Reviewer's report

Title: Weight status at age 18 influences marriage prospects. A population-based study of Swedish men.

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Reviewer: Andrew Clark

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This paper uses register data from (almost) the population of Swedish Men over an 11-year period, and shows that weight at around age 18 is a very significant predictor of marital status around age 40. In particular, the obese are less likely to be married, conditional on a number of other control variables.

I found this paper to be well-done overall, in terms of the presentation of the empirical analysis. However, I thought that it actually did a less good job of describing why these correlations come about (when they are not observed in the US, for example). I list my concerns in turn below.

Major Compulsory Revisions

1) While I am sure that the correlation found here is “right” in the statistical sense, I wondered through which channels it operates. In particular, I note that the regression controls for contemporaneous education and social status. Yet it is entirely possible that weight at age 18 (which I will call “weight” from now on) affect these outcome variables too. So one exercise would be to first run the regressions with only the variables that we would think of as being not caused by weight, and then add in those that may well be.

2) Along the same lines as the above, would it not be possible to control for the individual’s income at age 40? We know that weight is a determinant of labour-market income: once we net out this effect, is there anything left?

3) The background section confused me. Line 6 of page 3 says that “obese women but not men are less likely to get married”. It then says that there is no longitudinal work. But if we are talking about getting married then we must be using panel data. Can it be made clear throughout here which of these existing pieces of work use panel data (and how) and which are cross-sectional?

4) In the middle of page 11, this line about education and obesity doesn’t work for me. I am sure that it is factually correct, but education is being controlled for in the multivariate analysis, essentially shutting off this channel of influence.

5) I thought the first line of the conclusion about getting married to increase social status and prestige was taking it a bit far. People marry each other because they match well.

6) Along the same lines, if we marry each other because we match on weight,
then we wouldn’t necessarily expect obesity to matter, as long as it affects both sexes equally. What the paper is showing is that our preferences over partner weight are not completely determined by the social context: even if everyone gets heavier we’d still like to marry someone with a BMI between 18.5 and 25. Unless of course there were “not enough” overweight Swedish women to marry these Swedish men with BMIs of over 25. As marriage is a matching game, I think that it would be very useful indeed for the paper to show us some statistics for the distribution of female weight in the cohorts that were most likely to marry the cohort of males analysed here. Could it be the joint movements in male and female weight that are behind the differences between Sweden and the US?

Minor Essential Revisions

7) The description of how the data is constructed needs a bit of tightening. The top of page 5 makes it sound as thought the LOUISE data is available every year, but Figure 1 only provides data at five-year intervals. Also, the paper suggests that marriage information should be available for every age, so why are marriage rates only shown at ages 25, 30, 35, 40 and 45?

8) Middle of page 5. There is a noun missing after “potential confounding”.

9) What’s the logic for the 1-9 standardisation of intelligence: is this standard in the literature?

10) At the top of page 9, it is said that the highest socio-economic position and education of the parent was taken, and that which was nearest to the time of birth of the subjects. I am not sure I get this. First, closest to time of birth and highest may not be the same (if education rises over time). Second, as PHC was measured in 1960 and 1970, and the subjects were born between 1950 and 1961, isn’t it obvious that 1960 is closest?

11) Page 6, top. Many individuals will have two parents matched to them. What if one is blue collar and the other white collar; or if one is low education and the other high education?

12) Page 6, lines 4-8. It is not clear enough whether these variables refer to the individual or to their parents, nor at which point in time they are measured.

13) Page 10, line 2. “this type of potential bias should have skewed the estimate toward the null hypothesis”: When wouldn’t it do so?

Discretionary Revisions

14) The paper uses BMI categories. One further analysis would be to see whether there is variation within these categories. You could, for example, introduce a polynomial in \((\text{BMI} - 25)\), for those with BMI over 25 (and zero otherwise), and another for \((18.5 - \text{BMI})\), for those with BMI under 18.5 (and zero otherwise).

15) Not everyone is a fan of stepwise techniques. Just to make sure, it might be worth preparing an appendix table showing the regression results when you
include all of your covariates.

16) Page 8, lines 7 to 8. The fact that the low-educated are both less likely to be married and more likely to be divorced suggests that low education is not necessarily a barrier to getting married (although it is a barrier to staying married).

17) The paper estimates average effects. I would have been very interested to see whether some individuals are more affected (marriage-wise) by their weight than are others. In particular, are individuals who live in higher-weight regions less penalised by their own weight in terms of marriage? Or even: Are individuals with higher-weight parents less penalised by their own weight in terms of marriage?

Level of interest: An article of importance in its field

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