Exposé of data analysis exercise

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### Motivation

The longstanding conflict in Colombia has had profound and multidimensional consequences for the country’s population, particularly in rural and economically vulnerable areas. Humanitarian, political, social, environmental, and economic impacts have significantly shaped the characteristics and development trajectories of municipalities across the nation.

Despite the National Government’s efforts to achieve sustainable peace, conflict dynamics persist—primarily linked to the presence and trafficking of illicit crops. These dynamics raise critical questions about the role of local development and governance in mitigating or exacerbating conflict. Understanding how spatial patterns of underdevelopment relate to conflict zones can inform both policy and peacebuilding efforts. Therefore, the aim of this research is to understand the current spatial dynamics of the conflict in Colombia and their relationship to municipal development outcomes.

### Specification of the Task

The project seeks to perform a spatial correlation analysis between development indicators and conflict-related variables in Colombia. This involves integrating municipal-level development data with indicators of violence and displacement to identify statistically and spatially significant relationships.

The key task is to map and measure the co-occurrence of poor development scores—such as low governance, equity, or innovation—and conflict indicators, such as coca cultivation zones and displacement hotspots. This will be complemented by spatial clustering and hotspot analysis to detect patterns and regional trends.

### Data to Be Used

The analysis will be based on the municipal and departmental data from the **Modern Cities Index (Índice de Ciudades Modernas - ICM)**, which includes the following sub-indices for the period of 2010 and 2022:

* **Productivity, Competitiveness, and Economic Complementarity Index**
* **Governance, Participation, and Institutions Index**
* **Equity and Social Inclusion Index**
* **Science, Technology, and Innovation Index**
* **Security Index**
* **Sustainability Index**

In addition, conflict-related data will include:

* Coca cultivation areas
* Data on internally displaced persons
* GeoJSON file containing population data and administrative boundaries