Occurrence of citizen complaints concerning drinking water: a case study in Quebec City

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**ABSTRACT**

Understanding complaints regarding tap water is a useful tool for improving management of water quality. This paper presents an analysis of the spatio-temporal occurrence of citizen complaints concerning drinking water in three distribution systems of Québec City (Canada). The study is based on an analysis of complaint data by census unit within the territory under study (spatial dimension) and by week over a period of three years (temporal dimension). Spatial and temporal complaint variability was associated through Poisson regression analysis to parameters of water quality (at the source and within the distribution system), meteorological factors and socio-economic characteristics of the population. The results show that variability of complaints is associated with distributed water quality. Modelling results highlighted the fact that the socio-economic portrait of the population has a great influence on the spatial distribution of complaints. Also, the study demonstrates that the temporal variability of complaint occurrence is affected by the variability of raw and distributed water quality. Recommendations are provided to enhance the analysis of drinking water complaints for future studies.

**Keywords:** complaints; drinking water; perception; spatial analysis; temporal analysis; water quality