

General Comments

Overall summary

I enjoyed reading this paper. As an avalanche forecaster I'm personally very interested in improving our communication. I think this study contributes significantly to do so. Some of the recommendations as given at the end of the paper should find its way back into the ongoing discussion within EAWS.

My recommendation to the editors is to publish this article under reserve of the revisions as suggested below.

Since I and many other avalanche experts assume the communications design of the avalanche reports at least as important as their content, I think you addressed a very important topic with this study. Your survey was very well designed and organized; accordingly your results are based on a sound data basis – one of the main strength of this paper.

I have two major concerns with the paper: (1) The weights you establish for a communication effectiveness score are on the one hand difficult to understand and on the other hand it is hard to understand the reason behind the chosen percentage classes. (2) In the result section I would prefer a diagram illustrating both the answers of the experts and the answers of the larger group. In my eyes this would make it easier to understand.

Since I see this piece of work as very relevant I encourage the authors to undertake the suggested revisions.

Specific Comments

Introduction

The introduction in the topic provides the necessary background to get into the topic. I have only minor comments:

Page 2, Line 33: Instead of Landrø et al., 2013 I would rather refer to EAWS, 2017 which would be the newer synthesis.

Page 3, Line 2-4: Travel advises are in some regions also given within the avalanche danger assessment section of the report. There they do not resist as a general advice but more as a specific advice for the actual situation.

Methods and data collection

Either in this section or in the discussion at the end I encourage you to address a possible bias of your study sample towards participants with an over-average interest in avalanche safety and its possible different answers (e.g. Haegeli, Strong-Cvetich, and Haider (2012), p. 806).

Page 11, 12: Is there any reason how you determine the classes for positive and negative weights of the communication effectiveness score? For my feeling this was one of the weak points of the analysis. It seems a bit made up out of thin air. Maybe you can bring some more evidence how you chose this classes?

Page 13, Line 18, 19: I guess that this values could be biased towards a population with more avalanche expertise than average (see point described above).

Page 12, Line 28, 29: As well here a see a possible bias towards people who use the forecast more often than average (see point described above).

Page 14, Table 4: "Ski tours per year" is in my opinion only one important value of experience. It is also important to know how many years of experience someone has. Did you survey this as well? Further, I suggest adding total values in Table 4, so that one can see how many percent of all members fell within the different competence classes.

Results

I was a bit confused to find answer values from the experts here in the result section since I understood from the method section (page 11, line 4) that the expert answers just define the "correct" answers. Anyway I recognized that the comparison between the two values (from the experts and from the recreational users) is of interest of course. Therefore I propose to adopt Figure 4 and 5 in a way that you show both values (from the experts and from the recreational users) for each factor.

Further I have some minor suggestions:

Page 17, Line 15, 16: I assume that this point corresponds to paragraph 3.2.2 as well? Maybe you mention that here.

Page 17, Line 19: I would write "Avalanche size" instead of "Size" only, so it gets clearer.

Page 18, Line 1-8: This is quite a bit of criticism and would demand major changes in the RegObs application. It does not really become clear, whether you intend to do so or not. I suggest you to give this point some more weight in the discussion section.

Page 18, Figure 6: In my opinion the pictures are not really very suitable for what you want to show. The wind slab could also be a persistent slab or a new snow problem. A picture with more varying slab thickness would be clearer in my eyes. Further, the picture showing the persistent slab shows only the upper fracture. This could also easily be from a wind slab problem. You address this problem in the discussion section anyway, so I see not really a need for action here.

Page 19, Line 16, 17: I would prefer to have two sentences here (instead of the parentheses), it would make the text more readable.

Discussion

The discussion is interesting and addresses the general points. However, in some points I suggest to go a bit more into detail:

Page 22, Line 15: Probably you could add a reference here which addresses the of the snow cover (e.g., Schweizer, Kronholm, Jamieson, and Birkeland, 2008).

Page 23, Line 15: Would you have any examples of AWS who show different danger levels and/or avalanche problems and is it possible to shortly discuss pros and cons of it?

Page 23, Line 15: Isn't there any possible conflict with red color for the core zone with the red color from danger level 4?

Page 23, Line 21: As mentioned above I see the pictures as not perfectly suitable for the phenomena you want to show. This means that your chosen sample is probably not the best and I find it delicate to generalize that pictures are not suitable for this kind of communication. However, I saw that you addressed this point properly later on (line 30 ff) and accordingly do not see a necessary action here.

Page 24, Line 27, 28: Maybe you take my comment from above with the number of years in experience into account here.

Conclusions and recommendations

Some minor points could be more precise here:

Page 26, Line 4, 5: How would you illustrate parts of regions most affected by an avalanche problem? Would you further divide the region into sub-regions? This does not become clear here.

Page 26, Line 4, 5: What do you mean with higher or lower avalanche hazard? Are you talking about another danger level or about variations within one danger level?

Page 27, Line 5, 6: I suppose here to refer to a simple "public danger scale" which has only a short characterization and a travel advice for backcountry recreationists for each danger level (e.g., <https://www.slf.ch/en/avalanche-bulletin-and-snow-situation/about-the-avalanche-bulletin/danger-levels.html>, <https://avalanche.org/avalanche-encyclopedia/danger-scale/>).

Page 27, Line 19: Concerning the communication of the core zones it would probably be worth to develop a EAWS standard design. However, I know this will be a challenge. I don't think you have to mention that in the paper anyway.

Technical note

Page 3, Line 17: There is a point missing after "(DeJoy, 1999)"

References

- Haegeli, P., Strong-Cvetich, L., & Haider, W. (2012). How mountain snowmobilers adjust their riding preferences in response to avalanche hazard information available at different stages of backcountry trips *International Snow Science Workshop 2012, Proceedings* (pp. 800-806). Anchorage, AK.
- Schweizer, J., Kronholm, K., Jamieson, J. B., & Birkeland, K. W. (2008). Review of spatial variability of snowpack properties and its importance for avalanche formation. *Cold Regions Science and Technology*, 51(2–3), 253-272. doi:<http://dx.doi.org/10.1016/j.coldregions.2007.04.009>