Reviewer's report

Title: Efficiency of Health Centers Groups in Lisbon and Tagus Valley - An approach with Data Envelopment Analysis

Version: 2 Date: 18 August 2013

Reviewer: Paul Marschall

Reviewer's report:

Data Envelopment Analysis is a very important instrument for assessing the performance of health care facilities. The background of the paper seems to be an appropriate case for using DEA. However, the paper is in a very early state so some comprehensive revisions are necessary before considering it for publication.

Major Compulsory Revisions

1. Abstract:
   a. contents and structure of the text is not convincing: improve the main motivation for reading the paper. You should express the aims of your study and consecutively explain your methods. Policy advice and further conclusions are missing
   b. Background:
      i. Some international readers might not know about the economic problems of Portugal
      ii. If quality and equity concerns are also main issues of the paper adequate instruments must be described in the methods

2. General remarks:
   a. citation brackets only include “???”
   b. I do not understand the meaning of some sentences
   c. Results of 1st and 2nd stage should be combined; similar with respect to discussion

3. Structure of paper:
   a. Numbering of sections is missing;
   b. Structure of the paper should be in line with the structure of abstract
   c. You should integrate your “case study” within the paper, because this is the object of your study

4. Introduction:
   a. Literature review is not convincing “only a few papers regarding PHC efficiency were found”
   b. “A common feature of most of these studies is the variables that are chosen” –
if you think about the DEA approach, and how these health facilities can be characterized, it becomes clear, why similar variables were selected

c. Growth of health expenditures seems to be a problem. Why? You have to describe which kind of growth you mean

d. “…created a constant concern about the sustainability of the Portuguese” – source is missing

e. There seems to be some confusion about the concept of PHC and the level of primary care within the health care system

5. Primary health care in Portugal:

a. Some important information about the health care system in Portugal is missing – the information about PHC in Portugal is quite comprehensive

b. You did not describe the state of the art concerning performance measurement with respect to primary care in Portugal

c. Last section: you do not have to name each of the ACES

d. Table 2 does not fit into this chapter

6. Methods:

a. Start with the data base of your study

b. Data Envelopment Analysis (first stage)

i. You should explain the formulas (table 2), and the meaning of the variables

ii. Define the variables which are used in table 2

iii. Explain “economies of scale”, the corresponding technologies and the reason for choosing CRS/ VRS

iv. Why did you do not consider economies of scope?

v. According to your findings you did conduct a dynamic DEA analysis. The corresponding information in the methods is not included!

c. Order-m methodology (second stage)

i. Variables are not defined (X, Y, …)

ii. The reader might not understand the approach based on the included formulas. You should better point out that this methodology is a type of regression

iii. Why did you do not address other approaches, which are included in the literature (tobit, censored regression)?

d. Variable selection:

i. Explain reasons for selecting the variables which are included in table 3

7. Case study

a. You should integrate your “case study” within the paper, because this is the object of your study (see 3-c)

b. Sample - Your data is not well defined
c. Table 4 should be in the “results” chapter

d. Model specification “we decided to use these three orientations, in order to compare the results” – based on the situation you should clearly state which kind of orientation is more appropriate; discussion of orientation (and the corresponding results) is missing!

e. Adopted models: what was the reason for choosing these models?

8. “Efficiency”

a. This is the first part of the results section

b. Table 5 does only include results for “input orientation”!

c. Table 6 is not explained

d. Some concrete key results of DEA (results with respect to DMUs, inputs and outputs) are not included

e. Discussion of results

i. efficiency

1. You did include a conclusion in the running text!

2. Why did you do not compare your results with findings from other papers?

ii. Equity and quality:

1. The used methods were not presented before! (Kruskal Wallis test???)

2. It is not appropriate only to discuss equity and quality – results are missing before

3. Why did you do not compare your results with findings from other papers?

9. Influence of the environment

a. Results of regressions are missing! Table 7 is not enough! You have to include the corresponding test results

b. Why did you do not compare your results with other articles?

10. Strengths and weaknesses of the paper are missing, e.g.

a. which important variables were not available?

b. What is new concerning the research question, the data and findings?

11. Concluding remarks

a. Clear message is missing!

b. Policy advice is not included!

Minor Essential Revisions
None

Discretionary Decisions
None
**Level of interest:** An article of limited interest

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

**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