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How should national statistical offices respond - moving from risk avoidance to risk management

Challenges in access to micro-data for scientific research purposes

Note by State Statistical Committee of Azerbaijan

Summary

The paper describes the challenges of the State Statistical Committee of Azerbaijan in providing micro-data for researchers. It describes how new technology can be used for provision of services to scientific research institutions while ensuring compliance with the principles of confidentiality. The public needs information on the procedure for access to micro-data for researchers as well as on the types of use and users. The legal basis and other essential regulatory documents providing the protection of confidentiality of micro-data are a necessary condition for the provision of micro-data.

1. The principle six of the United Nations Fundamental Principles of Official Statistics clearly underlines the need for confidentiality:

“Individual data collected by statistical agencies for statistical compilation, whether they refer to natural or legal persons, are to be strictly confidential and used exclusively for statistical purposes”.

2. This and the other Fundamental Principles are reflected in the Law on “Official Statistics” of the Republic of Azerbaijan.

3. Moreover, in accordance with Article 18 of the present Law for the implementation of concrete research and development projects, the State Statistical Committee (SSC) can permit use of personal information on the condition that the confidentiality is protected by statisticians.

4. The use of these data is possible only if they are protected.

5. In our opinion, the following steps are necessary for the provision of confidential micro-data:

(a) Information on the procedure for access to micro-data for researchers as well as on the types of use and users should be transparent and accessible to the public;

(b) The legal basis and other essential regulatory documents providing the protection of confidentiality of micro-data are necessary for the provision of micro-data.

6. With a view to avoiding violation of the law in the process of micro-data provision, the SSC adopted Rules on micro-data provision for research activities on 13 June 2011. The Rules explain what micro-data means, how to ensure its confidentiality in practice, the characteristics of statistical units, and access and provision of micro-data for research purposes. In summary, these rules consist of five sections. Section five provides a form for researcher to apply access to micro-data including the complete characteristics of natural and legal entities: ranging from initials, the economic activity and affiliation of the organization.

7. However, when making a decision on the provision of micro-data to users, the SSC should be certain that these data will be used solely for research purposes. There is, however, a question: How to control unintended use of information? Measures of administrative punishment must be applied to anyone violating the rules.

8. Furthermore, there are no problems in providing anonymized micro-data on several enterprises in a given economic activity class. What to do if some branches of the economy are represented by one enterprise only? For example, in Azerbaijan one big plant is so dominant that we cannot disclose data on this enterprise without its consent. In this case, the SSC does not present micro-data on such branches in order to maintain public confidence on official statistics.

9. One method to safely disseminate micro-data is to anonymize it. For example, the address of the units can be intentionally corrupted so that identification becomes impossible. Anonymization is done in such a way to ensure it does not affect the results of aggregation. This method, for example, could be applied to population census micro-data where the number of units is large. But it is not suitable for a comparatively lower number of units. In this case, the identification risk of the concrete object through the data remains higher.

10. In our opinion, there is always a certain element of risk in the transmission of micro-data to third parties, and any leakage of information could inflict large damage to the statistical authorities.

11. New technology can be used for provision of services to scientific research institutions. The fact is that micro-data are not of special interest to these institutions. Instead, they are interested in the answer to their research questions, thus in the aggregated data. These results can be formed by programming without seeing the full unit level data.

12. All micro-data are kept in database servers. For safety, direct access to the database from outside is denied. Access is possible only for programs implemented on application servers. Scientific research institutions can transfer to the SSC data computation algorithms. These algorithms will be run on the application servers by our programmers. Remote access is provided for interested organizations for obtaining the kind of aggregation they require.

13. This is the safest method of service for scientific research institutions.
