

**Review of ‘Demographic yearbooks as a source of weather–related fatalities: The Czech Republic, 1919-2022’ by Rudolf Brázdil,**

The manuscript under review is written by Rudolf Brázdil and co-authors, all three of them members of the Global Change Research Institute, Czech Academy of Sciences, Brno, Czech Republic. The authors deal extensively with the subject of weather-related human impact events in the content of Demographic Yearbooks of the Czech Republic over more than 100 years. The origin of the fatalities is statistically analyzed in terms of number, gender and age for the following climate aspects such as excessive natural cold, excessive natural heat, lightning, natural disasters, atmospheric pressure changes, and falls on ice or snow.

Table 1 contains the categories of external death causes attributed to weather and natural extremes in the periods available in Demographic yearbook of the CZ Republic. Indeed, excessive natural cold, excessive natural heat and lightning are present over the entire period. Natural disasters (1931-1978), is replaced by Natural disasters and flooding (1979-1993), and later on Flood / Inundation (1994-2022). Other, less frequent causes like air pollution (e.g. smog) and whirlwind or tornado are not specified in the catalog of categories but are probably comprised in other categories.

In a first instance, this reviewer was not expecting this material to be present in Demographic Yearbooks and it is the merit and original view of the authors to have worked on the subject. In particular, in Belgium, lightning data, dust rain, frost, storm were subjects which were currently mentioned in the Belgian Meteorological Yearbooks.

**RESPONSE: We would like to thank Gaston Demarée for careful reviewing of the manuscript and several critical comments which we are trying to respond below.**

I suggest to add the website of the Centre for Research on the Epidemiology of Disasters.

**RESPONSE: Accepted. The corresponding sentence was changed as follows: “According to Emergency Events Database (EM-DAT) of the Centre for Research on the Epidemiology of Disasters (CRED, 2024), ...”**

**New citation in references:**

**CRED: Centre for Research on the Epidemiology of Disasters, <https://www.cred.be>, last access: 6 January 2024, 2024.**

The sentence ‘Czechoslovakia was initially formed on 28 October 1918 following the end of the First World War’, seems a little bit strange for international readers as the end of WWI is fixed by the capitulation of Germany on 11 November 1918. Of course, Czechoslovak readers know in detail the emergence of their country out of the Austrian-Hungarian double monarchy in the context of the end of WWI.

**RESPONSE: Accepted. The corresponding sentence was changed as follows:**

**“Czechoslovakia was initially formed on 28 October 1918 before the end of the First World War (11 November 1918).”**

In the proportions of male vs. female fatalities, lightning with a female proportion of 36,8 % is rather near to the maximum female fatality of 37,6 % in the excessive natural heat category. As both proportions are very near to each other, they could be mentioned together.

**RESPONSE: Accepted. The corresponding sentence was changed as follows: “Among the six weather categories, the highest proportion of male and the lowest of female fatalities were observed in the category of excessive natural cold (75.2 % male to 24.8 % female), while the opposite extreme proportions were recorded for excessive natural heat (62.4 % male to 37.6 % female), slightly higher than for lightning (63.2 % male to 36.8 % female).”**

Although the authors distinguish three distinct periods in the yearly evolution of the excessive cold fatalities (see to graph in Fig. 1) the picture exhibits a statistically significant trend for the whole series. Maybe, a cup-like linear trend would be a fairer representation.

Mathematically speaking all deviations from the trend line from 1919 till 1978 are all positive in the first part and negative in the second part (no random distribution) which suggest that a linear trend is not the appropriate statistical model. Similar note may be said about the top picture in Figure 6.

**RESPONSE:** We are aware of this problem (any fitting line of higher order would be better), but the idea was to show general development during the whole studied period as for other groups of fatalities in Fig. 1. We used it also in Fig. 6a to show some coincidence with increasing mildness of January–February temperatures described well with this trend. On the other hand, we always stressed that this series of fatalities related to excessive natural colds generally consist of three quite different parts (see text in Sections 4.1 and 4.3.1).

This paper is clear, well written and has a strong reference list. The authors were successful in exploiting the data base of the Demographic Yearbooks in the context of weather-related fatalities. This reviewer suggest publication as it stands leaving the authors, if they wish, taking care of the few minor suggestions mentioned in this review.

**RESPONSE:** Many thanks for this critical review.