# Quantile-parameterized distributions for expert knowledge elicitation

## Cover letter

Dear Editor,

I am pleased to submit our manuscript titled "Quantile-parameterized distributions for expert knowledge elicitation" for consideration in Decision Analysis. This paper provides a comprehensive overview of quantile-parameterized distributions (QPDs) as a tool for capturing expert predictions and parametric judgments, and builds on our recently published previous work “The tenets of quantile-based inference in Bayesian models” (published in [CSDA last year)](https://www.sciencedirect.com/science/article/pii/S0167947323001068).

In this review paper, we survey a range of methods for constructing distributions parameterized by a set of quantile-probability pairs and describe an approach to generalizing them to enhance their tail flexibility. Furthermore, we describe the methods for extending QPDs to the multivariate setting, surveying the approaches to construct bivariate distributions, which can be adopted to obtain distributions with quantile-parameterized margins. Through this review and synthesis of previously proposed methods, we aim to enhance the understanding and utilization of QPDs in various domains.

I believe this paper will be of interest to the readers of Decision Analysis due to the increasing importance of robust methods in capturing expert judgments across different fields, including finance, environmental science, and risk management. The methodologies reviewed and proposed in this manuscript offer significant potential for advancing the application of QPDs in these areas.

The work is based on the original research carried out by the authors who have agreed to the submission. The earlier version of the manuscript has been made available on OSF Preprints (https://doi.org/10.31219/osf.io/tq3an). The manuscript has not been published elsewhere, nor is it under consideration by any other journal. We have adhered to all ethical guidelines for research and publication.

Thank you for considering the submission. I look forward to your feedback.

Best regards,

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