

Visual comparison of differences in understanding to spatially oriented infographics

Jakub Konicek ^{a,*}, Mariane Félix da Rocha ^b

^a Department of Geoinformatics, Palacký University Olomouc, 17. Listopadu 50, 779 00 Olomouc - jakub.konicek@upol.cz*

^b Geography Department, Federal University of Paraná, Curitiba, Brazil. - mariane.fr1306@gmail.com

* Corresponding author

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Abstract:

Infographics, a very powerful tool for effectively transferring various information, is a well-known term worldwide. Based on theoretical research counting scientific publications from the information visualization community, data visualization experts, and cartographers, there is visible inconsistency in a pure definition of infographics and categorization. Most people can somehow describe it, and it is familiar with identifying this term as a catchy information visualization without any further assistance. Nevertheless, it is possible to identify the common idea of infographics that can be interpreted as a visualization, including several graphical, attribute and visual elements.

There is a visible increase in the usage of infographics terminology in cartographic society, especially in current map production. Authors try to enrich maps with additional data visualizations, pictures, or thematically oriented illustrations by presenting spatially oriented information in wider contexts. Thus conceived, map-oriented visualization started to call geo-infographics, spatial infographics, or just infographics instead of map posters. There comes a question: How can we identify an infographic or map? Can we see a difference between spatially oriented (geo)infographics and maps? Is the understanding to spatially oriented infographics the same in different groups of people?

In this research, we tried to identify the key elements of spatially oriented infographics, which could distinguish from the map's long-known definition. Thanks to international collaboration via the UNIGOU Remote Program between the Federal University of Paraná, Brazil, and Palacký University Olomouc, Czechia, we could extend this research with the comparison of understanding of the topic of the infographic between these two international groups.

We performed the research in the style of a digital survey at the limesurvey.org platform. The original survey was designed in English, but we designed two specific language mutations according to understanding limitations in Brazil and the Czech group. Limesurvey interface enables a collection of all the answers from both language versions into one database.

The survey consisted of four thematic areas – a) informational, b) theoretical, c) identificational and d) understanding of meaning. A) an informational part was designed to specify personal information about the respondent to support further analysis for properly categorizing collected data. We asked about age groups, education or previous knowledge of infographics or cartography. B) theoretical part focused on determining definitions of infographics, spatial infographics, and maps from the respondents. Four questions tried to find out a user's point of view on the difference between the mentioned topics. C) identification part focused on practically identifying concrete graphical elements (map, data visualization, text, picture, heading etc.) on independently selected visualization. These parts also tried to unhide perspectives about comprehension, interpretation and understanding of the content of infographics and maps. Thanks to the custom extension of the Limesurvey, we collected positions and user interaction at the selected place in the visualization. D) understanding part of the survey aimed to test the ability to understand without knowledge of the written text's language only by using graphical content. For this purpose, Chinese, Japanese or Russian visualization was used to eliminate the possibility of understanding the written content.

The article presents the results of this join survey, which took more than 300 participants in different age groups, levels of education and deeper knowledge about infographics or maps. All answers were analyzed and underwent to visual analysis process to identify hidden connections between answers. We visualized interactive questions through QGIS thanks to the saved coordinates of user interaction with the visualization. These outputs and achieved knowledge were visualized into an infographic presentation which can serve as a base for further research in this area of interest.

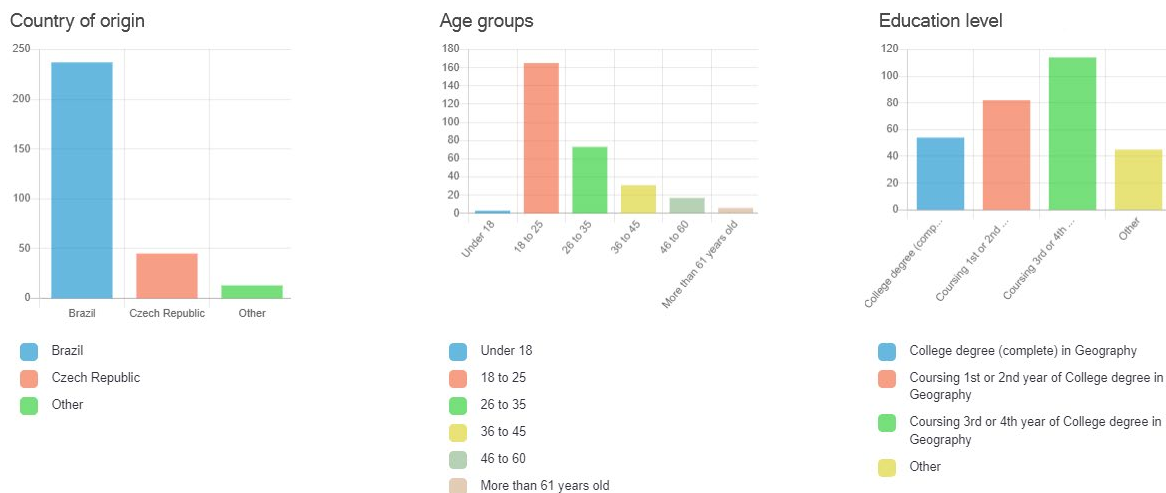


Figure 1. Structure of questionnaire survey respondents

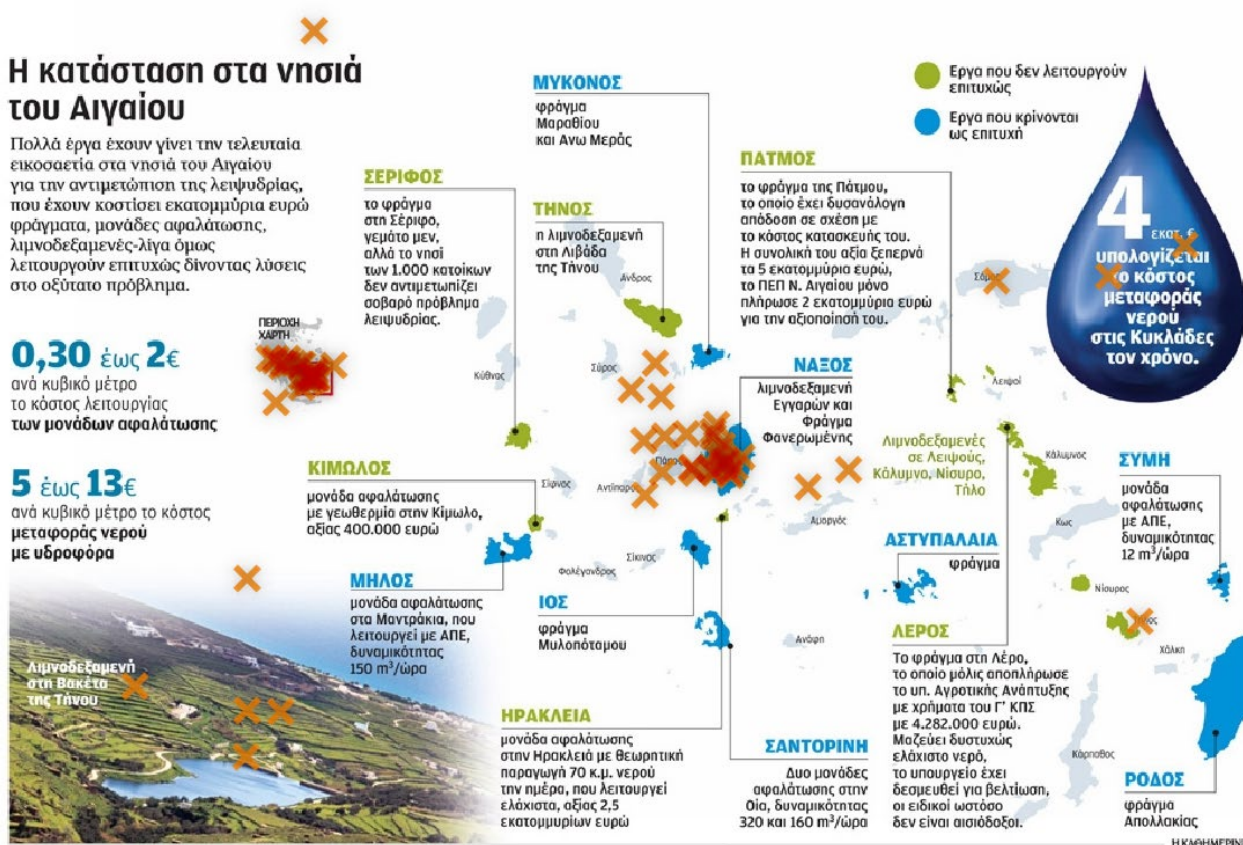


Figure 2. Visualization of users' identification of map in a given task

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