

Title: Causal layered analysis of the current state of inter-organizational knowledge sharing in Tehran smart city: the study of information and knowledge organizations

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Introduction: The design, creation, and development of smart cities rely on the infrastructure and capacity to share and use data, information, and knowledge produced or collected between organizations. In this regard, the current research aims to analyze the causes affecting the formation of the current state of inter-organizational knowledge (assets) sharing in the information and knowledge organizations located in Tehran smart city based on the four layers of litany, systemic, discourse, and metaphor in the causal layered analysis (CLA).

Methodology: In terms of the purpose, this research is applied research with a descriptive nature, which was conducted with a mixed-method approach. In the qualitative part, the causes affecting the current state of inter-organizational knowledge sharing of organizations in the field of information and knowledge, such as the National Library and Archives of I.R. Iran, the Iranian Research Institute for Information Science and Technology (IranDoc), the organizations in charge of the public libraries and the university libraries of the country in Tehran was gathered through a semi-structured interview with 14 managers of information and knowledge organizations; In the quantitative part, the identified causes were validated using a researcher-made questionnaire using the Delphi technique (in two rounds) and the consensus opinion of 22 experimental experts. In the current research, "Kendall's coefficient of coordination" was used in SPSS software to determine the level of consensus among panel members. In the quantitative part, the face and content validity of the questionnaire was confirmed using the opinions of 7 specialists and experts of related fields to the current research. To measure the reliability of the instrument, Cronbach's alpha coefficient was used. The results showed that Cronbach's alpha coefficient for the first and second-round questionnaires is higher than 0.7. Therefore, the questionnaires have the necessary reliability.

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Data analysis has been done in the qualitative part by layered causal analysis and in the quantitative part using descriptive statistics indicators and Excel and SPSS software.

Main findings: The analysis of the data from the interviews led to the formation of 104 causes in the form of 39 causes in the litany layer, 25 causes in the systemic layer, 20 causes in the discourse layer, and 19 causes in the metaphor layer; After the second round of Delphi, 90 causes were validated in the form of 31 causes in the litany layer, 25 causes in the systemic layer, 19 causes in the discourse layer and 8 causes in the metaphor layer. In total, the causes of "Bipolar or hierarchical knowledge", in the metaphor layer and "inability of organizations to resolve conflict of interests" and "lack of necessary infrastructure" in the systemic layer had the highest mean; The causes of "selection of senior managers of information and knowledge centers based on political orientation", "lack of attention to becoming knowledge-based" and "viewpoint and approach of the organization leader" in the discourse layer had the next mean; The causes of "lack of common/centralized data and knowledge base and platform" and "non-implementation of knowledge management and inter-organizational communication" in the litany layer were ranked third in terms of the mean.

Discussion and conclusions: Since one of the first steps in smartening is to identify the current state of cities and different players in this field from different aspects, the present study tried to examine the current state of organizations in the field of information and knowledge in terms of inter-organizational knowledge sharing based on causal factors and elements. Undoubtedly, in the next steps, planning should be done to improve the current state based on the infrastructure and then the necessary foundations. In other words, in order to solve the problems and challenges of the current state of inter-organizational knowledge sharing in information and knowledge organizations, it is suggested that scenarios designed and implemented with a priority on creating discourse and changing the metaphors of actors in this field with a focus on solving the problems caused by the bipolar or hierarchical knowledge metaphor and Discourses on the leadership approach of organizations and the selection of managers and the knowledge-based approach.

Keywords: Inter-organizational knowledge sharing, Inter-organizational information sharing, Inter-organizational data sharing, Smart life, Smart people, Libraries and Information Centers