Bibliometrix Analaysis for Lake Urmia Peer Reviewed Literature: 1900 to Sept. 2020

David E. Rosenberg

April 8, 2021

Introduction

This is an R Markdown document. The script is modified from https://cran.r-project.org/web/packages/bibliometrix/vignettes/bibliometrix-vignette.html

The Scopus database was quried for articles with the key words ("Lake" AND ("Urmia" OR "orumiyeh" OR "Orumiyeh")). The quries were done in two batches: 1) from 1900 to August 2019, and 2) and from August 2019 to September 2020. Duplicates were removed.

Two custom plots are made: 1. Articles versus time compared to lake level (Fig. 1 in the synthesis article) 2. Observed and planned lakes levels vs basin precipitation (Figure in Secton 4.7)

Then the Bibliometrix package was used to make several other plots of article data.

Summary of Articles from SCOPUS

Keyword search = TITLE-ABS-KEY ("Lake" AND ("Urmia" OR "Ormayeh" OR "Orumiyeh"))

Number of articles = 544

Number of authors = 1319

Number of multi-authored articles = 1283

Number of single-authored articles = 36

Figure 1. Journal articles by year vs Lake Level

```
## New names:
## * Month -> Month...3
## * Month -> Month...4
```
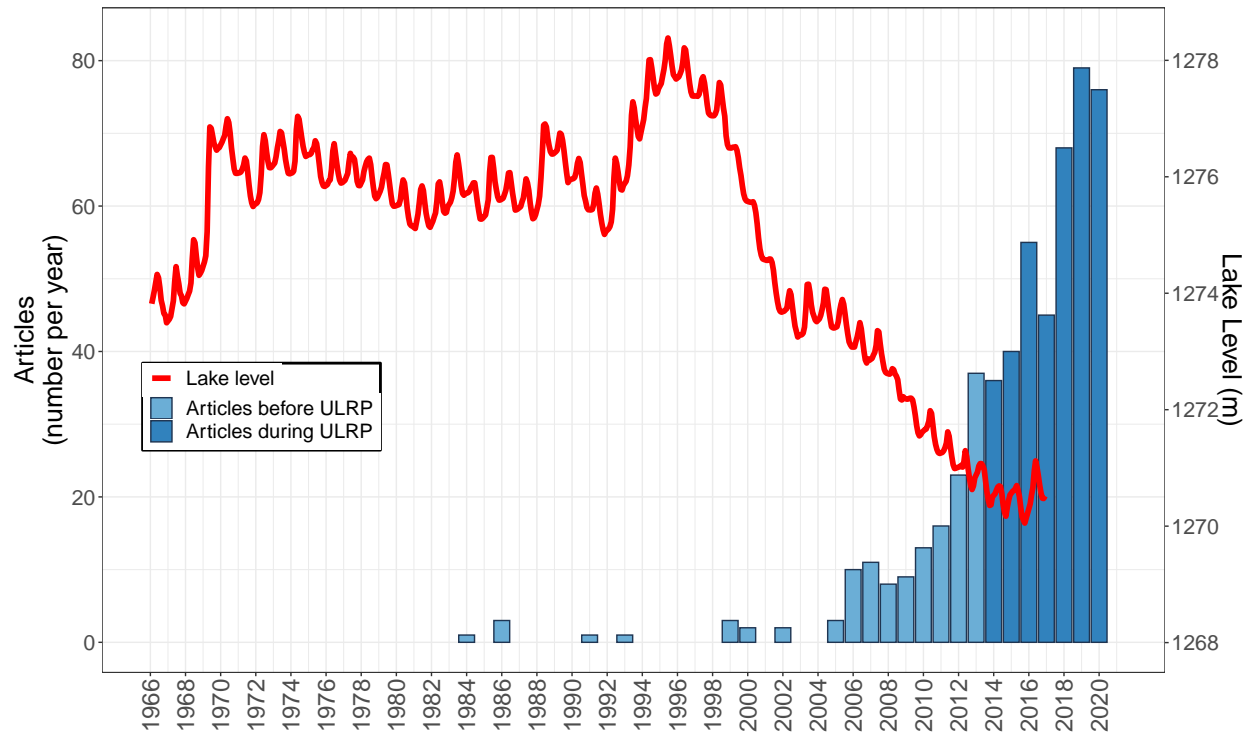
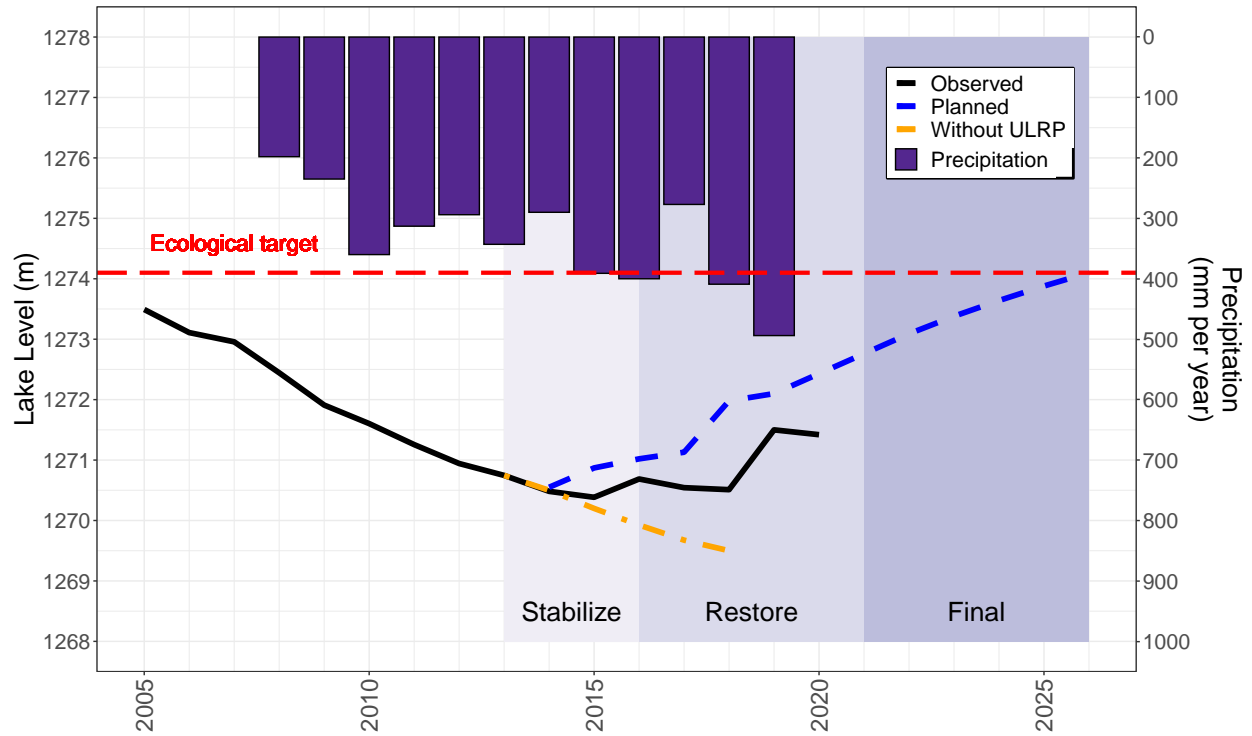# Figure for Section 4.7. Lake Restoration efforts: Lake level vs precipitation
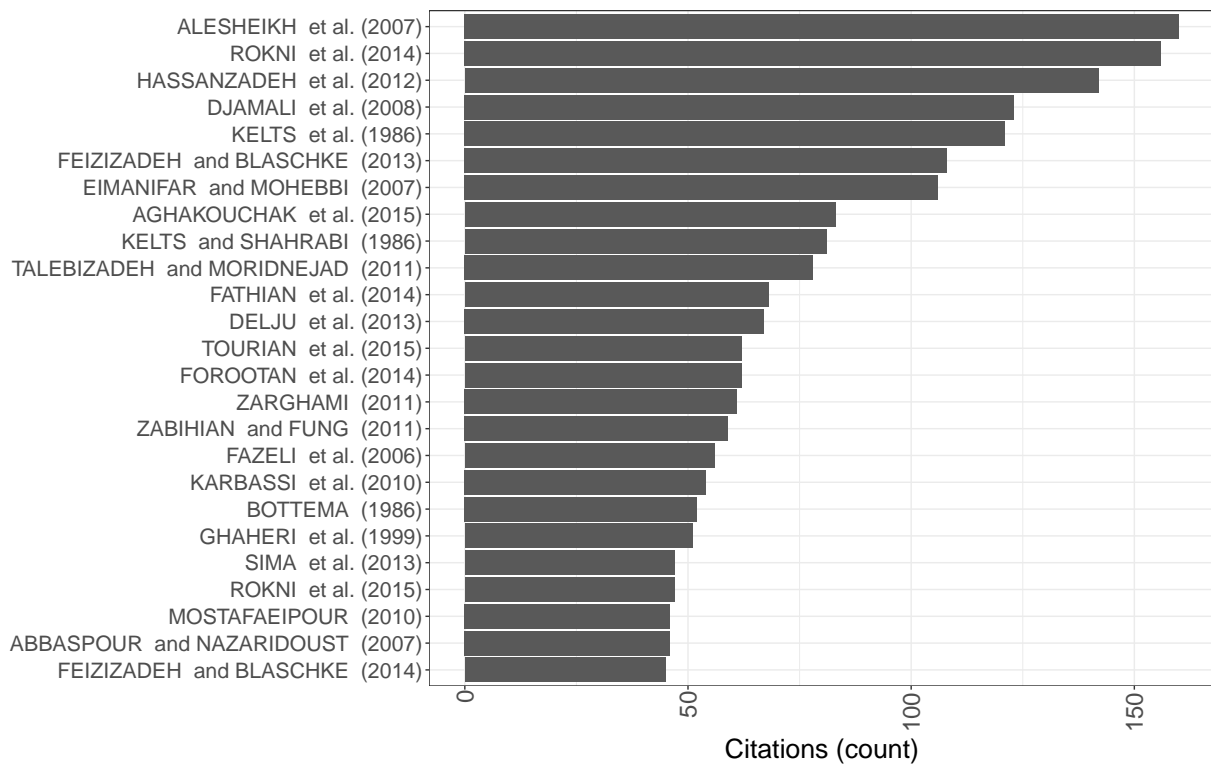
Figure 2. Top cited articles

Figure 2 caption: Horizontal bar chart showing citations (count) for top cited articles, from ALESHEIKH et al. (2007) at top to FEIZIZADEH and BLASCHKE (2014) at bottom. X-axis: Citations (count) from 0 to 150.

Figure 3. Author team size

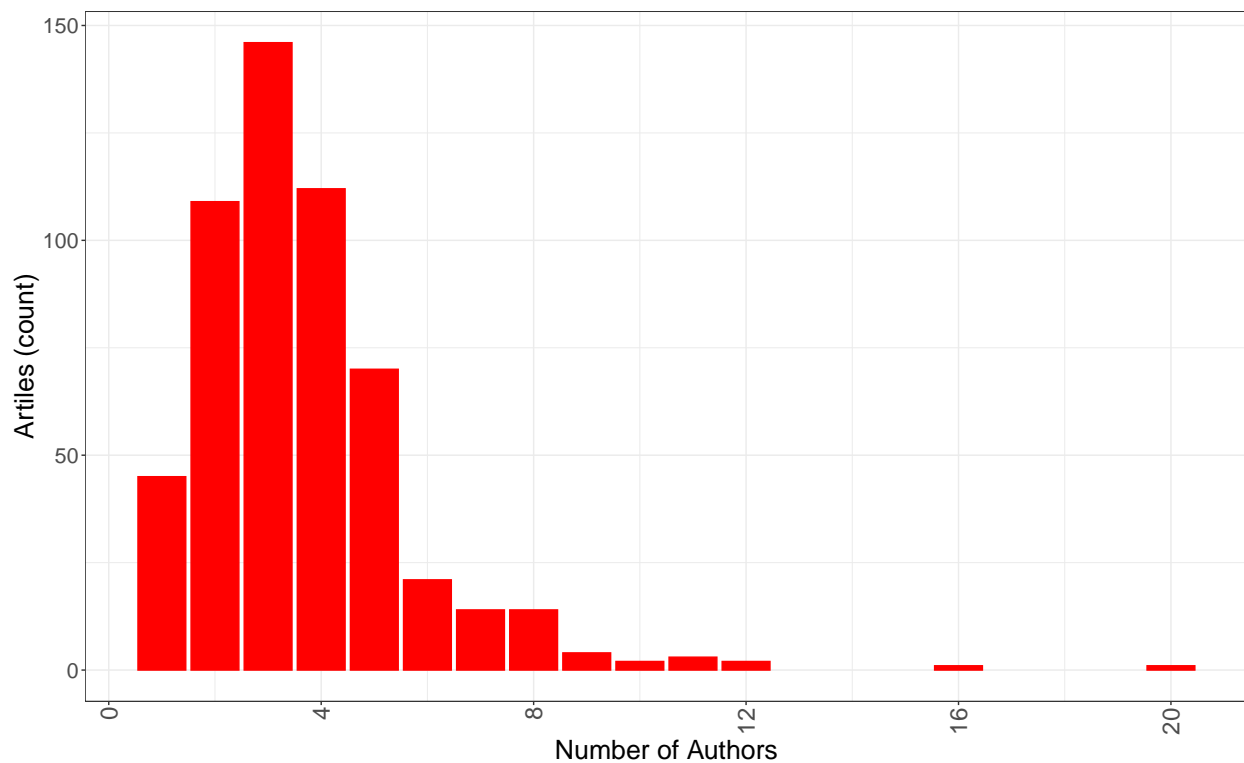Figure 3 caption: Histogram of article counts by number of authors. Y-axis: Articles (count) from 0 to 150. X-axis: Number of Authors from 0 to 20.
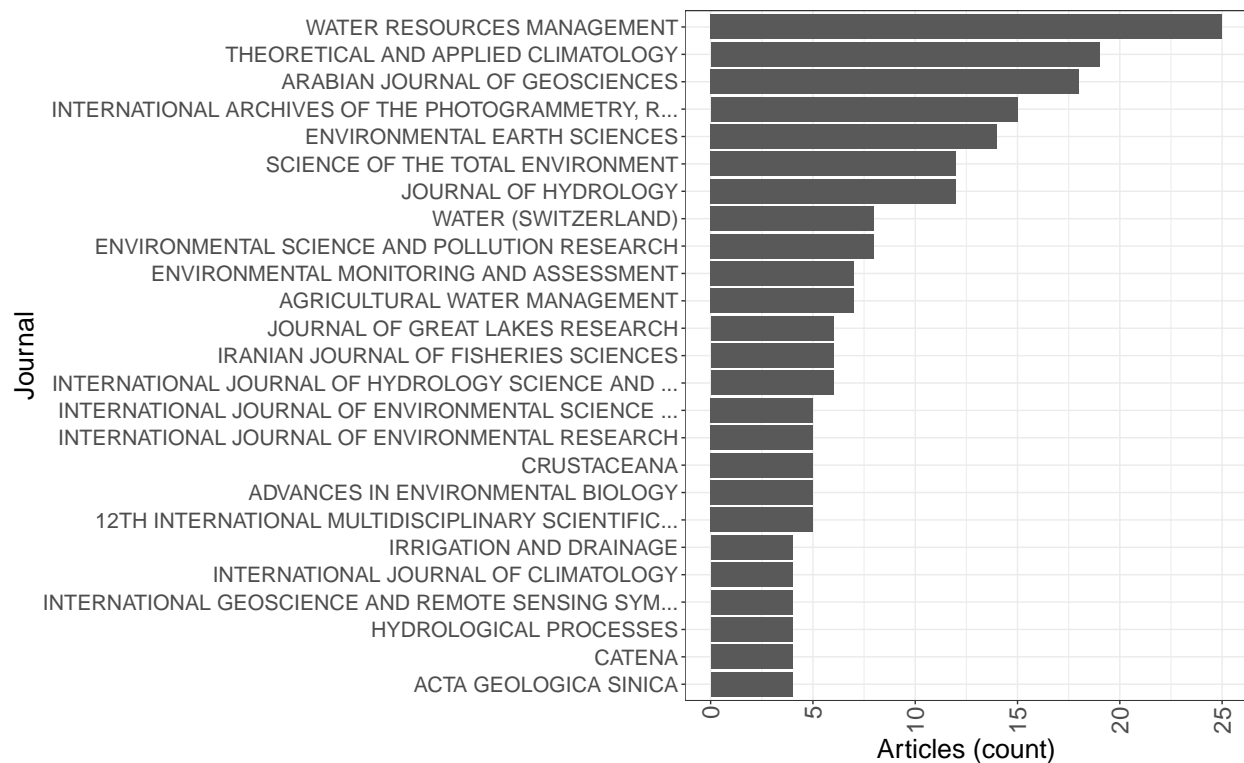
Figure 4. Most frequent journals

Figure 5. Author keyword frequency
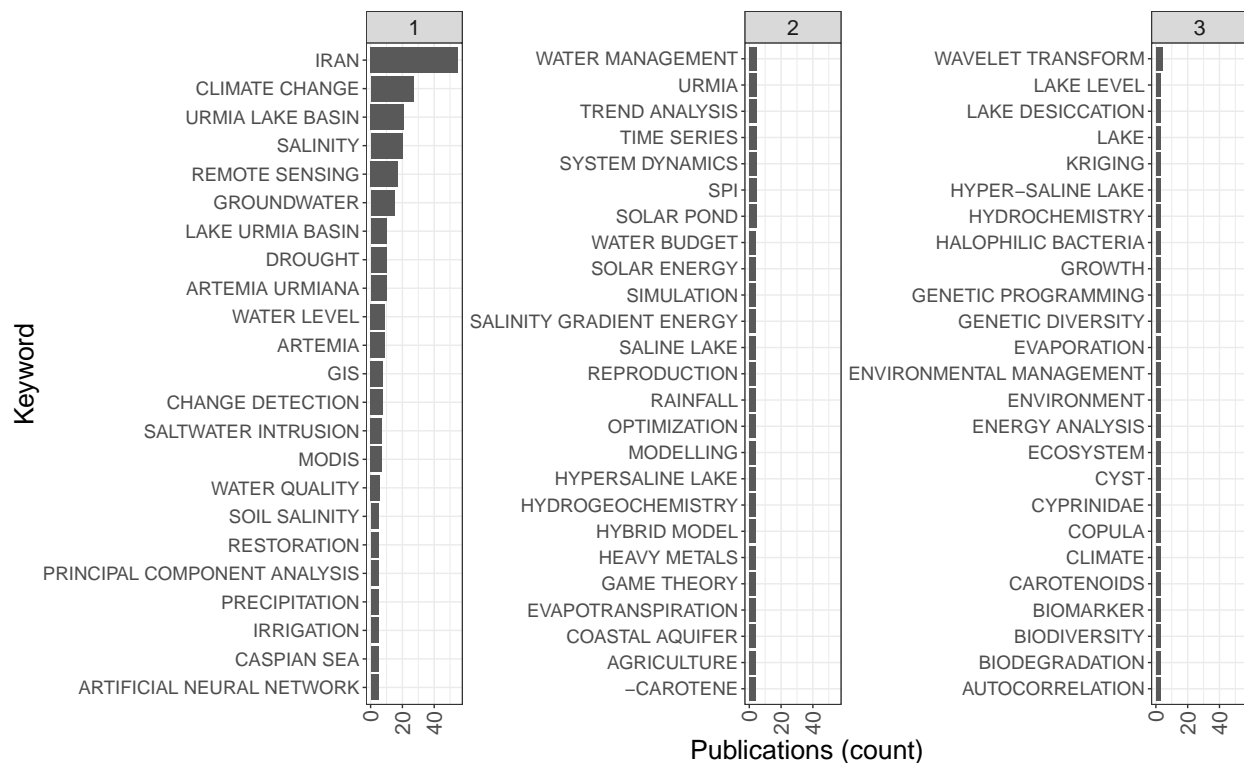
Figures 6 - 8. Network plots

Top–Authors' Production over the Time

Authors' Coupling

Keyword Co-occurrences

Figure 9. Historical citation network
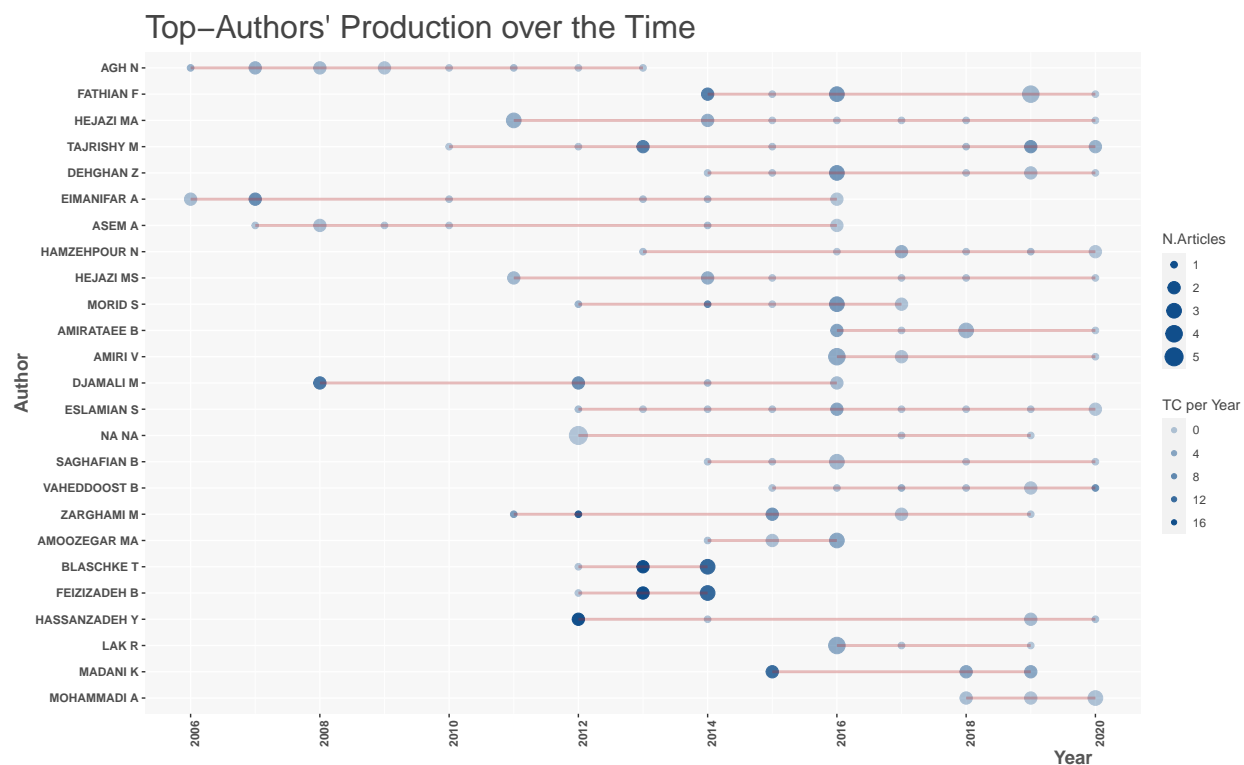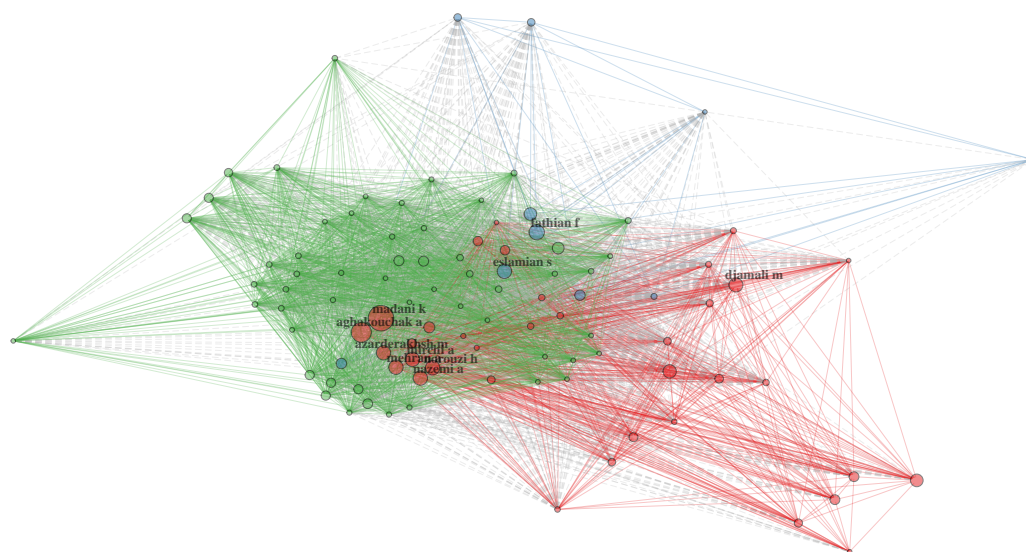
Historical Direct Citation Network