











- When the analysis focuses on subject behavior, then the analysis could focus only on  $\Delta_i$ . The vqegMM2 dataset [1] provides an example.

The authors are conducting further investigations into the subject model and subject error ( $\epsilon_{ij}$ ). Another interesting researcher area is finding a typical pool of bias in different groups, like different countries.

## 7. APPENDIX

The following MATLAB® code implements the equations seen in this paper. Input argument `oij` is  $o_{ij}$  from (1). Output argument `rij` is  $r_{ij}$  from (11); `deltai` is  $\mu_{\Delta_i}$  from (5); `deltaistd` is  $\sigma_i$  from (8); and array `ni` holds  $J_i$  for each subject.

```

1 % SYNTAX
2 % [rij, deltai, deltaistd, ni] = ...
   normalizationByDelta(oij)
3 % SEMANTICS
4 % Input: oij matrix with subjects ratings ...
   where rows are different PVSs and ...
   columns are different subjects.
5 % Output: rij normalized matrix with the ...
   same structure as oij (that is, rij = ...
   oij - deltai).
6 % deltai is the subjects bias
7 % deltaistd is the standard ...
   deviation of a subject bias
8 % ni number of correct ratings per ...
   subject
9
10 function [rij, deltai, deltaistd, ni] = ...
   normalizationByDelta(oij)
11
12 psi = nanmean(oij,2);
13 temp = bsxfun(@minus, oij, psi);
14 deltai = nanmean(temp);
15 deltaistd = nanstd(temp);
16 rij = bsxfun(@minus, oij, deltai);
17 ni=zeros(1,length(deltai));
18 for i=1:length(deltai),
19     ni(i) = sum(~isnan(rij(:,i)));
20 end

```

## 8. REFERENCES

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