Reviewers report

Title: Factors affecting Tobacco Smoking in Ethiopia: Evidence from the Demographic and Health Surveys

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Reviewer: Hadii Mamudu

Reviewer's report:

Title

Factors Affecting Tobacco Smoking in Ethiopia: Evidence from the Demographic and Health Survey

Summary

The paper is about the key determinants of tobacco smoking in Ethiopia. This paper uses the Demographic and Health Surveys (DHS; 2011 and 2016) collected by the Ethiopia Central Statistical Agency to address smoking patterns related to khat use, geographical location, and other social covariates that could affect smoking. The overall sample in this study consists of 56,644 adults between the ages of 15-49. The main finding from the pooled analysis is that after control demographic, socioeconomic, and spatial factors, chewing Khat was associated with tobacco smoking.

Overall Comment

This study is important to highlight all the different factors on smoking in Ethiopia. The results of this study are extremely important to the government officials in Ethiopia and regulating or preventing smoking. Each individual, household, or community level factor could be affected differently by different policy implementation in the given area. After looking at data from the 2011 and 2016 DHS, the areas discerned included khat chewing, gender, age, marital status, education level, occupation, household wealth, members of household smoking, religion, place of residence, and distance from sea level. While there are specific corrections to be made in this study, the overall paper is effective in not only outlining the most prominent determinants of tobacco smoking in each region but also proposes a fix to effectively combat smoking as a result of the research recorded.

1. The main issue with the paper is data management, which spurs into the analysis and results. The authors merged the 2011 and 2016 DHS without providing any information
whether these two cross-sectional data were statistical different or similar. In this regards, the authors should include results of any diagnostics such as t-test, multicollinearity, auto-correlation they conducted before merging the two data. Regardless, I will suggest that the authors should conduct separate analysis for 2011, 2016, and pooled (2011 + 2016). With that, the reader can delineate some trends and differences in the results, if any.

2. Given the huge gender gap in tobacco smoking and Khat use among men and women, I would urge the authors to conduct stratified analysis by gender. If the sample sizes for women are too small such that it poses analytical challenges, then the authors should consider a study about Ethiopian men, not including women. As paper stands, it subsumes the effects of the independent variables on the behavior of women, which is erroneous and over-generalizes the results.

3. While the paper mentioned several policy changes that could be implemented to prevent and or stop the spread of smoking, it also discusses the government of Ethiopia passing the anti-tobacco bill in between the time of the two surveys examined in this study, 2011 and 2016. This bill was not taken into account in the research recorded, and it could be a significant mediator in tobacco use between the two surveys. This reinforces the previous suggestion that the authors should conduct separate analysis.

4. The interpretation of the results as "predictors" connotes some form of causation, which is not true for cross-sectional data. Indeed, the main limitation of DHS data, even though they are large and nationally representative, is that the data cannot be used to establish causation. As such, the authors should revise the enter Results and Discussion sections to couch their results as determining "association" between the dependent and independent variables.

5. The statistical notations in the Methods section do not add much information to the analysis of the data. Instead, these notations make the paper a bit harder to read. Thus, I will suggest that the authors should get rid of them.

Specific Comments

Abstract

1. Including the policy already in place for tobacco smoking in Ethiopia would have been helpful in understanding the study.
Background

1. While this study takes into consideration the different genders and percentages of tobacco smoking in each, the introduction describes an increase khat consumption on the basis on young men stand around at khat kiosks, which is concerning.

2. The introduction states that by using the 2011 and 2016 survey data, the study is able to compare the effectiveness of tobacco policies in 2015, but this is never looked at and assessed in the study.

Methods

1. The methods include a binary dependent variable that include any individuals above the age 15, but when measuring age factors in the study, the highest age included was only 49 years. Please be as specific as possible.

Results

1. According to the results in the summary statistics, wide variations in smoking are expected to be due to wide variation in khat use. Gambela has the highest prevalence of smoking in Ethiopia; however, it accompanies one of the lowest percentages of khat use proving this statement false.

2. For Figures 1 and 2, what do the legends stand for? I will suggest that you should add a title to the legend and have a caption for each map.

Discussion

1. As in the introduction, a section in the results refences men alone. The paper states that, "the likelihood of smoking increased by 11 times if a household member smokes inside the house." This says a household member but then is only explained by men rather than men or women in the household.

2. The discussion talks about the lower smoking rate in 2016 compared to the 2011 surveys. The discussion explains that this is because the survey does not track smoking behavior and randomly selects different households. However, the discussion does not discuss the policies put into place in Ethiopia in 2015 that may mediate the results observed in 2016 vis-à-vis those in 2011.
Conclusion

1. One conclusion made by the study is that by controlling khat consumption the
government could control tobacco consumption. The survey asked if khat had been
chewed 30 days prior to the survey and if the participant had smoked tobacco, but it did
not ask which activity came first. Khat usage might not be the gateway but the other way
around.

Minor Corrections

1. Spell out numbers 0-9
2. Using %, instead of "per cent" will be better.
3. Always bring comma (,) before "respectively".
4. Include information on town/region/country for the STATA version 14
5. P. 28 ln. 11- add brackets around the number 17 in "…practice17, it…"
6. The title for Table 1, "Summary Statistics" is inadequate as a table should be self-
contained.
7. It's not clear the significance of reporting the :Minimum" and "Maximum"; please
remove them from the Table 1. In any case, can you merge Tables 1 and 2?
8. You should include sample sizes (N, n) in all the tables.

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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