

Advisory Committee on Statistical Methods

Impact of the advisory committee on the Istat projects

A new framework for quality assessment of processes based on integrated administrative data

O. Luzi, F. Rocci, R. Varriale

We propose a quality assessment framework as an useful instrument to monitor a statistical production process based on the combined use of Administrative Data (AD), possibly together with survey data. We are at a stage where even though the design of such processes follows major guidelines, they have still to be standardized. In this view, the quality framework is thought to help to support both the design and monitoring of the process: the result could help in understanding how to proceed to a final standardization.

The proposed framework is based on the scheme of the two-life cycle (proposed by Zhang, 2012) and further developments by Reid et al. (2017), who formalized a three-phase framework: the first two representing the two-life cycle and the third one proposing the elaboration of a quality measure of the final output.

We presented an application of the framework to a case study, that introduced us to some issues that seem yet not to be solved. In this view, we proposed a modification consisting of splitting the second phase into two sub-phases. This should allow to represent different types of processes (according to the number of AD sources used and to the type of integration/combination used), to introduce a worthwhile flexibility of the life-cycle approach.

The comments from the Advisory board have been analysed carefully.

Hence, considering all the fruitful comments, we have tried to understand how to enhance the given framework and how to put the basis to further proceed.

As a fundamental basis, we decided to change the name of the proposed quality evaluation framework from TSE (Total Survey Error) to TPE (Total Process Error) to underline that, even though we use the same concepts as formulated for the well standardized processes based on direct surveys, we need to consider that different kinds of errors can affect a process based on a combination of different sources (external or/and internal).

Furthermore, we think it is important to use a clear terminology, in order to keep always in mind which is the *object* under study:

- A. a *general framework for quality assessment* in order to support the design and the monitoring of a statistical production process based on a combination of different sources (external and/or internal).
- B. the *definition of different outputs* that the statistical production process can release and need to be evaluated.
- C. the *development of a synthetic quality measure* of the entire statistical production process.

We briefly present each point:

A. *General framework for quality assessment*

We started from the proposed quality evaluation framework based on the three phases proposed by Reid *et al.* (2017) and we proposed to split the second phase in two different sub-phases. Besides that, we agree with Zhang's comment that a general quality evaluation framework should be flexible in order to be fitted to any kind of processes. Therefore, as suggested we developed an operative tool to connect the description of a process with the quality evaluation framework: the tool is represented by a matrix that cross-classifies the process steps with the framework phases. The matrix, with the connected quality measures proposed for each phase, could gather information on the exact step of the process where the errors (potentially) originate, this also allows to evaluate the effect of different process strategies. Thus, the matrix can be considered as a "dashboard" associated to the process highlighting its critical aspects.

B. *Definition of different outputs*

We believe it is important to face the problem of the lack of a comprehensive and clear terminology that would help in classifying which type of output can to be assessed, at which stage of the process an overall measure of quality can be delivered and what kind of methodology has to be used. In the future we will study an output classification (such as: statistical register, estimates based on a register, etc.).

C. *Development of a synthetic quality measure*

The final result should be a comprehensive framework including a set of indicators following the whole production process. In addition, we will evaluate the possibility to identify suitable synthesis indicators for each phase and for each output.