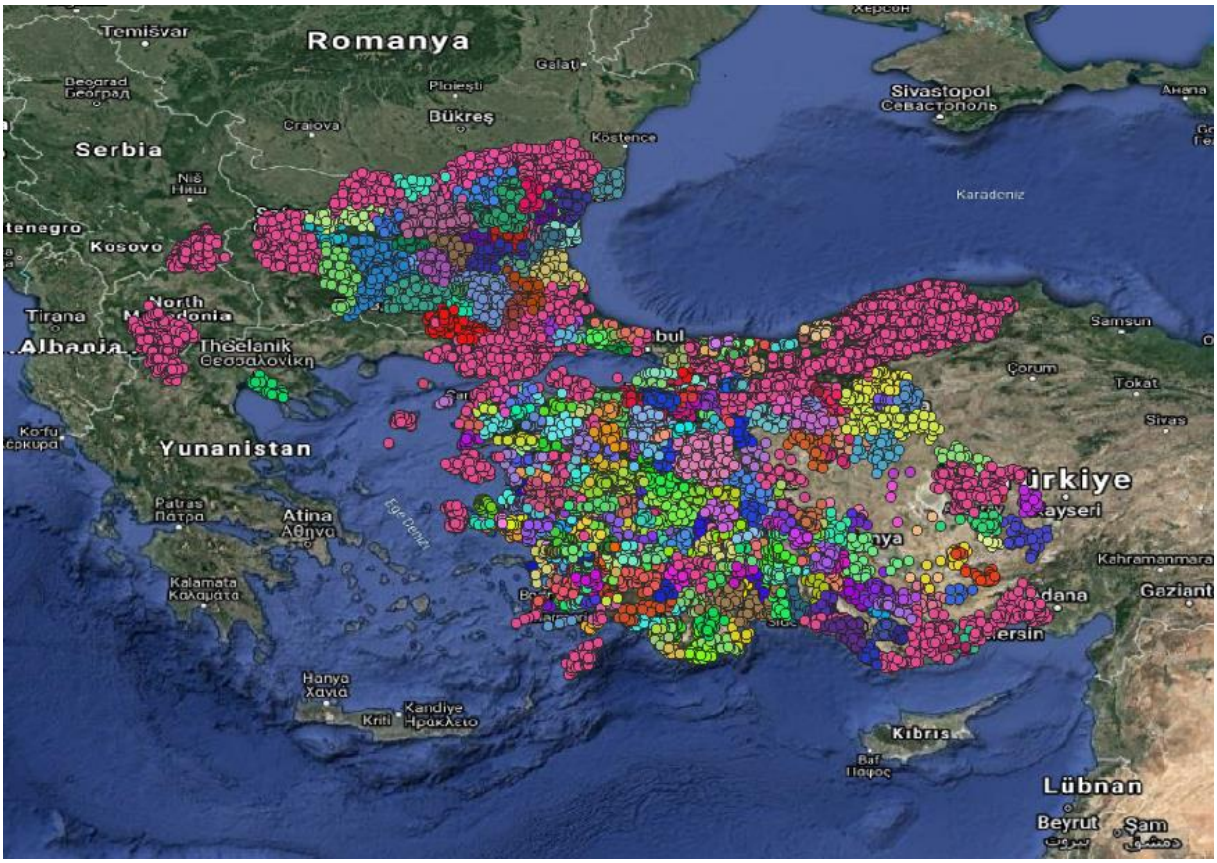
MAKING OF A MID-NINETEENTH CENTURY GAZETTEER AND EXAMINING OTTOMAN POPULATION GEOGRAPHY

M. Erdem Kabadayı, Koç University
Grigor Boykov, University of Vienna
Piet Gerrits, University of Glasgow
Akın Sefer, Koç University

There is no large-scale historical gazetteer available for any of the numerous territories that once belonged to the Ottoman Empire. Although the mid-nineteenth century Ottoman state kept population registers meticulously to govern its population for conscription and taxation purposes, these demographic sources were never utilized for gazetteer making. There are two main reasons for the lack of an Ottoman gazetteer until today: First, the Ottoman population registers from the 1840s totalling around 11,000 became available in the central Ottoman archives in Istanbul only starting from 2011. Second and more importantly, it has been a daunting task to geolocate toponyms in a multi-lingual, multi-ethnic empire listed in the population registers. These registers are handwritten in Ottoman script, using a version of the Arabic alphabet omitting signs for short vowels, and produced in a period preceding the earliest extensive Ottoman map-making efforts from the early twentieth century.

As a joint effort of two research projects, *UrbanOccupationsOETR* (ERC-StG, Industrialisation and Urban Growth from the mid-nineteenth century Ottoman Empire to Contemporary Turkey in a Comparative Perspective, 1850-2000, https://urbanoccupations.ku.edu.tr) and *POPGEO_BG* (Marie Skłodowska-Curie Individual Fellowship, Population Geography of Bulgaria, 1500- 1920: A Historical Spatial Analysis, https://popgeo.ku.edu.tr) we have been tackling this challenge. We have located and acquired scanned copies of around 850 Ottoman population registers from the 1840s in the Ottoman archives. The advantage of working with Ottoman population registers for our gazetteer project is that they are organized by district and sub-districts and have universal coverage for our chosen regions of the Ottoman Empire. We then constructed a geospatial database and entered toponyms and total household and total male population counts (mid-nineteenth century Ottoman population registers enlist only males) of 18,548 settlements. Using many historical maps, we could geolocate 16,275 of these registered settlements, shown below.

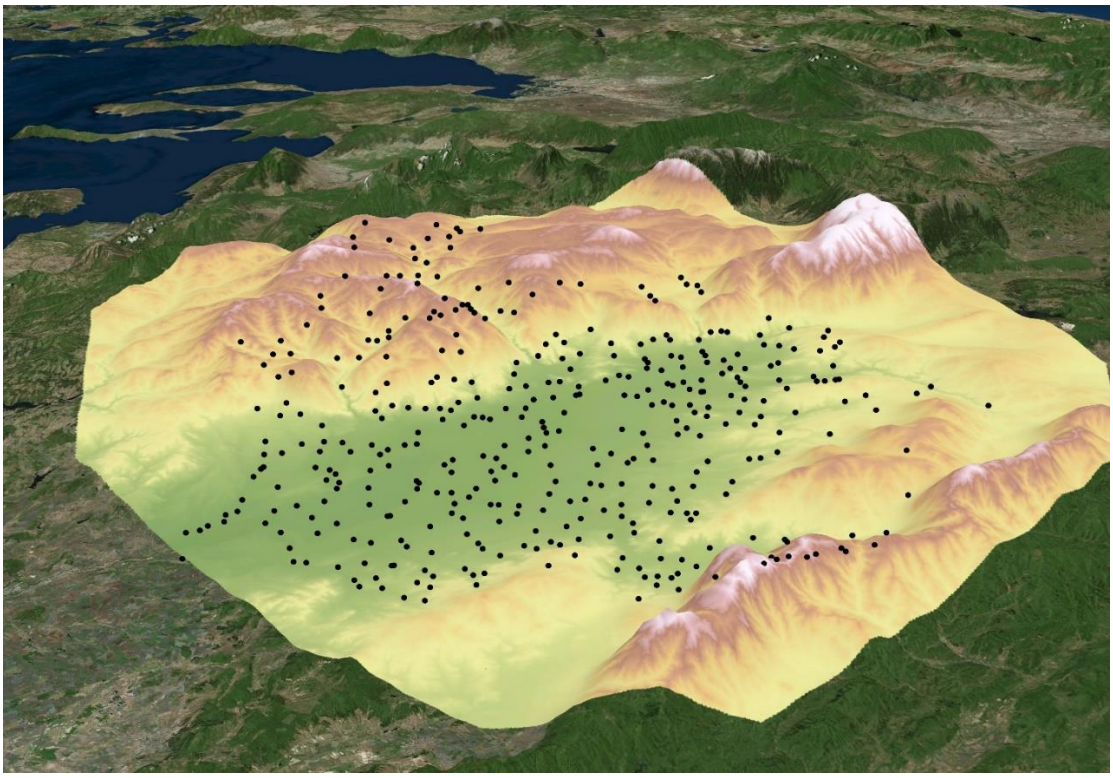


Map 1. Geolocated settlements listed in Ottoman population registers in chosen sub-districts

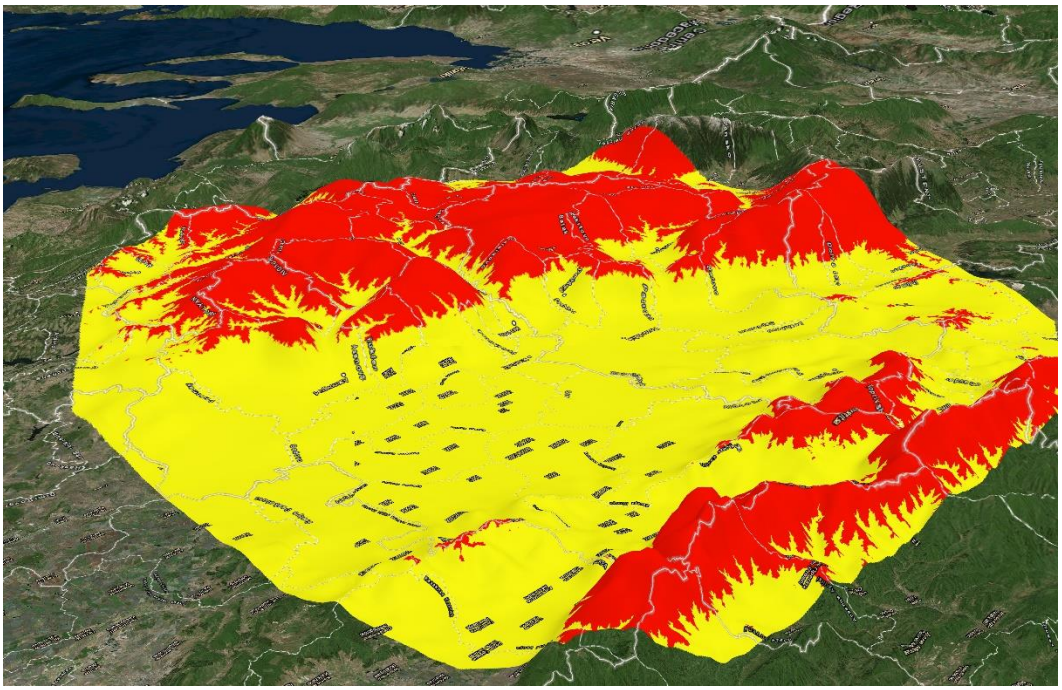
Around 2,5 million males are registered in about 1 million households in these 18,548 settlements. Our gazetteer project with total population data assigned to settlements is unprecedented in scale and detail. Spatial disaggregation of historical population data to all registered locations in districts and subdistricts at this scale has never been attempted before for the Ottoman Empire. We are convinced that this tedious task rewards Ottoman population geography and spatial humanities.

First, our research output directly contributing to Ottoman studies via geospatial humanities methodology: Our geospatial database has administrative relationships information for all settlements with their total male population, including those we could not geolocate precisely. Therefore, by doubling these totals, we can reliably estimate the total population of around 18,500 settlements in 46 districts and around 400 sub-districts. The earliest administrative division map of the Ottoman Empire with district and sub-districts is from 1899 (Huber, R. "*Empire Ottoman: Division administrative, dressee d'apres le Salname 1899*." 1:150,000. F. Loeffler, 1899. We grouped the sub-districts of the settlements according to an official Ottoman statistical yearbook from 1848 (colour coded in the map 1). We can now create polygons for districts and sub-districts of the Ottoman Empire for the mid-nineteenth century for the very first time. Furthermore, we have population data with ethno-religious breakdowns for all settlements. Therefore, we can devise conventional population density and ethno-religious composition of population maps for the first time on a large scale for regions in Southeast Europe and Western Anatolia before the beginning of the implosion of the Ottoman Empire in the later nineteenth and the early twentieth century.

Secondly, by creating around 400 sub-district and 46 district polygons with attached total population figures for this large and geographically diverse territory, we could explore further methodological novelties in the field of spatial humanities. By making use of Digital Elevation Models (DEM) based on Shuttle Radar Topography Mission (SRTM) or Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Global DEM, in combination with geospatial distribution of total population per sub-district, we could set individual habitation zones based on elevation and ruggedness per sub-district in three dimensions. We can calculate total areas suitable for premodern, mostly agricultural-based populations to map more advanced and functional born-digital population density maps for the mid-nineteenth century Ottoman territories in Southeast Europe and Western Anatolia. We have already tested this methodology in two regions of today's Bulgaria.



Map 2. Geolocated 1840s settlements on the SRTM-DEM for the Plovdiv region



Map 3. The implementation of a 1000 m elevation cap for the habitable zones for the Plovdiv region (red areas above 1000 m)

With our proposed paper, we aim to present and discuss our methodology with experts, further improve it, and finally present our research output as a set of online available interactive maps for further manipulation on our project webpages.