

Editor's note:

As regards the following suggestion,

1. A chapter "data" should follow the introduction. In it, this interesting bureaucrat-scholar can be introduced. A few sentences about his life, the writings he left behind and perhaps about the government and civil service system of this era in Korea in general. Many readers know little about it and this information helps to emphasise the special nature of this source. In my view, a chapter from the last section of the introduction, from: "In relation to this, I would like to pay attention..." could be separated and expanded for this purpose.

Answer) I added about Chŏng Yak-yong and his writings as well as his political up and downs to elucidate the historical significance of his writings against the background of the two great famines in introduction chapter.

2. Is there perhaps even a picture from the work of Chŏng Yak-yong?

Answer) I inserted photos of *Kyŏngse yup'yo* (1817) and *Sŭngjŏngwŏn ilgi* in the introduction.

3. The other primary sources and their historical context could also be presented in this chapter. Again, most readers know very little about the bureaucracy and records from the Chosŏn Dynasty. For example, under what circumstances were these Sŭngjŏngwŏn ilgi created? Who collected the information? What kind of information can be found in these daily records besides descriptions of the weather? The information on the lunar calendar in footnote 7 could be placed here.

Answer) In the introduction, I added a few paragraphs to give more explanations about the official documents of Chosŏn dynasty used as primary and secondary sources in this article such as *Sŭngjŏngwŏn ilgi* [the Diary of the Royal Secretariat, *SI*] and *Chosŏn wangjo sillok* [the Veritable Records of the Chosŏn Dynasty, *CS*].

4. Figure 2 is based on "'Precipitation in Seoul for the last 140 years' in Chosŏn hach'ŏn chosasŏ [Survey on Korean Rivers], the Japanese Government General of Korea. 1929". Is this a tabular source with measurement data or is it a reconstruction? If

possible, a short "method" chapter should also be included. This could be used, for example, if old units of measurement were converted into modern ones.

Answer) I made it clear that Wada Yuji, the first Japanese director of the Office of Astronomy in colonial Korea, converted the traditional measuring unit of Chosŏn dynasty into the western metric system in the paragraphs below Figure 2. I also explained in the paragraph that Wada's data was based on the amount of rainfall measured by the rain gauge, called Ch'ŭgugi, during the Chosŏn dynasty.

Referee # 1.

This article examines the extent and causes of the two famines of 1809-1810 and 1814-1815, particularly using the documentary data of a bureaucrat-scholar, Chong Yak-yong. Based on different sources, the author could date years with a low harvest, the number of starving people for different regions, and the number of deaths for different regions. According to “The Palgrave Handbook of Climate History” (White, 2018) and Burkdorf (2022), there is little historical documentary data on Korea. Therefore, historical records for Korea are very relevant. Nevertheless, unfortunately, I have a few main points that I think need to be considered:

1) I also read the article "Successive volcanic eruptions (1809-1815) and two severe famines of Korea (1809-1810, 1814-1815) seen through historical records" by Sungwoo Kim, which has a lot of parallels thematically and thus one compact paper would have been more helpful. Especially since Chong Yak-yong's documentary data was also cited on page 11, I would be interested to know why it was decided to produce two papers. In any case, the introduction should clearly state what added value the paper has to the article mentioned.

A) The introduction was rewritten to add new citations and historical references such as the records by Chŏng Yak-yong and other government documents of Chosŏn dynasty on the famine in the southern regions of Korea including Chŏlla-do province.

2) The introductory chapter: I miss a well-founded discussion of what literature already exists and has already been dealt with. At least two papers are mentioned in the Palgrave Handbook. This would show that there are only a few articles in this direction and emphasize the value of the data.

A) As regards the scarce literature on past climate in Korea, as White (2018) and Burkdorf (2022) noted, the author presented the documentary evidences produced by the bureaucrats and intellectuals of Chosŏn dynasty about climate change, disasters and the human efforts to overcome the crisis. In the introduction, the author cited the official documentary evidence of

Chosŏn dynasty such as Ch'ugugi (測雨器, rain gauge) records, *Annual Crop Reports* (災實分等狀啟) and *Relief Status Reports* (畢賑狀啟), in addition to many officials records about climate and disasters in the *Sŭngjŏngwŏn ilgi* [Daily Records of the Royal Secretariat] and the *Chosŏn wangjo sillok* [Veritable Records of the Chosŏn Dynasty].

3) (Missing) Data section: New sources are gradually introduced as you read the article. I, at least, had difficulty differentiating which information was taken from Chong's papers and which was not, or which was new or from other articles (clearer citations would be helpful...). I would suggest introducing the data extensively (not just in a few lines 47-56). I.e., introducing the author, showing an example graph, data density, whether quantitative or qualitative data, etc. The other used data should also be mentioned, as some graphs and tables are not based on Chong's data.

A) The author clearly specified the data from Chŏng's papers in the main text. Upon the suggestion of the reviewer, the author also made it clear that the information in the introduction and Chapter 1 was based on the writings of Chŏng about the famine in Kangjin, Chŏlla-do province, and those in Chapter 2-4 were in accordance with the government records of the disasters across the nation, including Chŏlla-do and Kyŏngsang-do provinces.

Based on points 1-3, I would suggest a restructuring that places Chong's documentary data at the center because they add value to the description of the famines of 1809-1810 and 1814-1815, which may be seen and stated explicitly as a follow-up paper to Kim's paper (2023). In any case, the article needs a more comprehensive introduction to the data sets. If there is only a small amount of metadata, it should be explicitly mentioned. However, I think the data is definitely worth being published, but in a way explained above.

A) Upon the suggestion of the reviewer, the author extensively cited Chŏng's documentary data in Chapter 1, as well as rewriting the introduction to elucidate how the bureaucrats and intellectuals of Chosŏn dynasty produced the documentary data sets on climate and disasters.

Since I think the manuscript needs to be rewritten significantly, I will add only a few minor points:

Line 1: The LIA's start and end dates may never be fixed to a particular year, at least not globally. Thus, the phrase in the header, “the last stage of the Little Ice Age (1809-1819),” should be justified by citing appropriate literature. See Wanner et al. (2022). Also a typo: It should be "1814-1815".

A) The years were removed from the header in consideration of the lack of global consensus on the LIA years. The typographical error was also corrected. As regards the LIA years, the author cited Wanner et al. (2022) in the conclusion of this article.

Line 10 and others: As the paper wants to show a link between volcanic eruptions and famines, I would like more information on that. I.e., is this link only statistically and historically observed or physically explained in earlier studies?

A) The correlation of volcanic eruptions and famines was explained in the author's earlier paper, “Successive volcanic eruptions (1809-1815) and two severe famines of Korea (1809-1810, 1814-1815).”

Line 234 and others: “Let us then estimate how many people died” seems too informal.

A) “Let us then estimate how many people died” was deleted, because there is no difference without it.

Referee #2.

Major comments:

This article presents really interesting new empirical results but has an inadequate, and at times unclear, English. It is almost also entirely lacking references to the standard literature in the field and to earlier research of relevance (even if few publications concern Korea, relevant literature exists for China and Japan). Professional English language editing and proof-reading is required before this article can be published. The empirical findings, based on the historical source material, are very interesting as few studies of climate-induced famines exist for Korea.

As regards 1) the comment that this article needs professional English language editing and proof-reading

A) A native English speaker who has served as copyreader at The Korea Times, an English newspaper published in Seoul, Korea, edited this article.

2) the comment that this article entirely lack references to the standard literature in the field and to earlier research of relevance.

A) As references, I cited such articles about climate change as Galloway (1986), Ljungqvist et al.(2021), Ljungqvist et al(2004), Slavin (2016), Wanner et al.(2022) and others.

As to other comments

1) LIA

A) All of LIA are written in uppercase.

2) Line 266: Epidemics and famines interact so it is hard to separate the causes of death, see Ljungqvist et al. (2024).

A) I added to this article the finding of Ljungqvist et al.(2021), Ljungqvist et al(2004), Slavin (2016)

3. Line 324: What is “a well field system”?

A) I gave more detailed explanation about the well field system and the reason why Chong Yak-yong strongly called for the reform measure.

4. Lines 334–335: The Finnish famine of 1867–1868 was also very severe.

A) I cited the example of the Finnish famine of 1867-68 in addition to the Great Irish Famine.