

A Typology of Research Methods Within the Social Sciences

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NCRM Working Paper

November 2004

Abstract:

This paper discusses and develops a typology of research methods in the social sciences. Such a typology will be relevant for various aspects of the work of the ESRC National Centre for Research Methods (NCRM) as well as other ESRC initiatives and the wider social science research community. It may be useful, for example, for the prioritisation of research methods, for defining the current focus of research, for the identification of needs for further training and research within certain areas and for a classification of research projects and funding schemes. This paper describes other approaches to such a classification, in particular the thesaurus of social research methodology developed by the SRM-Documentation Centre at the University Rotterdam. It is apparent that there is not a unique classification scheme and that various approaches to such a classification are possible. Aims and possible uses of the typology developed here are discussed. Some justification for the chosen structure is presented. Difficulties encountered in the development of the typology are described.

Keywords: research methods, typology, thesaurus, social sciences.

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1. Introduction and Background

This paper discusses and develops a typology of research methods in the social sciences. Such a typology will be relevant for various aspects of the work of the ESRC National Centre for Research Methods (NCRM) as well as other ESRC initiatives and the wider social science research community. It may be useful, for example, for the prioritisation of research methods, for defining the current focus of research, for the identification of needs for further training and research within certain areas and for a classification of research projects and funding schemes. The initial motivation for producing a typology was the need to structure a research methods training database. It was found that the design and search facilities for such a database required the development of an adequate classification of research methods.

Some work has already been carried out in this area since for example other institutions within the social science community have encountered similar classification problems (see for example the UK Data Archive, www.data-archive.ac.uk, and SOSIG, www.sosig.ac.uk). However, such classifications are often discipline based (for example the classification used by Regard, www.regard.ac.uk) or may have been developed for a different purpose (for example the classifications used by the UK Data Archive and the Data Documentation Initiative (DDI) have been developed for the documentation of datasets). Research methods typologies referred to in the social science literature do not necessarily categorise research methods in a systematic way, using mutually exclusive categories and hierarchies and are not necessarily complete (Sproull, 1995, Frankfort-Nachmias and Nachmias, 1992, and Bryman, 2004). It is apparent that there is not a unique classification scheme and that various approaches to such a classification are possible. A readily available research methods typology, as necessary for the work of NCRM, may not exist and may need to be derived. The most promising and detailed approach has been carried out by the Erasmus University Rotterdam. A *thesaurus of social research methodology* has been developed by the SRM-Documentation Centre for the documentation of literature (van Logchem et al., 1996). This thesaurus and its main structure will be described in greater detail in section 2.

This paper describes a possible research methods typology for the work of NCRM. It is primarily based on the typology derived by van Logchem et al. (1996) as well as on a number of references and websites related to research methods in the social sciences. It contains elements of the classification developed by the Data Documentation Initiative

(DDI) and the classification used by the ESDS/UK Data Archive. The typology presented here is structured according to the main stages and processes of a research project. It is ordered hierarchically in a tree-format such that lower level categories can be taken out or added if necessary. It should be noted that the work presented in this paper is ongoing and subject to modifications and changes.

This paper is structured as follows. Section 2 summarises briefly the thesaurus developed by the social research methodology (SRM) centre. Section 3 describes the aims of the research methods typology developed for NCRM purposes. The structure of the typology is explained in section 4 and section 5 contains the typology itself. In section 6 some difficulties of the typology are listed. An appendix including information on the SRM-thesaurus (appendix A1) and the classification used by ESDS/UK Data Archive (appendix A2) is attached.

2. The Thesaurus of Social Research Methodology (SRM)

This section briefly reviews the main features of the thesaurus of social research methodology as described in van Logchem et al. (1996). The development of the thesaurus has a long history leading back to initial projects in the early 1970s. Since then, leading Dutch and international methodologist and social scientists have worked on and contributed to the development of the thesaurus, which was developed and published by the Centre for Social Research Methodology (SRM-Centre) at the University of Rotterdam. The classification has been under constant revision and modifications have been made due to changes and new developments in research methodology. The typology includes research methods from sociology, psychology, anthropology, political science, history and others. The aim is the selection, indexing and abstracting of international literature on research methods and techniques. After the completion of the thesaurus, the SRM-database was constructed, containing bibliographic references and abstracts of literature on social research methodology, statistical analysis and computer programmes.

The development of such a classification is strongly related to the development of information technology, which improved the possibilities for scientific information handling and documentation. Such a classification is therefore to a great extent computer and programming based. Although general information systems and general

bibliographic systems may be available, a specialised documentation system, such as SRM, is needed to allow for the in-depth classification and the focus on a specialised area such as social science research methodology. The SRM-thesaurus may be regarded as a “scientific basis for a documentation system on social research methodology” (van Logchem et al., 1996, p. 10). With the help of the thesaurus, systematic and comprehensive searches can be carried out in the SRM-database using specially developed software.

The SRM-thesaurus is based on a hierarchical structure where the sequence of the main categories reflect the successive stages of a research project in practice. The SRM-thesaurus is given in appendix A1. (Related classifications by the ESDS/ UK Data Archive are presented in appendix A2). The overall structure of the SRM-thesaurus is based on a sequence of categories (concepts) which reflect the main hierarchies. The indexing terms are referred to as ‘descriptors’ and connected terms (mainly synonyms) are referred to as ‘unauthorised terms’. The interrelations between descriptors are indicated by means of ‘related terms’. A ‘related term’ refers to another descriptor which is closely related, but which belongs to a different category of the thesaurus. This way, relationships between methods can be revealed. Topics, relevant for all phases of a research project are categorized in additional main categories at the end of the classification-scheme. The twelve main categories are divided into hierarchically arranged sub-categories. The lowest level of this hierarchical system of concepts is filled with terms (descriptors and unauthorised terms) reflecting specific methods and techniques used in social science research. All descriptors and unauthorised terms are also listed alphabetically. The selection of terms as categories or descriptors is based on theoretical or simply practical considerations. The general structure of the SRM-thesaurus will be partly reproduced in the typology in sections 4 and 5. We will now turn to the development of the research methods typology for NCRM purposes.

3. Aims and Possible Uses of the Research Methods Typology

The research methods typology presented in section 5 may be used within NCRM (and possibly within other social science research institutions) for the following purposes:

1. For the classification of research and the prioritisation of research methods within the social sciences. This could provide a useful framework for the identification of

gaps within current research, the identification of needs for further research and the current focus of research methods, the evaluation of recent developments, the classification of research projects and the establishment of further research funding. The typology could also be used when monitoring the evolution of an area and the development of new research methods. It may therefore stimulate methodological research on specific topics.

2. For the classification of training events on research methods. Such a classification will be important for the structure and organisation of the NCRM training database and training website. The classification could also be used for the identification of gaps in existing training and for the identification of needs for further training and capacity building.
3. For the classification and structure of NCRM working papers, methodological research reviews and other publications and the development of on-line resources.
4. There could be broader applications, such as to the classification of literature in the social sciences more generally, the classification of computer software, the identification of relationships between research methods and contributions to a standardisation of terms and understanding and clarification of terms.

4. Structure of the Research Methods Typology

4.1 Structure of the Research Methods Typology

The research methods typology presented in section 5 is organised as follows. The proposed typology is structured hierarchically. It is primarily based on the successive main stages of a research project, such as research design, data collection, data quality and data management, data analysis and evaluation, application and dissemination. This appears to be a 'natural' structure of research methods and research related terms and a similar order has been used by van Logchem et al. (1996), Sproull (1995), Frankfort-Nachmias and Nachmias (1992) and Bryman (2004). The main hierarchies in the proposed typology are the main categories (concepts) of interest. The main categories are divided into hierarchically arranged sub-categories. These sub-categories are described further with the use of 'descriptors' as well as 'connected terms' (mainly synonyms of the descriptors). Descriptors and connected terms represent the lowest level of this

hierarchical system and include specific methods and techniques used in social science research. This order provides a flexible structure of the typology. For example, the structure presented here allows one to take out or add more hierarchical levels if necessary. This flexible structure is particularly important since further developments in research methods and changes in priorities in methods will be inevitable over time. The interrelations between descriptors may be indicated by means of ‘related terms’. A ‘related term’ refers to another descriptor which is closely related, but which belongs to a different sub-category. This is important for the identification of relationships between methods and for a clarification and understanding of terms. The selection of terms as categories or descriptors is based on theoretical or simply practical considerations and evolved primarily from various NCRM user consultations (Beissel-Durrant and Lang, 2004 and NCRM meetings listed in the reference list) and references in the social science literature (van Logchem, 1996; Bryman, 2004).

The main categories (or hierarchies) in the typology are:

1. Frameworks for Research and Research Designs
2. Data Collection
3. Data Quality and Data Management
4. Data Handling and Data Analysis
5. ICT, Software and Simulation
6. Research Management and Application of Research
7. Research Skills, Communication and Dissemination

Topics and research terms that are relevant to several or all stages of a research project are categorised in the last two main categories (6. Research Management and Application of Research; 7. Research Skills, Communication and Dissemination). It should be noted that the differences between some of the stages may in reality not be as distinct as indicated in the typology. For example, in practice the design of research and the data collection stage may coincide or the stages ‘2. Data Collection’ and ‘4. Data Handling and Data Analysis’ may not be distinct. Also, elements of “3. Data Quality and Data Management” may be relevant to several stages. For example, methods of statistical disclosure control may be carried out before or after the data analysis stage. An advantage of the typology presented here is that it can be used for both research and training related aims such as those mentioned in section 3.

4.2 Justification for the Structure of the Typology

This section gives some justification for the structure of the typology and the choice and design of the main categories and some of the subcategories. The research methods typology presented here used elements of the SRM-thesaurus as a starting point. However, modifications to this typology were made as explained in this section. In addition, elements and structures of research methods typologies found elsewhere in the social science literature and on relevant websites, attached in the reference list, were also taken into account.

The proposed structure, which is based on successive stages of a research project, avoids, at least to some extent, the classical distinction between qualitative and quantitative approaches, which is important since NCRM aims to encourage the use of mixed methods and the combination and integration of qualitative and quantitative approaches. Also, some methods, such as social network analysis, may incorporate elements of both qualitative and quantitative areas. An alternative approach to designing a typology, for example, would be to use a discipline based classification which has been applied for instance by Regard. However, some disadvantages of such a classification were found. For example, many methods are not necessarily discipline specific and in different disciplines the same or similar methods may be used (e.g. multi-level modelling may be used in Statistics, Geography, Demography etc.). In addition, the focus of NCRM is on social science methodologies more generally rather than on discipline specific approaches and NCRM tries to encourage interdisciplinary and multidisciplinary approaches. A typology that avoids these traditional distinctions into disciplines or areas may therefore be preferable.

The following section refers to differences between the SRM-thesaurus and the NCRM typology and the modifications made. The categories of the SRM-thesaurus are given in Appendix A1. Category A (Methodology of the Social Sciences) of the SRM-thesaurus has been omitted since it appeared too general to justify a separate category. Methods in category B (Research Methodology and Research Design) are merged with either C (Types of Research) or D (Selection of Research Units) and E (Data Collection). Category C (Types of Research) is used but modified and shortened. This category is referred to as '1. Frameworks for Research and Research Designs' since this title seemed to reflect the chosen subcategories better. Category D (Selection of Research Units) is

combined with category E (Data Collection) and both categories are shortened. This is reflected in the second main category '2. Data Collection'.

The category F (Measurement and Scaling Methods) is shortened and merged with '2. Data Collection' ('Measurement') and '3. Data Quality and Data Management' ('Measurement Error'). The category G (Statistical Theory and Tests) is shortened and included in 'Quantitative Approaches' of the '4. Data Handling and Data Analysis' stage. The category H (Multivariate Analysis) is changed into 'Quantitative Approaches' of the '4. Data Handling and Data Analysis' stage, which contains a subcategory 'Multivariate Analysis'. The category K (Data Processing and Interpretation) is merged with other categories, primarily with 'Quantitative Approaches' within '4. Data Handling and Data Analysis' and '3. Data Quality and Management'. It should be noted that the SRM-thesaurus does not include or emphasise some of the more qualitative methods, such as corpus analysis, and some qualitative methods are only included as a 'data collection' method. It was therefore decided to create the sub-category 'Qualitative Approaches' within the '4. Data Handling and Data Analysis' stage to give these methods a greater emphasis. Some more references are made to qualitative approaches, for example in '3. Data Quality and Data Management'. In addition, the typology emphasises mixed methods approaches in '1. Frameworks for Research and Research Designs' and 'Mixed Methods Approaches' in the '4. Data Handling and Data Analysis' stage.

Category L (Reliability and Validity) is included in '3. Data Quality and Data Management'. It was felt that the category 'Reliability and Validity' was only applicable to quantitative research and that qualitative research was not well represented in this classification. Therefore, the two subcategories 'Quality in Qualitative Research' and 'Quality in Quantitative Research' were created. The latter includes aspects of 'Reliability and Validity'.

An additional category '5. ICT, Software and Simulation' was created in the NCRM typology. It was felt that aspects of computer hard- and software, programming, simulation and in particular e-social science are areas of increasing importance.

Category M (Organisation and Application of Research) is modified into the category '6. Research Management and Application of Research'. This category includes aspects of evidence-based policy, official statistics and user involvement. Category N (Information Sources) is modified into the category '7. Research Skills, Communication and

Dissemination’. This category also includes aspects of e-social science and e-learning to reflect recent developments in this area.

In the following, some general aspects and considerations regarding the development and organisation of the typology are discussed. In qualitative research, approaches to data collection and analysis (generally termed qualitative methodologies) are usually not distinct. For this reason, qualitative research is categorised primarily under the heading ‘4. Data Handling and Data Analysis’, which incorporates some data collection methods and data analysis methods. However, there are general issues relating to data collection (generally termed methods as distinct from methodologies) which comprise the ‘nuts and bolts’ of data collection (e.g. how to conduct interviews or focus groups) and are not specific to a particular approach or methodology. These are categorised under a general data collection heading (‘2. Data Collection’).

In some (or all) of the main categories a general subcategory is introduced, usually included at the beginning of the subcategories. For example, in the main category ‘2. Data Collection’ the subcategory ‘2.1 Data Collection (general)’ is included. This facilitates the inclusion of terms that may not easily be categorised into any of the other subcategories under this main heading but may also not form a separate subcategory. This is important in the case of new developments and changes to research methods. It may be conceivable that a new type of methods emerges over time or that existing research methods experience a change in emphasis and direction. The inclusion of such general subcategories enables the research methods typology to incorporate changes in a flexible manner without the need to change the overall structure of the typology. However, over a longer period of time the structure of the typology would need to be (and will be) modified to reflect changes in research methods. The introduction of these general subcategories is therefore mostly due to practical considerations.

In addition to incorporating a large number of research methods in the social sciences the typology incorporates also more general terms. For example, it includes areas of applications of research, terms such as ‘official statistics’ or terms related to research management and user involvement. The flexible structure of the typology also allows the incorporation of terms and topics that relate to several or all stages of a research project in particular in the two last categories ‘6. Research Management and Application of Research’ and ‘7. Research Skills, Communication and Dissemination’.

5. A Research Methods Typology

The following is a research methods typology as used for NCRM purposes. The table shows the main categories and subcategories of the typology. The list of descriptors and connected terms as well as the list of related terms, as shown here, are not complete. This work is ongoing. For further information please contact the author.

| Main Categories and Subcategories of the Typology | Descriptors and Connected Terms | Related Terms |
|---|--|-----------------------------|
| 1. Frameworks for Research and Research Designs | | |
| 1.1. Frameworks for Research and Research Designs (general) | | |
| 1.2. Epistemology | philosophy of social science | |
| 1.3. Descriptive Research | | |
| 1.4. Exploratory Research | | |
| 1.5. Explanatory Research and Research on Causality | | |
| 1.6. Comparative Research | cross-national research, cross-cultural research | |
| 1.7. Hypothesis Testing Research | | |
| 1.8. Survey Research | | |
| 1.9. Cross-sectional Research | | |
| 1.10. Longitudinal Research | | |
| 1.11. Experimental and Quasi-Experimental Research | randomized control trials, experimental design intervention studies | Hypothesis Testing Research |
| 1.12. Evaluation Research | evaluation, researching consumer feedback, researching consumer satisfaction | |
| 1.13. Case Study | | |
| 1.14. Pilot Study | | |
| 1.15. Field Research | | |
| 1.16. Collaborative Approaches | action research, participatory methods | |
| 1.17. Behavioural Research | | |
| 1.18. Meta-Analysis and Synthesis | | |
| 1.19. Secondary Analysis | | Meta-Analysis |
| 1.20. Mixed Methods | Interdisciplinary research, | |

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|-------------------------------------|---|---|
| | multidisciplinary research, multi-strategy research, combination of qualitative and quantitative approaches | |
| 2. Data Collection | | |
| 2.1. Data Collection (general) | | |
| 2.2. Sampling | sampling and survey designs, types of sampling (cluster sampling, multistage sampling etc.) | |
| 2.3. Questioning | | |
| 2.3.1 Self-Administered Questioning | question design, postal survey, mail survey, electronic mail survey, web-based survey, opinion polls, | Questionnaires |
| 2.3.2 Interviewing | question design, qualitative and quantitative, telephone, face-to face, focus groups/ group interview, computerised, standardised and unstandardised, practice of interviewing, interviewers, procedure of interviewing, interviewer training, respondents, recording responses | Questionnaires |
| 2.3.3 Questionnaires | question design, self-administered questionnaire, mail questionnaire, questionnaire design, types of questions, question wording, structure of questionnaire, pretest of questionnaire Postal questionnaire, web-based questionnaire | Interviewing, Self-Administered Questioning |
| 2.4. Observation | field observation, field experimentation, participant observation, laboratory observation | |
| 2.5. Measurement | measurement of attitudes, behaviour, ability etc. | |
| 2.6. Use of Administrative Sources | | |
| 2.7. Visual Methods | | |
| 2.8. Advanced Technologies | computer-assisted data collection, grid technology, audio-and video, data mining, e- | e-social science |

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|---|--|-------------------------------------|
| | social science approaches to data collection | |
| 3. Data Quality and Data Management | | |
| 3.1. Data Quality and Data Management (general) | | |
| 3.2. Quality in Qualitative Research | rigour in qualitative research, evaluation of research | |
| 3.3. Quality in Quantitative Research | reliability and validity, evaluation of research | |
| 3.4. Measurement Error | measurement error models, survey error reduction, methods for handling measurement error, validation studies | |
| 3.5. Data Editing | | |
| 3.6. Nonresponse | missing data, imputation, weighting | |
| 3.7. Statistical Disclosure Control | privacy, confidentiality | |
| 3.8. Data Matching | combining data from different sources, data fusion | |
| 3.9. Data Archiving | | |
| 4. Data Handling and Data Analysis | | |
| 4.1. Qualitative Approaches | | |
| 4.1.1 Qualitative Approaches (general) | | |
| 4.1.2 Discourse Analysis | | |
| 4.1.3 Interaction Analysis | | |
| 4.1.4 Conversation Analysis | | |
| 4.1.5 Content Analysis | | |
| 4.1.6 Narrative Methods | | |
| 4.1.7 Analysis of Composite Data | | |
| 4.1.8 Corpus Analysis | | |
| 4.1.9 Documentary Analysis | | |
| 4.1.10 Biographical Methods/ Oral History | | |
| 4.1.11 Grounded Theory | | |
| 4.1.12 Ethnography | | |
| 4.1.13 Phenomenology | | |
| 4.1.14 Visual Methods | | |
| 4.1.15 Thematic Analysis | | |
| 4.2. Quantitative Approaches | | |
| 4.2.1 Quantitative Approaches (general) | | |
| 4.2.2 Statistical Theory and Methods of Inference | probability theory, distribution theory, hypothesis testing, point estimation, Bayesian methods | Survey Data Analysis and Estimation |

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|--|---|--|---|
| 4.2.3 | Survey Data Analysis and Estimation | analysis of complex survey data, point estimation, variance estimation, small area estimation | Statistical Theory and Methods of Inference |
| 4.2.4 | Microdata Methods | | |
| 4.2.5 | Regression Analysis | GLM, ANOVA, ANCOVA, linear and non-linear regression analysis | Non-Parametric Approaches |
| 4.2.6 | Multilevel Modelling | | |
| 4.2.7 | Longitudinal Data Analysis | panel data, repeated measures data analysis, analysis of change | |
| 4.2.8 | Event History Analysis | hazard and survival analysis | |
| 4.2.9 | Spatial Data Analysis | point pattern analysis, network analysis, area-based analysis and surface modelling, GIS – Geographical Information System | |
| 4.2.10 | Latent Variable Models | latent class analysis, factor analysis, graphical modelling | |
| 4.2.11 | Structural Equation Models | path analysis, simultaneous equation models, causal models | |
| 4.2.12 | Multivariate Analysis | discriminant analysis, cluster analysis, correspondence analysis | |
| 4.2.13 | Time Series Analysis | forecasting | |
| 4.2.14 | Data Mining | neural networks. machine learning | |
| 4.2.15 | Non-Parametric Approaches | | Regression Analysis |
| 4.3. Mixed Methods Approaches | | | |
| 4.3.1 | Mixed Methods Approaches (general) | | |
| 4.3.2 | Social Network Analysis | interaction analysis | |
| 4.3.3 | Combining Qualitative and Quantitative Approaches | mixing, integration, combining qualitative and quantitative methods | |
| 5. ICT, Software and Simulation | | | |
| 5.1. | ICT, Software and Simulation (general) | | |
| 5.2. | Qualitative Software | computing, computer package, computer software | |
| 5.3. | Quantitative Software | computing, computer package, computer software | |
| 5.4. | Simulation | agent-based simulation, design of simulation studies | |
| 5.5. | e-Social Science | web-based technology, | |

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|---|---|------------------|
| | internet, on-line research methods, on-line data access, on-line simulations etc. | |
| 6. Research Management and Application of Research | | |
| 6.1. Research Management and Application of Research (general) | | |
| 6.2. Research and Project Management | time management, change management, staff management, performance management, leading and chairing meetings, recruitment and selection, coaching and mentoring skills | |
| 6.3. Confidentiality and Anonymity | | |
| 6.4. Ethics | | |
| 6.5. Research Policy | | |
| 6.6. Evidence-Based Policy and Practice | | |
| 6.7. Official Statistics | | |
| 6.8. Management of User Involvement | | |
| 6.9. Consultancy Skills | client / user relationship | |
| 6.10. Regulatory and Legal Aspects | research governance, data protection, intellectual property, copyright, plagiarism | |
| 7. Research Skills, Communication and Dissemination | | |
| 7.1. Research Skills, Communication and Dissemination (general) | | |
| 7.2. Researching Literature | literature reviews | |
| 7.3. Writing Skills | reporting on research, report writing, writing for publications and grant applications | |
| 7.4. Conference Posters and Presentations | dissemination | |
| 7.5. Alternative Methods of Dissemination | e.g. theatre | |
| 7.6. Teaching and Supervising Skills | skills in teaching research methods, supervision of research students | |
| 7.7. E-learning | videoconferencing, powerpoint, on-line research methods, e-social science | e-social science |

6. Difficulties with the Research Methods Typology

When developing the research methods typology a number of difficulties have been encountered, which are described in the following. It is apparent that there is not a unique classification scheme and that various approaches to such a classification are possible. The typology of research methods may be defined differently and different aspects of research methods may be emphasized depending on the research background or discipline. Some further difficulties are listed below:

1. It is inevitable that some research methods or keywords are applicable to several broader categories. For example 'e-Social Science' is not a single category but may reflect an entire new approach to the progression and structure of a research project and may contain elements of research design, data collection, data analysis and research management. The more recent development of 'e-Social Science' has been incorporated by creating several subcategories, in particular in the data collection and the analysis stage.
2. There may be a conflict of interest in the sense that for example a typology designed for the classification of research projects and training courses may not be readily usable for the classification of literature, simulation and on-line resources and may therefore require further modifications.
3. Not all categories listed here are strictly speaking 'research methods'. However, it may be advisable to include such relevant keywords (e.g. official statistics) for practical reasons since it may provide the user with better search facilities.
4. Some terms listed in the typology relate to several or all stages of a research project and may therefore not belong to one of the main categories, for example 'nonresponse' or 'statistical disclosure control' may relate to the data collection or the analysis stage.
5. For the aims and the potential use of the typology (see section 3), in particular for the identification of gaps in training and research, it may be necessary to allocate certain keywords to the research methods listed. For example, it may be necessary to identify all training courses that relate to qualitative research methods or that are interdisciplinary. Such an analysis may require the allocation of additional non-hierarchical search terms (such as qualitative, quantitative, government etc.) that may not necessarily be covered by the typology described here. It is therefore advisable to allocate further keywords to each entry to the event and training database that may facilitate the search function.

7. Acknowledgements

This work would not have been possible without the support of colleagues and a number of research institutions in the social sciences. In particular, NCRM would like to thank the SRM-Documentation Centre for documentation of the SRM-thesaurus. I would also like to thank members of the NCRM hub-team at the University of Southampton, members of the NCRM advisory committee, representatives of NCeSS (National Centre for e-Social Science), Professor Angela Dale, Director of the ESRC Research Methods Programme, representatives of the ESDS/ UK Data Archive, in particular Louise Corti and Ken Miller, Wendy White, faculty liaison librarian at the University of Southampton, and Mary Jane Steer, subject librarian of Regard/ Sosig, for helpful comments and advice.

Further comments and feedback are very welcome and can be sent to gbd@soton.ac.uk.

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Relevant websites:

- SRM-Documentation Centre and SRM Database
<http://www.srm-online.nl/index.htm>
- Data Documentation Initiative (DDI), <http://www.icpsr.umich.edu/DDI/>:

The DDI is an effort to establish an international XML-based standard for the content, presentation, transport, and preservation of documentation for datasets in the social and behavioural sciences.

- Economic and Social Data Service (ESDS), <http://www.esds.ac.uk/>, including the UK-Data Archive (UKDA), <http://www.data-archive.ac.uk/>:
The ESDS is a UK based national data service and provides access and support for a range of key economic and social data, both quantitative and qualitative, spanning many disciplines and themes. It uses the DDI specification.
- Nesstar, <http://www.nesstar.com/>:
Nesstar Limited is a provider of data publishing and analysis solutions. It uses the DDI specification.
- Council of European Social Science Data Archives (CESSDA), <http://dasun3.essex.ac.uk/Cessda/IDC/>:
This is a current effort to provide electronic searching across several social science data archives around the world. The catalogue is currently being converted to be DDI-compliant. One of its aims is the “development and use of social science thesauri”.
- International Association of Social Science Information Service and Technology (IASSIST), <http://www.iassistdata.org/>:
IASSIST is an international organization of professionals working in and with information technology and data services to support research and teaching in the social sciences. Its 200 members are from a variety of workplaces, including data archives, statistical agencies, research centres, libraries, academic departments, government departments, and non-profit organizations.
- Regard, <http://www.regard.ac.uk/>:
Regard is an online database containing information on social science research funded by the Economic and Social Research Council (ESRC). The database contains records describing 1.) ESRC funded research projects and 2.) research output records (which describe books, journal articles, conference papers etc. published as a result of the funded research). Regard also holds research findings reports including a summary and full report of the research activities and results.
- UK Economic and Social Research Council (ESRC), <http://www.esrc.ac.uk>
- ESRC Research Methods Programme, RMP, <http://www.ccsr.ac.uk/methods/>
- Social Science Information Gateway, SOSIG, <http://www.sosig.ac.uk/>

- Quantitative Methods within the Social Sciences (QMSS), <http://www.s3ri.soton.ac.uk/qmss/>
- National Centre for e-Social Science (NceSS), <http://www.ncess.ac.uk/>.

Recent developments in research methods:

- Methods presented in recent conferences on research methods such as:
 - Research Methods Festival, Oxford, July 2004.
 - RC33 Sixth International Conference on Social Science Methodology, Amsterdam, August 2004.
 - 55th Session of the International Statistical Institute, April 2005
- Methods mentioned and referred to on relevant programmes and websites such as ESRC, RMP, QMSS, ESDS, UKDA, Regard, Sosig etc.
- Government Forum on Research Methods, 28 October 2004 at the Royal Society, Meeting with representatives from NCRM, ESRC, RMP (Research Methods Programme), UK government departments and others.
- NCRM and RMP Advisory Committee Meeting, November 2004.
- Consultation of various institutions, such as ESDS, NCeSS, RMP, Centre for Applied Social Research (CASR) Manchester, International Bibliography of the Social Sciences, Regard, Sosig, ESRC Information Centre, ESDS/ UK data archive etc.

Appendix

A1.) Main categories of the SRM-thesaurus (van Logchem et al., 1996)

- A. Methodology of the Social Sciences
- B. Research Methodology. Research Design
- C. Types of Research
- D. Selection of Research Units
- E. Data Collection
- F. Measurement and Scaling Methods
- G. Statistical Theory and Tests
- H. Multivariate Analysis
- K. Data Processing and Interpretation
- L. Reliability and Validity
- M. Organization and Application of Research.
- N. Information Sources.

A2.) Classification provided by Ken Miller, Information Systems Development Manager from the ESDS/ UK data archive

a.) a complete view of the hierarchy that is not available on the public website as used by ESDS/ UK data archive:

```
METHODOLOGY
| ..DATA ANALYSIS
|   | ..CONTENT ANALYSIS
|   | ..STATISTICAL ANALYSIS
|   |   | ..MULTIVARIATE ANALYSIS
|   |   | ..STATISTICAL INFERENCE
|   |   | ..ESTIMATION
| ..DATA COLLECTION METHODOLOGY
|   | ..FIELD WORK
|   | ..FREQUENCY OF DATA COLLECTION
|   | ..MODE OF DATA COLLECTION
|   |   | ..INTERVIEWS (DATA COLLECTION)
|   |   | ..OBSERVATION (DATA COLLECTION)
|   |   | ..MASS OBSERVATION
|   | ..SAMPLING PROCEDURES
|   | ..SURVEYS
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- | ..EXIT POLLS
- | ..PUBLIC OPINION POLLS
- | ..TIME METHODS (RESEARCH)
- | ..HISTORIOGRAPHY
- | ..MODELLING
- | ..MATHEMATICAL MODELS
- | ..SIMULATION MODELS

b.) For a European project this hierarchy was expanded and altered based on the Thesaurus of Social Research Methodology SRM.

- METHODOLOGY
- | ..DATA ANALYSIS
 - | ..CONTENT ANALYSIS
 - | ...STATISTICAL ANALYSIS
 - | ..MULTIVARIATE ANALYSIS
 - | ..STATISTICAL INFERENCE
 - | ..ESTIMATION
- | ..DATA COLLECTION METHODOLOGY
 - | ..FIELD WORK
 - | ..FREQUENCY OF DATA COLLECTION
 - | ..MODE OF DATA COLLECTION
 - | ..CLINICAL MEASUREMENTS (DATA COLLECTION)
 - | ..DIARIES
 - | ..EDUCATIONAL MEASUREMENTS (DATA COLLECTION)
 - | ..INTERVIEWS (DATA COLLECTION)
 - | ..FACE-TO-FACE INTERVIEWS
 - | ..CAPI
 - | ..TELEPHONE INTERVIEWS
 - | ..CATI
 - | ..OBSERVATION (DATA COLLECTION)
 - | ..MASS OBSERVATION
 - | ..PHYSICAL MEASUREMENTS (DATA COLLECTION)
 - | ..PSYCHOLOGICAL MEASUREMENTS (DATA COLLECTION)
 - | ..SELF-COMPLETION
 - | ..SIMULATION
 - | ..TRANSCRIPTION
 - | ..SAMPLING PROCEDURES
 - | ..CLUSTER SAMPLE
 - | ..ONE-STAGE CLUSTER SAMPLE
 - | ..CONVENIENCE SAMPLE
 - | ..ONE-STAGE STRATIFIED SAMPLE
 - | ..PURPOSIVE SAMPLE
 - | ..QUASI-RANDOM SAMPLE
 - | ..QUOTA SAMPLE
 - | ..RANDOM SAMPLE
 - | ..MULTI-STAGE STRATIFIED RANDOM SAMPLE
 - | ..SIMPLE RANDOM SAMPLE
 - | ..TOTAL UNIVERSE (NO SAMPLING)
 - | ..VOLUNTEER SAMPLE
 - | ..SURVEYS

- | ..POSTAL SURVEYS
- | ..PUBLIC OPINION POLLS
- | ..TIME METHODS (RESEARCH)
- | ..CROSS-SECTIONAL STUDY
 - | ..CROSS-SECTIONAL AD HOC FOLLOW-UP STUDY
 - | ..CROSS-SECTIONAL ONE-TIME STUDY
 - | ..CROSS-SECTIONAL REGULAR STUDY
- | ..LONGITUDINAL STUDY
 - | ..COHORT STUDY
 - | ..PANEL STUDY
- | ..TIME SERIES
- | ..HISTORIOGRAPHY
- | ..MODELLING
 - | ..MATHEMATICAL MODELS
 - | ..SIMULATION MODELS