

Session 4

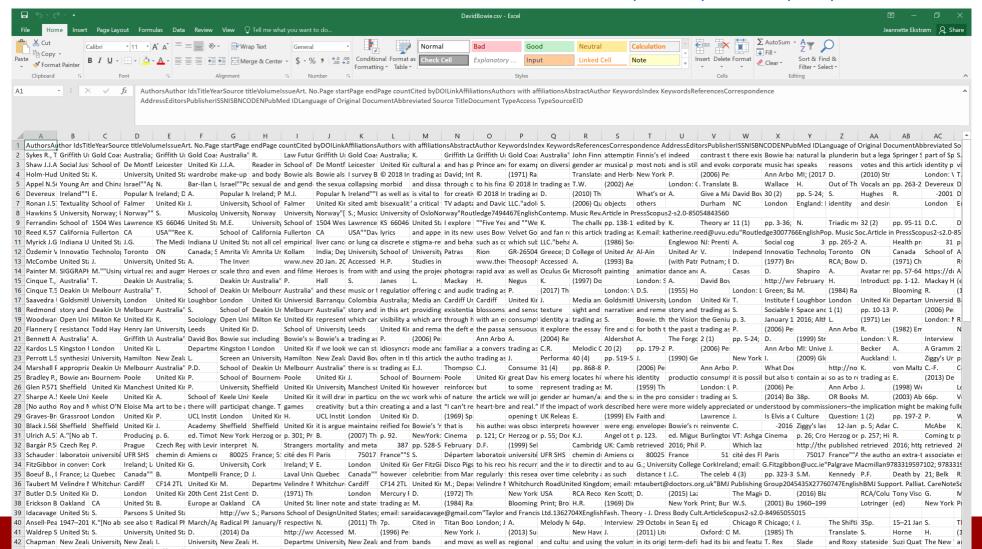
15 minutes of Data

ate DTU



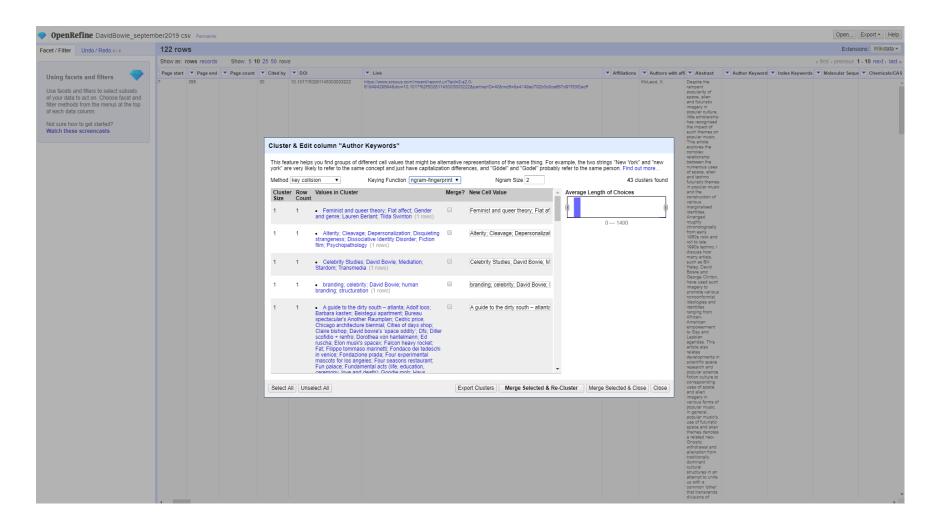
Opfølgning fra session 2...

http://scopus.com.proxy.findit.dtu.dk





Og session 3 – OpenRefine.org (data cleaning)





.. I dag handler det om "visualisering & præsentation"

Adgang til "dataset"

A data set (or dataset) is a collection of data. In the case of tabular data, a data set corresponds to one or more database tables, where every column of a table represents a particular variable, and each row corresponds to a given record of the data set in question....

https://en.wikipedia.org/wiki/Data_set

Scopus

http://scopus.com.proxv.findit.dtu.dk

Rensning af dataset

Data cleansing or data cleaning is the process of detecting and correcting (or removing) corrupt or inaccurate <u>records</u> from a record set, <u>table</u>, or <u>database</u> and refers to identifying incomplete, incorrect, inaccurate or irrelevant parts of the data and then replacing, modifying, or deleting the <u>dirty</u> or coarse data.

https://en.wikipedia.org/wiki/Data_cleansing



http://openrefine.org/download.html

Visualisering af dataset

Data visualization is

the <u>graphic representation</u> of <u>data</u>. It involves producing images that communicate relationships among the represented data to viewers of the images.

https://en.wikipedia.org/wiki/Data_visualization



https://www.vosviewer.com/download



Vi har ca. 1 time til dette – derfor Læringsmål ©

Learning Objectives

After the introduction the participants...

- Will know of and be able to start to work with VosViewer
- Can import search results from Web of Science or Scopus to VosViewer
- Can create simple bibliometric/network visualisations in VosViewer



Developed by Nees Jan van Eck and Ludo Waltman, CWTS

..... "The Centre for Science and Technology Studies (CWTS) is an interdisciplinary research institute at Leiden University that studies scientific research and its connections to technology, innovation, and society. Our research, bibliometric and scientometric tools, and evaluation expertise provide a solid basis for supporting research assessment and strategic decision making and for developing science policy."

https://www.cwts.nl/about-cwts



What is VosViewer really?

VOSviewer

- Software tool for visualizing (bibliometric) networks
- Built-in support for popular bibliographic databases
- Text mining functionality
- Layout and clustering techniques
- Advanced visualization features:
 - Smart labeling algorithm
 - Overlay visualizations
 - Density visualizations ('heat map')



Borrowed with respect from https://www.slideshare.net/NeesJanvanEck/vosviewer-a-software-tool-for-analyzing-and-visualizing-scientific-literature



Why is VosViewer worth looking into...??

Accident Analysis and Prevention 132 (2019) 105243



Contents lists available at ScienceDirect

Accident Analysis and Prevention

journal homepage: www.elsevier.com/locate/aap



Mapping the knowledge domain of road safety studies: A scientometric analysis



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ARTICLE INFO

Keywords:
Road safety
Scientometrics
Co-citation analysis
Citation network
VOSviewer
CitNetExplorer

ABSTRACT

As a way of obtaining a visual expression of knowledge, mapping knowledge domain (MKD) provides a vision-based analytic approach to scientometric analysis which can be used to reveal an academic community, the structure of its networks, and the dynamic development of a discipline. This study, based on the Science Citation Index Expanded (SCIE) and Social Sciences Citation Index (SSCI) articles on road safety, employs the bibliometric tools VOSviewer and CitNetExplorer to create maps of author co-citation, document co-citation, citation networks, analyze the core authors and classic documents supporting road safety studies and show the citation context and development of such studies. It shows that road safety studies clustered mainly into four groups, whose we will refer to as "effects of driving psychology and behavior on road safety", "causation, frequency and injury severity analysis of road crashes", "epidemiology, assessment and prevention of road traffic injury", and

https://doi-org.proxy.findit.dtu.dk/10.1016/j.aap.2019.07.019



Visualisation from prior article

https://doi-org.proxy.findit.dtu.dk/10.1016/j.aap.2019.07.019

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digallo a, 1997, brit j psychi
                                       al-sultan s, 2014, j netw comp
         american psychiatric associati
                                                         yamamoto t, 2004, accident ana
                                                            abdel-aty m, 2003, j safety re
        drummer oh, 2004, accident ana
        horne ja, 1995, brit med j, v3
                                     odero wilson, 2003, inj contro
                                                                  milton jc, 2008, accident anal
                                      lozano r, 2012, lancet, v380,
 hansotia p, 1991, new engl j m
                            world health organization, 200
                                                                        anastasopoulos pc, 2009, a
folstein mf, 1975, j psychiat
                                   hosmer d, 1989, appl logistic
 ball k, 1993, invest ophth vis
                                  clarke dd, 2006, accident anal lord d, 2010, transport res a-
                           evans I., 1991, traffic safety
                                                                  lord d, 2005, accident anal pr
                   ajzen i, 1991, organ behav hum
                reason j, 1990, ergonomics, v3
              lawton r, 1997, j appl soc psy
                                                         malo je, 2004, j appl ecol, v4
                                                      forman rtt, 1998, annu rev eco
VOSviewer
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Fig. 2. Density view of the document co-citation network.



VosViewer even keep track of papers that includes...

https://www.vosviewer.com/publications#applied-publications

Publications on applications of VOSviewer

Applications of VOSviewer and of the VOS mapping and clustering techniques can be found in the following publications:

- Mascarenhas, C., Ferreira, J.J., & Marques, C. (in press). University–industry cooperation: A systematic literature review and research agenda. *Science and Public Policy*. (paper)
- Flis, I., & van Eck, N.J. (in press). Framing psychology as a discipline (1950–1999): A large-scale term co-occurrence analysis of scientific literature in psychology. (paper)
- Sherren, K., & Kent, C. (in press). Who's afraid of Allan Savory? Scientometric polarization on Holistic Management as competing understandings. *Renewable Agriculture and Food Systems*. (paper)
- Alhuay-Quispe, J., & Hernandez, R.M. (in press). Cuban Letters to Editor published in medical journals indexed at Scopus Database. *Investigación en Educación Médica*. (paper)
- Park, J.Y., & Nagy, Z. (2018). Bibliography data for thermal comfort and building control research – Keywords co-occurrences relationship and citation network from 5536 articles. *Data in Brief*, 17, 529-532. (paper)
- Krauskopf, E. (2018). A bibiliometric analysis of the Journal of Infection and Public Health: 2008–2016. *Journal of Infection and Public Health*. 11(2), 224-229 (paper)



10



Which maps to create in VosViewer

Network data

-> different types of networks can be constructed

Bibliographic data

- -> can be used to construct a network of co-authorship, co-occurrence, citation, bibliographic coupling, or co-citation links
 - A bibliographic coupling link is a link between two items that both cite the same document.
 - A co-citation link is a link between two items that are both cited by the same document.

Text data

-> can be used to construct a network of co-occurrence links between terms. Terms are identified in the text data using natural language processing algorithms

https://www.vosviewer.com/documentation/Manual VOSviewer 1.6.13.pdf

11



From page 25-26 in the VosViewer Manual

https://www.vosviewer.com/documentation/Manual_VOSviewer_1.6.13.pdf

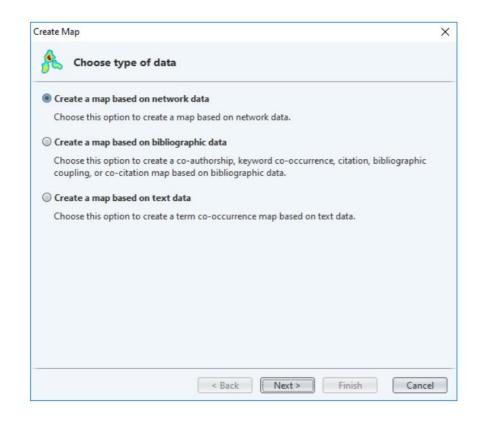


Table 1. Summary of the main options provided by the Create Map wizard for creating a new map.

Type of data	Data source	Links	Items
Network data	VOSviewer, GML, and		
	Pajek files		
Bibliographic data	Bibliographic database	Co-authorship	Authors
	files		Organizations
	Reference manager files		Countries
	APIs	Co-occurrence	Keywords
		Citation	Documents
			Sources
			Authors
			Organizations
			Countries
		Bibliographic coupling	Documents
			Sources
			Authors
			Organizations
			Countries
		Co-citation	Cited references
			Cited sources
			Cited authors
Text data	VOSviewer files	Co-occurrence	Terms
	Bibliographic database files		
	Reference manager files		
	APIs		

12



From Web of Science to VosViewer

Make sure Web of Science Core Collection database is selected.

Choose the **Save to Other File Formats** option, and choose either the Plain Text or the **Tab-delimited file format.**

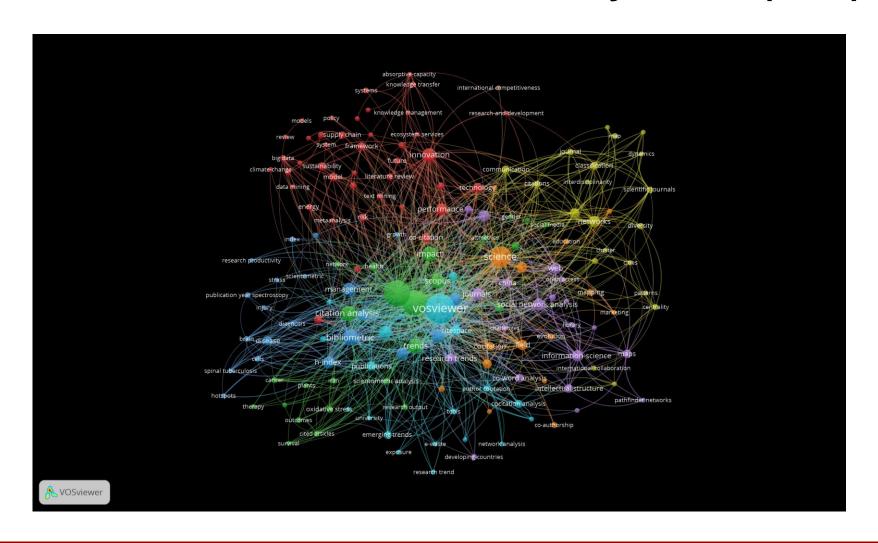
Although VOSviewer supports both file formats, it is recommended to use the tab-delimited format.

When asked which data elements to download, choose the Full Record and Cited References option.



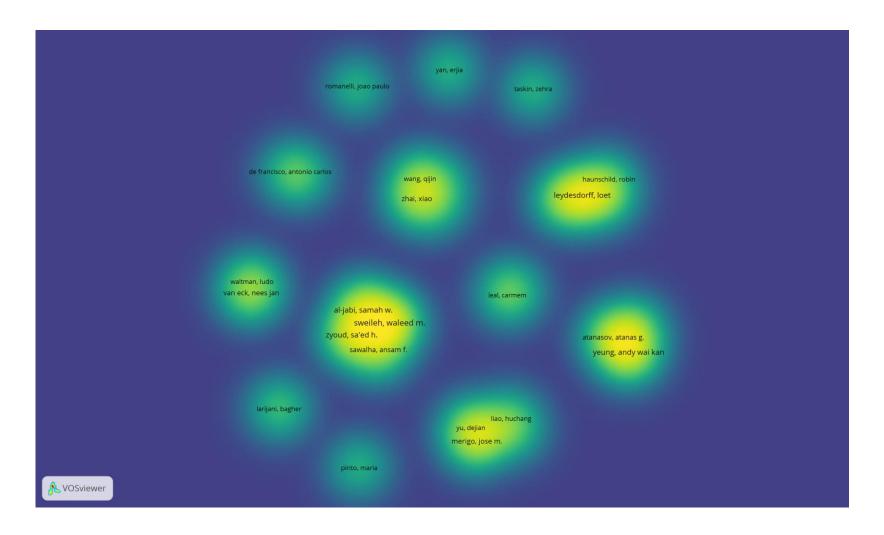


Co-occurences visualisation on keywords (wos)





Co-authorship / authors (wos)



Date DTU Title

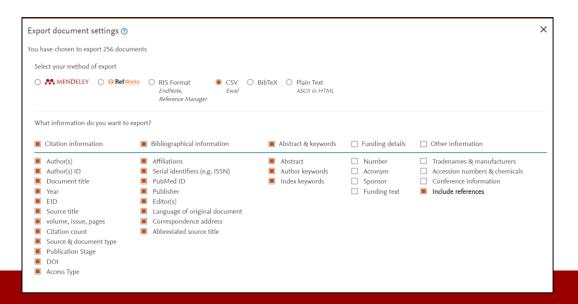
15



From Scopus to VosViewer

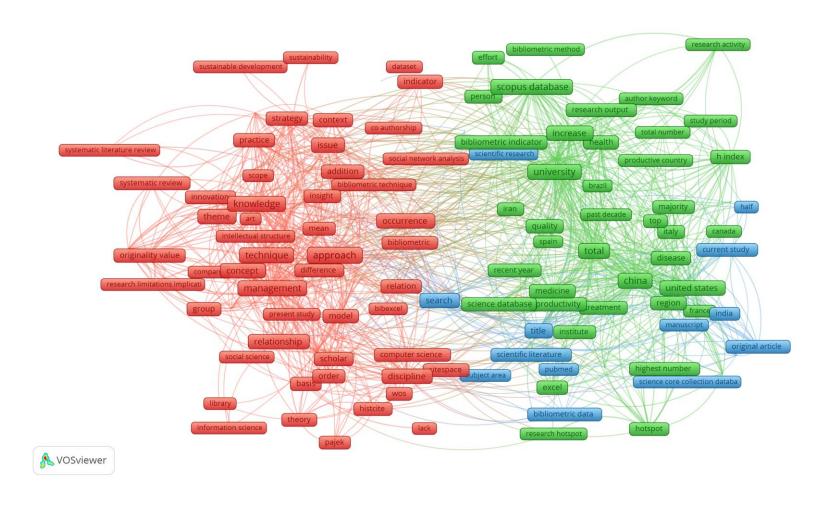
To download (meta)data from Scopus, choose the CSV export option

Make sure that the data is downloaded in a CSV file and that all data elements are included





Map based on text clusters... (scopus search)





Supplementary literature and tutorials

- A Tutorial for VosViewer by Clement Levallois
 https://seinecle.github.io/vosviewer-tutorials/generated-pdf/importing-en.pdf
- The official VosViewer Manual https://www.vosviewer.com/documentation/Manual_VOSviewer_1.6.13.pdf
- Cases that uses VosViewer: http://aida.tudelft.nl/toolbox/aida-booklet
- Book Chapter: https://www.vosviewer.com/getting-started#vosviewer-book-chapter
- Curating data with OpenRefine to visualize them in VOSviewer https://bit.ly/2H9I31z
- https://seinecle.github.io/vosviewer-tutorials/generated-slides/importing-en.html



Now time for hands-on and workshop

