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Social and Institutional Origins of Political Islam

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Abstract

Under what conditions did the first Islamist movements organize? Which social and institutional contexts facilitated such mobilization? A sizable literature points to social and demographic changes, Western encroachment into Muslim societies, and the availability of state and economic infrastructure. To test these hypotheses, we match a listing of Muslim Brotherhood branches founded in interwar Egypt with contemporaneous census data on over 4,000 subdistricts. A multilevel analysis shows that Muslim Brotherhood branches were more likely in subdistricts connected to the railway and where literacy was higher. Branches were less likely in districts with large European populations, and where state administration was more extensive. Qualitative evidence also points to the railway as key to the movement’s propagation. These findings challenge the orthodoxy that contact between Muslims and the West spurred the growth of organized political Islam, and instead highlight the critical role of economic and state infrastructure in patterning the early contexts of Islamist activism.

Acknowledgements

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1 Introduction

The first decades of the twentieth century saw the emergence of mass movements mobilizing in the name of Islam. From North Africa to the Indonesian archipelago, Islamist movements were on the leading edge of national liberation struggles, and would go on to play prominent roles in post-independence politics: winning national elections, developing sophisticated social welfare activities, and occasionally waging violent insurgencies. Yet despite the extensive outpouring of academic and journalistic writing on the rise of organized political Islam, little is known about the conditions under which these movements emerged and the local ecologies that facilitated their growth. This is part of a more general shortcoming in the literature on Islamism: while significant attention has been paid to the biographies and ideologies of Islamist movements and their leaders, little if any research has systematically evaluated the social and political contexts of this activism (Masoud 2014 is a notable exception). As Ketchley and Biggs (2017) argue, in rare instances when systematic data on Islamist movements is available, it is worth the painstaking effort to reconstruct these contexts.

This paper examines the rise of organized political Islam in interwar Egypt.\(^1\) We consider three claims in particular: First, that Islamist movements initially developed in areas that had undergone social and demographic transformations in the period leading up to the Second World War (Ayubi 1991, Ayoob 2009, Moaddel 2005, Gershoni and Jankowski 2002); second, that the first Islamists found support amongst Muslims who had come into contact with the West and, in particular, amongst those Muslims living in areas where Christian missionaries were active (Baron 2014, Cleveland 2014, Sharkey 2008, 2013); and third, that the early sites of Islamist activism were patterned by state presence and the available economic infrastructure (Lia 1998, Munson 2001). While all of these explanations are widely cited in the literature, previous studies have not accounted for variation in where the first Islamist movements established an organizational presence.

\(^1\)We use Islamist activism, Islamist movements, and organized political Islam interchangeably to mean “organizations and movements that mobilize and agitate activities in the political sphere while deploying signs and symbols from Islamic traditions” (Ismail 2006, 2).
We address this shortcoming by combining a unique cache of historical data with a mixed methods research design. In 1937, the Egyptian Muslim Brotherhood’s Arabic-language newspaper published a nationwide inventory of the organization’s chapters, furnishing micro-level data on over 200 branches. This provides an unparalleled insight into the early sites of activism and recruitment by one of the world’s most influential Islamist movements. We locate branches in their social and economic context by using contemporaneous census records for over 4,000 subdistricts. The annual reports of British and American missionaries active in Egypt during this period allow us to test for the effect of Christian proselytization on the sites of branch formation. Newly digitized workforce statistics on the distribution of employees in state administration provide a measure of state presence. Finally, maps and timetables of the country’s rail network account for the role of economic infrastructure in the organizational development of the Muslim Brotherhood. We bring these materials together using an ecological approach, inspired by recent research on social movements and contentious politics in Western contexts (Biggs and Knauss 2012, Kawalerowicz and Biggs 2015), to identify the characteristics of subdistricts and districts that made branch formation more or less likely. Because our quantitative analysis is ecological, it is inevitably silent on the processes of Islamist expansion. To further examine how organized political Islam initially developed, we then expand on the statistical findings through a focused qualitative examination of the Muslim Brotherhood’s activities, as reported in the movement’s Arabic-language publications.

We find that Muslim Brotherhood branches were more likely to be established in subdistricts with higher rates of literacy and fewer agricultural workers, supporting claims that Islamism initially found support amongst the urban middle classes. We can detect no statistically significant effect of Christian missionary activity in patterning branch formation, and the presence of large European populations in a district significantly reduced the likelihood that a branch would be established, challenging arguments that attribute the growth of political Islam to contact between Muslims and the West. Finally, our quantitative results show
that Brotherhood branches were more likely in areas where there were fewer state employees, and in those neighborhoods and hamlets connected to the Egyptian rail network. Qualitative evidence from the Muslim Brotherhood’s publications, including the travel itineraries of the Brotherhood’s leadership, also points to the rail network as a crucial pathway for the growth of the movement. A close examination of those sources suggests that the Muslim Brotherhood deliberately exploited the railway to reach new constituencies and consolidate newly formed branches. Early Islamist activism, in other words, conforms to the general pattern seen in the emergence of social movements and mass politics in other contexts: the rise of organized political Islam was inextricably linked to the availability of economic and state infrastructure.

The paper proceeds as follows. In the next section we examine the literature on the rise of organized political Islam to isolate three distinctive groups of theories that purport to explain the contexts in which Islamist movements initially coalesced. After describing the data and analysis we present the results. Subsequent sections provide an interpretation and discussion of our findings, as well as a brief description of robustness checks on the data. A final qualitative section draws on Arabic-language material from the Muslim Brotherhood’s publications, as well as biographies of the movement’s membership, to expand upon a key finding from the quantitative analysis - that Egypt’s rail system was a vital channel for the movement’s organizational development. We close by suggesting potential areas for future research.

2 The rise of organized political Islam

By the eve of the Second World War, mass-based Islamist movements had emerged across the Muslim world. These groups, including the Khilafat movement in India, the Sarekat Islam in Java, and the Muslim Brotherhood in Egypt, commanded memberships in the hundreds of thousands and provided new outlets for Muslims’ social grievances and political aspirations (Alavi 1997, Burke 1972, Khalid 1999, Lia 1998, Minault 1982, Noer 1973, Özcan 1997,
Qureshi 1999, Reetz 2006, Shiraishi 1990). In this section, we sort the extensive and diverse literature on the rise of organized political Islam into theoretically-supported hypotheses that are amenable to testing with subnational ecological data (see Snyder 2001). We are interested in identifying where Islamist movements first established an organizational presence, and so we focus on three principle clusters of explanations: demographic change, cultural reaction, and institutional context, respectively.

2.1 Demographic change


- H1a: Islamist movements were more likely to be present in areas with higher literacy rates.

A related claim is that Islamist movements initially mobilized in areas marked by the internal migration that characterized this period. Islamism, several scholars have suggested, was particularly attractive for those economic migrants cut free from traditional rural networks of family and tribe and thrust into the tumult of unfamiliar urban environments
(Fischer 1982, Kepel 2006). In parallel, a variety of authors claim that Islamists have been historically absent from areas where the agrarian economy predominates, in part because of the persistence of folk forms of Islam and other traditional social configurations that proved resistant to the Islamist message (Ayubi 1980, Kupferschmidt 1982, 1987). We express these implications as the following:

- **H1b**: Islamist movements were more likely to be present in areas with higher levels of population growth.

- **H1c**: Islamist movements were less likely to be present in areas where the agrarian economy predominated.

Grievance-based explanations relate the initial appeal of Islamist movements to socioeconomic deprivation (Schulze 2002, Woltering 2002). The years following the First World War saw significant disruption of traditional economies resulting from the war effort and the incorporation of colonial societies into the world capitalist system (Owen 1993). Muslims, in these interpretations, turned to Islamist movements as a reaction to their declining economic position and to gain access to Islamists’ social welfare activities (Munson 2001). Parallels to this argument can be found in the literature on more contemporary Islamist mobilization, which attributes Islamist activism to economic immiseration and a lack of employment opportunities (Gambetta and Hertog 2016, Roy 1994). If unemployment and economic deprivation are associated with political Islam, we would expect:

- **H1d**: Islamist movements were more likely to be present in areas with higher levels of economic deprivation.

### 2.2 Cultural reaction

A separate vein of research relates local forms of Islamist activism to the cultural threat that Westernization supposedly poses to traditional Islamic values (Dekmejian 1995, Gershoni 1988, Keddie 1983, al-Sayyid Marsot 1984). One strand of this large literature explicitly
focuses on the way that first-hand experience or contact with the “West” – usually European émigré communities or businesses – spurred the organizational growth of Islamic counter-movements. John Voll (1994, 182), for instance, suggests that the appeal of political Islam was greatest for those “who had already had significant contact with Westernizing ideas and institutions.” This argument features prominently in the literature on the rise of the Muslim Brotherhood (Goldberg 1981, Husaini 1956). In his widely-cited account of the early Brotherhood, Richard Mitchell (1993/1969, 7) notes how the large European presence in the movement’s birthplace of Ismailia, where even the street signs “were written in the language of the economic occupation,” provoked the Brotherhood’s founding members into action. Charles Wendell (1978, 2) similarly points to the intense and continuing contact between Western officials and the local Muslim population in Ismailia – specifically the “prosperous offices and villas of the European town alongside the squalid homes of the ‘native’ quarter” – as a key factor in the birth of the movement. The Muslim Brotherhood’s founder would later describe the European presence in Ismailia as “a delicious food and healthy resource,” which contributed to the appeal of the movement (al-Banna 1939). This supposed reaction has led some scholars to brand those who comprised the first Islamist movements as “emotional xenophobes” (Harris 1964, 148). One testable implication of the “Western contact” hypothesis is that Islamist movements first established an organizational presence in those places where contact between the Muslim population and Europeans was most intense. This can be summarized as:

- H2a: Islamist movements were more likely to be present in areas where the proportion of Europeans was larger.

Islamist mobilization, a newer set of scholars argues, is more correctly understood as a reaction to one specific manifestation of Western encroachment: the proselytization efforts of Christian missionaries. Beginning in the late nineteenth century, American and European missionary societies had established a significant presence across the Middle East and
North Africa, aimed at converting both indigenous Orthodox Christians and Muslims (Makdisi 2008, Sedra 2011, Okkenhaug 2015, Carter 1984). The prominence of anti-Christian missionary rhetoric in the Muslim Brotherhood’s early speeches and writings has been well chronicled (Sharkey 2008, 2013). In a recent study, Beth Baron explicitly relates the Brotherhood’s expansion to their concerted efforts to counter Christian missionaries present in Egypt at the time. As she writes, “The Muslim Brotherhood founded some of its earliest branches in towns around Ismailia and along the Suez Canal, where missionaries had been aggressively proselytizing” (2014, 125). Refining H2a to account for specific contact with Christian missions, we might expect that:

- **H2b:** Islamist movements were more likely to be present in areas where Christian missionaries were more prevalent.

An alternative hypothesis, related to proselytization, focuses on religious competition. Islamists frequently highlight the supposedly pernicious influence exerted on Muslim society by religious minorities, especially Jews and Christians (Ayubi 1991, Kepel 2006, Roy 1994). This dynamic is tied to European colonialism, which was perceived to be favoring and promoting the interests of non-Muslims to the detriment of indigenous Muslim populations. If religious competition and sectarian animosity was a factor in Islamist mobilization, we should expect:

- **H2c:** Islamist movements were more likely to be present in areas where the proportion of non-Muslims was higher.

### 2.3 Institutional context

A third family of explanations keys the rise of organized political Islam to the emergence of centralized states and the development of national economies. The dynamics of modern contentious politics, in general, are entwined with the growth of states and economic markets (Tilly 1990, 2008, Tarrow 2011, 2015). For the purposes of the discussion here, we
are interested in how state and economic infrastructure simultaneously facilitated and circumscribed the contexts of early Islamist mobilization. In defining infrastructure and state presence, we follow Michael Mann’s classic typology (1984), and concentrate on the role played by centrally-organized services and systems of transport in shaping Islamist organizational presence.

A common argument is that Islamist movements operate where the state is weak or lacks infrastructural capacity - an assertion that has become common currency in scholarship that seeks to explain the proliferation of Islamist welfare activities (Wickham 2002, Berman 2003). The key premise here is that Islamist movements act as an alternative to the state, providing much-needed services that the state might otherwise be expected to administer (Munson 2001, Davis and Robinson 2012). Discussing the post-1967 Middle East, Lisa Wedeen (2003, 55) notes how “as the state has retreated economically in the Middle East, Islamist movements have tended to fill in the gaps, providing goods and services states do not proffer.” Similarly, scholars suggest that movements like the Muslim Brotherhood initially thrived in areas where the state lacked the resources to survey and monitor them (Heyworth-Dunne 1950). If either hypothesis is correct, one key empirical implication is that:

- H3a: Islamist movements were more likely to be present in areas where state infrastructure was less extensive.

Social movements must generate and sustain some degree of personal connection between individuals (McAdam 1986, Wickham 2002). For this reason the rise of modern mass politics is ineluctably tied to the availability of economic infrastructure, and in particular those “agents of change” (Weber 1976) that underpin the development of national economies: communication, transportation, and distribution networks. Still, the role of economic infrastructure in shaping the contexts of mobilization has, until recently, largely eluded systematic investigation, despite a preponderance of evidence pointing to the importance of road and river transport networks (Hobsbawn and Rudé 1968, Rudé 1999/1964, Charlesworth 1983),
stagecoach lines (Skocpol 1997), and railroads (Pethybridge 1972) in the rise of mass politics (notable exceptions are Hedström, Sandell and Stern 2000 and Cunningham and Phillips 2007). Those studies suggest that economic infrastructure, while not intended to facilitate mobilization, can nonetheless create opportunities for citizens and subjects to become involved in activism (Tarrow 2011, ch.4). At the same time, the topography of a country’s economic infrastructure can also delimit a movement’s outer orbit. As Charles Tilly (2004, 104) notes in his history of the social movement, “transportation breakthroughs such as intercity steam trains, electrical cars, and jet aircraft facilitated social movement contact at a distance but [also] impeded contact with like-minded people who lived far away from major transport lines.” This suggests that Egypt’s extant transport infrastructure shaped the Muslim Brotherhood’s ability to reach populations. Therefore we should expect that:

- H3b: Islamist movements were more likely to be present in areas that were accessible by transport networks.

We now turn to examining these hypotheses as they relate to the initial contexts of Muslim Brotherhood activism in interwar Egypt. In the following sections, we provide a brief overview of the Brotherhood’s history, before introducing a series of new data sources on the period and describing our method for analyzing them.

3 The Egyptian Muslim Brotherhood

Beginning in the late 19th century Islamic thinkers, including most prominently Jamal al-Din al-Afghani and Mohammed Abduh, began to articulate a religiously-based critique of the contemporary Muslim world (Hourani 1962, Keddie 1983). In the interwar period these arguments would take organizational form as mass social movements, most prominently the Muslim Brotherhood in Egypt. Following its founding in 1928, the Brotherhood would grow to establish cognate movements in nearly every country with a Muslim population. In the
process they would become, in Brynjar Lia’s (1998, 1) words, “the mother organization of all modern Islamist movements.”

The founding and growth of the Muslim Brotherhood must begin with the story of its founder, Hasan al-Banna, who arrived in the Suez Canal city of Ismailia to teach Arabic in 1927. It was here that he began to articulate an activist message that aspired to convert Egyptians’ supposedly “anesthetized faith” to a version of Islam that was “burning, blazing, [and] intense” (al-Banna cited in Wendell 1978, 44). Al-Banna’s down-home preaching style and personal charisma began to attract acolytes among Ismailia’s growing population, and in March 1928 six of these men would form the Muslim Brotherhood (Lia 1998, 36). As the movement grew, al-Banna refined his message of comprehensive religious reform and nested it within a regimented and formal organizational structure, emphasizing, “deep faith, precise organization, [and] uninterrupted work” (al-Banna cited in Wendell 1978, 33). The new movement’s appeal was prodigious and it quickly spread to towns and villages along the Suez Canal. In 1933, al-Banna was transferred from Ismailia to Cairo, marking the first transition in the movement’s history (Lia 1998, 21-53; Mitchell 1993/1969, 1-11).

In Cairo, the Brotherhood’s new headquarters in the district of al-Darb al-Ahmar quickly became a hotbed of activity. Members lectured in mosques throughout the swelling metropolis, established a printing press and magazine, and al-Banna and the movement’s early leadership began undertaking ever longer trips in a bid to establish new branches throughout the country (Lia 1998, 129-150). As the Brotherhood grew they also began to weigh in on national political issues, including demanding the application of Islam in widening spheres of public life. This politicization escalated with the outbreak of the Arab Revolt in Palestine in 1936, during which Brotherhood branches began to propagandize and fundraise in the cause of the Palestinians (Awaisi 1998, Gershoni 1986, Mayer 1982, 1983). During this early period the Brotherhood were able to organize with relative impunity, thanks in large part to the movement’s good relations with Egypt’s monarchy, who saw the movement as a possible counterweight to the authority of the newly elected parliament (Gershoni and Jankowski
The Muslim Brotherhood took the opportunity offered by the outbreak of World War Two to further up their political engagement, especially through criticism of foreign occupation. However, the movement’s increasing popularity and prominence brought with it more scrutiny from both the British and Egyptian authorities, leading to a period of tribulation that included Hasan al Banna’s “internal exile” from Cairo to Qena, in Southern Egypt. This antagonism reached its height in October 1941, when Hasan al-Banna was briefly detained for publicly criticizing the regime (Lia 1998, 256-261). This incident, according to Richard Mitchell (1993/1969, 23), marked a shift in relations between the Brotherhood and the authorities: “from that time no government in Egypt avoided clashing with the Society of the Muslim Brothers.”

We focus on this critical early period of the Muslim Brotherhood, beginning with the group’s founding in 1928 and ending with its first confrontation with the Egyptian state. This period, which Richard Mitchell (1993/1969, 12) calls the group’s “Rise to Power,” was a time of both qualitative and quantitative change. It was during this period, Krämer (2014, 36) observes, that “the Society of the Muslim Brothers was gradually transformed from a benevolent society ... to a social movement with the attributes of a mass-based political party.” By 1944, British intelligence estimated that the movement comprised half a million members (Lia 1998, 154). Richard Mitchell (1993/1969, 328) reports that during the “peak period” of 1946-49, the Brotherhood’s membership ranged between 300,000 and 600,000, with potentially as many as 2,000 branches established by 1949. To put this into perspective, the 1947 Egyptian census reported a national population of just under 19 million. If these estimates are accurate, then within two decades of the movement’s founding potentially as many as 3% of Egypt’s population were Muslim Brothers, making the Brotherhood one of the largest social movements in the world at that time.

2One early account of the Muslim Brotherhood recalls how the movement’s youth members would stand outside of the gates of the royal palace to mark King Farouq’s arrival to Cairo (Husaini 1956, 120). The highpoint in these relations came in 1938, when the Brotherhood’s leaders enjoyed a series of audiences with King Farouq himself (Lia 1998, 217).
Yet despite the Muslim Brotherhood’s tremendous growth and increasing involvement in national politics, the social and institutional factors contributing to the movement’s rise during the interwar years have remained elusive. In suggesting a more intense study of this period, Gershoni (1986, 367) reminds us that scholars:

[h]ave not properly explained how a small religious organization, which in the early 1930s was still a peripheral, almost anonymous body devoid of all political ambitions, became, by the close of the decade, the most powerful and highly organized Islamic force in Egypt.

In what follows, we take up this call by combining an array of underutilized primary source material from the period with newer analytical techniques to identify the social and institutional ecologies that facilitated this mobilization.

4 Data and method

To study the early contexts of Islamist activism, we draw on two branch surveys published in the Muslim Brotherhood’s Arabic-language newspapers. The first survey appeared in the 11 June 1937 edition of Jaridat al-Ikhwan al-Muslimin (reproduced in Amin 2003, 424-439). This is apparently a complete record of the Brotherhood’s branches established up until that point. A second branch survey appeared in a different Muslim Brotherhood newspaper (al-Ta’aruf) on 18 May 1940.\footnote{Both surveys report the governorate, district, and subdistrict of the branch, as well as the name and honorific of the branch leader. Unfortunately, the surveys do not record the date that a branch was founded, the number of branch members, or the precise address of a branch’s headquarters.} To evidence the processual dynamics of the movement’s expansion, we also draw on the print editions of the Brotherhood’s newspapers published between 1933 and 1940, as well as Arabic-language memoirs published by the movement’s early membership.

We can locate Muslim Brotherhood branches in their social and institutional context using census data and workforce statistics. The Egyptian Ministry of Finance carried out a nationwide census in March 1937, an English-language, district-level summary of which
is widely available. The American University in Cairo and the Egyptian National Library hold eighteen Arabic-language appendices to that census, which contain socioeconomic and demographic data at the subdistrict level, as well as labour force statistics that do not appear in the district-level summary. Annual reports for the three largest missionary societies active in Egypt during this period - the United Presbyterian Church of North America (1931), the Church Missionary Society (1931), and the Egypt General Mission (1931) - detail the number of Christian missionaries in a district. During this period, Egypt possessed an advanced railway system, which was itself the product of the country’s integration into the global capitalist economy (Barak 2013, Hobsbawm 2010, Goldfinch 2003). Princeton University holds a timetable and station-by-station route map published by the Egyptian State Railway (1936), and this allows us to account for the extent of Egypt’s transport infrastructure. To our knowledge, these materials have not been previously analyzed together.

4.1 Dependent variable

The dependent variable is the presence or absence of a Muslim Brotherhood branch in a census subdistrict (no subdistrict contained more than one branch). Each subdistrict was roughly equivalent to a large neighborhood; the median subdistrict contained 2,614 people. Of the 212 Muslim Brother branches listed in the 1937 survey, eight are missing information. We were able to locate the remaining 204 branches (96%) in their census subdistrict. In 1937, there were 4,230 census subdistricts in Egypt; the Muslim Brothers had a branch in nearly 5% of them (Figure 1 maps the location of each branch).

The presence or absence of a Muslim Brotherhood branch is modeled using multilevel

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A preliminary analysis of the 1937 Muslim Brother branch survey can be found in Masoud (2014, 118). While multivariate, the analysis is limited to the district level and uses only five indicators. The intraclass correlation obtained from the null model indicates that 95 per cent of the variation explaining branch formation is at the subdistrict level.

We could only locate district-level reports for all three missions for the year 1930, which falls within the period between the Brotherhood’s founding and the publication of the branch surveys. Analysis of British missionary reports suggests that missionary numbers did not increase in the interim. See Figure 4 in the appendix.

For a discussion on assignment, see the Appendix.
Figure 1: Spatial distribution of Muslim Brotherhood branches, March 1937
Table 1: Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim Brotherhood branch, 1937</td>
<td>0</td>
<td>1</td>
<td>0.04</td>
<td>0.21</td>
</tr>
<tr>
<td>Muslim population (subdistrict)</td>
<td>0</td>
<td>59278</td>
<td>3462.83</td>
<td>3661.92</td>
</tr>
<tr>
<td>Employed in agriculture (subdistrict)</td>
<td>0</td>
<td>83.96</td>
<td>32.69</td>
<td>13.67</td>
</tr>
<tr>
<td>Literate (subdistrict)</td>
<td>0</td>
<td>100</td>
<td>15.80</td>
<td>10.88</td>
</tr>
<tr>
<td>Unemployed males (subdistrict)</td>
<td>0</td>
<td>70</td>
<td>10.30</td>
<td>4.98</td>
</tr>
<tr>
<td>Population change since 1917 (district)</td>
<td>-71.38</td>
<td>2466.13</td>
<td>25.55</td>
<td>88.15</td>
</tr>
<tr>
<td>Sq. rt. Distance from Cairo (district)</td>
<td>0</td>
<td>26.15</td>
<td>11.31</td>
<td>5.16</td>
</tr>
<tr>
<td>Administrative centre (district)</td>
<td>0</td>
<td>1</td>
<td>0.03</td>
<td>0.16</td>
</tr>
<tr>
<td>Non-Muslim (subdistrict)</td>
<td>0</td>
<td>100</td>
<td>6.48</td>
<td>14.40</td>
</tr>
<tr>
<td>Europeans (district)</td>
<td>0</td>
<td>34.02</td>
<td>0.59</td>
<td>2.71</td>
</tr>
<tr>
<td>Missionaries per 10,000 (district)</td>
<td>0</td>
<td>11.10</td>
<td>0.16</td>
<td>0.62</td>
</tr>
<tr>
<td>Employed in state administration (district)</td>
<td>0.19</td>
<td>7.83</td>
<td>0.87</td>
<td>0.76</td>
</tr>
<tr>
<td>Egyptian state railway (subdistrict)</td>
<td>0</td>
<td>1</td>
<td>0.09</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Each observation comprises one subdistrict in one district

logistic regression. To account for clustering, the model introduces random intercepts at the district level; districts contained from two to 90 subdistricts, with a median of 28. There were 142 districts in Egypt during this period; missing observations for remote and sparsely populated districts reduces the number of observable subdistricts to 4,180 located in 133 districts. Two branches are dropped from the analysis as a result of listwise deletion. The number of Muslims in a subdistrict is the offset variable. With twice as many Muslims in a subdistrict, we expect that it will be twice as likely that a Muslim Brotherhood branch will be present. The inclusion of the offset naturally excludes areas with no Muslims, reducing the number of subdistricts where a branch was possible to 4,178.

4.2 Independent variables

Table 1 provides descriptive statistics for all variables (Appendix Table 4 is the correlation matrix). From the 1937 census we construct a series of ecological indicators at both the subdistrict and district levels, which are measured as percentages using a population denominator. Literacy is measured as the percentage of the population over five years of age in
a subdistrict who can read and write. H1a suggests that this variable should be positively associated with Muslim Brotherhood branch formation. To test H1b, we enter a variable recording district-level population change since 1917. If political Islam rooted in districts with higher levels of migration, this variable should be positive. The percentage of a subdistrict’s population employed in agriculture (farming, hunting and fishing) accounts for the agrarian economy. Following H1c, we expect this variable to be negative. The percentage of male unemployment in a subdistrict is our measure for economic deprivation. H1d leads us to expect that this variable will be positively associated with a Muslim Brotherhood branch being present.

H2a leads us to enter a variable measuring the percentage of Europeans (British, French, Italian and Greek) in a district. As per H2b, to test for the impact of Christian missionaries, we sum the personnel reported in missionary reports and then transform the count into a ratio of missionaries to the district’s total population. Following H2c, the percentage of non-Muslims (Christians and Jews) in a subdistrict measures inter-religious animosity and competition. The literature that identifies Muslim contact with Westernization as a factor in the development of political Islam would predict that these variables will all be positively correlated with a Muslim Brotherhood branch being present.

To test H3a - that Islamist movements mobilized where the state lacked infrastructural capacity - we enter the percentage of a district’s population employed in state administration (including police officers, civil servants, and government officials). This assumes that state officials worked in the district where they lived; a reasonable assumption for this time period. H3b suggests that transport infrastructure played a vital role in patterning the contexts of Islamist mobilization. Travel during the interwar years was primarily conducted using the state-owned railway network, and so we enter a binary variable charting the presence of a train station in a subdistrict.7

7It would be desirable, as an additional measure, to account for distance to a train station. Our observed expectation is that subdistricts closer to train stations would be more accessible and thus more likely to host a Muslim Brotherhood branch. Unfortunately, to our knowledge, the spatial data required to test this hypothesis, and specifically the borders and centroids of subdistricts in 1937, is simply not recoverable.
We also add two control variables. Because the movement’s leadership will have struggled to reach geographically isolated areas, we include a control variable measuring a district’s distance from Cairo. We also expect social movements to establish an organizational presence close to political power, and so we enter a binary variable at the district level for a governorate’s administrative center.

5 Results

Table 2 presents the results, with coefficients expressed as odds ratios. Model 1 begins with the social and demographic contexts of branch formation; Model 2 adds indicators for the presence of Europeans, missionary activities, and religious competition; Model 3 adds indicators for state development and economic infrastructure. Each subsequent model represents an improvement in fit, as indicated by a diminution in Akaike information criterion (AIC).

Model 1 offers mixed support for demographic explanations. H1a is strongly affirmed: Muslim Brotherhood branches were more likely to be present in subdistricts with higher literacy rates. In contrast, H1b is not supported. Population change unexpectedly reduces the probability of branch formation. H1c and H1d are supported. Branches were less likely in subdistricts with more employment in agriculture and more likely in subdistricts with higher rates of male unemployment. The probability of a branch increases with distance from Cairo, suggesting that the movement initially grew outside the capital. Districts that hosted administrative centers were less likely to host a Muslim Brotherhood branch, although this is not statistically significant.

Model 2 introduces indicators for contact with Westernization and religious competition. H2 receives no support. The percentage of Europeans in a district is significantly negatively associated with the existence of a Muslim Brotherhood branch, contrary to H2a. In other words, the Brotherhood were less likely to have an organizational presence in districts where Europeans were present in large numbers. H2b is also not supported: the presence of Chris-
Table 2: Predicting the probability of a Muslim Brotherhood branch (1937)

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subdistrict: Literate (%)</strong></td>
<td>1.05***</td>
<td>1.06***</td>
<td>1.07***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td><strong>Subdistrict: Employed in agriculture (%)</strong></td>
<td>0.96**</td>
<td>0.96***</td>
<td>0.97*</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td><strong>Subdistrict: Unemployed males (%)</strong></td>
<td>1.05*</td>
<td>1.06*</td>
<td>1.05</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td><strong>District: Population change since 1917 (%)</strong></td>
<td>0.99*</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td><strong>District: Distance from Cairo (sq root)</strong></td>
<td>1.09**</td>
<td>1.07**</td>
<td>1.04</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td><strong>District: Administrative centre</strong></td>
<td>0.59</td>
<td>0.86</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>(0.30)</td>
<td>(0.49)</td>
<td>(0.61)</td>
</tr>
<tr>
<td><strong>Subdistrict: NonMuslim (%)</strong></td>
<td>1.02</td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td></td>
</tr>
<tr>
<td><strong>District: Europeans (%)</strong></td>
<td>0.72***</td>
<td>0.74***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
<td>(0.06)</td>
<td></td>
</tr>
<tr>
<td><strong>District: Missionaries (per 10,000)</strong></td>
<td>0.87</td>
<td>0.93</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.16)</td>
<td>(0.18)</td>
<td></td>
</tr>
<tr>
<td><strong>District: Employed in state administration (%)</strong></td>
<td>0.64**</td>
<td></td>
<td>0.64**</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td></td>
<td>(0.11)</td>
</tr>
<tr>
<td><strong>Subdistrict: Egyptian state railway</strong></td>
<td>4.00***</td>
<td></td>
<td>4.00***</td>
</tr>
<tr>
<td></td>
<td>(0.78)</td>
<td></td>
<td>(0.78)</td>
</tr>
</tbody>
</table>

Random intercept: district (std dev)

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Random intercept: district (std dev)</strong></td>
<td>1.12***</td>
<td>1.11***</td>
<td>0.95***</td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(0.17)</td>
<td>(0.15)</td>
</tr>
</tbody>
</table>

Reduction in AIC compared to Model 1

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subdistricts</strong></td>
<td>4178</td>
<td>4178</td>
<td>4178</td>
</tr>
<tr>
<td><strong>Districts</strong></td>
<td>133</td>
<td>133</td>
<td>133</td>
</tr>
</tbody>
</table>

Multilevel logistic regression, with ln(Muslim population) as offset
Standard errors in parentheses
p-value (two-tailed), *** p < .001, ** p < .01, * p < .05
tian missionaries in a district is negatively associated with the presence of a Muslim Brotherhood branch, although this is not significant \( (p = .43) \). The percentage of non-Muslims in a subdistrict is (modestly) positively associated with Muslim Brother branch existence, but this falls outside of the bounds for accepted statistical significance at \( p < .05 \). With the inclusion of measures for Westernization, the unexpected negative association between branch formation and population change loses statistical significance.

Model 3 adds indicators for state presence and economic infrastructure. All other hypotheses remain unaffected, with the exception of H1d. In that case, the indicator for deprivation remains positive but slips just outside the bounds of accepted statistical significance \( (p = .051) \). H3a is strongly supported. Muslim Brotherhood branches were more likely to appear in districts with fewer adults employed in state administration, our measure for state presence. H3b is also strongly supported. The presence of a train station is a substantive and significant predictor of a Muslim Brotherhood branch at the subdistrict level. Net of all other factors, the odds of a Muslim Brotherhood branch being present was 4 times greater in subdistricts where there was a train station (as compared to subdistricts without a train station). When we account for the presence of the railway and state infrastructure, the effect of distance from Cairo is diminished and loses statistical significance.

Figure 2 shows the magnitude of the effect of the statistically significant continuous variables from Model 3.\(^8\) Holding all other variables constant at their median values, increasing the percentage of literacy in a subdistrict from 7\% to 28\% (the 10th to the 90th percentiles) quadruples the predicted probability of a Muslim Brotherhood branch from .008 to .032 (2a). The inverse holds for employment in agriculture. Increasing the percentage of agricultural workers in a subdistrict from 10\% (the 10th percentile) to 48\% (the 90th percentile) more than halves the probability of a Muslim Brotherhood branch existing from .02 (note that the 95 per cent confidence interval extends to .011) to .008 (2b).

\(^8\)These margins plots were calculated using the Stata command `genatmedian`, written by Michael Biggs. Note that this command does not account for the offset term, and so we enter the logged number of Muslims in a subdistrict as a separate variable.
Figure 2: How branch formation varied by literacy, employment in agriculture, Europeans, and employment in state administration

(a) % Literate (subdistrict)  
(b) % Employed in agriculture (subdistrict)  
(c) % Europeans (district)  
(d) % Employed in state administration (district)
The proportion of Europeans in a district is negatively associated with branch presence. At the 10th percentile - indicating a subdistrict within a district where Muslims had few opportunities to come into contact with Europeans - the probability of a branch is .012. At the 90th percentile - a subdistrict within a district where Muslims had more opportunities to come into contact with Europeans - the probability decreases to .011 (2c). At higher values, this association is more pronounced. At the 95th percentile - a subdistrict within a district where Muslims had the greatest exposure to Europeans - the probability of a Muslim Brotherhood branch being present falls to 0.006. The likelihood of Islamist presence is also related to the number of state officials in a district (2d). At the 10th percentile - a subdistrict within a district where 0.5% of the population work in the state’s bureaucratic machinery - the probability of a branch is .013. At the 90th percentile - a subdistrict within a district where 1% of the population is employed in state administration - the predicted probability of a Muslim Brotherhood branch decreases to .010. Again, at higher values, this association is more pronounced. For subdistricts located in districts where 2% of the population were employed as state officials (the 95th percentile), the predicted probability of a Muslim Brotherhood branch being present decreases to 0.007.

6 Robustness

The maximum likelihood estimator used in logistic regression can give biased coefficients if there are only a small number of events on the rarer of the two outcomes (Allison 2012, King and Zeng 2001). This is a concern as Muslim Brotherhood branches were present in less than 5% of subdistricts. Thus, as an initial robustness check, we re-analyze the original 1937 survey using penalized logistic regression. To calculate these results, we used the Stata command *firthlogit*, developed by Joseph Coveney (2015). This command does not account for the offset term, and so we enter the logged number of Muslims in a subdistrict as a separate variable. A popular equivalent to penalized logistic regression is the rare events (relogit) module developed for Stata by Tomz, King and Zeng (2003). Re-analyzing our data using *relogit* produces substantively identical results to those reported in Table 5 (the output is available from the authors).
Table 5. Literacy remains significantly positively associated with the presence of a Muslim Brotherhood branch, while the sign for agriculture remains negative but loses statistical significance, at \( p < .05 \). Interestingly, our measure for H3b remains positive but regains significance in the full model. The percentage of the population who were European remains significantly negatively correlated with Islamist presence, as does the percentage of the population employed as state officials. The presence of a train station also remains a substantive and significant predictor of a Brotherhood branch being present in a subdistrict. We also re-analyzed our data using logistic regression with robust standard errors clustered at the district level. This provides substantively and statistically similar results to Table 5.\(^{10}\) Taken together, our principle findings remain unaltered; however, the sensitivity of the results regarding agriculture and deprivation to model specification prompts us to take these findings as indicative and in need of further corroboration.

Our findings as they relate to the 'Western contact' hypothesis are provocative. One objection might be that measuring the percentage of Europeans at the district level does not adequately account for the distribution of Europeans at the subdistrict level. To test for this, we can re-run Model 3, substituting our district level indicator of percentage Europeans for a variable measuring the percentage of non-Egyptians in a subdistrict. Note that this variable is inferior as it includes the small number of non-Egyptian Arabs resident in Egypt during this period. Regardless, net of all other factors, the percentage of non-Egyptians in a subdistrict remains significantly negatively associated with a Muslim Brotherhood branch being formed (\( p < .05 \)).

Another objection may be that these findings are simply picking up state presence. Here, one interpretation for the negative association between contact with the West and Islamist presence is that Europeans were more likely to live in areas where the state’s infrastructure was more extensive (note, however, that these variables are only modestly correlated and that we are already controlling for a governorate’s administrative center). To rule this out, we can

\(^{10}\)The output is available from the authors.
re-run Model 3, replacing our control for administrative centers with a dummy variable for districts where 1% or more of the population were employed as state officials (at and above the 90th percentile). Even after we “dummy-out” those areas where the state’s machinery was especially concentrated, the percentage of Europeans living in a district remains significantly negatively correlated with a Muslim Brotherhood branch being established ($p < .001$). We get substantively similar results if we substitute the percentage of Europeans in a district with the percentage of non-Egyptians in a subdistrict ($p < .05$). Re-running the analysis on a subset of the data - excluding those districts where 1% or more of the population were employed as state officials - does not alter the result. An interaction term between the percentage of Europeans and the percentage of the population employed as state officials in a district offers no improvement ($p = .47$).

We can also test for the specific role of the British military in determining the contexts of Muslim Brotherhood branch formation. In 1936, the year before the publication of the Muslim Brotherhood’s branch survey, the Egyptian and British authorities signed the Anglo-Egyptian treaty, which led to a significant reduction in the number of British troops in the country. A classified British military report (1927) provides information on the locations and capacity of military barracks in the period before the diminution in troop numbers. Re-running the analysis above, the historic presence of a British military barracks in a district is actually negatively associated with a Muslim Brotherhood branch being established, but this is not statistically significant, and does not alter other findings. To proxy for the number of British soldiers in a district we can also use the listed capacity of each barracks (tested both as an unbounded count and as a count transformed to its square root). While the sign for both variables is positive, neither are statistically significant or affect other results. A second British military report (1938) provides information on the locations of British military barracks after the 1936 treaty was signed. This variable is positively associated with a Muslim Brotherhood branch being founded, but it also does not approach statistical significance at $p < .05$. All other findings are robust to its inclusion.
Another concern relates to the role of social networks in driving branch formation. One plausible objection is that Muslim Brotherhood branches were more likely to be established in areas where the movement’s early leadership had pre-existing relationships with the local community. We can at least partially account for this by coding dummy variables for the home districts and governorates of the early leaders of the movement (listed in Lia 1998, 40-43; we also coded the home district and governorate of al-Banna’s father, a noted religious figure). Re-running Model 3, the home districts of the Brotherhood’s early leadership are positively associated with a Brotherhood branch being present, but this does not approach statistical significance ($p = .26$). All other findings remain unchanged. To account for kinship networks that spanned multiple districts within the same governorate, we also tested a dummy variable for the home governorate of the movement’s first leaders. Again, the coefficient is positive, but it does not achieve statistical significance at $p < .05$, while all other findings remain unaffected. This provides some modest evidence against the role of social networks in patterning branch formation, and suggests that, by 1937, the Muslim Brotherhood had become a mass movement with a truly national presence (see Figure 1), reaching constituencies that lay beyond the personal networks of the movement’s founders.

6.1 1940 branch survey

Our analysis can be replicated for the second Muslim Brotherhood branch survey that appeared in 1940. That survey records 260 branches, of which 238 can be reliably assigned to a census subdistrict. There was significant turnover in the three years separating the surveys, a product of internal schisms in the movement and leadership quarrels culminating in a formal split in 1939 (Lia 1998, 247-250). Of the branches surveyed in 1937, 96 (45%) had folded or ceased to be affiliated with the movement by 1940, while 122 new branches appeared. This presents a novel opportunity to see if the contexts of Muslim Brotherhood mobilization remained constant, despite significant upheaval within the movement itself. To establish whether the same factors identified in Table 2 are relevant for the newly formed
branches, we re-run the analysis on this new branch survey, entering a dummy variable for
subdistricts with branches in 1937.\textsuperscript{11} Table 3 presents the results.

Again, branches were more likely in subdistricts with a higher literacy rate. The sign
for employment in agriculture remains negative, but is no longer statistically significant.
Branches were significantly less likely in districts with large European populations and with
more adults employed in state administration. The presence of a train station in a subdis-
trict remains a substantive and significant predictor of a Muslim Brotherhood branch being
present. Despite the high rate of branch turnover, our findings suggest that there was no sig-
nificant change in the social and institutional ecologies of Islamist mobilization in the three
years since the first Muslim Brotherhood survey was published. These findings are robust to
penalized logistic regression (see Appendix Table 6), as well as the alternative specifications
outlined above.

7 Discussion

Before discussing the implications of these findings, we should acknowledge their limitations.
Unfortunately, no data are available on other relevant characteristics of the Muslim Broth-
erhood, such as the number of Brothers in each branch or the professional backgrounds of a
branch’s membership, which would allow for a comparison with the underlying population
(see Ketchley and Biggs 2017). In the absence of such information, readers should be alert to
the risk of committing an ecological fallacy: our analysis can only illuminate the local con-
texts in which branches were formed, not the precise characteristics of individuals who joined
them. Our ecological approach is also silent on the processual dynamics of the movement’s
growth and mobilization (McAdam, Tarrow and Tilly 2001). Despite these limitations, our
analysis has the great advantage of identifying the characteristics of subdistricts and districts
that made the establishment of a Muslim Brotherhood branch more or less likely.

\textsuperscript{11}As an additional measure, it would be desirable to account for a subdistrict’s spatial relationship to subdis-
tricts where branches were established in 1937; however, as previously noted, this data is not recoverable.
Table 3: Predicting the probability of a Muslim Brotherhood branch (1940)

<table>
<thead>
<tr>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subdistrict: Branch present 1937</td>
</tr>
<tr>
<td>Subdistrict: Branch present 1937</td>
</tr>
<tr>
<td>Subdistrict: Literate (%)</td>
</tr>
<tr>
<td>Subdistrict: Literate (%)</td>
</tr>
<tr>
<td>Subdistrict: Employed in agriculture (%)</td>
</tr>
<tr>
<td>Subdistrict: Employed in agriculture (%)</td>
</tr>
<tr>
<td>Subdistrict: Unemployed males (%)</td>
</tr>
<tr>
<td>Subdistrict: Unemployed males (%)</td>
</tr>
<tr>
<td>District: Population change since 1917 (%)</td>
</tr>
<tr>
<td>District: Population change since 1917 (%)</td>
</tr>
<tr>
<td>District: Distance from Cairo (sq root)</td>
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<tr>
<td>District: Distance from Cairo (sq root)</td>
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<tr>
<td>District: Administrative centre</td>
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<tr>
<td>District: Administrative centre</td>
</tr>
<tr>
<td>Subdistrict: NonMuslim (%)</td>
</tr>
<tr>
<td>Subdistrict: NonMuslim (%)</td>
</tr>
<tr>
<td>District: Europeans (%)</td>
</tr>
<tr>
<td>District: Europeans (%)</td>
</tr>
<tr>
<td>District: Missionaries (per 10,000)</td>
</tr>
<tr>
<td>District: Missionaries (per 10,000)</td>
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<tr>
<td>District: Employed in state administration (%)</td>
</tr>
<tr>
<td>District: Employed in state administration (%)</td>
</tr>
<tr>
<td>Subdistrict: Egyptian state railway</td>
</tr>
<tr>
<td>Subdistrict: Egyptian state railway</td>
</tr>
<tr>
<td>Random intercept: district (std dev)</td>
</tr>
<tr>
<td>Subdistricts</td>
</tr>
<tr>
<td>Districts</td>
</tr>
</tbody>
</table>

Multilevel logistic regression, with ln(Muslim population) as offset
Standard errors in parentheses
p-value (two-tailed), *** $p < .001$, ** $p < .01$, * $p < .05$
The tendency for Muslim Brotherhood branches to be present in areas with higher literacy rates and fewer workers employed in agriculture is consistent with the image of organized political Islam emerging among newly literate publics living at a distance from the traditional agrarian economy. However, our findings as they pertain to Western contact run counter to the received wisdom about the initial contexts of Islamist mobilization. Qualitative accounts of the rise of the Brotherhood often spotlight the presence of large European populations such as those found in the Suez Canal city of Ismailia as a key factor in the rise of the movement.\textsuperscript{12} We find, however, that subdistricts in districts with large European populations were significantly less likely to host a Muslim Brotherhood branch. One potential reason for this divergence is that prior analysis has not adequately accounted for variation in the spatial distribution of Europeans. According to the 1937 census, Europeans comprised 8% of Ismailia’s population (above the 95th percentile). However, districts in Cairo and Alexandria with comparably sized European populations hosted few if any Muslim Brotherhood branches. Viewed from this perspective, the birthplace of the Muslim Brotherhood appears atypical of the social and political conditions associated with the movement’s emergence elsewhere. One important implication of this finding is that contact between Muslims and Western populations seems to have inhibited, rather than impelled, Islamist growth during this period.

This is not wholly unexpected. As Mansoor Moaddel (2005, 198) notes, sizable European émigré communities had resided across the Middle East and North Africa for several decades before the emergence of organized political Islam. If Islamist mobilization was a traditionalist reaction by Muslims who had come into contact with an alien Western culture, he asks, why did it emerge after this encroachment peaked? Similarly, the number of missionaries in Egypt appears to have been in decline during the formative early years of the Brotherhood (see Figure 4). Here, one interpretation might be that the Muslims most susceptible to joining

\textsuperscript{12}Note that Lia (2015, 207-208) has suggested that al-Banna’s hostile attitude towards the West was likely a political position that he cultivated later, and so is unlikely to have been a factor at the outset of the Muslim Brotherhood.
Islamist movements were those who experienced Westernization vicariously, such as through newspapers or word-of-mouth, rather than in their everyday life. In other words, instead of Muslims who lived and worked in close proximity to Europeans during the interwar period, it was those who read about European transgressions in Palestine or heard local shaykhs inveigh against missionaries’ attempts to convert Muslims, yet who had few opportunities to encounter Europeans in the flesh, who were most prone to join a movement like the Muslim Brotherhood (al-Anani 2013, Gershoni 1988). This mechanism would be consistent with scholarly research on exposure to immigration and the far right in Europe, which finds that support for anti-immigrant sentiment tends to operate at a distance from immigrant populations (Biggs and Knauss 2012, Kaufmann and Harris 2015).

The presence or absence of state infrastructure is an important explanation for variation in Islamist presence. The likelihood of a Muslim Brotherhood branch existing increased as the percentage of state officials decreased, our proxy for the extent of state infrastructure and administration. This finding tallies with other studies of Islamist mobilization, which portray organized political Islam as a religious social movement that provides functions and services that might otherwise be fulfilled by the state. However, as Melani Cammett and Pauline Jones Luong (2014) note, this dynamic is frequently cited, but rarely if ever empirically demonstrated (Brooke 2017 is an exception). In this, our paper provides concrete evidence that organized political Islam emerged in areas where the state lacked capacity, an important pre-condition for welfare-centric arguments about Islamists’ appeal and mobilization.

Even taking into account other characteristics, the available economic infrastructure of the day profoundly influenced where the Muslim Brotherhood established an organizational presence. Research on social movements has shown that economic infrastructure - including ports, road networks, and the railway - often occupies a key space in the ecology of modern contentious politics (Silver 2003). The transport networks that underpin economic activity are even more important in a geographically large country such as Egypt, as prior work has shown that distance poses a key handicap to the creation and maintenance of effective orga-
nizations (Stasavage 2010). As the quantitative results presented in Tables 2 and 3 suggest, Egypt’s rail infrastructure allowed the Muslim Brotherhood to surmount these difficulties. We now look to expand on this finding using qualitative evidence from the Brotherhood’s early years, in a bid to better understand the role played by the railway network in facilitating the rise of organized political Islam in interwar Egypt.

8 Processes of early Islamist expansion

Shortly after its founding, the Muslim Brotherhood boasted 50 branches, concentrated along the Suez Canal and in the Nile Delta (al-Banna ND, 14-15). The number of branches grew dramatically once the movement’s early leadership moved to Cairo so that, by the Brotherhood’s second decade, it boasted over 200 chapters located in 20 of Egypt’s 23 governorates. To further illuminate the role of economic infrastructure in determining these first sites of Islamist activism, we turn now to evidence from the Muslim Brotherhood’s Arabic-language publications. Here, a qualitative analysis of the ways in which the Brotherhood spread compliments our ecological findings, by providing an insight into the processual dynamics of Islamist expansion during this critical period of early growth.

8.1 “When the train finally stopped people were shaking our hands and kissing us”

As the Muslim Brotherhood’s figurehead and charismatic leader, Hassan al-Banna’s travel’s across Egypt were frequently chronicled by the Brotherhood’s various publications. However he rarely went alone; often accompanying him were various movement figures including members of the Majlis al-Shura and what later became the Guidance Bureau. In the below analysis, we spotlight al-Banna’s peregrinations across the rail network in an attempt to understand how Egypt’s economic infrastructure contributed to the process by which the

\[\text{For histories of these bodies and their role in the development of the Muslim Brotherhood, see Lia (1998, 96-101) and Mitchell (1993/1969, 163-184).}\]
movement grew. As a first cut at using this rich historical record, we reviewed the Muslim Brotherhood’s early periodicals, including *al-Nadhīr* and *Jaridat al-Ikhwān al-Muslimīn*. Between August 1933 and September 1939, these organs printed a number of al-Banna’s detailed itineraries as he traversed the county by rail, establishing new branches and visiting existing ones. Figure 3 plots a selection of these journeys on a map of Egypt, along with the number of days al-Banna spent traveling and the number of stations visited.

These rail journeys were critical to the organizational growth of the Muslim Brotherhood. Hassan al-Banna was notorious for crafting short weekend trips, often up and down the canal and into the Nile Delta, to accommodate his teaching responsibilities during the working week (Ushama 1995, 33). On one of his earliest tours in August 1933, recorded by the Muslim Brotherhood’s newspaper, al-Banna disembarked at 14 train stations in the Delta, covering 1,000 km in two weeks (see Figure 3a). And as Figure 3 shows, following the transfer of the movement’s headquarters to Cairo, al-Banna began to embark on more extensive journeys as the movement looked to strengthen its organizational presence in the governorates south of Cairo. In February 1939, for example, al-Banna spent over a month traversing Egypt’s rail network, stopping at 33 stations and traveling over 1,500 km in the process (see Figure 3e). These journeys were often advertised in advance, with detailed itineraries announcing the names of stations that were to be visited, as well as arrival and departure times (see for example, *al-Nadhīr* 1938/1358).

Firsthand accounts of these trips recorded in memoirs and the Muslim Brotherhood’s publications suggest that a stop on one of these tours was often characterized by its pomp and pageantry designed to maximize the movement’s profile. In his history of the early

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14 Here, our focus on al-Banna simply reflects the abundant column space dedicated to recording his journeys; the actions of other itinerant members of the organization, or even members of one of his delegations, received far less attention. To take one example, a 1938 article in the Brotherhood’s journal *al-Nadhīr* records a rail journey undertaken by four Muslim Brothers, but the coverage almost completely focuses on Hasan al-Banna, suggesting that while other Brothers also used the rail network to grow the movement, their journeys were considered less newsworthy by the movement’s publications (*al-Nadhīr* 1938/1358a).

15 To give an example: in one account of a trip to the Suez Canal, one observer reports being extremely impressed with the “punctuality and organization” of the Brotherhood’s celebratory reception for the delegation (*al-Nadhīr* 1938/1358a).
Figure 3: Hasan al-Banna’s Rail Visits, 1933-1939

(a) Aug. 1933  
(16 days, 14 stops)
(b) July 1936  
(15 days, 15 stops)
(c) Nov. 1938  
(14 days, 13 stops)
(d) Jan. 1939  
(7 days, 5 stops)
(e) Feb. 1939  
(35 days, 33 stops)
(f) Sept. 1939  
(12 days, 10 stops)
Brotherhood, Brynjar Lia (1998, 131) relates how members of the Brotherhood’s youth wing sometimes staged rallies at the train station to meet al-Banna, who would then lead a delegation of Muslim Brothers through the main street of the town or village chanting the Brotherhood’s hymn, “Ya Rasul Allah” (O God’s Prophet). One of Banna’s traveling companions recorded the scene in one Southern Egyptian district: “When we arrived to Meghagha train station there were crowds cheering loudly saying “God is great!” and “Thanks be to God!” and when the train finally stopped people were shaking our hands and kissing us, and we felt so much love” (cited in al-Nadhīr 1939/1358d). In contexts unused to public street politics, these raucous scenes “must have attracted the attention of the local community and made al-Banna’s arrival an event of some note” (Lia 1998, 131).

These travels grew in importance as the organization expanded, becoming not only a means for establishing new branches but, by visiting existing branches, a critical mechanism for sustaining the intense personal and social bonds that gave the movement coherence. One of al-Banna’s biographers notes how he would schedule trips to visit even those villages inhabited by a single Muslim Brother (al-Guindi 1978, 285-286). These visits became part of the group’s repertoire, and were undertaken by local branches’ own “rover battalions” (jawāla) or “traveling units” (firaq al-rahāla) who would visit sick members of the movement or use short trips to learn about the residents of nearby towns (see e.g. al-Nadhīr 1938/1357, 1939/1358c). Hasan al-Banna himself acknowledged these frequent journeys as a crucial factor in the Brotherhood’s transformation into a national movement. In a speech to the Muslim Brotherhood’s fifth conference, al-Banna (1939) reflected on the growth of the organization over its first decade. As he reminded the audience, he and his compatriots had “issued the call to the nation, gave lessons often, traveled constantly, distributed many publications, met regularly, wrote in the older versions of the Brotherhood’s paper and also in the weekly al-Nadhīr.” Later in the same speech al-Banna returned to this theme of travel to emphasize how his own unflagging efforts to visit far-flung places had helped to grow the movement:
Few know that the Brotherhood’s preacher leaves work [in Cairo] on Thursday afternoon and then is speaking to the people in Minya by that evening, then is giving the Friday sermon in Manfalout, then is lecturing in Asyut, then following evening prayers is speaking in Sohag, and then returns home with a full and peaceful heart, thanks be to God…”

Al-Banna’s efforts also suggest the limited extent to which the expansion of the Muslim Brotherhood relied on the extant personal connections of the movement’s leadership. The author of an early Arabic-language biography notes how al-Banna pursued the organizational development of the Muslim Brotherhood with almost a sense of fatalism, relying on a persistence of faith and strength of character “to enter a village in order to establish a branch there, despite the fact that he knows no one there” (al-Guindi 1978, 30). Another early chronicler summarized how, in these journeys, al-Banna would “never pass by a village, a town, a hamlet, nor any group of dwellings without visiting it, spending the night and meeting with the people in their mosques, their houses, and their homes” (Husaini 1956, 12). David Commins (1994, 147) concurs, writing in his study of Hasan al-Banna that he would travel “throughout the country by train, automobile, and cart [and] pray in the village mosque and then talk with people about religion.” Here, al-Banna’s efforts to establish new branches sometimes led him to places where he was a complete stranger, and so he always carried with him on his train journeys a bag of toiletries and a pillow. As he explained to one of his acolytes, this was because he could well end up in a village where he would have to sleep at the mosque because he knew no one there (al-Guindi 1978, 283).

Local social networks were not unimportant to the development of the Muslim Brotherhood, however. On these tours al-Banna’s retinue often included Muslim Brothers who were familiar with the area, in part because this would help him to understand the concerns and dispositions of the locals (Lia 1998, 131).16 And once in a village or town, Hasan al-Banna was adept at targeting and co-opting local social networks and infrastructures into his own movement (Langohr 2005). Ziad Munson (2001, 498), for example, notes how “traditional

16According to one biographer, Banna put great effort into crafting distinct speeches specifically tailored to that village, that audience, and relevant events of the day (al-Guindi 1978, 284).
social networks were maintained and incorporated into the individual branches of the group, allowing the Muslim Brotherhood to gain access to lines of communication and commitment originally developed outside of the organization.” Brynjar Lia explicitly relates the Brotherhood’s organizational growth to the movement’s ability to embed newly formed branches within pre-existing social networks. This was necessary because, “In traditional villages and provincial towns, those relatively untouched by the process of modernization and industrialization, the religious elite still held an enormous influence over the local populace. Winning the support of the local elite was therefore of fundamental importance” (1998, 132). This sentiment clearly comes through in how al-Banna planned his journeys around Egypt. For example, one report published in the Brotherhood’s newspaper noted how the first stop for a Brotherhood delegation after praying the dawn prayer was the “elites in the city, doctors and businessmen.” As that delegation continued to wind their way southward along the Nile, establishing new branches and visiting existing ones, each stop followed the same general pattern: a speech at the train station or mosque then a visit to important local notables, such as a court judge, professor, member of the police force, or renowned sheikh (cited in al-Nadhîr 1939/1358d).

Against this backdrop, Egypt’s national and local transportation infrastructure appears to have served as a crucial link between the demographic factors that spurred the growth of the Brotherhood - such as the aspirations of the country’s literate middle classes - and the purposive, top-down organizational efforts of the movement’s tireless leadership. Both the quantitative and the qualitative evidence align on this point, showing how Egypt’s pre-existing economic infrastructure allowed the Muslim Brotherhood to break into isolated social networks, and translate local grievances into organized activism. Here, the capillaries of Egypt’s relatively cheap and widespread rail system constituted what Peter Hedström and colleagues (2000) have called a “mesolevel network,” which served to connect pre-existing and potential members of a social movement who might otherwise have existed beyond the

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17 This dynamic is also visible during the movement’s formative early years in Ismailia, where al-Banna drew on the patronage of local elites (Lia 2015, 210-211).
possible range of everyday interpersonal ties. By bridging geographic and social space in this way, Egypt’s railroad system facilitated and empowered the rise of organized political Islam.

9 Conclusion

Organized political Islam is one of the most consequential social and political phenomena of the twentieth century. Marshaling both qualitative and quantitative evidence, we have provided the first systematic investigation of the contexts of early Islamist activism. We find that Muslim Brotherhood branches in interwar Egypt were more likely to be present in areas with higher numbers of literate individuals and fewer workers employed in the agrarian economy. In contrast to much of the received wisdom on the rise of political Islam, we find little support for arguments that organized Islamism took root in areas where there was greater contact between Muslims and the West. Most notably, our results suggest that the reach and development of state and economic infrastructure profoundly shaped the organizational development of the Muslim Brotherhood. On the one hand, this is a story of the uneven growth of the modern administrative state: Brotherhood branches were more likely to exist in areas where the state’s infrastructural presence - proxied by the percentage of the population employed in state administration - was weak. On the other hand, the economic infrastructure that paved the way for Egypt’s incorporation into the world capitalist economy also played an important role in patterning the early contexts of Islamist activism. Net of all other factors, we find that a strong predictor of organizational presence was whether or not a rail station was located in that subdistrict. And a reading of the rich textual record left by Arabic-language memoirs and the movement’s own publications reinforces the importance of this infrastructure in the rise of organized political Islam. Not only are contemporaneous accounts in the Brotherhood’s newspapers spotted with reports and itineraries of the leadership’s rail travels across the country, but in their own writings and speeches the Muslim Brotherhood’s leadership highlighted these journeys as an innovative
means by which they grew the movement.

These findings suggest that the Muslim Brotherhood was a modern social movement that consciously appropriated the existing economic infrastructure of the day to mobilize literate populations in areas where the state had only a titular presence. In this, our account aligns with qualitative studies of other early mass-participation Islamist movements, which stress the importance of literate middle class constituencies (Minault 1982, Noer 1973, Qureshi 1999, Reetz 2006). And specific accounts of the Islamist Khilafat movement in colonial India and the Sarekat Islam in Dutch-controlled Indonesia also highlight the role of rail networks, alongside other forms of economic infrastructure, in the initial development and growth of these movements (Van der Veur 2006, 188, 266, Minault 1982, 20). It will, of course, require census data, alongside other historical sources such as Christian missionary reports and maps of available transportation infrastructure, to more fully arbitrate the extent to which our findings apply to these cases.

The Muslim Brotherhood’s similarities to other social movements also raises an important puzzle for future research. The dynamics of competition (and potentially cooperation) are important to organizational development and vitality (McAdam, Tarrow and Tilly 2001), but the political and movement ecology of our paper is rather barren: we examine only the relationship between the emergence of organized political Islam and the Christian missionary movement. Yet interwar Egypt was a hothouse of social, religious, and political activism, encompassing groups like Young Egypt (Misr al-Fatat) (Jankowski 1975, Shalabi 1981), the Wafd (Deeb 1979, Quraishi 1967), and the Young Men’s Muslim Association (Gershoni 1986, 379-382). By the end of the interwar period these competitors had dwindled, while the Brotherhood had emerged as a dominant sociopolitical force, “so diversified as to be virtually representative of every group of Egyptian society” (Mitchell 1993/1969, 12). To what extent was the Muslim Brotherhood inspired by such movements, and what factors explain the Brotherhood’s relative success and resilience? As scholars become more concerned with uncovering the precise ways in which Islamist groups are advantaged over their non-Islamist
competitors, such a comparison would seem to hold great promise (Brooke 2017, Cammett and Jones Luong 2014, Masoud 2014, Pepinsky, Liddle and Mujani 2012).

Two additional areas of future inquiry are also worth highlighting. One outstanding question is the role local religious figures played in the rise of organized political Islam. Qualitative material, including an array of primary sources, points to the role of mosques and religious lectures in the growth of the Muslim Brotherhood. In such accounts, prominent shaykhs associated with the group frequently spoke on religious topics at the Brotherhood’s headquarters in Cairo, and travelled around the country delivering sermons and lectures. While the Muslim Brotherhood are often understood as a lay movement of the middle classes, there is suggestive evidence of a hitherto unappreciated dynamic in which formal figures of Islamic religious authority lent credibility and legitimacy to the movement. Secondly, and as noted earlier, we lack systematic data on the movement’s membership. In its absence, a study of the micro-level processes of branch formation holds notable potential for testing and expanding on our conclusions.

Finally, this paper continues a growing trend in comparative politics to excavate underutilized historical evidence and couple it with newer analytical tools in order to examine matters of distinct contemporary importance. Recent research in this vein has shed light on the political divergence of the West and the Muslim World (Blaydes and Chaney 2013), the persecution of religious minorities (Braun 2016), the role of combat veterans during episodes of ethnic cleansing (Jha and Wilkinson 2012), the dynamics of local resistance to foreign rule (Ferwerda and Miller 2014, Kocher and Monteiro 2016, Lawrence 2013), and state strategies of counterrevolution (Weyland 2016). This trend holds particular promise for political scientists of the Middle East, where systematic contemporary data is notoriously scarce, and sometimes even potentially dangerous, to acquire (Brooke 2016, Brown 2015). It is our hope that this paper will encourage others to look to similar sources and methods to revisit important moments and episodes in the region’s history.
References


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10 Appendix

10.1 Assignment to Subdistricts

In the vast majority of cases, a branch or train station had the same name as the census subdistrict, making assignment academic. In some cases, spelling or transcription errors, or differences between popular and official spellings of a location, made assigning these branches or stations more difficult. However in nearly all of these cases we were able to triangulate with a high degree of certainty by using two additional sources. The first was a directory of villages assigned to both subdistrict and districts published by the Egyptian Ministry of Finance (1925). This was particularly helpful because it contained both the original Arabic spellings and the common English transliteration of the unit. It also, quite fortuitously, contained hand-written Arabic corrections that often provided the informal or popularly-known name of the unit alongside the official designation. The second source was a Arabic language multi-volume geographical encyclopedia of Egyptian towns published in 1963. This provided, for each unit, a brief discussion of the history and naming conventions (Ramzi 1963).

For some cities in the Nile Delta and the Suez Canal region we struggled to locate Muslim Brother branches in their subdistricts. This was due to inconsistent naming conventions used in both the census and the branch survey. For example, in the census, subdistricts were sometimes assigned numbers instead of names - designations that do not appear in contemporaneous maps, or survive in current usage. To address this, we exploited a convenient feature of urban geography. Cities outside of the capital often had city limits, with subdistricts designated as being either “inside the limit” (dakhil al-kurdun) or “outside the limit” (kharig al-kurdun). Examination of branch addresses reported in the Muslim Brothers’ newspaper suggest that branches were often “inside the limit,” and so we aggregate subdistricts along this distinction and assign branches to the newly pooled subdistrict.

Similarly, some subdistricts were delineated using directions, e.g. Aswan al-Qibli (South
Aswan) and Aswan Bahri (North Aswan). These distinctions rarely appear in the branch survey or contemporaneous maps, suggesting that these were often arbitrary administrative divisions rather than socially distinct spaces. Again, on these occasions, we aggregate subdistricts and assign branches and calculate independent variables for the pooled unit. Aggregation reduces the number of subdistricts from 4,272 to 4,230. Missing observations at the district level reduces the total number of subdistricts analyzed to 4,135.

10.2 Missionary Activism

Figure 4: Number of Church Missionary Society Missionaries in Egypt, 1923-1939
Table 4: Correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
<th>(10)</th>
<th>(11)</th>
<th>(12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Muslim Brother branch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Muslim population</td>
<td>0.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Employed in agriculture (%)</td>
<td>-0.16</td>
<td>-0.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Literate (%)</td>
<td>0.10</td>
<td>0.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Unemployed males (%)</td>
<td>0.10</td>
<td>0.15</td>
<td>-0.37</td>
<td>-0.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Population change since 1917 (%)</td>
<td>0.00</td>
<td>0.04</td>
<td>-0.10</td>
<td>0.05</td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) Non-Muslim (%)</td>
<td>0.03</td>
<td>-0.01</td>
<td>-0.23</td>
<td>0.30</td>
<td>0.04</td>
<td>0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) Distance from Cairo (sq root)</td>
<td>0.04</td>
<td>0.03</td>
<td>0.09</td>
<td>-0.36</td>
<td>0.30</td>
<td>0.05</td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9) Administrative centre</td>
<td>0.07</td>
<td>0.19</td>
<td>-0.31</td>
<td>0.32</td>
<td>0.04</td>
<td>0.23</td>
<td>0.10</td>
<td>-0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10) Europeans (%)</td>
<td>-0.01</td>
<td>0.07</td>
<td>-0.43</td>
<td>0.53</td>
<td>0.05</td>
<td>0.10</td>
<td>0.32</td>
<td>-0.12</td>
<td>0.32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(11) Missionaries (per 10,000)</td>
<td>0.02</td>
<td>0.08</td>
<td>-0.24</td>
<td>0.29</td>
<td>-0.01</td>
<td>0.03</td>
<td>0.23</td>
<td>-0.12</td>
<td>0.06</td>
<td>0.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(12) Employed in state administration (%)</td>
<td>0.01</td>
<td>0.13</td>
<td>-0.44</td>
<td>0.49</td>
<td>-0.03</td>
<td>0.15</td>
<td>0.11</td>
<td>-0.36</td>
<td>0.27</td>
<td>0.30</td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td>(13) Egyptian state railway</td>
<td>0.26</td>
<td>0.32</td>
<td>-0.13</td>
<td>0.05</td>
<td>0.12</td>
<td>0.05</td>
<td>0.02</td>
<td>0.05</td>
<td>0.03</td>
<td>0.00</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>
### 10.4 Penalized Logistic Regression, 1937 Branch Survey

Table 5: Predicting the probability of a Muslim Brotherhood branch, 1937

<table>
<thead>
<tr>
<th></th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subdistrict: Literate (%)</td>
<td>1.07***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>Subdistrict: Employed in agriculture (%)</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>Subdistrict: Unemployed males (%)</td>
<td>1.06**</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
</tr>
<tr>
<td>District: Population change since 1917 (%)</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
</tr>
<tr>
<td>District: Distance from Cairo (sq root)</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
</tr>
<tr>
<td>District: Administrative centre</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>(0.40)</td>
</tr>
<tr>
<td>Subdistrict: NonMuslim (%)</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>District: Europeans (%)</td>
<td>0.80***</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
</tr>
<tr>
<td>District: Missionaries (per 10,000)</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>(0.13)</td>
</tr>
<tr>
<td>District: Employed in state administration (%)</td>
<td>0.64**</td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
</tr>
<tr>
<td>Subdistrict: Egyptian state railway</td>
<td>3.26***</td>
</tr>
<tr>
<td></td>
<td>(0.60)</td>
</tr>
<tr>
<td>Subdistrict: Muslims (log)</td>
<td>3.09***</td>
</tr>
<tr>
<td></td>
<td>(0.37)</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subdistricts</td>
<td>4178</td>
</tr>
<tr>
<td>Districts</td>
<td>133</td>
</tr>
</tbody>
</table>

Penalized logistic regression
Standard errors in parentheses; *** p < .001, ** p < .01, * p < .05
### 10.5 Penalized Logistic Regression, 1940 Branch Survey

Table 6: Predicting the probability of a Muslim Brotherhood branch, 1940

<table>
<thead>
<tr>
<th>Model 6</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subdistrict: Branch present 1937</td>
<td>16.71***</td>
</tr>
<tr>
<td></td>
<td>(3.21)</td>
</tr>
<tr>
<td>Subdistrict: Literate (%)</td>
<td>1.05***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>Subdistrict: Employed in agriculture (%)</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>Subdistrict: Unemployed males (%)</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
</tr>
<tr>
<td>District: Population change since 1917 (%)</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
</tr>
<tr>
<td>District: Distance from Cairo (sq root)</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
</tr>
<tr>
<td>District: Administrative centre</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>(0.30)</td>
</tr>
<tr>
<td>Subdistrict: NonMuslim (%)</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>District: Europeans (%)</td>
<td>0.86*</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
</tr>
<tr>
<td>District: Missionaries (per 10,000)</td>
<td>1.17</td>
</tr>
<tr>
<td></td>
<td>(0.15)</td>
</tr>
<tr>
<td>District: Employed in state administration (%)</td>
<td>0.66**</td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
</tr>
<tr>
<td>Subdistrict: Egyptian state railway</td>
<td>2.40***</td>
</tr>
<tr>
<td></td>
<td>(0.48)</td>
</tr>
<tr>
<td>Subdistrict: Muslims (log)</td>
<td>1.98***</td>
</tr>
<tr>
<td></td>
<td>(0.23)</td>
</tr>
</tbody>
</table>

Subdistricts: 4178
Districts: 133

Penalized logistic regression

Standard errors in parentheses: *** p < .001, ** p < .01, * p < .05