Referee report of the paper Innovation and willingness to export; is there an effect of conscious self-selection?

The paper aims to contribute to the understanding of the link between innovation, productivity and exports by considering both self-selection and learning effects. French SME data from about 150 SMEs shows that the average exporter has higher productivity than the average non exporter, and that the average innovative form has higher TFP than the average non-innovative firm.

The econometric analysis conducted in the paper is interpreted by the authors as empirical support for export self-selection into exports, but export premium only among firms with 10% export rate or more. Based on these results, the paper recommends the politicians to pick winners and support exporters.

My overall assessment is that the paper is poorly written and contains severe statistical problems. In addition, the information about the number of observations in the different equations is unknown to the reader. In addition, the suggested policy recommendation is not supported by this paper

Let me start with Table. It is estimating ln TFP as a function of the binary variables (a) innovation, (b) product innovation, (c) process innovation, (d) marketing innovation, (e) organisation innovation, (f) R&D and (g) patents for the what I'll guess is about 150 observations. The seven equations use only one co-variate (sales) and two sector dummies. While the coefficients for R&D and patents are non-significant, the innovation indicators are all significant in the other five equations. But since there must be (substantial?) overlapping between the seven measures of innovation, I have problem finding the idea with the analysis conducted in the table.

During the last 20 years, a large number of firm level studies have examined the link between innovation and productivity using various production function approaches properly specified. Table 6 suggests that firms with higher TFP also conducts innovative activities. But it tells nothing about innovation premium (that innovation causes higher TFP). Both TFP and innovation can be explained by a third factor or innovation can be explained by TFP. My arguments are about the same regarding the export premium reported in table 5; the authors find that some variables are correlated and interpret this relation wrongly as a causality.

I equation 8, the paper estimates the association between TFP and a subsample consisting of only firms defined as innovative, and finds no significant estimates. The number of observations in these selection biased equation must be very low. Only 24 firms are market innovators according to Table 4. If the paper estimates firms that are market innovators exclusively (no other types of innovations) the number of observations on with this characteristic should be very low.

In equation 8, the paper continues with an additional split of the sub-sample into firms with less than 10% export-intensity and firms with more than 10%. Still, the paper avoids to inform about the number of observations in each equations. Table 8 reports a significant point estimates for firms that have conducted an organization innovation and exports more than 10% of their production. In my opinion, the estimated subsamples in tables 7 and 8 are almost useless. There are too many statistical problems with the estimates (and then we could add the econometric problems with identification).

Section 5 estimates a CDM-type of three-step procedure with propensity to innovate in step 1, TFP in step 2 and willingness to export in step 3. Here I assume that the paper only consider the subsample consisting of non-exporting firms, and the paper now introduced set of controls(human capital, financial capital and market location) not used in the previous equations. Why not? In line

with what could be expected from earlier paper applying the same approach on the link between innovation, productivity and exports, the paper finds that R&D is positively associated with innovation, that innovation is positively associated with productivity and that productivity is positively associated with exports (In this case, the willingness to exporting firms to enter foreign markets).

A very first step for a major revision of the paper must be a proper summary statistics and a correlation matrix. A proper information on the number of observations are also important. Regarding the application if the CDM-model, which is the only potential contribution of the paper, I would recommend the authors to apply the GSEM-approach for heterogeneous firm suggested by Baum et al (Economics of Innovation 2017, Issue 1-2)