Geo-mapping the Brazilian Research Groups in Information Science

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Introduction

Due to advances in technology, nowadays the scientometric studies have seen an increase in new tools to reinforce the analysis of the various characteristics from scientific production, with highlight to those developed by the Social Network Analysis (Freeman, 2006, Wasserman & Faust, 1994). Several computer programs easy-to-use for constructing and viewing maps are available today, allowing the graphic representation in maps of many phenomena, using data from specific sources (Leydesdorff & Raffols, 2009), enhancing the capabilities of researchers in their analytical tasks. This work shows the use of NetDraw, a non-profit and free available social network analysis software (Borgatti, 2010) in mapping the Brazilian research groups in Information Science, combined with the Google Maps to projecting their characteristics in the national territory.

Purpose

We aimed to show the current spatial configuration of the Brazilian research in the Information Science field, through a geo-mapping of the research groups registered in the Diretório Nacional dos Grupos de Pesquisa (Directory of the National Research Groups) managed by Conselho Nacional de Desenvolvimento Científico e Tecnológico – CNPq (Brazilian National Council to Scientific & Technological Development), which collects data from national research community, combined with the Google Maps to verify aspects as number of groups, thematic studies, institutions and their localization in the national regions.

Methods

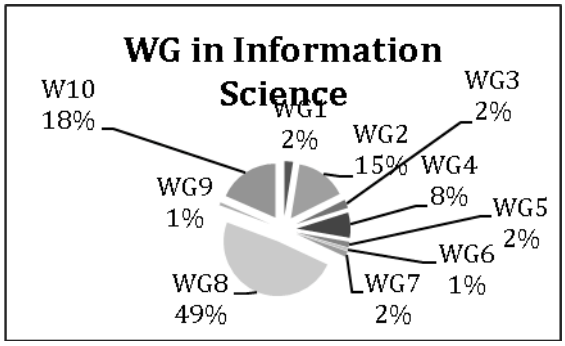
Data's retrieval from the Brazilian research groups in Information Science was carried out using the CNPq Directory database and the search was performed with the titles of the 10 Working Groups (WG) adopted by the Associação Nacional de Pesquisa e Pós-Graduação em Ciência da Informação – ANCIB (National Association of Research and Post-Graduating in Information Science) as key words. The 10 ANCIB's GW are described below:

- WG1: Epistemological & Historical Studies of Information Science
- WG2: Organization & Representation of the Knowledge
- WG3: Mediation, Circulation & Appropriation of the Information
- WG4: Information Management & Knowledge in Organizations
- WG5: Politics & Economics of Information
- WG6: Information, Education & Labor
- WG7: Production and Communication of Information in ST&I
- WG8: Information & Technology
- WG9: Museum, Heritage & Information
- WG10: Information & Memory

Research groups undergoing these key words registered in CNPq Directory but from subject areas different of the Information Science were excluded. With the data obtained a list was created to feed

the mapping program NetDraw, generating relationship maps that were projected on the Brazilian territory through Google Maps.

Findings



Graphic 2. Research Groups in Information Science

Table 1. WG X Brazilian Institutions X Regions

Regions	# Institutions	# WG
North	2	2
Northeast	10	26
Midwest	4	20
South	7	25
Southeast	15	45

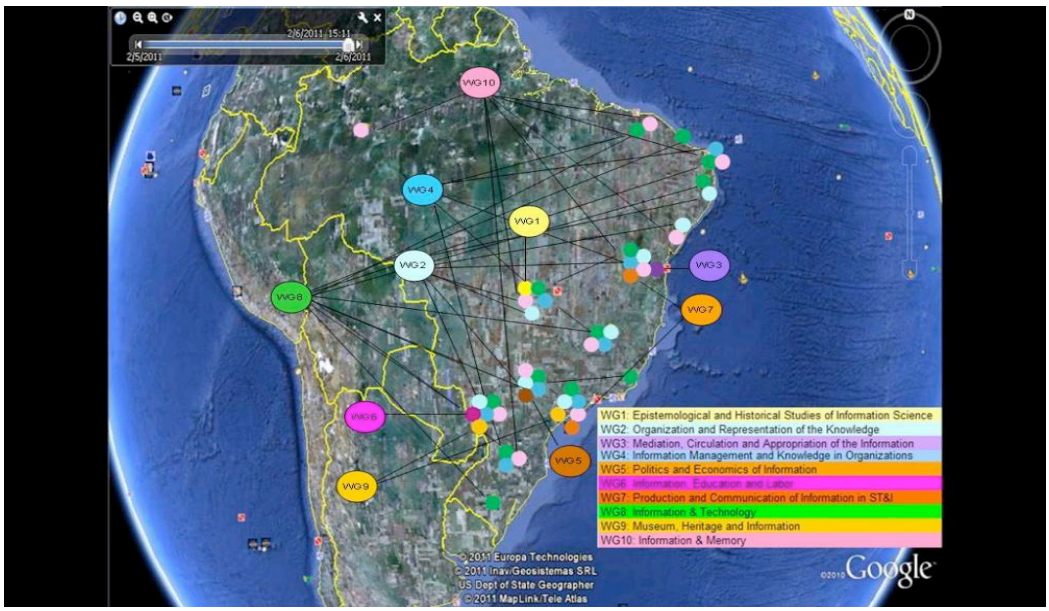
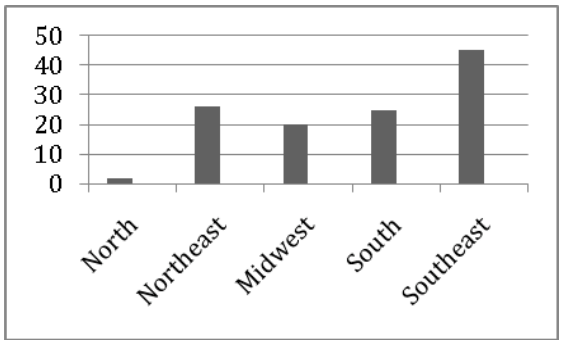


Figure 1: Geo-mapping of the Brazilian research groups in Information Science



Graphic 3. Research Groups at Brazilian regions

Discussion

Data retrieval on research groups in the CNPq database returned in total 696 groups from different fields such as Education, Business Administration, Computer Science, etc., involved with the searched thematics. Of these, only 118 were in the area of Information Science and from this set, the largest research group is the WG8 - Information & Technology, with 58 groups (49%), followed by WG10 - Information & Memory, with 22 groups (18%), WG2 – Organization & Representation of the

Knowledge, with 18 groups (15%), and WG4 – Information Management & Knowledge in Organizations, with 9 groups (8%). Other subject thematics did not have good representation in number of groups.

Regarding the spatial distribution of these groups in Brazil, most groups are concentrated along the east coast, with 45 groups in 15 institutions in the Southeastern region, 26 groups from 10 institutions in the Northeast, 25 groups from 7 institutions in the Southern region, 20 groups of 4 institutions in the Midwest and only two groups of 2 institutions in the Northern region. Research groups in the countryside have not been observed.

Conclusion

The projection of the data from the research groups in Information Science through a geo-mapping allowed to observe in an easier and immediate manner the spatial configuration of research groups in Information Science in Brazil. The association of software NetDraw with Google Maps was useful to identify gaps and visualize regional distribution of the research in this area.

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