Urban Security Analysis in the City of Bogotá Using Complex Networks

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Abstract

In an increasingly globalized and borderless world, fast access to reliable information about cities has become almost a necessity. From tourism to business trips and emigration, one should have a good knowledge about the destination to avoid problems and to ensure a good adaptation to the local region. As such, by exploring complex networks concepts and open data initiatives, this study focuses on the city of Bogotá as a model for security analysis, defined by official crime records and social strata percentages. In addition, a comparison of the previous data can be made with the location of police stations, as well as a urban traffic analysis. Finally, it's possible to do a regional quality classification and a quicker and safer route recommendation, in function of the reliable data extracted from databases, obtained from specialized institutions, with national accreditation for this work.

Keywords: Big data science, criminal records, network models, network visualization, open data, regional quality classification, safety analysis, social groups, urban network, urban security, urban traffic.
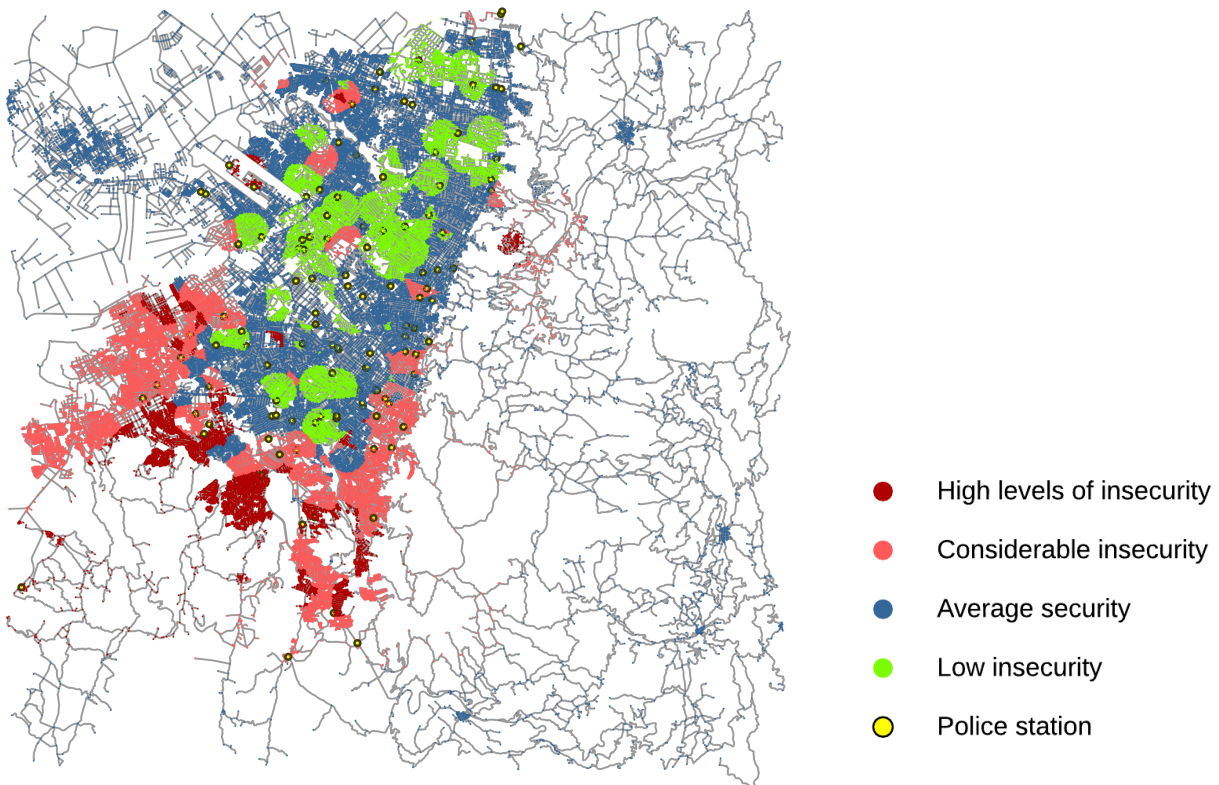
Figure 1: Network graph representing the city of Bogotá, Colombia, as well as its surroundings, having security information represented in colors.