

Measuring the degree of organisational transformation

A methodological benchmark of organisation surveys

Summary:

In order to map and analyse changes in work, data emerging from organisation surveys can be applied as a useful source. This article provides a comparative overview of 12 major organisation surveys in European countries and at the European level that monitor changes in work. It is a methodological comparison as the overview is focused on survey design. The criteria discussed are (1) description of the population; (2) definition of research units; (3) sampling plan and sampling; (4) choice of respondents; (5) questioning method and response and (6) continuity of the survey efforts. Recommendations are made to improve the quality of organization surveys and to foster their convergence in order to enhance the comparability of survey results and deepen our understanding of changes in work across Europe.

Keywords:

Organisational changes; Changes in work; Organisation surveys; Survey methodology; European comparative research.

Definition of the problem

International organisations are increasingly urging governments to support the dissemination of new organisational concepts, in particular by removing a number of obstacles to this dissemination.

The *OECD* is playing a leading role in this respect, one of its policy objectives being specifically to encourage the adoption of new organisational concepts. These organisational concepts are expected to promote the knowledge-creation and innovation and, in turn, to benefit productivity and employment. The action points include (1) fostering the adoption of innovative workplaces by individual companies; (2) reforming framework conditions to maximise the incentives to introduce new forms of work organisation and to minimise the obstacles; (3) enhancing the development of human capital (OECD, 1998). Within the context of the first action point, government programmes are running in a number of countries, aimed at supporting the development of new organisational concepts, for example the 'Irish Forum on the workplace of the future' (National Centre for Partnership and Performance, 2005) or the 'Finnish national workplace development programme' (Alasoini et al., 2005). The second action point relates to reforms in the sales market, the capital market and the labour market. The third point relates to basic education, vocational training and company training.

The *European Commission* is also actively promoting new organisational concepts. Increasing the adaptability of organisations is one of the four pillars underpinning the European employment policy. It explicitly highlights the need of modernising work organisation, inviting the social partners to take the lead in the process of organisational change, negotiating agreements at all appropriate levels. The guideline calls for the design and dissemination of innovative and sustainable forms of work organisation, which support labour productivity and quality at work (Council of the European Union, 2003).

These policy lines underline the importance of accurately monitoring what is going on within organisations. Research into the efforts made by the business community in its quest for new organisational concepts and permanent monitoring of the effects of organisational modernisation are necessary tools for supporting these policy lines. In this context fits the WORKS research project (Work Organisation and Restructuring in the Knowledge Society) funded by the European Commission under its 6th Research Framework Programme¹. The project aims at improving our understanding of the major changes in work in the knowledge-based society. The project applies a variety of research methods, but a specific part focuses on available information on changes in work emerging from organisation surveys in European countries and at the European level. This involves mapping the existing organisation surveys that are relevant to measure changes in work, but also assessing the comparability of these information sources. A total of 12 major organisation surveys are involved in this comparative study, which can also be consulted in the section 'digital toolkit' on the website of the project.

¹ For more information, see www.worksproject.be.

Such a comparative overview can be carried out at various levels. An initial approach is to compare results. A second comparison level is that of the conceptual frameworks and modes of operationalisation used. A third level is that of the survey methodology or survey design. This paper concentrates on this third level. In other words, we are confining ourselves to a comparison and evaluation of the methodological choices in these 12 surveys. The objectives can be described as follows:

- comparison of organisation surveys with the aim of making an inventory of 'good practices' in survey methodology, which can strengthen the quality of research into the diffusion and effects of new organisation concepts;
- charting current 'methodological diversity' with the aim of investigating the possibilities for cross-national research into the spread and effects of new organisation concepts;
- by highlighting methodological differences, fostering efforts towards more convergence between organisation surveys in order to improve their comparability and our knowledge on changes in work in Europe.

This approach is chosen because little information is currently available about the methodological limitations of organisation surveys, the results of which appear frequently in journals and policy circles. Indeed, the findings relating to the content of these surveys have frequently been put under the microscope (Appelbaum & Batt, 1995; Cappelli et al., 1997; European Commission, 1999; Kling, 1995; Marsden, 1995; OECD, 1999; Vickery & Wurzburg, 1998). These comparisons of content are, incidentally, fraught with major difficulties precisely because the choices of methodology differ widely. For this reason, focusing on the methodological approach of the surveys and explaining the differences between them produces a stronger foundation for such comparisons at results level.

This paper is structured as follows. The first section discusses the selection of the 12 surveys studied. The second section systematically compares these surveys based on the following criteria: (1) description of the population; (2) definition of research units; (3) sampling plan and sampling; (4) choice of respondents; (5) questioning method and response and (6) continuity of the survey efforts. We conclude with recommendations relating to the further structure of organisational research.

Inclusion criteria

In this first section, we explain the selection of the 12 organisation surveys involved in this comparative methodological research. Three inclusion criteria were used. The first is, of course, the *content* of the survey. The surveys retained are those which allow the dissemination of new organisational concepts to be measured in terms of at least a number of dimensions. The two other inclusion criteria relate to scope and continuity.

Scope

One research method gaining in popularity is the *single-type organisation survey*, usually in the form of a sector survey or intra-industry survey, where the field of validity is limited by selecting organisations from the same industry (Dunlop & Weil, 1996; Ichniowski et al., 1998; MacDuffie,

1995; Womack et al., 1990). This approach allows the operationalisation of variables to be developed in a sector-specific manner and therefore enables more precise questions to be asked. Moreover, this is a good method for keeping many confounding variables under control. To give a simple example: by comparing companies which make similar products using comparable technology, it is easier to examine the pure effect of the features of human resource management on turnover, labour productivity, etc. However, the question arises whether the relationships we find in one industry can be generalised for other industries? What is the relevance of the advantages ascribed to lean production in car assembly for the chemical industry, banks or hospitals?

As it is difficult to generalise the results from a survey in one industry for other sectors, a multiple sector survey can be executed. The study by Appelbaum on high performance work systems (Appelbaum et al., 2000) is an example of such an approach whereby the operationalisation of the survey variables is carried out on a sector-specific basis, but at the same time derived from one generic conceptual framework. As a result, the results are comparable for the basic dimensions of the conceptual model. By developing several intra-industry surveys one after the other, the findings from one sector or industry can be replicated in other sectors. However, the costs of developing sector-specific questionnaires can be high. If the questions vary by sector, comparability can succeed or fail depending on the strength of the underlying conceptual framework.

Restricted diverse organisation surveys expand the population further. In this survey method, no restrictions are imposed on sectors or activities but limits are imposed, for example, on the size of the company. Expectations regarding response or the accessibility of companies are often used as arguments, for example, for excluding companies with fewer than 20 employees. Often, surveys are confined to private enterprises because no all-embracing sample frames are available. This type of intervention means that a substantial proportion of reality (such as the growth of small businesses) remains hidden. *Unrestricted diverse organisation surveys* therefore have the widest scope.

Continuity

The majority of surveys are carried out *once*, which means that they cannot give a precise indication of trends in organisational change. Surveys involving regular questioning of a random sample of organisations using a similar sampling method and questionnaire can measure changes at the level of the overall population. In this case, we are talking about *periodic cross-sectional analyses*. *Organisation panels* offer by far the most possibilities for analysis. The same organisations are questioned at various times. This makes it possible to chart the organisation dynamics at micro-level, i.e. that of the individual organisations. Cross-sectional time series can give the impression of a fairly stable situation, when in fact major restructuring is underway at organisation level. A cross-sectional analysis is also inadequate for monitoring the impact of particular measures, where the situations before and after implementation have to be compared.

Selection

The dimensions 'content', 'scope' and 'continuity' are used to determine the inclusion criteria. As far as the *content* is concerned, the surveys selected are those devoted to examining the

dissemination or effects of new organisational concepts. As the focus of this paper is on changes in work in Europe, surveys comprising several or all European countries are of special interest as they offer enhanced possibilities for comparisons. Therefore the inclusion of European surveys in this methodological overview is advanced, even though the issue of new organisational concepts is only addressed briefly.

As far as *scope* is concerned, the inventory is targeted at restricted and unrestricted diverse surveys. In terms of *continuity*, the only surveys included are those which regularly measure changes in organisational concepts. This included both surveys which aim to provide periodic cross-sectional measurements and panel studies.

In table 1, we present the 12 surveys selected on this basis. An abbreviation is given for each survey, which will be used further in this paper. We also indicate the organisation responsible for the survey and to which country the results relate. Finally, a link is included to the website of the survey, where interested readers can find more information.

Table 1. Summary of organisation surveys discussed

	Survey	Organisation	Country	Website
CIS	Community Innovation Survey	Eurostat	Europe	http://www.cordis.lu/innovation-smes/src/cis.htm
COI	Changements Organisationnels et l'informatisation dans l'Industrie	Centre d'Etudes de l'Emploi (CEE)	France	http://www.enquetecoi.net
CVTS	Continuing Vocational Training Survey	Eurostat	Europe (EU-22)	http://europa.eu.int/comm/education/programmes/leonardo/new/leonardo2/cvts/index_en.html
DISKO	Danish Innovation System in a Comparative Perspective	Aalborg University, Department for Business Studies	Denmark	http://www.business.auc.dk/pie
ESWT	European Survey on Working time and Work-Life balance	European Foundation for the Improvement of Living and Working Conditions	Europe (EU-21)	http://www.eurofound.eu.int/areas/worklifebalance/eswt.htm
Eurostat-ICT	Community Survey on ICT Usage and e-Commerce in Enterprises	Eurostat	Europe (EU-25)	http://europa.eu.int/estatref/info/sdds/en/infosoc/infosoc_base.htm
IAB	Institut für Arbeits- und Berufsforschung	Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit	Germany	http://betriebspanel.iab.de/
ISI	Neue Produktionskonzepte in Deutschland	Fraunhofer-Institut für Systemtechnik und Innovationsforschung, Abteilung Innovationen in der Produktion	Germany	http://www.isi.fraunhofer.de/i/projekte/erhebung_pi.htm
OSA	Organisatie voor Strategisch Arbeidsmarktonderzoek	Katholieke Universiteit Brabant, Instituut voor sociaal-wetenschappelijk beleidsonderzoek en advies	Netherlands	http://www.uvt.nl/osa/data/
PASO	Panel Survey of Organisations	Katholieke Universiteit Leuven	Flanders	http://www.paso.be
REPNSE	Relations Professionnelles et Négociations Entreprises	Direction de l'Animation de la Recherche des Etudes et des Statistiques (DARES)	France	http://www.travail.gouv.fr/etudes-recherche-statistiques/statistiques/relation-professionnelles/85.html
WERS	Workplace Employee Relations Survey	Department of Trade and Industry, Department Employment Relations, Employment Market Analysis and Research	UK	http://www.dti.gov.uk/er/emar/wers5.htm

Comparing surveys

The twelve selected surveys are compared in six consecutive stages. The order of the stages is as follows: description of the population, definition of research units, description of the sampling plan and sampling, choice of respondents, questioning method and response and, finally, periodicity or continuity.

Description of the population

One initial question in the development of an organisation survey is how to describe the population. The population is the well-defined empirical field of validity for which the statements made on the basis of the survey will apply. Describing the population is important, given that population limits also determine to what extent statistical generalisations will apply. In a second stage, a sample is taken from this population.

The surveys listed in Table 1 are all broad in scope. Nonetheless, the population rarely covers all organisations active within a national economy. Based on their population description, most of the surveys can therefore be described as *restricted* surveys. This is evident from table 2, in which we illustrate how the surveys deal with the two most frequently used inclusion criteria – the number of employees and the activity of the organisation.

Table 2. Population restrictions used.

Survey	Minimum number of employees	Type of activity
IAB	1	Whole economy
PASO	1	Whole economy
OSA	5	Whole economy
WERS	5	Whole economy (SIC-codes D-O) except for A (agriculture), B (fishing), C (mining), P (private households) and Q (extra-territorial org.)
CIS	10	<ul style="list-style-type: none"> - mining and quarrying (NACE 10-14) - manufacturing (NACE 15-37) - electricity, gas and water supply (NACE 40-41) - wholesale trade (NACE 51) - transport, storage and communication (NACE 60-64) - financial intermediation (NACE 65-67) - computer and related activities (NACE 72) - architectural and engineering activities (NACE 74.2) - technical testing and analysis (NACE 74.3)
COI	10	<ul style="list-style-type: none"> - industry - energy - construction - trade - hotels and restaurants - transport - financial services - business services - media - public administration
CVTS	10	Whole economy (SIC-codes C-O) except for A (agriculture), B (fishing), P (private households) and Q (extra-territorial org.)
ESWT	10	Whole economy (SIC-codes C-O) except for A (agriculture), B (fishing), P (private households) and Q (extra-territorial org.)
Eurostat – ICT	10	<ul style="list-style-type: none"> - manufacturing (section D) construction (section F) Wholesale and retail trade (section G) hotels & camping sites (groups 55.1 & 55.2) transport, storage & communication (section I) retail, renting & business activities (section K) motion picture, video, radio & television activities (groups 92.1 & 92.2)
ISI	10	Metal, electronic, chemical and synthetics processing industry
REPOSE	20	Private sector (excl. agriculture)
DISKO	25	All private business sectors

A frequently used population limit is the size of the research units based on the number of employees. IAB and PASO are the exceptions to the rule. Often, financial reasons are given for this limitation. The cost to question a small organisation is similar to that of questioning a large organisation in most surveys. Confinement to larger organisations makes it possible to chart a large proportion of jobs based on research into a relatively small number of units. A second argument is the unavailability of a database which includes small organisations. Thirdly,

operationalisation problems are also quoted. Variables related to organisation structures, teamwork, industrial relations, etc., are more difficult to uncover in small organisations, due to a lack of formal and sufficiently stable structures and forms of work (Neumark & Cappelli, 1999). Finally, it is often more difficult to identify a respondent in small organisations. In most surveys, the questionnaires are addressed to the head of personnel. In small organisations, this kind of separate post is often missing.

Confining the research population to larger organisations produces a good 'input/output'-ratio. Statements can be made about a large proportion of jobs at minimum cost price. However, this limitation can have a serious influence on the score for many variables and thus misrepresent the observation of changes in organisation concepts. Smaller organisations, for example, are much less departmentalised than large organisations, but can also demonstrate a higher level of centralisation (Kalleberg et al., 1996). If they are excluded, descriptive statistics then give a distorted picture about the occurrence of such features. Moreover, by excluding small organisations, much of the dynamism in the economy is overlooked. In this category, many organisations 'enter' and 'exit'. Many rapid-growers are also found among the smaller organisations. If the survey is restricted to large organisations, these smaller ones will only come into the picture at a more mature stage in their life cycle. In panel studies, in particular, this type of limitation has major consequences. The panel nature allows dynamics at micro-level to be better analysed, but if only larger organisations are targeted, successful growers are not monitored from their birth, which means that the precedents for dynamic growth cannot be examined. It is then more difficult to identify predictive indicators for high performance.

A second, frequently used inclusion criterion concerns the *type of activity*. The exclusion most frequently used relates to (sections of) the services or public sector. The reason for this can partially be found in the difficulty of achieving generic operationalisation from the research variables. This is also related to the topics dealt with. Questions about the influx and outflow of employees, their contract types, working hours, etc., are more generic in nature than questions about the level of automation, for example. In addition, the identification of research units is usually more difficult in the services and public sector. Production companies are often geographically concentrated around a physical production process at an identifiable address. Service-providers are often 'concealed' in various locations and are more difficult to demarcate organisationally.

In other respects, it is striking that no single organisation survey was found which is targeted exclusively at the services sectors or the public sector, while the reverse – confinement to industry or the private sector – is more often the rule. This is all the more surprising given that services and the public sector absorb a larger proportion of jobs in many countries and are responsible for the growth in employment.

Research unit and sampling framework

Once the population has been defined, the question arises of research units about which information has to be obtained. The aim of an organisation survey is, of course, to chart the reality in organisations. But at what level of the organisation is questioning to be carried out? Are we talking about head offices, companies, workplaces or units? One closely-related question is that of

the most appropriate sample frame. Table 3 shows for which research units information is gathered and which source forms the basis of the sample frame.

Table 3 Sources for the universe of research units

Survey	Research unit	Source for universe of research units
COI	Workplace	Enquête Annuelle d'Entreprise (EAE)
ESWT	Workplace	Address registers of local branches from TNS Infratest
IAB	Workplace	Employment statistics register of the Federal Employment Services
ISI	Workplace	ISI address list based on previous questioning Adresses Projektträger Produktion und Fertigungstechnik (PFT) Hoppenstedt Firmen-Datenbank
OSA	Workplace	LISA-database (Countrywide Information System Workplaces and Establishments)
PASO	Workplace	Statistiek Rijksdienst voor Sociale Zekerheid (RSZ) Onderwijsbestand Vlaamse Gemeenschap Statistiek Rijksdienst voor Sociale Zekerheid voor Plaatselijke en Provinciale Overheden (RSZPPO)
REPONSE	Workplace	Base de données des entreprises et des établissements (SIRENE)
WERS	Workplace	Inter-Departmental Business Register (IDBR)
CIS	Enterprise	National registers of enterprises (EU Regulation 2186/1993)
CVTS	Enterprise	National registers of enterprises (EU Regulation 2186/1993)
DISKO	Enterprise	N.A.
Eurostat - ICT	Enterprises	National registers of enterprises (EU Regulation 2186/1993)

Ideal research unit. Most surveys choose to use the workplace as the ideal research unit. Terms used are also establishment, operating centre, office,... These terms all refer to the same geographical entity. The emphasis is then on the geographical concentration of the (core) activities of the organisation. A number of descriptions can explain this:

"A workplace is the activities of a single employer at a single set of premises." (WERS)

"The establishment is the local unit which in fact performs the activities of a company, i.e. the manufacture of products or the provision of services." (IAB)

"While an enterprise is an economic unit, juridically autonomous, organised to produce goods or services, a workplace is a unit of exploitation or production, geographically localised and individualised, where the activity is effectively exercised" (REPONSE)

"A workplace is a location of an enterprise, institution or professional (this means each plant, office, shop or other working accommodation, in which or from which an economic activity or profession is exercised by at least one person. " (OSA)

The European-wide surveys (CIS, CVTS, Eurostat-ICT) have a higher level research unit and rely on the national registers of enterprises in the different countries. In the Council Regulation (1993), the enterprise is defined as "the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision making,

especially for the allocation of its current resources. It may carry out one or more activities at one or more locations and it may be a combination of legal units, one legal unit or part of a legal unit.” However, the precise composition of the many national registers varies according to country, making a European-wide sampling procedure only approximately possible.²

Generally speaking, research units should be defined which are as homogeneous as possible in terms of the questions used in the survey. The ideal level can thus vary, depending on the topics which are central to the research. As many changes in work are increasingly related to changes in the relationship between organisations and their environment, the workplace or the enterprise is no longer necessarily the ideal unit of observation or analysis. Practices as subcontracting, outsourcing, delocalisation or the integration of organisations in networks and global value chains which lead to important changes in work, require a wider scope than the organisation itself to be monitored and analysed. In order to deal with the issue, surveys can include topics on the relationship of the organisation with other organisations and the wider society in their questionnaire. But as they rely on the workplace or the enterprise as the ideal research unit, they risk missing important causes of changes in work in an increasingly networked economy.

Suitability and completeness of sample frames. One problem with which many surveys wrestle is that workplaces are often difficult to identify. Research teams rarely have databases with workplaces as units. The quality of the databases available determines the quality of the *sample frame*. By sample frame we mean an existing register of all the basic units which together make up the population. This framework is the source for sampling. The reliability of generalisations based on a sample therefore depends on the accuracy and completeness of this sample frame. Deviations between population and sample frame are permissible, provided they are known and therefore correctable. Most of the teams performing organisation surveys, however, provide little information about the differences between sample frame and target population.

The critical problem is that a sample frame from which a sample of workplaces can be extracted is rare. Some organisation surveys therefore choose (often tacitly) different research units which are listed in administrative databases. Moreover, the description of the units in the databases is linked to the specific administrative guidelines in the various countries and is, as a result, not very transparent. The description of units is therefore under-reported by most surveys. Particularly when comparing the results of similar surveys, this then poses a major problem.

Owing to the lack of reliable databases at workplace level, the precise demarcation of the research units in many surveys is an important task of the interviewer. The IAB questionnaire provides the interviewers with an extensive set of guidelines which should allow them to check whether they are approaching the correct research unit. This is one important advantage of face-to-face questioning. Since information gathering takes place on the spot, more adequate supervision can also be carried out regarding the demarcation of units. This leads to more reliable data collection.

² An extensive description of the available national registers of enterprises in the EU-member states is made in Eurostat (2006).

Sampling plan and sampling

Once the sample frame has been defined, a sampling plan has to be drawn up. The sampling plans for the organisation surveys differ from one another chiefly at the level of (1) the method of stratification and (2) whether or not they have a two-stage sample.

Stratification. Not one survey goes for an entirely simple random sample. This type of sampling plan would mean that organisations with many employees are hardly ever included in the sample. The sample of organisations is then representative but, given that the population of organisations includes primarily a large number of small organisations, the final sample covers a particularly small proportion of jobs. For this reason, the sample is stratified in virtually all surveys.

In the stratification, account is always taken of the size of the organisation (in terms of the number of employees). One alternative is to combine a sample from small organisations with a census of large organisations (for example, all organisations with more than one hundred employees are questioned). Most surveys add additional variables to the stratification model, such as the activity of the organisation and/or the region where it is based. This should enable reliable pronouncements to be made at the level of the regions, for example, including for regions where a random sample would not provide sufficient observations. The following table presents a summary.

Table 4 Information about sampling plan

	Stratification variables (number of classes)	Two-stage sample
CIS	Economic activity Size (4) Region	No
COI	N.A.	Yes (employees), but only of enterprises > 20 employees. The sample of employees is not drawn in the workplace, but independently from administrative databases.
CVTS	Economic activity (20) Size (6)	No
DISKO	All enterprises > 25 employees	Yes (employee representatives)
ESWT	Economic activity (2) Size (5)	Yes (employee representatives)

Eurostat-ICT	Economic activity (16) Size (3)	No
IAB	Economic activity (16) Size (10)	No
ISI	No stratification applied	No
OSA	Economic activity (9) Size (5)	No
PASO	Economic activity (7) Size (5) Region (5)	No
REPONSE	N.A.	Yes (employee representatives) Yes (employees): the sample of employees is not drawn in the workplace, but independently from administrative databases
WERS	Economic activity (12) Size (9)	Yes (employee representatives) Yes (employees)

Based on a combination of the stratification variables, a sampling table can be compiled, showing a minimum number of observations for all cells. In some surveys, this minimum number of observations is corrected for the expected rate of non-response. Achieving the sampling plan is, however, difficult in most surveys because the non-response is usually not the same in all cells. Even if non-response units are replaced in each cell, the sample achieved usually differs from the sampling plan. This deviation can usually be attributed to mistakes in the sample frame or to the time lag between registration in the sample frame and the time of questioning. The longer this time lag, the greater the likelihood that research units will shift to another cell in the sampling table (e.g. because of growth or a reduction in numbers of employees). This emphasises the importance of recent, accurate and complete sample frames.

Two-stage sample. Table 4 shows that several surveys use a two-stage sample. In this case, the sampling of organisations is followed by a sampling of employee representatives and / or employees in those organisations. Organisations are questioned in combination with a questioning of employee representatives (DISKO, ESWT), employees (COI) or both (REPONSE, WERS). Consequently, characteristics of the two levels can be linked to one another. A two-stage sample allows the perspectives of various stakeholders to be taken into account. The importance of two-stage sampling is illustrated as follows by Greenan & Mairesse (1999: 12): "Firm representatives generally describe formal organization, whereas workers can be asked about what they really do and how they adapt assignments to the context of their work. Topics like empowerment, worker involvement and greater autonomy on the shop-floor cannot only be investigated through what management knows about it. It is even more true for considerations about intensification of effort, stress or all types of adjustment costs caused by organizational change".

The questioning of employee representatives is limited to one respondent as a counterpart for the management questionnaire. Of course, this is only possible in those responding organisations where a formal employee representation exists. In most surveys working with an additional employee sample, a fixed number of employees is randomly selected from personnel lists made available by the organisation, regardless of the size of the staff. The WERS goes as far as

randomly selecting 25 employees. If the workplace has less than 25 employees, all employees are questioned. Both French surveys (COI, REPOSE) have a peculiar secondary sample stage of employees. In these surveys, the employees are sampled from a different source of the universe (Déclarations Annuelles de Données Sociales: DADS) and approached directly, separately from the organisation. The organisation is however informed of this method, but without an identification of the people questioned.

This separate selection of employees from an administrative database allows for the input of additional information on the respondents in the analysis. Due to the growing possibilities for database management, we see an increasing use of complementary data on employees from administrative sources to the survey data. The IAB survey is probably the most striking example in this respect. Although lacking an additional employee survey, the research institute is nevertheless able to offer a linked employer – employee dataset, due to the input of data of the Federal Employment Services. The dataset offers a combination of information about individuals and details concerning the firms in which these people work.

The DISKO-survey goes further by merging survey data with register data not only on each individual employee employed in the enterprise but also register data on enterprise accounting (Reichstein et al., 2003). Also in the WERS exploratory analyses have been done with data linking between the survey and other sources, as on financial performance in the Annual Business Inquiry (Forth et al., 2007).

Respondent(s)

Once the research unit has been established, the question arises of who best represents this unit as a respondent. The answer to this depends partly on the research topics. If the emphasis is on topics such as automation, production or work organisation, it is appropriate to question the line management. However, if the emphasis is on personnel data, personnel policy or industrial relations, it is better then to approach the head of personnel. The correct selection of respondent is important to the collection of reliable data. All too often, the head of personnel is approached with questions about which he is insufficiently involved. Osterman (1994: 174) says, in this respect, "Years of open-ended interviews with firms suggested to me that too often HRM staff, even at the establishment level, are not in touch with work organization".

A detailed description of the respondent is not established in advance in many organisation surveys, due to a lack of names and positions of potential respondents. Many surveys are therefore confined to vague descriptions along the lines of "a representative of the workforce". Surveys on specific topics as Eurostat-ICT, ask for an IT-manager. Face-to-face interviewing has the advantage, in this context that the interviewer can determine on the spot who is the most suitable respondent. Most questionnaires explicitly ask about the position of the respondent, so that any distortion produced by this variable can be controlled.

Some surveys explicitly provide the possibility of talking to several respondents. This can lighten the load on respondents and improve the quality of the answers. However, the risk involved in this strategy is that questionnaires remain incomplete (non-response from one of the respondents).

With face-to-face interviewing, the use of several respondents does also lead to higher costs. For this reason, this method was abandoned in the WERS. OSA offers an alternative solution, by using different questioning methods for different sections of the questionnaire. Telephone interviewing is supplemented by a written questionnaire, which asks for a number of hard facts.

Questioning method and response

One of the crucial evaluation criteria by which organisation surveys are judged is the response ratio. A low response jeopardises representativeness. In a panel, a high non-response leads to an overly limited panel section for the dynamic analysis. Generally speaking, it can be said that the extent of the response depends partly on the chosen questioning method. For this reason, the questioning method is placed next to the response in Table 5.

An initial comment concerns the combination of questioning methods. Several questioning methods are applied in a number of surveys. Telephone questioning can be supplemented, with the same respondent, by a written questionnaire which has to be sent by post (OSA). In two-stage samples, face-to-face questioning at organisation level can be interspersed with written questioning of employees (WERS, REPONSE) or inversely postal at the organisation level and face-to-face at the employee level (COI). Some surveys use different questioning methods for large and smaller organisations (CVTS, PASO). European-wide surveys leave the choice of question method largely open to the different national institutes, sometimes with a minimum threshold for a particular method (e.g. 15% face-to-face observations in the CVTS).

Table 5. Summary of questioning methods and response (in multi-stage sampling: ORG = enterprise or workplace level; E.R. = employee representative level; EMP = employee level)

	Questioning method	Sample size	Response (response ratio)
CIS	Postal	N.A.	125.000 (N.A.)
COI	ORG: Postal EMP: Telephone and face-to-face	ORG: N = 18.000 EMP: N = 23.000 (employees only from organisations > 20 empl.)	N.A.: Data collection ends in 2007. Last survey ORG = 88% and EMP = 77%
CVTS	Mainly postal, but also telephone and at least 15% face-to-face (incl. for all organisations > 500 empl.)	N.A.	N = 76.000 (N.A.)
DISKO	Postal	N = 6975 (incl. 1363 panel observations)	ORG: N = 2007 (29%) (incl. 637 panel observations) E.R.: N = 473
ESWT	Telephone	ORG: N = 78.000 E.R.: N = 10.451 (number of responding organisations with formal E.R.)	ORG: N = 21.031 (27%) E.R.: N = 5232 (50%)
Eurostat-ICT	Mainly postal, but face-to-face telephone and electronic are also allowed.	N = 204.414 (EU-25 excl. DK)	N = 137.877 (EU-25 excl. DK) (67%)
IAB	Face-to-face	N = 19060 (incl. 14.450 panel observations)	N = 15821 (83%) (including 12.284 panel observations)
ISI	Postal	N = 13.259	N = 1450 (11%)
OSA	Telephone and postal	N = 4757	N = 3170 (67%)
PASO	Web, but also postal (for all organisations < 10 empl.)	N = 11.491	N = 2007 (19%)
REPOSE	ORG & E.R.: Face-to-face EMP: Postal	N.A.	ORG: N = 2930 E.R.: N = 1970 EMP: N = 11.766
WERS	ORG & E.R.: Face-to-face EMP: Postal	ORG: N = 4830 (incl. 1245 panel observations) E.R.: N = 1280 EMP: N = 36.805	ORG: 3251 (67%) (incl. 956 panel observations) E.R: N = 984 (77%) EMP: N = 22.451 (61%)

Secondly, we must note that several surveys provide very incomplete information about response. Specifically, a response ratio does not say everything. What about the item non-response? Was the response calculated with respect to the 'gross' or 'net' sample (this means after leaving out all observations which could not be identified or no longer exist)? Which sample was originally taken and what section of it was used, if replacement was used? If several questioning methods were used, several response ratios also have to be given. If two-stage sampling was used, a distinction has to be made between the non-response in the second stage and non-response cumulatively with the non-response in the first stage. With panels, not only the response from a given round is

important, but also and in particular the response from organisations which answered in a previous round. In this context, a distinction must be made between organisations which now no longer exist or now fall outside the sample frame, those which could not be found and those which did not respond. Only the last type of drop-out can genuinely be regarded as 'non-response'. To the extent that the surveys make this distinction, table 5 can be read as the ultimate response to a net sample. Where several respondents are present and in panels, several ratios are indicated in so far as available.

We now summarise some of our observations. The most striking is that the questioning method does indeed seem to correlate with the response ratio. Postal and electronic questionnaires produce the lowest response (average approx. 20%: DISKO, ISI, PASO). Exceptions are those surveys that have an obligatory character as for the COI and for some of the European-wide surveys. Postal questionnaires also get good response rates when they are addressed to employees of surveyed workplaces in a two-stage approach (REPONSE, WERS).

Telephone questioning scores fairly well (average approx. 50%). It is also much cheaper than face-to-face questioning and therefore seems an attractive alternative. However, this questioning method places a restriction on the duration of the interview. The leader as far as response is concerned is face-to-face questioning. The highest score is achieved by IAB (83%). This is probably the most established survey, with a long tradition, which means that questioning can systematically be optimised. The IAB also has an extensive research group, pursues an active policy of making databases available for research and spares neither time nor money in training interviewers.

Our second observation concerns the importance of non-response analysis. Attempts can be made to correct non-response using a comparison of the characteristics of non-response organisations with characteristics of the response organisations or the population. Some surveys draw up non-response weighting factors on the basis of these comparisons, in particular to correct the deviation in the sample obtained with respect to the sampling plan. Other surveys dispense with this because while it is possible to correct for a number of known organisation characteristics, it is not clear to what extent the answers to the questionnaire actually correlate with these features. Following a very low response (11%) and having to work with a sample which differs considerably from the sampling plan, the ISI decides not to allocate weights based on a non-response analysis because "the influence of such weights on other variables depends on a multiplicity of other, non-controllable factors which can just as easily produce the reverse effect" (Lay, 1997: 5). There is then little alternative but clearly to explain the deviations in the sample compared to the intended sample and the universe.

Some surveys offer a differentiated response rate according to characteristics of the organisations. This division makes it possible to concentrate efforts in subsequent measurements on the critical groups. It is striking that a link is seldom reported between the response and the size of the organisations. Small organisations do not respond noticeably less than large organisations. Some surveys refer instead to a U-shaped link. In small organisations, the manager (jack of all trades) has no time to answer the questionnaire. Large organisations have to battle with over-questioning. Consequently, the highest response comes from the middle category.

A third conclusion concerns to the notable success of two-stage samples. Employers do not seem hesitant when it comes to making personnel lists available or allowing employees to be interviewed. Employee questioning always takes place outside working hours. Nonetheless, the cumulative failure at both stages of the sample puts a burden on response rates.

Continuity

The surveys included in this overview are periodic in nature. This implies, in the best case scenario, that the same or a similar questionnaire will be used for a similar, but new sample. In this case, we talk of periodic cross-sectional surveys. In such surveys, comparisons in time are only possible at population level. The questioning method often makes it unfeasible to develop a panel. Thus, the response from postal surveys is often so low that it is scarcely possible to work with a panel. If higher response ratios are obtained, the failure to make use of a panel is in fact a missed opportunity, not only because many possibilities for analysis at micro-level are overlooked, but also because of cost considerations. In a cross-sectional approach, the sample must be reconstituted from scratch each time. With a panel it is possible to build further on the response from the previous round, with supplements depending on the failure rate.

Table 6. Panels versus cross-sectional surveys

	Time of questioning	Longitudinal character
IAB	1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005	Panel
OSA	1989, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005	Panel
WERS	1980, 1984, 1990, 1998	Partial panel
DISKO	1996, 2001	Partial panel
CIS	1992, 1996, 2001, 2005	Cross-sectional
CVTS	1994, 2000, 2006	Cross-sectional
Eurostat-ICT	2002, 2003, 2004, 2005, 2006	Cross-sectional
ISI	1987, 1990, 1993, 1997, 2001, 2003	Cross-sectional
REPOSE	1993, 1998, 2005	Cross-sectional
COI	1997, 2006	Cross-sectional (though considerably different questionnaire)
ESWT	2005	Only once (but intended to be repeated, although possibly on other topics)

The interval with which both panel and successive cross-sectional surveys carry out questioning varies from one (IAB, PASO, CIS) to six (CVTS) years. It is important to keep this period as short as possible, particularly with panels, so as to keep the number of drop-outs within certain limits. For instance, WERS – which is held every four years – has only a partial panel section. In addition to a

new sample from the research population, part of the sample from previous questioning is also contacted once again.

The periodicity of questioning depends on the research topic. If the questions are aimed at charting organisational structures, a longer interval is appropriate to register changes – including in the case of panels. Data relating to the influx and outflow of employees and their characteristics fluctuate more quickly and require a shorter interval.

The panel character in combined organisation/employee questioning applies only to the organisation. The employees are drawn anew each time on a random basis from the participating organisations so that only cross-sectional analyses are possible at employee level. In view of the mobility of employees, the formation of a panel within these organisations is difficult to achieve.

Conclusions

A total of 12 major organisation surveys have been subjected to a methodological benchmark in this comparative study. Below we present the most important conclusions of this comparison of survey designs:

1. We observed a lack of organisation surveys which include small organisations and organisations in the services and public sector in the research population. In the future, attempts must be made to hold more unrestricted diverse (or multiple sector) surveys.
2. The lack of availability of databases based on which a universe of the research units can be compiled is a thorny problem in most of the surveys. This problem pushes the surveys into an occasionally undesirable restriction of the research population.
3. A sample frame based on strata by size and activity of the organisation is the most common. In this case, a fixed number of observations to be obtained per cell is determined in order to be able to make reliable statements about the various size/activity categories. A complete database of correct information about the research units is indispensable to a good sample frame and the extrapolation of research results.
4. The workplace is considered to be the ideal research unit by most surveys, referring to a geographical concentration of the (core) activities of the organisation. However, as many changes in work are increasingly related to changes in the relationship between organisations and their environment, the workplace is no longer necessarily the ideal unit of observation or analysis. Surveys on organisation concepts must therefore pay attention to these relationships in their questionnaire.
5. Two-stage samples combining questioning at organisation level with information collection at employee level produce surprisingly good results and are rich in possibilities for analysis. Changes at organisation level can after all be linked directly to their effects on employees. The surveys which aim for this combination report few difficulties in obtaining details about members of staff. The response from these employees is quite considerable.

The objection of confidentiality does not therefore seem to play a role, at least not when the selection of employees can also take place on the spot, employees are not questioned during working hours and have complete freedom to choose whether to answer or not.

6. Accurate identification of respondents is usually not possible, based on the available databases. A face-to-face interview has the advantage that this identification by the interviewer can take place on the spot. If the interviewer has been well-trained in this respect, this can improve the reliability of the data collection. In any case, it is a good idea to include the position of the respondent in the questioning, so that monitoring for any distortions based on position is possible. In order to limit the duration of face-to-face questioning, the face-to-face questioning can be linked to a written questionnaire which concentrates on a number of objective details concerning the organisation. In this case, it is also wise to collect the written questionnaires on the spot so as to keep partial non-response to a minimum.
7. Telephone questioning can produce a good response, but can only be used for short questioning. When setting up an organisation panel, a face-to-face interview seems the only possible alternative for ensuring a good response. All organisation surveys with a panel character therefore use face-to-face questioning.
8. If rapid periodic questioning is planned, the obvious method is to set up a panel. This offers more possibilities for analysis without incurring a higher cost. For research into topics which only evolve slowly a longer interval can be used. In order to be able to understand the dynamics of this at organisation level, a new sample with a panel section can be supplemented after a longer interval.
9. Further encouragement of panel studies is indispensable. Based on cross-sectional surveys, one of the most important questions can of course not be answered: do changes in organisational concept precede higher performance or are only high-achieving companies in a position to implement new organisational concepts? Here, only panel data can offer a solution, where periodic data about the organisation concept are linked to performance indicators. The OECD (1999: 182) illustrates this same comment with a different example: "when studies are based purely on cross-sectional information, it is difficult to control for the reasons why the practices were introduced in the first place. If firms only began to experiment with new forms of working practices when they faced dire trouble, the existence of practices might be associated with poorer performance, at least over the short term."

With a view to strengthen the possibilities for cross-national organisation research, closer alignment of the survey designs used in the various countries must be urgently pursued. The above recommendations can form a guiding principle for starting up the discussion. Obviously, this is just an initial step. One additional factor which makes comparisons at the level of the dissemination or effects of new organisational concepts more difficult is the diversity in terms of content. Although the surveys do have a sizeable common denominator, they differ in terms of the key questions or the central theme. In order to get a view on the way the surveys discussed here question different aspects of the organisation concept applied, we refer to the website of the WORKS-project (www.worksproject.be). The digital toolkit section of this website contains a comparative overview of all questions asked by these surveys. This toolkit allows for a comparative research of the

variables included in the surveys and, in particular, the way in which these variables are operationalised in questionnaires, which are both important for the purposes of international comparative research

Whether or not it is possible to conclude, based on the various organisation surveys, that new organisational concepts are being widely used, cannot be unequivocally stated at present. This is a consequence of the highly diverse forms of operationalisation used in the surveys. Depending on the indicators used, one survey detects few signs of new organisational concepts, another many signs. Comparisons between these results are virtually impossible because no agreement exists concerning the questions, question formulation, the answer categories offered or the construction of variables which act as indicator for the organisational concepts. International organisations in particular, are constantly insisting on the need for consensus in operationalisation. "Work is needed to evaluate the different approaches to measurement of different variables and to further test the power of alternative definitions in current use to arrive at useful results" (Vickery & Wurzburg, 1998: 17).

To arrive at a better harmonisation of core concepts and their indicators, a new European research project MEADOW (Measuring the Dynamics of Organisations and Work) is launched in the spring of 2007. It contains 14 research organisations with experience of carrying out organisation surveys and will establish a set of guidelines for collecting and interpreting harmonised data on organisational change as a first step towards implementing a harmonised European survey instrument.

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