

## **Access to microdata in the State Statistical Office of the Republic of North Macedonia**

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### ***Abstract and Paper***

The obligation of all stakeholders in a community is timely and high-quality fulfilment of their obligations, based on their competencies, for adopting proper policies. Using statistical data of high quality in the decision-making process at macro and micro level is significant for the planning process in the country. In this process, one of the main providers of statistical information is the State Statistical Office (SSO), and one of the most important users of microdata is the scientific research community. Statistical information is useful only if its use is increasing in society. The SSO provides access to microdata (data on people, households or businesses) to support the research community. The research community has the possibility for in-depth complex analysis using microdata. Access to microdata is carefully managed to protect confidentiality. No information about individual people, households or businesses may be published or disseminated.

The protection of data confidentiality is ensured with the legal instruments: the Law on State Statistics, the Law on Personal Data Protection, EU regulations and SSO internal documents and procedures, appropriate handbooks, rulebooks and guidelines. The Statistical Confidentiality Committee in the SSO handles the procedures for granting researchers access to microdata. This arrangement gives researchers a unique possibility to use microdata in their research.

The paper briefly presents the rules and the organisational framework for researcher access to microdata at the State Statistical Office of North Macedonia, as well as some experiences from the use of microdata by researchers.

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Topic (I): Access to microdata

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## **1. Introduction**

The obligation of all stakeholders in a community is timely and high-quality fulfilment of their obligations, based on their competencies, for adopting proper policies. Using statistical data of high quality in the decision-making process at macro and micro level is significant for the planning process in the country. In this process, one of the main providers of statistical information is the State Statistical Office (SSO), and one of the most important users of microdata is the scientific research community. State statistics is an independent professional activity, which

conducted on a scientific basis, provides users (legal and natural persons) with data on the economy, demography, social life, environmental protection and other areas. The SSO provides access to microdata (data on people, households or businesses) to support the research community. The research community has the possibility for in-depth complex analysis using microdata. Access to microdata is carefully managed to protect confidentiality. No information about individual people, households or businesses may be published or disseminated. Access to anonymised microdata is becoming increasingly important to the scientific research community. The State Statistical Office of the Republic of North Macedonia provides researchers with access to the available anonymised microdata, in accordance with established good practices in the European Statistical System. Access to microdata can be granted to researchers and analysts from research environments pre-approved by the SSO. Any access to anonymised microdata is allowed under clear and strict conditions and procedures that are closely monitored to ensure that there is no violation of any legally established principles for safeguarding statistical confidentiality.

## 2. Legal framework

The protection of confidential information is ensured with the legal instruments: the Law on State Statistics (Official Gazette No. 54/1997, 21/2007, 51/2011, 104/2013, 42/2014 and 192/2015, 27/16, 83/18 and 220/18), the Law on Personal Data Protection, EU Regulations and SSO internal documents and procedures, appropriate handbooks, rulebooks and procedures such as: Handbook on Statistical Disclosure Confidentiality (SDC), Rulebook on the measures and techniques of protection of individual data collected for statistical purposes, Rulebook on the way of making security copy, archiving and safekeeping, as well as recovery from the backup copy for personal data, Rulebook on reporting, reaction and recovery from security incidents at the SSO, Information security policy, Back up strategy, procedures for archiving and for data access.

It is clearly stated in the Law on State Statistics that the activities of state statistics shall be performed according to the principles of professional independence, impartiality, objectivity, reliability, **statistical confidentiality** and cost-effectiveness.

#### **Article 4-a of the Law on State Statistics**

*“statistical confidentiality” shall mean that data collected from reporting units through statistical surveys or indirectly, from administrative or other sources, are confidential and shall be used for statistical purposes only, which prohibits the use of data for non-statistical purposes and their unlawful disclosure.*

A special article in the Law on State Statistics is dedicated to ensuring the protection of confidential data and access for the scientific community.

#### *Article 41*

*The Office and authorised bodies referred to in Article 6 of this Law may, upon written request, give individual data without identification data on the reporting unit, only to registered research organisations and registered individual researchers for scientific and research purposes, if the user ensures all protection measures prescribed by law and other regulations.*

#### *Article 43*

*To ensure the protection of confidential data collected for statistical purposes, measures shall be taken against unauthorised access, transmission or any unauthorised processing, as well as measures to prevent the destruction, loss, modification, misuse or unauthorised use of data.*

*The measures and techniques to ensure the protection of data collected in accordance with the Programme shall be prescribed by the Director of the Office or the manager of the authorised body.*

A number of general procedures have been established at the SSO with respect to storing, handling and protecting individual data, and measures have been put in place to monitor the implementation of the general procedures for data confidentiality, such as:

1. Form for requesting access to anonymised microdata
2. Confidentiality declaration
3. Project description and information regarding the data user
4. Agreement on granting access to anonymised microdata
5. Rules on work organisation in the protected safe room
6. Rulebook on managing user requests for access to anonymised microdata

7. Rulebook on procedures and measures for protection of data collected under the Programme of Statistical Surveys of the SSO.

### **3. Administrative, methodological, technical and organisational measures**

In accordance with legal regulations and international practice, the Director of the SSO has established an advisory body – the Statistical Confidentiality Committee. Requests for accessing anonymised microdata and the fulfilment of the necessary conditions are considered by the Committee. The right of access to anonymised microdata is based on signed agreements between the SSO and researchers (or institutions) and signed declarations of confidentiality protection. Work with anonymised microdata is enabled in a protected environment, i.e. "safe room" at the SSO, where researchers may analyse anonymised microdata. The safe room of the SSO is equipped with a protected workstation and software (Microsoft Office, SAS, STATA). The user of the data is obligated that he will not bring in devices (notebooks, smart phones) in the safe room that allow data transfer. All outputs, in electronic format, must be checked and approved by SSO experts before they can be removed from the safe room.

Researchers requesting access to anonymised microdata must meet the following conditions:

- to submit a research proposal with specific details on the objectives and the expected results of the proposed research work.
- the research proposal must demonstrate that there are no alternatives to using anonymised microdata for the research.
- to agree to provide the SSO with a copy of all outputs that are made publicly available.

Furthermore, researchers are obliged to the following:

- access to anonymised data that is granted for one purpose may not be used for another purpose without prior approval of the SSO
- to provide specific information about their plans to publish outputs.

- when publishing outputs, it must be clearly stated that the source of data from which the results have been prepared is the State Statistical Office.

Generally, access to data may be granted if the purpose for which the data are collected is consistent with the research proposal. The SSO will provide access to the subset of the data necessary to undertake the research and will determine the appropriate level of protection required for the data. Access will also be given to available microdata, metadata and information about the quality of the data to enable effective use of the data.

The SSO will not allow access to microdata, collected under the Law on State Statistics, for commercial gain.

In addition, the SSO is fully aware of the importance of implementing statistical disclosure control rules for microdata as well as for tabular data. In this regard, Argus software is used. A good level of knowledge in using Mi-Argus and Tau-Argus has already been achieved.

#### **4. Registration of researchers**

Each researcher who is interested in having access to anonymised microdata for the purpose of scientific research work needs to submit a request to the Office and it must be approved by the Director General of the Office. Approved requests from researchers who used anonymised microdata in the Office are registered and in that way they are included in the list of potential data users. The registration is based on the described scientific research work and proven competence of the researcher in the field of statistics, because access to the data is granted only for statistical purposes.

#### **Some cases of using microdata**

Using microdata increases the value of data that are provided in the SSO. Given below are some cases of using microdata in the SSO:

- Analysis of the changes in the economic status of persons throughout the quarters and years
- Analysis of the needs for services in the field of employment, healthcare, members of households who need care in rural and urban settlements
- The factors that influence the high unemployment, informal employment and the assessment of structural unemployment in North Macedonia, in order to provide a relevant recommendation on how to solve the high unemployment in the country
- Calculation of table for designing social assistance reforms

- Econometric analysis to identify the causative effect of the minimum wage on salary increases, employment and working hours
- Models for the analysis of factors that affect the price of labour
- Correlation of the conditions and causes of poverty in urban and rural areas
- The impact of the macroeconomic employment policy factors that influence innovation and the performance of small and medium enterprises.

## 5. Conclusions

The Law on State Statistics (Article 41) allows researchers access to microdata. Access to anonymised microdata is allowed only in a secured safe room located in the premises of the SSO where researchers can produce their own outputs, under strict conditions of respecting statistical disclosure rules. The SSO staff checks the results of the data processing to ensure that there is no breach of confidentiality. The policy on access to anonymised microdata for scientific research purposes is not aimed at limiting the access, but rather to make the access procedure simpler for the “scientific research community”, with a view to establishing clear and transparent procedures.

Giving access to anonymised microdata means at the same time giving access to the necessary metadata which enable effective usage of data. These include: lists of codes, coverage, and necessary information about data quality (such as non-response, sampling error, etc.).

It is a matter of public interest when detailed analyses based on anonymised microdata are available to decision makers as well as the entire public. The interest of the SSO in providing microdata is reflected in the fact that the feedback of the analyses can significantly contribute to the improvement of statistical data quality.

Users of microdata need more flexible procedure to access microdata in order to be able to work at a distance from the SSO. The SSO should keep track of the new methods and solutions for access to microdata for researchers that are being introduced in the EU countries and beyond and update the rules and the procedures to offer better service. The SSO should consider the option to share microdata through Eurostat remote access, by providing permission for sharing submitted data for the most requested data sets.

References:

1. Law on State Statistics (“Official Gazette of the Republic of Macedonia” No. 54/1997, 21/2007, 51/2011, 104/2013, 42/2014, 192/2015, 27/16 83/18 and 220/18)
2. Regulation (EU) 2015/579 of the European Parliament and of the Council of 29 April 2015
3. Law on Scientific Research Activity (“Official Gazette of the Republic of Macedonia” No. 46/08, 103/2008, 24/2011, 80/2012, 24/2013, 147/2013, 41/2014, 145/2015, 154/2015, 30/2016 and 53/2016)
4. Policy on Statistical Confidentiality