



D3 – Report on the evaluation of research and legal conditions for the establishment of a social science data archive in Macedonia



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Institute of Economic Sciences, Belgrade	IES	Serbia
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Introduction and methodology overview

This is the Macedonian report on the mapping of existing infrastructure and the national research policy context, part of the SEEDS project, which aims toward the establishment of social science data services in the Western Balkan countries.

The report is based on the findings of:

- A survey of researchers in the social sciences in the Republic of Macedonia;
- Interviews with policy-makers and funding institutions in the social sciences;
- Interviews with research infrastructure institutions in the country.

These are the key stakeholders in the current phase of promotion of the idea for the establishment of a social science data archive in Macedonia, as well as in the future endeavour that will lead towards the establishment of this type of national social science infrastructure.

The Interview guide for research policy and funding Institutions

The interview guide for research policy and funding institutions serves the purpose of collecting information from relevant public institutions in the country responsible for creation and implementation of research policy and its financing. The interviews with policy makers helped in the assessment of the institutional environment in which a national data archive will be settled, and the possibilities of national funding and support. The overview of current national policies is aimed to determine whether any activities and measures have been taken so far for the preservation and archiving of social science data in Macedonia.

The questionnaire for researchers

The aim of the survey of researchers was to assess the amount of research that is produced in the social sciences in Macedonia, the current practices of researchers with regard to storing and curation of research data, and their opinions with regard to the need for the establishment of a social science data archive in Macedonia.

The research infrastructure instrument

The goal of the interviews with social science research institutions was to collect more detailed information about current practices, knowledge and capacities with regard to data preservation at the institutional level in the public, private, and NGO sector.

We also relied on additional sources to collect information on the research environment in Macedonia. Official documents of state institutions in the area of research, publications of the State statistical office of the R. Macedonia, and previous assessments of the situation in social science research in Macedonia were used.

Part I: Policy and legal frameworks

1. Basic features of the science system in Macedonia

This part of the report presents the main institutions responsible for research policy in Macedonia, the funding sources of social science research, and the institutions involved in social science research in the country.

The **Ministry of Education and Science of the Republic of Macedonia** (MES) is the main national institution in the area of research and education, and the main actor responsible for designing and implementing national policies related to scientific research. In fulfilment of these tasks, MES is supported by the **National Council for Higher Education, Science, Innovation and Technology (NCESIT)**, an advisory/expert body of the government, which unites two previously separate bodies- the *National Committee for Development of Scientific Research and Technological Development of the R. Macedonia*, and the *Council for Scientific and Research Activity*. These bodies have an important role in the creation and implementation of national policies in the education and research sector. For example, they participate in the preparation of the national programme for research activity, a document which sets priorities in research areas and distributes funds for research in the country for the next four years. Within the Ministry of Education and Science there is the **Sector for Science, and Technical and Technological Development**, specifically responsible for the development of policy for research activities, including research infrastructure.

Research activities are currently regulated within the 2008 Law on Scientific and Research Activities, the 2008 Law on Higher Education and various bylaws, internal legal acts of the Universities, as well as other laws. Research and education fields are defined by the Organization for Economic Co-operation and Development's (OECD) Frascati classification of science and technology, and the UN's ISCED classification of education.

Currently, Macedonia does not have a strategic document devoted to research and science. In absence of this type of national policy document, the national programme for research is especially important because it sets the 4-year priorities in the area of research and its financing, including research infrastructure. According to the Law on Scientific and Research Activities, the programme is prepared in consultation with the National Council for Higher Education, Science, Innovation and Technology, the Macedonian Academy of Sciences and the Interuniversity conference, which unites the public and private Universities in the country. After adoption by the national parliament, this programme should be further operationalized in annual programmes prepared by the Ministry of Education and Science.

Currently, Macedonia also does not have an ongoing national programme for research as prescribed within the law on research activity. A draft proposal of this programme for the period 2013-2017 was prepared in 2012, with several public debates taking place, but a final version was not adopted.

We also took into consideration other strategic documents related to research in order to see if there is any reference to a social science data archive. In the National programme for development of education in the Republic of Macedonia (2005-2015) there is a short mention of the importance of research activities. But this is only in general terms and language. In the strategy for innovation of the Republic of Macedonia (2012-2020) research activities are seen in the context of innovation. This strategy also aims to connect better research and business sectors in the country. One section is devoted to research institutions, because of its importance for production of innovations. Here a large project goal for equipment of 189 “sophisticated laboratories” by 2014 is mentioned.

With the aim of fulfilling the Strategy for innovations goals’, the **Fund for Innovation and Technological Development** was recently established. Its main focus is the business sector and the connection of research and commercial activities. At the time being, a strong connection with social science research has still not been developed.

Funding of research activities

In Macedonia the financing of science is not managed by a separate body. The main financing of research projects is done by the Ministry of Education and Science which, as mentioned above, runs an annual national programme for research, open for competition to the public and, more recently, to private universities in Macedonia. The last call of this programme in 2010 has largely prioritized research topics connected to history, archaeology, and language studies, while social science research was almost completely neglected. Several international bilateral research schemes were also established- for example with Bulgaria, Slovenia, Austria and Japan, but some of the previously approved funds were cut or were distributed with significant delays. Indirect funding for research can also come from other national level programmes, as well as from other government institutions.

Academic research in Macedonia is currently financed by 0.22% of GDP, which is among the lowest levels of funding in Europe (Erawatch, 2014). In 2011 the share of public funding in the gross expenditure for research and development was 44.2% (which was an actual increase

compared to 2000-2007), the share of international funding was 43%, while the share of private sector funding was 12.8% (Erawatch, 2014).

With regard to the social sciences, in 2008, these disciplines received only 8.6% of the total gross domestic expenditure for research. 65.7% of these sources came from the public sector, 15.8% from the private sector, 18.4% from foreign sources, and only 0.1% came from the non-profit sector (Josimovski, 2011, p. 21). What is striking when discussing research funding in Macedonia is the fact that more than 90% of national expenditure for research consists of salaries for the employed researchers and current expenditures for research institutions (Josimovski, 2011; State Statistical Office of the Republic of Macedonia, 2014).

Besides facing a serious lack of national funds for research, Macedonian researchers are faced with significant problems when it comes to the availability of good infrastructure for research, including libraries, access to scientific journals and data bases, IT equipment, general software, statistical software, and statistical training for researchers. On the other hand, despite the lack of national funds for research, social science research in Macedonia is still not well integrated within European research. The available funds from the EU framework programmes for research and development, or other programmes of the EU are not effectively utilised in the country. In the technical sciences, for example, the situation is much better.

Research institutions

Currently, there are five public universities, nine private universities, and several faculties or other higher education institutions in the register of higher education institutions of the Ministry of Education and Science. Most of the research in the social sciences in Macedonia is however performed at public research institutes, at public universities (especially their research institutes), and the Macedonian Academy of Sciences. In 2008 the public sector employed more than 90% of research staff in the social sciences and humanities (Josimovski, 2011, p. 1). Specifically with regard to social science research, the NGO sector and think tank organizations appear to also be large producers of research data in the last several years, especially in light of the recent cuts of national funds for research for public institutions.

2. Current policy related to science infrastructure

In the existing strategic documents in the area of education and research in Macedonia, a social science data archive is not explicitly mentioned. From the interview that we conducted in MES, we found that a social science archive has not been part of any plans or activities related to research in the ministry. The officials however, were very open to the idea, recognising its value in the context of open and easier access to social science research for the academic community and the broader public in the country.

Research infrastructure, however, has attracted considerable activity by national policy makers, with several recent national-level investments presented below. The Law on Scientific and Research Activities defines research infrastructure as “objects, laboratories, innovation centers, computer centers, scientific equipment, library-information and reference centers, archival and publishing documentation, as well as anything else that supports scientific research”. Article 54 of the same law specifically regulates “Data bases of information about scientific and research activity”. According to this article, and the changes from 28.10.2013, in order to follow more closely scientific and research activity, the Ministry of Education and Science shall establish and maintain:

- Databases of information about research institutions
- Databases of researchers
- Database of research programmes and projects (both national and international)
- Database of bibliographies of researchers
- Database of researchers in the country and abroad

Thus, there is no mention of data archives for research data from conducted research in the main legal act that regulates research activity, even though research infrastructure is regulated in a separate article.

The implementation of these provisions has so far resulted in financing of research laboratories, predominantly in other scientific areas than the social sciences, and the establishment of several web platforms presented below.

3. Key components of the research infrastructures and public institutions taking part in development of research e-infrastructure

Research infrastructure in Macedonia is still under development, with several research infrastructure projects run by the Ministry of Education and Science started recently. Other institutional-level activities are less common, although there are some exceptions, as in the case of the E-repository established by the public university “Goce Delchev” in Shtip, which we present further in the report. The State Statistical Office, National and University Library, and National Archive also use some kind of infrastructure in performing their main functions, and their capacities are also interesting for our research. We present them in Part III of this report. Below is a short presentation of the main research infrastructure institutions and projects related to scientific research and higher education in general in Macedonia.

Recent investment of the government in science infrastructure involves the equipment of 80 laboratories for scientific research and applicative activities in the public universities and research institutes. This is the largest recent investment in science infrastructure. It has to be noted however, that only one of these laboratories is used for social science purposes. Also, a project for translation of 1000 books and textbooks from all scientific disciplines in the Macedonian language, and access to EBSCO database and other research databases were provided by the MES in order to be used by all higher education and research institutions across the country.

The **Macedonian academic research network** (MARNET) (<http://marnet.mk/>) is a public body responsible for the organisation and management of the single education and research telecommunication network in the Republic of Macedonia. It supports “the educational and research activities of research and education community in Macedonia, and among others, promotes and disseminates the use of information and communication technology, especially in the academic and research sector.”

The web platform **Nauka.mk** (<http://www.nauka.mon.gov.mk>) serves as an online platform for registration of researchers and their research activities (in accordance with the Article 54 of the Law on scientific and research activities discussed above). Researchers fill in information about their education, employment, research projects and publications, and can also deposit their publications. The portal aims to make “accessible the research results” to the general public. The platform is however not fully operational since it currently only lists names of researchers by scientific field, and shows information about research laboratories.

The web platform **Plagijati.mk** (<http://plagijati.mon.gov.mk/>) is a tool for detection of plagiarism in academic work developed by MES, which currently only covers Macedonian language sources. According to the Law on Scientific and Research Activities, all student works, master theses and doctoral dissertations prior to acceptance or public defence have to be submitted and checked for plagiarism using this software.

4. Support for open access to scientific institutions

In 2012, within the project *Initiative for Open Educational Resources*, carried out by the Foundation Metamorphosis, a working group was established for promoting the idea of free access to educational resources in Macedonia, which also includes open access to research data. One year later, an informal network of citizens and different institutions (schools, faculties, NGOs) was formed. The alliance publicly supports the declaration of UNESCO for Open Educational Resources. At the same time the website OER.MK is a resource centre for free access to educational material.

5. Legal framework regarding data protection and dissemination

Law on copyrights and related rights (Official gazette of the R. Macedonia No.115/10, 140/10 and 51/11)¹. This law regulates the copyrights of authors over their work, among others, the rights of “(...) authors of data sets over their works, or related rights...”, as well as the practicing and protection of copyrights and related rights (Article 1). According to this law, related rights can also be “data bases and their authors”. Related rights are regulated with the General provisions on related rights, especially in Part 6- The rights of authors of data bases (Article 118-122). The law includes the following aspects: definition of database authors; contents of the rights of the authors of databases; the scope of protection; rights and obligations of the legal users; restriction of the rights; and duration of the rights of authors of databases. The law also foresees the possibility of regulation of collective management of related rights.

Law on archival material (Official gazette of the R. Macedonia No.95 from 26.7.2012)² regulates the protection, storage, processing and use of archival material. According to this law, Article 3, archival material is defined as “documentary material of permanent value for R. Macedonia, the science, culture, its possessors, as well as for other needs.” According to Article

¹http://www.kultura.gov.mk/images/stories/dokumenti/Zakon_za_avtorskoto_pravo_i_srodnite_prava_Precisten_tekst.pdf

²<http://www.kultura.gov.mk/images/stories/dokumenti/zakoni/D87COD737D113A4EBCE0620790740D5D1.pdf>

3, point 5, research databases are defined as “nonconventional archival and documentary material”, as “data kept/noted in data bases which can serve as a basis for creation of conventional documents...”. This law also regulates the rights and obligations of the possessors of archival and documentary material, which can be institutions, legal or natural persons, carriers of the right of possession over the archival and documentary material (Article 18 to Article 20). The law also regulates the right of access and use of the data in this material. The electronic archival and documentary material is regulated separately by the law (Article 8 to Article 15) where provisions with regard to “electronic archive” and “electronic data” exist, concerning their preservation, accessibility, security, confidentiality and authenticity.

Law on protection of personal data (Official gazette of the R. Macedonia No.7/05, 103/08, 124/08, 124/10, 135/11, 43/14 and 153/15)³ regulates the protection of personal data through the discourse of protection of personal liberties and freedoms of individuals, and the right of privacy in connection with the usage of personal data. In particular, this law regulates secrecy and protection in processing the personal data of citizens of the Republic of Macedonia.

Article 2 determines the meaning of certain terms used in this law. "Personal data" shall be any information about an individual whose identity may be determined directly or indirectly. "Personal data processing" is “every operation or a sum of operations performed on personal data, automatically or otherwise, such as: collection, recording, organizing, storing, adjusting, or altering, withdrawing, consulting, using, revealing through transmitting, publishing or making them otherwise available, aligning, combining, blocking, deleting or destroying”. According to Article 3, the law applies to entirely or partly automated personal data processing. Personal data protection is guaranteed to every person without discrimination on any grounds (Article 3a). With regard to the personal data processing, Article 5 prescribes that personal data is collected for specific, clear and legally determined purposes and processed in a manner pursuant to those purposes. Further data processing for historic, scientific or statistical research shall not be considered as not being in compliance with the primary purposes for the data collection, provided that the appropriate protection measures have been undertaken in accordance with law. The policy for protection of the privacy, personal and family life of the personal data subject from their unauthorized use, shall be applied when personal data are used for historic, scientific or statistical research purposes, and in as short term as possible the data shall be made anonymous. After expiration of the preservation period, the personal data may only be processed for the aforementioned research purposes. Among other criteria set out in Article 6, personal data processing may also be performed upon previously obtained consent of the personal data subject. The secrecy and protection of the processing of the subject’s personal data is provided by applying “proper technical and organizational measures for

³http://www.dzlp.mk/sites/default/files/Law_on_Personal_Data_Protection_Cleared_version_0.pdf

protection of accidental or illegal damaging of the personal data, or their accidental loss, change, unauthorized disclosing or approach, especially when the processing includes transmission of data over a network and protection of any kind of illegal forms of processing.” (Article 23, paragraph 1). Article 31 of the law provides that the transfer of personal data to other countries “may be carried out only if the other country provides adequate degree of personal data protection.” Finally, what is important in the context of this report is the question of revealing data to users. Regarding the provision of personal data, Article 34, paragraph 5, prescribes that “The personal data processed in scientific and research and statistical purposes may not be revealed to the user in a form which enables identification of the person to whom the personal data refer”.

The aim of the **Law on free access to information of public character** (Official Gazette of the R. Macedonia N. 13/06) is to provide transparency in the work of the state and public bodies, and also to provide free access to information that is produced and/or possessed by such entities. According to the law, the *information holder* can be “...(a) public institution or service,[...](a) legal and physical person that have public duties and their activity is in public interest ...” (Article 1- 3). *Information requester* is any legal or natural entity without any discrimination, which includes domestic and foreign entities (Article 3 and 4).

In addition, in Article 3 the law defines that a *document* is any information regardless of its physical form or nature, which includes texts on paper, any type of audio and video material and records, but also moveable equipment for data processing, including equipment or parts of equipment, where the data are stored.

The main logic of the law is that any information is under “free access” if it is in the public interest and especially if it is produced and held based on public money. On the other hand, the main reasons for denying free access are: protection of privacy, the data or information is classified, or they are part of criminal or court investigation and procedure, and also, when displaying of the data or information will bring harm to someone’s commercial interests and/or to someone’s intellectual or industrial property, and when the data/information is in very draft stage and will bring confusion to the public.

Part II Survey on production, preservation and use of research data among researchers

1. Methodology

In order to reach as many researchers as possible, we compiled a database of researchers in the social sciences in the Republic of Macedonia. We did that in several steps. After mapping the research institutions in the private and public sector, we relied on information about staff from their websites. We also contacted 105 NGOs and think tank organizations and asked them to provide us with information about researchers engaged in collecting and analysing research data within their organisations. Those who responded to our e-mail were also included in the dataset, alongside the biggest organisations for which we collected information from their websites.

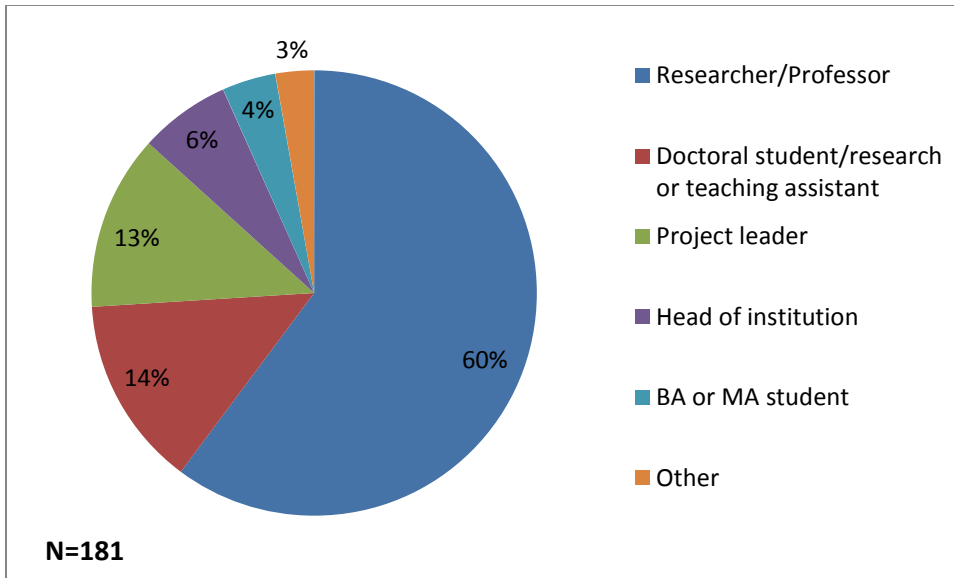
The resulting dataset consists of 1,159 researchers with e-mail addresses that were contacted, and 156 for who we could not provide e-mails (even after officially contacting their institutions). In our invitation email we also encouraged respondents to inform other researchers, especially those not employed at higher education institutions about the survey, since the access to it was not restricted. However, we are confident that we managed to map more than 90% of active researchers in the social sciences in Macedonia.

One invitation e-mail and two reminders were sent between July 2 and September 3, 2015. The survey was accessed by 278 researchers, with 181 completing the survey. Thus, our response rate stands at around 15% of the mapped population, and is comparable with similar research. No less than 140 researchers have provided their contact details in order to receive additional information related to the SEEDS project and our further efforts in establishing a social science data archive, illustrating the interest for this undertaking in the country.

2. Survey participants

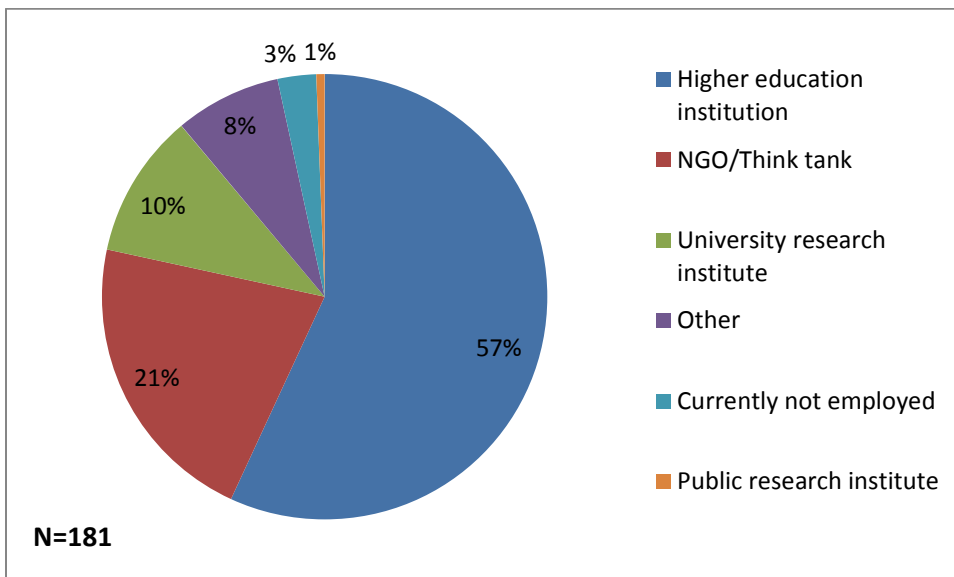
A majority of our respondents are (senior) researchers or university professors (60%). The second largest category of respondents was doctoral students or teaching/research assistants (14%). 13% of researchers were currently project leaders, 7% were heads of institutions. 4% of researchers were BA or MA students (most probably working in the NGO sector), while 3% chose the option “other”.

Figure 1. Principal activity of respondents



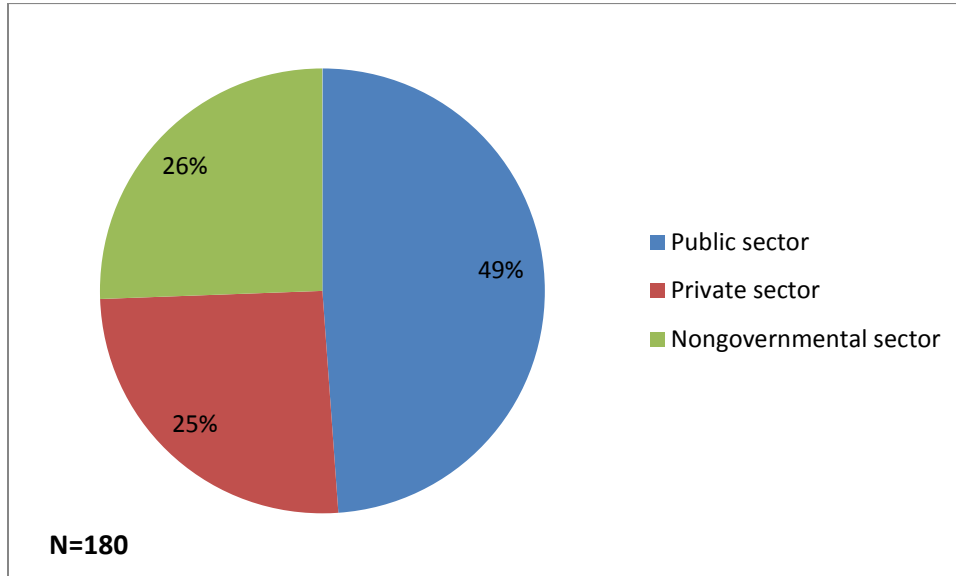
With regard to institutional affiliation, a majority of respondents work in a higher education institution (57%). The second largest category of respondents is affiliated with NGO/think tanks (22%), followed by the employees in university research institutes (11%). Three percent of researchers are currently not employed, and 8% of researchers are affiliated with other types of organisations.

Figure 2. Institutional affiliation of respondents



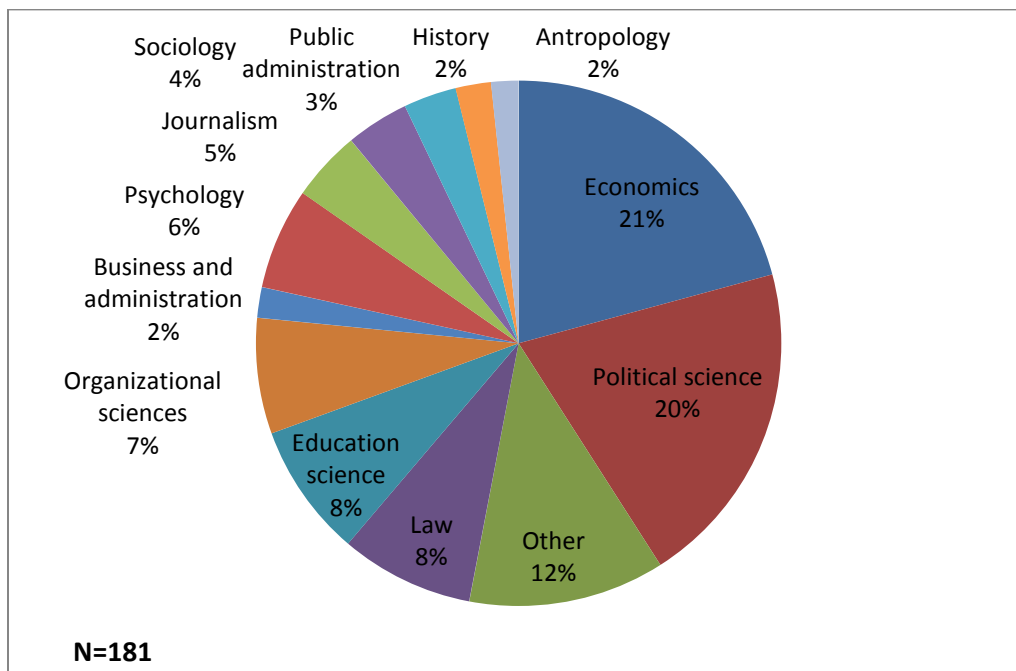
As shown in figure 3, 49% of the respondents work in the public sector, 25% in the private sector, and 26% in the nongovernmental sector.

Figure 3. Type of employment of respondents



With regard to research discipline (figure 4), economists and political scientists dominate among our respondents, followed by researchers in education science, law, organizational sciences, and psychology.

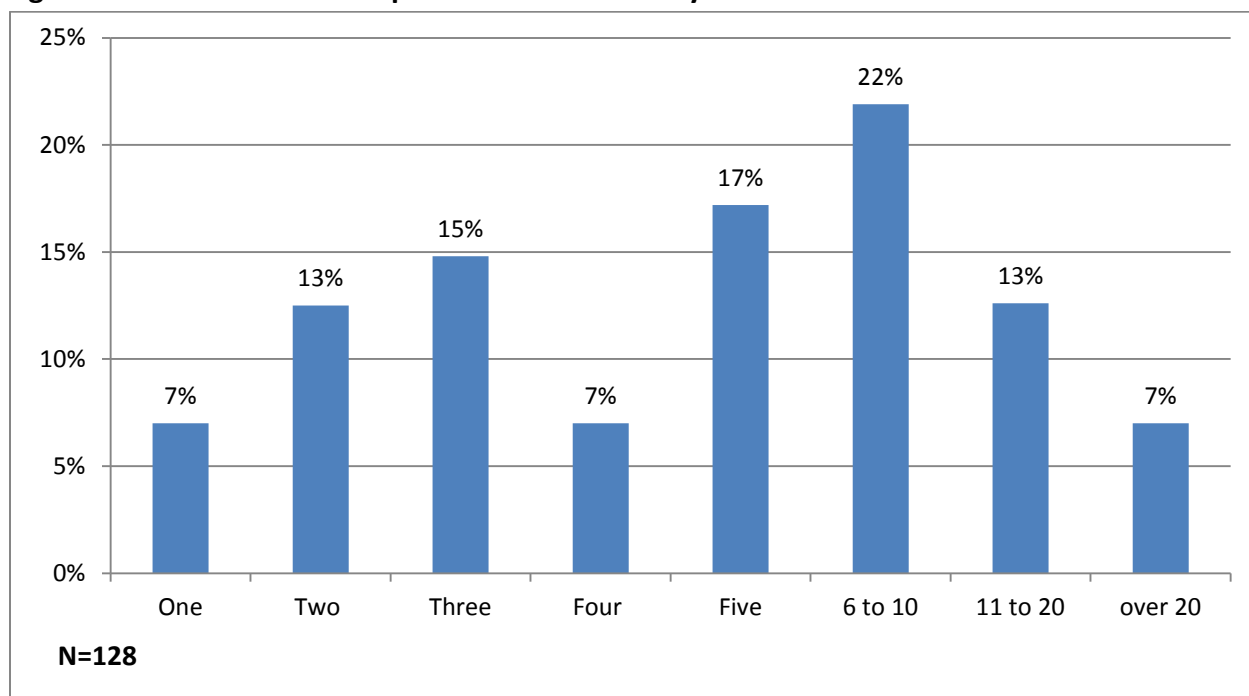
Figure 4. Principal research discipline of respondents



3. Production of data

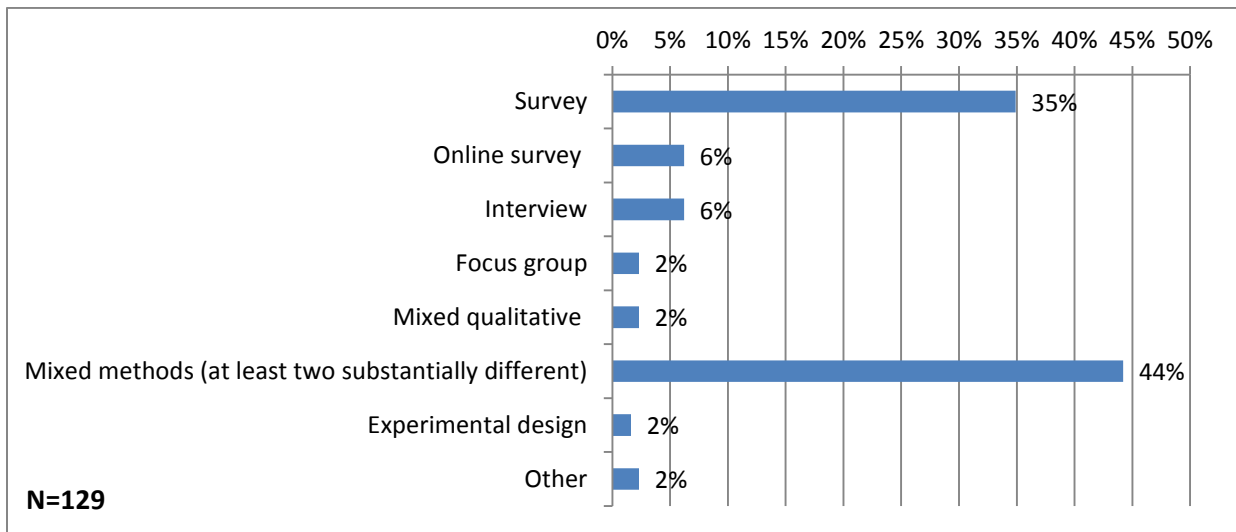
A significant number of social science staff in Macedonia is involved in research activities. In the last 5 years, 75% of respondents have produced or helped in producing research data (figure 5). The mean number of produced datasets stands at 9.23, while the median, which we use because of the several outliers, is 5. On average, every year, one dataset per researcher is produced. Of all respondents who have produced datasets in the last 5 years, 7% have produced only one dataset, 13% produced two datasets, 15% produced three datasets, and 7% produced four datasets. 17% of researchers have produced five datasets, while a significant number of researchers has taken part in production of more than 5 datasets (42%).

Figure 5. Number of datasets produced in the last 5 years



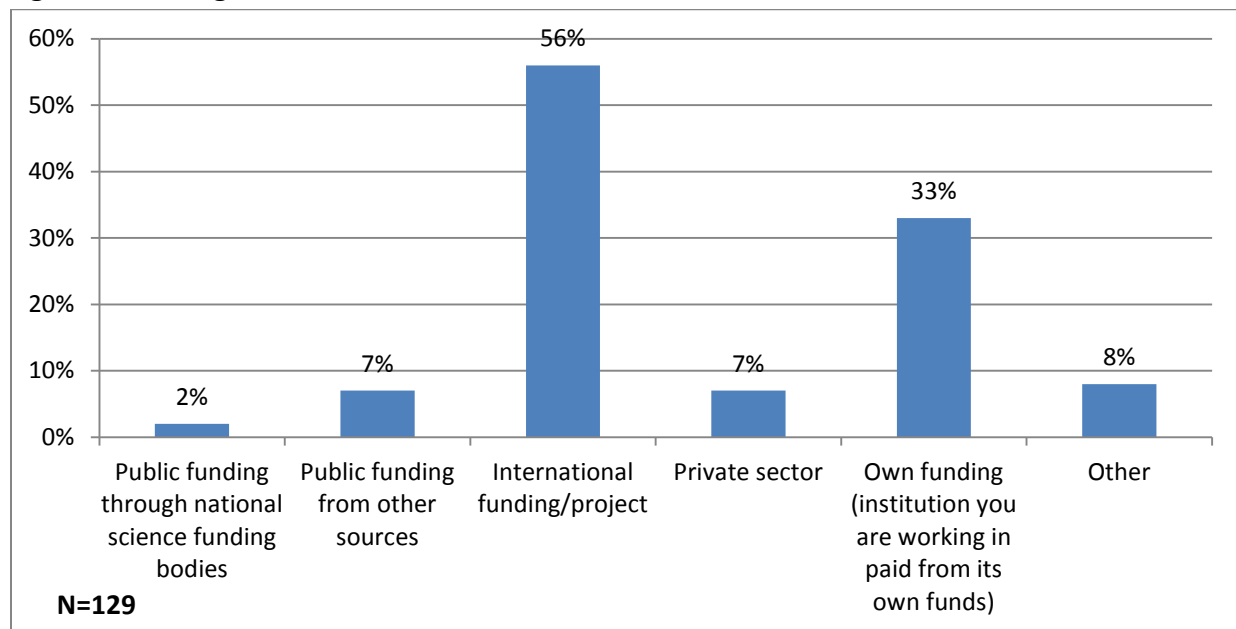
Researchers in the social sciences in Macedonia use both qualitative and quantitative methods in their research (figure 6). Currently, a considerable amount of researchers (44%) use mixed methods (at least two substantially different methods). Quantitative methods (survey, online survey) are used by 41% of researchers, which means that quantitative methods are very popular and used very frequently in Macedonian social science research. Exclusively qualitative methods (interview, focus group, or mixed qualitative methods) are used by only 10% of researchers. Two percent of researchers used some kind of experimental research design, and 2% used other research designs.

Figure 6. Data collection method used in respondents' most recent research



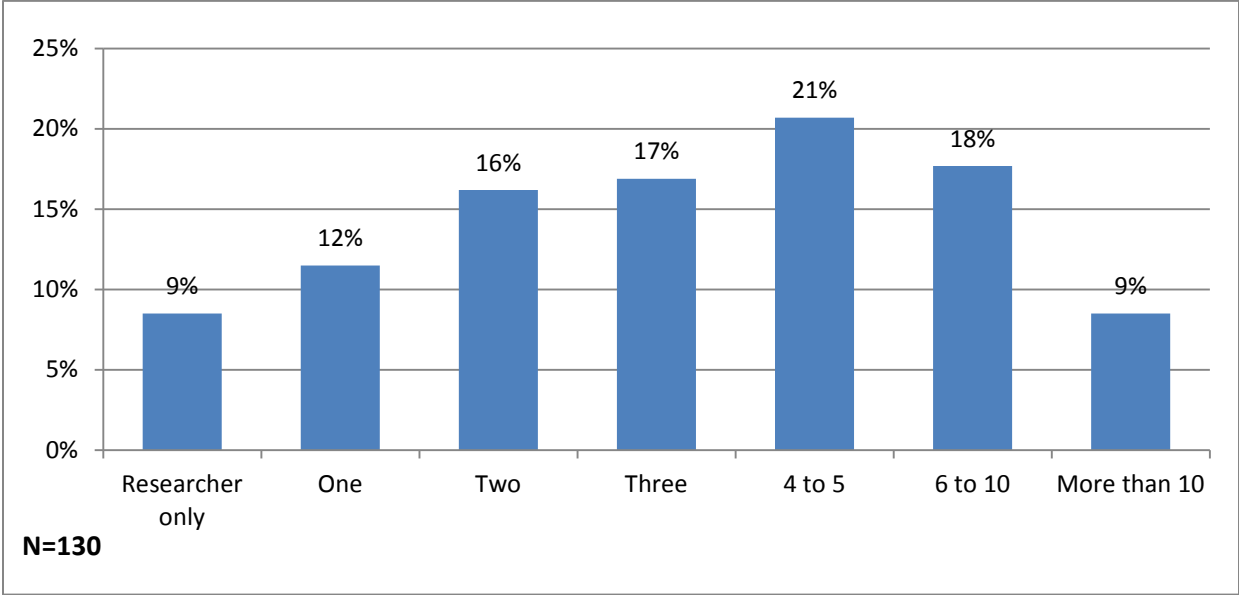
Funding of research is important issue for researchers. 39% of respondents have indicated that their last research was financed by international funders, followed by 22% who said that their research was funded by the institution where they work (figure 7). Other funding (90% of what is actually researchers' own private funding) is used for 8% of all research, followed by 5% of research funded by the private sector. What is of great concern is the poor funding from public sources in Macedonia-- only as little as 2% of research is financed by national public sources.

Figure 7. Funding sources of most recent research



When it comes to the number of researchers involved in the most recent research projects, 21% of research projects were conducted by teams of 4 to 5 researchers, 18% of research projects involved larger teams of 6 to 10 researchers, 17% of research was performed by 3 researchers, 16% of research was conducted by two researchers, and 9% of research projects were conducted by a single researcher (figure 8).

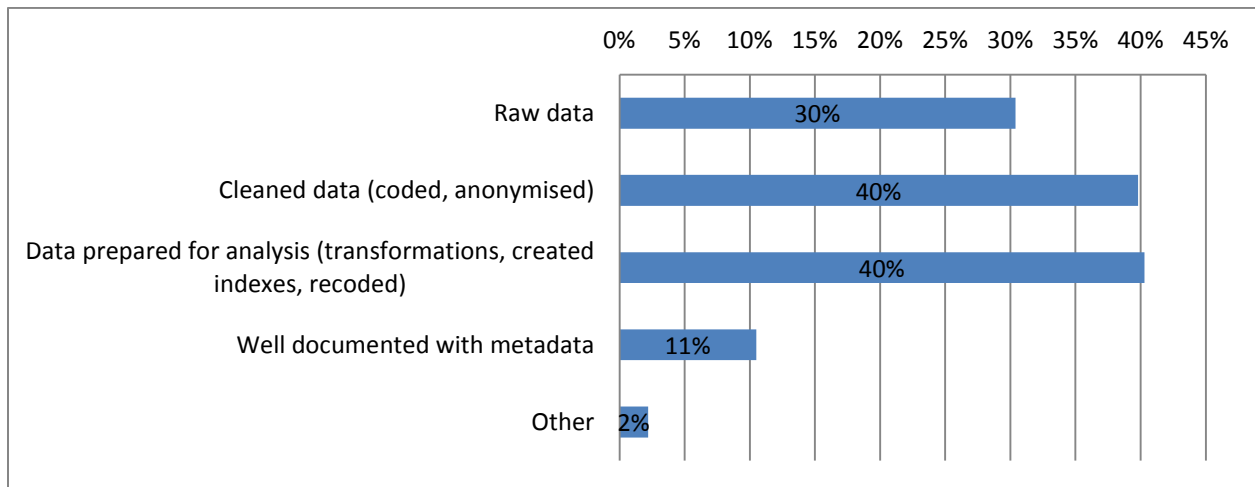
Figure 8. Number of researchers involved in the most recent project



4. Archiving practices and preferences

This section of the questionnaire was devoted to the current practices of researchers with regard to the preservation of their research data. 98% of researchers have indicated that they have kept their research data after their last project was completed. However, as shown in figure 9, only 10.5% of researchers keep their research data well documented with metadata. 40% of researchers keep data prepared for analysis (with transformations, created indexes, recoded), another 40% keep cleaned data, and 30% also keep raw data (multiple responses were possible).

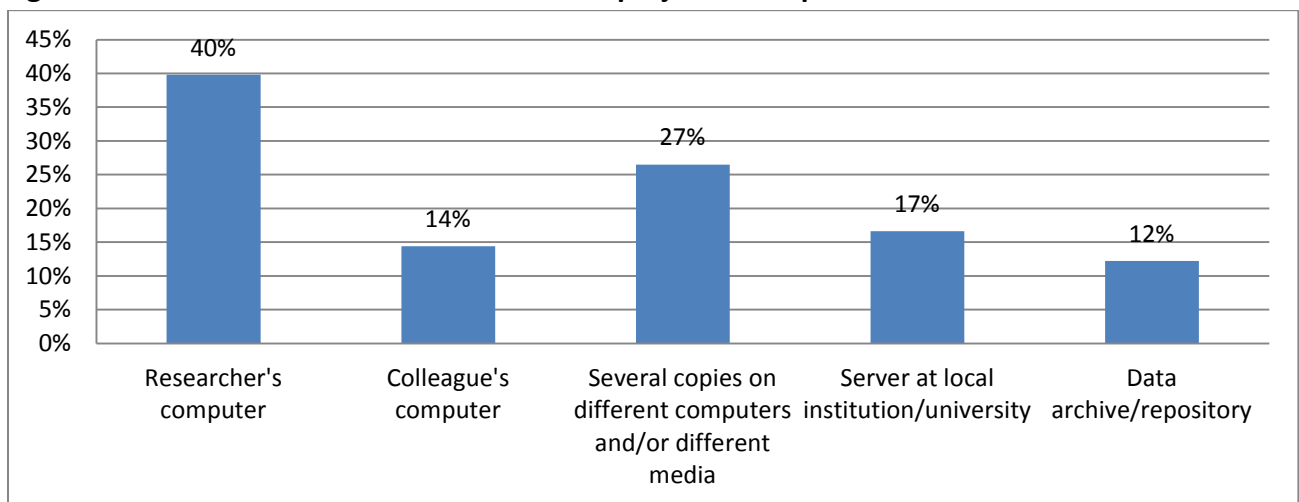
Figure 9. Type of data kept from most recent project



When asked whether they have used any special documentation/metadata standard for description of research data, only one researcher indicated that he/she had used the ISO 11179 standard (not shown in figures). Also, only 4% of researchers have used some kind of internal documentation standard of their institutions which indicated the low level of research documentation practices in Macedonia and the need for education of researchers about research data documentation, as well as a more systematic approach for data preservation at the institutional level.

The next question asked researchers where the data from their last project are kept. Aside from keeping their data on their own computers (40%), several copies on different computers/media (27%) or on colleagues' computer (14%), 17% of researchers indicated that their institution keeps the data- which is a somewhat more systematic approach to data preservation (figure 10). 12% claim to have deposited their research to a data archive/repository.

Figure 10. Place where data from most recent project are kept



5. Access to data

Based on the interviews presented further in the report, we have concluded that the practice of providing access to research data differs from institution to institution, but also, in most of the cases, there is a lack of rules, standards and procedures for regulating such access, not only within particular organizations, but even more, within the field of social sciences at the national level. Such a “state of affairs” is confirmed also by the survey results.

The first question in this sense was: “Who may be granted access to the data from your last project, for research use?” The data show that the dominant practice in providing access is very narrowly focused: the biggest group of respondents (44%) answered “members of the research team” (figure 11). Much fewer respondents (19%) answered “members of my institution” and even fewer (14%) “broader scientific community”. Only 7% of respondents answered that data are “publicly available – open access” but there is a slightly bigger group (9%) that gave quite an opposite answer: the access is granted just to the project leader.

Figure 11. Access to data from researchers’ last project



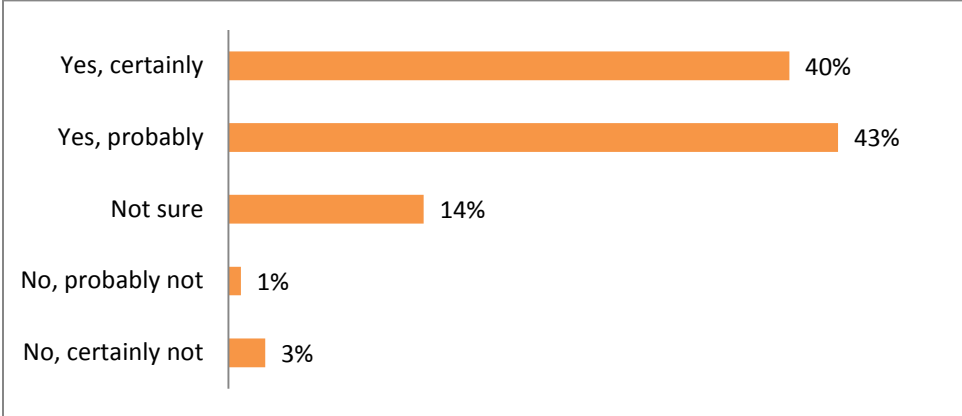
The answers of the next question (“In your opinion, what would be the ideal level of access to this research data?”) give a better understanding of the opposite viewpoints with regard to granting access to research data. As shown in figure 12, the majority of respondents, but only with a few percent advantage, shares the narrow understanding of access where the ideal level of access is when the access is granted: just to the project leader (25%); to the members of the research team (19%); and to the members of my institution (5%). On the opposite side are those that consider that the ideal level of access is when access is granted to the “broader scientific community” (23%) and “when data are publicly available – open access” (24%).

Figure 12. The ideal level of access to research data from researchers' last project



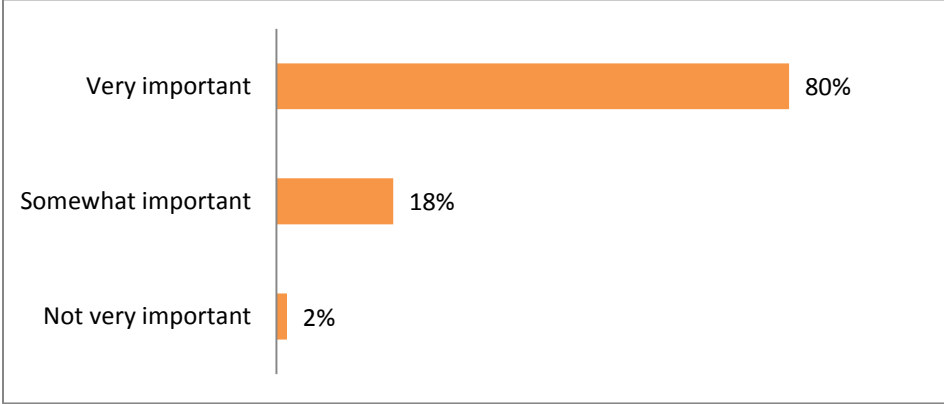
The readiness to share research data among our respondents is on a satisfactory level if the necessary standards for archiving research data are introduced through the creation of a social science data archive. In such a new environment, the attitudes are very different from the previous cases – about 80% of respondents are prepared to grant access to other researchers, and the difference is only in intensity of willingness to provide access: probably – 43% and certainly – 40% (figure 13). This is a clear indication that a social science data archive will be “welcomed” from the very beginning of its work.

Figure 13. Willingness to deposit research data to a social science data archive



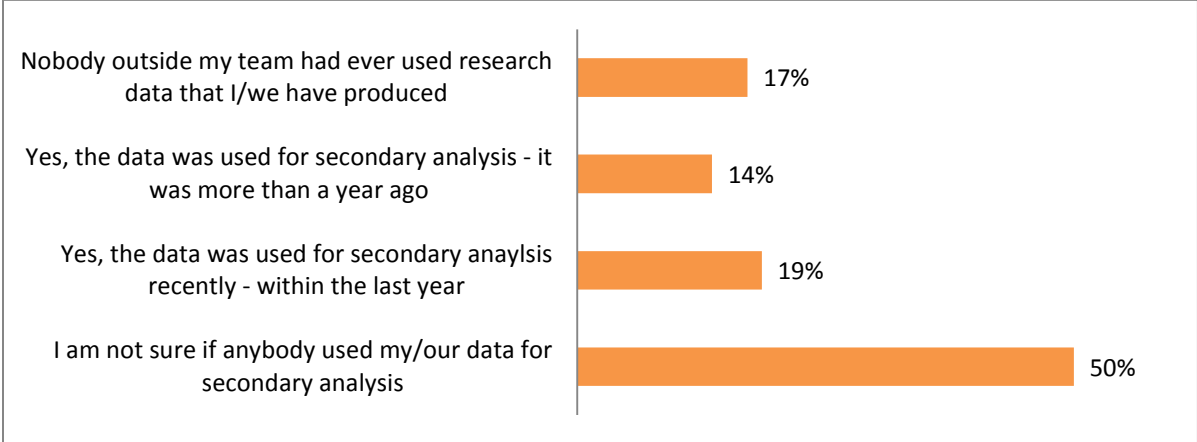
In support of this new environment is also the awareness of the importance of sharing research data within the researchers’ own discipline. Four out of five respondents (80%) answered that sharing of data is “very important”, and 18% estimated such practice as “somewhat important” (figure 14). Such answers strongly suggest that there is already “fertile ground” for future or even current building of professional communities within particular research fields. This is the first condition and is of great importance in establishing a broadly acceptable policy that will define the work of a social science data archive.

Figure 14. The importance of sharing research data within researchers’ own discipline



Although sharing of data for most of the respondents is very important, the answers to the question: “Do you know if any other researcher outside your own team had used for secondary analysis any of the research data that you produced?” show that there is a clear lack of this type of information: half of the respondents are not sure if anyone had ever re-used data that they had produced (figure 15).

Figure 15. Knowledge if someone outside researchers’ own team had used their research data



Very similar is the situation with the next two questions. The answers to the questions “When was the last time that you analysed quantitative/qualitative data that were not produced by you or your own research team?” show an even bigger lack of this essential information. 52% of respondents in the case of quantitative data (figure 16) and 59% of the respondents in the case of qualitative data (figure 17) have no answer to those questions.

Figure 16. Most recent time when researchers have analysed quantitative data that were not produced by them or their research team

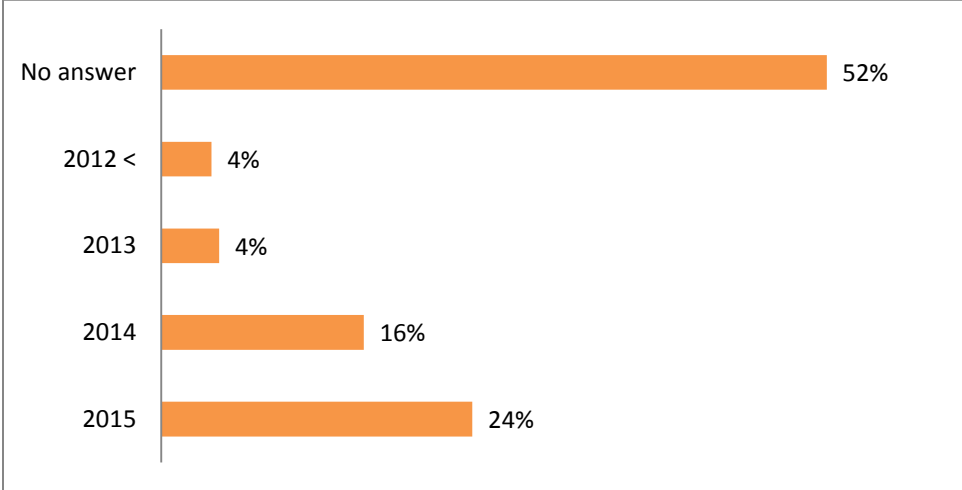
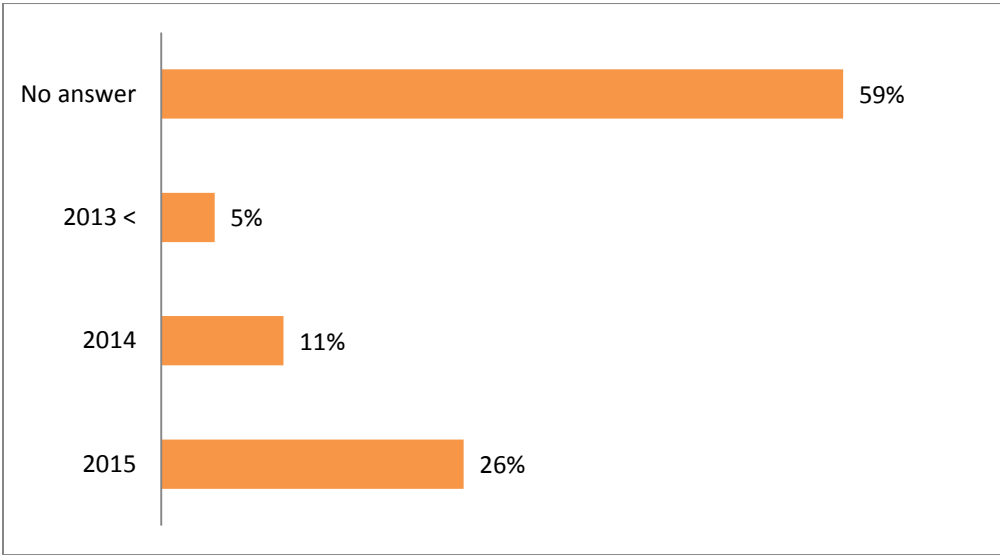


Figure 17. Most recent time when researchers have analysed qualitative data that were not produced by them or their research team



The consequences of such lack of information are two-sided and always essentially negative. On the one hand, every second researcher has no information whether someone has used his/her data, and on the other hand, even more than half of the respondents cannot say when was the

last time they used data produced by other colleagues. Obviously there is no practice of exchange or using (commenting, checking) research data produced by other researchers.

The point is that this type of information is the necessary “infrastructure” for establishing and functioning of any type of professional community. Hence, such “isolation” raises important questions about professional communication within the particular discipline or field, or how the professional community is established and shares knowledge.

The main reasons that led to this situation are illustrated in the answers to the question: “What are the barriers to conducting secondary analysis in your country?” (multiple answers were possible). As shown in figure 18, the main three reasons are: “inaccessible data” (54%); “poorly documented data” (41%) and “not enough relevant data” (37%). At the same time, it should be stressed that the other two reasons are far from unimportant. One-fifth of respondents points to the lack of appropriate training for secondary analysis, while one-fourth points to the existing “research culture” in the country. It could be argued that if the percentage of the last two answers was smaller, that would have been a sign of an already articulated need or awareness. Without doubt the present working and professional environment would need to change, and in order for this change to happen there is a need for institutional upgrade.

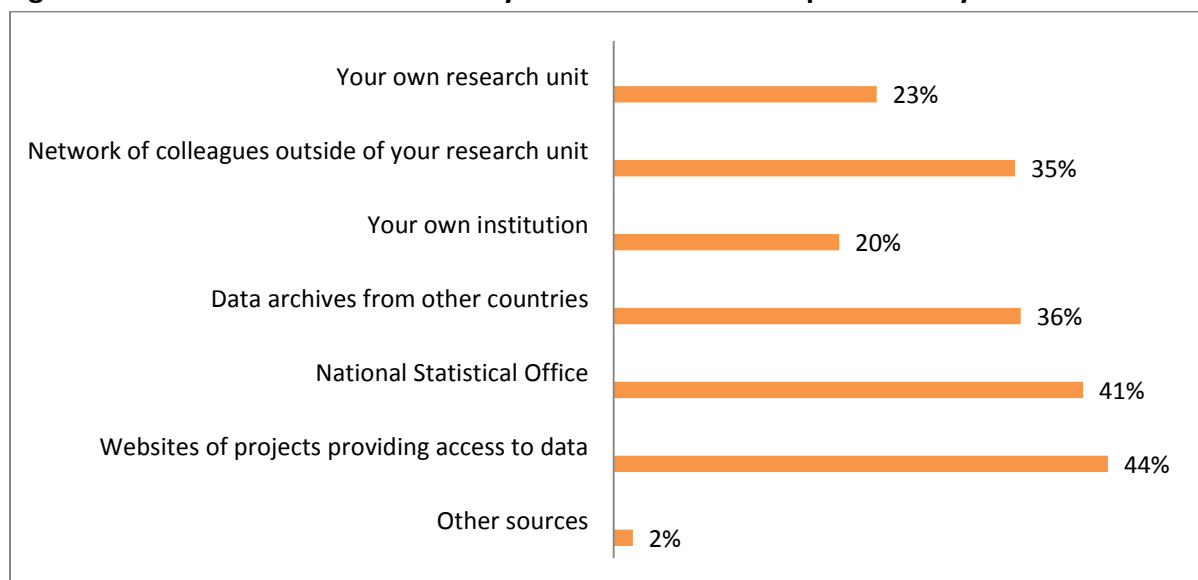
Figure 18. Barriers for conducting secondary analysis



At the same time, we should be aware that the necessary elements for establishing a new professional environment are already present in the work of researchers. However, because of the previous noted deficiencies it is only an informal practice. This thesis is confirmed with the

answers to the question: “There are different ways to obtain research data produced by others. Please indicate all the sources that you ever used successfully to obtain such data.” As the figure 19 below shows, most often used sources for research data produced by others are: websites of the projects (44%), National Statistical Office (41%), and data archives from other countries (36%).

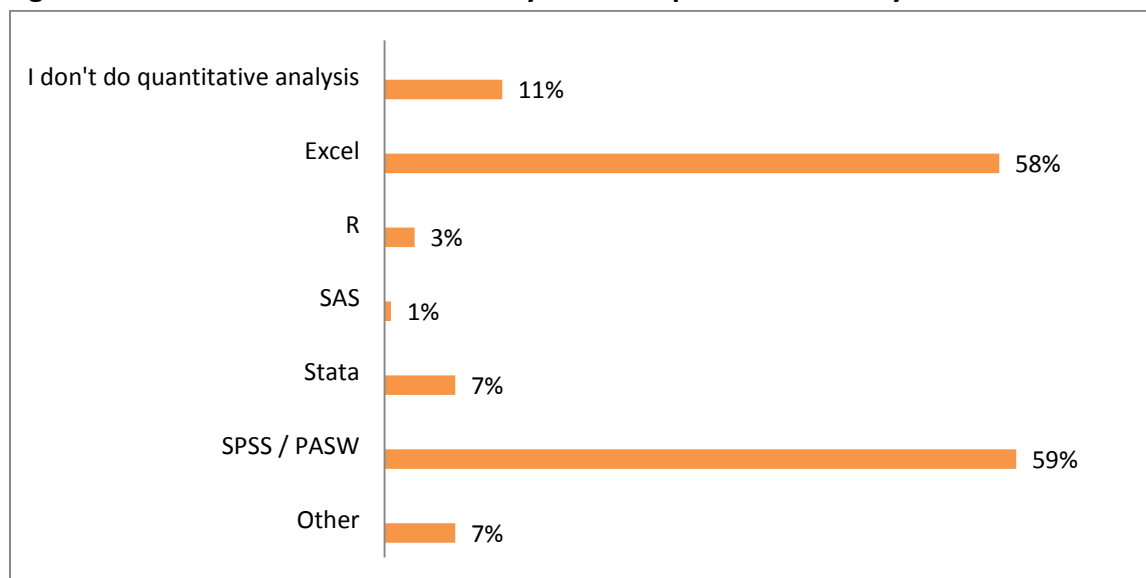
Figure 19. Sources used to successfully obtain research data produced by others



6. Data analysis software

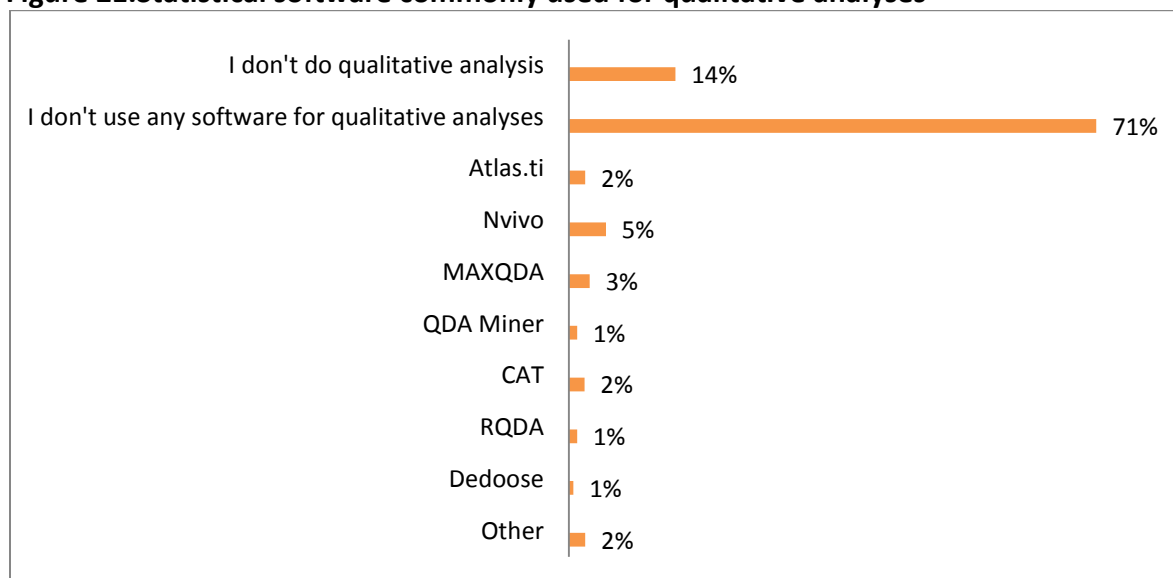
With regard to quantitative analyses there is a “common professional language” among researchers in Macedonia. To the question, with multiple answers: “What statistical software do you commonly use for your quantitative analyses?” the answers show that a majority of respondents are using Excel (58%) and/or SPSS (59%). Newer software like R, which is also open access, is much less frequently used- only by 3% of researchers.

Figure 20. Statistical software commonly used for quantitative analyses



The answers to the question: “What statistical software do you commonly use for your qualitative analyses?” show that 71% of all respondents do not use any software for qualitative analysis. Aside from the 14% of researchers who do not perform qualitative analysis, only 5% or less of researchers use some of the listed software for conducting qualitative analysis (figure 21).

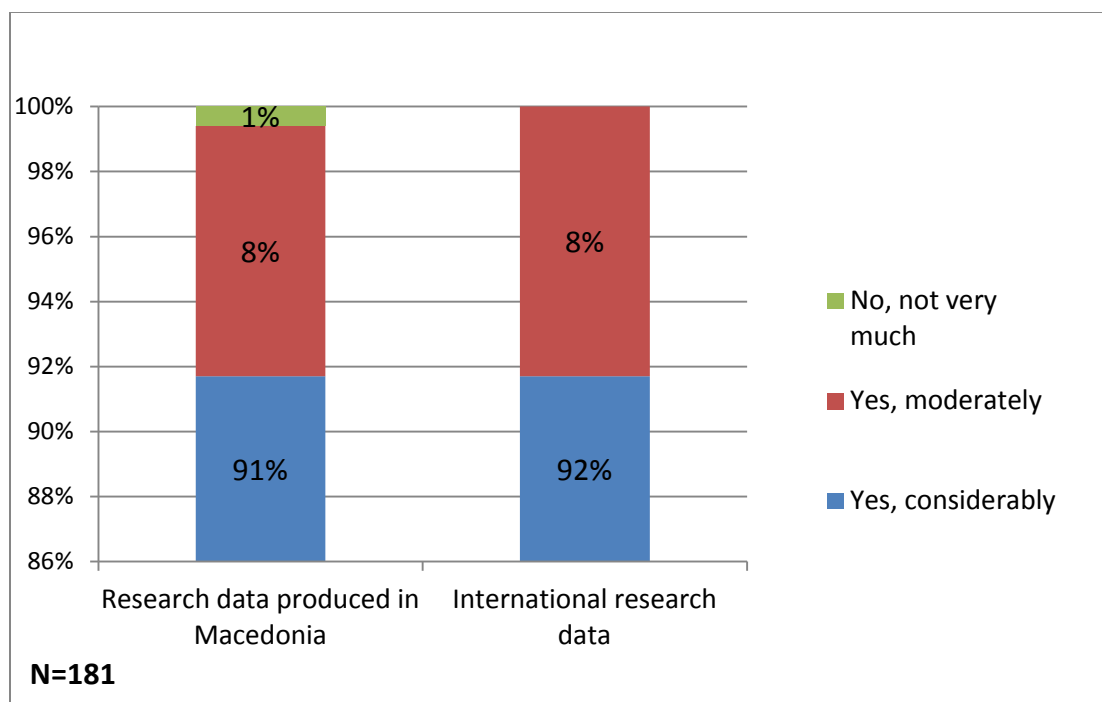
Figure 21. Statistical software commonly used for qualitative analyses



7. Perceived benefits from data archive

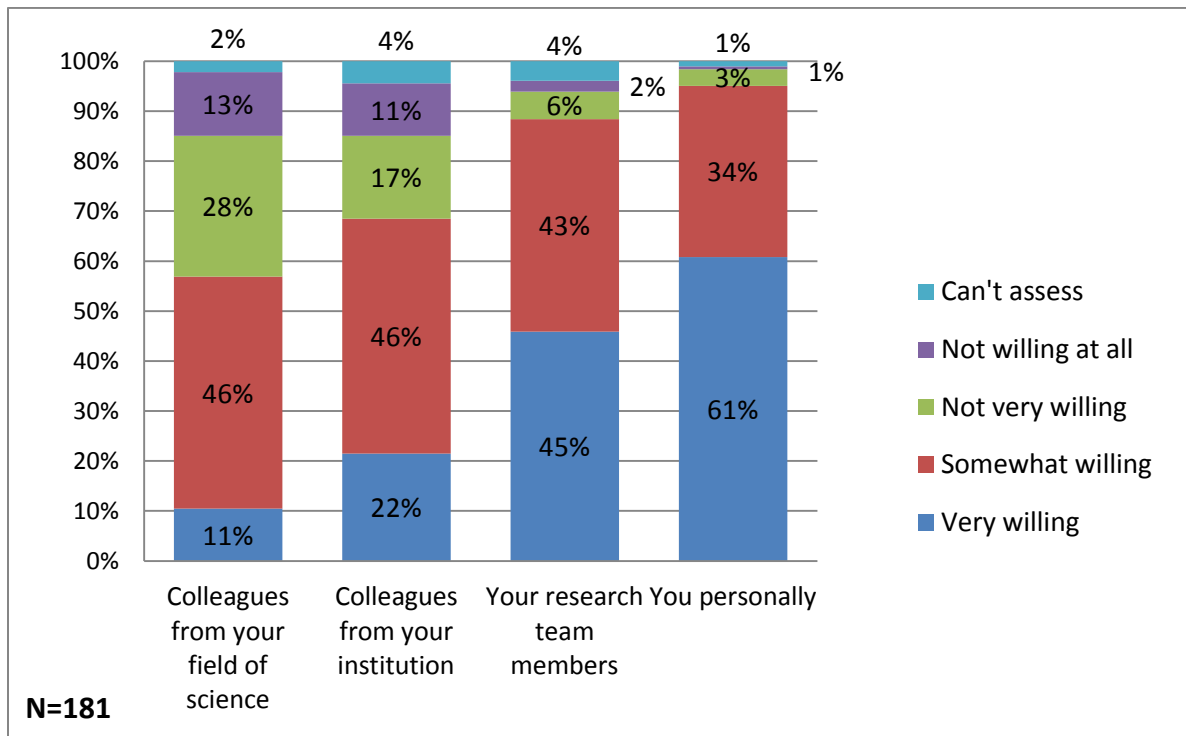
The next questions of the questionnaire ask to what extent research data produced in Macedonia and international research data are useful for the scientific work of researchers. In both cases, 92% of the respondents agree that access to this kind of data will significantly improve their work (figure 22). Eight percent consider that these data would be moderately helpful, and only 1% do not find these data very useful for them. Generally, almost all respondents (more than 99% for both questions) agree that better access to research data is very valuable for their scientific work. These results suggest that researchers in Macedonia face a lack of scientific data, and this confirms the need of a national data service.

Figure 22. Usefulness of research data produced in Macedonia and international research data for the scientific work of researchers



According to the respondents' opinions, 61% are personally very willing to share their own research data (figure 23). On the other hand, only 11% believe that colleagues from their field of science are enthusiastic to share research data. Respondents' assessments of the extent to which Macedonian researchers are willing to share their own research data are presented in the graph below.

Figure 23. Attitudes towards sharing one's own research data among:

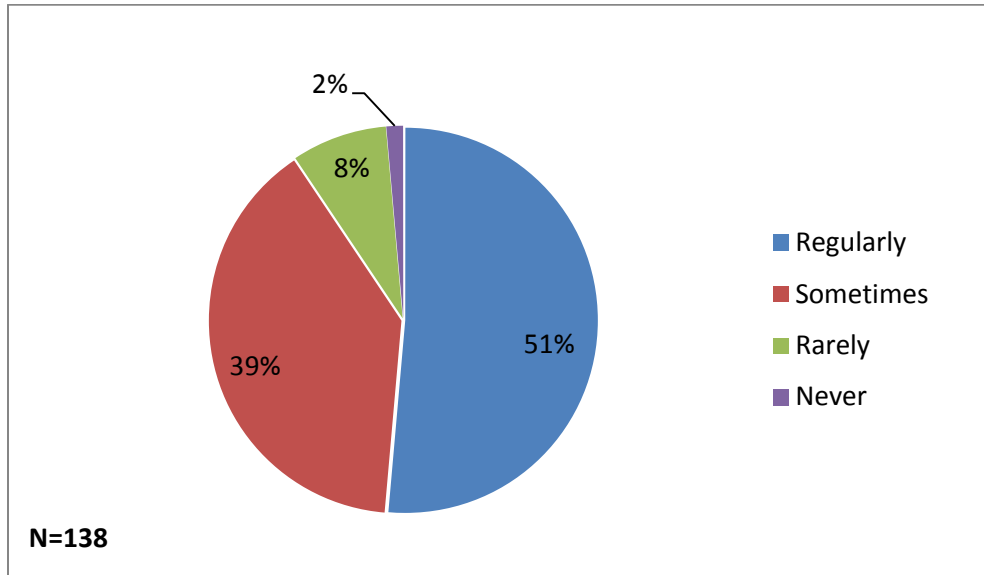


Out of 181 respondents in total, 79% (143) did not answer the question “What are the main reasons for which you aren't willing to share your own research data with others?”. According to the remaining 21% (38) who answered, the main reasons are: possible abuse/misuse of the data, risk of manipulation, customer requirements for data confidentiality, and (the) risk of plagiarism (not shown in figures).

Access to research data would be useful for researchers who besides research activities also have teaching responsibilities. A significant number of researchers- 76% (138), are engaged in teaching. In the following three questions the use of research data in teaching activities was examined.

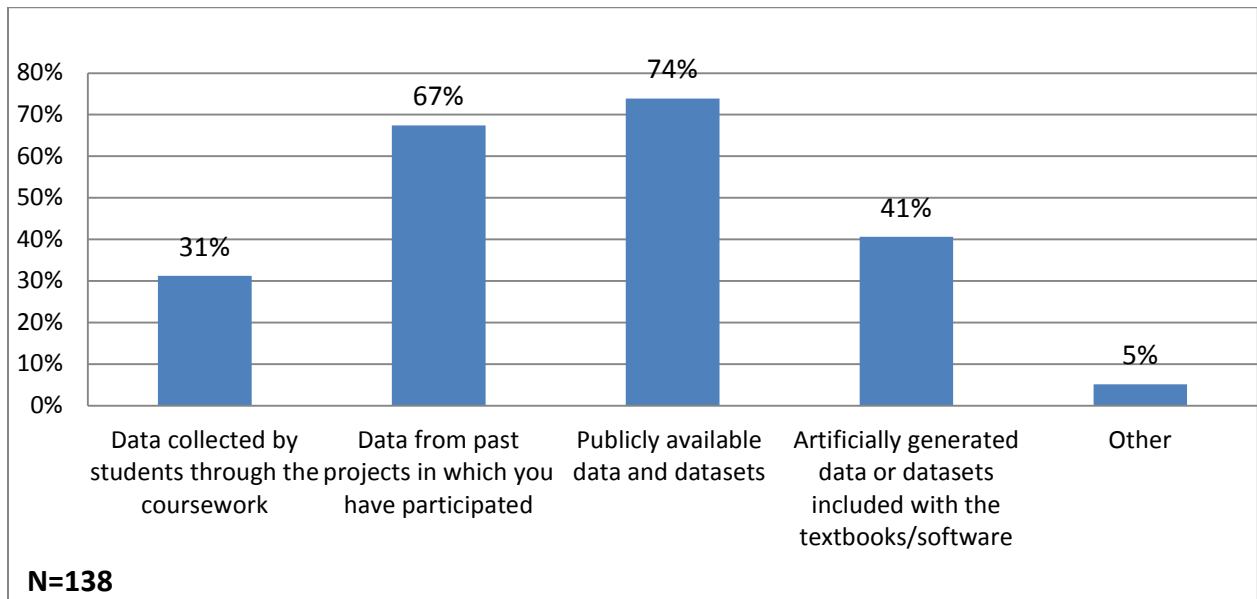
When the respondents were asked how often they analyse or discuss research data, half of them (51%) responded that they use it on a regular basis, 39% sometimes, 8% rarely, and 2% never (figure 24).

Figure 24. Use of research data for teaching purposes



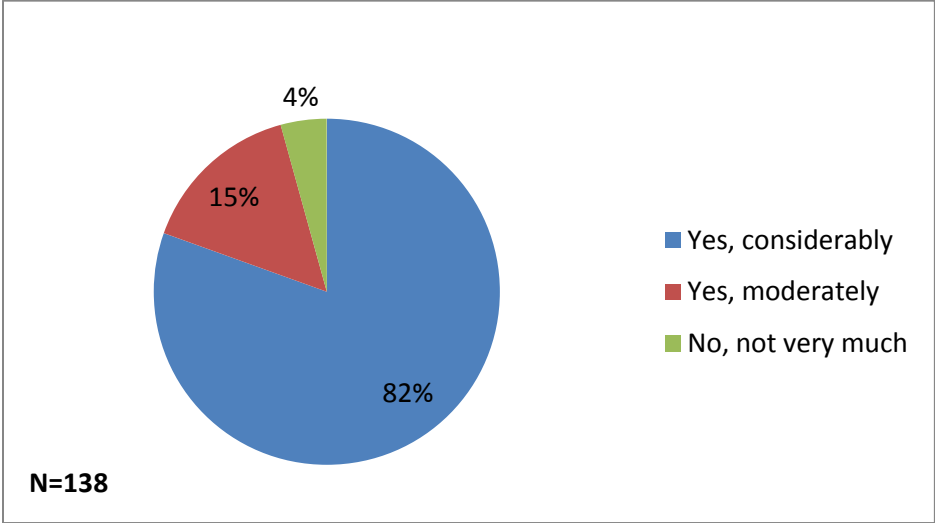
The question regarding the type of data used in teaching activities allowed multiple answers. A majority of the total number of surveyed researchers engaged in teaching (74%) responded that they use publicly available data and datasets, 67% use data from projects in which they participated, less than half (41%) use artificially generated data, 31% data collected by students, while a small number of respondents (5%) uses other sources (figure 25).

Figure 25. Type of data used for teaching



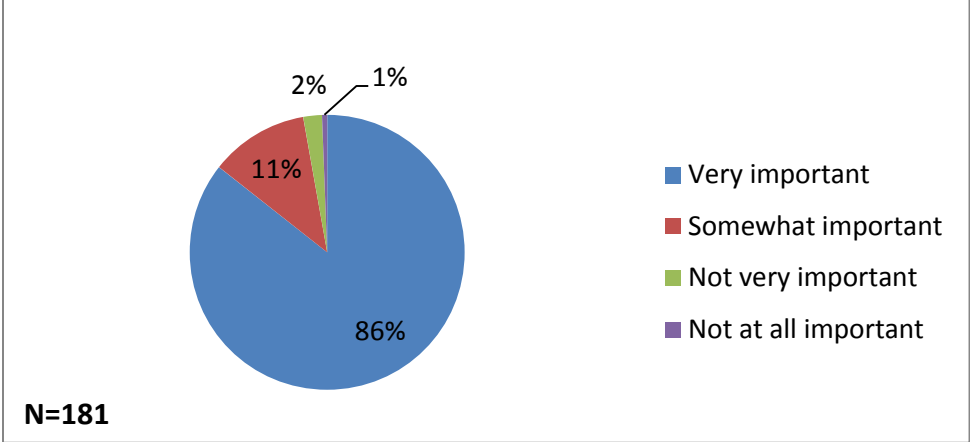
Survey results also suggest that greater access to more national or international data will be helpful for those involved in teaching activities. According to the respondents' answers (figure 26), 82% believe that better access to data is considerably beneficial, and the remaining respondents said that it is more or less useful (15%) or not very much useful (4%).

Figure 26. Benefits for teaching from better access to more national or international data



The last question examined the attitude of the respondents regarding the usefulness of an institution specialising in data archiving in Macedonia. Most of the respondents hold that such an institution would be exceptionally important (86%) or important to a certain extent (11%) (figure 27). Only 2% think that it is not very important, and for a marginal 1% that is not at all important.

Figure 27. Importance of exiting data archive in the country



The presented survey results once again confirm the need for establishing a social science data archive in Macedonia and clearly show that Macedonian researchers recognise the benefits of a national data service.

Part III: Survey on existing infrastructure and interest for data archiving

In order to get a better picture of current capacities and practices for data preservation at the institutional level among research as well as among other national institutions of interest for the project, we conducted interviews with their representatives. In addition to the higher education and research institutions, we contacted the State Statistical Office of the Republic of Macedonia, the National and University Library St. Clement of Ohrid, Skopje, and the National Archive. Besides asking questions about their capacities, we wanted to explore the possibilities for cooperation with the mentioned institutions on the path of the establishment of a social science data archive in Macedonia.

In addition to the institutions listed in Annex I, we contacted several other universities and made considerable effort to provide information from the State Statistical Office of the Republic of Macedonia. Unfortunately we did not manage to get any feedback.

We also had a very important meeting at the Ministry of education and science where we presented our project and discussed the possibilities for national support and funding of the archive.

1. Current national capacities

Among the national institutions, of special importance are the capacities of the **State Statistical Office of the Republic of Macedonia (SSO)**. The State Statistical Office of the Republic of Macedonia is the largest and most important institution that produces and disseminates statistical data in Macedonia. This year the institution marks its 70th anniversary. The work of the State Statistical Office is regulated in the Law on state statistics (“Official Gazette of the Republic of Macedonia” No. 54/1997, 21/2007, 51/2011, 104/2013 and 42/2014). The headquarters of the institution are in Skopje. There are also eight regional offices and a total of 294 employees.

We tried numerous times to get in touch with the SSO during September to November 2015 via telephone, e-mail and formal letter. Unfortunately we did not succeed to conduct an interview with their representative. Regardless of the reason, being it work overload or other reasons for not responding to our request, the State statistical office is informed about our project and we expect more fruitful future cooperation.

Because of that, we present the activity of the SSO using the publicly available information from its website, as well as using our personal experiences from use of statistical data for research.

SSO produces social and business statistics, as well as statistics in the area of national accounts which are comparable at European and international levels. The statistical system is

harmonised in accordance with the EU standards and the EU acquis. The Labour Code for European statisticians is used in the domain of quality assurance, transmission (through single entry point EDAMIS) and data and metadata dissemination (through National Reference Metadata Editor - NRME) to Eurostat. Data are also disseminated to the International Monetary Fund using SDDS.

The website is fully operational, with easy access to the products and services. It is the most frequently used tool for obtaining statistical data in Macedonia which are organised in public releases, publications and the MakStat database. The MakStat database enables access at different territorial levels: national level, level of statistical regions and municipal level, and time series. Users have free access to tables and datasets, from which they can select variables, rearrange data and generate and save graphs in accordance with their preferences. For research needs, access to anonymised data (access to microdata) from several statistical surveys, with adequate data protection measures is allowed.

Within the **National and University Library "St. Kliment of Ohrid"** in Skopje, there is no particular department that is focused only on research data. Hence, this means that there are no particular research data in a form of datasets or files. They possess only already analysed data which are part of (research) publications or reports.

Although this institution has a status of "National university library" it is an associate member of Ss. Cyril and Methodius University in Skopje. The Library is using the COBISS system and within this system, a database of research institutions and researchers in Macedonia exists.

The **National Archive of the Republic of Macedonia** does not archive research data since such legal obligation in the current laws does not exist. The archive lists digital collections on its website, but according to the same source their number is very small.

2. Capacities in the higher education sector

At most public and private universities and research institutions there is no established practice of data preservation. At the university level, in most of the cases, it seems that their computer centres only provide "digital support" to the university administration and maintain the university network. At the level of university units (faculties and institutes) there is no developed internal institutional practice for data preservation. At best, information about past projects, in form of short project descriptions and information on the research teams can be found in publications and monographs of the institutions. However, there is no central data collection available. Data from past projects are usually in "possession" of the project leaders

and/or members of the research teams. Data sharing among the staff of the institutions is also not very well-developed practice.

The most advanced capacity related to social science infrastructure undertaken by particular higher education institution in Macedonia is the e-Repository of the public university “Goce Delchev” in Stip. The UGD Academic Repository⁴ is powered by *EPrints 3* which is developed by the School of Electronics and Computer Science at the University of Southampton.⁵ The repository keeps academic information and data in the social sciences and humanities. Currently 9,000 units are deposited in it, mostly research publications. It is an open access repository, data are publicly available and can be used for non-profit purposes. It is allowed for the items to be reproduced, displayed or performed, and given to third parties in any format or medium, as well as to be used for personal research or study, educational, or not-for-profit purposes without prior permission or charges. The open access is conditional upon referencing of the source, including the hyperlink and/or URL for the original metadata page. Commercial use is not allowed in any format or medium without formal permission of the copyright holders. The repository contains and preserves journal articles; conference and workshop papers; theses and dissertations; books, chapters and sections; datasets; multimedia and audio-visual materials and patents. The documentation of the material is available in Macedonian and English. Currently only staff employed at this university can deposit data and publications.

Their long term *preservation policy* is in accordance with the following rules⁶:

1. Items will be retained indefinitely.
2. UGD Repository will try to ensure continued readability and accessibility.
 - Items will be migrated to new file formats where necessary.
 - Where possible, software emulations will be provided to access un-migrated formats.
3. UGD Repository regularly backs up its files according to current best practice.
4. The original bit stream is retained for all items, in addition to any upgraded formats.
5. Items may not normally be removed from UGD Repository.
6. Acceptable reasons for withdrawal include:
 - Proven copyright violation or plagiarism
 - Legal requirements and proven violations
 - National Security
 - Falsified research
7. Withdrawn items are not deleted *per se*, but are removed from public view.

⁴<http://eprints.ugd.edu.mk>

⁵<http://eprints.ugd.edu.mk/information.html>

⁶Quoted according to <http://eprints.ugd.edu.mk/policies.html>

8. Withdrawn items' identifiers/URLs are retained indefinitely.
9. URLs will continue to point to 'tombstone' citations, to avoid broken links and to retain item histories.
10. Changes to deposited items are not permitted.
11. *Errata* and *corrigenda* lists may be included with the original record if required.
12. If necessary, an updated version may be deposited.
13. In the event of UGD Repository being closed down, the database will be transferred to another appropriate archive.

Deposited data are kept on servers equipped with a data storage system and protected by a disaster recovery system. Data are kept in a standard file format (PDF) and are enriched with the appropriate metadata. The repository uses Dublin Core and Learning object metadata (LOM) and is compliant with OAIS with certain modifications in accordance with their needs. Visibility of their publication items is promoted through indexing in Google Scholar. The OAI-PMH protocol is used for exchange of metadata with other repositories.

3. Current capacities in the NGO sector

In the NGO sector, research databases are treated as part of the documentation for conducted projects and are generally kept. They are usually stored according to internal documentation rules which are not specified in written documents. All personal data are deleted from the kept data shortly after the research projects are completed, i.e. the organisations that we interviewed keep anonymised data. No particular documentation standard is used. More resource-rich organisations keep these data on separate servers. The research data are owned by the organization and all researchers within the organisation can use it, a practice that is almost non-existent in the higher education institutions (public and private) that we interviewed.

Access to data for researchers from Macedonia outside these organisations is provided only on request and under the same conditions as for researchers from abroad. The condition is to state the source of the data and to use it only for academic, non-profit and non-commercial purposes.

4. Opinions on the establishment of social science data archive in Macedonia

Similarly to the responses of the survey, among various national institutions, especially among higher education and research institutions, the support for the idea of the establishment of social science data archive in Macedonia is welcomed.

What is of special importance is that the Ministry of education and science recognises the need for the establishment of a social science data archive in Macedonia and is supportive to the SEEDS project. Its representative encouraged us to continue the work on the project and has accentuated that the Ministry will be open for cooperation in the further stages of the project. A substantial help was also promised for the establishment of the data archive.

With regard to the research institutions, the general conclusion from the conducted interviews complements the survey results. There is a very favourable climate for the establishment of a social science data archive in Macedonia. Our interviewees see our project as beneficial for the research community and the broader public in our country. According to the interviews, a social science data archive will ease the work of researchers, will save significant resources and will enable better use of existing data for both research and teaching purposes.

The NGO/think tank organisations that we interviewed are also very favourable to the SEEDS project. From their point of view, this kind of national institution is needed since this type of work is out of reach of their activities and will save significant costs for them. One interviewee stressed that even if they did have funds at their disposal for this type of activity, they could not perform it because of its time-consuming character. They were also open to learning about the international standards for data preservation in order to improve their internal documentation practices.

With regard to the institution that should be responsible for the data archiving, there is no strong preference for a particular model to be followed, probably because this idea is still very recent. Some of the interviewees agree in opinion that the Ministry of education and science should maintain the archive, which should be connected to the libraries of the faculties and other research units in the country. Others think that this should be an independent institution, experienced in social science research and that adequate IT staff should also be involved in the work. Again others suggest that a library is a good choice for an institutional solution since some knowledge of indexing and curation is needed for the work of the archive.

Most of our interviewees agree that the national social science data archive should be based on the concept of open access. The state is considered as the main source of financing. Part of the finances could come from commercial services and also from international source.

Conclusions

National research funding in Macedonia, especially in the last several years, has significantly decreased and is among the lowest in Europe. Researchers face a serious lack of national funds for research as well as basic infrastructure to conduct their research work.

In the legal acts, as well as in some recent projects related to research infrastructures, a social science data archive is not envisioned at all. This idea was new to the responsible personnel of the Ministry of education and science.

According to the results from the survey of researchers, there is a clear need for the establishment of a social science archive in Macedonia, and researchers strongly support the idea.

A considerable amount of research is produced in Macedonia, and there is indeed need for long-term preservation of the produced data before they are lost. In the present circumstances such danger exists.

Currently there is one capacity on the university level that has the knowledge of and practice in data preservation. This is the case with the e-Repository of the University Goce Delchev in Stip.

Representatives of the research institutions in the public, private, and NGO sector are supportive to the idea of the establishment of a social science data archive in Macedonia.

The Ministry of education and science has also supported the project and expressed commitment to provide the material resources needed for the actual establishment of the data archive.

Recommendations

- The future social science data archive in Macedonia should be established as a national institution and should serve the whole research community, both its public and private segments.
- Such an institution will serve as central repository and should: (1) provide education to the research community in the area of data management and promotion of the concept and its benefits; (2) implement the basic concept (including all necessary legal documents) and provide further development of the national policy for data archiving in

the social sciences in Macedonia; (3) identify the financial sources necessary for normal work in the archive.

- The establishing of such an institution should be based on the implementation of international and regional experiences of similar institutions and projects, (e.g. SERCIDA, SEEDS) but should also include domestic institutions with appropriate knowledge and experience. It should also involve institutions from the area of design and implementation of national policies in science. In this sense the institutions that should be particularly active in establishing the archive should be: (1) The Ministry of education and science; (2) The Institute for sociological, political and juridical research – Ss. Cyril and Methodius University in Skopje; (3) The University of Goce Delchev in Stip; and (4) the National Inter-university conference.

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Annexes

Annex 1. List of interviews

Institution	Person	Date	Visit/e-mail/telephone
Goce Delchev University of Sthip	Prof. Dr. Zoran Zdravev, Head of data repository	30.09. 2015	E-mail and telephone
Institute for democracy Societas Civilis Skopje	Misha Popovikj, project coordinator	04.10.2015	Visit
University American College Skopje	Prof.Dr. Marjan Petreski, Vice-rector for science	07.10.2015	E-mail
Ss. Cyril and Methodius University in Skopje	Prof. Dr. Vladimir Petrushevski, Vice-rector for Science	04.10.2015	Visit
Ss. Cyril and Methodius University computer center	Goran Muratovski, Head of computer center	04.10.2015	Visit
Institute of economics, Ss. Cyril and Methodius University of Skopje	Prof.Dr. Klementina Poposka	06.10.2015	Visit
Institute of economics, Ss. Cyril and Methodius University of Skopje	Ass. Prof. Iskra Stanceva Gigov	06.10.2015	Visit
Macedonian Centre for European Training	Bojan Maricikj, Executive Director	09.10.2015	E-mail and telephone
National and university library St. Clement of Ohrid, Skopje	Zaklina Gjalevska	30.10.2015	Visit
Goce Delchev University of Sthip	Kiril Barbareev, Vice rector for teaching	29.10.2015	E-mail and telephone
Fund for innovations and technological development	Jasmina Popovska, Director	03.11.2015	Visit
Ss. Clement of Ohrid University of Bitola,	Ass. Prof. Goran Ilik, Vice-dean for science	24.11.2015	e-mail

Faculty of Law			
Macedonian centre for international cooperation	Daniela Stojanova, program coordinator	26.11.2015	Visit
State University in Tetovo	Prof. Dr. Bashkim Ziberi, Science and innovation office	04.12.2015	e-mail
Ministry of education and science of the R. Macedonia	Bardulj Tushi, Head of the Sector for science and technical-technological development	07. 12. 2015	Visit
National archive of the R. Macedonia	Emilija Rop Kiril Jordanovski	03.02.2016	Visit

Annex 2. Questionnaires

Annex 2.A: Guidelines for semi-structured interviews with government counterparts and potential funding institutions

Research policy setting: interview with policy makers/funders

PREPARATION

Stakeholder identification

Who is involved in making science policies?

What are the main sources of financing scientific work?

Reading relevant documents, domestic and international

Relevant documents:

- current research policy documents
- project funding criteria and rules
- criteria for evaluation of scientific work

Identify everything concerning science infrastructure and data archiving in relevant documents

Are we one of the members of ESFRI? (Croatia and Serbia are associated members)

http://ec.europa.eu/research/infrastructures/pdf/esfri/membership/esfri_membership_july_2011.pdf#view=fit&pagemode=nonehttp://ec.europa.eu/research/infrastructures/pdf/esfri/home/esfri_inspiring_excellence.pdf#view=fit&pagemode=none

Good data source (not all information are up to date)

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/

Invitation letter

- maximum one page
- introduce the project and yourself, explain what is data archive
- ask for meeting to talk about relevant issues on establishing data archive
- attach topics for discussion and questions (so that they can prepare themselves)

TOPICS FOR DISCUSSION

- A. Needs
- B. Current policies and activities, plans for future
- C. Possible institutional solutions
- D. Financing

QUESTIONS

A. Have you met the need for archiving of research data in the social sciences?

Do you rely on the results of research in social sciences when proposing/designing scientific policies and for other activities? If so, can you give some examples?

In this process was there a need for examining the raw data obtained in these studies?

Have you ever used the online available source data or the results of research (e.g. Eurostat)? What data sources did you use?

Have you met the requirements of the users / authors of the study (scientists and researchers) to archive research data in order to preserve and use them in future research?

B. Is there something in the scope of your current policy and actions with regard to data archiving in the social sciences? What are the plans for the future?

What is the current science policy in relation to the archiving of research data?

Are there any requirements related to research data when financing projects or other activities? (e.g. if funding publishing scientific journals, criteria could include and requirement related to research data archiving)

Is there a policy relating to open access to research results?

If there is nothing currently:

-Why is not there?

-Can this be changed and how?

(assumption is that If there is need, and no current activities, there must be plans for the future)

C. What do you think how an institutional solution for data archiving should be established? What kind of institution should carry this task? (scientific institute? faculty? university? library?) centralized, distributed?

D. What are the possible sources of funding for activities related to the collecting, processing, use and dissemination and permanent preservation of research data?
available or prospective (EU)

Anex 2B: Data Service Infrastructure Survey

Project: South East European Data Services (SEEDS)

SEEDS is a project funded by the Swiss national science foundation to study the conditions of social science research in Balkan countries toward establishing durable data infrastructure at the service of researchers in the region. We are particularly interested in existing work within Macedonia with respect to the long-term preservation of research data and the potential for a national social science data infrastructure.

*(For the interviewer: Please instruct and remind where relevant that the term "data" refers to **raw data**, that is, information collected in specific research projects that is recorded in machine readable format and used for analytic purposes. This could be survey data, interviews in sound files, video footage, notes, images, etc. By "data", we do **not** include analyses, descriptions, statistics, facts, or conclusions that appear in reports, papers, websites, or scientific publications.)*

About your institution

- 1) Name of institution

- 2) Type of institution
 - a) University
 - b) Public research institute
 - c) Private research institute
 - d) Library
 - e) National/Regional archive
 - f) National Statistical Institute
 - g) Other (specify)

- 3) What is your institution's principal research discipline? *(Only applicable if respondent answered b or c on Question 2)*

- 4) What is your institution's principal research methodology focus? *(Only applicable if respondent answer b or c on Question 2)*
- a) Quantitative methodology
 - b) Qualitative methodology
 - c) Mixed methodology
 - d) Other (specify)
 - e) Not applicable
- 5) What is the scope (discipline) of your data collection? *(Only applicable if respondent answered d, e, or f on Question 2)*

Existing infrastructure and data capacities

- 6) Does your institution store or disseminate data for use by researchers?
- a) Yes *(go to question 8)*
 - b) No *(go to question 7)*
- 7) What happens to the data produced at your institution? Are they at risk of being lost forever? *(skip to question 34 after answering this question.)*
- 8) What discipline(s) are covered by the data you store or disseminate?
- a) Social sciences
 - b) Humanities
 - c) Other (specify)_____

Data preservation

- 9) How does your institution store research data for the long-term? Could you briefly describe this process?
- 10) How safe are the research data that are preserved at your institution? That is, are the data kept on servers that are protected? Are there backup or formal preservation systems? *(Interviewer to explore which.)*

- 11) Are the data treated in a way that assures that they can be accessed and used again in 20-50 years? (e.g., kept, with necessary documentation, in a non-proprietary machine readable format)

Data documentation and standards

- 12) Does your institution use any documentation standards for the research data that it preserves? (*If yes:*) Which standards does it use, e.g., DDI, Dublin Core, other?
- 13) Does your institution follow a particular standard for trusted digital repositories, such as OAIS or the Data Seal of Approval?
- 14) Does your institution participate in any international survey projects that aim to harmonise datasets from different countries for comparative purposes?
- 15) Does your institution make use of any thesaurus to translate and/or index your data? (*If answer is yes, interviewer to ask for details*).

Tools and technologies

- 16) Does your institution have any experience with particular data service tools for the social sciences, such as NESSTAR, FEDORA or Dataverse? (*If yes:*) Could you briefly describe the purpose for which you use these and your experiences of using them?

Data discovery and dissemination

- 17) Does your institution allow access to the research data that it preserves?
(*If no, skip to next section.*)
- 18) Who is allowed to have access to the data? (*Explore if respondent answers researchers, whether this includes researchers in their own organization only or also in other organisations*)
- 19) What are the conditions that must be met to access these data?

- 20) Do you have some kind of authentication system that identifies who is eligible to access the data?
- 21) Are all of the data equally accessible? That is, are there some data that are more accessible than others?
- 22) Can the data be accessed from outside of the country? (*Interviewer: If yes, probe to see whether the access is for national researchers who are abroad, or whether there are also foreign researchers who can access the data.*)
- 23) By what means does your institution disseminate its research data? For example, are the data sent out on CDs, or are they available on screen, or can they be downloaded from a website?
- 24) Does your institution have a data catalogue that allows people to find the data that they are looking for? (*If yes:*) Is the catalogue visible outside of your institution, and what software is used to enable this?

Data policy and service funding

- 25) Does your institution have any policy or other documents regarding long-term preservation of research data? (*If yes:*) Could you briefly describe the policy or documents? (*Also, ask if they could send it to us by e-mail.*)
- 26) Does your institution use any legal agreements for storing, disseminating, and/or using research data? This might be in the form of deposit contracts or end-user licenses. (*If yes:*) Could you give a brief description of these legal agreements? (*Also, ask if they could send them to us by e-mail.*)
- 27) Do the intellectual property rights remain with the researcher/data producer, or are they transferred to your institution?
- 28) Does your institution receive any external funding for archiving/data service activities? (*If no:*) How is the work of data preservation and dissemination paid for at your institution? (*If yes, ask how much, whether the income is constant and whether it is dedicated to particular activities, e.g., preservation, dissemination, user support*).

29) In your view, would your institution do more to preserve and disseminate research data if it had more resources?

Staff capacities

30) Does your institution have dedicated staff for the preservation and dissemination of research data? (*If yes:*) How many?

31) Do these staff members have specific training in data preservation and dissemination? (*If yes:*) Please explain.

32) What sort of additional training do you think would be needed for your staff to acquire sufficient knowledge about data service policies and practices?

33) What kind of statistical software package experience do they have?

- a) SAS
- b) SPSS
- c) STATA
- d) R
- e) MathLab
- f) Excel
- g) Other (specify)

About a possible National Data Service for the social sciences

34) In general, to what extent are *social science* research data preserved for the long-term in [*name of country*]?

35) Could you estimate roughly how much research data produced in [*name of country*] are lost because they are not stored in a safe setting for the long term (in percentage)?

36) Do you think it would be useful or important to establish a national data service for the social sciences in [*name of country*] ? Please explain why or why not.

37) (*If yes to question 35*) We are interested in your views about what a national social science data service might look like in [*name of country*]. Can you say what key functions such an

institution should serve? How might it be structured and what kinds of relationships should it have to other institutions?

38) Are there any existing national data service infrastructures for other disciplines in [*name of country*] (for example, in the humanities, medicine, climate and environment, natural sciences, or technology)?

- a) Humanities
- b) Medicine
- c) Climate and environment
- d) Natural Science
- e) Technology
- f) Other (specify)
- g) No

[SEEDS] Data use Survey

In this questionnaire, we are particularly interested in your research practices and needs related to collecting empirical data, their preservation and use for secondary analysis.



This survey forms part of an international project “South East European Data Services” - **SEEDS**, coordinated by Swiss Centre of Expertise in the Social Sciences. The purpose of the project is to establish durable infrastructures for storage and secondary use of data generated in social science research. The project is a collaborative effort of eight countries, including partners who already have functional services for data archiving (Switzerland, Slovenia, Croatia, Serbia), together with regional partners, whose countries have yet to establish these services (Albania, Kosovo, FYR Macedonia, Montenegro).

Thank you for taking 10-15 minutes to complete the questionnaire. The information provided by you in this questionnaire will be used for research purposes only. It will not be used in any manner that would allow identification of your individual responses.

This questionnaire has 38 questions.

There are 38 questions in this survey

About you

First, we would like to get some information about you.

[]What is your current principal activity? *

If you choose 'Other:' please also specify your choice in the accompanying text field.

Please choose **only one** of the following:

- Undergraduate student
- Doctoral student / research or teaching assistant
- Researcher / professor
- Project leader
- Head of institution
- Other

Choose one answer only

[]With what type of institution are you currently principally affiliated? *

If you choose 'Other:' please also specify your choice in the accompanying text field.

Please choose **only one** of the following:

- Higher education institution
- University research institute
- Public research institute
- NGO/Think tank
- Currently not employed
- Other

Choose one answer only

[]Do you work in public, private or nongovernmental sector? *

Only answer this question if the following conditions are met:

Answer was NOT 'Public research institute' at question '2 [Q2]' (With what type of institution are you currently principally affiliated?)

Please choose **only one** of the following:

- Public sector
- Private sector
- Nongovernmental sector

This question concerns your primary job.

[]What is your principal research discipline? *

If you choose 'Other:' please also specify your choice in the accompanying text field.

Please choose **only one** of the following:

- Economics
- Sociology
- Psychology
- Education science and teacher training
- Library and information sciences
- Political science
- Journalism
- Business and administration
- Law
- Organizational sciences/Management
- Public administration
- History
- Antropology
- Other

Please select most appropriate of listed International Standard Classification of Education (ISCED) fields.

[]What country are you working in? *

Please choose **only one** of the following:

- Albania
- Kosovo
- Macedonia
- Montenegro

Your research

For this survey, the term "data" refers to **raw data**, that is, information collected in specific research projects that is recorded in machine readable format and used for analytic purposes. This could be survey data, interviews in sound files, video footage, notes, images, etc.

By "data", we do not mean analyses, descriptions, statistics, facts, or conclusions that appear in reports, papers, websites, or scientific publications.

[]

In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.

*

Please choose **only one** of the following:

- Yes
 No

Please count only research where you were involved at a substantive level with planning or organization of research, fieldwork management, cleaning or coding of research data.

[]

Enter the number of datasets that you have produced or helped to produce during the past 5 years.

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

Only an integer value may be entered in this field.

Please write your answer here:

For example, one survey or series of interviews are both to produce one dataset. However, one research project might produce more than one dataset if several methods (e.g. focus groups and questionnaire) or distinct data collection efforts took place (e.g. employer survey and employee survey).

Your most recent research

The following questions are about your **most recent** research effort which **involved data collection**.

[] In which year was the fieldwork (or data collection phase) completed?

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

Your answer must be between 1960 and 2015

Only an integer value may be entered in this field.

Please write your answer here:

[]

Which data collection method was applied in this research?

(e.g. online questionnaire, structured interview, focus groups, experiment, ...)

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

Please write your answer here:

If research involved data collection through application of several methods, list all of them, separated by ;

[]

What was the approximate scope of raw data collected in this research?

(e.g. : 8000 respondents; or 15 focus groups; or 50 firms; or 700 case reports; or 500 newspaper articles; or 200 hrs of video footage)

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

Please write your answer here:

[] How was this research financed?

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

Please choose **all** that apply:

- Public funding through national science funding bodies (science ministry, science foundation...)
- Public funding from other sources (other ministries, state agencies, cities and municipalities...)
- International funding/project
- Private sector
- Own funding (institution you are working in paid from its own funds)
- Other:

Mark all that apply

[]**Apart from you, how many researchers were involved in this research project?**

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

Only an integer value may be entered in this field.

Please write your answer here:

Persons involved in field-roles during execution phase only (such as respondents in surveys) are not to be counted.

Data preservation

For this survey, the term "data" refers to **raw data**, that is, information collected in specific research projects that is recorded in machine readable format and used for analytic purposes. This could be survey data, interviews in sound files, video footage, notes, images, etc.

By "data", we do not mean analyses, descriptions, statistics, facts, or conclusions that appear in reports, papers, websites, or scientific publications.

[]

After you completed your last research project, did you or your research team members keep/retain the data?

*

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

Please choose **only one** of the following:

- Yes
 No

[]What kind of data was kept?

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.) *and* Answer was 'Yes' at question '13 [Q12]' (After you completed your last research project, did you or your research team members keep/retain the data?)

Please choose **all** that apply:

- Raw data
 Cleaned data (coded, anonymised, ..)
 Data prepared for analysis (with transformations, created indexes, recoded)
 Well documented with metadata
 Other:

Mark all that apply

[] Have you used any special documentation/metadata standard for description of your research data?

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.) *and* Answer was 'Well documented with metadata' at question '14 [Q13]' (What kind of data was kept?)

Please choose **all** that apply:

- DDI
- DC
- ISO 11179
- Internal/institutional documentation standard
- Don't know
- Other:

Mark all that apply

[] Where is the data from your last project kept? *

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.) *and* Answer was 'Yes' at question '13 [Q12]' (After you completed your last research project, did you or your research team members keep/retain the data?)

Please choose **all** that apply:

- On my computer
- On my colleague's computer
- Several copies on different computers and/or different media
- Server at my local institution/university
- Data archive/repository
- Don't know
- Other:

Mark all that apply

[]Who may be granted access to the data from your last project for research use? *

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.) *and* Answer was 'Yes' at question '13 [Q12]' (After you completed your last research project, did you or your research team members keep/retain the data?)

Please choose **all** that apply:

- Just the project leader
- Research team members
- Members of my institution
- Broader scientific community
- The data is publicly available (open access)
- Don't know
- Other:

Mark all that apply

[]In your opinion, what would be the ideal level of access to this research data? *

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

If you choose 'Other:' please also specify your choice in the accompanying text field.

Please choose **only one** of the following:

- Just the project leader
- Research team members
- Members of my institution
- Broader scientific community
- The data should be publicly available (open access)
- Don't know
- Other

Mark one option that you consider most suitable

[] If you knew that your data would be preserved for the long-term in a secure environment, and shared only with accredited researchers, would you be willing to provide your data to a social science data archive? *

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.) *and* Answer was NOT 'Data archive/repository' at question '16 [Q15]' (Where is the data from your last project kept?)

Please choose **only one** of the following:

- Yes, certainly
- Yes, probably
- Not sure
- No, probably not
- No, certainly not

Choose one answer only

Data sharing and secondary analysis

Now we would like to ask you several questions regarding the sharing of data and secondary analysis.

By **sharing** we mean practices where researchers access and use data that they themselves did not produce.

Secondary analysis is defined as analysis of data that were produced by others, where one was not involved in the original research.

[]With respect to your own discipline, how important is the sharing of research data? *

Please choose **only one** of the following:

- Very important
- Somewhat important
- Not very important
- Not important at all

Choose one answer only

[]Do you know if any other researcher outside your own team had used for secondary analysis any of the research data that you produced? *

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '6 [Q5]' (In the context of your research activity within the past 5 years, did you produce or help to produce any research data? This could be quantitative and/or qualitative data.)

Please choose **only one** of the following:

- Nobody outside my team had ever used research data that I/we have produced
- Yes, I know of an occasion when my/our data was used, but this was more than a year ago
- Yes, I know that my/our research data was used for secondary analysis recently, the most recent occasion being within the past year
- I am not sure if anybody used my/our data for secondary analysis

Choose one answer only

[]

When was the last time that you analysed quantitative data that were not produced by yourself or your research team.

Please write your answer(s) here:

Year

Month (1-12)

If you have never done such analysis, just enter **0** in the year field.

[]

When was the last time that you analysed qualitative data that were not produced by yourself or your research team?

Please write your answer(s) here:

Year

Month (1-12)

If you have never done such analysis, just enter **0** in the year field.

[]In general, what are the barriers to conducting secondary analysis in your country? *

Please choose **all** that apply:

- Not enough relevant data exist
- Data exist but are not accessible
- Data exist but are poorly documented and unusable
- Researchers are not trained well enough in secondary analysis
- It is not part of the research culture
- Don't know
- Other:

Mark all that apply

[] There are different ways to obtain research data produced by others. Please indicate all the sources that you ever used sucesfully to obtain such data. *

Only answer this question if the following conditions are met:

----- Scenario 1 -----

Answer was NOT '0' at question '22 [r15q3]' (When was the last time that you analysed quantitative data that were not produced by yourself or your research team. (Year))

----- or Scenario 2 -----

Answer was NOT '0' at question '23 [Q22]' (When was the last time that you analysed qualitative data that were not produced by yourself or your research team? (Year))

Please choose **all** that apply:

- Your own research unit
- Network of colleagues outside of your research unit
- Your own institution
- Data archives from other countries
- National Statistical Office
- Websites of projects (national or international) providing access to data
- Other:

Mark all that apply

[] What statistical software do you commonly use for your quantitative analyses? *

Please choose **all** that apply:

- I don't do quantitative analysis
- Excel
- R
- SAS
- Stata
- SPSS / PASW
- Other:

Mark all that apply

[]What software do you commonly use for your qualitative analyses? *

Please choose **all** that apply:

- I don't do qualitative analysis
- I don't use any software for qualitative analyses
- Atlas.ti
- NVivo
- MAXQDA
- QDA Miner
- CAT
- RQDA
- Dedoose
- Other:

Mark all that apply

[]Would your scientific work benefit if you had better access to *

Please choose the appropriate response for each item:

	Yes, considerably	Yes, moderately	No, not very much	No, not at all
research data produced in your country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
international research data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

In your opinion, what is the prevalent attitude with respect to sharing one's own research data among...

*

Please choose the appropriate response for each item:

	Very willing	Somewhat willing	Not very willing	Not willing at all	Can't assess
colleagues from your field of science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
colleagues from your institution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
your research team members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
you personally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mark one assessment for each group mentioned and for yourself.

[]What are the main reasons for which you are not very willing to share your own research data with others?

Only answer this question if the following conditions are met:

Answer was 'Somewhat willing' or 'Not very willing' or 'Not willing at all' at question '29 [Q29]' (In your opinion, what is the prevalent attitude with respect to sharing one's own research data among... (you personally))

Please write your answer here:

[]Does your professional activity include teaching responsibilities? *

Please choose **only one** of the following:

- Yes
- No

[] In the context of your teaching, how often do you analyze or discuss research data? *

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '31 [Q31]' (Does your professional activity include teaching responsibilities?)

Please choose **only one** of the following:

- Regularly
- Sometimes
- Rarely
- Never

Choose one answer only

[] Which type of data do you use in your teaching? *

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '31 [Q31]' (Does your professional activity include teaching responsibilities?) *and* Answer was 'Rarely' or 'Sometimes' or 'Regularly' at question '32 [Q32]' (In the context of your teaching, how often do you analyze or discuss research data?)

Please choose **all** that apply:

- Data collected by students through the courseworkstion
- Data from past projects in which you have participated
- Publicly available data and datasets (e.g. international surveys)
- Artificially generated data or datasets included with the textbooks/software
- Other
- Other:

Mark all that apply

[]Would your teaching benefit if you had greater access to more national or international data? *

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '31 [Q31]' (Does your professional activity include teaching responsibilities?)

Please choose **only one** of the following:

- Yes, considerably
- Yes, moderately
- No, not very much
- No, not at all

Choose one answer only

[]In your view, how useful could be an institution that specializes in data archiving in your country? *

Please choose **only one** of the following:

- Very important
- Somewhat important
- Not very important
- Not at all important

[]Please include any comments that you think would be helpful for understanding the social science research community in your country, or the likelihood of success of a national data infrastructure/archive at the service of researchers.

Please write your answer here:

[] If you are interested in archiving of and access to research data in your country, please leave us your contact information so that we can send you further information about our project.

Please write your answer(s) here:

Name

Institutional affiliation

E-mail address

*Your contact data will be kept confidential and used for contact purposes only. **Data entered here won't be linked with answers that you have provided in this survey without your permission.***

[] Can we associate your email address with information about recent data collections in which you participated? Only questions from sections "Your research" and "Your most recent research" will be linked. *

Please choose **only one** of the following:

Yes

No

Submit your survey.
Thank you for completing this survey.