

Data 551 Report

Visualizations about the Urban Social Disorder Events

1. Introduction

In this project, our group analyzes and visualizes urban social disorder events among 4 regions by 6 plots, including one heatmap, one line plot, one dot map, one stacked bar chart and two pie charts about 3 aspects: total number of urban social disorders, death casualty, and causes of social disorders.

2. Data Preparation

During the data processing, firstly, we change the date code 99 to unknown. Then, we change problem type from coded numbers to actual type names. Next, we change NDEATH numbers to a fixed value. Also, we change NPART coded numbers to actual participant numbers. Last, we calculate which country has most events at a specific year and save processed data to excel.

3. Visualization Results

At first, we analyze the total number of urban social disorder events with two plots: one heatmap and one line plot.

- *Which City and Country had the highest Number of Social Disorders Events?*

In the Heatmap of Social Disorders Events in Developing Countries' Cities, the yellow points present the events that happened for the 1960-2014 period. The deeper the color of the points is, the more incidents that occurred in that place. The deepness of the color on the map indicates the number of events that took place in the countries. According to the map, we can find Baghdad was the city that was having most social disorders events from 1960 to 2014, which cause Iraq became the country that has most social disorders events in this period, followed by cities Beirut, Karachi, and Kabul.

- *Which Developing Country is the Major Contributor to Social Disorders Events Per Year?*

In the Line Plot of Social Disorders Events in Developing Countries over time, the labels or the colors represent the developing country that occurs the most social disorders events in a specific year. From the chart, we can find the lowest number of events that happened in 1963, and the peaks hit in 2013 with the highest contributed country was Iraq. However, the country which reaches the highest number of events took place is rotated with the month changed.

Regarding the death causality, we come up with two plots: one dot map and one stacked bar chart. Both of them have an effective filter in choosing the year that we are interested in. And colors in each bar represent the number of deaths in each region, including Asia, Latin America, the Middle East and North Africa, and Sub-Saharan Africa.

- *What is the Number of Deaths in Each capital or Major City of the Developing World?*

In the Dot Map of Number of Deaths in Developing Countries' Cities, the sizes of circles represent the total amount of deaths. The larger circle occurs, the greater the number of deaths is. According to our dot map, an event that has the largest number of deaths occurred in Kigali, Rwanda, which resulted in 500959 records of deaths. However, three events result in no deaths, which were located in Shanghai, Singapore, and Brasilia respectively.

- *How Does the Number of deaths change in Each Region Over 1960-2014 period?*

In the Stacked Plot of Number of Deaths in Different Regions Over Time, we label some events that cause a large number of deaths with their names. According to the stacked bar chart, the Rwandan genocide caused the highest total number of deaths, which is 503522, in 1994, followed by Black September in 1970, First Congo War in 1997 and Vietnam War in 1968, which resulted in 10412, 7242 and 6023 records of deaths respectively.

- *How many people participated in each problem type of social disorder? And how many died in each type?*

Lastly, we focus on the cause of social disorders. These two pie charts show the number of participants and the number of deaths per problem type respectively. The pie graph on the left shows that, from 1960 to 2014, in 55 years time period the urban social disorder type with the largest number of participants is Organized Demonstration, which total s involved around 230 million people. Followed by Organized Demonstration is Spontaneous Violent Riot and Spontaneous Demonstration, in which around 38 million and 40 million people took part respectively. The pie chart on the right shows that in total 647, 7517 people died in the same period in these urban social disorder events. The most serious category is Armed Battle/ Clash, which killed 547 thousand participants. The problem type in the second rank is General Warfare, the number of death total in this kind of social disorder is 33 thousand. Then, 17 thousand and 15 thousand were killed in Armed Attack and Spontaneous Violent Riot. The comparison of these two charts shows that generally, demonstration got the most number of participants, while the number of the most death casualty was caused by armed battle, war or riots.

Reference

Urdal, Henrik & Kristian Hoelscher, 2012. 'Explaining urban social disorder and violence: An empirical study of event data from Asian and Sub-Saharan African cities', International Interactions 38(4): 512–528.