Summary WHO Study Global Burden of Disease SEJ

The World Health Organization recently completed a large scale application of structured expert judgment (SEJ) on food attribution to inform estimates of the global burden of foodborne disease. The study involved 72 experts distributed over 134 expert panels, with panels comprising thirteen experts on average. Elicitations were conducted in English, French, Russian, Spanish and Chinese. Elicitors were given cursory training only. For most elicitors and experts, this was their first experience with structured expert judgment. Based on statistical accuracy and informativeness, using between ten and fifteen calibration variables from the experts' field with known values, performance-based weighted combinations were formed for each panel. The main conclusions on expert performance are: (1) individual expert’s accuracy was lower than in other studies; (2) equal weighting of experts per panel increased statistical accuracy to acceptable levels, at the cost of informativeness, and (3) performance-based weighting increased informativeness, while retaining accuracy (4) there is a negative correlation between experts' informativeness and statistical accuracy which attenuates as accuracy improves, thereby explaining the success of performance based weighting. Because a large number of experts assessed similar variables it is possible to compare statistical accuracy and informativeness on a larger dataset than heretofore possible. A negative rank correlation between informativeness and statistical accuracy is revealed, driven by the *least* accurate experts. These results suggest that application of SEJ on a large scale is feasible. They motivate the development and deployment of enhanced elicitor and expert training, and advances in tools for remote elicitation of multiple, internationally-dispersed panels.

Literature

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