

Response to reviewer 3

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June 2020

1 Comparing Poisson Models

When responding to reviewer 3's comments on the use of Poisson regression we stated that we did not think that there was any way the alternative method would change the results, but that others could use the open access code and data to test this. We are keen advocates of open science and so hoped that others would do this (in fact they already have at several R-hackathon events).

The reviewer has since responded that this is disappointing, and that we should have re-run the analysis. We agree - simply making code and data available publicly available does not equal full transparency, particularly when people are trained in different programming languages. We therefore present the results of models 1, 2 and 3 below using a Poisson (P) and QuasiPoisson (QP) regression model. As suspected, the changes do not affect the findings of the study.

We once again thank Reviewer 3 for their useful comments, and apologise for not re-running this relatively simple change to the analysis in the first instance.

Table 1: Log-link GLM Results

	<i>Dependent variable:</i>					
	Participation					
	<i>Poisson</i>	<i>glm: quasipoisson</i> <i>link = log</i>	<i>Poisson</i>	<i>glm: quasipoisson</i> <i>link = log</i>	<i>Poisson</i>	<i>glm: quasipoisson</i> <i>link = log</i>
	Model 1 P	Model 1 QP	Model 2 P	Model 2 QP	Model 3 P	Model 3 QP
	(1)	(2)	(3)	(4)	(5)	(6)
IMD Score	−0.0374*** (0.00005)	−0.0374*** (0.0004)			−0.0338*** (0.00005)	−0.0338*** (0.0004)
Ethnic-Density			−1.9662*** (0.0042)	−1.9662*** (0.0410)	−1.5236*** (0.0044)	−1.5236*** (0.0373)
Pop Density	−0.1069*** (0.0004)	−0.1069*** (0.0036)	−0.1179*** (0.0004)	−0.1179*** (0.0040)	−0.0699*** (0.0004)	−0.0699*** (0.0036)
Distance(km)	−0.1068*** (0.0002)	−0.1068*** (0.0016)	−0.1158*** (0.0002)	−0.1158*** (0.0018)	−0.1115*** (0.0002)	−0.1115*** (0.0016)
Non-working-age	0.6139*** (0.0068)	0.6139*** (0.0600)	0.2334*** (0.0074)	0.2334*** (0.0731)	−0.1343*** (0.0070)	−0.1343** (0.0600)
Constant	−0.9127*** (0.0052)	−0.9127*** (0.0457)	−1.0685*** (0.0052)	−1.0685*** (0.0515)	−0.7372*** (0.0052)	−0.7372*** (0.0443)
Observations	32,844	32,844	32,844	32,844	32,844	32,844
Log Likelihood	−1,301,151.0000		−1,554,894.0000		−1,231,308.0000	
Akaike Inf. Crit.	2,602,312.0000		3,109,799.0000		2,462,628.0000	

Note:

*p<0.1; **p<0.05; ***p<0.01