Reviewer's report

Title: Characteristic profiles among students and junior doctors with specific career preferences

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Reviewer: Fred C.J Stevens

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Major compulsory revisions

1. P. 4 Could you explain why you adopted the theory of reasoned action to ground your model, and then also tell the readers at the end of the paper whether the theory/model you used was appropriate?

2. P.5: Your answer categories on specialty choice were ‘the most probable specialty’ and other specialties ‘under consideration’. What if a respondent had no probable specialty and only specialties under consideration? Were these groups compared, and if yes, what were the findings? (And if not, I suggest you do so.)

3. I feel it is a rather ‘strange’ group of factors that you introduced in your factor analyses. For example I am missing a dimension contrasting the bioscientific orientation (people instead of organ orientation?). I also think the bioscientific orientation is a much more ‘deeper’ orientation than something like advice from others. What is the rationale for including all this in the same factor analysis? There is also quite some overlap between factors as can be seen from the correlation matrix you present with inter-correlations ranging between .20 and .53 (!). Considering your large sample this is quite high, so you at least need to say something about this. (Have you tried to use factor scores instead of sum scores?)

4. You did your study among students and junior doctors, but I don’t see any report of analyzing differences between these groups. Why not?

5. Table 2: I do not think you should report specialties separately when number of respondents are too small (e.g. neurosurgery, Urology, emergency medicine, etc.). I also don’t think the small numbers warrant some of your discussion points.

Minor essential revision

6. P. 3 You write: ‘Therefore, studies in the non-American settings are needed to obtain findings more applicable to countries in which the health system is more equitable and most students enter medical school as undergraduates.’ Could you please give a more extensive description of the literature, not only focusing on
the U.S?

7. You say: ‘This implies that exposing students and residents to the expertise of the discipline, including technologies and research, might enhance the attractiveness of the field. On the other hand students and residents considering paediatrics and orthopaedics were influenced more by the factor “personal reasons”. This factor consists of illness experience and existing interest before entering medical school, which could be identified through interviewing candidates in enrolment process.’ But it also could be that the biomedical orientation precedes the other ones (see my previous comment)

8. ‘This suggests that too much emphasis on the work environment in recruitment, in exchange of compromising the learning experience, could be counterproductive for candidates in these fields.’ I don’t understand this.

9. You say: ‘We speculate that this difference reflects the fact that income disparities among specialties are generally not great in Japan due to a wage system based mainly on number of years after graduating from medical school, although wage difference might exist between hospitals or regions. Could it also be that high income in some specialties is guaranteed so that is will not be an issue for the students that opt for that choice?

10. In your limitations I think you also need to say something about the difference between specialty preference and specialty choice.

Discretionary revisions

11. P. 4: Please do not only report item numbers but add a few item topics as examples so the reader doesn’t need to look up the appendix all the time.

12. Table 2 and the figures seem to report the same things

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests