

Understanding societal well-being through the eyes of the news world media

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Abstract

Societal **well-being** is an important value for people's lives and it contributes considerably to the societal progress. It has been traditionally captured with surveys and during the last decades innovative approaches have been applied for its measurement. **Global Peace Index** is an indicator, which measures well-being in terms of **peace** and **safety**. This study suggests the potential measurement of this index through the **GDEL**T data set.

The dimensions of well-being

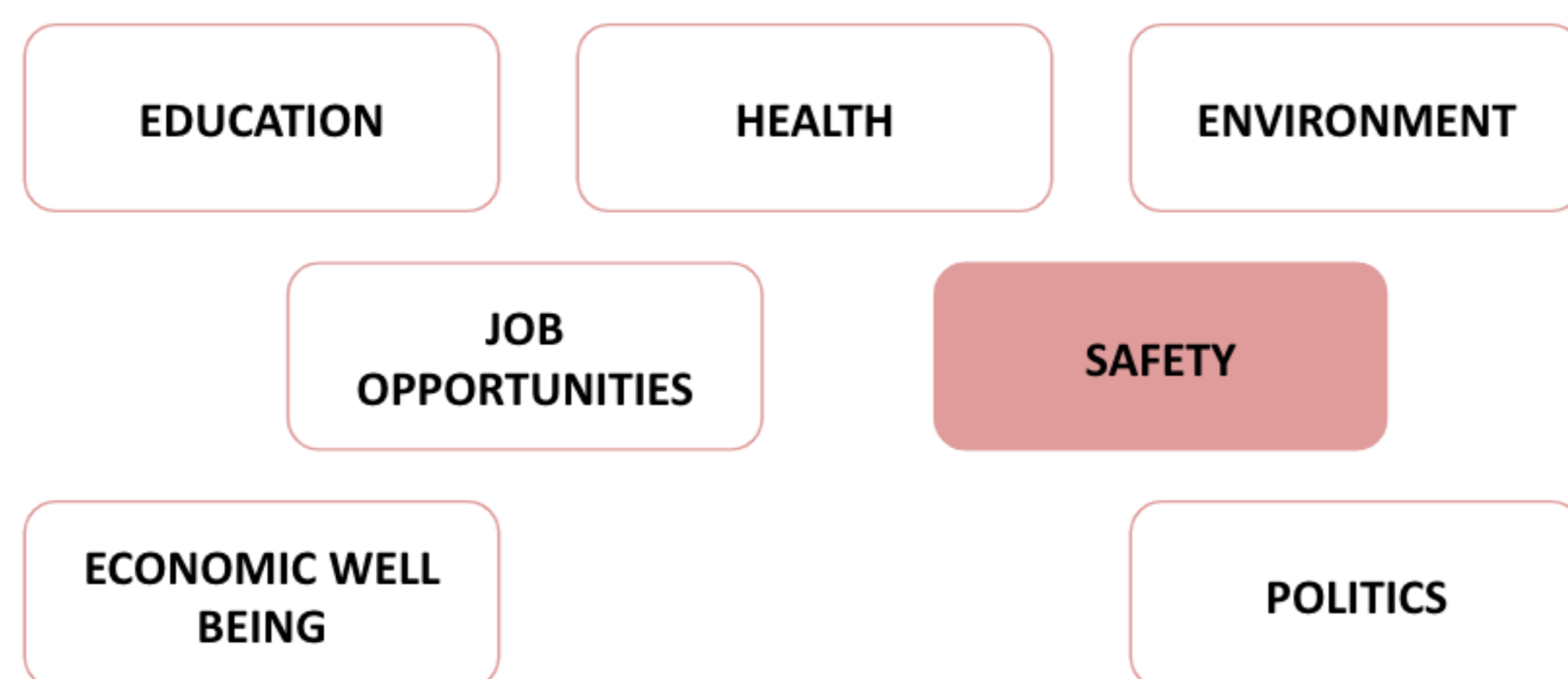


Figure 1: The dimensions of well-being as defined from OECD, UN and ISTAT.

The Global Peace Index

- It measures the relative position of nations and regions **peacefulness**.
- It is consisted of 21 indicators and measured by institutional surveys and governmental data.
- The scores for each indicator are normalized on a scale of 1 to 5, whereby nations considered more peaceful have lower index scores.

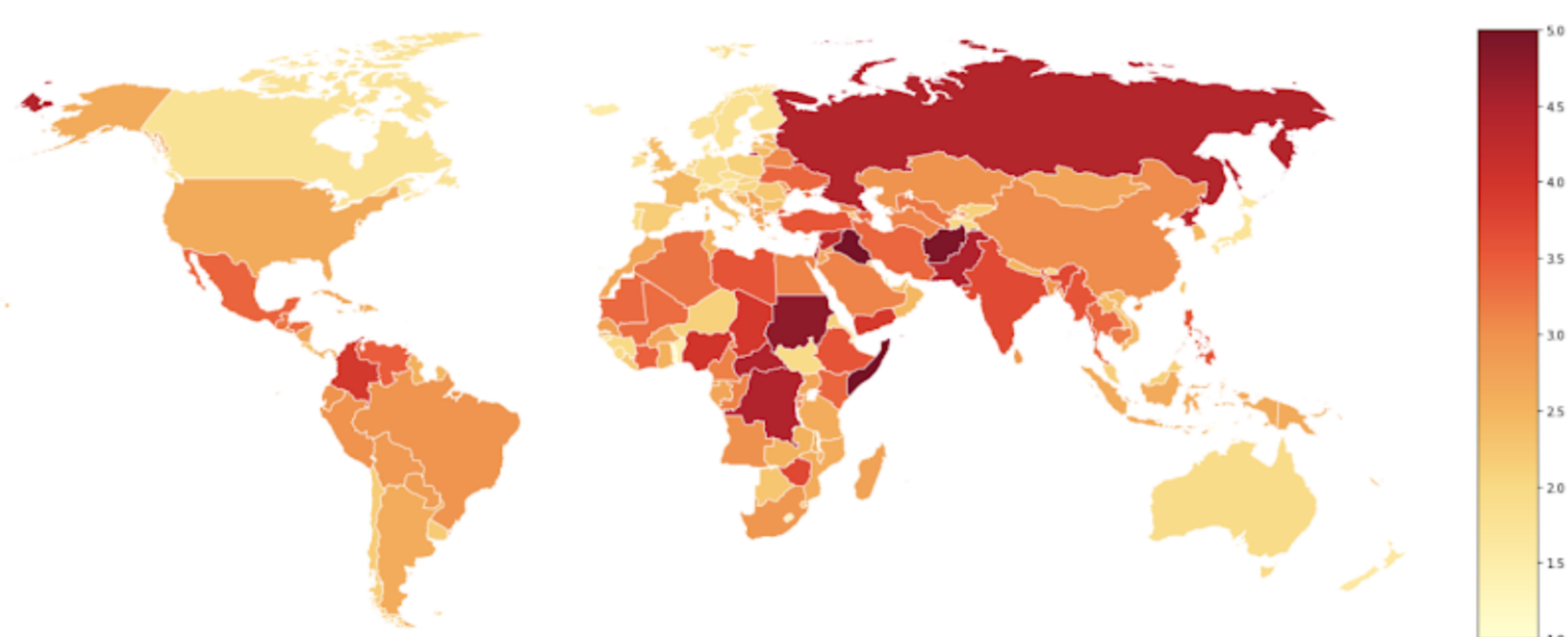


Figure 2: Average GPI score around the world between 2008 and 2016.

Could we capture Global Peace Index through the news? The GDELT project

- The GDELT Project is a news media **open** database, **updated every 15 minutes**.
- Its **sources** are: BBC Monitoring, The New York Times, Associated Press, United Press International, etc

event category	date	location	URL
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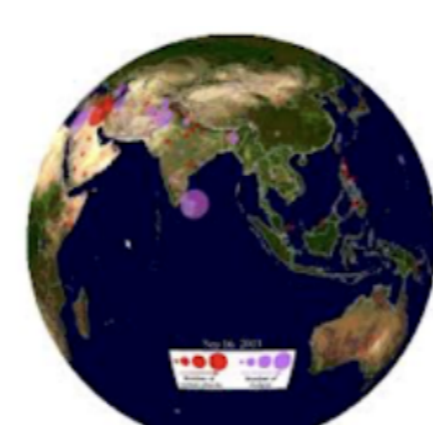


Figure 3: Data record example provided by the GDELT data base.

where event category varies among **59 socio-political categories** (e.g. investigate war crimes, cooperate militarily, increase police alert status, etc)

Creation of the new variables

The measurement of the GPI is suggested by the creation of new variables extracted from the GDELT event database. In particular, official GPI variables are recreated by mapping them with GDELT data. For instance, the 'Conventional weapons' GPI variable is created by the **total count of 'fight with small arms and light weapons' and 'fight with artillery and tanks' GDEL**T events, **normalized to the total count of events, at a country and year level**. Below, the formula of the aforementioned example is provided:

$$\text{Conventional weapons}_{i,j} = \frac{\text{count of events on conventional weapons}_{i,j}}{\text{total count of events}_{i,j}}$$

where i and j label countries and years, respectively.

Preliminary analysis confirm our intuition

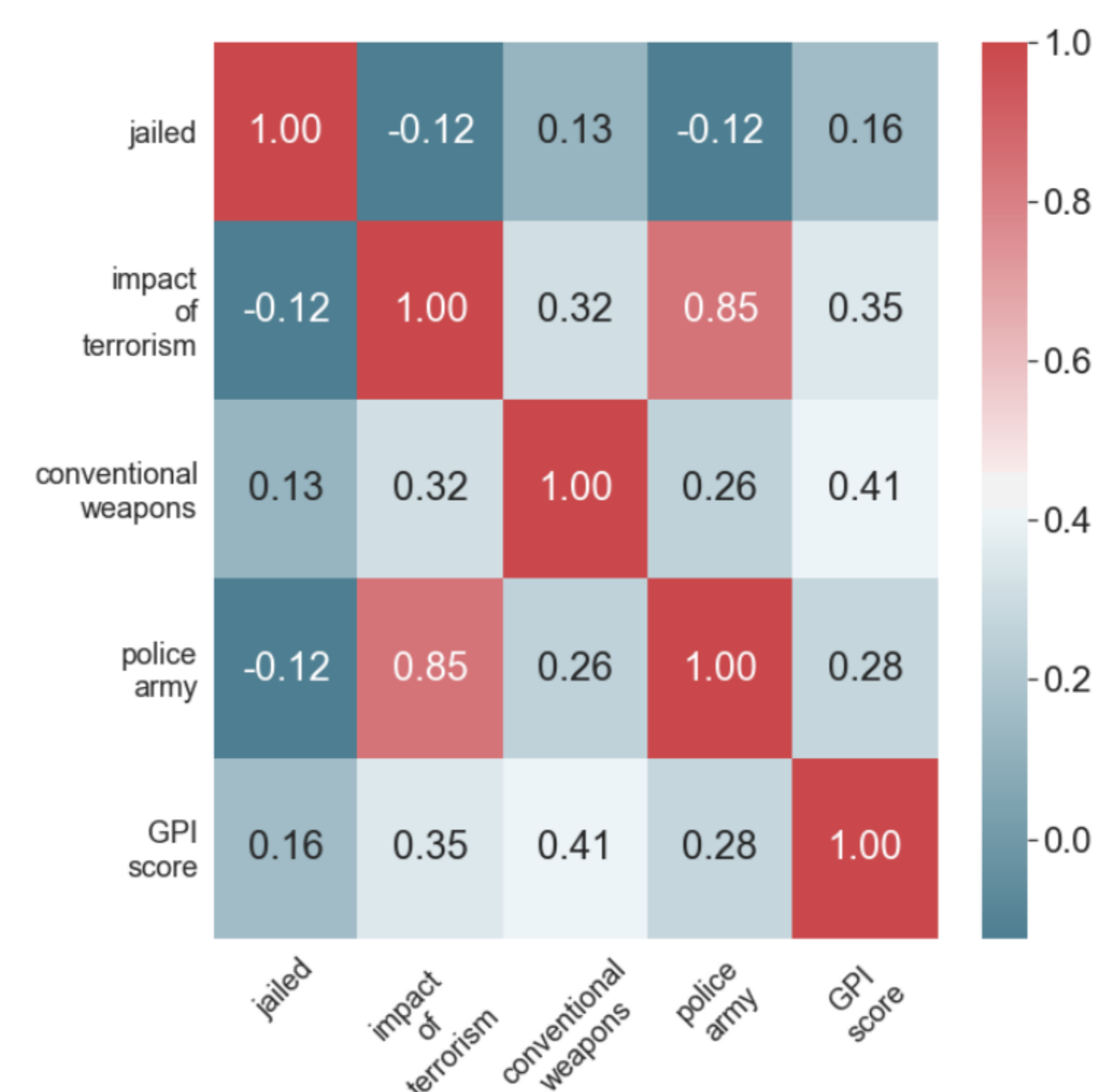


Figure 4: Correlation matrix between the GPI and the new variables.

Nowcasting/predicting the trends of the Global Peace Index



Figure 5: Total events in Libya after the recent conflict outbreak in April 2019.

References

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