Reviewer's report

Title: Community characteristics that attract physicians: A cross-sectional analysis of community demographic and economic factors in Japan

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Reviewer: nanako tamiya

Reviewer's report:

Generally, this paper is well written and the topic is very important and attractive for the physicians' allocation in Japan. However, I have some concerns I listed below:

• Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

1) The main result of this paper is “daytime population and service industry population in a municipality represent the attractiveness of an area better than population does” as written in Conclusions. This is very attractive as I wrote above. However, I am not sure whether this result is validated statistically well in this paper. For instance, the difference between correlation coefficients’ 0.451 and 0.409 in Table 3 can be understood as different not due to by chance. The same concerns occurred in table 2, and difference between GINI indices 0.26 and 0.33 in Fig 1.

Some statistical comparisons or additional explanations should be applied. Moreover, I wonder why “Population density” was not included in Table 4 although it is included in Table 3. To compare the daytime population etc and population, the direct way may be the analysis including both variables.

2) p4 :“The power of communities to attract physicians consists of two elements: the amount of medical demand and the extent of urbanization.” There is no citation supporting this sentence although often used as the main logic of this paper. Some citations will be needed, I suppose.

3)p16 (Discussion) About the sentence“daytime population is a better indicator of community’s medical demand than nighttime population [19]. “

Recently in Japan, the number of clinics opens at night or week-end seems to be increasing (though I am not sure the exact situation), and some patients use the clinics at home town. Some explanation may be needed on that point of view.

• Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1)P11 (Result section) the last line :Table 1 should be Table 2
2)P12 the 3rd line from the bottom R2 was 0.312 should be 0.318(written in the Table)?
3) Both of the words “urbanization” and “urbanity” were used. Is there any difference which authors mean?

4) Fig. 1 Title: Gini indeces may be "indices"

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.