

ESPS PEER REVIEW REPORT

Name of journal: World Journal of Meta-Analysis

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Title: Meta-Analysis of Bivariate P-values

Reviewer code: 02474355

Science editor: Ling-Ling Wen

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CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> Existing	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	<input type="checkbox"/> Existing	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		<input type="checkbox"/> No records	<input type="checkbox"/> Major revision

COMMENTS TO AUTHORS

Mehmet Kocak from the Department of Preventive Medicine, University of Tennessee Health Sciences Center, Memphis, TN, USA describes a meta-analysis method for bivariate p-values (also followed by George and Mudholkar, 1983), which is based on logit transformation of p-values, implemented by a new proposal for meta-analysis of bivariate P-values. The two approaches were compared using extensive simulations and through an application to the time-course cell cycle gene expression data from 10 independent *S.Pombe* experiments. The Author showed that the meta-analysis approach has much more desirable sensitivity and specificity, which is more pronounced when the correlation between the p-value pairs gets stronger towards the positive end of the correlation spectrum (Figure 2). In addition, he has shown through simulations that the proposed method for bivariate P-values has much better sensitivity and specificity under varying degree of correlation between the P-values in a given pair of P-values. The new approach for meta-analysis of bivariate P-values preserves the 'paired' structure between the P-values in a given P-value pair, which in term keeps the possible correlation within a pair intact. I have one suggestion to incite the Author to ameliorate his message to the readership and so the potential impact of his investigation. The proposed method might indeed appeal those performing clinical trials where a researcher may want to stratify the patients based on a single diagnostic or prognostic factor, while other significant factors may also be present. In such a case, comparing the 'relative evidence' for a given factor (feature) over the others may be quite practical as the researcher may want to choose the factor that



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has the highest relative evidence of significance for stratification. My recommendation is to provide a numerical example for such an application so that interested researcher might immediately appreciate how the new method might be applied practically and with which relative advantage for his purposes.