

Feasibility study for the construction of a national research network and its participation in the development and utilisation of the European Research Infrastructure CESSDA_RI (Acronym of the project: SoDaNet)

EXECUTIVE SUMMARY

This study was designed to investigate both the feasibility of setting up a national research network for empirical research and also the country's participation in the development and utilisation of the European research infrastructure CESSDA-RI.

1 Social research is high priority and requires infrastructures

1.1 Social research is a high priority for the country

Social sciences are high priority for the country mainly for two reasons:

First, the Greek economy is based on services, therefore its development depends on the quality of the services provided. The design and evaluation of services depends critically on the development of applied social research. Therefore, the failure of development of social research in the country has a direct impact on its development.

Second, Greece nowadays is characterised by problems in social organization; tackling these problems depends to a great extent on the development of social research. So far, the country has attempted to deal with these problems without empirical documentation, by just copying solutions from abroad. However, this approach has been unsuccessful since it fails to take into consideration the fact that social systems are unique historical creations and therefore their operation is difficult to replicate. Even when this is possible, it requires significant adaptations to the social and cultural peculiarities of each country. The transfer of expertise in any field is a difficult task, because it is always necessary to adapt technology to special social conditions, since the term technology refers mainly to the usage of some techniques rather to their development. However, in social functions the transfer of expertise is doubly problematic since its application requires the social construction (representation) of another social construction (of the society). Therefore, any social intervention, even at the economic field, such as the provision of services, requires the systematic and reliable empirical study and understanding of the specific society. But something like this cannot take place suddenly and when the need arises from some outside consultants, whom – besides their lack of understanding of the social and cultural peculiarities of the country – neither have nor can produce at once data for the whole country. Moreover, too often today, the lack of reliable data for the country has prevented any reliable conclusions from any consultants.

The country has so far systematically underestimated the development of social sciences and especially of empirical research with significant negative implications in its economic and social development. Although empirical research is a long-term investment mainly of public character, it is necessary for the country to fill in immediately the gap. The most important step in the right direction is the systematic development of empirical research.

1.2 Infrastructure and observation in the social sciences

The organisation of observation in the social sciences differs substantially from that of natural sciences because it is not based so much on sensory observation but rather on communication. Therefore, empirical observation in social sciences is based on the production, management and processing of documents which have the form of either a text or a digital object.

Documents are not produced solely from scientific research but also in reference to specific social systems established through their own conceptual framework. Therefore, the production of documents is scattered. The production of documents follows two basic strategies. The first is based on the primary production of documents using a particular scientific process known as empirical research. The second is based on the secondary production of documents through their analysis and classification in series.

The accumulation and management of documents produced is organised with the help of infrastructures in the form of computerized documentation systems. Especially the documentation systems of empirical research are based on the methodology of empirical research. The development and the operation of these systems are based on the adoption of specific standards of documentation, which vary depending on the type and the production process of these documentations. These systems, though based on different models, have many similarities with other types of documentation systems. These similarities reflect the common features shared by the different documentation standards and the common information technology used for their development.

Research infrastructures in social sciences serve the following objectives:

1. The organisation of the accumulation and management of documents. The accumulation is a prerequisite for tackling the problems posed by the scattered production of documents. Moreover, a requirement for the development of systematic observation is the development of a communicative rationality which ensures the accumulation and the integrated management of scattered documents produced both by scientific and business research. The development of such a communicative rationality is achieved through the adoption of consistent documentation standards for empirical research.
2. The organisation of the relationships between business and scientific research. The creation of a stable relationship between business and scientific empirical research is realized in each empirical field by adopting a specific thematic ontology that allows homogenisation of research on this field and therefore supports comparative research and secondary analysis. This relationship ensures reference.
3. The organisation of comparative research. Social research has studied specific social formations and phenomena that emerge within these formations. In modern times, social formations are organized as nation-states and so the empirical research, in the vast majority of cases, is organised within a nation-state. However, in the Information Society a great amount of social practices of a social formation is organized outside the boundaries of the state, so the boundaries of a society are associated less and less with the state borders. Therefore, the organisation of empirical research with reference solely the boundaries of nation-states becomes more and more problematic. The need for international comparative research is becoming increasingly necessary. Globalization increases the need for transnational research while European integration increases the need for systematic comparative research between EU countries.

1.3 Expected benefits from the development of research infrastructures

The development of a network of research infrastructures for social sciences will generate significant benefits for the scientific community and for society at large. The expected benefits for the scientific community are the following:

1. The accumulation, organisation and management of data, and the supported access for third parties.
2. The contribution in the development of the scientific field of social sciences by ensuring everyone has access to all documents, strengthening this way scientific reflection.
3. The contribution in the development and support of comparative research and secondary analysis, ensuring not only access to third party data but also the mechanisms and procedures of their homogenization.
4. The contribution in the education of students and young researchers in empirical research, providing them both with tools and content.
5. The design and development of new tools for documentation and (thematic) organisation of social data.

The expected benefits for the society are the following:

1. Access for all for the accumulated and homogenised research and operational data.
2. Systematic production of data sets (statistical and other types).
3. Production of cognitive schemas for organising research.
4. Enhancing the validity and reliability of data.

The opening of data for secondary analysis allows the monitoring of data by third parties, and in particular specialised scientists, thereby increasing both the validity and reliability of this data.

2 A National Documentation System for Social Sciences

2.1 The research infrastructures in social sciences

The operation and development of research infrastructures in social sciences are based on the existence of a number of institutes which use them regularly, and produce new digital materials. Just because digital materials are elements of research infrastructures, the distributed organisation of empirical research from a number of independent operators – research or business - is necessary and leads to the development of a number of independent documentation infrastructures. Each infrastructure manages documents related only to a part of social reality. The possibility of establishing a unified image for society requires the homogenisation and integration of digital content scattered in various infrastructures. The integration of content requires the integration of infrastructures, namely the establishment of a grid with adaptation to certain common standards of operation and a uniform standard of documentation. Thus, every infrastructure becomes a node of the grid but still maintaining its autonomy. Similarly, institutes of the country, who are systematically involved with empirical research, but have no infrastructures, will set up a network utilising the systematic access to a single network of research infrastructures which will become the **National Documentation System for Social Sciences**.

2.2 The mapping of institutes and the analysis of their needs

Within the framework of the study it was attempted to map and analyse the needs of the Greek research community. The survey revealed that: the institutes dealing with socio-economic data in the country vary with respect to legal status (Public Entities, incorporated, etc.) and with respect to their objectives (research, business). The majority of institutes are producers / providers of data. The institutes expressed the need for expertise, training in the use of tools, information for identifying sources and establishing procedures for monitoring the dissemination and documentation support. A great interest was expressed for the establishment of a network by the institutes involved in field research and by institutes involved in related events in recent years. Therefore, according to the opinion of the research community, the establishment of a network becomes necessary so that the end-user is able, using standardised and institutionalised procedures, to have access to raw data. Within the framework of this network the production of systematic research can be foreseen at cutting-edge topics of the Greek society. To ensure access, the data should be documented on the basis of international standards for documentation. At the national level it seems that most organisations that provide data for third parties do not have a formulated strategy for the allocation and use of their data. These organisations show an interest in participating in networks or initiatives that can address such issues. The data generated should be disseminated to third parties according to an institutional and commonly accepted procedure for access. The data may be disseminated either physically or electronically through an integrated management system for the management of research - collections. The National Documentation System for Social Sciences should provide the following: a) the data provider will be able to document the research-based collections according to metadata standards (in cooperation with the data producer), b) the user would be able to identify data of interest by conducting searches on line, c) the user would be able to edit data on line in case of quantitative research and d) the user would be able to store and manage data locally assuming that s/he follows the standard procedures of access. Finally, in cases where the data is analysed by network users or institutes - analysts participating in the network, the resulting studies would be included in the integrated system and therefore become available under the institutional framework for the distribution of data of the research network.

2.3 The characteristics of the National Documentation System for Social Sciences

The development of a National Documentation System for Social Sciences is necessary for the following reasons:

1. Every nation-state is organised historically as a discrete organization with a distinct language and culture. Besides its probable similarities or its close interaction with other states, every nation-state is made up of different social systems and different social phenomena. Its study requires an autonomous organisation of empirical research, even when the comparison of different nation states is a key objective. The understanding and management of this peculiarity requires systematic support from national research infrastructures.
2. The study of a multinational formation such as the EU requires the systematic activation of a stable multi-national research network. The development and operation of national nodes that are part of a European network is crucial for establishing and operating such a network.

3. The diversity of social structures and the differences in their empirical observation, ultimately distinguishes the research infrastructures that are developed in each structure.

The development of the National System Documentation for Social Sciences requires:

1. The existence of a number of independent Documentation Systems for the Social Sciences that will become the local nodes of the National System and which will be developed by universities and research centers in the country, as research laboratories or research institutes.
2. The development of a Greek National Node. The Greek Social Data Bank plays this role today.
3. The support of the operation of the grid by a network of institutes.

2.4 The Greek National Node

The formation of the National Documentation System for Social Science as a grid of research infrastructures requires the existence of a Greek National Node which is the central coordination of the grid and will support the operation of a National Registry of empirical research and the operation of a Central Depository. The Greek National Node can not obtain all the functions of production and documentation of data in the country. Much of the data generated by different institutes are likely to be stored in other infrastructures that will be used as data repositories, and will become the local nodes of the National System. Therefore, the National System will be developed as a grid of independent infrastructures - nodes, each of which will be maintained and supported by an independent research institute. All these institutes will establish the national network that is managed by the National System. We note that the infrastructure will be possibly used by other research institutes (eg various analysts) who are not managers of any node and thus do not belong to the national network management of the National Documentation System for Social Science . The Greek National Node should:

1. Be compatible with respect to technology and procedures with CESSDA _RI.
2. Operate as Register of Empirical Research and Data Sets as well as National Depository of Social Data.
3. Be supported by an administrative body.
4. Be established and operate with the support of a network of research institutions and a grid of research infrastructures.
5. Systematically support interdisciplinary research in the area of research infrastructures. This type of research examines the developments in the social sciences in connection with computer science and linguistics with emphasis on knowledge management, language and data.

The development of the Greek National Node can be based on the experience and research tradition of the Greek Social Data Bank, which played so far this role.

2.5 The development of a research network

The division of labour that characterises the overall production of social data, will determine the network characteristics. In fact, the modern social production data is based on the coexistence of two separate groups of entities: a network of key producers, analysts and providers of data and a number of analysts and data users that having access to the raw data available, are performing

secondary analyses, are checking it and use it to document scientific or operational hypotheses. Research infrastructures provide the link between these two groups.

Developing a network of institutes that manages the grid of research infrastructure is crucial because:

1. Current research involves large-scale infrastructures that can not be maintained by individual institutes.
2. Production and analysis of data in the social sciences are organized in a decentralized way by independent research projects. Thus the organization and support of longitudinal and comparative research depends on a number of institutes that produce and analyse data. To ensure coordinated functioning of these bodies, their systematic cooperation in a network is necessary, that is organised by the sharing of research infrastructures. Without the network, any research infrastructure risks being unable to accumulate the necessary data for its continued operation.

Just because its function depends crucially on the existence of a network of institutes, the National Documentation System for Social Sciences must be set up as a grid infrastructures that is supported by the network. Moreover, each individual node must maintain its research autonomy and at the same time strengthen its cooperation with other nodes. Research laboratories of the country's universities and research institutes can form local nodes of the National Documentation System for Social Sciences .

3 The connection of the National Documentation System for Social Sciences with European research infrastructures

The connection of the National Documentation System for Social Sciences with the respective research infrastructures in Europe to create a similar grid, ie a European Documentation System for Social Sciences essential for the following reasons:

1. European integration makes the systematic comparative research between EU countries an imperative.
2. Systematic comparative study requires the systematic activation of a stable European research network supported by a European grid infrastructure.
3. The operation of the European grid requires the development of a national node.

For the integration of the National Documentation System for Social Science as a subsystem of the European Documentation System for Social Sciences, besides the institutionalisation and development, the following are necessary:

1. The simultaneous participation of the country in the research programme for the development of the European System of Social Science Documentation.
2. Greece's participation in other programmes of ESFRI. Because the research programme CESSDA _RI focuses only in the design and development of IT infrastructures rather than the development of its digital content, and cannot suffice for the development of comparative research, the involvement of network institutes in other European research infrastructures targeted primarily at the development of comparative thematic databases like ESS and SHARE is necessary. To strengthen the National Documentation System for Social Science it is also important that the network institutes are involved in European programmes focusing on the development of infrastructures and tools such as CLARIN and EROHS.

4 The cost of development and operation of the National Documentation System for Social Sciences

4.1 Development costs of the National Documentation System for Social Sciences

The development costs will be handled jointly with other European countries. The estimate of ESFRI was about 30 ME. Greece should of course take part in this effort, but the initial phase of the operation of the National System can be supported by the already available infrastructures of the Greek Social Bank Data.

4.2 The operating cost of the National Documentation System for Social Sciences

The cost – benefit for the first six years of operation of the National Documentation System for Social Science is given in the following table in euros.

| Year | 1 | 2 | 3 | 4 | 5 | 6 |
|------------------------|----------|----------|----------|----------|----------|----------|
| A. Benefit | 122.000 | 183.000 | 201.300 | 222.650 | 244.000 | 305.000 |
| B. Cost | 182.400 | 170.400 | 170.000 | 181.000 | 180.000 | 167.000 |
| Net profit (AB) | -60.400 | 12.600 | 31.300 | 41.650 | 64.000 | 138.000 |

Because the cost of production, maintenance, documentation and dissemination of data is high, while the selling price must be kept relatively low, we propose the following:

1. Public finance (at least for a transitional period of 10 years) of the operating cost of the Greek National Node.
2. Public finance of the production and documentation of data, with a concurrent obligation of researchers to deposit their data in the Greek National Node. The funding stops for anyone who does not comply.
3. Systematic accumulation, documentation and maintenance of data already available in the Greek National Node to be able to be used in the future from as many users as possible.
4. Obligation of public agencies to submit data they produce in the Greek National Node.
5. Immediate lifting of diffusion limitations. These limitations are usually due to institutional constraints related to the protection of confidentiality of personal data and intellectual property rights.

5 The steps required for the creation of the National Documentation System for Social Sciences

The developing of the National Documentation System for Social Sciences as a research grid and network that supports empirical research in the country, requires systematic and long-term policy. In particular the following are required:

5.1 The institutionalisation of the National Documentation System for Social Science

The institutional framework must:

- a) Regulate the operation of the National Documentation System for Social Sciences. Specifically:
1. The formation of the Governing Board of the National Documentation System for Social Science composed of representatives of the institutes involved as independent nodes in the National System.
 2. The formation and operation of the Greek National Node, which is established as an independent entity. The Governing Board of the National System will manage the Greek National Node.
 3. The operation of the separate nodes of the National System as a grid and a network of infrastructures.
 4. Relations of the National System with the European System and CESSDA.
- b) Regulate the conditions of growth of empirical research in the country:
1. The obligation of all institutions funded wholly or partly from public funds to conduct empirical research to submit the resulting data in one of the repositories of the National System.
 2. The obligation of all agencies engaged in empirical research to follow certain rules of conduct.
 3. The establishment of an Authority responsible for monitoring the compliance with the institutional framework and for the design of a strategy and funding of scientific empirical research. As such Authority we propose the National Council of Empirical Research.

5.2 The establishment of a programme for the funding of the National Documentation System for Social Sciences

The development and maintenance of the National System requires a long-term programme of funding for:

1. The development and maintenance of the Greek National Node. The development and maintenance of the Greek National Node requires regular annual funding to cover fixed operating expenses, salaries for key personnel who operates and maintains the node as well as the cost of maintenance and renewal of equipment.
2. The participation of new research institutions in the network. The development of the National System is mostly a project of its nodes that develop autonomous research but within the framework provided by the National System. The strengthening of this autonomous work with the public financing of social research is essential. Prerequisite for financing is the signing of an agreement that would require the submission of all data produced at the National Documentation System for Social Sciences accordance with the documentation requirements.

3. The development of specific nodes in the network. The National System must maintain some special type nodes to enhance the coupling of science to business research. The business empirical research is organised by public or private entities to support specific operational priorities at a time. This type of research usually produces a large volume of evidence. The coupling of business with scientific research is very important on the one hand because it increases the validity and reliability of the generated business documents and on the other hand because it supplies the scientific research with documents. The coupling of business and scientific research can be greatly enhanced with the creation of specific network nodes that undertake the mediation and the feeding of the scientific research with operational data and the business research with tools for recording and analysis. Initially some of the nodes of the network will undertake the role of specific nodes.

5.3 Strengthening of empirical research and research infrastructures

The strengthening of empirical research is necessary for the development of research infrastructures. The country needs a **National Council for Social Research**, which will be responsible for the design and funding of the research strategy and the systematic evaluation of research in the country. The establishment of a public research funding programme is also necessary that will include the following:

1. The support of research for the research infrastructures. Research on methods, techniques and infrastructures that is by nature interdisciplinary should be strengthened through participation in national and European research projects.
2. The strengthening of empirical social research, particularly in areas of high scientific or social and economic priorities.
3. The increased participation in comparative research projects at the national or international level. Systematic comparative research, based on prior homogenization presupposes systematic European cooperation. It is crucial that we participate in such surveys, such as ESS or SHARE. But this research should be undertaken by institutes that are members of the network of the National System of Social Sciences Documentation.
4. Strengthening of education in empirical research.