Reviewer's report

Title: Stability of dietary patterns assessed with reduced rank regression; the Zutphen elderly Study

Version: 2
Date: 16 January 2014

Reviewer: Fumiaki Imamura

Reviewer's report:

The manuscript seems improved. It became easy to identify limitations of the study.

Major compulsory revisions:

1. The limitation came up, after the manuscript is generally improved. If the authors selected dietary variables with high reproducibility first, the authors should be able to get good reproducibility over time. Thus, selection of 19 food items from 36 food items looks producing bias toward better reproducibility. Ideally, it would be nice to select 19 food items in one dataset, and test reproducibility in another dataset. If the authors cannot do it, the limitations should now include that the authors did not validate the selection of food groups and may involve bias toward better reproducibility.

The last paragraph (Line 318-319) of the conclusion should exclude the note about backward elimination, because the approach might not work well in different independent datasets. The current statement is too provocative.

This point is consistent with one raised by the other reviewer, but the authors did not address the concern. Difference between confirmatory factor analysis and confirmatory RRR has nothing to do with it. (They are not different very much in terms of how coefficients are used. RRR used predictor and response variables after standardization. Regression coefficients become similar to correlation coefficients.)

2. Limitation should include that the selection of response variables may not be optimal. If the response variables were not correlated well or a few of them were highly correlated, the authors must have had difficulty in identifying dietary patterns predicting the set of response variables. The limitation does not bias toward positive finding, so correlations observed can be interpreted as they are now, but the authors should acknowledge possibility of examining reproducibility of RRR-based patterns more thoroughly.

It appears that the other review pointed it out, but the authors did not respond to it well. “We did not, because of a priori decision” is never satisfying.

Minor essential comments:

3. Introduction:

Take out “sophisticated”, line 57. Again, this is subjective and not correct.
Statistical algorithm is not sophisticated – just an extension of least squares approach.

4. On 282-283, the authors stated “We applied confirmatory analysis to distinguish changes in food consumption from changes in risk factors over time.“ This is incorrect. This could be said if the authors did look at correlation of dietary patterns over time after adjustment for changes in response variables. The authors did not do it. Removal of this sentence does no harm, so please do.

5. State somewhere that detail of food groupin can be obtained by request.

Discretionary revisions: none

**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.