Reviewer’s report

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

**Version:** 2  **Date:** 19 Oct 2017

**Reviewer:** Christos Grigoroglou

**Reviewer's report:**

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.

A few minor comments:

**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 tackled 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.

**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.

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.

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?

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.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
I am able to assess the statistics

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