Author's response to reviews

Title: Long term unemployment, income, poverty, and social public expenditure, and their relationship with self-perceived health in Spain (2007-2011)

Authors:

M. Puerto Lopez del Amo (puerto.lopezdelamo@hotmail.es)
Vivian Benitez (vivben75@gmail.com)
José Martín (jmartin@ugr.es)

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Author's response to reviews:

Dear editor,


Thanks to the reviewers as well for their suggestions to improve the paper; we have taken their suggestions into consideration and changed the text accordingly.

Sincerely,

Technical Comments:

1. Please upload a clean version of the manuscript without tracked changes.

Ok.
2. Please move all tables to the end of the main manuscript.
Done.

3. The figures need to be removed from the main manuscript and uploaded as individual figure files. Additionally, please list all figure legends after the References.
Done.

4. In the Authors Contributions please include the specific contributions of each author and identify them by their unique initials.

Ok. Where it used to say (page 34, line 688, paragraph 5):

- Authors' contributions

All authors have participated in every task relating to the development and preparation of this manuscript.

It now reads (page 26, line 538, paragraph 3):

M. Puerto López del Amo González MPLAG
Vivian Benítez VB
José J. Martín JJM

All the authors above have taken part in the conception, design and writing of this article. More specifically, JJM coordinated the development of the research, the writing of the paper and its critical review; VB collected the data, estimated the multilevel models, reviewed the literature, and drafted the text; and MPLAG designed the project, reviewed the literature and drafted the text. All authors have contributed to the interpretation of results, have reviewed all aspects of the research, and have approved the final version.

5. The point-by-point response letter can now be removed from the additional files.
Ok.
6. Could you please clarify within the manuscript who granted permission to access the data files of the SLC or if they are available to the public.

The terms “publicly accessible” have been added to the description of the available database (page 24, line 508, paragraph 14).

“From the publicly accessible microdata of the Survey on Living Conditions. Spanish National Statistics Institute”.

Editor Comments:

Dear authors the reviewers have made a few discretionary comments which you may or may not want to take on board.

Reviewer reports:

William Hulme (Reviewer 1): The latest changes have really improved this paper, in particular concerning the appropriateness of conclusions - well done.

Minor suggested revision: Given the confusion over the use of longitudinal modelling methods, it would be a good idea to report the Stata commands used to build the models.

Ok. Thank you for the suggestion, we are sure this will improve the paper.

The stata commands run to estimate the models have been included in page 25, line 522, paragraph 4:

```
xtset panelvar timevar [, tsoptions] (to declare the longitudinal nature of data)

melogit depvar fe_equation [|| re_equation] [|| re_equation ...] [, options] (to estimate the logit model)

meologit depvar fe_equation [|| re_equation] [|| re_equation ...] [, options] (to estimate the logit ordered model)
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Christos Grigoroglou (Reviewer 2): The authors have done a good job with the final revision and after a few discretionary revisions, the manuscript is adequate for publication. Even though, the problem of bi-directionality is not addressed the revised version of the study addresses the questions posed and declares the problems that were encountered throughout the study in the limitations.

We want to thank you again for your comments about our paper and the deep analysis that you performed.

Sincerely,
The authors.

A few minor comments:

1.- Reply to my previous comments 1 & 2.

You didn't have to change the statements to which I refer in my comments 1& 2, as in the latest revision you exclude the paragraph of your methods section where you talk about how "this methodological strategy helped you tackle bi-directionality". Regarding my comments 1 & 2 from revision 1, the confusion occurred because you talked about how you "properly bounded and characterized the variables involved" and "how you tested for over-representation of long-term unemployed individuals who report to have good health" but then you said that this methodological strategy helped you tackle bi-directionality. So it was implied that you used these strategies to tackle bi-directionality, thus my two comments. Now that you included the problem of bi-directionality in your limitations and you say that it couldn't be dealt with, your previous
statements from the first revision are fine. I am not suggesting to remove the new statements, these are okay as they explain the methods better and you can do as you wish, but I thought I had to clarify this.

Response to reviewer 2 comment 1:

Ok. Sorry for the misunderstanding. We will not make any additional changes in this regard.

2.- Reply to my comment 11:

I didn't mean to change the statement all together. I asked which are the "specific factors" that increase the risk of death? So, I would suggest to go back to your previous statement and mention the factors that increase the risk of death (e.g. lifestyle choices such as smoking etc). You don't look at the effect of unemployment on mortality anyway, so this is irrelevant. Instead you look at self-perceived health.

Response to reviewer 2 comment 2:

Thank you for your suggestion, we believe the text will be improved by it.

Where it said (line 580, pag. 29, paragraph 2):

“Material deprivation is linked to the main causes of death both for men (lung cancer, chronic obstructive pulmonary disease, and cirrhosis) and women (diabetes and ischaemic heart disease) [100].”

It now reads (line 453, pag. 22, paragraph 2):

“The fact that severe material deprivation is associated with bad health is probably due to two mechanisms: an increase in the general susceptibility to illness and a set of specific factors which increase the risk of death (healthy lifestyle, overweight, obesity, alcohol consumption, smoking, etc. [100].

3.- P.12 lines 241-244:
This paragraph looks more as a sensitivity analyses. You have not introduced any models so far in the manuscript, nevertheless you talk about an ordered logit model. It might be better to move this paragraph after your models description.

Response to Reviewer 2’s comment 3:

Done. It has been moved to line 223, page 11, paragraph 4, where the paragraph has been rewritten for consistency.

Where it said (line 304, page 15, paragraph 4):

“When the perceived health variable is categorical, the longitudinal multilevel ordered logit model can be used, and it can be written in terms of a latent response y^*_{ijk}:

It now reads (line 223, page 11, paragraph 4):

“In addition, and in order to confirm that the loss of information resulting from collapsing perceived health into fewer categories does not skew the results of the estimated odds ratios of the variables of interest, an ordered logit model was estimated with the self-perceived health in its original five categories. This longitudinal multilevel ordered logit model can be written in terms of a latent response y^*_{ijk}:

4.- P.23 line 448:

It is not clear what you mean here. I am not sure I understand the meaning of MOR in this instance so considering that you look at several regions, I am not sure what the 34% likelihood of declaring bad health between two regions means? Is there a reference region to which the other regions are compared to?

Response to Reviewer 2’s comment 4:

Sorry for the inaccuracy. Where it said (p. 23 line 448):

“when comparing two randomly selected regions, the likelihood of declaring bad health was 34% higher in one than in the other”.

It now reads (p. 17, line 344, paragraph, 1):

“when comparing two randomly selected regions, the likelihood of declaring
bad health was 34% higher in one than in the other (in the median case)."

5.- P.24 line 465:

Surely the study is not able to establish the degree of causality between the association but also the study is not able to establish any causality between the associations. I would replace the sentence "establish the degree of causality" with "establish a causal relationship". When you refer to the degree of causality, readers may think that you tried to quantify the causal relationship but in reality no causal relationship is proved.

Response to Reviewer 2’s comment 5:

You are right. The sentence has been rewritten as you suggest. Thank you very much.

Where it said (page 24, line 463, paragraph 1):

Before discussing our results, some limitations must be acknowledged. Firstly, and given the bidirectional nature of the relationship between the variables of interest and perceived health, this study is not able to establish the degree of causality between the associations we have identified [75]. This becomes particularly relevant regarding the link between bad perceived health and long-term unemployment.

It now reads (page 18, line 365, paragraph 1):

Before discussing our results, some limitations must be acknowledged. Firstly, and given the bidirectional nature of the relationship between the variables of interest and perceived health, this study is not able to establish a causal relationship between the associations we have identified [75]. This becomes particularly relevant regarding the link between bad perceived health and long-term unemployment.