

## ***Interactive comment on “Measuring perspectives on future flood management on the Rhine: application and discussion of Q methodology” by G. T. Raadgever et al.***

### **Anonymous Referee #4**

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#### General Comments

The current article is a very interesting study on the application of Q methodology to water management. It would be an important publication after considerable revisions. My general comment has to do with the overall aim of the paper and subsequently with the way it is written. A clear research question is not set out from the start, so the reader can not always follow the logical flow of the writing. Does the research question concern the perspectives on the management of the Rhine, or the suitability of Q methodology for exploring the discourses on the issue? Similarly a clear and sharp conclusion in the end is not evident. Therefore, I think it would be useful to define the

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research question and use it as a guide throughout the whole article in order to reach the conclusion. The reader should be able to summarise in a few sentences, what does this paper examine/ask, how does it do that and what is the conclusive answer.

### Specific comments

1. Pages 439-441. I find the discussion of other methods too short for comparison, and too large for just mentioning them. Again this refers to my general comment about the research question.
2. Page 442, lines 10-20. The selection of the statements in Q methodology is indeed one of the more crucial steps of the research. Therefore I do not believe it can be done in an 'intuitive way'. Many of the Q studies for instance have used the 4 x 4 matrix first described by Dryzek & Berejikian (1993) in order to select the statements. Could the authors please explain what similar technique they used instead for the same purpose? Dryzek, J.S., Berejikian, J., 1993. Reconstructive Democratic Theory. The American Political Science Review 87 (1), 48-60.
3. Page 444, lines 1-4. Could the authors be more precise about the criteria used to decide on the number of factors? (e.g. eigenvalue, how many Q sorts minimum had to load significantly on them)
4. Page 444, lines 14-16. What are the 'certain statistical thresholds'? Could the authors please be more precise? Also the whole sentence could be rephrased in order to make more sense.
5. Page 444, lines 7-22. I found the whole paragraph quite confusing, so I guess this will apply also to the non Q-familiar readers. Could the authors please be more clear?
6. Page 445, lines 15-29. Is there a specific reason why the Q sorts were filled in at different times by different groups?
7. Page 446, lines 6-7. I think it should be made clear that the addition of argumentation theory is a personal preference of the authors, and not a prerequisite of Q methodology

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which can generate valid and reliable conclusions on its own.

8. Page 446, lines 19-21. Why were the 3 distinct perspectives shaped by 36 out of the 47 respondents? If this means that 36 Q sorts loaded significantly on the 3 factors and the rest (11) did not load significantly on any factor, then the sentence should be rephrased so as not to confuse the reader.

9. Page 446, line 22. The table of the Factor Scores is the most important result of the paper. It should definitely be included in the main text.

10. Page 447, line 6. The word 'most' is repeated twice.

11. Page 447, lines 19-23. Where do the authors get this conclusion from, if not from the automatically generated consensus statements by the PQMethod software package? In the Factor Scores table (Appendix B) shouldn't then statement 46 be placed more near the top?

12. Pages 448-449. I believe that even though it is interesting to see which groups load more on each factor, it should nevertheless be pointed out once more that the aim of Q methodology is to find patterns within and across individuals, contrary to standard survey analysis which sees patterns across individual traits.

13. Page 454, lines 3-5. The way this sentence is phrased could lead the reader to the conclusion that since the groups are not statistically significant population samples, then so are the results - not statistically significant. Therefore here it should be pointed out that one of the biggest advantages of Q methodology is the fact that it takes only a small sample to produce statistically reliable results. This is discussed both by Brown (1980) and by subsequent articles.

14. Page 454, line 11. By 'clean' I guess it is meant 'clear'?

15. Page 454, lines 13-14. I do not necessarily agree that there is a need to 'restore some of the richness of the overview'. If the authors wanted 47 different opinions, then a traditional interviewing technique could be more useful to them. The point of

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Q methodology is to reveal discourses shared among people, not individual opinions. Which brings me back to my general comment whether the research question concerns the different discourses on the management of Rhine. Is the use of Q methodology carefully considered?

16. Page 455, lines 4-13. The researchers can choose between a forced distribution (quasi-normal) or an open (free) distribution without any implications in the validity of the results as Brown (1980) has clearly proved. However I do not agree with the authors' statement in the last sentence that the perspectives will be less accurate in the case of an open distribution. On the contrary, if a respondent agrees with all statements (an extreme scenario), why should they be forced to disagree with half of them?

17. Page 456, lines 3-5. I do not see a clear benefit in conducting a second Q study. In case the discourses did indeed change, how would the authors prove causality between the feedback they gave to the stakeholders and the change in their perceptions?

18. Pages 466-470. It would be useful if the tables were in the main text adjacent to where they are discussed.

19. Page 468. Table 3 has neither a clear structure nor a concise heading. It is very difficult for the reader to add up the numbers in totals. So, the table should be redesigned either by being divided in columns which consist of subcolumns, or in any other way to give a clear message.

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