

Response to Reviewers' Comments for Sensors-700783

We would like to thank the three anonymous reviewers for their comments, which significantly improved our manuscript. In this document, we detail how we have addressed all the comments made by the reviewers. For your convenience, we first reproduce your comments in a grey box , then highlight our response in **bold**. Furthermore, changes in the manuscript are highlighted in red and accompanied with a text box, highlighting the comment (via letter) by reviewer (via #) that is being addressed in this revision.

1 Response to Reviewer 1's Comments

1.1 General Comments for Part 1 and Part 2:

The authors submitted the manuscript in two parts. This is generally discouraged by many publishers. Sensors itself warns: "Authors should not unnecessarily divide their work into several related manuscripts". There are several reasons to avoid splitting the manuscript. One of them is the tendency to repeat subjects, addressed in both articles. The division into two parts, Part 1 and Part 2, can be done, and there are several examples in the literature, but it requires special care, one of which is that each part is independent of the other and deals with different subjects, without repetition. There are other problems involved in the division: one part can be accepted and the other rejected, creating a complicated situation. Readers may find that they need to read both articles to understand the subject and give up reading. However, by evaluating the pros and cons, the authors decide the best way.

After reading both parts, it turns out that the special care mentioned above were not fully taken by the authors: There is some repetition of subjects covered in both articles. The "Conclusions" sections of the two articles in their first paragraph are virtually identical, with literal repetition of several sentences, which is unacceptable. This section has to be redone in one of the articles, probably the second. The work as a whole is good, providing a large amount of data, information, and tools for researchers.

Thank you for your comments and suggestions.

We note that part 1 is very generic, dealing with road safety, not limited to large trucks. Already in part 2, despite using examples aimed at large trucks the authors emphatically indicate that the approach can be extended to other road vehicles. This leads to a reflection: Wouldn't it be better for the title to use "road safety" rather than "large truck safety"? That would make the work more comprehensive. This is not a recommendation, it is just a comment to be evaluated by the authors.

Thank you for your comments and suggestions.

We also note that the order of the authors in each article is different. Evaluate if the order of the authors is correct, using the same criteria in the 2 articles.

Thank you for your comments and suggestions.

1.2 Specific Comments for Part 1:

1- On page 2 the text "This contradicts the findings from the first stream (eg, see the reviews in [12] and [13])" should explain in the text itself, briefly, what are the contradictions. The reader cannot be compelled to read another article to understand what is written in the main text. References are for further details.

2- In Figure 2 evaluate the phrase "black and red lines correspond to between and within clusters, respectively". It seems incorrect.

Thanks for the comment. By checking the R code and the image, the links between the the clusters and within the each cluster are correct. Some links crossing two clusters may touch some unrelated nodes. For instance, it shows the "ALGORITHMS" from the blue area co-occurs with the "MODELS" from the red area. When drawing the link between these two nodes, it passes through the node "MODEL" and "ROAD" in the blue area. However, the links generated from the "bibliometrix" are correct after we gave a thorough review.

3- Sections 2.1 and 5.2 have the same content regarding the example of epidemiologists. Rewrite not to get repetitive.

4- In figure 5 the text "and is shown in our review since it is in the public domain" is not necessary. Please, remove it.

5- On page 5 the text "a deceleration force greater than 0.3 g [20.21]." seems incorrect. I found in the reference 3.0 m/s². Anyway, the deceleration unit is "m/s²" and not "g". The term "force" also seems inappropriate. Evaluate.

6- On page 15 the phrase "For example, in all crashes model, adverse weather conditions would increase crash risk. However, under the injury crashes model, adverse weather conditions had the opposite effect " seems contradictory. Evaluate.

7- Revise the text for minor corrections. Evaluate the following places where there seems to be some mistake or writing can be improved:

- Page 1: "motor vehicle (which we use to capture passenger cars, motorcycles, buses and trucks)"
- Page 2: "the primary purpose of this review to help bridge the gap"
- Page 4: "is identified then identified"
- Page 9: "comparing between crash / fatality rates between larger geographic regions"
- Page 9: "drivers examined the study"
- Page 9: "and; and (c) "
- Page 10: "researchers can combine these approaches in their analysis"
- Page 10: "scree plot"
- Page 15: "were were"
- Page 16: "The found"
- Page 18: "is no longer a a major factor"

Here are the revision based on the comments:

- Page 1: "motor vehicle (which is used to capture passenger cars, motorcycles, buses and trucks)"
- Page 2: "the primary purpose of this review is to help bridge the gap"
- Page 4: "is then identified"
- Page 9: "comparing crash / fatality rates between larger geographic regions"

- Page 9: "drivers examined in the study"
- Page 9: "and; (c) "
- Page 10: "the researchers could combine these approaches in their analysis". **To be honest, I am not sure about the mistake here.**
- Page 10: "screen plot"
- Page 15: "were"
- Page 16: "They found"
- Page 18: "is no longer a major factor"

2 Response to Reviewer 2's Comments

This is a survey paper of the crash risk field for large truck transportation. The paper identifies 2 distinct research streams that are seldom combined. Potential public data sources that can be used by researchers in both streams to build on each other's work are proffered. The authors additionally provide a case study to demonstrate the usefulness of translating research from one stream to the other.

Overall, the survey paper is well written, clear, and its motivation is convincingly stated. Literature of the relevant streams cover the field well. A useful paper of interest to the readers in my opinion.

3 Response to Reviewer 3's Comments

This paper reviews crash prediction/ crash risk prediction model from a different perspective with particular focus on risk factors considered, analytic tools to understand data. Whereas most of the previous reviews mainly focused on the application of different modelling derivatives. From this point of view, this paper has research value to a certain extent. English grammar is also good. However, it has some major drawbacks as follows that need to be addressed to be worthy of publication.

The title of the paper is complicated and seems out of focus. Should make it simple as a review paper.

Revise after we get reviews for paper 2.

Rational/context of the paper is not clear. The authors should rewrite the entire introduction with brief description of context of the review and specific research gap or contribution.

Revise after we get reviews for paper 2.

The authors need to do a better job of explaining the study design shown in Figure 1, Section 2. Methodology could be under a separate section or sub-section with detailed description, not just a brief in introduction.

Thanks for the comment. To better explain the Figure 1, we add one paragraph to describe the details in the introduction section. "Figure 1a describes the network between those literature according to the keywords used in the papers. Within each cluster, a black link is used to demonstrate that two keywords co-occurred more than four times, while the read link is to depict the relationship of keywords between clusters. The conceptual structure map in figure 1b is to identify those papers which use the common concepts and group them into clusters by applying K-means method. In terms of the concepts, it could be keywords or the terms from the titles and abstracts. Also, some dimensionality reduction methods have been applied to narrow down the size of each cluster such as the 41 Multidimensional Scaling, Correspondence Analysis and etc.."

The fatal flow of this paper is the lack of consistency or flow in the writing. E.g Interlocution paragraph 1 & 2, 2 to 3. Section 2.1, 4.2.

Section 4.3 is a redundant.

Section 3.1 and 5.1 should be combined under a generation title, such as outcome or explanatory variable considered. Entire paper needs to be reorganized with proper flow of writing.

Miao work on 3.1, and potentially 5.1, read the 8 papers.

Authors gave a hint on "Safety-critical events" (section 3.1) also known as surrogate safety measures e.g. traffic conflict technique. However, there are number of good application and review on this. That should be addressed in the review. See the following examples

1. Zheng, L., Ismail, K., & Meng, X. H. (2014). Traffic conflict techniques for road safety analysis: open questions and some insights. Canadian journal of civil

engineering, 41(7), 633-641. doi:10.1139/cjce-2013-0558

2. Johnsson, C., Laureshyn, A., & De Ceunynck, T. (2018). In search of surrogate safety indicators for vulnerable road users: a review of surrogate safety indicators. *Transport Reviews*, 1-21.
3. Mahmud, S. M. S., Ferreira, L., Hoque, S., & Tavassoli, A. (2017). Application of proximal surrogate indicators for safety evaluation: A review of recent developments and research needs. *IATSS research*. doi:http://dx.doi.org/10.1016/j.iatssr.2017.02.001

It is unclear why the author turns his focus to truck risk from a general traffic safety review. As mentioned above, it could be under a general term with section 3.

Wait for the review for paper 2.

In section 5.2, the author describes about statistical modelling. It is very generic and preliminary indeed. There are number of reputed review papers on this issue. My suggestion, you don't touch this area. You keep your focuses on other aspects as you described in the previous sections. If you want to consider this area, then need something new and contributory other than the following examples but not limited to.

1. Savolainen, P. T., Mannering, F. L., Lord, D., & Quddus, M. A. (2011). The statistical analysis of highway crash-injury severities: a review and assessment of methodological alternatives. *Accident Analysis & Prevention*, 43(5), 1666-1676.
2. Mannering, F. L., & Bhat, C. R. (2014). Analytic methods in accident research: Methodological frontier and future directions. *Analytic methods in accident research*, 1, 1-22.
3. Abdulhafedh, A. (2017). Road crash prediction models: different statistical modeling approaches. *Journal of transportation technologies*, 7(02), 190.
4. Ambros, J., Jurewicz, C., Turner, S., & Kieć, M. (2018). An international review of challenges and opportunities in development and use of crash prediction models. *European Transport Research Review*, 10(2), 35.
5. Yannis, G., Dragomanovits, A., Laiou, A., Richter, T., Ruhl, S., La Torre, F., . . .

Li, H. (2016). Use of accident prediction models in road safety management—an international inquiry. *Transportation Research Procedia*, 14, 4257-4266.

Read the papers and discuss with Steve.

Finally, each and every single paper need to an independent paper (it could be a part of a broader study, but paper should not be a part of another paper like part 1). So, this paper should be organized in such a way that the reader gets an complete idea on the focused area.

In summary, as a reader I would give this paper another chance given its importance in empirical context. This would only be possible if the paper is reorganized with proper flow, consistency and with correct focus.