Peer review

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Reviewees: Daniel Sędłak, Kinga Brudz

Criterion	Points	Argumentation
1. Problem formulation [0-5 pts]:		
• is the problem clearly stated [1 pt]	1/1	The problem is clearly stated
• what is the point of creating model, are potential use cases defined [1 pt]	1/1	Use cases for scientists an farmers are defined
• where do data comes from, what does it contained [1 pt]	1/1	Data is thoroughly described
• DAG has been drawn [1 pt]	0.5/1	DAG is present in the project, but some relations are unclear (i.e. Shucked weight -> Height).
• confoundings (pipe, fork, collider) were described [1 pt]	1/1	Confoundings are thoroughly described.
2. Data preprocessing [0-2 pts]:		
• is preprocessing step clearly described [1 pt]	1/1	Preprocessing is clearly described.
• reasoning and types of actions taken on the dataset have been described [1 pt]	0/1	The authors did not use normalization even though they stated that the scale of data is a real problem.
3. Model [0-4 pts]		
• are two different models specified [1 pt]	1/1	The models are specified.
• are difference between two models explained [1 pt]	1/1	The differences between models are specified
• is the difference in the models justified (e.g. does adding additional parameter makes sense?) [1 pt]	1/1	The difference is stated by the authors
• are models sufficiently described (what are formulas, what are parameters, what data are required) [1 pt]	0.5/1	The models were thoroughly described, however we think that the first model is too basic.
4. Priors [0-4 pts]		
• Is it explained why particular priors for parameters were selected [1 pt]	1/1	The priors were selected based on scientific article.

• Have prior predictive checks been done for parameters (are parameters simulated from priors make sense) [1 pt]	1/1	PPC for parameters have been done.
• Have prior predictive checks been done for measurements (are measurements simulated from priors make sense) [1 pt]	1/1	PPC for measurements have been done.
• How prior parameters were selected [1 pt]	1/1	The priors were selected based on scientific article.
5. Posterior analysis (model 1) [0-4 pts]		
• were there any issues with the sampling? if there were what kind of ideas for mitigation were used [1 pt]	1/1	Diagnostic tools showed no problems.
• are the samples from posterior predictive distribution analyzed [1 pt]	1/1	Pairwise plots were provided.
• are the data consistent with posterior predictive samples and is it sufficiently commented (if they are not then is the justification provided)	1/1	Data are consistent on the plot.
• have parameter marginal distributions been analyzed (histograms of individual parameters plus summaries, are they diffuse or concentrated, what can we say about values) [1 pt]	0/1	Marginal distributions for every **fixed** parameter are present. Diffusion and concentration of parameters is described. However we believe that a more sophisticated model should be used that optimizes values of parameters according to input data instead of analyzing **fixed** parameters.
6. Posterior analysis (model 2) [0-4 pts]		
• were there any issues with the sampling? if there were what kind of ideas for mitigation were used [1 pt]	1/1	Diagnostic tools showed no problems.
• are the samples from posterior predictive distribution analyzed [1 pt]	1/1	Posterior Predictive analysis was conducted.
• are the data consistent with posterior predictive samples and is it sufficiently commented (if they are not then is the justification provided)	1/1	Data seems to be consistent with real data. The authors evaded a problem with negative values using the appropriate distribution.
• have parameter marginal distributions been analyzed (histograms of individual parameters plus summaries, are they diffuse or concentrated, what can we say about values) [1 pt]	0.5/1	Model is very simple (relies on only one input variable). However Marginal distributions are present.

7. Model comparison [0-4 pts]		
• Have models been compared using information criteria [1 pt]	1/1	Comparison plots and tables are present.
• Have result for WAIC been discussed (is there a clear winner, or is there an overlap, were there any warnings) [1 pt]	0.5/1	The results have been discussed. Parameters were thoroughly explained. The authors noticed a warning however they did not state the results can be therefore unreliable.
• Have result for PSIS-LOO been discussed (is there a clear winner, or is there an overlap, were there any warnings) [1 pt]	1/1	The results have been discussed. Parameters were thoroughly explained.
• Whas the model comparison discussed? Do authors agree with information criteria? Why in your opinion one model better than another [1 pt]	1/1	Comparison is conducted.
RESULT	23/27	