Literacy in Statistics for the Public Discourse

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Abstract:

If one assesses the quality of statistics according to whether they are fit for purpose, one must put the question of this very purpose at the beginning, not only for the production of statistics, but also for their use and the literacy required. In this contribution, public discourse, political communication and decision-making processes are placed at the beginning of the argument.
Official statistics work with a conceptual approach in which very much emphasis is placed on standardisation of products and processes, thus ensuring comparability of facts in regional and temporal terms. Only in this way can statistics be used as a common language to objectify conflicting issues. It is not about everyone being able to create his or her own statistical model of reality, quite the opposite. In this sense, public statistics are an infrastructure, comparable to rail transport. Moreover, statistical processes today are highly rationalised and industrialised, comparable to a factory. So, when approaching the question of what literacy is needed in this particular application area of statistics, the education and training of professional statisticians has accordingly specific requirements, which are in many ways comparable to what professions in other industries or in the operation of the railways should have as a basic qualification. For the citizen, the entrepreneur, the teacher, the student, etc., who wants to understand and apply the indicators of the public statistical sources, technical skills are of secondary importance. Rather, it is necessary to understand enough about the product and its properties to be able to judge its quality in the light of personal application goals and questions. This indeed already presupposes a lot of knowledge and experience in dealing with quantitative information. Such competencies do not necessarily belong to the field of mathematics but demand practice in interpreting indicators in their context, an assessment of the reliability of sources and processes, experience with graphical representations of statistics (including the flaws that may appear in them) and practice in assessing uncertainties, etc. One needs to know a certain amount about the data sources, the preparation processes, quality standards, etc., but not at the level that would be required if one were to carry out this work oneself.