

BEYOND IRAQ & AFGHANISTAN
WHAT FOREIGN FIGHTER DATA REVEALS
ABOUT THE FUTURE OF TERRORISM

CITY ANALYSIS

APPENDIX C

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APPENDIX C: ANALYSIS OF CITIES

The Sinjar records provide unique insight into foreign fighter recruitment from both a national and a city level. While other data exists for foreign fighter's country of origin, the Sinjar records help pinpoint those radicalization flashpoints where discussions of jihad actually transform into violent action and a commitment to foreign travel. This study examined foreign fighters by city, comparing the city population of a foreign fighter's hometown as a portion of the country's population. Table C-1 shows those cities with 3 or more Sinjar fighters. Calculating the city's population within the national population (City % Pop.) and then comparing this ratio with the percentage of fighters from a country declaring that city their hometown (% Ctry Fighter) clearly identifies those locations that are producing an abnormally large number of fighters. The most interesting cities are those which have a small portion of the country's population (< 5 percent) and yet a large portion of the country's foreign fighters (> 25 percent).

Table C-1

CITY	CITY POP.	COUNTRY	FIGHTERS	CITY % POP.	% CTRY FIGHTER	% OVERALL
Darnah	84768	Libya	52	1.39%	60.47%	9.24%
Riyadh	4087152	S. Arabia	51	18.02%	25.89%	9.06%
Mecca	1294168	S. Arabia	43	5.71%	21.83%	7.64%
Benghazi	685367	Libya	20	11.24%	23.26%	3.55%
Jawf	26179	S. Arabia	16	0.12%	8.12%	2.84%
Dayr al Zur	201306	Syria	16	1.10%	43.24%	2.84%
Casablanca	2933684	Morocco	16	9.95%	61.54%	2.84%
Jeddah	2801481	S. Arabia	14	12.35%	7.11%	2.49%
Sanaa	954448	Yemen	14	4.85%	51.85%	2.49%
Taif	521273	S. Arabia	11	2.30%	5.58%	1.95%
Medina	918889	S. Arabia	11	4.05%	5.58%	1.95%
Buraydah	378422	S. Arabia	10	1.67%	5.08%	1.78%
al Qasim	20316	S. Arabia	8	0.09%	4.06%	1.42%
el Oued	104801	Algeria	8	0.36%	38.10%	1.42%
Dara	49534	Syria	7	0.27%	18.92%	1.24%
Zarqa	395227	Jordan	6	7.74%	66.67%	1.07%
Tabouk	441351	S. Arabia	5	1.95%	2.54%	0.89%
Sarat	161345	Libya	5	2.65%	5.81%	0.89%
Idlab	51682	Syria	5	0.28%	13.51%	0.89%
Tetuan	320539	Morocco	5	1.09%	19.23%	0.89%

CITY	CITY POP.	COUNTRY	FIGHTERS	CITY % POP.	% CTRY FIGHTER	% OVERALL
Algiers	1519570	Algeria	5	5.22%	23.81%	0.89%
Bin Arouss	74932	Tunisia	5	0.74%	29.41%	0.89%
Aden	398294	Yemen	4	2.02%	14.81%	0.71%
Tunis	728453	Tunisia	4	7.19%	23.53%	0.71%
Ihdabayah	172316	Libya	3	2.83%	3.49%	0.53%
Masratah	354823	Libya	3	5.82%	3.49%	0.53%
Tal	18198	Syria	3	0.10%	8.11%	0.53%
Benzerte	114371	Tunisia	3	1.13%	17.65%	0.53%
Amman	1036330	Jordan	3	20.31%	33.33%	0.53%

While these gross numbers and percentages are interesting, this study went a step further to actually test statistically if certain cities' foreign fighter production rates are significantly different from what might be expected. Based on the observed differences from Table C-1, the below cities were selected for a goodness of fit test for proportions using a Chi-squared distribution. The hypothesis question for this analysis was: "Is the proportion of fighters the city actually produced significantly different from the expected proportion of fighters from that city?" This test produced the following results.

Tests for Proportions

1) Benghazi, Libya: Test and CI for One Proportion

Test of $p = 0.1124$ vs $p > 0.1124$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
20	86	0.232558	0.148211 – 0.336063	0.001

2) Darnah, Libya: Test and CI for One Proportion

Test of $p = 0.0139$ vs $p > 0.0139$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
52	86	0.604651	0.493390 – 0.708489	0.000

3) Casablanca, Libya: Test and CI for One Proportion

Test of $p = 0.0995$ vs $p > 0.0995$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
16	26	0.615385	0.405708 – 0.797740	0.000

4) Sanaa, Yemen: Test and CI for One Proportion

Test of $p = 0.0485$ vs $p > 0.0485$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
14	27	0.518519	0.319497 – 0.713327	0.000

5) Dayr al Zur, Syria: Test and CI for One Proportion

Test of $p = 0.011$ vs $p > 0.011$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
16	37	0.432432	0.270979 – 0.605116	0.000

6) El Oued, Algeria (Al Wadd): Test and CI for One Proportion

Test of $p = 0.0036$ vs $p > 0.0036$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
8	21	0.380952	0.181072 – 0.615646	0.000

7) Tetuan, Morocco: Test and CI for One Proportion

Test of $p = 0.0109$ vs $p > 0.0109$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
5	26	0.192308	0.065548 – 0.393506	0.000

8) Dara, Syria: Test and CI for One Proportion

Test of $p = 0.0027$ vs $p > 0.0027$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
7	37	0.189189	0.079621 – 0.351552	0.000

9) Bin Arouss, Tunisia: Test and CI for One Proportion

Test of $p = 0.0074$ vs $p > 0.0074$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
5	17	0.294118	0.103136 – 0.559583	0.000

10) Benzerte, Tunisia: Test and CI for One Proportion

Test of $p = 0.0113$ vs $p > 0.0113$

Fighters	Total	Sample P Value	Exact 95% Confidence Interval	P-value
3	17	0.176471	0.037985 – 0.434318	0.001

Analysis of Tests

Both the descriptive statistics and the statistical tests for proportions illustrate that these 10 cities produce a significantly larger number of foreign fighters than might be expected based on their populations. One weakness of the data is many of the foreign fighters did not declare a city, only a country. While these individuals were neither counted in the city respondent count nor used in the test for one proportion, the number of cases decreased for many countries. The low count numbers for certain cities and countries therefore created a second weakness of the proportion test. Low count numbers made it difficult to analyze cities like Benzerte, Tunisia and Zarqa, Jordan with much confidence. Future data declassifications may remedy this problem. Until then, this is the best test that can be performed on city populations and their foreign fighter productions.