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Comparing Fuzzy Collective Maps to Explore Small Groups' Strategies and Cognitive Styles

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The use of fuzzy cognitive maps (FCMs) is increasingly common in any field in which it is necessary to investigate the relationship between decision makers' intentions and choices that need to be made under conditions of increasing uncertainty. Our study shows how collective fuzzy maps can be useful to compare the cognitive representations of four small groups that were involved in as many brainstorming practices. Such method was aimed at reconstructing members' comprehensive viewpoint of a shared problem-solving setting. The research did not require neither a preliminary stage of elements elicitation nor a subsequent arrangement of constructs (like in any repertory grid technique for example), but a single step that reproduced reasoning paths and expected consequences of intervention policies on a specific scenario (as it happens in the oval mapping technique). On the one hand, the comparison of the four maps resulted in graph theory standard indices of each fuzzy cognitive map (hence to show the concept contribution in the FCM). This helped us highlight the role of common issues in developing specific territorial policies and show a possible explanatory framework of the current status. On the other hand, with a kind of process tracing technique we were also able to identify various maps' singularities that allowed for broader thoughts and considerations on ideas/policies that were not convergent in the different groups.

Keywords

textual data analysis and network methods; fuzzy cognitive maps; graph theory

Topics

- Textual data analysis and network methods

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