Reviewer’s report

Title: Potential gains in health expectancy by improving lifestyle: an application for European regions.

Version: 1 Date: 12 Jun 2018

Reviewer: Marc Luy

Reviewer's report:

The revisions of the text and presentation of results further improved the paper, which is, according to me, almost ready for publication. I have only a few additional minor suggestions:

Abstract: I suggest making background and conclusion better fitting to each other. In the current form, the conclusion focuses exclusively on the lagging health expectancy of Eastern Europe, while the background addresses the whole European region.

Discussion (1): the section gained considerably with the additional arguments. However, these should be structured in a better way. For instance, the new text in lines 257-261 (p. 14) includes the same content as the new text in lines 274-278 (p. 15).

Discussion (2): in my first review, I suggested to mention that the smaller smoking effects among women might increase in the future because of the lagged - and in most countries still increasing - smoking prevalence compared to men. The authors rejected this suggestion because they "do not think that smoking in women will ever reach the levels of exposure experienced by men in the past". I also do not believe in identical peak values among women and men, and this was not the point of my argument. Unfortunately, it happens very often that readers interpret cross-sectional results in a longitudinal or forecasting manner. This is why authors should make the features of cross-sectional analyses as clear as possible. The authors of this paper extended the discussion by these aspects, what I highly appreciate. However, in one of the new text parts they explicitly describe that the decreasing smoking prevalence among men should lead to a lower potential effect of smoking reduction in the future (p. 15, lines 292-295). Thus, I urge the authors to reconsider their rejection of my suggestion to mention also the different situation for women to avoid a misunderstanding. The current text might be understood in the way that also among women a reduced potential effect of smoking reduction should be expected for the future, what is not in line with the past and actual trends in female smoking prevalence.
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