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The Long Term Impact of French Settlement on Education in Algeria*

Ouarda Merrouche[†]

December 2006

Abstract

This paper provides evidence on the long run relationship between European settlers presence and education levels in Algeria. To correct for endogenous sorting of settlers (and natives) into regions I rely on the fact that proximity to the Mediterranean coast determined the timing of conquest and therefore settlements' size. The main finding indicates that the colonial policy of discrimination explains a large fraction of the disparities in literacy across regions through 1998. However this effect declines significantly over time. I point out three factors that may explain this declining effect: (1) the massive funds allocated to the education sector post-war; (2) the role of the market via migration; (3) social interaction effects whereby natives progressively adopted education and fertility norms of the settlers.

JEL: O15, I29, I38

Keywords: French rule, Discrimination, Education, Social Interactions

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1 Introduction

In settlement colonies, the economic systems, infrastructure (e.g. schools but also roads, hospitals, housing etc. . . .) and development projects of the settlers exclusively served their own needs. A well documented historical fact is the denial of education to native populations under colonial rule. Colonial powers were reluctant to offer education purely for the benefit of the colonized people. In some cases, educational programs were offered but limited and given to a small elitist group. In the three decades of the post-colonial era, most former colonies, either created or significantly expanded the education network. Education, viewed as master determinant of economic growth, became an object of intense effort and enthusiasm. Governments spent considerable human and financial resources to develop the public education system (UNESCO, 2000). The case of Algeria, a former settlement and extractive colony of the French Empire is a good illustration. Under French rule (1830-1962) the huge majority of educated Algerian citizens were French settlers and other Europeans. On the eve of independence less than one-third of school-aged Muslim children were enrolled in schools and only 10 per cent of the total native Algerian population was literate.

At Independence, efforts to nationalize instruction at schools, therefore, required a huge expansion of all levels of education coupled with measures aimed at greatly increasing and encouraging access such as free and compulsory elementary education. The high priority assigned by the government to national education was reflected in the amount of money spent on it and on the existence of free schooling at all levels. In 1985 approximately 16.5 percent of the government's investment budget was devoted to education; in 1990 the education sector received 29.7 percent of the national budget. The country also received substantial assistance from the World Bank. Between 1973 and 1980, Algeria contracted five education loan agreements for sums totaling US\$276 million.

The purpose of this paper is to determine whether despite these massive investments the discriminative allocation of public resources and infrastructure that characterized

the colonial period caused persistent regional disparities in education levels. To do so, I use regional data covering the period 1977-1998 (i.e. 15 to 40 years after independence) to identify the long run relationship between school outcomes and the fraction of non-Muslims who lived in Algeria on the eve of the war of independence (1954). Using an instrumental variables approach to correct for potential non-random sorting of settlers and natives into regions, the main findings confirm that literacy rates increased more rapidly post-independence in regions that inherited a larger stock of infrastructure per capita i.e. regions where the presence of settlers was more intensive. Further, there are evidence of social interaction effects whereby female education increased and fertility rates decreased more rapidly post-independence in settlement regions than in native regions. However, I find evidence that this initial advantage dissipates over time suggesting that the allocation of school resources post-colonization effectively targeted historically neglected regions.

There has been renewed interest among economists in the question of whether history has a persistent effect on economic performance. Recent contributions to this literature include Acemoglu et al (2001) who show that former settlement colonies perform better than extractive colonies in the long run because they inherited better institutions (which protect private property rights). Banerjee and Iyer (2004) and Banerjee, Iyer and Somanathan (2006) analyze the colonial land revenue system set up by the British in India and show that differences in historical property rights institutions lead to sustained differences in economic outcomes. This paper is part of the same broad research agenda and like Banerjee and Iyer (2004) it focuses on a specific country experience-Algeria. However, unlike these studies, this paper does not focus on the role of inherited colonial institutions which were uniformly implemented in all provinces of Algeria but on the colonial legacy in infrastructure and agricultural development as well as the cultural or social norms heritage. Algeria offers an ideal setting for this study for several reasons. First, because the French made Algeria an integral part of France (in 1848), French and other Europeans settled massively and even formed a majority in some regions. Second, because the settlers primarily occupied

early conquered regions around the Mediterranean coast, there were large exogenous regional variations in settlements size. Third, the large majority of the settlers left Algeria in 1962 after 130 years of occupation.

The remainder of the paper is organized as follows. The next section provides a historical background on the colonial period. Section 3 describes the data. Section 4 develops the empirical strategy. Section 5 discusses the results. Section 6 concludes the paper.

2 Background¹

The French conquest of Algeria lasted twenty-seven years and was gradual from North to South. It started with the capture of Algiers in 1830, then Béjaia in September 1832. The army then moved inland to Constantine, which fell in 1837. The conquest was completed only in 1857 with the fall of Kabylia. The Saharan regions of Touat and Gourara, which were at that time Moroccan spheres of influence, were occupied in 1900; the Tindouf area, previously regarded as Moroccan rather than Algerian, became part of Algeria only after the French occupation of the Anti-Atlas in 1934. A large-scale program of dispossessing and confiscating cultivable land made rapid mass settlement possible. The settlers were allocated fertile lands and the largest populations of settlers were found in early conquered regions like Oran and Algiers as shown in the map.

Before the conquest, communal lands (*hubus*) funded Koranic education for Algerian youth and paid for the upkeep of schools. Land spoliation left Koranic schools with no source of income and as a consequence many closed permanently in the first decades of the colonial era. The dismantling of Muslim schools contributed to increase illiteracy, which worsened with time as one generation disabled the next. In 1962, 90 per cent of the Muslim Algerian population was illiterate.

¹This section relies on Stora (2004), Conrad (2003) and web links http://en.wikipedia.org/wiki/French_rule_in_Algeria [http://memory.loc.gov/cgi-bin/query/r?frd/cstdy:@field\(DOCID+dz0075\)](http://memory.loc.gov/cgi-bin/query/r?frd/cstdy:@field(DOCID+dz0075))

Although the French occupation of Algeria relied primarily on land confiscation, the colonial period also witnessed a modernization of the agricultural sector and the development and valuation of land areas left unexplored before the conquest. Algeria became the fourth world producer of wine in 1889. Important progress was also achieved to eradicate chronic diseases such as malaria (with the creation of the Institut Pasteur d'Alger and the construction of health centers and hospitals), further contributing to create ideal conditions for mass settlement. Because France had envisioned Algeria as a permanent part of the French nation, they invested much more in Algeria than in any other colony particularly to develop the infrastructure network. The fraction of investments directed to the colonies rose sharply from 9% in 1913 to 45% in 1939. For instance, in Algeria, the railway network was expanded from 1373 km in 1881 to 4724 km in 1932 (Conrad (2003)). There is however wide agreement among historians that the additional wealth generated in the agricultural sector and the expansion of public services and infrastructure (such as hospitals or educational facilities) witnessed during colonization almost exclusively accrued to the European settlers. During the colonial period settlers and natives were systematically divided by land ownership, religion, legal system and language. An Indigenous code stated that Muslims were not allowed to hold public meetings, bear arms or leave their districts or villages without government permission. In addition, although they were officially French subjects, natives could not become French citizens and therefore were not allowed to vote and had no political representation. As a consequence, the majority of the natives lived in very poor conditions reflected in the widespread famines and pandemics which killed millions especially in the early times of the colonization.

The war of independence started in 1954 and lasted eight years. It was a period of guerrilla strikes, maquis fighting and terrorism against civilians on both sides. Hence, damages to the infrastructure network was limited as aerial bombing targeted exclusively already deprived rural native regions. Immediately after Algeria gained independence in 1962, the majority of the settlers (about one million people) left the country.

3 Variables Description and Descriptive Evidence

Provincial level data are available for the census years 1977, 1987 and 1998. The outcome variables are the literacy rate of individuals aged 10 and older and the school enrollment rate of individuals aged 6 to 15². The fraction of non-Muslims in 1954 measures settlements (relative) size by province. This variable is computed using city level data from the 1954³ census of Algeria. Some cities with French or Christian connotation changed name after independence or were annexed to other cities but information is available on their current name or city of annexation to match each city to its current province. However, for 20 cities out of 421 the information was not available⁴ causing some measurement error in the fraction of non-Muslims. Measurement error in the independent variable attenuates ordinary least squares estimates. Note also that due to population growth the number of provinces increased in 1984 from 31 to 48 provinces. Map 1 depicts the fraction of non-Muslims by province in 1954 and confirms that the largest populations of settlers were found in early conquered regions i.e. the Northern part of the country around the Mediterranean coast. The settlers represented a very large fraction of the population especially in large agglomerations like Algiers where they formed a majority. Since independence Muslims represent about 99 per cent of the population against 1 per cent Christians and Jewish.

Table 1 provides some descriptive statistics for the main variables used in the analysis and figures 1 and 2 plot the fraction of non-Muslims in 1954 against the literacy rate and the school enrollment rate. These figures show a positive (although weak) relationship between education outcomes and settlements' size with two apparent outliers: Algiers and Oran.

²The average number of years of education is not available at provincial level. The national statistics office never grants access to household surveys or censuses. Hence, one can only rely on series published in the census reports.

³I use data from 1954 i.e. the date the war of independence started because a number of settlers already left the country during the war.

⁴These were either small cities (villages) or cities that had already changed name or been annexed to other cities before independence i.e. between 1954 and 1962.

4 Empirical Strategy

I exploit the substantial variations in settlements' size across provinces to capture the long run effect of the French colonial policy of discrimination in the provision of public goods on education outcomes by running the following regression:

$$S_i = \text{const} + \beta^{ols} NM_i + \varepsilon_i \quad (1)$$

Where S_i is an indicator of the level of education in province i averaged over post-independence census years 1977, 1987 and 1998; NM_i is the fraction of non-Muslims in province i in 1954, formally $NM_i = \frac{\text{Non-Muslim Population}}{\text{Muslim} + \text{Non-Muslim Population}} * 100$.

As was clear from the data description and historical background provided in the previous section there may be endogenous selection of settlers (and natives) into provinces. For instance, the redistribution of fertile land from the natives to the settlers probably caused more non-Muslims to settle in prosperous provinces while at the same time causing a forced migration of natives into less prosperous provinces. The source of exogeneity in settlement size that I exploit is the gradual penetration of the French army from Northern coastal regions to Southern regions as described in section II. In other words, to deal with concerns about exogeneity I use the distance to the coast as an instrumental variable for NM_i . The issue with this instrument is that it may have a direct effect on education levels. The main reason to worry that distance to the coast violates the exclusion restriction is that proximity to the coast is correlated with climate and implies lower transaction costs (for international trade). Through both these channels it possibly determines returns to education and (subsequently) investment in human capital. I assess the strength of these effects by directly controlling for rainfall precipitations and the distance to the largest port (Algiers). In addition, I will report estimates on a restricted sample of regions located within a narrow band of 0 to 200 km south from the coast (where 90 per cent of the population currently lives). Further, one empirical result I will discuss later that validates the use of distance to the coast as an instrumental variable is that while one would expect geography to have

a sustained impact on economic development, the evidence in this paper is that the relationship between French settlement and education vanishes over time. Note that a similar approach by Hall and Jones (1999) uses the distance from the equator as an instrument for social infrastructure because, they argue, latitude is correlated with ‘Western influence’, which leads to good institutions. Their approach, like ours relies on extensive evidence, including Acemoglu, Johnson, and Robinson (2002), Easterly and Levine (2003) and others that geography has no direct effect on economic development. In fact, this result is likely to be even more valid within country than across countries because geographical variations, like the distance to the coast and latitude, are less within countries than across countries.

Formally, the IV approach consists in running the following first stage and second stage equations:

First stage

$$NM_i = \text{const} \tan t + \gamma DC_i + \eta X_i + \nu_i \quad (2)$$

Where DC stands for the logarithm of the distance to the coast, X_i is a vector of geographical controls (including the distance to Algiers and rainfall precipitation) and ν_i is an error term.

Second stage

$$S_i = \text{const} \tan t + \beta^{IV} \widehat{NM}_i + \phi X_i + \rho_i \quad (3)$$

Where \widehat{NM}_i is the predicted value of NM_i derived from the first stage.

Table 2 columns 1 and 2 report the first stage results without and with geographical controls respectively and column 3 reports the first stage estimate on the restricted sample of regions within a distance of 0 to 200 km south from the coast. As expected from the descriptive map distance to the coast is a very good predictor for settlement size. In both cases the estimate is sizeable and has the expected sign i.e. the closer the province is located to the coast the larger the fraction of non-Muslims. Adding annual average rainfall and the distance to the largest port (i.e. distance to Algiers) as

controls has the effect of increasing the regression's predictive power and increases the point estimate (in absolute term) on the instrument. In other words the instrument does not seem to capture the effect of other omitted geographical variables.

5 Results

5.1 Stock Measure of Education Levels

Table 3 reports the OLS and IV estimates obtained from running regressions (1) and (3) respectively when the outcome variable is the literacy rate for the population aged 10 and older. Both OLS and IV estimates are significant statistically and are only slightly altered when I include geographical controls. These estimates indicate that the fraction of non-Muslims in 1954 is positively associated with the literacy rate even when controlling for endogeneity. OLS estimates are lower than IV estimates which is consistent with the fact that measurement error in the fraction of non-Muslims attenuates OLS estimates. The preferred IV estimate in column (4) indicates that a one standard deviation increase in settlement size is associated with a 3 percentage points increase in the literacy rate, which is almost equal to a fourth of a standard deviation. The effect at the mean is a 2.4 percentage points increase in literacy. Going from a totally integrated (fifty per cent Muslim and fifty per cent non-Muslim) to a totally segregated province (hundred per cent Muslim) causes a 13 percentage points fall in the literacy rate. The results are similar qualitatively and larger in magnitude when I exclude the two outliers (Algiers and Oran) from the sample (column 5) and when I restrict the sample to regions located within a narrow distance of 0 to 200 km south from the coast (column 6). The reason why settlement areas show higher literacy rates than extractive (native) areas in the long run may be wholly or partly attributed to the fact that when all settlers left Algeria at independence in 1962, settlement areas inherited a higher stock of infrastructure per capita as well as a more developed agricultural sector. Anecdotal evidence indicate that after the settlers' departure natives started

to spontaneously occupy abandoned dwellings and send their children to schools that used to be (non officially) reserved to settlers' children.

Next, I assess the role of social interactions in explaining the inherited disparities in education levels across regions. This is a plausible factor to consider given that French presence in Algeria lasted 130 years. Evidence of such social interaction effects have been found in other contexts (see e.g. Manski and Mayshar (2003)). The underlying logic is the following: natives living in larger settlement areas were more exposed to Europeans social norms characterized by a high level of both male and female education and (relatively) low fertility rates (Hunt (2002)). The purpose is therefore to assess whether they have tended to progressively adopt European education and fertility norms.

First, I estimate a relationship between the fraction of non-Muslims in 1954 and girls over boys pupil ratios. The purpose is to evaluate whether natives who reside in former settlement regions have been more prompt to provide equal education to boys and girls. Column 5 of Table 4 reports the result which confirms a positive relationship between the fraction of girls enrolled in school and settlements relative size. Second, I consider the relationship between the fraction of non-Muslims in 1954 and demographic indicators, in particular the age at marriage by gender and the fertility rate⁵. These indicators are worth considering because early marriage and the number of children may be viewed as substitutes to the *quantity* of education received by parents and (subsequently) children. Table 4 reports the IV results which confirm a more rapid demographic transition in regions where European presence was more intensive.

5.2 Time-Varying Effects and Flow Measures of Education Levels

Focusing on the literacy rate may yield to somehow biased conclusions because the literacy rate is a stock variable. In particular since the variable used here is the literacy

⁵Defined as the number of children per married couple

rate for the population aged 10 and older it includes individuals who were school aged either under French rule or immediately after independence and who therefore were too old to fully or even partially benefit from the vast expansion of the education system that occurred in independent Algeria. Unfortunately, the youth literacy rate is not available by province. However, I have run separate regressions for 1987 and 1998 and the results reported in Table 3 columns 7 and 8 indicate that the long run effect of French occupation on literacy decreases over time which supports the idea that the massive funds allocated to the education sector by successive governments post-independence may have achieved some equity by allocating more resources to regions that were neglected during colonization. In addition, this result may be confirmed by the fact that in 2002 the whole country average youth literacy rate (for individuals aged 15-24) reaches approximately 90 per cent. Further, the market, through migration which used to be very restricted during the colonial period (see section II), may have also contributed to progressively reduce the regional disparities in education. Indeed, after the settlers departure there were clear incentives for natives to move to settlement regions for they were better endowed in infrastructure, more fertile and (therefore) more prosperous.

Next, to more accurately determine the extent to which the regional disparities in education levels caused by the colonial policy of discrimination persist in the long run I look at two *flow* variables: the school enrollment rate and the number of pupils per classroom. The results are reported in Table 5 for the school enrollment rate of individuals aged 6 to 15. While OLS estimates appear to indicate that the negative effects of colonial discrimination on education outcomes persist in the long term, the preferred IV estimate reported in column (4) confirms the previous result that this effect vanishes over time. Similarly, the relationship between settlements size and the number of pupils per classroom is insignificant statistically (see Table 6). This is evidence that in the long run settlement regions do not conserve their initial advantage at least in terms of school infrastructure again indicating either that the massive public interventions post-war were effectively redistributive or that the market through mi-

gration contributed to compensate the inherited inequities in the distribution of public infrastructure across regions.

6 Conclusion

The question of whether colonialism had a positive impact in the former colonies raises a very emotional issue well illustrated with the recent debates on the content of the Law Fillon in France which attributed a positive role of colonial history on long term development. This paper has brought some pieces of evidence on this issue by focusing on the case of Algeria, a settlement and exploitation colony of the former French Empire. The main results indicate that literacy rates tend to be higher in the long run in settlement provinces relative to purely extractive provinces because the former inherited a larger stock of infrastructure per capita at independence and probably also because they were more exposed to European education and demographic norms. However, there is evidence that these disparities tend to dissipate over time indicating that government interventions and the market through migration may have effectively contributed to reducing the inequities inherited from the colonial period. Acemoglu, Johnson and Robinson (2001) have argued that former settlement colonies perform better than extractive colonies in the long run and attributed this difference to the fact that the former inherited better institutions. The case of Algeria illustrates the fact that in addition to inheriting good institutions, settlement colonies inherited physical infrastructures and European cultural or social norms, which casts doubts on the validity of their instrumental variables approach in isolating the impact of institutions on growth.

References

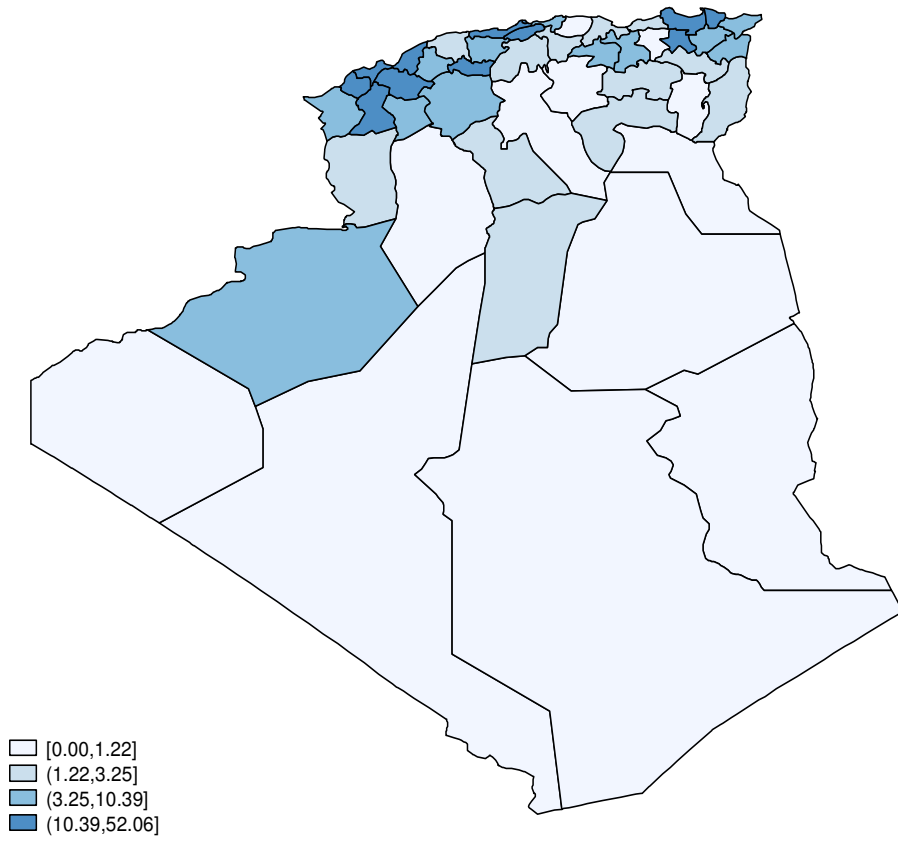
- [1] Acemoglu D., Johnson S. and Robinson J. (2001), “The Colonial Origin of Comparative Development: An Empirical Investigation”, *American Economic Review*

91(5), 1369-140

- [2] Acemoglu, Daron, Simon Johnson, S., James Robinson, (2002), "Reversal of fortunes: geography and institutions in the making of the modern world income distribution", *Quarterly Journal of Economics*, volume 117, pp. 1231-1294
- [3] Acemoglu, Daron, Johnson, Simon, Robinson, James, Thaicharoen, Yunyong (2002), "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth", NBER working paper 9124.
- [4] Banerjee, A., and Lakshmi I.(2005), "History, Institutions and Economic Performance: the Legacy of Colonial Land Tenure Systems in India", *American Economic Review* 95(4) , 1190-1213.
- [5] Banerjee A., Iyer L., and Somanathan R. (2006), "History, Social Division and Public Goods in Rural India, forthcoming *Journal of the European Economic Association*.
- [6] Conrad P. (2003), "Le Maghreb sous Domination Francaise (1830-1962)", edition Clio
- [7] Easterly and Levine (2003), "Tropics, germs, and crops: the role of endowments in economic development", *Journal of Monetary Economics*, 50:1
- [8] Hunt J. (1992), "The impact of the 1962 repatriates from Algeria on the French labor market", *Industrial and Labor Relations Review* April
- [9] Hall, Robert E. and Charles I. Jones (1999), "Why Do Some Countries Produce so Much More Output per Worker than Others?" *Quarterly Journal of Economics*, , 114:1, 83-116.
- [10] Manski, C. and J. Mayshar, "Private Incentives and Social Interactions: Fertility Puzzles in Israel," *Journal of the European Economic Association*, Vol. 1, 2003, pp. 181-211.

[11] Stora B. (2004), "Histoire de l'Algérie Coloniale (1830-1954)", Collection Repère

Map1: Fraction of Non-Muslims in 1954



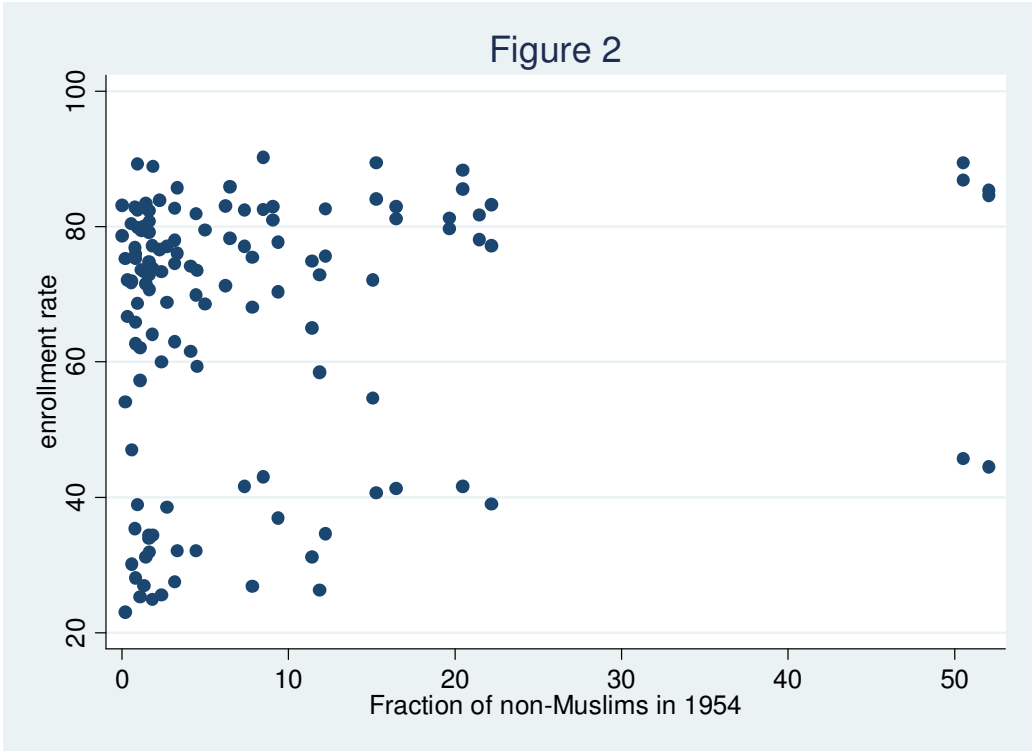
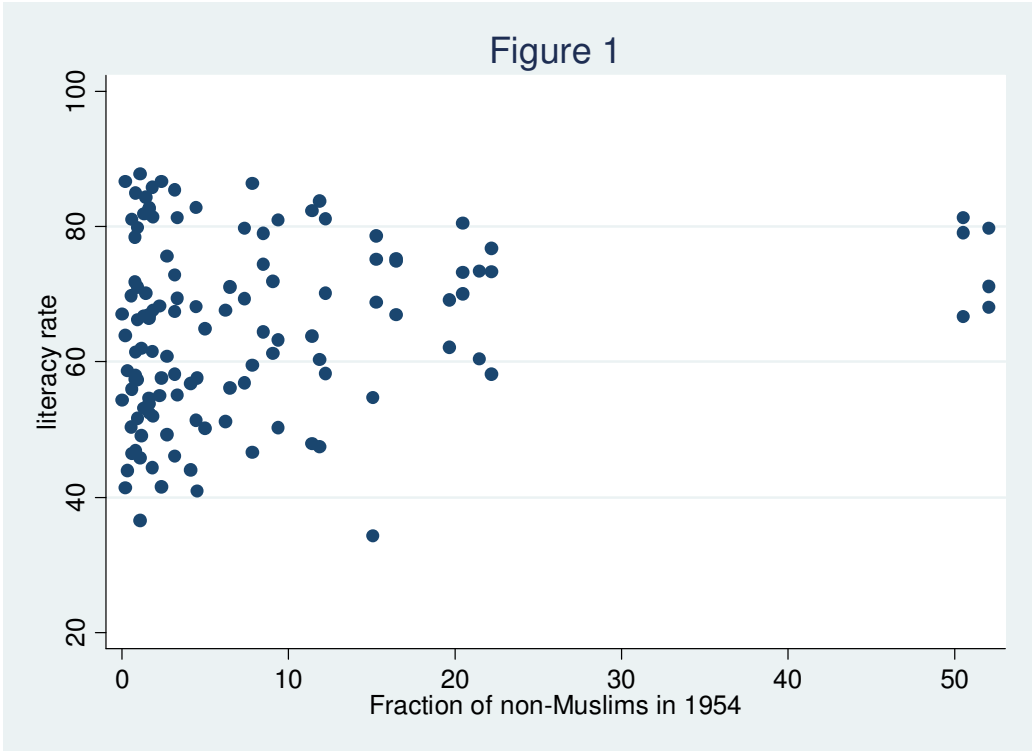


TABLE 1: DESCRIPTIVE STATISTICS

Variables	Means	Standard Deviations
Fraction of non-Muslims in 1954	9,134	11,47
Literacy rate	64,93	13,09
Enrollment rate	65,52	19,9
Girls/Boys pupil ratio	47,09	9,47
Fertility rate	5,45	2,34
Age at Marriage male	29,17	2,12
Age at Marriage female	25,02	2,57
log Distance to the Coast	3,83	2,16
log Distance to Algiers	5,52	1,18
Average Annual Rainfall in millimeters	30,59	24,93

TABLE 2: FIRST STAGE REGRESSIONS FOR IV

Dependent Variable: Fraction of non-Muslims in 1954

Coefficient on	(1)	(2)	(3)
Instrument	-2,96***	-3,44***	-3,379**
log Distance to the Coast	(0,617)	(0,774)	(1,509)
R-squared	0,33	0,47	0,43
No of observations	48	48	37 (#)
Geographical Controls	No	Yes	Yes

Note: Standard errors in parentheses

Geographical Controls include the distance to Algiers and average annual rainfall.

restricted sample of regions within 0 to 200 km south from coast

TABLE 3: IMPACT ON LITERACY

coefficient on	OLS		IV		IV Excluding Algiers and Oran	IV on restricted sample of regions within 0 to 200 km south from coast	IV 1987	IV 1998
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fraction of non-Muslims in 1954	0,215*** (0,041)	0,230*** (0,054)	0,345*** (0,099)	0,263** (0,118)	0,334* (0,172)	0,405** (0,193)	0,514** (0,197)	0,369** (0,164)
R-squared	0,69	0,7	0,68	0,68	0,21	0,22	0,43	0,39
No of observations	48	48	48	48	46	37	48	48
Geographical Controls	No	Yes	No	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses. The instrument is the log distance to the coast.
Geographical Controls include the distance to Algiers and average annual rainfall.

TABLE 6: IMPACT ON DEMOGRAPHY

coefficient on	IV Fertility rate*	IV Age at Marriage Men *	IV Age at Marriage Women *
	(1)	(2)	(3)
Fraction of non-Muslims in 1954	-0,112*** (0,041)	0,084** (0,038)	0,109** (0,043)
R-squared	0,14	0,12	0,21
No of observations	48	48	48
Geographical Controls	Yes	Yes	Yes

Note: Clustered Standard errors in parentheses. The instrument is the log distance to the coast.
Geographical Controls include the distance to Algiers and average annual rainfall.

(*) Observations not available for 1977 i.e. averaged over 1987 and 1998 only

TABLE 4: IMPACT ON SCHOOL ENROLLMENT

coefficient on	OLS		IV		IV Girls/Boys pupil ratio*
	(1)	(2)	(3)	(4)	(5)
Fraction of non-Muslims in 1954	0,291*** (0,049)	0,306*** (0,063)	0,405** (0,157)	0,248 (0,202)	0,48*** (0,148)
R-squared	0,89	0,9	0,88	0,88	0,31
No of observations	48	48	48	48	48
Geographical Controls	No	Yes	No	Yes	Yes

Note: Standard errors in parentheses. The instrument is the log distance to the coast.

Geographical Controls include the distance to Algiers and average annual rainfall.

(*) Observations not available for 1977 i.e. averaged over 1987 and 1998 only

TABLE 5: IMPACT ON THE NUMBER OF PUPILS PER CLASSROOM

coefficient on	OLS		IV	
	(1)	(2)	(3)	(4)
Fraction of non-Muslims in 1954	0,031 (0,093)	-0,118 (0,147)	0,249 (0,157)	-0,89 (0,192)
R-squared	0,16	0,22	0,17	0,22
No of observations	48	48	48	48
Geographical Controls	No	Yes	No	Yes

Note: Clustered Standard errors in parentheses. The instrument is the log distance to the coast.

Geographical Controls include the distance to Algiers and average annual rainfall.

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