ONLINE APPENDIX

BOWLING FOR FASCISM:

SOCIAL CAPITAL AND THE RISE OF THE NAZI PARTY

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Appendix A

Additional Figures and Tables

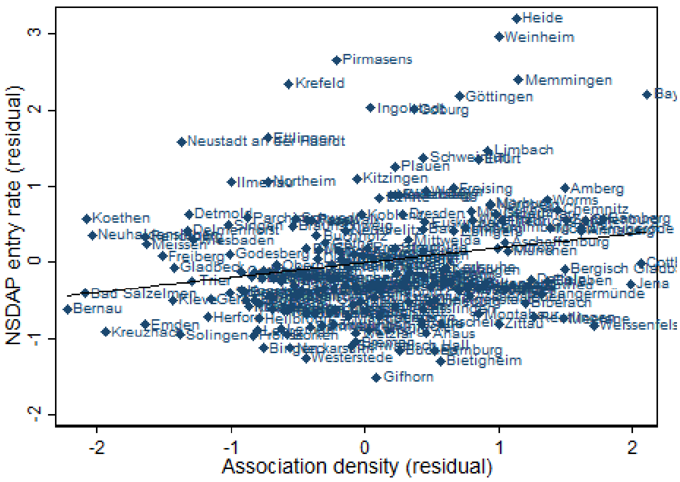

Figure A.1: Conditional scatter, exclude cities from 90th percentile of club density

Note: The figure is the same as Figure 3 in the paper, but excluding the top-10 percent of towns and cities with the highest club density. The y-axis plots the variation in NSDAP entry rates (per 1,000 inhabitants), after controlling for the baseline controls listed in Table 2. The regression line has a coefficient of 0.193 with a standard error of 0.065.

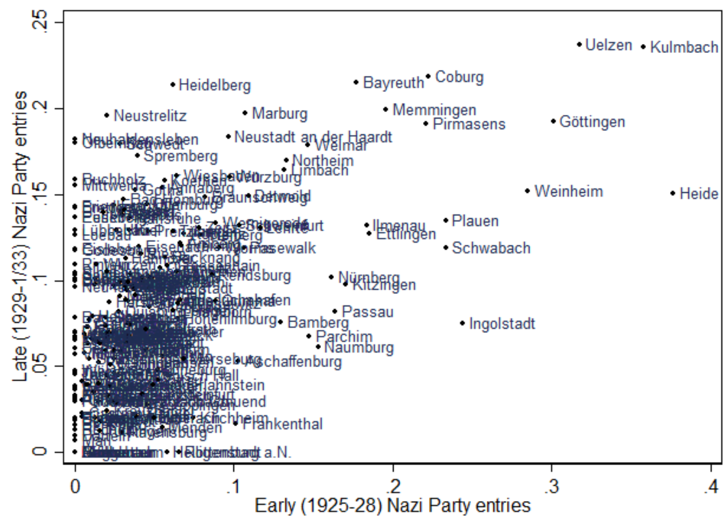

Figure A.2: Early and late Nazi Party entries, by locality

Note: The x-axis plots average rates of Nazi Party entry (per 1,000 inhabitants) in each city over the period 1925-28 (early entries), and the y-axis over the period 1929-1/33 (late entries). Two outliers are excluded (Calau and Hirschberg – both small cities with fewer than 4,000 inhabitants).

Table A.1: Descriptive Statistics – Explanatory variables and outcomes

Variable	Mean	Standard deviation
Association density		
All clubs *($ASSOC_{all}$)*	2.611	1.572
Civic clubs *($ASSOC_{cicic}$)*	0.845	0.565
Military clubs *($ASSOC_{military}$)*	0.401	0.349
NSDAP entry 1925-Jan.1933		
Total entry p.c. (Falter-Brustein)	0.629	0.473
Average (standardized) p.c. entry	-0.000	1.000
NSDAP vote shares		
May 1928 election	3.48%	4.76%
Sept. 1930 election	18.36%	8.70%
March 1933 election	40.0%	9.83%

Appendix B

Cities and Associations in the Sample

This section of the appendix describes the construction of our sample and then lists all 229 cities, as well as associations by type. We also show that, where data are available, our main explanatory variable – the *number* of associations per capita – is strongly correlated with the more accurate measure of association *members* per capita.

B.1. Construction of the sample

As mentioned in footnote 18 in the paper, we followed two steps to contact local archives.

Step 1: First, we used the contact details listed in two main directories:

- http://home.bawue.de/~hanacek/info/darchive.htm#AA and
- http://archivschule.de/DE/service/archive-im-internet/archive-in-deutschland/kommunalarchive/kommunalarchive.html

From these lists, we identified local contacts and inquired about the existence of city directories from the 1920s.[1] This led to the collection of association data from the 1920s for 110 towns and cities.[2] Among these, 23 cities had fewer than 10,000 inhabitants in 1925, and six cities, fewer than 5,000 inhabitants.

Step 2: Second, we contacted the administration of all (remaining) cities with more than 10,000 inhabitants in 1925 for which an archive was not listed in the central directories above. In many cases, the local administration pointed us to available (often small) archives, and we checked whether these contained city directories from the 1920s. This process led to an additional 119 towns and cities with available data on associations. In a few cases, the local archives also revealed city directories for neighboring towns, which we included as "associated finds" in our sample. As a result, out of the 119 cities added to our sample in the second step, nine had fewer than 10,000 inhabitants in 1925, and five had fewer than 5,000. Combined with the 23 smaller (below 10,000) cities from the first step, our sample thus includes 32 "associated finds." Our results hold whether or not these are included (see Table A.16 below).

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[1] See, for example the city archive of Backnang (Württemberg), which is obtained from the second source: http://www.archive-bw.de/sixcms/list.php?page=seite_archivanschrift&sv[id]=10305&_seite=Kontakt and is included in our sample.

[2] We obtained directories for 111 towns and cities, but the cities of Duisburg and Hamborn merged in 1929 to Duisburg-Hamborn, for which we aggregated associations and all socio-economic variables.

Figure A.3 shows what determined our sample size. Out of the 547 cities with more than 10,000 inhabitants in 1925, 65 lay in former German territories in the East (now Poland or Russia), and we cannot obtain city directories for these. When contacting the remaining cities (or those with archives listed in central directories), we also identified 32 “associated finds” with below 10,000 inhabitants, as described above. Among the cities we contacted, in 170 the city archives or administrations failed to reply to our inquiries; and among those that replied, in 115 no directories existed or survived. This determines our overall sample size of 229 locations.

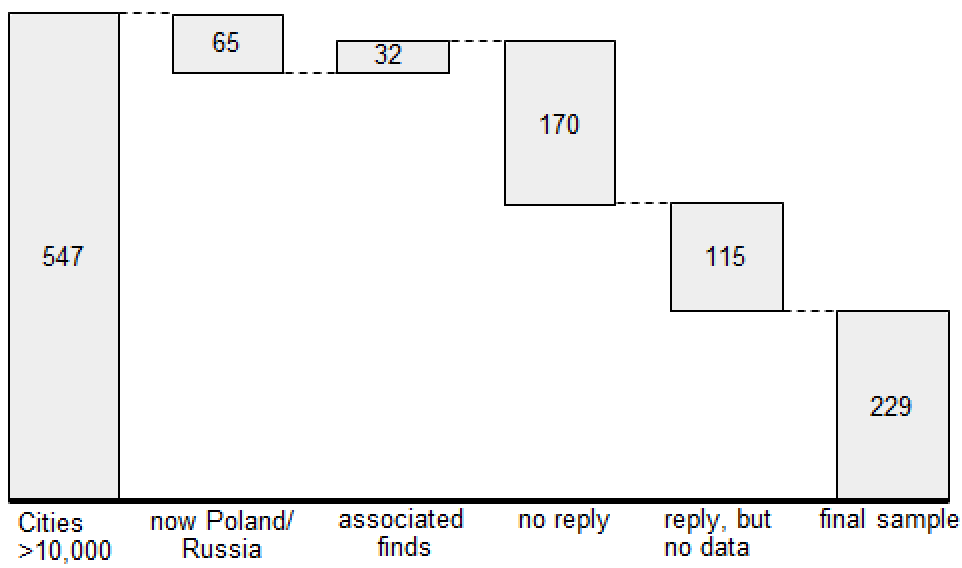

Figure A.3: Cities considered, contacted, and included in our sample

Note: See text above for description.

Figure A.4 shows that the strong relationship between association density and Nazi Party entry holds for both the 110 towns and cities obtained in Step 1, and for the 119 towns and cities from Step 2. Since a scatterplot of each data point would become too crowded for a visualization, we use a binscatter plot that groups association density into 20 equal-sized bins. We plot the residual variation in NSDAP entry against association density, including our baseline controls (ln(pop), share of Catholics, and share of blue-collar workers). Hollow dots and the dashed line are (binned) data points from the cities obtained by Step 1; full dots (and the solid line) are for towns and cities added to the sample in Step 2.The values in each bin are not identical, but the overall pattern in the data is very similar. This makes it highly unlikely that sample selection issues are responsible for our result.

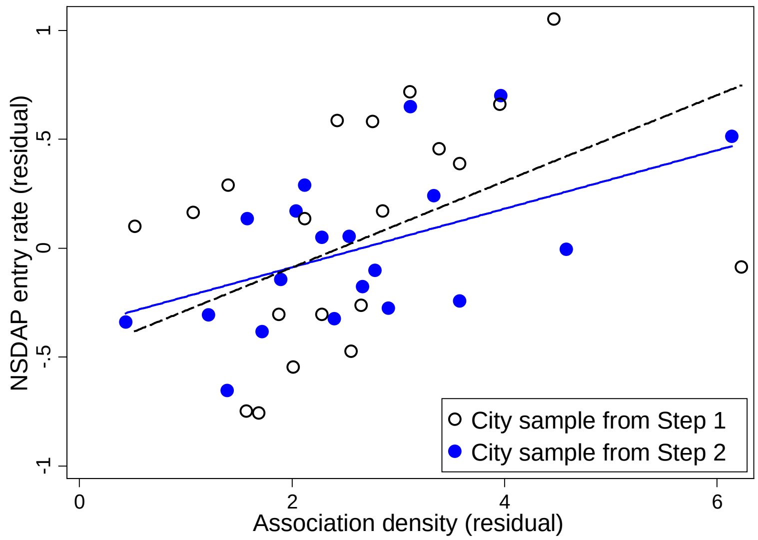

Figure A.4: Binscatter: Main result for cities obtained from Steps 1 and 2

Note: The figure shows the binscatter plot, grouping association density into 20 equal-sized bins and then plotting its relationship with Nazi Party entry rates (after controlling for the baseline controls ln(pop), share of Catholics, and share of blue-collar workers). See Appendix B.1 for explanations of the two steps of sample collection.

Table A.2 lists the 229 towns and cities in our sample.

Table A.2: Towns and cities in the sample

1.	Ahaus	78.	Godesberg	155.	Neustadt an der Haardt
2.	Ahrweiler	79.	Goeppingen	156.	Neustrelitz
3.	Altenburg	80.	Gotha	157.	Neuwied
4.	Altona	81.	Grimma	158.	Niederlahnstein
5.	Amberg	82.	Grossenhain	159.	Northeim
6.	Annaberg	83.	Guben	160.	Nürnberg
7.	Apolda	84.	Göttingen	161.	Oberhausen
8.	Aschaffenburg	85.	Hagen	162.	Offenburg
9.	Aschersleben	86.	Halberstadt	163.	Olbernhau
10.	Buer	87.	Halle	164.	Osnabrueck
11.	Backnang	88.	Hamburg	165.	Paderborn
12.	Bad Homburg	89.	Hameln	166.	Parchim
13.	Bad Langensalza	90.	Hanau	167.	Pasewalk
14.	Bad Salzelmen	91.	Hannover	168.	Passau
15.	Baden Baden	92.	Heide	169.	Perleberg
16.	Bamberg	93.	Heidelberg	170.	Pforzheim
17.	Bayreuth	94.	Heilbronn	171.	Pirmasens

18. Beckum
19. Bensberg
20. Bergisch Gladbach
21. Bernau
22. Biberach
23. Bietigheim
24. Bingen
25. Bocholt
26. Bochum
27. Bonn
28. Borken
29. Bottrop
30. Braunschweig
31. Bremen
32. Bretten
33. Buchen
34. Buchholz
35. Burgsteinfurt
36. Calau
37. Castrop-Rauxel
38. Celle
39. Chemnitz
40. Coburg
41. Cottbus
42. Datteln
43. Delmenhorst
44. Detmold
45. Dortmund
46. Dresden
47. Dueren
48. Duisburg-Hamborn
49. Dürrmenz-Mühlacker
50. Düsseldorf
51. Eberswalde
52. Ebingen
53. Eisenach
54. Eisleben
55. Emden
56. Emsdetten
57. Erfurt
58. Essen
59. Esslingen
60. Ettlingen
95. Heiligenstadt
96. Herford
97. Herne
98. Hersfeld
99. Hilden
100. Hildesheim
101. Hirschberg
102. Hohenlimburg
103. Ilmenau
104. Ingolstadt
105. Iserlohn
106. Jena
107. Jülich
108. Karlsruhe
109. Kiel
110. Kirchheim
111. Kitzingen
112. Kleve
113. Koblenz
114. Koethen
115. Konstanz
116. Krefeld
117. Kreuznach
118. Kulmbach
119. Köln
120. Leer
121. Lehrte
122. Leipzig
123. Lemgo
124. Limbach
125. Limburg
126. Loebau
127. Loerrach
128. Luckau
129. Ludwigsburg
130. Lübbenau
131. Lübeck
132. Lüneburg
133. Mainz
134. Mannheim
135. Marburg
136. Marl
137. Meerane
172. Plauen
173. Poessneck
174. Potsdam
175. Prenzlau
176. Ravensburg
177. Recklinghausen
178. Remscheid
179. Rendsburg
180. Reutlingen
181. Rheydt
182. Riesa
183. Rinteln
184. Rottenburg a.N.
185. Rudolstadt
186. Saarbrücken
187. Schoenebeck
188. Schwabach
189. Schwedt
190. Schweinfurt
191. Schwäbisch Gmuend
192. Schwäbisch Hall
193. Senftenberg
194. Siegen
195. Singen
196. Solingen
197. Speyer
198. Spremberg
199. St. Ingbert
200. Stralsund
201. Straubing
202. Suhl
203. Tailfingen
204. Tangermünde
205. Trier
206. Tuttlingen
207. Tübingen
208. Uelzen
209. Ulm
210. Viersen
211. Villingen
212. Wanne-Eickel
213. Wattenscheid
214. Weiden

61. Euskirchen
62. Finsterwalde
63. Forst
64. Frankenthal
65. Frankfurt
66. Freiberg
67. Freiburg
68. Freising
69. Friedberg
70. Friedrichshafen
71. Frohse
72. Gaggenau
73. Gelsenkirchen
74. Gera
75. Gevelsberg
76. Gifhorn
77. Gladbeck
138. Meissen
139. Memmingen
140. Menden
141. Merseburg
142. Meuselwitz
143. Mittweida
144. Moers
145. Montabaur
146. Mönchengladbach
147. Mühlheim (Ruhr)
148. München
149. Münster
150. Naumburg
151. Neckarsulm
152. Neu-Isenburg
153. Neuhaldensleben
154. Neuss
215. Weimar
216. Weinheim
217. Weissenfels
218. Weisswasser
219. Wernigerode
220. Wesel
221. Westerstede
222. Wetzlar
223. Wiesbaden
224. Worms
225. Wuelfrath
226. Wurzen
227. Würzburg
228. Zeitz
229. Zittau

B.2. Associations in the sample, and types of associations

Table A.3 lists the associations in our sample by type, reporting both their total number and their share.

Table A.3: Associations in the sample

Association category	**Total**	**Share**
Sports	4,076	18.4%
Choirs	3,348	15.1%
Military	2,978	13.5%
Breeder	1,352	6.1%
Gymnastics	1,348	6.1%
Heimat (homeland)	1,047	4.7%
Music	845	3.8%
Shooting	680	3.1%
Students/Fraternities	640	2.9%
Hiking	490	2.2%
Lodges	379	1.7%
Women	331	1.5%
Citizen	319	1.4%
Youth	312	1.4%
Chess	163	0.7%
Oldfellows	159	0.7%
Stahlhelm (“steel helmet”)	137	0.6%
Hunting	101	0.5%
Gentlemen	95	0.4%
Corps	49	0.2%
Other[#]	3,278	14.8%
Total	22,127	100%

[#] Other associations include predominantly civic clubs, many with an artistic or creative pursuit such as gardening, theatre, or photography.

Table A.4 shows the types of associations that enter in the “civic” and “military” categories. Note that the we use a conservative categorization for “civic” clubs, including only those with a clearly civic character. For example, we do not include sports clubs, gymnasts, and choirs in the “civic” category because some of them acquired a distinctly more nationalistic character in the interwar period (Kittel 2000). While the pattern is not clear-cut and arguably highly localized in the more serious cases, we err on the side of caution by excluding these associations. Similarly, shooting, hunting, and student clubs were neither clearly civic nor necessarily military and are thus excluded.

Table A.4: Civic and military Associations

Civic associations	**Military associations**
Breeder	Veterans' associations
Music	Stahlhelm ("steel helmet")
Chess	
Hiking	
Heimat (homeland)	
Citizen	
Women	
Other[#]	

[#] Other associations include predominantly civic clubs, many with an artistic or creative pursuit such as gardening, theatre, or photography.

Table A.5 shows the types of associations that enter our "bridging" and "bonding" categories. We build on Putnam's distinction whereby "bridging" social capital brings people from different backgrounds together, while "bonding" social capital cements pre-existing social cleavages. As a rule, we categorize associations according to "mostly bridging" vs. "mostly bonding." For example, most gymnastics and sports associations were open for people from all social backgrounds, even if some exceptions may have existed. On the "bonding" side, most student and fraternities were closed for non-students, just like corps, lodges, and gentlemen's clubs were closed for outsiders. We exclude shooting, hunting, youth, and women's clubs, as well as oldfellows, for which arguments in both directions can be made.

Table A.5: "Bridging" vs. "bonding" associations

Bridging Social Capital	**Bonding Social Capital**
Gymnastics	Military
Sports	Stahlhelm ("steel helmet")
Breeder	Students/Fraternities
Choirs	Corps
Music	Lodges
Chess	Gentlemen
Hiking	
Heimat (homeland)	
Citizen	
Other#	

Other associations include predominantly civic clubs many with an artistic or creative pursuit such as gardening, theatre, or photography.

B.3. Number of associations vs. membership

Next, we examine whether our main variable – the *number* of associations per capita – is a good predictor of a more precise (but for most cities unavailable) measure of social capital – association *membership* per capita. First, we use data from the 1927 Statistical Yearbook of German Cities on sports clubs (*Statistisches Jahrbuch deutscher Städte: Verbände der deutschen Städtestatistiker*, *XX. Sportstatistik*). This contains data on membership and number of sports clubs for 42 cities in our sample. In the left panel of Figure A.5, we show that the two variables are strongly and significantly correlated, suggesting that our main variable (association density) is a reasonable proxy for overall members per capita. Next, in the right panel we use data from Putnam (2000) for US states between 1977 and 1992.[3] We plot the average number of group memberships of individuals against the state-level density of civic and social organizations. We again find a strong positive relationship. In sum, there is broad empirical support for the use of the *number* of associations per capita as a proxy for social capital.

[3] The data is available at http://bowlingalone.com/StateMeasures.xls [accessed in September 2014].

Sports clubs and membership per capita in Weimar Germany in the 1920s

Association density and membership rates across US States, 1977-92

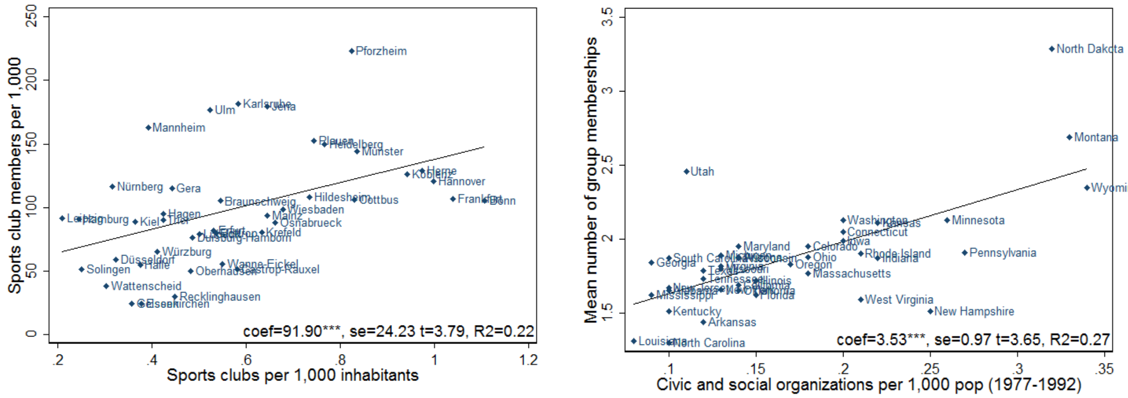

Figure A.5: Associations per capita and association membership

Notes: The left panel plots sports club members (per 1,000 inhabitants) in 1920s Germany against the number of sports clubs per 1,000 inhabitants. Data are from *Statistisches Jahrbuch deutscher Städte: Verbände der deutschen Städtestatistiker, XX. Sportstatistik*. The right panel plots average group memberships against the number of civic and social organization per 1,000 inhabitants in US states. Data are from Robert Putnam's "Bowling Alone" webpage: http://bowlingalone.com/StateMeasures.xls [accessed 09/ 2014].

Appendix C

Adjusting aggregate entry rates in the Falter-Brustein NSDAP member sample

C.1. Adjusting Nazi Party entries

Here, we discuss the derivation of three types of dependent variables for Nazi Party entry and their implications:

1. Standardized rates (main dependent variable used throughout the paper)
2. Unadjusted rates (the raw data as taken from the Falter-Brustein dataset)
3. Adjusted rates (raw data reweighted so as to mirror fluctuations in annual entry rates year-by-year)

The Falter-Brustein sample of NSDAP member records (Falter and Brustein 2015) was drawn as follows. Membership records are stored in card boxes. In a first step, every 25th of these boxes was randomly chosen (yielding altogether 203 boxes). Each box was separated in half, and for each half, the following sampling method was applied: 1) Draw all German NSDAP members with entry dates before 1930.[4] 2) For those who entered in

[4] For example, Austrians and Sudeten German members were excluded.

1930-32, draw the first five in the order of appearance. 3) Draw also five individuals who entered in 1933, but instead of keeping the first five drawn, use only every third in the order of the cards (Schneider-Haase 1991, p.120).

This oversampling approach has the advantage that it provides a good number of entries for the early period, when entries were less frequent. We are principally interested in cross-sectional differences. The original data as collected by Falter and Brustein (2015) exhibits reasonable stability over time in cross-sectional patterns. To avoid any distortion from the change in sampling methodology, we a) standardize entry rates in each year's cross-section to have zero mean and unit standard deviation, and b) take the average of these normalized rates for each location. This is the main dependent variable in our analysis. Here, we show the robustness of our findings to alternative data definitions. In addition to using the unadjusted rates from the Falter-Brustein data, we also adjust annual totals in our sample with an inflation factor that allows us to match movements in total entry, year-to-year.

We now derive year-specific inflation factors, which we apply to all entries in all cities equally in the same year. The inflation factors for each year are set so that for our sample as a whole, growth rates in Nazi Party membership are equal to those for the country as a whole.

Researchers from the Free University Berlin (FU) collected a sample with a consistent sampling strategy that allows us to infer the aggregate growth in membership for each year. This sample was processed by the Falter team in Mainz, who kindly shared the data with us.[5] Table A.6 below reports the total annual entries from the Falter-Brustein sample for our cities (col 1), and from the Germany-wide Falter-FU sample (col 2).[6] While the entry growth rates are very similar before 1930, they begin to differ substantially thereafter, with the Falter-Brustein sample showing stagnant entry, while the representative total entry rates increased significantly. This is the pattern that one would expect, given the change in sampling method in the Falter-Brustein sample in 1930.

[5] However, the FU sample is less adequate for our cross-sectional analysis than the Falter-Brustein sample since it contains much less detail. Also, the FU sample includes only 11,312 members before 1933, Germany-wide, whereas the Falter-Brustein sample has 38,752. On the other hand, the FU sample has a disproportionately larger coverage for the year in which the Nazi Party rose to power – 18,055 entries in 1933 compared to only 2,164 in the Falter-Brustein sample.

[6] Since we only count entries for January in 1933, we do not report total entries for this year in Table A.6.

Table A.6: Totals used for entry adjustment

	Entry our sample		Entry FU sample	
Year	Total	Change in Entry Rate	Total	Change in Entry Rate
1925	945		234	
1926	615	-35%	192	-18%
1927	484	-21%	172	-10%
1928	633	31%	230	34%
1929	1,156	83%	539	134%
1930	1,813	57%	1,759	226%
1931	1,759	-3%	3,772	114%
1932	1,758	0%	4,414	17%

We follow four steps to adjust the original Falter-Brustein sample. First, we calculate growth rates in the FU sample for each year $t \geq 1930$ relative to the (combined) pre-1930 entries, using entry *totals* for all of Germany:

$$Growth_t^{FU} = \frac{TotalEntry_t^{FU}}{(1/5) \cdot \sum_{j=1925}^{1929} TotalEntry_j^{FU}}$$

Second, we use these growth rates to compute how large total entry in the Falter-Brustein sample should have been if it had been consistently sampled after 1930, as well. To obtain these adjusted totals, we extrapolate total entry for each year, starting in 1930, in the sample which contains all members sampled by Falter and Brustein (2015) with residence in one of the cities in our city sample (henceforth the FB sample); this yields $AdjTotalEntry_t^{BM}$, where $t \geq 1930$ is the year:

$$AdjTotalEntry_t^{FB} = Growth_t^{FU} \cdot (1/5) \cdot \sum_{j=1925}^{1929} TotalEntry_j^{FB}$$

Third, we calculate the ratio of FU-adjusted total entries to actual entries in the Falter-Brustein sample ($AdjTotalEntry_t^{FB}/TotalEntry_t^{FB}$). This indicates the extent to which the BM sample needs to be adjusted to reflect the growth in actual entries. Finally, we use this ratio to adjust location-specific entry rates, using the formula:

$$AdjEntry_{it}^{FB} = Entry_{it}^{FB} \cdot \frac{AdjTotalEntry_t^{FB}}{TotalEntry_t^{FB}}$$

where $Entry_{it}^{FB}$ denotes entry in location i in year t, as reflected in the original Falter-Brustein sample.

C.2. Results for Adjusted and Unadjusted Nazi Party entries

Columns 1 and 2 in Table 3 (Panel A) already showed that using unadjusted entry numbers made little difference to the coefficients we find. In Panel A of Table A.7, we show that unadjusted entry rates per capita from the original Falter-Brustein data produce nearly identical results as our baseline specifications in Table 3 in the paper. In Panel A of Table A.7, we use the adjusted rates, computed as described in Appendix C.1. Here, results are somewhat weaker overall, with smaller coefficients and two out of six coefficients below standard levels of significance (with the most demanding set of controls). This is not surprising because the average of adjusted entry is dominated by the much more numerous late entry, which we have shown to be less strongly correlated with association density (see Table 5 in the paper). Overall, however, alternative definitions do not overturn our main result of a positive and substantial correlation between association density and Nazi Party entry rates.

Table A.7: Baseline results with original and adjusted aggregate entry rates

	(1)	(2)	(3)	(4)	(5)	(6)
Period of Nazi Party entry	Full sample period, 1925-January 1933				Early entry 1925-28	Late entry 1929-1/33
PANEL A: Original Falter-Brustein data						
Dep. variable: Avg. annual entry (not standardized) over indicated period, original Falter-Brustein sample						
ASSOC$_{all}$	0.00823**	0.00829**	0.00856**	0.00374*	0.00627***	0.00172
	(0.00375)	(0.00330)	(0.00296)	(0.00197)	(0.00188)	(0.00244)
[beta coeff]	*[0.25]*	*[0.25]*	*[0.26]*	*[0.11]*	*[0.13]*	*[0.05]*
Controls: see below						
Observations	227	219	216	216	216	216
Adjusted R^2	0.207	0.205	0.209	0.358	0.233	0.373
PANEL B: Adjusted Falter-Brustein data						
Dep. var: Avg. annual entry (not standardized) over indicated period, adjusted Brustein - Falter sample						
ASSOC$_{all}$.	0.0126**	0.0145**	0.0139**	0.00659	0.00627***	0.00685
	(0.00548)	(0.00583)	(0.00541)	(0.00635)	(0.00188)	(0.0107)
[beta coeff]	*[0.143]*	*[0.164]*	*[0.160]*	*[0.076]*	*[0.134]*	*[0.048]*
Controls (in both Panels A and B)						
Baseline	✓	✓	✓	✓	✓	✓
Socio-economic		✓	✓	✓	✓	✓
Political			✓	✓	✓	✓
State FE				✓	✓	✓
Observations	227	219	216	216	216	216
Adjusted R^2	0.254	0.262	0.308	0.386	0.233	0.380

Notes: Dependent variable is the average rate of Nazi Party entry (per 1,000 inhabitants) in each city over the period indicated in the table header. Standardized errors in parenthesis (clustered at the Weimar State level) * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *ASSOC*$_{all}$ is the number of associations per 1,000 inhabitants in each city. See Table 2 in the paper for a list of control variables.

Appendix D

State-level government stability

In this appendix, we provide more detail on the construction of our proxy for state-level government stability. We also provide additional results, complementing those in Table 7 in the paper.

D.1. Details on construction of state-level stability proxy

In Table A.8, we list the three individual components of our proxy for state-level government stability: (1) the percentage of time that the longest-serving state government was in office, (2) the percentage of time that the longest-serving party was in office (possibly in different coalitions), and (3) the percentage of time that a state was governed by at least one party from the "Weimar coalition." The data on state governments are from http://www.gonschior.de/weimar/Deutschland/ and http://www.wahlen-in-deutschland.de.[7] Column 4 reports the first principal component of these measures (all three variables enter positively).[8] The states in the table are ranked by the principal-component based stability measure, with Anhalt, Hesse, and Prussia being the most stable.

[7] Accessed in October 2014. We measure the three percentages that enter our government stability proxy over the period October/November 1918 until May 1932, i.e., over the period before the Prussian coup d'état (*Preußenschlag*). Dates adjust slightly based on when administrations began and ended in different states.

[8] Because of differences in the voting system, the federal states of Waldeck-Pyrmont, Lübeck, and Bremen do not have party results for state governments. The Saarland was administered by the Völkerbund.

Table A.8: State Government stability: Individual variables and first principal component

Weimar State	(1) % Longest-serving Party	(2) % Longest-serving Gov't	(3) % Party from Weimar Coalition	(4) Stability (principal component)
Anhalt	0.92	0.97	0.97	2.02
Hessen	0.69	1.00	1.00	1.56
Preußen	0.84	0.93	0.73	1.29
Lippe	0.85	1.00	0.47	1.07
Oldenburg	0.56	0.68	0.29	-0.92
Mecklenburg-Strelitz	0.56	0.61	0.39	-0.93
Sachsen	0.41	0.77	0.18	-1.22
Baden	0.20	0.58	0.78	-1.28
Bayern	0.60	0.68	0.00	-1.31
Braunschweig	0.49	0.49	0.21	-1.77
Hamburg	0.41	0.37	0.46	-1.91
Thüringen	0.43	0.46	0.09	-2.23
Mecklenburg-Schwerin	0.23	0.46	0.24	-2.48
Württemberg	0.30	0.30	0.39	-2.52

Note: The measure in col 1 is the percentage of time that the longest-serving state government was in office; in col 2, the percentage of time that the longest-serving party was in office (possibly in different coalitions); and in col 3, the percentage of time that a federal state was governed by at least one party from the "Weimar coalition." Col 4 reports the first principal component of the three measures (all individual measures enter positively).

D.2. State government stability and Nazi Party entry

Are stable governments associated with lower Nazi Party entry? While we find that state stability and Nazi Party entry are negatively correlated, the number of federal states is too low to run meaningful state-level regressions. Nevertheless, we can present a graphical illustration in Figure A.6, showing the distribution of Nazi Party entry rates for all cities in states with high (above-median) and low (below-median) political stability.[9] As the figure shows, party entry is markedly shifted to the left for states with relatively high political stability.

[9] Prussia alone accounts for about one-half of all cities in our sample, and it has the median state stability in our sample. Following the discussion in the main text, we rank Prussia as stable (i.e., include it in the above-median stability states).

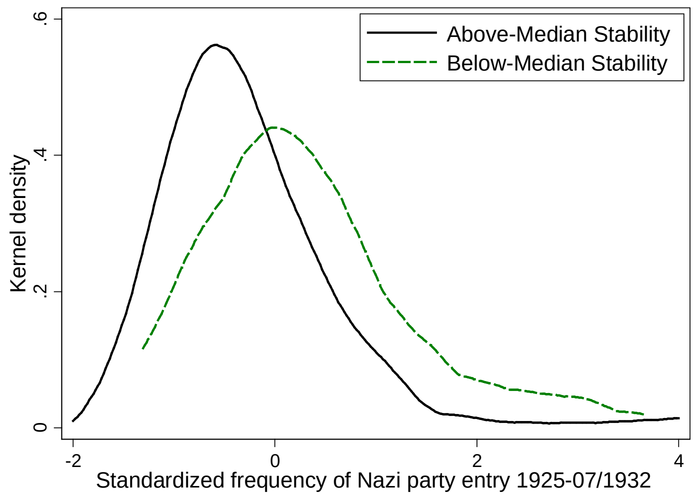

Figure A.6: State-level political stability and Nazi Party entry

Notes: Kernel density plot. See text above.

D.3. Association density and Nazi Party entry, conditional on political stability

We have documented in Section 5.3 that the effect of association density on Nazi Party entry declines in state-level political stability. In Figure A.7, we illustrate this relationship, with political stability on the horizontal axis, and the net effect of association density on the vertical axis. The note to the figure provides further detail. As the figure shows, the net relationship between club density and Nazi Party entry is strongly positive at low levels of stability; it then declines and is close to zero for states with political stability at Prussian levels. With even higher political stability (such as for the state of Anhalt), we eventually find negative effects in expectations, indicating that association density may have been associated with somewhat *slower* entry into the Nazi Party in politically very stable environments.

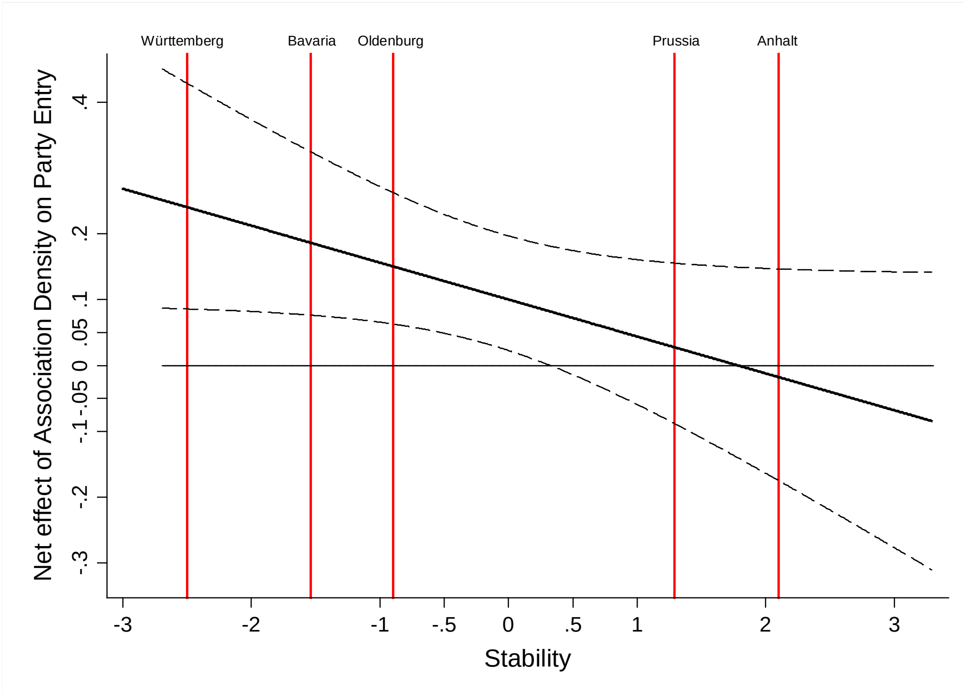

Figure A.7: Net effect of association density on Nazi Party entry, conditional on political stability

Note: The figure presents an additional analysis to illustrate the magnitude of effects. We pool all observations and estimate a version of the specification in Table 7, col 5 of the paper, but using an interaction between the continuous measure of state-level stability and association density (in this analysis, Prussia is one of many Weimar states and is not controlled for with a separate dummy). Based on these estimates we can compute the net effect of association density on Nazi Party entry. This is depicted on the vertical axis, with the continuous measure of stability on the horizontal axis. The figure shows a strong negative effect of associations for low and medium levels of political stability, but for higher values, the effect becomes first insignificant, before becoming negative (in expectations).

Appendix E

Further robustness checks

In this appendix, we provide additional robustness checks and additional results on the relationship between association density and Nazi Party entry.

E.1. Socio-economic and political controls, and state fixed effects

In Table A.9, we report the individual coefficients of all control variables used in Table 3, Panel B in the paper. As discussed in the paper, few of these are statistically significant, and including these controls does not affect our results.

Table A.9: Reporting individual coefficients for controls in Table 3B.

Dependent variable: Average (standardized) NSDAP entry per capita in 1925-Jan. 1933

	(1)	(2)	(3)	(4)	(5)	(6)
ASSOC	0.158**	0.162***	0.169***	0.0857*	0.278***	0.601***
	(0.0599)	(0.0543)	(0.0464)	(0.0405)	(0.0601)	(0.133)
[std coeff]	*[0.25]*	*[0.26]*	*[0.28]*	*[0.14]*	*[0.16]*	*[0.22]*
<u>Baseline Controls</u>						
ln(pop)	0.175***	0.0852	0.0973*	0.0732***	0.0718**	0.0787***
	(0.0508)	(0.0488)	(0.0537)	(0.0155)	(0.0249)	(0.0224)
Share Catholics	-0.934***	-0.910***	-1.166*	-1.510*	-1.507*	-1.327
	(0.168)	(0.135)	(0.639)	(0.752)	(0.745)	(0.774)
Share Blue-Collar	-2.774***	-2.514**	-1.876	-1.513	-1.516	-1.464
	(0.683)	(1.020)	(1.265)	(1.518)	(1.423)	(1.430)
<u>Socio-economic Controls</u>						
Share Jews 1925		-0.641	3.130	-7.625*	-7.260**	-7.389
		(9.379)	(7.551)	(3.924)	(2.600)	(5.622)
Unemployment (1933)		0.390	1.596	0.740	0.462	0.809
		(1.851)	(1.214)	(1.852)	(1.804)	(1.773)
Welfare recipients per 1000		0.0119	0.0132	0.00838	0.00762	0.00910
		(0.0113)	(0.0116)	(0.00693)	(0.00699)	(0.00652)
World War I participants per 1000		-0.0226	-0.0269	-0.0212	-0.0212	-0.0243
		(0.0143)	(0.0207)	(0.0171)	(0.0184)	(0.0165)
Social insurance pensioners per 1000		-0.0130	-0.0178	-0.0315	-0.0306	-0.0354
		(0.0219)	(0.0216)	(0.0251)	(0.0228)	(0.0265)
ln(avg income tax)		0.147	0.199	0.0871	0.102	0.0202
		(0.194)	(0.185)	(0.214)	(0.223)	(0.187)
ln(avg property tax)		0.0424	0.0425	0.0843	0.0834	0.119
		(0.167)	(0.172)	(0.186)	(0.190)	(0.154)
<u>Political controls</u>						
Hitler speeches per 1,000			0.368	-2.329	-2.218	-2.820
			(0.270)	(1.731)	(1.602)	(1.911)
DNVP votes			0.0169	0.0207	0.0221	0.0194
			(0.0170)	(0.0135)	(0.0139)	(0.0134)
DVP votes			-0.0296	-0.0138	-0.0125	-0.0110
			(0.0234)	(0.0113)	(0.0112)	(0.0109)
SPD votes			-0.00855	-0.0169	-0.0174	-0.0133
			(0.0124)	(0.0180)	(0.0184)	(0.0174)
KPD votes			-0.0188	-0.0195	-0.0201	-0.0167
			(0.0229)	(0.0243)	(0.0230)	(0.0242)
State FE				✓	✓	✓
Observations	227	219	216	216	215	215
Adjusted R^2	0.214	0.223	0.231	0.368	0.374	0.390

Notes: The table reports the coefficients on all control variables included in Table 3, Panel B. Standardized errors in parenthesis (clustered at the Weimar State level) * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. See the notes to Table 3 in the paper for details.

Table A.10 repeats the analysis performed in Table 4, adding socio-economic and political controls, as well as state fixed effects. We find that the coefficients drop in magnitude, and some become statistically insignificant. Nevertheless, the main result of Table 4 is confirmed: the proportion of the total effect of association density on Nazi Party entry that is mediated by NSDAP entry is about 0.9 in 1928 and then falls to about 0.35 in 1933.

Table A.10: Analysis from Table 4, including additional controls and state FE

	(1)	(2)	(3)	(4)	(5)	(6)
PANEL A: Regressions on association density						
Dep. Variable:	NSDAP votes (%) in:			Avg. (standardized) NSDAP entry rates in:		
	May 1928	Sep 1930	Mar 1933	1925-28	1925-30	1925-1/33
$ASSOC_{all}$	0.22**	0.66	0.54	0.09***	0.08**	0.09*
	(0.10)	(0.38)	(0.34)	(0.03)	(0.03)	(0.04)
[beta coeff] #	*[0.09]*	*[0.13]*	*[0.09]*	*[0.15]*	*[0.13]*	*[0.14]*
Controls	✓	✓	✓	✓	✓	✓
State FE	✓	✓	✓	✓	✓	✓
Observations	216	216	216	216	216	216
Adjusted R^2	0.524	0.562	0.682	0.350	0.417	0.459

PANEL B: Mediation

Dep. Variable:	NSDAP votes (%) in:			Sobel-Goodman mediation test		
	May 1928	Sep 1930	Mar 1933			
Notes:	NSDAP entry rates measured in:			NSDAP election results in:		
	1925-28	1925-30	1925-1/33	May 1928	Sep 1930	Mar 1933
$ASSOC_{all}$	-0.00	0.36	0.35	Effect of $ASSOC_{all}$ on NSDAP votes via party entry (std coeff):		
	(0.05)	(0.33)	(0.40)			
[beta coeff]	*[-0.00]*	*[0.07]*	*[0.06]*	*0.074*	*0.099*	*0.064*
NSDAP entry	2.36***	3.63***	2.25***	Prop. of total effect of $ASSOC_{all}$ that is mediated by NSDAP entry		
	(0.26)	(0.27)	(0.37)			
[beta coeff]	*[0.60]*	*[0.46]*	*[0.24]*	*0.897*	*0.455*	*0.358*
Controls	✓	✓	✓			
State FE	✓	✓	✓			
Observations	216	216	216			
Adjusted R^2	0.755	0.682	0.712			

Notes: The table presents the individual steps of the Sobel-Goodman mediation test, which examines whether a mediator (NSDAP entry) carries the influence of an explanatory variable ($ASSOC_{all}$) to a dependent variable (NSDAP votes). Robust standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable. Baseline controls and additional (socio-economic and political) controls are listed in Table 2. $ASSOC_{all}$ is the number of associations per 1,000 city inhabitants. Controls include all baseline, socio-economic, and political controls that are listed in Table 2. $ASSOC_{all}$ is the number of associations per 1,000 city inhabitants.

Table A.11 repeats the analysis from Table 5 in the paper, which differentiates between early and late Nazi Party entry. We confirm that the coefficient on association density is stronger for early party entry than for late party entry (cols 1 and 2). In addition, the coefficient on association density becomes small and insignificant once we control for early party entry (col 3). The Sobal-Goodman test in column 3 shows that about one-third of the total effect of $ASSOC_{all}$ on late Nazi Party entry is mediated by early party entry.

Table A.11: Early and late Party entries: Analysis from Table 5 with additional controls and fixed effects

Dependent variable: Nazi Party entry rates

	(1) Early Party entry (1925-28)	(2) Late Nazi Party entry (1929-1/1933)	(3)
$ASSOC_{all}$	0.0949***	0.0465	0.0308
	(0.0258)	(0.0545)	(0.0493)
[beta coeff]	*[0.15]*	*[0.05]*	*[0.05]*
Early NSDAP Entry			0.166
			(0.116)
[beta coeff]			*[0.17]*
Controls	✓	✓	✓
State FE	✓	✓	✓
Sobel-Goodman mediation#			0.34
Observations	216	216	216
Adjusted R^2	0.240	0.371	0.391

Notes: In cols 1 and 2, the dependent variable is the average (standardized) rate of Nazi Party entry (per 1,000 inhabitants) in each city over the period 1925-28 ("early entries"); cols 3-6 use "late entries" between 1929-Jan '33. Standard errors (clustered at the state level) in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable. Controls include all baseline, socio-economic, and political controls that are listed in Table 2. $ASSOC_{all}$ is the number of associations per 1,000 city inhabitants.

#The Sobel-Goodman mediation test computes the proportion of the total effect of $ASSOC_{all}$ on late Nazi Party entry that is mediated by early party entry.

Table A.12 adds socio-economic and political controls, as well as state fixed effects to the split-sample regressions in Table 8 in the paper. These are extremely demanding specifications, with smaller sample sizes, and fixed effects that absorb and important part of the historical variation in association density across states. Nevertheless, most coefficients remain statistically significant and of a similar magnitude as in our baseline specifications in Table 3.

Table A.12: Sample splits with additional controls (robustness of Table 8)

Dep. var: Average (standardized) NSDAP entry per capita 1925-1/'33	(1)	(2)	(3)	(4)	(5)	(6)
	Pop 25 rel. to median		Share Catholics		Blue-collar rel. to median	
	below	above	<50%	>50%	below	above
PANEL A: Association density based on all clubs						
ASSOC$_{all}$	0.107*	0.103**	0.120**	0.0473	0.136	0.0511
	(0.0576)	(0.0362)	(0.0532)	(0.0923)	(0.0994)	(0.0470)
[beta coeff]	*[0.14]*	*[0.18]*	*[0.20]*	*[0.09]*	*[0.19]*	*[0.10]*
Controls	✓	✓	✓	✓	✓	✓
State FE	✓	✓	✓	✓	✓	✓
Observations	110	106	152	64	112	104
Adjusted R^2	0.321	0.487	0.287	0.427	0.314	0.434
PANEL B: Association density based on civic clubs only						
ASSOC$_{civic}$	0.358**	0.240***	0.375***	0.188	0.314	0.247*
	(0.140)	(0.0663)	(0.105)	(0.201)	(0.258)	(0.110)
[beta coeff]	*[0.18]*	*[0.16]*	*[0.22]*	*[0.13]*	*[0.14]*	*[0.19]*
Controls	✓	✓	✓	✓	✓	✓
State FE	✓	✓	✓	✓	✓	✓
Observations	110	105	152	63	111	104
Adjusted R^2	0.332	0.477	0.302	0.411	0.302	0.456

Notes: Controls include all baseline, socio-economic, and political controls that are listed in Table 2. *ASSOC$_{all}$* is the number of associations per 1,000 city inhabitants, counting all types of associations, and *ASSOC$_{civic}$* counts only those with a civic agenda (see Table A.4 for a list of associations included in these categories). Standard errors (clustered at the state level) in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable.

E.2. Alternative specifications

Is the effect of association density on party entry rates uniform throughout the range of towns and cities – from the most Nazi-skeptical locations to the most enthusiastic ones? Or are our results driven by behavior at one of the extremes? To examine this question, we estimate quantile regressions where the conditional 20th, 40th, 60th, or 80th percentile of NSDAP entry is the dependent variable. The results are reported in columns 1-5 of Table A.13, which also shows the median regression for the 50th percentile for completeness.[10] The effect of association density is highly significant throughout; it is somewhat smaller for very low entry rates (col 1), then stable in the middle part of the distribution (cols 2-4), and larger for high entry rates (col 5). This suggests that associations had a proportionately

[10] Column 3 in Table A.12 reports this median regression, which – in contrast to OLS – analyzes the conditional median instead of the conditional mean by minimizing the absolute deviations from the expected value, and not of the square of deviations. The standardized beta coefficient is very similar in magnitude to our baseline OLS results and highly significant.

somewhat larger effect on Nazi Party entry in towns and cities with higher entry rates. Finally, column 6 of Table A.13 uses a robust estimator that first drops all observations with a Cook's D-statistic greater than unity; in a second round, the influence of the remaining observations is reduced using Huber weighting, i.e., in line with the size of the OLS residual. This procedure again yields very similar results, suggesting that our results are not driven by outliers. We confirm all results when restricting the association density measure to civic clubs (Panel B in Table A.13).

Table A.13: Quantile regressions

Dep. var: Average (standardized) NSDAP entry per capita 1925-1/'33

Quantile	(1) 20 pctile	(2) 40 pctile	(3) 50 pctile	(4) 60 pctile	(5) 80 pctile	(6) Robust
PANEL A: All associations (*ASSOC_{all}*)						
$ASSOC_{all}$	0.0796**	0.144***	0.121**	0.140**	0.244**	0.102***
	(0.0317)	(0.0403)	(0.0497)	(0.0566)	(0.0943)	(0.0356)
[beta coeff]	*[0.13]*	*[0.23]*	*[0.20]*	*[0.23]*	*[0.39]*	*[0.17]*
Controls	✓	✓	✓	✓	✓	✓
Observations	216	216	216	216	216	216
Adjusted R^2						0.286
PANEL A: Civic associations ($ASSOC_{civic}$)						
$ASSOC_{civic}$	0.209**	0.285***	0.260**	0.448***	0.501**	0.268***
	(0.0816)	(0.0973)	(0.126)	(0.142)	(0.239)	(0.0888)
[beta coeff]	*[0.12]*	*[0.17]*	*[0.15]*	*[0.26]*	*[0.29]*	*[0.16]*
Controls	✓	✓	✓	✓	✓	✓
Observations	215	215	215	215	215	215
Adjusted R^2						0.288

Notes: Controls include all baseline, socio-economic, and political controls that are listed in Table 2. $ASSOC_{all}$ is the number of associations per 1,000 city inhabitants, counting all types of associations; $ASSOC_{all}$ includes only civic associations (see Table A.4 for a list). Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable.

Table A.14 uses city population as weights in all regressions and shows that our results are even stronger in magnitude and remain highly significant throughout.

Table A.14: Regressions weighted by city population

Dep. var: Average (standardized) NSDAP entry per capita 1925-1/'33						
	(1)	(2)	(3)	(4)	(5)	(6)
ASSOC measure:	all (*ASSOC*$_{all}$)		civic (*ASSOC*$_{civic}$)		military (*ASSOC*$_{military}$)	
ASSOC	0.199***	0.115*	0.538**	0.366***	0.579**	0.291
	(0.0395)	(0.0553)	(0.187)	(0.0754)	(0.208)	(0.266)
[beta coeff]	*[0.31]*	*[0.18]*	*[0.32]*	*[0.22]*	*[0.18]*	*[0.09]*
Controls	✓	✓	✓	✓	✓	✓
State FE		✓		✓		✓
Observations	216	216	215	215	215	215
Adjusted R^2	0.342	0.604	0.360	0.616	0.307	0.592

Notes: Controls include all baseline, socio-economic, and political controls that are listed in Table 2. *ASSOC*$_{all}$ is the number of associations per 1,000 city inhabitants, counting all types of associations, and *ASSOC*$_{civic}$ counts only those with a civic agenda, and *ASSOC*$_{military}$ only those with a military agenda (see Table A.4 for a list). Standard errors (clustered at the state level) in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable.

Is city population a confounding factor in our analysis? We control for log city population in all our regressions. However, this does not capture potential non-linear relationships between city population and Nazi Party entry. In Table A.15 we address this issue by allowing for more flexible functional relationships. In column 1, we use a third-order polynomial in population and confirm our baseline result. In column 2, we include a dummy for each city population quintile.[11] This specification allows for different average party entry rates in each quintile, in addition to the linear relationship between log population (which is also included in the regression) and NSDAP entry. Again, the coefficient on association density remains unchanged. Next, in column 3 we make the specification even more flexible, by including interactions between log population and the quintile dummies. This allows the effect of population on party entry to be different for each quintile (in addition to a different mean, captured by the quintile dummies themselves). Our results remain unchanged. Finally, we show that the same is true for civic and military associations (columns 4 and 5).

[11] The average city sizes within the five quintiles are 7,560 (first quintile), 14,098 (second quintile), 24,106 (third quintile), 45,934 (fourth quintile), and 262,492 (fifth quintile).

Table A.15: Alternative specifications for population

Dep. var: Average (standardized) NSDAP entry per capita 1925-1/'33

	(1)	(2)	(3)	(4)	(5)
ASSOC measure:	all	all	all	civic	military
ASSOC	0.159***	0.163***	0.171***	0.424***	0.823***
	(0.0472)	(0.0477)	(0.0476)	(0.129)	(0.180)
[beta coeff]	*[0.26]*	*[0.26]*	*[0.28]*	*[0.25]*	*[0.29]*
Controls	✓	✓	✓	✓	✓
Pop polynomial	✓				
Pop quintiles		✓	✓	✓	✓
Quintiles×ln(pop)			✓	✓	✓
Observations	216	216	216	215	215
Adjusted R^2	0.224	0.246	0.239	0.241	0.260

Notes: Controls include all baseline, socio-economic, and political controls that are listed in Table 2. $ASSOC_{all}$ is the number of associations per 1,000 city inhabitants, counting all types of associations; $ASSOC_{all}$ includes only civic associations, and $ASSOC_{military}$ only those with a military agenda (see Table A.4 for a list). Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable.

In the main analysis, we used all towns and cities with available data on associations in the 1920s, including our "associated finds" – 32 cities with fewer than 10,000 inhabitants (see Appendix B.1). In Table A.16 we present results using only the 185 cities with more than 10,000 inhabitants. We confirm our main results.

Table A.16: Excluding results for towns with less than 10,000 inhabitants

Dep. var: Average (standardized) NSDAP entry per capita 1925-1/'33

	(1)	(2)	(3)	(4)	(5)	(6)
ASSOC measure:	all ($ASSOC_{all}$)		civic ($ASSOC_{civic}$)		military ($ASSOC_{military}$)	
ASSOC	0.171***	0.101	0.422**	0.330***	0.743***	0.484
	(0.0469)	(0.0680)	(0.160)	(0.0933)	(0.185)	(0.284)
[beta coeff]	*[0.27]*	*[0.16]*	*[0.25]*	*[0.19]*	*[0.27]*	*[0.18]*
Controls	✓	✓	✓	✓	✓	✓
State FE		✓		✓		✓
Observations	185	185	184	184	184	184
Adjusted R^2	0.300	0.421	0.298	0.430	0.304	0.423

Notes: Controls include all baseline, socio-economic, and political controls that are listed in Table 2. $ASSOC_{all}$ is the number of associations per 1,000 city inhabitants, counting all types of associations, and $ASSOC_{civic}$ counts only those with a civic agenda, and $ASSOC_{military}$ only those with a military agenda (see Table A.4 for a list). Standard errors (clustered at the state level) in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable.

E.3. Controlling for population density

A potential concern with our results is that high population density may drive more frequent interaction between city dwellers and thus lead to both higher association density and more frequent Nazi Party entry. To address this concern, we collected data on the area of cities from two sources. First, we consulted the 1928 *Brockhaus Encyclopedia*, which reports the area for 95 cities in our sample (mostly larger cities that are classified as *Stadtkreise* – city precincts, which coincide with the precincts in our socio-economic data). Second, for a selection of smaller towns, we used topographical maps from the early 20th century and measured their area by hand.[12] These additional data were available for another 29 towns and cities in our sample.[13] We then compute population density, dividing each city's population in 1925 by its area (in square km). Since our own measurement of population density may differ from the official statistics, we consider the *Brockhaus* data as our main source and report additional results that use all available data on population density.

Table A.17 reports the results for population density. We begin with the *Brockhaus* data in columns 1-4. Column 1 shows that the correlation between association density and population density is actually negative. One reason for the negative relationship may be that in more densely populated cities, people can reach any given association more easily, resulting in fewer duplicate clubs of the same type. Consequently, our measure of *number* of clubs per capita may underestimate actual club *membership* in more densely populated cities. This would be a potential problem if population density was also associated with Nazi Party entry. However this is not the case, as shown in column 2 – the relationship between party entry and population density is weak and statistically insignificant, with a minuscule standardized beta coefficient of -0.02. In column 3, we show that our main result holds in the subsample of 95 cities for which *Brockhaus* area data are available: there is a strong positive relationship between association density and Nazi Party entry. Next, in column 4, we add population density as a control and obtain an identical (if anything, slightly stronger) coefficient on association density.

In columns 5-8 of Table A.17, we add the population density data collected from maps, increasing the sample size to 124 towns and cities. To account for the possible

[12] We approximate each city's area by first deciding whether a circle or a rectangle is a better approximation for the city's shape, and then measuring radius or side length to compute the area.

[13] The topographical maps of German towns from the 1920s were accessed at the University of Zurich library and at the British Library in London.

methodological differences with the *Brockhaus* data, we include a dummy for population density measured based on maps (I_{maps}), as well as an interaction of I_{maps} with population density. This specification allows both the intercept and the slope coefficient to differ for maps vs *Brockhaus* data. We confirm all earlier findings: population density is negatively related to association density (col 5), is essentially unrelated to Nazi Party entry (col 6), our main result holds in the subsample with 124 cities (col 7), and controlling for population density – if anything – strengthens our main result (col 8).

Table A.17: Controlling for population density
Dep. var: Average (standardized) NSDAP entry per capita 1925-1/1933

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
City area source		Brockhaus (1928)			Brockhaus + 1920s city maps			
Dep. variable	$ASSOC_{all}$	NSDAP entry (std)			$ASSOC_{all}$	NSDAP entry (std)		
$ASSOC_{all}$			0.201***	0.223***			0.167**	0.200***
			(0.0733)	(0.0769)			(0.0736)	(0.0757)
[beta coeff]			*[0.30]*	*[0.33]*			*[0.23]*	*[0.28]*
ln(pop density)	-0.744***	-0.0343		0.131	-0.729***	-0.0637		0.0824
	(0.150)	(0.110)		(0.103)	(0.149)	(0.111)		(0.107)
[beta coeff]		*[-0.02]*		*[0.09]*		*[-0.05]*		*[0.07]*
I_{maps}					-2.098	1.768		2.189
					(2.456)	(2.503)		(2.488)
$I_{maps}\times$ *ln(pop density)*					0.418	-0.241		-0.325
					(0.293)	(0.284)		(0.286)
Controls	✓	✓	✓	✓	✓		✓	✓
Observations	95	95	95	95	124	124	124	124
Adjusted R^2	0.117	0.205	0.295	0.295	0.162	0.196	0.221	0.254

Notes: Controls include the share of Catholics and the share of blue-collar workers in 1925 "NSDAP entry (std)" is the average (standardized) NSDAP entry per capita in 1925-1/'33. $ASSOC_{all}$ is the number of associations per 1,000 city inhabitants. Robust standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable.

E.4. Fragmentation of population

If the local population is highly fragmented, this may lead to a larger number of clubs. For example, sports clubs for Catholics and Protestants, or for conservative and progressive individuals. If the degree of fragmentation also reflects the extent to which individuals are isolated, and if isolation drove Nazi Party entry, then fragmentation could be a driver of our results.[14] In this section, we use three different proxies to address this potential concern:

[14] To be plausible, this interpretation would require that members of associations are similar to the 'marginal loners' described in the original literature on the rise of the Nazi Party. We think this is unlikely, but will nonetheless try to deal with the issue empirically.

a. We use the average number of clubs in each of the 21 categories listed in Table A.2. By this measure, a city will be more "fragmented" if it has many different rabbit breeding, gymnastics, etc. clubs. Note that this measure will be mechanically larger in larger cities, which have a higher probability of having multiple clubs of each type. The second measure corrects for this shortcoming:

b. We use a Herfindahl index of club density, which is computed as follows: We first compute the Germany-wide average number of clubs *per capita* within each of the 21 categories. We then use this to normalize city-specific clubs per capita within each category, so that the average city will have a "1" in each category.[15] Denote these normalized clubs of type *i* in city *c* by C_{ic}. Based on these, we compute the (normalized) shares $s_{ic} = \frac{C_{ic}}{\sum_{i \in I} C_{ic}}$ for all clubs $i = 1, \ldots, I$. Finally, we compute the Herfindahl index for each city *c* as $H_c = \sum_{i \in I} s_{ic}^2$. A city with an even distribution of clubs per capita within each category will have a close-to-zero index, while a city with an uneven distribution – many clubs p.c. in some categories – will have a high Herfindahl index. Thus, a higher Herfindahl index indicates more fragmentation (e.g., many different breeder clubs).

c. Our third measure is the (negative) Herfindahl index based on religion, differentiating between Protestants, Catholics, Jews, and other (incl. atheists). This measure will be smallest (the most negative) for cities with one predominant religion, and closer to zero for religiously more diverse cities. Thus, a higher (less negative) index indicates religiously more fragmented cities.

Table A.18 reports our results for the three different proxies. The results in columns 1 suggest that more fragmentation is associated with higher club density (although the results in column 1 have to be interpreted particularly carefully due to the limitations discussed above). Once we use the Herfindahl-based measure (col 2), or when using religious fragmentation (col 3), fragmentation is *negatively* associated with club density.[16] This implies that homogenous places had relatively *more* clubs per capita. In particular, in the case of religious fragmentation, the results mean that cities with one dominant religious

[15] For example, there are on average 0.17 breeding, but 0.51 sports clubs per 1,000 inhabitants in Germany overall. Not correcting for the different prominence of different club categories would introduce asymmetries in the measure of fragmentation.

[16] An alternative way to describe the result for the Herfindahl-based measure 2. is that cities with higher overall club density also tend to have a more balanced distribution of the *types* of clubs. In other words, one is unlikely to find a city with high overall club-density but very few club types.

group (either Protestants or Catholics – the two religions that dominate the fragmentation index) had higher club density. This suggests that if anything, religious homogeneity *increased* sociability, rather than religious fragmentation mechanically raising club density by the separation into Protestant and Catholic rabbit breeding clubs, etc.

In columns 4-6, we use Nazi Party entry as the dependent variable and show that controlling for the various measures of fragmentation does not affect our main results. The coefficient on association density remains highly significant and positive, with the same magnitude (standardized beta coefficients) as in our baseline regressions in Table 3 in the paper. On the other hand, the coefficients on each of the fragmentation measures are minuscule and statistically insignificant.

Table A.18: Local fragmentation

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Variable:	Club density ($ASSOC_{all}$)			NSDAP entry rates (std)		
Fragmentation proxy (see above):	a.	b.	c.	a.	b.	c.
$ASSOC_{all}$				0.158^{**}	0.161^{***}	0.162^{***}
				(0.0638)	(0.0606)	(0.0549)
[beta coeff]				*[0.24]*	*[0.25]*	*[0.26]*
Fragmentation	0.0712^{***}	-2.821^{***}	-1.485^{**}	-0.000834	0.305	0.120
	(0.0140)	(0.939)	(0.599)	(0.00720)	(0.627)	(0.413)
[beta coeff]	*[0.42]*	*[-0.18]*	*[-0.15]*	*[-0.01]*	*[0.03]*	*[0.02]*
Controls	✓	✓	✓	✓	✓	✓
Observations	226	226	227	226	226	227
Adjusted R^2	0.450	0.380	0.341	0.208	0.209	0.211

Notes: Fragmentation proxies a.-c. are described in the text above. "NSDAP entry rates (std)" is the average (standardized) NSDAP entry per capita in 1925-1/'33. Controls include the baseline controls that are listed in Table 2. $ASSOC_{all}$ is the number of associations per 1,000 city inhabitants. Robust standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized beta coefficients *[beta coeff]* report by how many standard deviations (sd) the outcome variable changes due to a one-sd increase in the explanatory variable.

E.5. Different types of associations

Did all types of associations facilitate the rise of the NSDAP? In the paper, we included different types of associations separately. However, the various sub-divisions are highly correlated, e.g., cities with many civic associations also tend to have dense networks of military clubs (see Figure A.8).

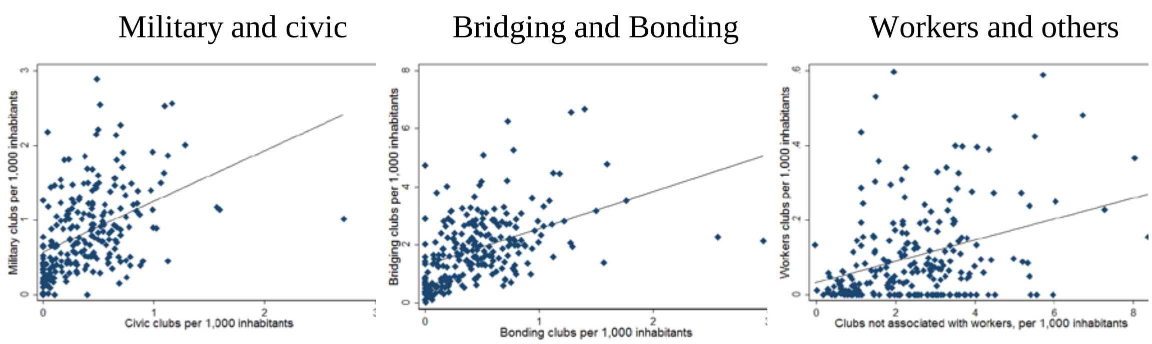

Figure A.8: Scatter plots for different divisions of social capital

Note: The left panel plots the local density of military associations against civic associations. The middle panel plots the density of bridging associations against their bonding counterparts. The right panel plots the local density of worker associations against those not associated with workers.

In the following, we include the various split subsets simultaneously in order to analyze whether the explanatory power of some outweighs others.[17] Table A.19 reports the results.[18] Columns 1 and 2 show that civic associations were probably more important for the rise of the Nazi Party than their military counterparts.[19] On the other hand, the difference for bridging vs. bonding associations is less pronounced (col 3), although the beta coefficient on bridging associations is more robust and significantly larger when state fixed effects are included (col 4; the p-value for the difference in beta coefficients is 0.05). Finally, columns 5-8 examine the role of worker associations.[20] Worker associations are at best weakly associated with Nazi Party entry – a result that we should expect, given the ideological incompatibilities. The density of all other (non-worker) associations, on the other hand, is a strong predictor of Nazi Party entry (cols 7-8).

[17] We include these subsets in a pairwise fashion for each corresponding split of overall associations. Including all subsets at the same time is problematic due to multi-collinearity.

[18] The smaller number of associations in the various sub-categories makes the corresponding variables more prone to outliers. We thus exclude the top 5-percentile for each sub-category in order to avoid that outliers drive our results. Results are quantitatively similar when we include all observations, but bonding social capital is somewhat stronger.

[19] In particular, in the specification with state fixed effects (col 2), the two beta coefficients are significantly different with a p-value of 0.01.

[20] Worker associations can span across the categories listed in Table A.3. We put into this category all associations that mention workers in the name explicitly, e.g., Workers' Cycling Club, or Miners' Bowling Association, etc.

Table A.19: Joint estimation, different types of association, and results for workers' associations

Dependent variable: Average (standardized) NSDAP entry per capita, 1925-Jan'33

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ASSOC p.c. measure	civic vs. military		bridging vs. bonding		worker vs. non-worker associations			
Civic	0.400***	0.367***						
	(0.120)	(0.102)						
[beta coeff]	*[0.21]*	*[0.19]*						
Military	0.378	0.00199						
	(0.249)	(0.0590)						
[beta coeff]	*[0.11]*	*[0.001]*						
Bridging			0.115**	0.142***				
			(0.0526)	(0.0430)				
[beta coeff]			*[0.12]*	*[0.15]*				
Bonding			0.472**	0.0975				
			(0.169)	(0.144)				
[beta coeff]			*[0.16]*	*[0.03]*				
Worker					0.741	0.415	1.098	0.983*
					(1.030)	(0.730)	(0.918)	(0.507)
[beta coeff]					*[0.07]*	*[0.04]*	*[0.11]*	*[0.09]*
Non-worker							0.214***	0.193**
							(0.0480)	(0.0767)
[beta coeff]							*[0.28]*	*[0.25]*
Controls#	✓	✓	✓	✓	✓	✓	✓	✓
State FE		✓		✓		✓		✓
Observations	196	196	195	195	202	202	195	195
Adjusted R^2	0.261	0.403	0.230	0.371	0.183	0.302	0.272	0.372

Notes: Standardized errors in parenthesis (clustered at the Weimar State level) * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The different association density categories are mutually exclusive. To avoid that outliers within the smaller categories drive results, we exclude the 95th percentile for each sub-category. For a list of civic, military, bridging, and bonding associations, see Tables A.4 and A.5.

Controls include baseline controls, as well as political and socioeconomic controls (see Table 2 in the paper).

In Table A.20 we examine the relationship between association density and the votes for other parties from the extremes of the political spectrum in Weimar Germany – the Communist Party (KPD) and the right-wing German National People Party (DNVP). Ideally, we would want to study membership entries for these parties, as well. Unfortunately – to the best of our knowledge – these data are not available. Since we have documented a strong positive association between club density and Nazi Party votes (and that much of this relationship is mediated by NSDAP entry – see Table 4 in the paper), we believe that party votes are a valid 'second best.' Columns 1-3 show that, if anything, there was a negative relationship between association density and KPD votes, and columns 4-6 show a quantitatively small and insignificant pattern for right-wing DNVP votes. This suggests that the NSDAP was uniquely successful at exploiting existing associations to promote its cause.

Table A.20: Counterfactuals: Associations and other election results

Dependent variable: KPD / DNVP vote share in year *y*

	(1)	(2)	(3)	(4)	(5)	(6)
	German Communist Party (KPD)			German National People Party (DNVP)		
Year (*y*)	1928	1930	1933	1928	1930	1933
$ASSOC_{all}$	-0.38	-0.51*	-0.50*	0.11	-0.04	0.10
	(0.28)	(0.30)	(0.26)	(0.26)	(0.19)	(0.20)
[std coeff]	*[-0.078]*	*[-0.099]*	*[-0.117]*	*[0.025]*	*[-0.013]*	*[0.036]*
Baseline controls	✓	✓	✓	✓	✓	✓
Observations	227	227	227	227	227	227
Adjusted R^2	0.330	0.386	0.421	0.237	0.156	0.246

Notes: Robust standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standardized coefficients *[std coeff]* report by how many standard deviations (sd) the dependent variable changes due to a one-sd increase in $ASSOC_{all}$. See notes to Table 2 for a list of baseline controls.

Appendix F

Historical variation in association density and additional IV results

F.1. Historical roots of 1920s association density

In Section 2.1 in the paper we discussed the historical roots of associational life in Germany. In the following, we show that associations that were involved in the 1848 revolution are a strong predictor of later club density. We use delegates sent by local associations to the Democratic Congress in Berlin in 1848, reflecting a left-wing political agenda. Altogether, data for delegates are available for 39 cities in our sample from Vereins-Buchdruckerei (1848). In the left panel of Figure A.9, we document a strong positive relationship between delegates per capita in 1848 and gymnast members per capita in 1863; the correlation is highly significant and the R^2 of the corresponding regression is 13%.[21] In the right panel of Figure A.9, we repeat the analysis for our main explanatory variable, $ASSOC_{all}$. We again find a highly significant relationship, with a t-statistic of 6.39 and an R^2 of 46%.

[21] Since population figures for 1848 are not available at a systematic level, we use the 1863 population figures from the 1863 *Statistisches Jahrbuch der Turnvereine* to compute per-capita figures. Out of the 39 cities in our sample for which the number of delegates is available, 38 also have data on gymnast club members.

Gymnast association members, 1863 — Association density (*ASSOC$_{all}$*), 1920s

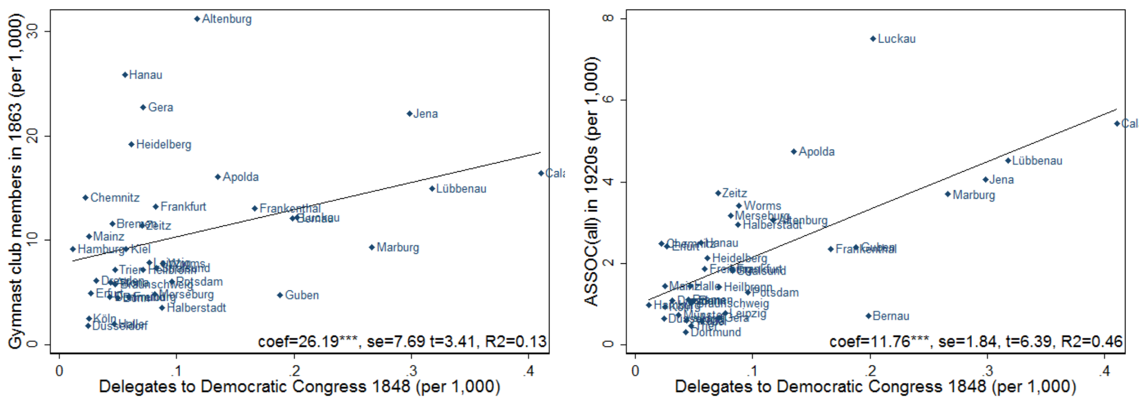

Figure A.9: Delegates of associations to the 1848 Democratic Congress and associational life at later points in time

F.2. Reduced-form results

In this section we present the reduced-form results corresponding to our IV regressions in Table 11 in the paper.[22] Table A.21 shows that the coefficient on our instrument (the first principal component of gymnast association members in 1863 and participants in the 1861 singer festival – both per 1,000 inhabitants) is highly significant and positive in all specifications, with the exception of the most restrictive specification with state fixed effects in column 4.

[22] For completeness, we show the results for both columns 3 and 5, even if the reduced-form results are the same.

Table A.21: Reduced-form results

Dependent variable: Average (standardized) NSDAP entry per capita 1925-1/'33

	(1)	(2)	(3)	(4)	(5)
Club members p.c.	0.208^{**}	0.203^{**}	0.233^{**}	0.111	0.233^{**}
in 1860s	(0.0862)	(0.0911)	(0.0915)	(0.0894)	(0.0915)
[std coeff]#	*[0.22]*	*[0.21]*	*[0.25]*	*[0.12]*	*[0.25]*
Baseline controls		✓	✓	✓	✓
Additional controls			✓	✓	✓
State FE				✓	
N	156	155	147	147	147
adj. R^2	0.040	0.137	0.193	0.334	0.193

Notes: The table shows the reduced-form results corresponding to the IV regressions in Table 11 in the paper. Baseline controls are listed in Table 2. Additional controls include the socio-economic and political controls listed in Table 2. *Club members p.c. in 1860* is the first principal component of gymnast association members in 1863 (per 1,000 inhabitants), and participants from each city in the 1861 *Sängerfest* (singer festival) in Nuremberg (per 1,000 inhabitants).

Standardized beta coefficients are reported in square brackets; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

F.3. Instrumental variable and nationalistic/anti-Semitic votes in Imperial Germany

In this section we show that it is unlikely that our instrumental variable reflects nationalistic or even anti-Semitic sentiments (i.e., that it captures latent compatibility with Nazi ideology). We examine elections in Imperial Germany over the period 1890-1912 and focus on the nationalistic parties NLP (National Liberal Party) and DKP (German Conservative Party), as well as on votes for anti-Semitic parties.[23] In columns 1-3 of Table A.22 we show that the average votes for all parties are quantitatively strong and statistically significant predictors of average NSDAP votes in 1928-33. Next, in columns 4-6 we show that none of the vote shares for these parties are predicted by our instrumental variable, club members per capita in the 1860s. The standardized coefficients are small and actually negative in two out of three cases.

[23] See Voigtländer and Voth (2015) for detail on anti-Semitic votes in Imperial Germany.

Table A.22: (Non-)relationship between IV and deeper roots of NSDAP appeal

	(1)	(2)	(3)	(4)	(5)	(6)
Columns show:	*Nationalistic and anti-Semitic votes in 1890-1912 predict NSDAP votes.*			*Nationalistic and anti-Semitic votes are not predicted by IV (club members in 1860s)*		
Dependent var.:	Avg. NSDAP votes in 1928-33			Avg. votes in 1890-1912:		
				NLP	*DKP*	*AS*
National Liberal Party (NLP)	0.0645**					
	(0.0322)					
[std coeff]#	*[0.13]*					
German Conservative Party (DKP)		0.0928***				
		(0.0276)				
[std coeff]#		*[0.17]*				
Anti-Semitic Parties (AS)			0.134***			
			(0.045)			
[std coeff]#			*[0.125]*			
Club members p.c.				0.00436	-0.0098	-0.0059**
in 1860s				(0.0092)	(0.0086)	(0.0024)
[std coeff]#				*[0.03]*	*[-0.07]*	*[-0.09]*
Constant	0.195***	0.199***	0.203***	0.186***	0.0805***	0.0262***
	(0.00736)	(0.00564)	(0.00494)	(0.0114)	(0.0109)	(0.00537)
Observations	224	224	227	154	154	156
Adjusted R^2	0.012	0.026	0.011	-0.006	-0.001	0.002

Notes: The table checks whether the instrumental variables used in Table 11 in the paper is associated with nationalistic and anti-Semitic votes in Imperial Germany. *Club members p.c. in 1860* is the first principal component of gymnast association members in 1863 (per 1,000 inhabitants), and participants from each city in the 1861 *Sängerfest* (singer festival) in Nuremberg (per 1,000 inhabitants). Avg. NSDAP votes are from the Weimar elections in May 1928, September 1930, and March 1933 (all elections for which NSDAP votes are available at the community level).
Standardized beta coefficients are reported in square brackets; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

F.4. Relaxing Instrument Exogeneity

In this section, we describe our implementation of the generalized IV approach in Conley, Hansen, and Rossi (2012), which allows for a direct effect of the instrument on the outcome variable.

We first confirm that the IV regressions with the principal component as instrument yield very similar results to those presented in the paper.[24] We then assume, following Conley et al. (2012), that the (potential) direct effect of the instrument on Nazi Party entry, γ, is uniformly distributed in an interval $[0,\delta]$, with $\delta>0$. By varying δ, we identify the threshold at which the second-stage coefficient on (instrumented) association density

[24] For example, for the main specification based in column 3 in Table 11, we obtain a second-stage coefficient on $ASSOC_{all}$ of 0.550 with an Anderson-Rubin p-value of 0.07 and a first-stage p-value of 0.0186.

becomes insignificant at the 10% level. Figure A.10 shows the results for our main specification, using the standard controls and $ASSOC_{all}$ as measure of association density. We identify a threshold of $\hat{\delta} = 0.156$. That is, as long as the direct effect of our instruments on party entry is smaller than 0.156, our second stage is still significant at the 10% level.

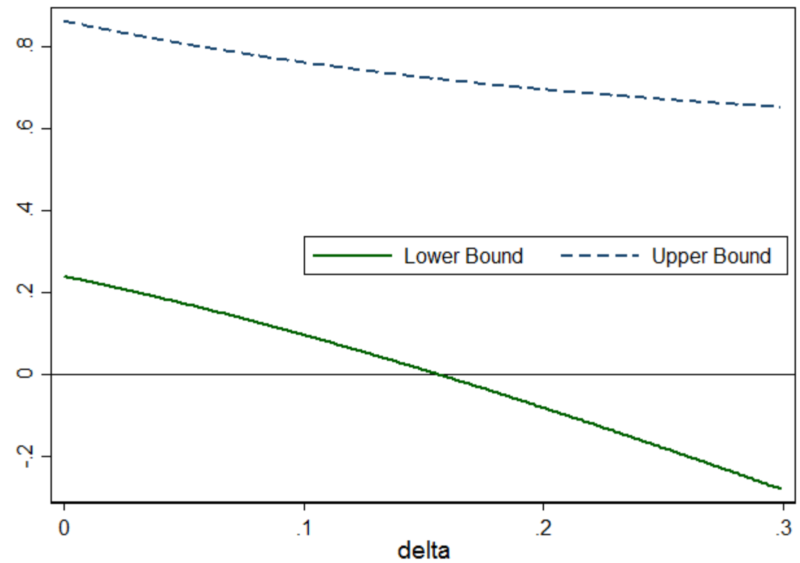

Figure A.10: 90% Confidence interval of main effect

Note: The figure shows the upper and lower bound of the 90% confidence interval of the second-stage coefficient on association density, using our baseline IV specification from column 3 in Table 11 in the paper. The instrument is the first principal component of the two instruments used in Table 11. Following Conley et al. (2012), we allow for a direct effect of the instrument on Nazi Party entry, assuming that this is uniformly distributed over an interval [0,δ], with δ>0. The interval size δ is plotted on the x-axis. At δ=0.156, the second-stage coefficient on (instrumented) association density becomes insignificant at the 10% level (i.e., where the lower bound in the graph falls below zero).

To gauge magnitudes, we compare this to the overall reduced-form effect of the principal component instrument on party entry, which is 0.223 (see Table A.21 above, col 3). Therefore, the direct effect of the instruments on party entry would have to be about two-thirds of the overall effect to render our IV results insignificant, a magnitude that seems implausible, given that our instrument reflects historical associational life with a democratic (rather than xenophobic, anti-democratic) focus.

F.5. IV robustness checks and alternative specifications

Table A.23 presents our IV results when we use both instruments separately, rather than exploiting their joint variation as a proxy for club membership in the 1860s. The first stage is presented in panel A, and the second stage in panel B. Both instruments are strong and significant predictors of association density in the 1920s. The overidentification test does not reject instrument exogeneity in any of the specifications. While this result is subject to the usual concern of weak statistical power, it is reassuring with respect to the exclusion restriction of our instruments. In the second stage, we confirm the large and statistically significant coefficients on association density from our main analysis. The F-test on excluded instruments is somewhat weaker than in our main analysis, and we continue to report weak-IV robust p-values in square brackets. One reason for the somewhat weaker first-stage relationship may be that many cities have zero participants in the singer festival, making this variable heavily skewed (which is not the case for our main IV derived from the principal component). In columns 2 and 3, we restrict the sample to those 39 cities with at least one participant in the singer festival. In column 3, we also control for distance to Nuremberg, where the singer festival took place. Even in these very restrictive specifications, we find second-stage coefficients of the same magnitude as above, and the weak-IV robust standard errors indicate that these remain statistically significant (although the results have to be interpreted particularly cautiously now, due to the low first-stage F-statistics). Finally, in column 4 we confirm our results from the paper when restricting attention to civic associations.

Table A.23: Robustness of IV results

Dependent variable: Average (standardized) NSDAP entry per capita 1925-1/'33

	(1)	(2)	(3)	(4)
ASSOC measure	all	all	all	civic
Other notes	--	exclude singerfest zeros		--
PANEL A: Second Stage				
ASSOC	0.571**	0.656***	0.691**	1.503**
	[0. 024]	[0. 006]	[0. 019]	[0. 0277]
[std coeff]	*[0. 99]*	*[1.10]*	*[1.16]*	*[0.89]*
ln(distance to Nuremberg)			0.0532	
			(0.159)	
Baseline controls	✓	✓	✓	✓
Additional controls	✓	✓	✓	✓
PANEL B: First stage. Dep var: ASSOC				
Gymnastics club members p.c. in 1863	0.0435***	0.0803	0.0802	0.0148*
	(0.0150)	(0.0494)	(0.0513)	(0.00759)
Singer festival 1861 Participants p.c.	0.185**	0.187**	0.189*	0.0742***
	(0.0824)	(0.0724)	(0.103)	(0.0282)
ln(distance to Nuremberg)			0.0158	
			(0.390)	
Controls: See Panel A.				
Kleibergen-Paap First stage F-stat	8.2	4.7	3.7	6.1
Overidentification test (p-value)	0.43	0.90	0.98	0.73
N	147	39	39	146
adj. R^2	0.401	0.385	0.355	0.281

Notes: Dependent variable in the second stage is the average rate of Nazi Party entry (per 1,000 inhabitants) in each city over the period 1925-1/33. Standardized beta coefficients; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *ASSOC* is the number of associations per 1,000 inhabitants in each city counting all in cols 1-3, and only civic associations in col 4. Second stage results report the p-values [in square brackets] for the Anderson-Rubin (Chi-square) test of statistical significance (heteroskedasticity-robust). This test is robust to weak instruments (see Andrews and Stock 2005 for a detailed review). Baseline controls are listed in Table 2. Additional controls include the socio-economic and political controls listed in Table 2. Instruments in the first stage are gymnast association members in 1863 (per 1,000 inhabitants), and participants from each city in the 1861 Sängerfest (singer festival) in Nuremberg (again normalized by city population in 1863).

F.6. Using Delegates to the Democratic Congress as Instruments

In this section, we use an alternative instrument to capture the deeper historical roots of social capital. Following our discussion of the 1848 Revolution in Section 2.1, we use the number of delegates sent by local clubs to the Democratic Congresses in Berlin in 1848. These data are available for 39 towns and cities (see also Appendix F.1). As the historical background section argued, sending delegates to the 1848 Democratic Congresses reflected both the ability and willingness to organize and a belief in a left-wing agenda. The exclusion restriction here is that the spatial variation in clubs' representation at the Democratic Congress only influenced Nazi Party entry through associational density. Since the left-wing motives to send delegates were ideologically opposed to the Nazi agenda, we argue that the exclusion restriction is likely to hold. We use the number of club delegates sent to the Berlin Congress in 1848 (per 1,000 inhabitants) to instrument association density in the 1920s.[25] Panel B in Table A.24 reports the first stage results. We control for distance to Berlin throughout and add our baseline controls in column 2.[26] Given how small our sample is, we find a remarkably solid first stage (the right panel of Figure A.9 shows that the strong relationship is not driven by outliers). In the second stage, reported in Panel A, we estimate effects of very similar magnitude as in our main IV analysis in Table 11. However, due to the small sample size, the second-stage coefficients are not significant at standard levels – with (weak-IV robust) p-values of about 0.2.

Table A.24: Using Democratic Congress delegates in 1848 as IV

Dep. Var.: Average (standardized) NSDAP entry per capita 1925-1/'33

	(1)	(2)
Panel A: Second stage: Dep. Var. is NSDAP entry		
$ASSOC_{all}$	0.490	0.443
	[0.192]	[0.251]
[std coeff]	*[1.08]*	*[0.98]*
ln(distance to Berlin), ln(pop 1863)	✓	✓
Baseline controls		✓
Panel B: First stage: Dep. Var is $ASSOC_{all}$		
Delegates to Democratic Congress p.c. in 1848	6.932**	6.630**
	(3.355)	(2.845)
Controls: See Panel A.		
Kleibergen-Paap First stage F-stat	4.27	5.43
N	39	39
Adj. R^2	0.459	0.585

Notes: Dependent variable in the second stage is the average rate of Nazi Party entry (per 1,000 inhabitants) in each city over the period 1925-1/33. $ASSOC_{all}$ is the number of associations per 1,000 inhabitants in each city counting. Second stage results report the p-values [in square brackets] for the Anderson-Rubin (Chi-square) test of statistical significance (heteroskedasticity-robust); * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. This test is robust to weak instruments (see Andrews and Stock, 2005 for a detailed review). Baseline controls are listed in Table 2. Figure A.9 (right panel) shows a scatterplot for the first stage regression.

[25] We normalize by city population in 1863; population for earlier periods is not systematically available.

[26] Adding the full set of socio-economic and political controls is not feasible due to the low number of observations.

Appendix G

Altonji-Elder-Taber results

We implement the method proposed by Altonji, Elder, and Taber (2005), and adopted to the continuous case by Bellows and Miguel (2009). The computed ratio compares how much the coefficient on the variables of interest (total association density, density of military and non-military associations) declines as control variables are added.

We run two sets of regressions. First, we regress average (standardized) Nazi Party entry per capita on $ASSOC_i$ (i={all, civic, military}) without controls and denote the corresponding coefficient $\hat{\beta}^A$. Next, we add different sets of control variables, and denote the coefficient on $ASSOC_i$ by $\hat{\beta}^B$. Then, the Altonji et al. ratio is given by $\hat{\beta}^B/(\hat{\beta}^A - \hat{\beta}^B)$. Intuitively, the larger $\hat{\beta}^B$, the stronger is the effect that is left after controlling for observables – and the more would unoberservables have to explain in order to reduce the coefficient to zero. As for the denominator in the ratio, the smaller is the difference between $\hat{\beta}^A$ and $\hat{\beta}^B$, the less is the estimated coefficient influenced by observables, and the stronger would selection on unobservables have to be relative to selection on observables in order to completely explain away the effect. Importantly, this approach assumes that the variation in Nazi Party entries related to the observables has the same relationship with local association density as the part of the variation driven by unobservables.

We use two sets of controls to estimate how much stronger the effect of omitted variables would have to be, relative to observables, to attribute the entire OLS estimates to selection effects. The first set consists of our three baseline controls, the second set adds our political and socioeconomic variables (listed in Table 2 in the paper). Table A.25 presents the results – in Panel A, the standard Altonji et al. ratios, and in Panel B, Oster's (2014) extension that takes into account by how much the overall fit improves when controls are added. For our main measure, including all associations, the R^2 increases from 0.04 to 0.23 when adding the baseline controls, and to 0.29 when using the second set of controls. Thus, the observables that we include account for a substantial share of the overall variation, lending confidence to our use of the Altonji et al. method. In most cases, the implied ratios are negative. This occurs when the observable controls are negatively correlated with club density and positively with party entry (or vice-versa), yielding stronger coefficient estimates than in the basic regression without controls. In these cases, the Altonji-Elder-Taber test suggests that our OLS estimates are likely to be downward-biased (provided that the unobservables exhibit similar correlation patterns as the observable controls). Only in the case of military associations do we observe positive Altonji et al. ratios, ranging from 1.3 to 9.3. This implies that selection on unobservables would have to be substantially stronger than selection on observables for our main result to be overturned. This is especially true once our baseline controls are included (the small ratio of 1.3 is observed when going from no controls to baseline controls). Note also that for the logic of our argument, the coefficient for military associations is not the most important – what matters is that the civic clubs and associations have an important effect on Nazi Party entry. This is never in doubt in the Altonji-Elder-Taber/Oster exercise.

Table A.25: Altonji-Elder-Taber/Oster Results

Controls in restricted set	Controls in full set	Association density includes all	civic	military
	PANEL A: Original Altonji-Elder-Taber test			
None	*Baseline controls*	[<0]	[<0]	9.5
Baseline controls	*Baseline controls* + *socialeconomic controls* + *political controls*	[<0]	[<0]	22.8
	PANEL B: Oster (2014) correction of the Altonji-Elder-Taber test			
None	*Baseline controls*	[<0]	[<0]	1.3
	R^2 uncontrolled	*0.04*	*0.04*	*0.11*
	R^2 controlled	*0.23*	*0.23*	*0.25*
Baseline controls	*Baseline controls* + *socialeconomic controls* + *political controls*	[<0]	[<0]	[<0]
	R^2 uncontrolled	*0.23*	*0.23*	*0.25*
	R^2 controlled	*0.29*	*0.29*	*0.31*

Notes: The table reports the relative strength of selection on unobservables that is required to completely explain the effect of each association density measure on Nazi Party entry, using the methodology from Altonji, Elder, and Taber (2005). The entry [<0] indicates that the respective Altonji et al. ratio is negative; in these cases, observables are on average negatively correlated with the outcome variable, suggesting a downward bias for our OLS estimates due to unobservables (if these have similar correlation patterns as the included observables). *Baseline controls*, s*ocialeconomic controls*, and *political controls* are listed in Table 2 in the paper.

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