PRESS RELEASE

Could maths be the answer to ‘glaring weakness’ of the REF?

Mathematicians are calling for a change in Research Excellence Framework assessments to remove potential bias.

In a paper published today in the Royal Society Open Science, Robert MacKay and Sarah Parker from the University of Warwick, along with Ralph Kenna and Robert Low from Coventry University, use maths theory to try to remove bias and averaging from major assessments.

The academics now hope the algorithm they have created will transform the way funding and interview panels make decisions.

The new technique, known as calibrate with confidence, asks assessors to give their score for each item and also to rate their level confidence in providing that score. Each time a grant proposal, exam paper of job application is assessed, it is then possible to remove bias compared to simply using averages.

When used on a previous assessment of 44 funding bids from 2015, the formula showed a dramatic change in the results compared to using average scores, a technique used on most occasions.

In the original exercise, 13 bids were funded, with average scores across the assessment ranging from 74 to 87. When these were re-assessed using the calibrate with confidence method, only six projects originally given the highest marks would have received funding, while seven new projects would also have been allocated funds.

The method is already being used by Coventry University to assess internal funding applications, along with other

organisations who have downloaded a free online tool to use the formula.

Robert MacKay, Professor of Mathematics at the University of Warwick, said:

“Our ambition is for our method to be adopted as a decision support tool by every panel that has to evaluate a range of objects and whose members may have different standards and expertise.”

Ralph Kenna, from Coventry University said:

“The new approach is especially important for exercises such as the UK’s Research Excellence Framework (REF) where differences in standards within and between panels are currently a glaring weakness.”

For more press information contact Kelly Baker-Adams, press officer, Coventry University on 02477 659 752 or email Kelly.baker-adams@coventry.ac.uk.

Notes:

Calibration with confidence: A principled method for panel Assessment can be accessed online.