemporary outcomes: Effect of the regional development of the publishing industry (1923), OLS estimation (100km restriction)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	News b/se	News b/se	News b/se	News b/se	Trust b/se	Trust b/se	Trust b/se	Trust b/se	Education b/se	Education b/se	Education b/se	Education b/se
Distance to printing press	-0.024** (0.011)		0.021 (0.020)	0.022 (0.020)	-0.036*** (0.011)		-0.027* (0.016)	-0.027* (0.016)	-0.105*** (0.038)		-0.059 (0.063)	-0.064 (0.063)
Distance publication record		-0.059*** (0.013)	-0.078*** (0.024)	-0.078*** (0.024)		-0.038*** (0.014)	-0.015 (0.021)	-0.015 (0.021)		-0.130*** (0.049)	-0.079 (0.080)	-0.080 (0.079)
Distance to health				-0.004 (0.012)				0.002 (0.013)				0.011 (0.052)
Distance to school				0.003 (0.009)				-0.007 (0.010)				-0.062** (0.030)
Observations	28,590	28,590	28,590	28,590	15,511	15,511	15,511	15,511	28,720	28,720	28,720	28,720
Country and Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clusters	2,213	2,213	2,213	2,213	917	917	917	917	2,212	2,212	2,212	2,212
R-sq	0.18	0.18	0.18	0.18	0.11	0.11	0.11	0.11	0.24	0.24	0.24	0.24

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates. The unit of observation is an individual. Dependent variables are contemporary outcomes described in more details in the text. Standard errors in parentheses are clustered at the town-level. Controls are the individual-, town-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement.

Table D.4: Distance to mission investments and Contemporary outcomes, OLS estimation (100km restriction), Reporting all the covariates

	(1)	(2)	(3)	(4)
	News	Trust	Education	Clinic
	b/se	b/se	b/se	b/se
Distance to Protestant mission	-0.004 (0.007)	0.001 (0.008)	0.038 (0.031)	0.012 (0.012)
Distance to printing press	-0.024** (0.011)	-0.036*** (0.011)	-0.110*** (0.038)	0.006 (0.021)
Distance to health	-0.003 (0.012)	0.003 (0.013)	0.012 (0.052)	0.040 (0.026)
Distance to school	0.004 (0.009)	-0.007 (0.010)	-0.062** (0.030)	-0.019 (0.016)
Age	-0.003*** (0.001)	0.002 (0.002)	-0.014*** (0.004)	-0.000 (0.001)
Age 2	-0.000* (0.000)	0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)
Female	-0.117*** (0.006)	-0.035*** (0.008)	-0.454*** (0.030)	0.001 (0.002)
Distance To City1800	-0.002 (0.012)	0.028*** (0.010)	-0.001 (0.044)	0.008 (0.020)
Initial population density (log)	0.021*** (0.008)	-0.008 (0.008)	0.082*** (0.024)	-0.006 (0.012)
Slave per area (log)	-0.003 (0.012)	-0.001 (0.011)	-0.032 (0.042)	-0.012 (0.023)
Distance Coast	0.009 (0.009)	0.017* (0.009)	0.078** (0.034)	0.013 (0.018)
Growing days in year (%)	0.000*** (0.000)	-0.000 (0.000)	0.001** (0.000)	0.000* (0.000)
Rainfed suitability	0.004 (0.006)	0.001 (0.006)	-0.028 (0.019)	-0.006 (0.010)
Malaria ecology	0.000 (0.002)	0.002 (0.002)	-0.002 (0.006)	0.001 (0.003)
Ruggedness	-0.000*** (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)
Annual Precipitation	-0.000*** (0.000)	0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)
Distance To Rail	-0.023*** (0.004)	0.002 (0.004)	-0.049*** (0.016)	-0.003 (0.007)
Distance To Explorer	-0.009 (0.009)	0.009 (0.007)	0.005 (0.027)	-0.028** (0.012)
Closest Mission Size	0.000*** (0.000)	-0.000** (0.000)	0.000*** (0.000)	0.000 (0.000)
Closest Mission Has Education	-0.024 (0.022)	0.033 (0.022)	-0.196** (0.077)	0.030 (0.038)
Closest Mission Hospital	0.043 (0.036)	0.031 (0.043)	0.172 (0.112)	-0.035 (0.053)
Closest Mission Has Health	-0.031 (0.029)	0.018 (0.031)	0.030 (0.089)	0.026 (0.048)
Distance To Kgarten	0.004 (0.012)	-0.009 (0.012)	0.037 (0.040)	0.031* (0.019)
Distance to Catholic mission	0.004 (0.009)	-0.008 (0.009)	0.079* (0.043)	-0.015 (0.017)
Observations	28,590	15,511	28,720	28,267
Country and Wave FE	Yes	Yes	Yes	Yes
Clusters	2,213	917	2,212	2,175
R-sq	0.18	0.11	0.24	0.14

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates with all the covariates. The unit of observation is an individual. Dependent variable are contemporary outcomes described in more details in the text. Controls are the individual-, village-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement.

Table D.5: Distance to mission investments and Contemporary outcomes, OLS estimation (100km restriction), Standardized coefficients (Beta Coefficients)

	(1)	(2)	(3)	(4)
	News	Trust	Education	Clinic
	beta/se	beta/se	beta/se	beta/se
Distance to Protestant mission	-0.007 (0.007)	0.001 (0.008)	0.020 (0.031)	0.025 (0.012)
Distance to printing press	-0.053** (0.011)	-0.081*** (0.011)	-0.063*** (0.038)	0.013 (0.021)
Distance to health	-0.007 (0.012)	0.006 (0.013)	0.008 (0.052)	0.090 (0.026)
Distance to school	0.010 (0.009)	-0.016 (0.010)	-0.040** (0.030)	-0.045 (0.016)
Age	-0.087*** (0.001)	0.070 (0.002)	-0.110*** (0.004)	-0.004 (0.001)
Age 2	-0.058* (0.000)	0.017 (0.000)	-0.180*** (0.000)	-0.006 (0.000)
Female	-0.121*** (0.006)	-0.036*** (0.008)	-0.120*** (0.030)	0.001 (0.002)
Distance To City1800	-0.006 (0.012)	0.078*** (0.010)	-0.000 (0.044)	0.021 (0.020)
Initial population density (log)	0.072*** (0.008)	-0.026 (0.008)	0.071*** (0.024)	-0.019 (0.012)
Slave per area (log)	-0.006 (0.012)	-0.002 (0.011)	-0.018 (0.042)	-0.025 (0.023)
Distance Coast	0.033 (0.009)	0.062* (0.009)	0.074** (0.034)	0.046 (0.018)
Growing days in year (%)	0.352*** (0.000)	-0.092 (0.000)	0.247** (0.000)	0.292* (0.000)
Rainfed suitability	0.015 (0.006)	0.003 (0.006)	-0.025 (0.019)	-0.022 (0.010)
Malaria ecology	0.006 (0.002)	0.031 (0.002)	-0.010 (0.006)	0.023 (0.003)
Ruggedness	-0.080*** (0.000)	-0.033 (0.000)	-0.128*** (0.000)	-0.077 (0.000)
Annual Precipitation	-0.378*** (0.000)	0.114 (0.000)	-0.262** (0.000)	-0.284 (0.000)
Distance To Rail	-0.095*** (0.004)	0.010 (0.004)	-0.051*** (0.016)	-0.012 (0.007)
Distance To Explorer	-0.027 (0.009)	0.028 (0.007)	0.004 (0.027)	-0.084** (0.012)
Closest Mission Size	0.060*** (0.000)	-0.037** (0.000)	0.057*** (0.000)	0.006 (0.000)
Closest Mission Has Education	-0.021 (0.022)	0.027 (0.022)	-0.043** (0.077)	0.024 (0.038)
Closest Mission Hospital	0.022 (0.036)	0.014 (0.043)	0.023 (0.112)	-0.017 (0.053)
Closest Mission Has Health	-0.023 (0.029)	0.012 (0.031)	0.006 (0.089)	0.018 (0.048)
Distance To Kgarten	0.011 (0.012)	-0.023 (0.012)	0.027 (0.040)	0.083* (0.019)
Distance to Catholic mission	0.008 (0.009)	-0.017 (0.009)	0.039* (0.043)	-0.028 (0.017)
Observations	28,590	15,511	28,720	28,267
Country and Wave FE	Yes	Yes	Yes	Yes
Clusters	2,213	917	2,212	2,175
R-sq	0.18	0.11	0.24	0.14

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates with all the covariates. Coefficients are beta coefficients. The unit of observation is an individual. Dependent variable are contemporary outcomes described in more details in the text. Controls are the individual-, village-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement.

E Robustness Checks

E.1 Distance

Table E.1: Distance to printing presses and Contemporary outcomes, OLS estimation, No restriction on distance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	News	News	News	News	Trust	Trust	Trust	Trust	Education	Education	Education	Education	Clinic	Clinic	Clinic	Clinic
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Distance to printing press	-0.014 (0.010)			-0.024** (0.011)	-0.057*** (0.011)			-0.036*** (0.011)	0.001 (0.035)			-0.110*** (0.038)	0.023 (0.018)			0.006 (0.021)
Distance to health		-0.017 (0.011)		-0.003 (0.012)		0.023* (0.012)		0.003 (0.013)		-0.072 (0.046)		0.012 (0.052)		0.017 (0.023)		0.040 (0.026)
Distance to school			0.009 (0.009)	0.004 (0.009)			-0.001 (0.011)	-0.007 (0.010)			-0.070** (0.029)	-0.062** (0.030)			-0.011 (0.016)	-0.019 (0.016)
Observations	45,825	45,825	45,825	28,590	24,863	24,863	24,863	15,511	46,116	46,116	46,116	28,720	45,371	45,371	45,371	28,267
Country and Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clusters	3,621	3,621	3,621	2,213	1,574	1,574	1,574	917	3,620	3,620	3,620	2,212	3,563	3,563	3,563	2,175
R-sq	0.18	0.18	0.18	0.18	0.10	0.10	0.10	0.11	0.28	0.28	0.28	0.24	0.11	0.10	0.10	0.14

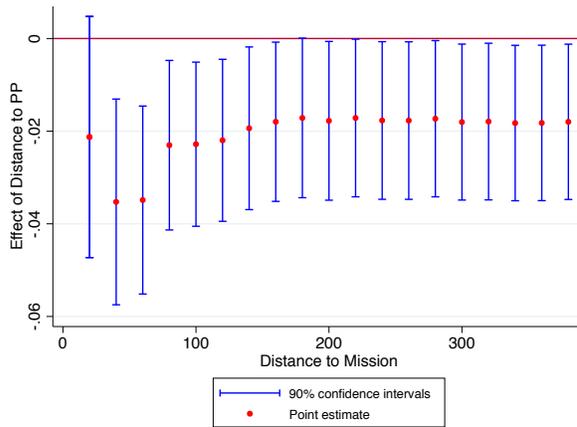
Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates. The unit of observation is an individual. Dependent variables are contemporary outcomes described in more details in the text. Standard errors in parentheses are clustered at the town-level. Controls are the individual-, town-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects.

Table E.2: Distance to printing presses and Contemporary Outcomes, OLS estimation using a binary variable (100km restriction)

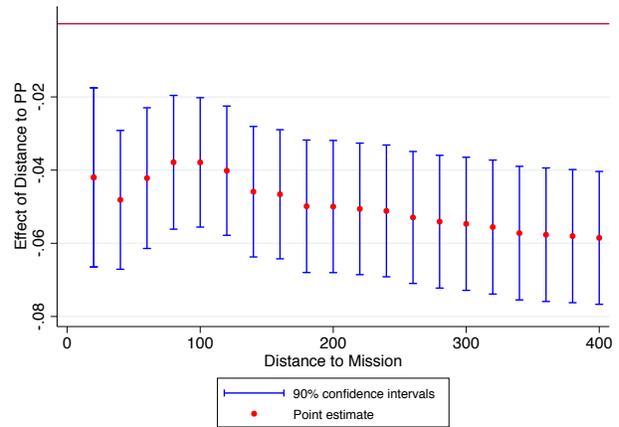
	(1)	(2)	(3)
	News	Trust	Education
	b/se	b/se	b/se
D(<25km Protestant mission with printing press)	0.100** (0.044)	0.075* (0.044)	0.559*** (0.134)
Observations	28,590	15,511	28,720
Country and Wave FE	Yes	Yes	Yes
Clusters	2,213	917	2,212
R-sq	0.18	0.11	0.24

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates. The unit of observation is an individual. Dependent variables are contemporary outcomes described in more details in the text. The explanatory variable is a binary variable equal to 1 if the individual lives within a 25km radius around a mission with a printing press. Standard errors in parentheses are clustered at the town-level. Controls are the individual-, town-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement.

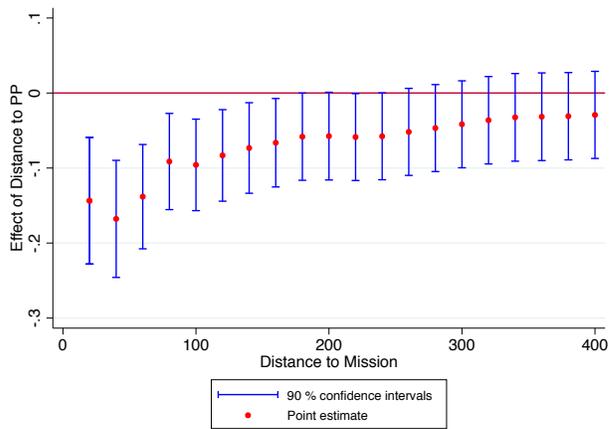
E.2 Additional Robustness Checks



(a) Newspaper Readership



(b) Trust



(c) Education

Figure E.1: Effect of Distance to the Printing Press on Contemporary Outcomes, for Different Restrictions on Proximity to Missions

Table E.3: Printing Press and Contemporary Outcomes, Probit Estimation

	(1)	(2)	(3)
	News	Trust	Education
	b/se	b/se	b/se
Distance to printing press	-0.070** (0.031)	-0.106*** (0.030)	-0.031 (0.035)
Distance to health	-0.006 (0.037)	0.009 (0.039)	0.001 (0.040)
Distance to school	0.008 (0.028)	-0.020 (0.029)	-0.066** (0.029)
Observations	28590	15511	28720
Country and Wave FE	Yes	Yes	Yes
Clusters	2213	917	2212
PseudoR2	0.148	0.0870	0.190

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The table reports Probit estimates. The unit of observation is an individual. The dependent variable is newspaper readership nowadays. Standard errors in parentheses are clustered by village. The controls are the individual-, village- and ethnicity-level controls described in the text and the distance to the closest mission without a printing press. All specifications include country fixed effects

Table E.4: Printing Press and Contemporary Outcomes, with Potential “Bad Controls”

	(1)	(2)	(3)
	News	Trust	Education
	b/se	b/se	b/se
Distance to printing press	-0.022** (0.010)	-0.038*** (0.011)	-0.097** (0.038)
Distance to health	-0.001 (0.011)	0.001 (0.013)	0.015 (0.045)
Distance to school	0.009 (0.009)	-0.007 (0.011)	-0.056** (0.029)
Observations	28446	15430	28570
Country and Wave FE	Yes	Yes	Yes
Clusters	2213	917	2212
R2	0.214	0.112	0.275
F-Statistic	96.78	27.13	105.8

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The table reports OLS estimates. The unit of observation is an individual. Standard errors in parentheses are clustered by village. The specification here includes “bad controls” (that is contemporary possible outcomes: religion, water constraints, cash constraints, and income proxied with light density). All specifications include country fixed effects.

Table E.5: Distance to the Largest Missions and Contemporary Outcomes

	(1)	(2)	(3)
	News	Trust	Education
	b/se	b/se	b/se
Distance to Big Mission	-0.003 (0.013)	0.024* (0.013)	0.049 (0.049)
Distance to school	0.006 (0.009)	-0.007 (0.011)	-0.058* (0.031)
Distance to health	-0.000 (0.013)	-0.000 (0.014)	0.012 (0.055)
Observations	28590	15511	28720
Country and Wave FE	Yes	Yes	Yes
Clusters	2213	917	2212
R2	0.182	0.110	0.241
F-Statistic	73.88	29.27	91.14

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The table reports OLS estimates. The unit of observation is an individual. Standard errors in parentheses are clustered by village. The baseline controls are the individual-, village- and ethnicity-level controls described in the text and the distance to the closest mission without a printing press. All specifications include country fixed effects.

Table E.6: Printing Press and Contemporary Outcomes, Clustering at the Mission Level

	(1)	(2)	(3)
	News	Trust	Education
	b/se	b/se	b/se
Distance to printing press	-0.024* (0.013)	-0.036*** (0.010)	-0.110*** (0.043)
Distance to health	-0.003 (0.015)	0.003 (0.012)	0.012 (0.057)
Distance to school	0.004 (0.010)	-0.007 (0.011)	-0.062** (0.031)
Observations	28590	15511	28720
Country and Wave FE	Yes	Yes	Yes
Clusters	431	343	431
R2	0.182	0.111	0.241
F-Statistic	62.19	43.78	70.05

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The table reports OLS estimates. The unit of observation is an individual. The dependent variable is newspaper readership. Standard errors in parentheses are clustered by closest mission. All specifications include country fixed effects.

Table E.7: Printing Press and Newspaper Readership, Former British Colonies

	(1)	(2)	(3)
	News	Trust	Education
	b/se	b/se	b/se
Distance to printing press	-0.054*** (0.016)	-0.058*** (0.019)	-0.162** (0.069)
Distance to health	-0.008 (0.023)	-0.019 (0.025)	-0.005 (0.086)
Distance to school	0.004 (0.016)	-0.002 (0.018)	-0.032 (0.057)
Observations	11680	6234	11731
Country and Wave FE	Yes	Yes	Yes
Clusters	1103	467	1102
R2	0.218	0.0661	0.223
F-Statistic	59.83	9.055	69.36

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The table reports OLS estimates. The unit of observation is an individual. The dependent variable is newspaper readership. The sample of countries is reduced to former British colonies. Standard errors in parentheses are clustered by village. All specifications include country fixed effects.

Table E.8: Proximity to a printing press and Contemporary outcomes: Effect of the regional development of the publishing industry (1923), OLS estimation (100km restriction)
Clustering at the closest mission with a printing press and a publication record level

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	News b/se	News b/se	News b/se	News b/se	Trust b/se	Trust b/se	Trust b/se	Trust b/se	Education b/se	Education b/se	Education b/se	Education b/se
Distance to printing press	-0.024 (0.015)	-0.059*** (0.014)	0.021 (0.026)	0.022 (0.020)	-0.036*** (0.006)	-0.027*** (0.010)	-0.027*** (0.010)	-0.027* (0.016)	-0.105** (0.045)	-0.130** (0.056)	-0.059 (0.080)	-0.064 (0.063)
Distance publication record			-0.078** (0.030)	-0.078*** (0.024)		-0.038*** (0.009)	-0.015 (0.016)	-0.015 (0.021)			-0.079 (0.098)	-0.080 (0.079)
Distance to health				-0.004 (0.012)			0.002 (0.013)	0.002 (0.013)				0.011 (0.052)
Distance to school				0.003 (0.009)			-0.007 (0.010)	-0.007 (0.010)				-0.062** (0.030)
Observations	28,590	28,590	28,590	28,590	15,511	15,511	15,511	15,511	28,720	28,720	28,720	28,720
Country and Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clusters	52	52	52	2,213	48	48	48	917	52	52	52	2,212
R-sq	0.18	0.18	0.18	0.18	0.11	0.11	0.11	0.11	0.24	0.24	0.24	0.24

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates. The unit of observation is an individual. Dependent variables are contemporary measures of political participation described in more details in the text. Standard errors in parentheses are clustered at the closest mission with a printing press and a publication record level. Controls are the individual-, town-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement. **Notes:** * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates. The unit of observation is an individual. Dependent variables are contemporary measures of political participation described in more details in the text. Standard errors in parentheses are clustered at the closest mission with a printing press and a publication record level. Controls are the individual-, town-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement.

Table E.9: Proximity to a printing press and Contemporary outcomes: Effect of the regional development of the publishing industry (1923), OLS estimation (100km restriction)
Two-way clustering (village- and closest mission with a printing press and a publication record-levels)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	News	News	News	News	Trust	Trust	Trust	Trust	Education	Education	Education	Education
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Distance to printing press	-0.024 (0.015)		0.021 (0.026)	0.022 (0.020)	-0.036*** (0.006)		-0.027*** (0.010)	-0.027* (0.016)	-0.105** (0.045)		-0.059 (0.080)	-0.064 (0.063)
Distance publication record		-0.059*** (0.014)	-0.078** (0.030)	-0.078*** (0.024)		-0.038*** (0.009)	-0.015 (0.016)	-0.015 (0.021)		-0.130** (0.056)	-0.079 (0.098)	-0.080 (0.079)
Distance to health				-0.004 (0.012)				0.002 (0.013)				0.011 (0.052)
Distance to school				0.003 (0.009)				-0.007 (0.010)				-0.062** (0.030)
Observations	28,590	28,590	28,590	28,590	15,511	15,511	15,511	15,511	28,720	28,720	28,720	28,720
Country and Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clusters	52	52	52	2,213	48	48	48	917	52	52	52	2,212
R-sq	0.18	0.18	0.18	0.18	0.11	0.11	0.11	0.11	0.24	0.24	0.24	0.24

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Table reports OLS estimates. The unit of observation is an individual. Dependent variables are contemporary measures of political participation described in more details in the text. Standard errors in parentheses are clustered two ways (at the closest mission with a printing press and a publication record level and at the village level). Controls are the individual-, town-, and ethnicity-level controls described in the text. All specifications include country and Afrobarometer round fixed effects. The sample is restricted to individuals living in a 100km radius around a historical missionary settlement.

References

- Becker, Sascha O and Ludger Woessmann**, “Was Weber Wrong? A Human Capital Theory of Protestant Economic History,” *Quarterly Journal of Economics*, 2009, *124* (2), 531–596.
- Béthune, Léon**, *Les Missions Catholiques d’Afrique*, Desclee, 1889.
- Chandler, Thomas**, *Four Thousand Years of Urban Growth: An Historical Census*, St. David’s University Press, 1987.
- Company, Century**, *The Century Atlas: Africa [map]*, Buffalo, NY: Matthews-Northryp, 1911.
- Daubert, Pierre**, *La presse écrite d’Afrique francophone en question: essai nourri par l’essor de la presse française* Etudes Africaines, Paris: l’Harmattan, 2009.
- Dittmar, Jeremiah E**, “Information Technology and Economic Change: The Impact of The Printing Press,” *The Quarterly Journal of Economics*, 2011, *126* (3), 1133–1172.
- Fischer, G, H van Velthuisen, and F O Nachtergaele**, *Global Agro-Ecological Zones Assessment: Methodology and Results*, Vol. IR-00-064, Laxenburg, Austria: IIASA - International Institute for Applied Systems Analysis, November 2000.
- Kiszewski, A, A Mellinger, A Spielman, P Malaney, S E Sachs, and J Sachs**, “A global index representing the stability of malaria transmission,” *American Journal of Tropical Medicine and Hygiene*, 2004, *70* (5), 486–498.
- Maja-Pearce, Adewale**, *Directory of African Media*, International Federation of Journalists, 1996.
- Nunn, Nathan**, “The Long Term Effects of Africa’s Slave Trade,” *Quarterly Journal of Economics*, 2008, *123* (1), 139–176.
- , “Christians in Colonial Africa,” Mimeo, Harvard University 2009.
- , “Religious Conversion in Colonial Africa,” *American Economic Review Papers and Proceedings*, May 2010, *100* (2), 147–152.
- **and Leonard Wantchekon**, “The Slave Trade and the Origins of Mistrust in Africa,” *American Economic Review*, December 2011, *101* (7), 3221–3252.

- Oster, Emily**, “Unobservable Selection and Coefficient Stability: Theory and Validation,” Mimeo, Chicago Booth School of Business 2013.
- Parker, P**, *National cultures of the world: a statistical reference* ABC-Clio ebook, GREENWOOD Publishing Group Incorporated, 1997.
- Redman, C and Gale Group**, *Willings Press Guide 1993* Willing’s Press Guide, Gale/Cengage Learning, 1993.
- **and** – , *Willings Press Guide 2003* Willing’s Press Guide, Gale / Cengage Learning, 2003.
- **and** – , *Willings Press Guide: 2012*, Cision UK, 2012.
- Tudesq, André-Jean.**, *Feuilles d’Afrique : étude de la presse de l’Afrique subsaharienne* Publications de la Maison des sciences de l’homme d’Aquitaine, Editions de la maison des sciences de l’homme d’Aquitaine, 1995.
- Zell, Hans M**, *The African book world and press : a directory*, 2nd ed., Zell London, 1980.