

Pressure Points: Assessing Vulnerability to Protests in Tunisia

Introduction

Observers often refer to Tunisia as the single success story of the Arab Spring. This obscures the major challenges Tunisia faces more than eight years after its revolution. Those residing in the interior continue to face marginalization compared to those in coastal areas. As a result, Tunisia has witnessed several waves of protests over persistently poor socioeconomic conditions since the first post-revolutionary polls in 2014.

Tunisia is scheduled to hold its next round of general elections in November 2019. The government is likely to continue to contend with protests in the preceding months as citizens express frustration over the socioeconomic state of affairs. As such, this project aimed to identify which areas in Tunisia are most vulnerable to protest.

Methodology

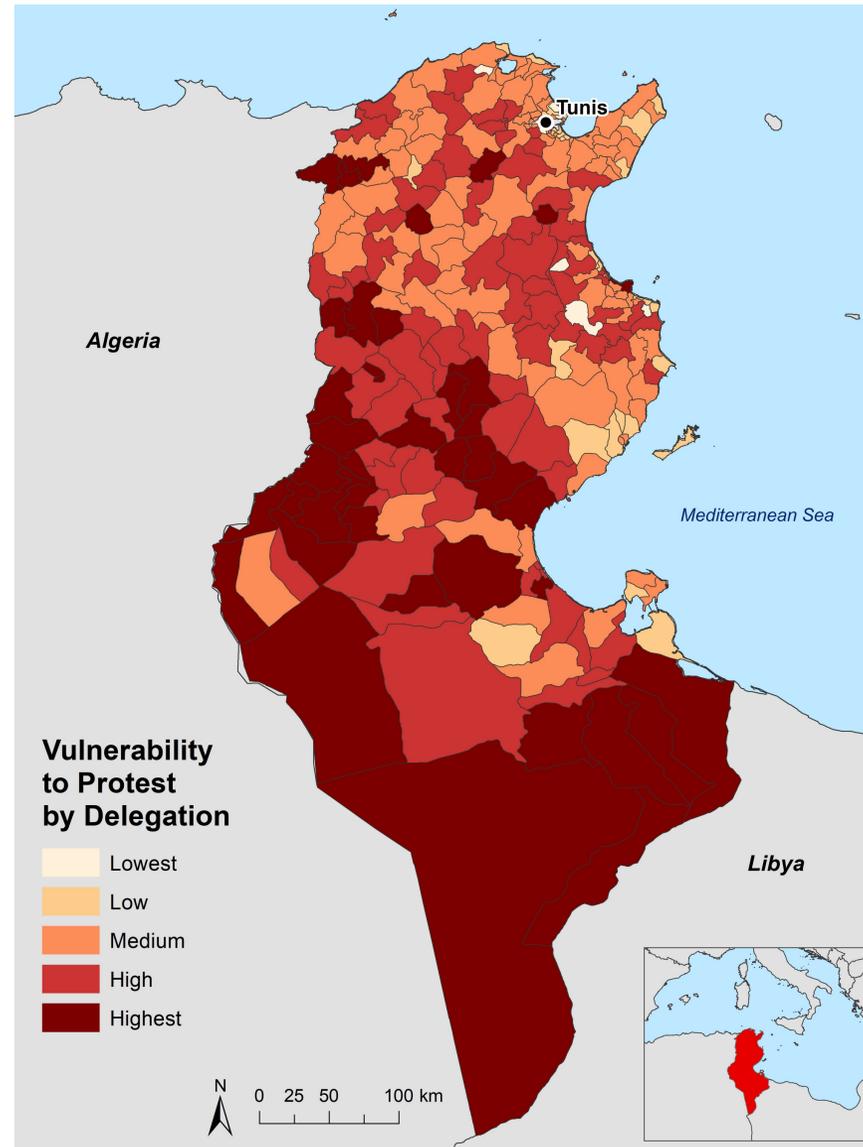
This project used specific criteria to determine which of Tunisia's 268 delegations (administrative level 2) are most vulnerable to protests. The demographic and socioeconomic indicators include the rate of male unemployment, the percentage of males aged 15-29 years-old, and the rate of unmarried males. The former two datasets were taken from Tunisia's 2014 census results, while the latter was taken from Tunisia's 2004 census results.

Additional indicators used included average proximity to places of worship, namely mosques, in each delegation, as well as average

proximity to government services defined as schools, libraries, and police stations. The data was gathered from publicly available OpenStreetMap data. Protests are more likely to occur as average proximity to places of worship that serve a gathering function (mosques) decreases. Meanwhile, vulnerability to protests increases as average proximity to services increases and access to public goods declines. The distances of each pixel from mosques and services were calculated, averaged, and scored within delegation boundaries.

Lastly, protest data from the Armed Conflict Location and Event Data Project was used to determine the density of protests by delegation from 2015-2018, the three years between the general elections. Protests are more likely to take place in areas that have experienced incidents of political violence in the past.

All indicators were scored using a scale of 1 (lowest vulnerability to protest) to 5 (highest vulnerability). Breaks in the data were determined manually for each dataset based on mean and standard deviation. The data was then added together in a weighted formal, with more emphasis on demographic and socioeconomic indicators, to produce an overall vulnerability score (maximum of 30). These scores were then averaged and manually classified into a final scale of lowest to highest vulnerability.



Results

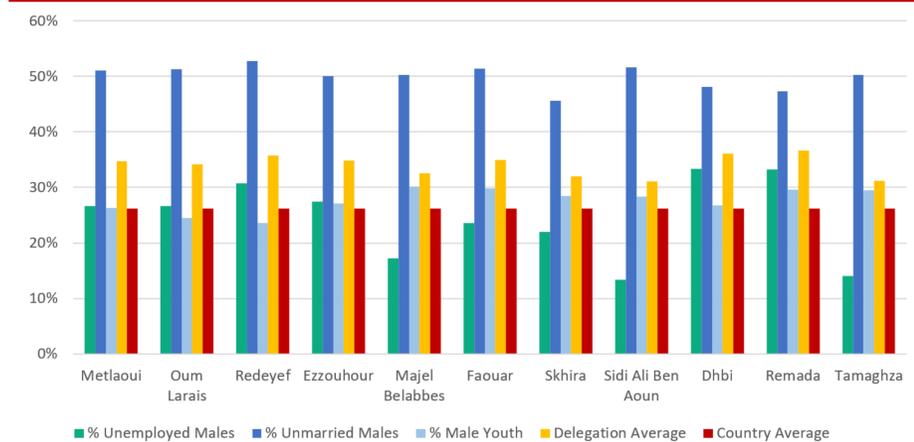
The results of this analysis show that the eleven delegations with the highest vulnerability to protest are largely located in Tunisia's south and southwest: Metlaoui, Oum Larais, and Redeyef in the

southwest governorate of Gafsa; Majel Belabbes in the southwest governorate of Kasserine; Faouar in the southwest governorate of Kebili, Tamaghza in the Southwest governorate of Tozeur, Dhbi and Remada in the southern governorate

of Tatouine; Skhira and Sidi Ali Ben Aoun in the central governorates of Sfax and Sidi Bouzid respectively; and Ezzouhar in the governorate of Tunis, near the capital. With the exception of Ezzouhar, all are located in areas that have witnessed anti-government protests over socioeconomic grievances in the last five years. The fact that delegations in the south have less proximity to mosques as potential protest gathering places compared

worship and government services was gathered from crowdsourced, open-source data, it is possible that not all locations were included in the datasets. This may have been exacerbated by the limited access to Tunisia's south and border areas with Algeria and Libya. Finally, the weighting and scaling of the data, as well as the decision to use manual breaks in determining proximity based on walkability, likely impacted the results.

Demographics of Most Vulnerable Delegations



to the north does not appear to significantly reduce the vulnerability of those delegations.

This project had several limitations. First, the lack of consistent census data was a challenge. The dataset for the rate of unmarried males was taken from Tunisia's 2004 census, as that data was not available in the most recent 2014 census. Therefore, data on male unemployment and male youth was gathered from separate census results. Second, because the data on places of

Cartographer: Elissa Miller
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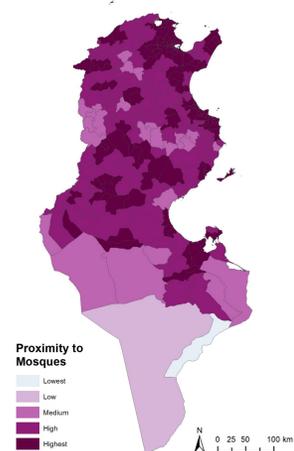
Course: DHP P207: GIS for International Applications

Date: May 5, 2019 (Spring 2019)

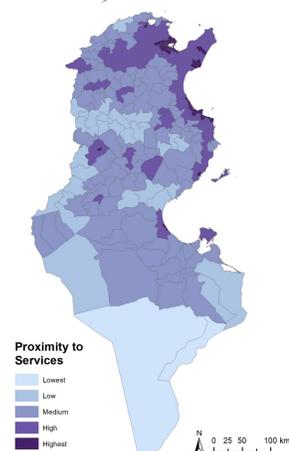
Projection: WGS 1984 UTM Zone 32N

Data Sources: Database of Global Administrative Areas (GADM), Humanitarian Data Exchange, OpenStreetMap, Tunisia National Institute of Statistics, Armed Conflict Location & Event Data Project (ACLED), ESRI

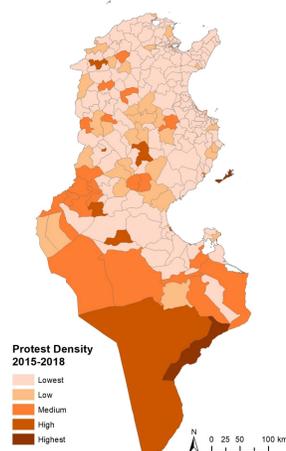
Places of Worship



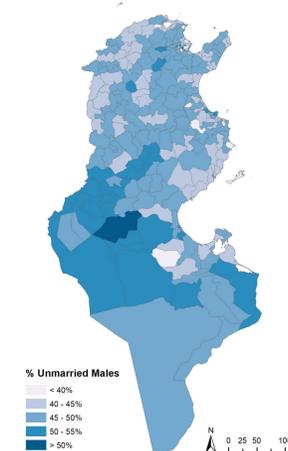
Government Services



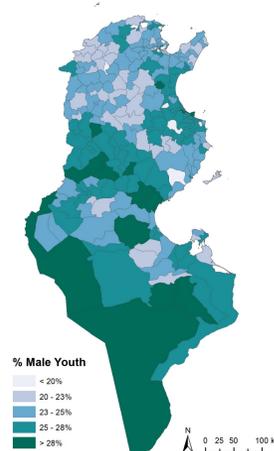
Past Protests



Male Unemployment



Male Youth



Unmarried Males

