Capstone two – Project proposal

Problem statement formation (Hypothesis):

What is the evolution of the impact of catastrophic events on the commercial aerial traffic in Canada, between 2001 and 2018?

Context:

The number and severity of catastrophic events have considerably increased in recent years, and the negative impacts are significant for several industries, particularly for aerial transportation. In order to deal with this problem and consider a possible acceleration of these phenomenon related to climate change, it is necessary to understand how catastrophic events affect aerial traffic, especially to offset economic losses caused by interruptions, breakages, etc.

Criteria for success:

The success constraint is the completion of the verification of the existence of a relation between the amount and types of catastrophic events with the aerial traffic. If a relation is identified, trends will be explored. This is a first step towards an hypothetical multi-level problem in which the cost of the impact of catastrophic event on the aerial traffic could be explored (this is out of the scope of Capstone Two).

Scope of solution:

The analysis is restricted to Canadian territory, as well as to commercial flights carrying passengers.

Constraints within solution space:

The datasets may need a lot of cleaning, and it will be necessary to make a coherent link between the two datasets.

Stakeholder(s) to provide key insight:

M. Ricardo D. Alanis-Tamez, mentor for the Springboard Data Science Career Track, is the stakeholder for the project.

Data sources are required:

Two datasets are required to answer this question, which are 1) the "Canadian Disaster Database – Dataset"[1]; and 2) the "Operating and financial statistics for major Canadian airlines, monthly"[2]. Both datasets are open access. The first dataset is from the Government of Canada, while the second is from Statistics Canada.

Deliverables:

Data manipulations will be available in the form of jupyter notebooks, and the results of the project will be submitted in a report and a slide presentation.

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[1] Government of Canada, Canadian Disaster Database, https://www.publicsafety.gc.ca/cnt/rsrcs/cndn-dsstr-dtbs/index-en.aspx. For the provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Québec. Selection of meteorological and geological disaster between 2000 and 2022.

[2] Statistics Canada. Table 23-10-0079-01 Operating and financial statistics for major Canadian airlines, monthly, https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2310007901&cubeTimeFrame.startMonth=01&cubeTimeFrame.startYear=2000&cubeTimeFrame.endMonth=01&cubeTimeFrame.endYear=2022&referencePeriods=20000101%2C20220101&request_locale=en.