Reviewer’s report

Title: Evolution of educational inequalities in life and health expectancies at 25 years in Belgium between 2001 and 2011: a census-based study

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Reviewer: Emmanuel Abatih

Reviewer’s report:

The article addresses a pertinent issue with inequalities in both life and health expectancies. The paper is unique in its sense of combining data from the census, national register and also pooled data from the HIS. The methodology is sound and adequate for the different objectives of the study. On addition, the results were well summarized and the main findings knotted with results from other studies. Limitations of the study were well discussed and conclusions nicely presented. However, after reading through the paper, it was not immediately clear what extra advantage using the census data has over usual national mortality data base. Are there any future perspectives following from this research? Differences across regions were not discussed which could have further implications. The implications for health policy makers were not discussed.

Overall, the paper is sound for publication but some minor issues need attention before this can happen. I have listed them under different sub-headings for clarity. I ignored many typos and English language mistakes.

Abstract

Page 2 Line 23: By disability rates what do authors mean? Should this be simply disability prevalence?

Page 2 Line 38: Authors claim a 6% increase of low-versus-high.. in both men and women from 2001 to 2011. How was this determined?

Page 2 Line 46: "increased strongly" may be replaced with "increased significantly" or There was an important increase in males of 4.5…"

Page 2 Line 50: replace "respective" with "respectively"

Page 2 Line 59: please replace "more strongly". The "increase more strongly" cannot be associated with a decline. Split the sentence in to two one of the overall increase and one with the exception in women.

Page 3 Line 4: Authors could replace "further increase health levels" with "further improve health status". What is it with a lower educational level that will lead to such a large difference in
DFLE between 2001 and 2011? Any explanations? If possible, authors can propose some efforts that can be helpful in bridging these gaps.

Introduction

Page 4 Line 9: Authors may write: "finding in public health research".

Page 4 Line 11: replace "public policies issue" with "public policy issue". The word crucial here is probably an overstatement. A word like "important" suits this context better in my opinion. I believe there are more crucial issues at hand.

Page 4 Line 14: Could authors mention some of the policies in the literature or from elsewhere that aim at reducing inequalities in health and life expectancies?

Page 4 Line 49: replace "census 2011" with "2011 census"

Page 4 Line 54: When authors say aim of the contribution was to describe the size of the inequalities, this should be reflected in the presentation of the results. The size of the inequalities were determined but were not described...in effect the sizes should stimulate some discussions in this sense. If not it is better to just say aim was to determine the size of...

Page 5 lines 5 and 6: What is the difference between the second and the third objective? Overtime here means from when to when?

Methods:

Page 5 Line 37: Data from the HIS 2001 and 2004 were pooled. And also for 2008 and 2013. How was this done? were any special statistical considerations made? Details will be very helpful. The census for 2011 was combined with HIS data from 2008 and 2013. There is some nice symmetry here. Why was data from 1997 and 2004 not use for the 2001 census? This would have introduced a symmetry similar to that of the 2011 census. Before and after the census.

Page 6 Lines 15 through 17: Please revise this sentence

Page 6 Lines 22 through 26: Regional trends would have been useful for the case of Belgium because we know that there are north south differences in these inequalities. Any comments on this?

Page 6 Lines 34 through 36: Is there a statistical theory that allows the summing of these two variances sources? It will be good to mention it.

Results:
Page 8 lines 10 to 14: Are there any possible explanations why there is a moderate upward shift in the educational distribution in 2011 compared to 2001? It seems natural that over the years more and more people will get highly educated because of job and societal demands.

Page 8 line 54: LE25==LE25

Page 9: All instances of DFLE25 should be replaced with DFLE25

Discussion:

In comparing with other studies did authors ensure that the same data types and methods were used across the studies?

What are future perspectives following this research?

Conclusion:

Page 13 line 47: What additional efforts for example? Are there already some ongoing efforts? Are they effective? It will be good to get a sense of how the very important results of this study can inform policy makers. Is it possible to indicate regional trends? The gaps observed in this study could be more regional than national. It will be good to know where to prioritize.

Level of interest
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An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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