Reviewer’s report

Title: Applying the Analytic Hierarchy Process in healthcare research: A systematic literature review and evaluation of reporting

Version: 0 Date: 23 Oct 2015

Reviewer: J. Marjan Hummel

Reviewer's report:

It is important to have clear guidelines on reporting AHP studies. This study provides AHP researchers with the relevant information that often critical aspects have not been reported, and this study emphasizes the need for such guidelines. I do have a few concerns:

1) Different analyses in the article lack a clear objective. In particular the objective behind the reported analysis of the group of 91 articles is not clear. It remains vague why they identified for the larger set of articles the number of criteria included, and whether this includes or excludes the number of covering main criteria. In overall, what is the objective behind the general analysis of the 91 articles? For instance, the necessary number of criteria depends on the goal of the decision. Just describing the amount of criteria does not provide further insight in best practices or reporting of AHP studies. And the studies have been divided over several categories of applications. But this result has not been used in the further analyses of the articles, or to derive more specific conclusions.

2) The type of study is described as a systematic literature review. However, considering the author's contributions, it appears that only one author has conducted the analysis, and subjective opinions may have steered the outcomes, such as on finding the categories of applications. Accordingly, can this study still be described as being a systematic literature review in which which bias due to subjectivity has been limited? Or has consensus been reached between two or more authors on all critical decisions for this study, besides the identification of the articles?
3) The authors claim that it was not possible to search for keywords in the abstracts (p 4). However, this should be possible. Could this have let to the identification of a broader set of articles?

4) It is a bit of a pity that the smaller selection of articles is already a bit outdated. In the meantime there have been articles published in the last year. And what is the reason that only articles from the, in that time, past three years were further examined? There appears to be no clear reason why only these 31 articles have been further examined; such as the introduction of better guidelines for reporting MCDA studies.

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**

If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**

If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**

If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

**Quality of written English**

Please indicate the quality of language in the manuscript:

Acceptable
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