SERSCIDA

PODRŠKA STVARANJU DRŽAVNIH/REGIONALNIH ARHIVA ISTRAŽIVAČKIH PODATAKA IZ OBLASTI DRUŠTVENIH NAUKA

SUPPORT FOR ESTABLISHMENT OF NATIONAL/REGIONAL SOCIAL SCIENCES DATA ARCHIVES

Analysis of existing potentials for the establishment of a social sciences digitised data service in Bosnia and Herzegovina

SEVENTH FRAMEWORK PROGRAMME

Disclaimer

The information in this Report does not necessarily represent the view of the European Commission (EC).

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Preface

SERSCIDA is designed as a strategic project for supporting the cooperation and exchange of knowledge between the EU countries associated within the Council of European Social Sciences Data Archives (CESSDA) and the Western Balkan Countries (WBC) in the field of social science data archiving. The project addresses the issues of potential usage of information-communication technologies for the benefit of scientific research and exchange of knowledge as laid down in the call for proposals topic. The project aims to produce tangible results and improve the capacities for exchange of knowledge and data collected through research in the social sciences between the European countries and WBC involved.

The four main objectives of SERSCIDA are:

- to **support the establishment of social science data archives** in order to increase the level of sharing and preservation of data collected through research in WB countries;
- to **identify potentials and infrastructures for establishment of social science data archives** in WB countries involved;
- to **enhance the exchange of knowledge and sharing of data** collected through research in the social sciences in the WB and EU – CESSDA countries; and
- to **increase the level of understanding and support for open access policies** through involvement of policy and decision-makers in WB countries.

The analysis that this document describes was a mapping exercise of the existing capacities and scope for the establishment of a digital data archive(s) in BiH. The same exercise is simultaneously taking place in Croatia and Bosnia and Herzegovina. The analysis will serve as a baseline for this project, and as a foundation from which other SERSCIDA activities will be developed.

The tasks foreseen in the preparation process of the analysis included:

- development of a methodology for analysis of existing potentials for establishment of social science digital data archives in the WB region;
- analysis of existing potentials and infrastructure for data archiving in the WB countries involved; and
- provision of recommendations for making use of the existing potentials.

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Abbreviations

BiH - Bosnia and Herzegovina

CESSDA - Council of European Social Sciences Data Archives

CIP - Classification of Instructional Programs

CIPS – Center for Interdisciplinary and Postgraduate Studies

COBISS - Co-operative Online Bibliographic System and Services

DOI - Digital Object Identifier

EC – European Commission

FBiH – Federation of Bosnia and Herzegovina

FP6 - Sixth Framework Programme for Research and Technological Development

FP7 - Seventh Framework Programme for Research and Technological Development

IC – International Community

IFB - International Forum Bosnia

ISBN - International Standard Book Number

ISSN - International Standard Serial Number

NGO - Non-governmental organization

RRPP – Regional Research Promotion Program

RS – Republic of Srpska

SCDA - Social Sciences Data Archives

SERSCIDA - Support for Establishment of National/Regional Social Sciences Data Archives

SPSS - Statistical Package for the Social Sciences

WBC - Western Balkan Countries

WP2 – Work package 2

Introduction

The purpose of this report is to map the existing potentials for establishing social science data archives in Bosnia and Herzegovina (BiH), as well to extent the current activities of CESSDA institutions to new member countries. In addition to illustrating the existing potentials for the establishment of data archives, the report will include recommendations for setting up a data archive in BiH.

To collect the information that could illustrate the existing potentials and areas to be improved, three main pillars for a data archive were determined. These three pillars are:

1. the researchers;
2. the research/data service infrastructure; and
3. the research policy and funding institutions.

The pillars address different potentials that are of importance for establishing and maintaining a data archive. Considering the first pillar, researchers would provide and use data, as well as be a potential resource for the archive with respect to knowledge on the ground. For the research infrastructure pillar, it could both provide technical infrastructure, such as servers and data capacity, as well as more service infrastructure, such as survey collection platforms. For the research infrastructure part of the analysis, institutions were included as well, since they may eventually serve as a host for the data archive. For the research policy and funding pillar, this involved consideration of the support for the establishment a data archive both in financial terms and within a research policy setting.

Due to the differences across these three pillars, a general survey covering all pillars was not feasible. Instead, three separate instruments were designed to fit the distinct specific potentials. Below each pillar instrument is presented briefly, with main areas of interest and how the data collection was carried out to examine the existing potentials for establishing a data archive in BiH.

1. The Researcher Instrument

The instrument that was designed to collect information about existing potentials for researchers was an online survey questionnaire. The questionnaire considered both their experience of documentation, re-use, and dissemination of research data, as well as which types of statistical/analytical software packages, methodologies, and data they used primarily in their work. In addition to these different areas, the researchers were asked if their institution had any policy regarding long term preservation and/or documentation of data. The survey data thus provide a view of the demand for data, training and support, and the supply of data and experiences with documentation.

2. The Research Infrastructure Instrument

The instrument that was designed to examine the research infrastructure background was a semi-structured interview/survey, conducted either face to face or via phone with representatives of research infrastructures and research institutions within the social sciences. The respondents had to answer questions about whether they could provide technical infrastructure or research service. They were also asked whether their institution had any policy or competences for long-term preservation and documentation of data. The institutions and infrastructures were also asked whether they had any available technical capacity or data collecting services that could be valuable for establishing a data archive. This was also an opportunity to get in touch with potential collaborators for a future data archive.

3. The Research Policy and Funding Instrument

In this case the ministry that handles the research policies in BiH as well as the major research funders were interviewed, either face to face or via phone. The purpose was to establish contacts, better understand the science policy and legal background, and to find out about the possibilities for financing a data archive, both for its establishment and long- term sustainability. Finding from these analyses are presented in the next section.

Policy, Legal, and Financing Provisions for Science in Bosnia and Herzegovina

The following overview includes the analysis of the existing policy and legal frameworks in Bosnia and Herzegovina that have a direct relevance to research production, protection preservation and dissemination.

This part of the mapping analysis has been prepared with the tools of two methods. The first is a desk review of available legislation, policies, stragies and reports produced by relevant government institutions. The second method are interviews with the policy makers in the field of higher education and research, as well as IC representatives who have been key in funding social science research in the last 10 years in BiH. When it was not possible to meet, IC representatives sent responses to the quesionnaire sent as part of the invitaition for a meeting. This part of the report is a synthesis of the results access through these two methods.

Basic Characteristics of Social Research Activities in Bosnia and Herzegovina

Development policies in the field of science in transition Bosnia and Herzegovina are not at the satisfactory level which leads to insufficient, and in some instances, non-existent financial investments into the development of scientific institutions. Specific administrative and institutional organization in BiH contributes to this as it signifies the competences are divided between state, entity (FBiH and RS) and within the FBiH, cantonal levels.

In terms of competences and responsibilities in the scientific field it is important to underline that it is not referenced at the state level. The result is fragmented development of science and institutions at the entity and cantonal levels (in the way they are independent of each other and that the development process is carried out concurrently) which leads to the existence of parallel structures and partitioning of financial funds, as well as less intensive progress for each of them individually. When it comes to financial fragmentation it is important to note that the models are asymmetric at the level of two entities. Within FBiH the competence is concentrated on cantonal levels (10 cantons), while in RS the competence is centralized.

Right now, it is too early to speak about any possibility of integration of these institutions.

There is no structured information on the current capacities and technical equipment of scientific and research organizations, while in many instances their legal status has not been defined. At the state level, there is no organization coordinating communication and providing services for the scientific and education sector. In the period from 1998 – 2000 BiHARNET – an academic and research network was operational. However, due to the lack of satisfactory financial support it stopped with its work (in December 2000). As of 2006 there is SARNET, the institution with similar role and function but which works at the level of Republika Srpska and which is also financed from the budget of that entity.

Since BiH institutions mostly have ethno-national character, each activity within them is more or less related to the existing ethnical policies. It is for this reason necessary to set up that level of compromise which would protect the interests of all structures relevant for decision-making,

managing and implementation of a certain project. Social research in BiH, as analysed in recent resarch,[1] is strongly marked by the following characteristics:

- demand and funding have been and to a large extent continue to be international community (IC) driven and
- a lack of institutional framework; and frequent politicization of research activities and findings.

The international community has so far primarily concentrated on providing support for establishing of the legal framework for the Higher Education System and social research. However, as pointed out by Weber in *the Crisis of the Universities in Bosnia and Herzegovina and the Prospects of Junior Scholars*,

> "strategic structural misconception on the part of the International Community stands behind all of these positive measures: in their normative approach, all educational reform projects remain dependent upon changes in the prevailing legal circumstances...this strategy does not really take into account the importance of conditions internal to the university and the role of such internal factors in realizing the desired reform goals."

At the same time, the legal reform favored by the IC, often is imposed by the IC agencies, primarily the Office of the High Representative (OHR), which can, as pointed out by Vogel,[2] provide complete draft laws to parliamentary procedure or indeed impose them outright. There is no procedure through which citizens, institutions, or the NGO community can formally participate in formulating policies on the state, entity, cantonal, or municipal level, nor is there a mechanism of involving institutions and NGOs research and expertise in policy formulation. This undoubtedly is negatively affecting the demand for social research.

However, significant improvements in the social research ownership have been recorded. In Were Bosnian policy research organizations more effective in 2006 than in 2003, Struyk, Kohagen and Miller observe that there was a substantial positive development in the policy development process in Bosnia and Herzegovina over this period, where "factual evidence and analysis are playing a much greater role, and PROs have been a major provider of this information."[3] Based on the series of interviews conducted with government officials and members of parliament, leaders of PROs and advocacy NGOs, evidence indicates that PROs have been successful in convincing the policy community that they are purveyors of objective,

[1] Human Rights Center of the University of Sarajevo, *The Assessment of Social Research Capacities at Universities and Civil Society Organizations*, Regional Research Promotion Programme in the Western Balkans (RRPP).

[2] *Policy Research Organizations in Bosnia and Herzegovina: An Overview*, prepared by Tobias K. Vogel for the Swiss Agency for Development and Cooperation in 2005.

[3] Raymond J. Struyk , Kelly Kohagen, Christopher Miller. *Were Bosnian policy research organisations more effective in 2006 than in 2003? Did technical assistance play a role?*

disinterested advice and analysis. The improvements occurred in a conducive environment that steadily placed greater responsibility for policy formation on Bosnian officials."[4] As a result, slow withdrawal of IC funds and agencies from BiH might have a positive effect on social research institutional support and demand.

At the same time, the aid allocated by the IC for strengthening academic potential of BiH faculty and researchers tends to take the form of specific scholarships for studying abroad (primarily in donor countries). Somewhat surprisingly, there are currently no programs initiated or supported by the IC for those who wish to pursue their post-graduate studies and research in BiH. This, combined with the education system with the complicated bureaucratic procedures for diploma nostrification contributes to brain-drain and negatively affects research capacities in BiH.

Social sciences research from BiH is internationally underrepresented. In the Central and Eastern European Online Library (C.E.E.O.L) which provides an access to articles from a comprehensive list of 312 humanities and social sciences journals and documents pertaining to Central, Eastern and South- Eastern European issues, Bosnia and Herzegovina is represented with 15 journals, of which the most frequently internationally accessed ones are Forum Bosnae and STATUS. In the regional context within C.E.E.O.L., BiH comes last compared to Croatia and Serbia in both the number of journals (15 compared to 22 from Croatia and 21 from Serbia) and downloaded articles from those journals (3145 to 7448 from Croatia and 5664 from Serbia). Nonetheless, the use of research tools and databases by the BiH researchers is on a considerable rise. The number of searches in EBSO database conducted by BiH researchers has increased from 53127 in 2004 to 77507 in 2007.

Although the BiH National and University Library in Sarajevo should officially be the central database for the academic research conducted in BiH through its virtual library based on the Co-operative Online Bibliographic System and Services (COBISS), the data is not up-to-date. The total number of PhD dissertations in this database is 1158 (of which 238 are in social sciences and humanities), while the total number of PhD dissertations at the University of Sarajevo alone is 2014. Similar system discrepancies are recorded in the numbers of MA/MSc theses. The system of recording therefore officially exists but is not yet entirely reliable and representative of work and research conducted by BiH researchers.

The social research visibility is important for the development of institutional framework for research; in other words development of system where social research would be integral part of policy development. One of the reasons why social research capacities in BiH are dispersed is because of the highly decentralized higher education system, which is addressed below.

[4] Ibid.

Legal Framework

The post-war Higher Education and Science Systems in Bosnia and Herzegovina are strongly marked by the following characteristics: decentralization and ethnic divisions; growing number of education institutions and students; overlap between intellectual and political elites; corruption; "brain-drain"; and diminished research potential.

These Systems in BiH are a result of the process of decentralization and subdivision of the country into two entities in compliance with the Dayton Peace Accords: Federation of Bosnia and Herzegovina (FBiH) and Republic of Srpska (RS). The Federation of Bosnia and Herzegovina is subdivided into ten cantons, whereas the Republic of Srpska is subdivided into six regions.

Stemming from the political decentralization process, the higher education is primarily regulated on the level of entities and further decentralized based on the entities' subunits. Despite the recent adoption of the Framework on Higher Education Law the state has little control and competence in the area of education. As a result, it is important for the further discussion to point out that there is no Ministry of Education on the state level regulating the education system, whereas the need for it has been repeatedly recognized by both domestic actors and international organizations and donor community engaged in the education reform.

The current Framework on Higher Education Law has been formally adopted on August 15, 2007 and is being overseen by the state Ministry of Civil Affairs. Higher Education in the Federation of Bosnia and Herzegovina is formally overseen on the cantonal level while in RS it is more centralized, being regulated on the entity level. Besides the state Ministry of Civil Affairs, there are additional two governing education system regulating bodies on the state level: the Co-ordination Board for Higher Education (KOVO), whose members are all the Rectors from BiH Universities and relevant representatives from the Ministries of Education coming from both entities; and the Center for Information and Recognition of Diplomas which is being established and scheduled to begin its operations in March 2008.

The higher education and science structure and organization needs to therefore first be analyzed on the entity level. In the Republic of Srpska, the political powers and competences of the Ministry of Education are centralized. At the level of Federation of BiH there is also the Ministry of Education and Science. However, the primary responsibility for regulating the universities in the Federation of BiH remains on the cantonal level, as the cantonal government, more specifically the Cantonal Assembly is the formal founder of the university/ies. This type of decentralization further complicates the legal framework for higher education institutions, as every canton in Federation of BiH has or is legally allowed to have its own Law on Higher Education.

When the above described higher education system decentralization is taken into consideration it should be pointed out that as a result, Bosnia and Herzegovina can have the total of 14 laws on higher education (1 at the State level, 3 at the levels of entities and the District of Brcko, and remaining 10 at the level of cantons within FBiH), creating "a specific kind of chaos in this area and more problems in recognition of school leaving certificates and diplomas."[5] Now that the State umbrella Framework Law on Higher Education has been

[5] University of Sarajevo, *Internal Self-Evaluation of the Current Situation*, Sarajevo, January 2004.

passed, it is expected that the harmonized laws in entities will follow soon. Higher education will then formally be positioned at the Entity level.

There are currently eight state Universities in the country (six in FBiH and two in RS): University of Bihac, University of Banja Luka, University of Tuzla, University of Sarajevo, University of East Sarajevo, University of "Dzemal Bijedic", University of Mostar, and the University of Zenica, whereas only four of them had already existed prior to war in the country (Those in Sarajevo, Banja Luka, Tuzla and "Dzemal Bijedic" in Mostar). Additionally, there are numerous private higher education institutions some of which are still in the process of obtaining their legal status.

After the foundation of new universities during the war, the post-war period saw a drastic increase in the number of enrolled students. Illustrative examples are University of Sarajevo and the University of Banja Luka. In the year 2000 University of Sarajevo reached its pre-war level of 30,000 enrolled students, where in 2003 this number increased dramatically to 47,000 students. Relating to the above listed markers of the post-war education system, such as ethnic division and decentralization, another 25,000 students are currently enrolled at the two universities in the Republic of Srpska, located in Banja Luka and Pale. As pointed out by Bodo Weber in Crisis of the Universities in Bosnia and Herzegovina and the Prospect of Junior Scholars, this is astounding when recalling that the University of Banja Luka counted only 3,000 to 4,000 students before the war broke out.

"In a country whose economy is only slowly recovering from the war, where unemployment is around 50 percent, and whose total population decreased considerably due to the war, this political authorization for a quantitative expansion of the universities has pushed them into the role of a social safety-valve, even more than in the 1980s."[6]

Undoubtedly, the university infrastructure, teaching and research activities have been greatly affected by the war. Growing number of universities, "brain-drain" and the overlap between political and intellectual elites have resulted in a reduced number of teaching staff often teaching at two or more universities at the same time, while combining their academic careers with private and public political engagements. As a result, "scientific research almost ground to a halt."5 The Research Law does not exist on the state level, while the need for it has been recognized. At the same time the RS has voted a Law for Research which defines the main guidelines for these activities, while the Ministry of Science and Technology of RS has also adopted a basic document for the research strategy of RS. Research Laws exist on the Cantonal level in the Federation of BiH. Financial constrains and low research budgets remain the primary characteristic of state supported research activities.

The teaching staff at Bosnian Universities tends to be consisted of older generations, with limited knowledge of foreign languages and information regarding the access to research funds. More than 50 percent of the professors currently employed at the University of Sarajevo are over 55 years old.6 Nonetheless, there exists a relatively small group of ambitious and well-educated junior scholars with the potential of introducing substantial and sustainable changes in the BiH Higher Education System through teaching, research and development of knowledge based society.

[6] Weber, Bodo. *Crisis of the Universities in Bosnia and Herzegovina and the Prospect of Junior Scholars.*

Framework law on Scientific Research Activities and the Coordination of Internal and International Scientific Co-operation in BiH 6/12/2009

The Framework Law on Science has created a more transparent legal basis for multi-level governance in the country, with a clearly specified role for the Ministry of Civil Affairs (MoCA) at state level. The Framework Law on Science provides for the creation of a new coordination body, called the Science Council. The Framework Law on Science also underlines the importance of the need to improve significantly the current S&T information system, including statistical data collection, according to international guidelines as set out by, for example, EUROSTAT, OECD and UNESCO.

Strategy for the Development of Science in BiH – 2010-2015 12/10/2010

The Strategy for the Development of Science in BiH, prepared by the Ministry of Civil Affairs of BiH (MoCA), specifies actions in line with the Framework Law on Science (for example, the renewal of the RTDI statistical and information system) and the role of the public authorities at each level (state, entity, canton and district). It also identifies priorities for RTDI policy in the following five years.

In parallel to what has been done at the State level in 2009 (adoption of the Strategy for the Development of Science in BiH 2010-2015), the two Entities (Republic of Srpska and Federation of BiH) drafted its own strategies on technological and scientific development in 2011. Republic of Srpska prepared the "Strategy on technological and scientific development 2012-2016" and the Federation of BiH the "Science development Strategy 2011-2021". At the time of this report (July 2012) none of the two strategies have been adopted by the respective parliaments.

The main elements of the research policy are described in the Strategy for the Development of Science in BiH 2010-2015. Sharing the vision of the Lisbon strategy, the recommendation of theUNESCO-ROSTE report[1] and realising the important role and the significance of R&D towards the improvement of competitiveness and growth, the Strategy for the Development of Science in BiH – 2010-2015 identifies the main issues concerning R&D enhancement, namely: training of a new generation of scientists, building-up the country's research infrastructures, reinvesting in industrial research in a limited number of sectors and create a general framework for the development of industry-university partnership.

By 2015, BiH should reach the investment level of 1% of its GDP, strengthening the human resources capacities by educating the young generation of scientists, enhancing the technical equipment, computers, information networks, libraries which should provide the scientific community with the capacity to undertake competitive research activities, developing system of evaluation and reporting in R&D.

It is foreseen that the stated goals will be facilitated through the work of a Science Council of BiH who will amongst other tasks, "monitor the implementation of the Strategy for the Development of Science in BiH – 2010-2015 and give recommendation on its further improvements
Research policy in BiH is dealt within the Republic of Srpska (RS) and Federation of BiH (FBiH) and its cantons. Involvement at State level is therefore mainly restricted to promoting

international scientific cooperation and participation of research institutions from BiH in FP7. Also, the participation of BiH in the COST and EUREKA programmes, will entitle both SME and academic laboratories to be involved in research and technological development activities over a wider geographical range than the EU. The BiH Ministry of Civil Affairs (MoCA) in accordance to theFramework law on Scientific Research Activities and the Coordination of Internal and International Scientific Co-operation in BiH plans to provide the funding of BiH participants in these programmes and other international scientific projects.

In RS the engineering and technology sciences (i.e., energy efficiency, electrical engineering, mechanical engineering and technology) receive slightly larger shares of the research budget than other fields. In FBiH, the technical sciences also receive a slightly higher priority (eg civil engineering, mechanical engineering and electrical engineering). The same situation is to be found in the cantons of Sarajevo, Tuzla and Zenica-Doboj. Apart from the funds for science, RS also allocates funds for technology development (support to innovators, conferences, projects for development of new technologies etc.) and projects for the development of an information society. However, the budget for both activities is less than the budget for research projects. In FBiH, funds for research are not only allocated from the Ministry of Education and Science but also from other ministries such as the Ministry of Agriculture,water-management and forestry, theMinistry of Crafts, Development and Entrepreneurship, the Ministry of Environment and Tourismand the Ministry of industry, energy and mining. It is estimated that these ministries allocate twice as much as the Federal Ministry of Education and Science. In RS, research funding also comes from a range of ministries, in this case the Ministries of Agriculture, Forestry and Trade and Tourism .

Public Institutions and Bodies that Ensure the Development and Quality of Scientific-Research Activity

Relevant government bodies overseeing and regulating the higher education system on the State, Entity, and Cantonal level are presented in the following overview. Information regarding Ministries' competences and support for research activities is provided.

Ministry of Civil Affairs of Bosnia and Herzegovina

Competences: The Ministry of Civil Affairs oversees the implementation of the Framework Law on Higher Education and the implementation of Bologna Declaration in line with the state obligations defined by the international treaties of which BiH is a signatory. Based on the Lisbon Convention, BiH is required to establish the National Academic Recognition Information Centre (NARIC), which is responsible for ensuring academic mobility of students and faculty and provide support for institutions which are responsible for diploma recognition, providing information to institutions and individuals regarding diploma recognition procedures and about higher education in BiH and abroad. The Framework Law on Higher Education mandates the establishment of Center for Information and Diploma Recognition (CIP) as an independent governing organization which will function as the NARIC. CIP's operation is scheduled to start in March 2008, and until then the Division of Education, Science, Culture and Sports of the

Ministry of Civil Affairs of Bosnia and Herzegovina serves this function in providing information about the higher education in BiH, domestically and abroad.

Support for Research Activities: The Ministry is currently collaborating with the Ministry of Foreign Affairs of BiH and UNESCO in providing scholarships and financial aid for young researchers.

The Ministry's Head of Department for Science/National FP7 Coordinator/CNC BiH said that funding opportunities for supporting a data archive and service exist, both from national public budgets (Cantonal, Entity and State level budgets' grant schemes) as well as international sources (EU Framework Programme, EU Instrument for Pre-Accession, as well as bilateral donors active in the field of supporting education and science – Austrian Development Agency – ADA, and Swiss Development Co-operation – SDC/DEZA).

Ministry of Education and Science of BiH Federation

Competences: The Federal Ministry of Education and Science performs administrative, professional and other tasks on the Federal level, as laid down by the legislation in, among other areas, validation of the foreign school certificates and diplomas, training and professional specialization of the teaching staff, standards for university-level education, development of scientific activity, protection of copyrights and intellectual property, coordination of scientific-researching activities, development of the scientific-researching institutions, encouragement of fundamental applied researches, development of investment technologies and human resources in scientific-researching field.

Support for Research Activities: The Ministry has provided support, by funding or co-funding the projects in the area of education and science, divided under topical areas of: raising student standards; quality assurance and reconstruction of schools; and supporting science and scientific institutions important for Federation BiH.

Relating to the research encouraging initiatives, 610,000.00 KM have been used to support scientific- research and research-development projects in 2007; 350,000.00 KM had been used to provide support to scientific institutions and researches important for Federation BH; 250,000.00 KM has been provided for support to scientific research work in postgraduate master and doctoral studies and work on master and doctoral thesis; 275,000.00 KM has been provided for equipment for scientific research institutions, scientific books, access to international scientific data base and publishing scientific magazines and 200,000.00 KM has been provided for scientific and technological international cooperation, international scientific assemblies and stimulation of young scientists and innovators.

The Assistant Minister, Mr. Jasmin Brankovic, found that the establishment of a data archive and service would be beneficial not only to the community of researchers, but also to government institutions, including his Ministry. He believes that such a data archive and service would provide an input to the Ministry on the types of research conducted in social sciences, more information about the researchers but the most important being more transparency in research. The Assistant Minister strongly believes that funds could be made available in part from his Ministry and that the Ministry is interested in supporting such a project in the future.

Ministry of Education and Culture of Republic of Srpska

Competences: In the area of Higher Education, the Ministry is responsible for the nostrification of foreign diplomas, quality assurance, coordination of educational cooperation with other countries and international organizations and international agreements and their harmonization with the RS and BiH Constitutions. The Ministry also oversees educational cooperation with the Federation of BiH. Some of its competences are expected to be transferred to the newly established and above discussed Center for Information and Diploma Recognition (CIP) which will operate on the state level.

Ministry of Science and Technology of Republic of Srpska

Competences: The Ministry deals with issues of science and technology within RS and actively participates in the distribution of information regarding available research funds, such as FP7 in the areas of science and technology.

budget amounted to 3 million KM in 2005, with 80% dedicated to research and development activities through support to projects mainly in the field of science and technology. In 2008, the Ministry is planning to allocate 2 million KM for education of faculty staff, improvement of research laboratories and international research cooperation projects. More specifically, 1.165.000 KM will be allocated to financing 150 post-graduate studies, writing of 150 MA and 100 Doctoral theses and 30 Doctoral studies. This budget marks a 30% increase from the Ministry's 2007 budget for the same purposes.

The Assistant Minister for Science, Mr. Vinko Bogdan, supports the idea of the establishment of a data archive and service and believes this would be very beneficial to researchers and those funding research, alike. However, he deems necessary to keep in mind that the mandates for science and education are those of BiH entities and not the BiH state level and that any such creation of a data archive-service would need to have this structure embedded in its establishment.

Cantonal Ministries of Education in FBiH

The following ministries regulate educational policies of their respective cantons in the Federation of BiH. Cantonal parliaments in the FBiH have established their own laws for higher education. In 1999, Sarajevo, Bihac and Tuzla cantons adopted new Higher Education laws. The two Universities in Mostar use the law adopted in 1990. The most advanced developments have been made in the Law of the Tuzla Canton where legal personality of faculties has been abolished and the position of the rector was strengthened, based on which the University of Tuzla became the first integrated university in BiH. "Due to the current legislation and diverse governance there is very limited coordination at any level of education between the entities or among cantons in FBiH."

The Cantonal governments finance the higher education institutions within their cantons. For example, the Sarajevo Canton provides the average of 60% of University of Sarajevo budget funds (the remaining 40% are covered by what is described as "independent income").

Ministry of Education and Science of Sarajevo Canton

Competences: In the area of higher education the Ministry oversees the education system

related policies in the Sarajevo Canton, and more specifically oversees the work of the University of Sarajevo and legally recognized private higher education institutions. Support for Research Activities: The Sarajevo Canton is the only canton within the BiH Federation which has voted a Science Law for the organization of research activities within its territory. It has established a research fund with the budget of 1.5 million KM to support research projects. The evaluation of proposed projects is conducted by the experts under the responsibility of the Academy of Sciences and Arts of BiH. The Ministry has recently created a new department of informatics which gives access to an ensemble of 46 scientific journals through Science Direct, enabling access to the international scientific literature.11 In 2007 the Ministry has provided financial support for 93 MA and 47 Doctoral candidates at the universities in BiH as well as in cooperation with foreign universities. In providing financial support, the Ministry does not distinguish social from natural sciences research projects.

Private Institutions and their Responses to Data Archive-Service Establishment

Responses of potential users and funders of data archives and services in BiH boiled down to only the response of the Bosnia and Herzegovina Office of the Heinrich Boell Foundation.[7] In addition to being familiar with digital data archiving, and identifying the need for such a service in BiH, the Foundation also shared that they would be potential users of the future data service. The Foundation conducts surveys with citizens, for instance, on the status of ecology, which are conducted in research waves on a regular basis. Such research results that analyse the social phenomena and citizen's reactions would require archiving and would be useful as secondary research data. The Foundation recommends that the funding for such a data service could be provided from the existing public funds and budgets as well as other EU projects.

Research funding[8]

The total budget of public funding for research in Bosnia and Herzegovina by the state, entities and cantonal governments was likely to amount to €7m in 2010, the lates available data on allocated budget figures. This figure is composed of the following main items:

[7] The questionnaire was shared with two multinational agencies who conduct regular surveys, as well as with four international foundations active in BiH.

[8] In the absence of overall statistics for R&D activities in BiH, it is difficult to provide an exact evaluation of public investment. According to the STI Strategy, BiH invests around 0.1-0.14% of its GDP on R&D which is far below the EU 27 average of 2.01%. In 2008 the budget of RS for R&D was €3.3 m or 0.07 % of its GDP while the FBiH budget amounted to €2.73m or less than 0.07 % of its GDP. In 2009, the Canton Sarajevo budget for science amounted to €2.19 m, Canton Tuzla - €0.04m and Canton Zenica-Doboj - €0.03m.
In accordance with the estimate that both entities do not allocate more than 0.1% of GDP, the STI Strategy reached the conclusion that no more than €3.1 per capita was allocated for R&D in 2008. This amount is insignificant compared to average allocations for RTD in EU 27 where €427 per capita was allocated.

- At the State level, Ministry of Civil Affairs through its Department for Science and Culture had a budget of €76,000 in 2010 for grants that support innovation and technical culture in BIH and €255.000 EUR to support research projects and researchers for the activities related to FP 7 specific programmes and themes.
- In RS, the financial allocation in 2010 was in total €2m (actual expenditure) channelled through the "Programme for scientific and research activities" while budget for innovation and technology was €0.41m.
- The total budget for research of the Federal Ministry of Education and Science in 2010 was €1.6m channelled through the "Programme for scientific and research activities". The financial cost in support of innovation and technology in 2010 was €0.37m.

There are no other public authorities that finance research out of their own funds.

Results of Survey on Infrastructure for Data Preservation

Research Infrastructures

The research infrastructure is primarily national in character. The public research (technological) organisation and the higher education institutions have a large autonomy within the Universities in BiH, with significant fragmentation of resources including present research infrastructure and equipment. As a result of this process, small research units with research infrastructure tools dominate. In such situation, duplication of equipment and unnecessary waste of already scarce resources is eminent. To avoid and enable networking and integration, the Register of equipment should be establish which is still not the case.

A Roadmap for the building of new infrastructures has been designed in the Strategy for Development of Science in BiH 2010-2015. The document specifiesthe following actions for improvement of the research infrastructure:

- Increase investments in research equipment, especially in priority scientific areas, as well as in the revitalisation of research infrastructure. To achieve this increase investment in R&D to 1.5% of GDP by 2015.
- Enable unlimited access to electronic scientific data bases (Science Direct, EBSCO, etc.). To have subscription and access to all major databases by 2010.
- Work on internationalisation and raising the quality of domestic scientific journals with the aim of becoming internationally recognised – creating and funding programmes for publishing reference scientific domestic journals. By 2013, to have a journal for each scientific field.
- Strengthen support for the publication of high quality scientific books.

Research Organisations

BiH has achieved considerable progress in improving quality as a key element of the Bologna Process. The Framework law on higher education in Bosnia and Herzegovina has clear provisions related to quality assurance, including the establishment of a special agency - the Agency for Development of Higher Education and Quality Assurance. BiH adopted National Standards and Guidelines fully compatible with the European Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESGs) covering the three pillars of the quality assurance process – internal assessment, external assessment and accreditation. This has prompted an action on the part of the universities and other stakeholders to prepare themselves for the implementation of a quality assurance system i.e., undertaking internal and external evaluation process. Tempus and other projects have contributed to developing special QA centres in the universities and to a better understanding of the Bologna principles and development of a 'quality culture'.

Of special importance are the two projects: (i) From Quality Assurance to Strategy Development (Tempus, 2007 -2010); and (ii) Strategic and Structural Development of Quality Assurance in BiH HE (Austrian Development Agency/ Liechtenstein Grant - 2008 -2010) involving all universities and other relevant stakeholders. Within these projects all universities have undertaken internal assessment in full compliance with ESGs. Appropriate organisations have been created, and comprehensive and accurate information has been collected in relation to the performance of the faculties and universities in all relevant areas. In the self-evaluations considerable numbers of all levels of academics and students were involved.

The University of Mostar and University of Zenica have performed external evaluations within the European University Association Institutional Evaluation Programme. This is a useful action in line with the modern European trend for competent and independent assessment. The strategy of the University of Zenica includes annual assessments instead of periodical self-evaluation.

Currently, there are no records to what extent block funding is linked to scientific results.

There is no data on scientific production, or data quantifying scientific production although support is provided to researchers to enable them to publish results in scientific publications which are edited in BiH and abroad. The Action Plan of the STI Strategy foresees the development of a system for evaluation and monitoring of the quality of work in R&D.

There is no Science Citation Index or other bibliometric database.

Survey

A study was conducted in Bosnia and Herzegovina on the existing infrastructure and experiences in the field of long-term preservation of data collected by researchers, as well as regarding the potential for the creation of a national data archives in the social sciences The study was conducted with eight relevant respondents from September-November 2012:

1. National Library of Bosnia and Herzegovina,
2. National and University Library of the Republic of Srpska

3. Agency of Statistics of Bosnia and Herzegovina,
4. Agency for Statistics of FBiH
5. Agency for Statistics of RS
6. Computer Center of the University of Sarajevo – UTIC
7. Archives of Bosnia and Herzegovina
8. Human Rights Centre of the University of Sarajevo

The survey was conducted by desk review of existing data on the above instutions and, when possible, face-to-face interviews with relevant representatives of these institutions. All respondents confirmed that funding for primary research in the social sciences is lacking in government budgets.

None of the involved institutions perform systematic collection, preservation, and dissemination of primary data in research conducted. Practices implemented in these institutions are reduced only to storing data on local media of researchers involved in the project or the head of the project. Thus, the stored data were subjected to double risk. First, they are likely to be permanently lost because of the lack of appropriate formal procedures of data storage and backup; second, they are likely to be lost in terms of their unavailability for a wider scientific and professional community.

Representatives of these interviewed and analysed institutions did not have proposals of specific models for digital data preservation in the social sciences. None of them, on their own, have the capacity to manage a digital data archive.

The respondents in this survey on available infrastructures indicated that research data is not adequately deposited in a systematic way and that this produces a considerable loss of research data. They assume most of the research data is kept by the original resarchers conducting the data, or in the best possible case, by their host institution.

The only institution that differs from this practice is the Human Rights Centre of the University of Sarajevo that has piloted the SERSCIDA project in recognising the need for digital data archiving. The Centre already has staff that are experts in the field of metadata and have been handling digital data archiving (MATRA funded BIHME project with University of Rotherdam), experts in quantitative and qualitative research methods (providing teaching on the subject at the Centre for Interdisciplinary Postgraduate Studies of University of Sarajevo and Faculty of Political Sciences of University of Sarajevo). Also, having a Library within the Centre, provides additional staff experienced with the necessity for protocols, policies and procedures required for data compilation, depositing, managing and dissemination.

Based on the above analysis, the possible infrastructures for hosting a digital data archive in social sciences in Bosnia and Herzegovina could be the following

1. The first model: the organization of the archive is at the University of Sarajevo within the HRC that would be in charge the main data service, training and cooperation with researchers. The partner for the IT and technical infrastructure (server space and management) would be the Agency for Statistics of Bosnia and Herzegovina, given

their extensive experience in the field of data management and IT capacities in terms of both human resources and necessary equipment;

2. The second model: the organization of the archive is at the University of Sarajevo within the HRC that would be in charge the main data service, training and cooperation with researchers. The partner for the IT and technical infrastructure (server space and management) would be the National and Universite Library of Republic of Srpska, given their experience in the field of archiving and IT capacities in terms of human resources;

3. The third model: the organization of the archive is at the University of Sarajevo within the HRC that would be in charge the main data service, training and cooperation with researchers while the server space and management would be hosted by an existing data service abroad.

The establishment of a digital data archive and service in the social sciences was supported by all those interviewed. The benefits identified in having such a data archive and service were the following:

- access to relevant data to general public, media as well as reasearchers,
- more efficient use of research funds, as primary data collections will be used for secondary research,
- a centralised location and support service to researchers seeking assistance in accessing and understanding data,
- increased transparency in research and ability to identify possible mishaps in methodology and analysis and
- access to data on Bosnia and Herzegovina compiled by international researchers.

Report on Survey on Gathering, Preserving and Use of Research Data

Research on the practice of gathering, preserving, and use of data collected in the social sciences was conducted through an online questionnaire. Two calls were forwarded to researchers, the first in mid-June and the other in the first half of the month of July 2012. Researchers know to HRC through the HRC Library Services were once more encouraged to respond in September 2012. More than emails were sent to over 100 addresses of university, faculties, departments, research agencies and individual researchers active in the social science research. The survey was promoted on the SERSCIDA web site, as well as through other HRC ongoing projects.

Access to the survey questionnaire was not limited or required authentication so that anyone who received the information and decided to follow the link to the questionnaire could have filled it in. Accordingly, the sample is not representative of the research population in the field

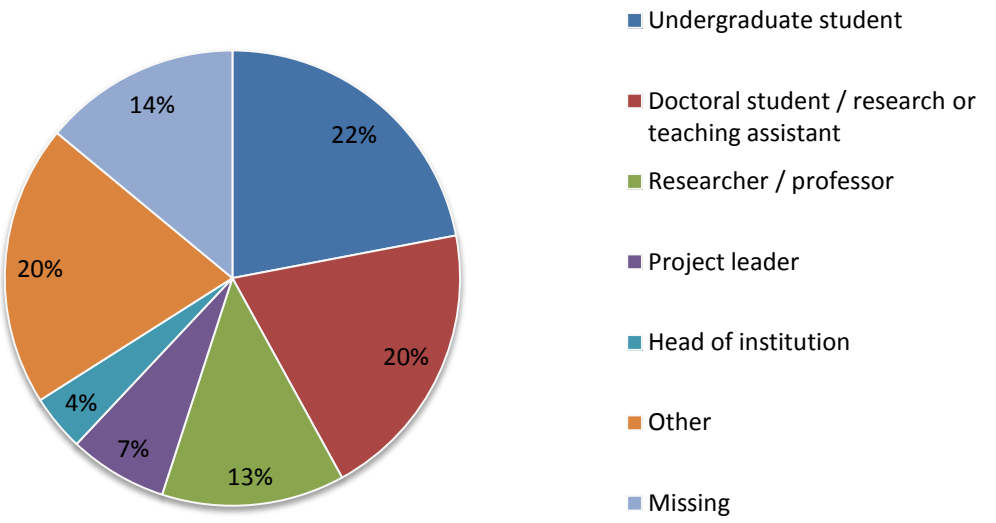
of social sciences (or the responses consequently), as the respondents were self-selected not only at the institution level (which have with more or less enthusiasm forwarded the invitation to its members) but also at the level of certain participants.

The total of 139 participants were involved in the Bosnia and Herzegovina section of the questionnaire.

Characteristics of respondents

Out of the total number of 139 participants, 31 were undergraduate students, 27 were assistants, junior researchers and other doctoral students, 18 were researchers in scientific or scientific-educational institutions, while 10 project leaders also participated in the research together with 5 heads of institutions. Additionally, 28 participants specified their status to be different (teachers, clerks, advisers, associates, independent researchers ...), while 20 have not declared themselves at all, that is, did not reply to the question.

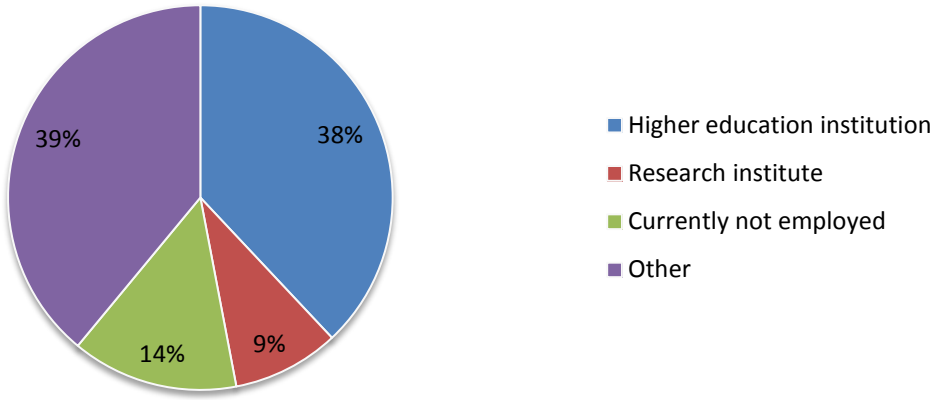
What is your current principal activity?



As for the institutional affiliation of graduate students, 38% were from the faculty, 9% from the institute, the total of 63% from public and 37% from private or non-governmental sector[9].

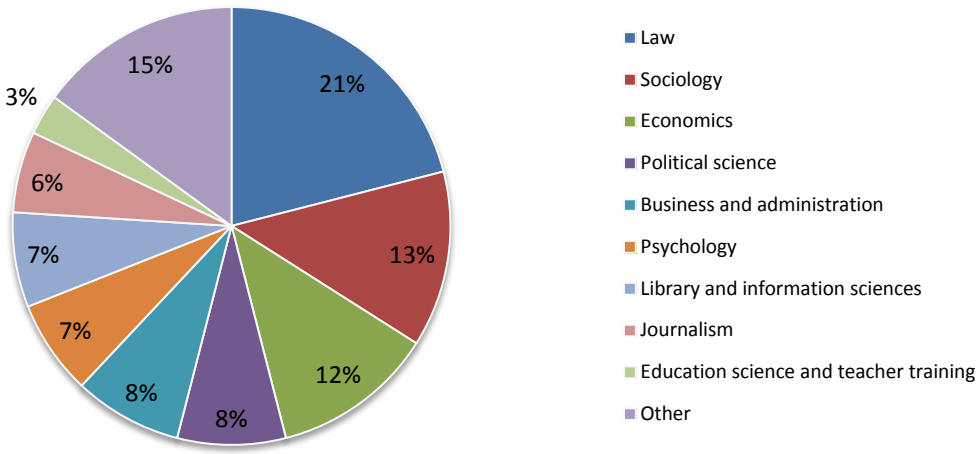
[9] The stated data in percentages does not include percentage of responses not included unless specified otherwise.

With what type of institution are you currently principally affiliated?



In terms of the disciplinary structure of participants (following the ISCED criteria), law takes dominant place (21%), while sociology (13%), economy (12%), political sciences (8%), business and administration (8%), psychology (7%), and information technologies and librarianship (7%) have a large share. Journalism and education comprise the total of 9%.

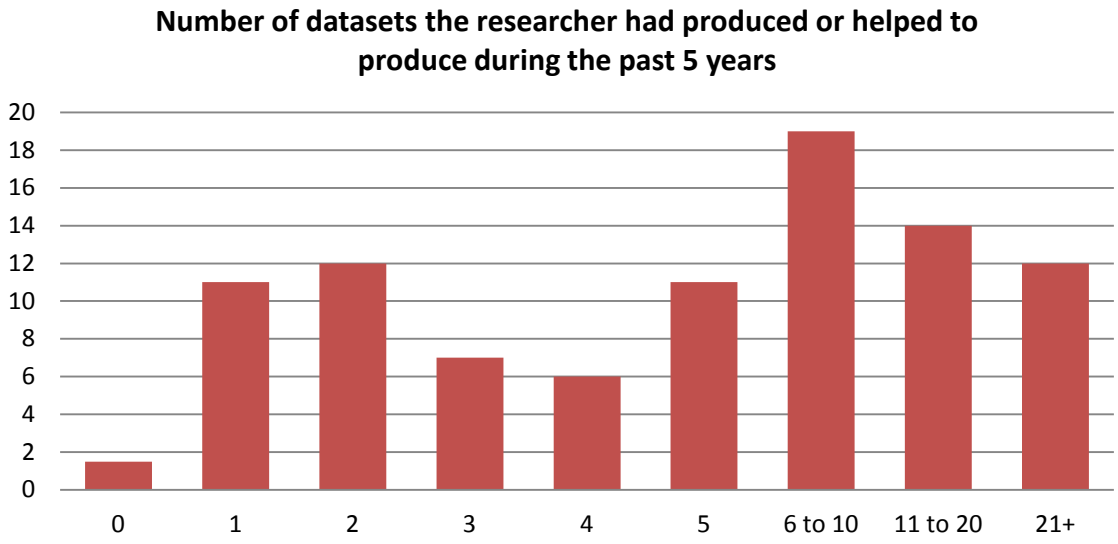
What is your principal research discipline?



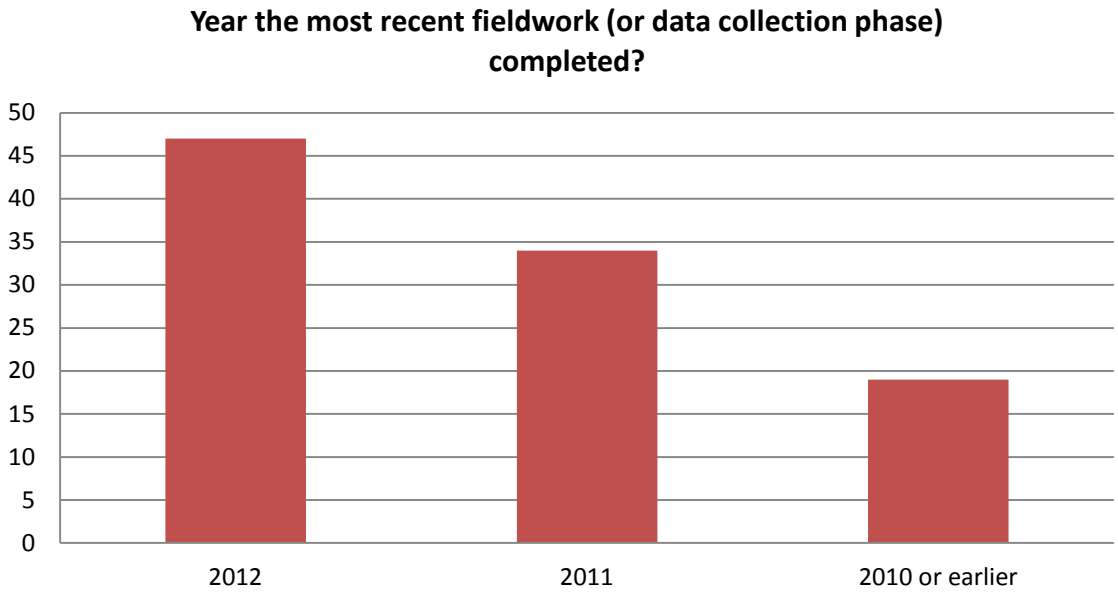
Data generation

During the past five years 64% of them produced some data sets.

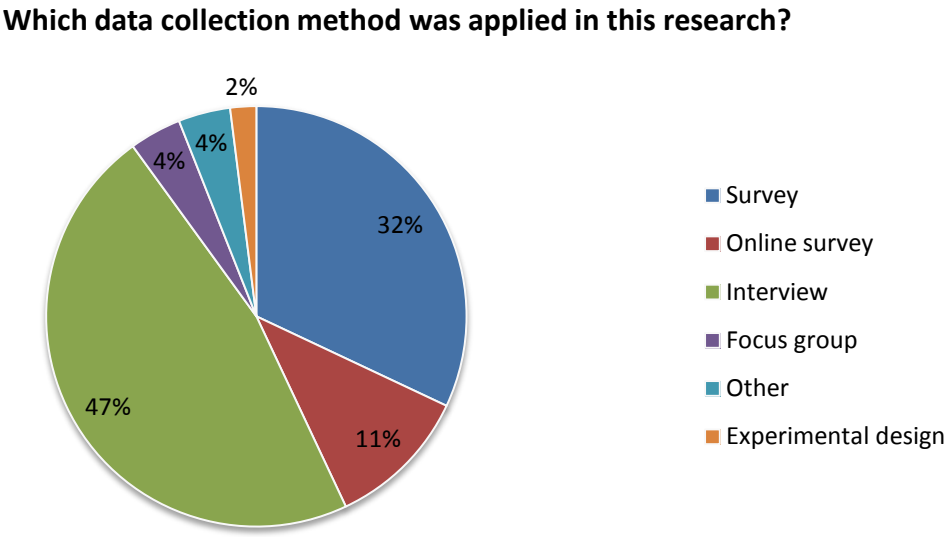
During the past five years 11% of them participated in generation of one research data set, 12% in two, 7% in three, 17% in four or five, 19% in six to ten, while one fourth of them noted that they have participated in more than 10 researches which resulted in data sets.



Four fifths (81%) of participants have completed their last research within the past 18 months (2011 and first six months of 2012), in other words, are currently active data creators.

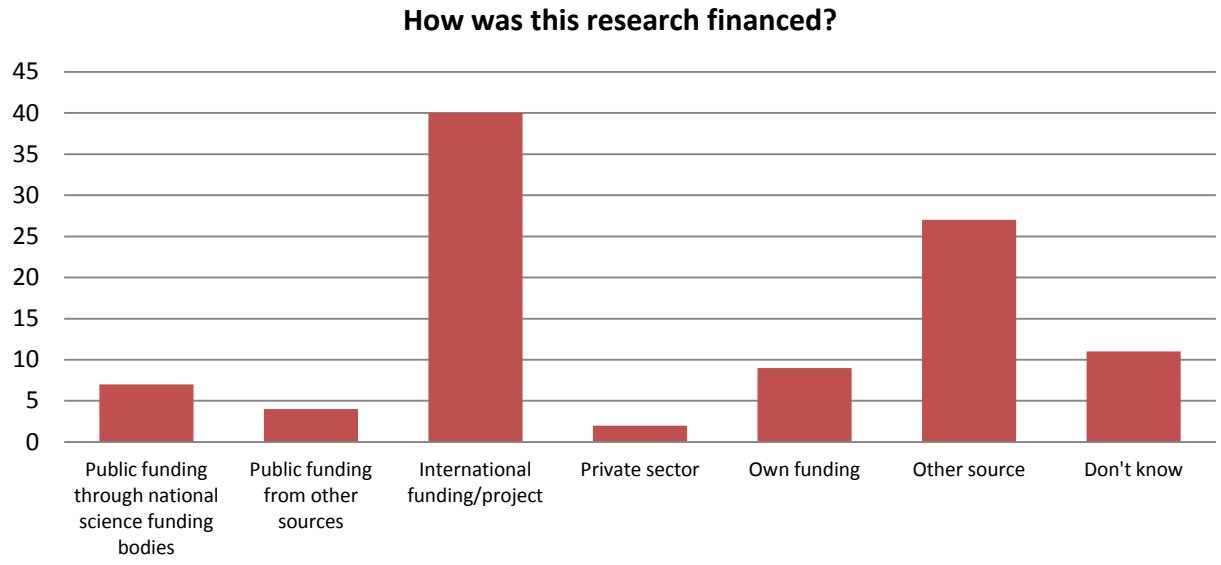


In terms of methods for last data collection, qualitative data dominate (51%); at the same time, the interviews are most dominant with 47%. Only 4% of responses goes to focus groups. Use of quantitative methods was identified in 43% of responses. In view of the above, it is obvious there is a need for archiving of both types of data, both quantitative and qualitative.

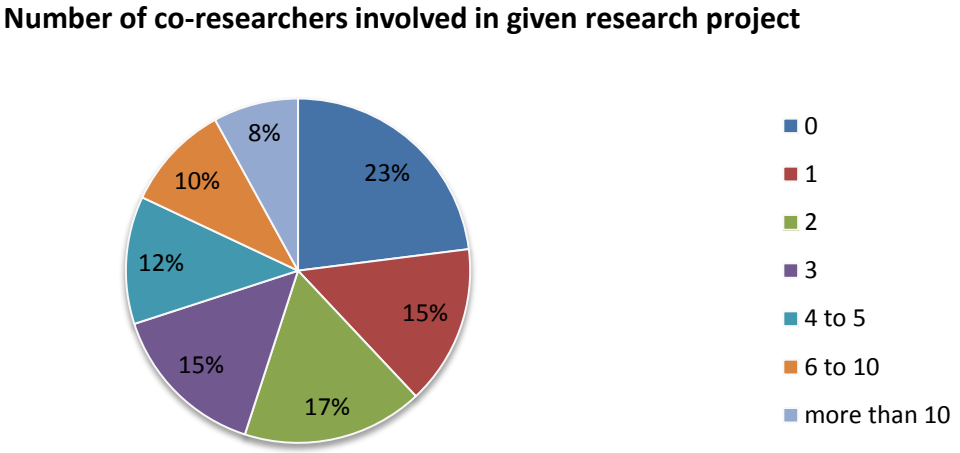


In terms of financing the research, in 7% of cases the last research carried out by the participants was financed by national bodies in the science system and in other 4% by other public sources. In 40% of cases resources were provided through international projects. It should also be noted that 9% of participants used funds from their own institutions and in 27%

instances the participants noted that the research was financed from other sources. Only 2% of those represented were financed from private sources. The total of 11% does not know who financed the research.



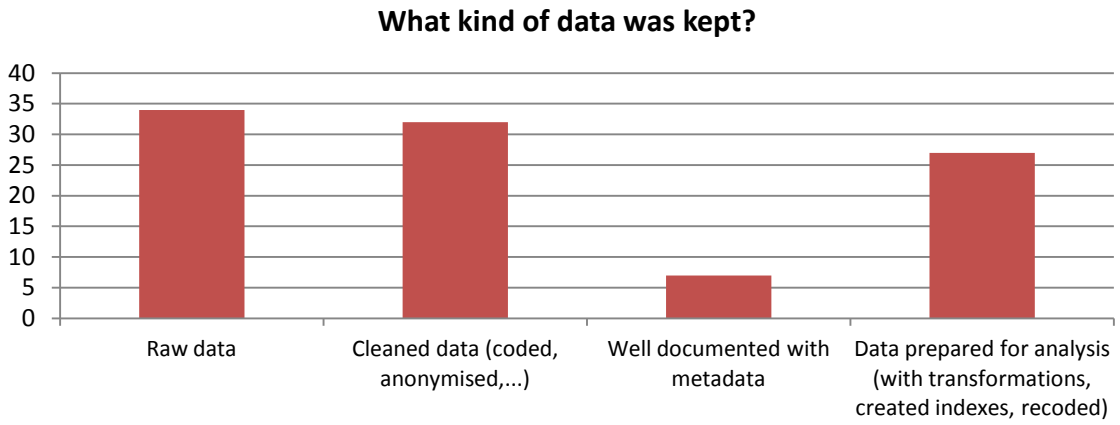
Number of project collaborators is important so that the framework for storage and the scope of use and data share could be understood. The total of 23% carried out the last research on their own. However, 47% of participants worked on projects during which two to four researchers in total were engaged (including the respondent himself). Only in 30% of instances were five or more researchers involved in the project.



Practices and archiving preferences

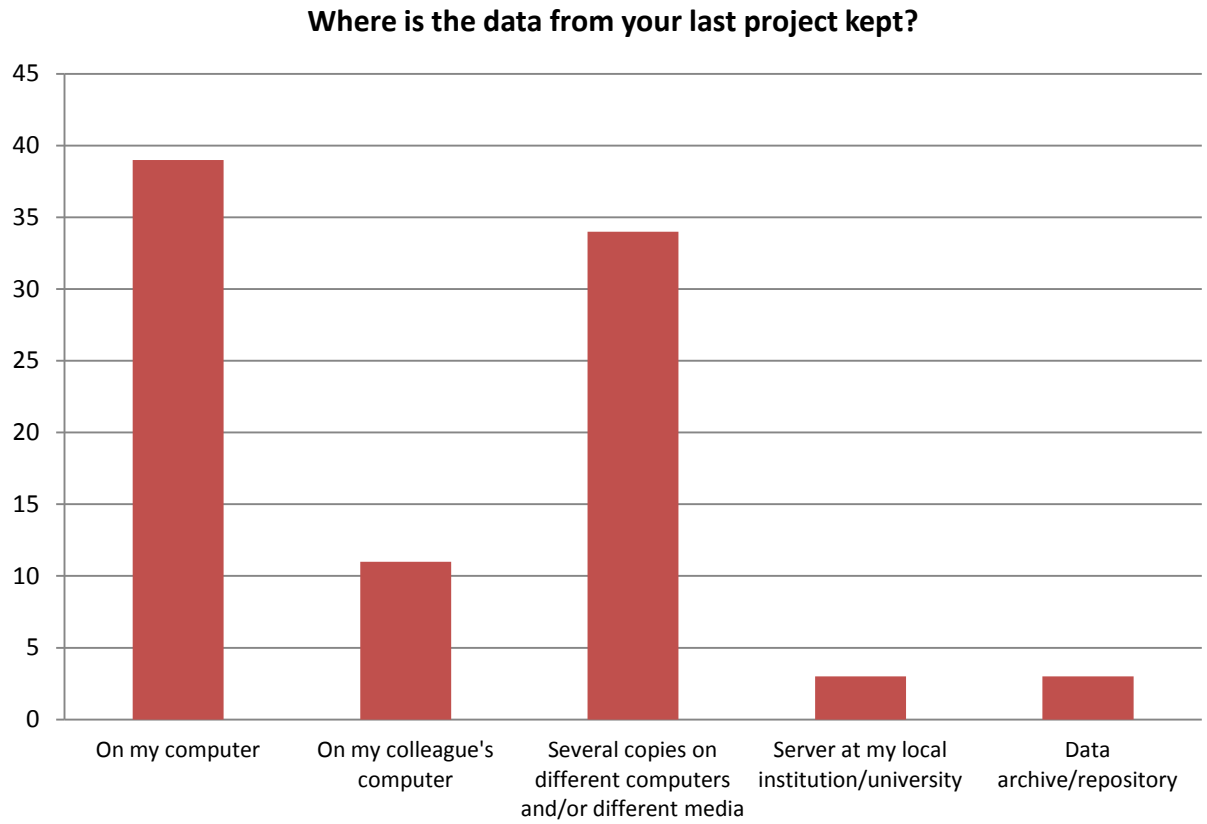
The data of their own (last) research is kept by 96% of respondents who carried out the research but very rarely in a systematic or standardized manner.

Which data is being kept? The existence of raw data is identified with 34%, "clean" and anonymous data sets with 32% and transformed data used for analysis with 27%. Only 7 participants mentioned the existence of extensively documented data pertaining to the described metadata. Six of them provided responses to the following question, three did not know which standards have been used for documentation, one person referenced one of the international standards (ISO 11179), while two individuals noted internal or institutional documentation standards.



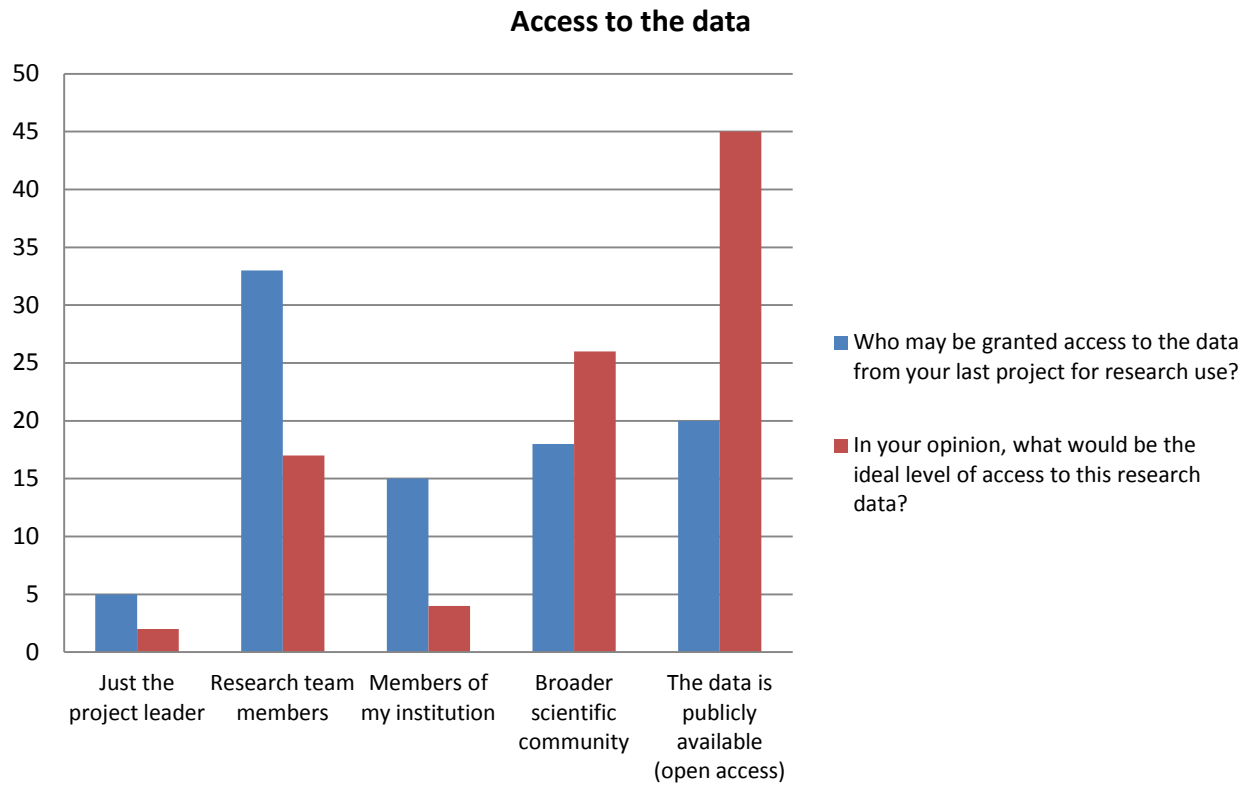
Where is the data stored? Most often, the data is kept by the participant himself on his personal computer (in 39% of cases) while in 34% of cases the researchers specified there was a copy on several computers or medias, whereas in 11% of cases the data was kept on computers of other participants in the project. These types of approaches can cause numerous problems medium-term and can be easily lost.

The institution server or specialized data archive have been used for storing of data collected during the last research by 6% of participants who referenced how they stored their data.

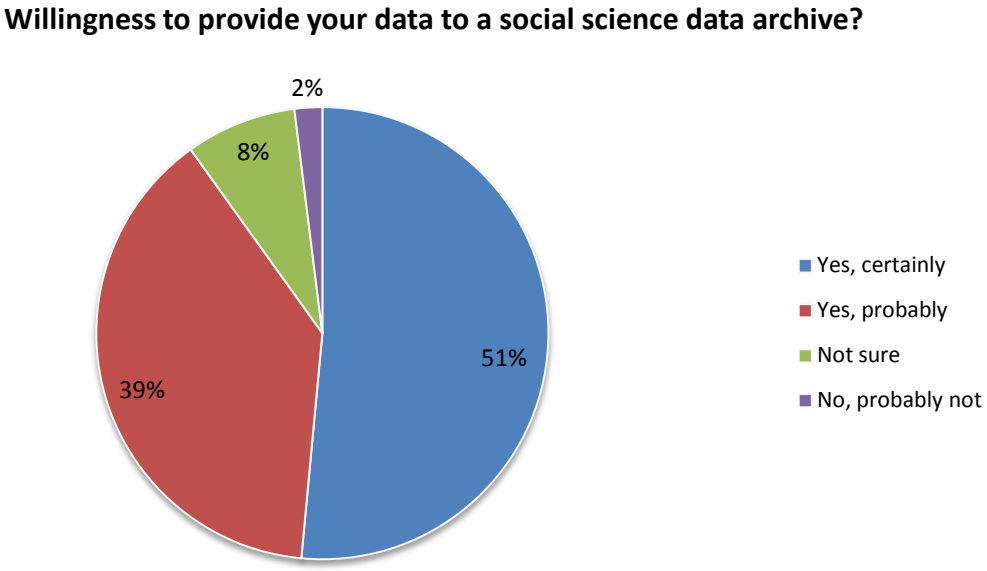


In terms of data access for secondary analytical purposes, in 5% of cases it can be currently done only by the research team leader. Nevertheless, the access scope, as expressed in 33% of cases, was dominant in terms of the research team that led the project. It should be also born in mind that very often it is a small collective, and therefore, the scope and potential of such share is very limited. Certain institutions do not see themselves as the points for archiving or share of data. Only in 15% of instances could the other researchers within the institution access the data. Finally, 38% of statements pointed to the availability of data to the wider scientific community (18%) or to the public (20%).

The level of accessibility when only the research leader would have access to data is not acceptable to the majority. It is the position of 45% that under ideal circumstances the access should be open to the wider public while in 26% instances to the wider scientific community.

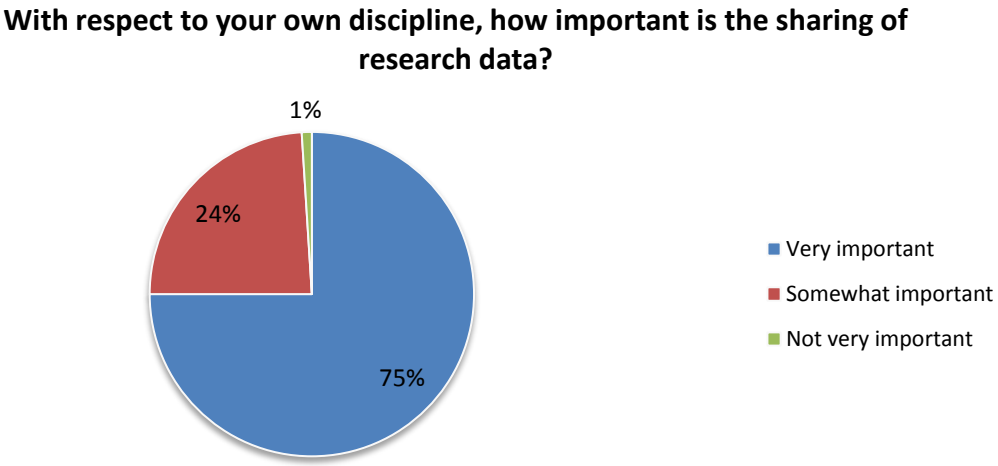


In case there is a safe data archive with regulated access, in 91% of responses participants were of the position that they would store their data there on their own initiative. On the other hand, only 2% would not want to do so while 7% were not certain.

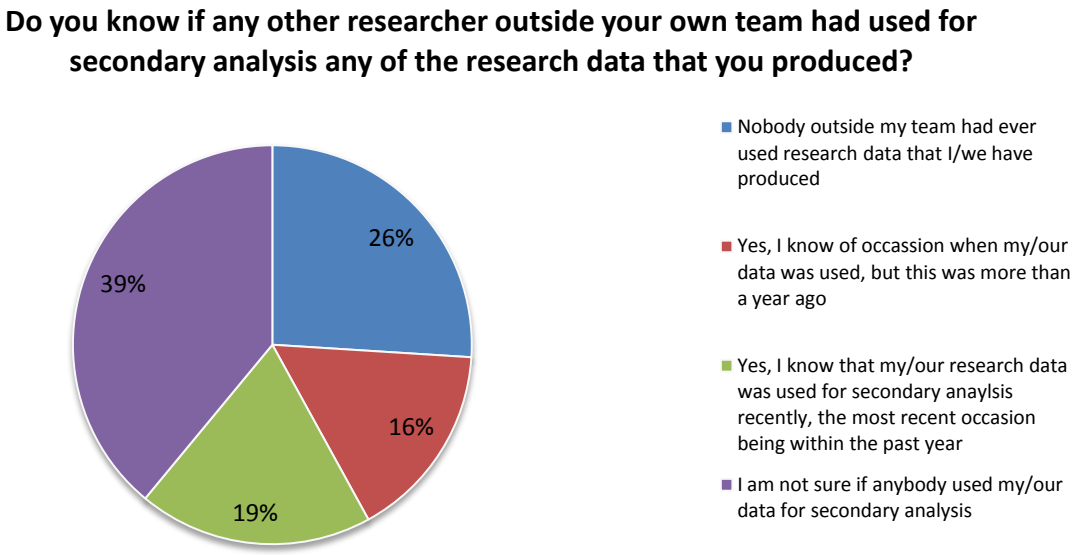


Use of data and secondary analysis

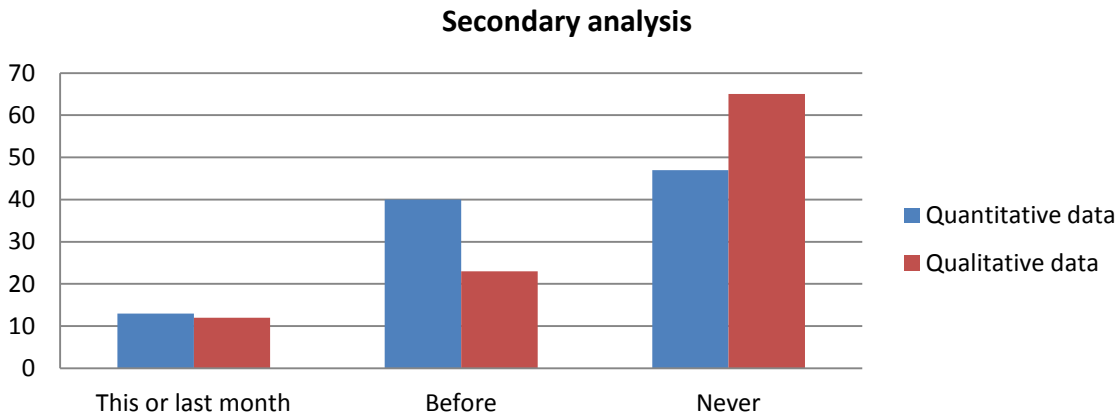
75% of participants in the research (those that responded to the question) believe that access to research data is exceptionally important in their discipline, while 24% is of the position that it is important.



However, only 35% of researchers can say that the data of one of his researches has ever been analyzed outside of the team that generated it. One quarter is convinced that no one has ever used their data while 40% actually is not certain whether the data they produced has been used by other researchers – which would not be the case if the data archive existed.

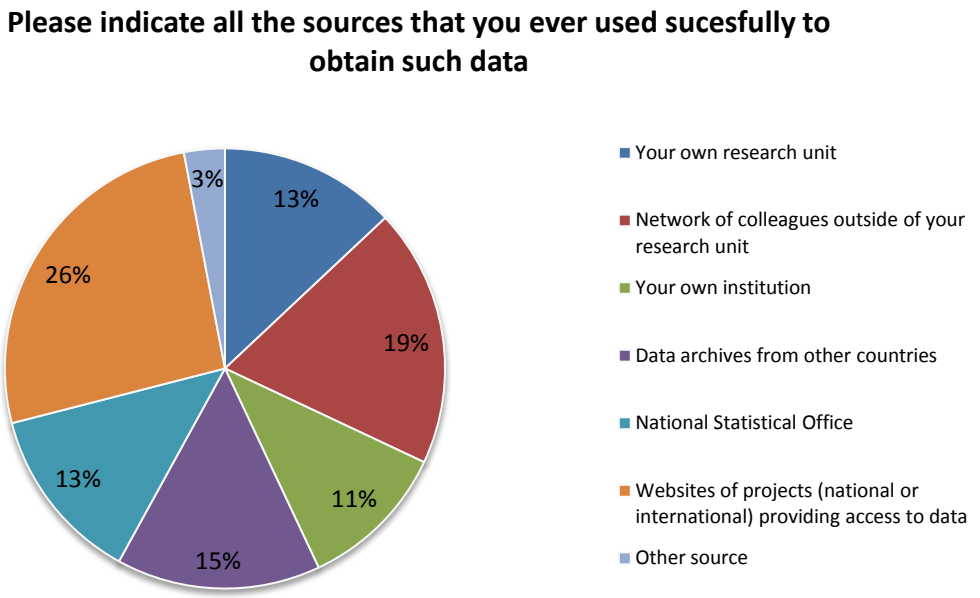


In the past two months following the research 13% participants have been regularly using quantitative data, 40% has experience in using such data but 47% of participants in the research have never analyzed data obtained through quantitative research that they did not produce themselves. In terms of qualitative research, the experience of using secondary data has been gained by only 35% respondents in this survey.

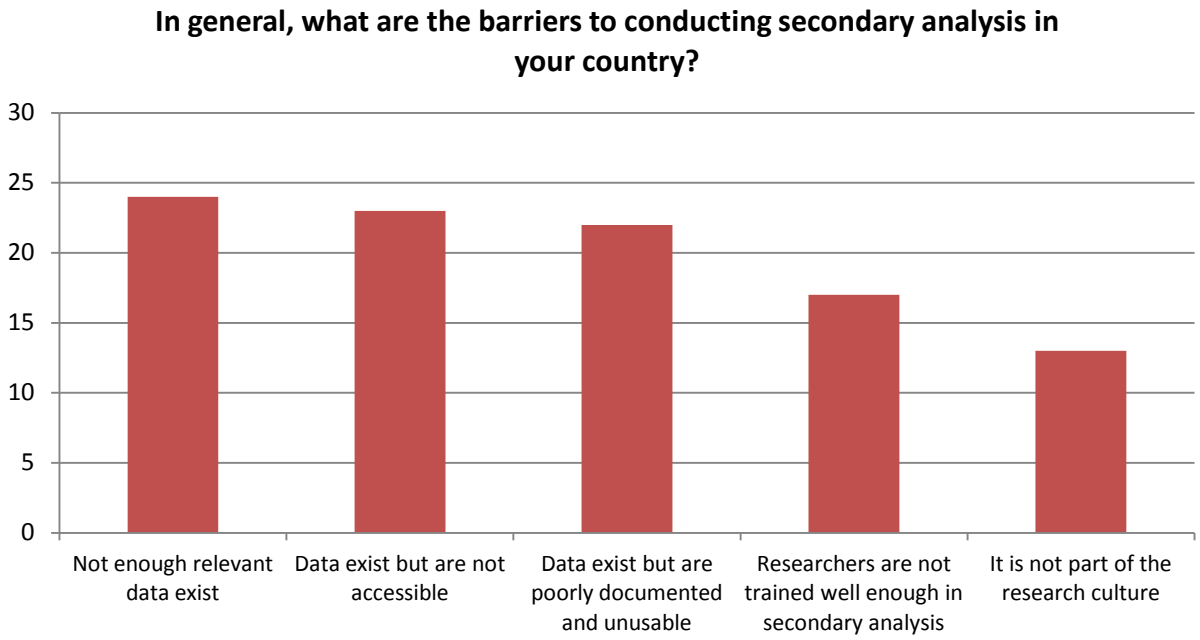


At this moment data for secondary analysis is being obtained in different ways. Most frequently the network sites of certain projects are being used (26%) or foreign repositories (15%). The network of colleagues outside of one's own research unit (institution) holds significant place with 19% of responses. The personal research unit or institution have been

recognized as the source in the total of 24% of responses while it is the National Office of Statistics in 13%.

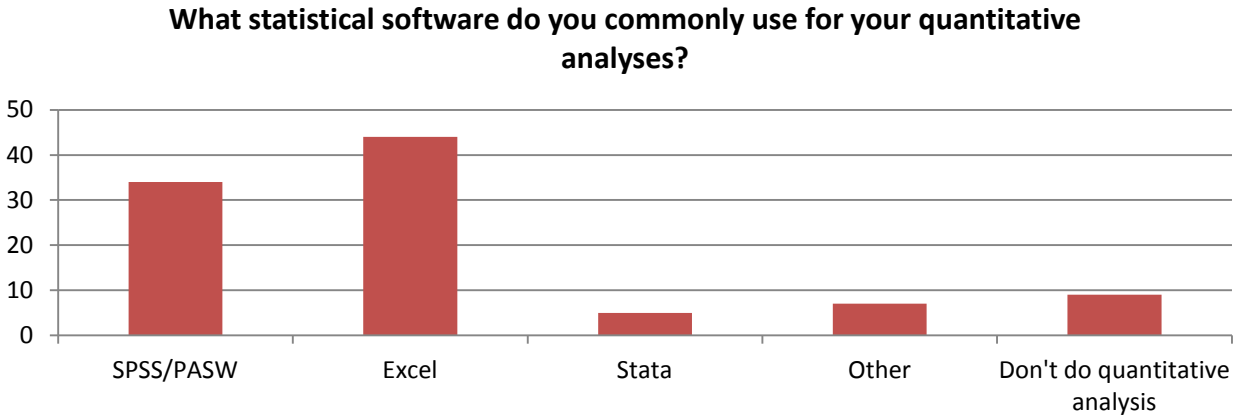


The obstacles for wider use of secondary analysis are the following: non-existence of sufficiently relevant data (24%), their inaccessibility (23%) and the fact they are poorly documented (22%). 17% of responses noted that the researchers were not sufficiently trained in performing secondary analysis while 13% identified that aspect is not a part of the researching culture.

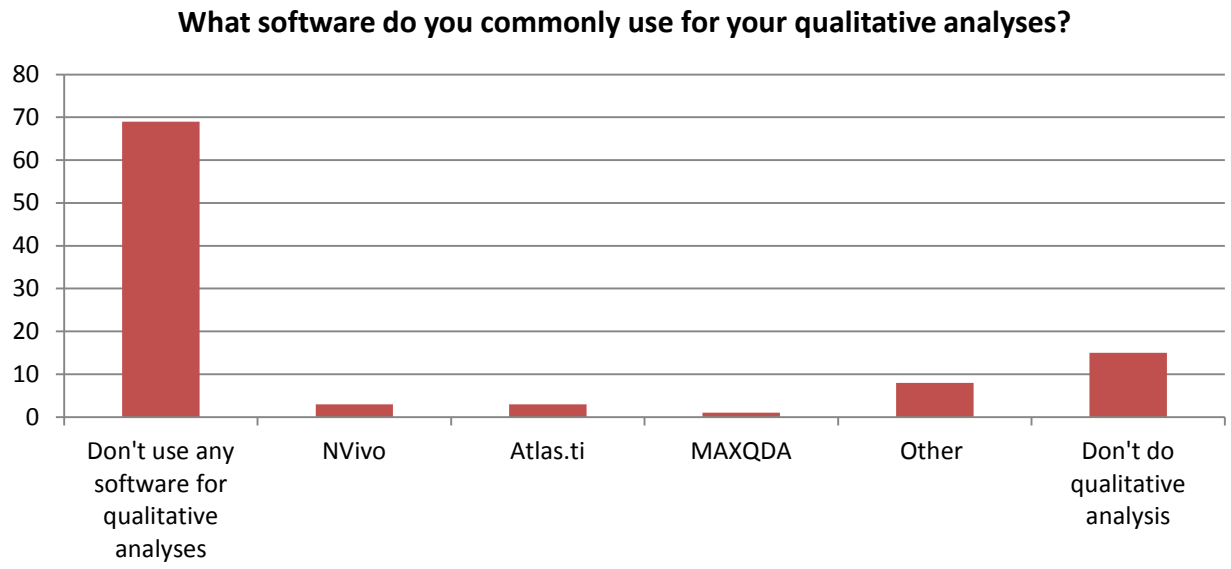


As for the software platforms, the use of which should be taken into account when organizing data archives and supporting services, they are largely neglected when compared to international trends and standards.

In terms of application of quantitative analysis, 44% uses Excel, and 34% SPSS / PASW package. Other packages are also being used but only several respondents use R (1), SAS (2) and Stata (5).

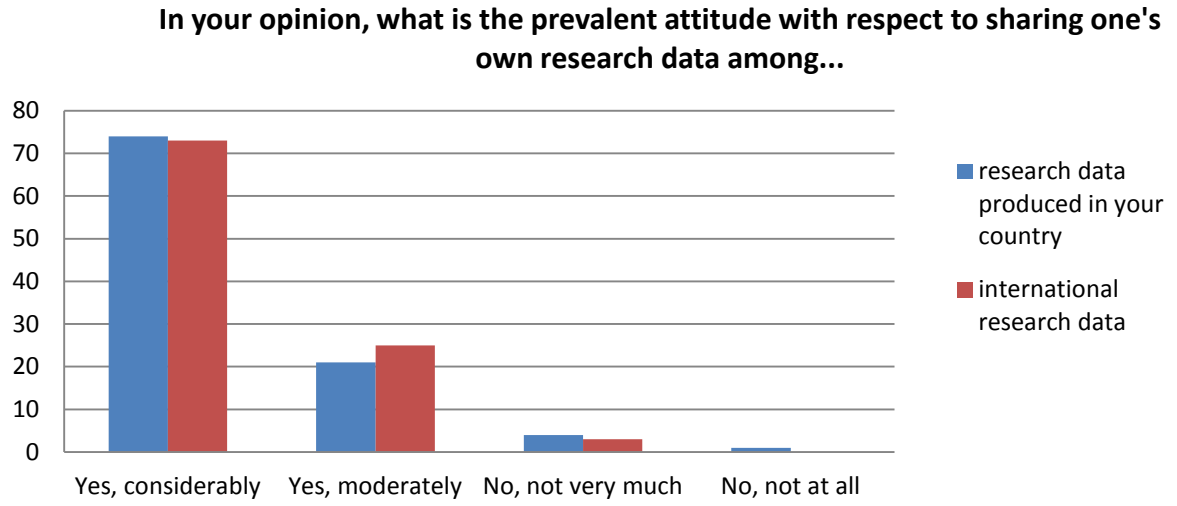


When it comes to qualitative analysis, 15% of respondents noted that they do not use them, while 69% specified they do not use software packages for qualitative analysis. The remaining users were per rule competent in using several packages: NVivo (2), Atlas.ti (2) and MAXQDA (1), RQDA (1) while CAT is used by three.



Need for archive and initial support

Around 95% of the participants in the survey who responded to this question thought their productivity would be significantly or somewhat improved if data obtained through local or international research were more available.

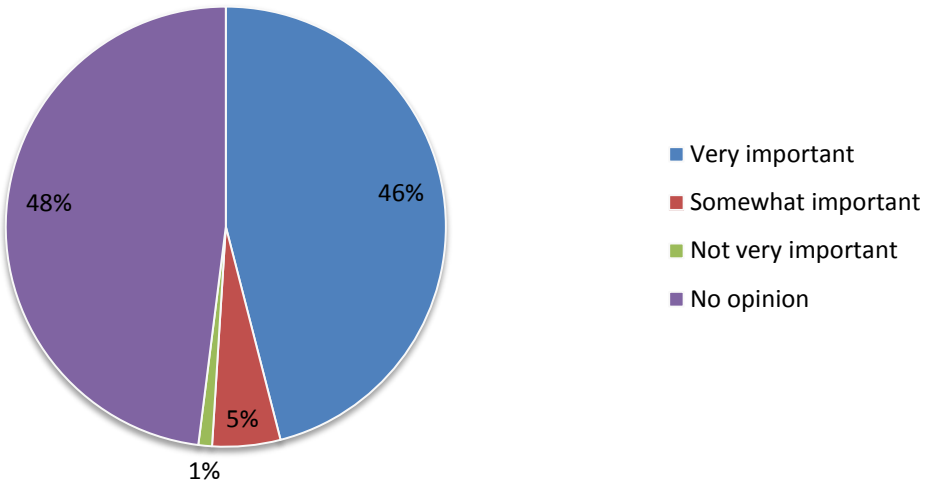


Furthermore, all the participants who take part in the teaching process and who responded to the question are of the position that greater availability of research data would significantly or somewhat improve their teaching.

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

The total of 89% of responses of those respondents who took a certain position believe that the existence of an institution specialized for archiving data related to social sciences in Bosnia and Herzegovina would be extremely useful while 10% responded it would be partially useful. The position that the contribution of such an institution would be small or that there would be none at all are very rare (1%).

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



It is obvious there is a great need in Bosnia and Herzegovina for this type of service and that there is a significant lack of possibilities of qualitative storage and access to research data. In this regard, 34 (24%) of research respondents expressed their wish to be contacted in the future in relation to the project and data archive.

Preliminary Conclusions and Recommendations

Conclusons

- This mapping analysis has shown that there is no digital data archiving of social science resarch. Equally there is no single institution that can provide both research community support in data services and IT data archiving.
- The legislative and policy framework of Bosnia and Herzegovina provides an enabling environment for the establishment of a data archive and service.
- Government institutions consider that the establishment of a data archive and service is a beneficial and significant development in the sectors of higher education and scientific research. Funding, albeit limited, can be provided to support the work of this data service.
- Researchers in Bosnia and Herzegovina have shown a great interest in co-operating with a data service, both in depositing and using research data, as well as using it for both their research and teaching.

Recommendations

- It is recommended that a single, university-based, data archive and service is established, to be hosted by the University of Sarajevo HRC in cooperation with another institution(s) that would be able to host the server and/or provide IT support.
- We recommend a centralized organization of a data archive and service in Bosnia and Herzegovina; as a regional one would not be able to draw on national public funding.
- The evelopment of a centralized archive would allow:
    - More effective approach to establishment of national policy on data archiving in the social sciences and consequently definition of relevant rules, procedures, contracts etc.
    - More efficient support to researchers in data archiving and milestones for their further research.
    - Education of researchers in the area of data archiving through workshops and training programs.

    - Secure the funds for project financing, but also its promotion to the wider scientific community.
- Key institutions to be involved in the process of social science data archive establishment and further activities are:
    - University of Sarajevo, Human Rights Centre
    - Federal Ministry of Education and Science
    - Ministry for Civil Affairs of Bosnia and Herzegovina
    - Agency of Statistics of Bosnia and Herzegovina
    - National and University Library of Republic of Srpska
- It is also recommended, given that the SERSCIDA project foresees support in establishing data archives and services in Croatia, Bosnia and Herzegovina and Serbia, that these three countries work on devleoping a single entry point (joint portal) for all three data servcies. In this way the researchers in the Western Balkans will be able to search for data sets available in three data archives and services.

Annexes

Annex 1. Questionnaires

Annex 1. A Questionnaires Researchers' questionnaire

What is your current principal activity?
1. Undergraduate student
2. Doctoral student / research or teaching assistant
3. Researcher / professor
4. Project leader
5. Head of institution
6. Other

With what type of institution are you currently principally affiliated?
1. Higher education institution
2. Research institute
3. Currently not employed
4. Other
(if not student)

Do you work in public, private or nongovernmental sector?
Public sector
Private sector
Nongovernmental sector

What is your principal research discipline?
Teacher training and education science
Humanities
Law
Psychology
Sociology and cultural studies
Political science and civics
Economics
Journalism and reporting
Library, information, archive
Social work and counselling

Reseach participation during past 5 years
Yes

Number of datasets the researcher had produced or helped to produce during the past 5 years

Year the most recent fieldwork (or data collection phase) completed?

Which data collection method was applied in this research?

How was this research financed?
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 source
Don't know
Personal effort/funding

Number of co-researchers involved in given research project
0
1
2
3
4 to 5
6 to 10
more than 10

After the last research project, did you or your research team members retain the data?
Yes

What kind of data was kept?
Raw data
Cleaned data (coded, anonymised, ..)
Data prepared for analysis (with transformations, created indexes, recoded)
Other kind of data
Well documented with metadata
Don't know

Where is the data from your last project kept?
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
Somwhere else
Don't know

Who may be granted access to the data from your last project for research use?
Just the project leader

Research team members
Members of my institution
Broader scientific community
The data is publicly available (open access)
Someone else
Don't know

In your opinion, what would be the ideal level of access to this research data?
Just the project leader
Research team members
Members of my institution
Broader scientific community
The data should be publicly available (open access)
Someone else
Don't know

Willingness to provide your data to a social science data archive?
1. Yes, certainly
2. Yes, probably
3. Not sure
4. No, probably not
5. No, certainly not

With respect to your own discipline, how important is the sharing of research data?
1. Very important
2. Somewhat important
3. Not very important
4. Not important at all
5. No opinion

Do you know if any other researcher outside your own team had used for secondary analysis any of the research data that you produced?
Nobody outside my team had ever used research data that I/we have produced
Yes, I know of occassion 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 anaylsis recently, the most recent occasion being within the past year
I am not sure if anybody used my/our data for secondary analysis

When was the last time that you analysed quantitative data that were not produced by yourself or your research team.
this month
last month
2-5 months ago
6-12 months ago
13-24 months ago
more than two years ago
never

When was the last time that you analysed qualitative data that were not produced by yourself or your research team.
this month
last month
2-5 months ago
6-12 months ago
13-24 months ago
more than two years ago
never

In general, what are the barriers to conducting secondary analysis in your country?
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
Something else
Don't know

Please indicate all the sources that you ever used sucesfully to obtain such data
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 source

What statistical software do you commonly use for your quantitative analyses?
Excel
R
SAS
Stata
SPSS / PASW
Other (statistica, eviews, amos)
I don't do quantitative analysis

What software do you commonly use for your qualitative analyses?
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 (AntConc. Tosmana, SPSS)

Would your scientific work benefit if you had better access to...
research data produced in your country
international research data

In your opinion, what is the prevalent attitude with respect to sharing one's own research data among...
you personally
your research team members
coleagues from your institution
coleagues from your field of science

Does your professional activity include teaching responsibilities?
Yes, No

In the context of your teaching, how often do you analyze or discuss research data?
Regularly
Sometimes
3. Rarely
4. Never

Which type of data do you use in your teaching?
Data collected by students through the coursework
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

Would your teaching benefit if you had greater access to more national or international data?
1. Yes, considerably
2. Yes, moderately
3. No, not very much
4. No, not at all

In your view, how useful could be an institution that specializes in data archiving in your country?
1. Very important
2. Somewhat important
3. Not very important
4. Not at all important
5. No opinion

Please leave your email if you wish to participate in the SERSCIDA project activities

Annex 1. B Questionnaires Guidelines for semi-structured interviews with government counterparts and potential

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 documents o znanstvenim poliotikama
- 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=none
http://ec.europa.eu/research/infrastructures/pdf/esfri/home/esfri_inspiring_excellence.pdf#view=fit&pagemode=none

Good data source (not all infomation 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
- aks for meeting to talk about relevant issues on establishing data archive
- attach topics for disscussion 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 (eg 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? (eg if funding publishing scientific journals, criteria could include and requirement related to research data arhcihivng)

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 isntitution should carry this task? (scientific instutute? faculty? university? library?)
centralized, distributed?

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

Annex 1. C Questionnaires Data Services

Data Service Infrastructure Survey 2012

SERSCIDA

SERSCIDA is a project funded by the European Commission 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 [*name of country*] 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

Annex 2. List of interviews held

No.	Date	Institution
1.	19.09.2012.	Mr. Ammar Mirascija, Head of Department for Science/National FP7 Coordinator/CNC BiHMinistry of Civil Affairs of Bosnia and Herzegovina, Sarajevo
2.	18.09.2012.	Mr. Jovan Sarac, Deputy Director and Ms. Daliborka Soldo, Institute of Intellectual Property in Bosnia and Herzegovina, Mostar
3.	05.09.2012.	Mr. Jasmin Brankovic, Assistant Minister in the Sector of Higher Education, Science and Technology, Federal Ministry for Education and Science, Mostar
4.	17.09.2012.	Mr. Vinko Bogdan, Assistant Minister for Science, Ministry for Science and Technology RS, Banja Luka
5.	25.09.2012.	Mr. Ismet Ovčina, Director, National and University Library of BiH, Sarajevo
6.	17.09.2012.	Ms. Ljilja Petrović – Zečić, Director, National and University Library of RS, Banja Luka
7.	27.09.2012.	Mr. Andrej Rodinis, Archive of BiH, Sarajevo
8.	14.09.2012.	Mirela Gruenther-Decevic, Director, Heinrich Boell Foundation Office in Bosnia and Herzegovina