Measuring the dynamics of organisations and work: employee-level survey
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I. Introduction

This chapter of the Guidelines proposes indicators and a questionnaire to measure work organisation, its evolution and outcomes at the employee level. It complements the analysis of the previous chapter which concentrated on the employer level. Some employees will be involved in the decision processes that bring about organisational change, and many more will witness the changes as they occur. All employees are affected in one way or another by work organisation and how it is changing.

Chapter I of the guidelines centred discussion on the areas of interest that an employee-level survey should focus on. After briefly revisiting the core objectives of the MEADOW project, andresting the concepts that are to be measured in the employee-level survey, this introduction will review the constraints, principles of item design and assumptions that the employee-level survey will face. Sections II and III of this chapter go through the concepts, including background demographics, and consider appropriate indicators in each case. The employee level questionnaire itself is included as an Appendix to the chapter.

Objectives

The objectives of the proposed survey are threefold: first, to capture employees’ perspectives on organisational change; second, to collect data on both the job and the employee; and third to measure employee experiences and outcomes within the firm. By being able to gain and link information on both the employer and the employee one will be able to examine organisational change on the firm as a whole and within the firm itself. For example, an employee’s perspective of organisational change will allow an analysis of just how successful a firm’s perceived organisational change has been by looking at those who have experienced it. In addition, measuring the outcomes for employees of any organisational change will help researchers and policy analysts understand the impacts of change on European workers.

The aim of the employee survey is to combine measures of the contemporary experiences and perspectives (that is, at the time of the interview) with measures of change. To capture the changes, retrospective questions are proposed to be used alongside the longitudinal design of MEADOW overall. These questions are included in the survey where it is deemed appropriate to look at changes in variables rather than, or in addition to, levels.

Chapters I and II of the guidelines recommend that work practices and working conditions be examined at the employee level while organisational states and change are examined at the employer level. This allows for a complimentary nature between the two questionnaires. Some aspects of the work experience that employees face will be seen as outcomes of the organisational state and any changes that are occurring. For example, worker well being. Other aspects, however, will be seen as measures of organisational design. For example, job autonomy or employee discretion can be seen at both the employer and employee level by using different sets of questions. The same level of autonomy should be captured at both levels, and any discrepancy between the perspectives at employer level and employee level will be informative itself.

Summary of concepts for measurement

Figure I of Chapter I of the Guidelines sets out the measurement framework for the construction of both employer and employee level questionnaires. The figure shows how an organisation will function in a dynamic environment, from the external drivers that cause an organisation to change, to the organisational design, to the economic outcomes for the firm and the social outcomes for the employee. From the employees perspective, a questionnaire must capture their involvement as members of the organisation and the consequences that they face from working in the organisation. The basic measurement framework sets out the concepts that are to be examined in an employee-level survey questionnaire. Specifically, the concepts of interest for this chapter are: job control; job demands, including control, mental and physical demands of the job; (indirect and direct) employee participation; the quality of jobs; employee well being; pay and other intrinsic rewards; work intensification; and employee competence and skills. Each of these will be analysed in section II of this chapter.

Constraints

What constraints are there which must be acknowledged in the preparation of the employee level survey questionnaire? The first major constraint is that any survey will be restricted, not only by cost considerations, but also by the length of time. Respondents limit the time they are willing to give up to answer questions if the survey is completed in their leisure time or else it will take up the time of the employer if it is completed while they are working. Therefore, chapter II of the guidelines set an optimum time of 30 minutes for respondents to answer the questionnaire. It is assumed that the questionnaire will be administered by telephone, though the questions could be adapted for alternative delivery modes. Such a limited time span implies that we have had to be very selective in item design. This is not therefore intended as an in-depth survey. Rather, it is designed as a broad and cross-nationally applicable survey on how employees perceive and experience organisational changes in their workplace.

The second constraint is that the survey at the employee-level will be restricted solely to the respondents’ knowledge of what is happening. Only what they are aware of and what happens around them with regard to organisational change will be within their purview when responding.

Principles for item design and selection

When constructing the employee questionnaire it is important to consider factors that will affect the item design. The first of these is international comparability – this survey if carried out would take place in many European countries and so the questions that appear in the questionnaire must be simple, objective and free of country-specific bias. A simple and objective harmonised questionnaire will allow international comparability.
The second principle for item design is that factual knowledge and behaviour-related and personal experience items are to be preferred where possible to items registering workers' subjective assessments, or their feelings and opinions about the organisation. For example, the questionnaire should ask whether they themselves have been appraised, rather than whether they thought that there was an appraisal system in the organisation; or, the questionnaire should ask what respondents do, if anything, with computers, rather than if they think they are good at using computers. This is a good principle to follow in many survey design contexts; it is especially useful where maximum international comparability is the aim.

Supplementing these principles for item design, we have also adopted three criteria for the selection of indicators and items for inclusion, in the light of the space constraints noted above. The first principle is policy relevance. We believe that, especially where survey space is scarce, priority needs to be given to indicators that may be ultimately relevant for policy guidance for governments and more generally for the work of the social partners. A second criterion, related to policy relevance, is centrality in debate (as reviewed in chapter I). The third is feasibility of measurement within a limited interview time.

### II. Concepts and indicators

In this section, we discuss possible indicators for capturing employees' perceptions of organisational change, and indicators which will characterise the employees' experiences that could be expected to be the outcomes of change. There is some overlap between these two objectives. For example, data about the extent of employee participation in decision-making will contribute both to researchers' understanding about organisational change and to their understanding about job quality. Indeed, the employee questionnaire will pick up both perspectives of organisational change and the implications of organisational change for them, in so much as it will affect them. Therefore, there is also a complementary relationship between the questionnaires at the employee level and the employer level. For example, questions on teamwork can be asked at both levels, and this will give different perspectives on how a team works from both the employer's and the employee's point of view. Of course, this is limited to areas where it is reasonable to assume that employees will have experienced some aspects of organisational change.

Before discussing the possible indicators for capturing employees' perspectives, it is useful first to set out the understanding of job quality indicators that informs the subsequent sections of the chapter. Unfortunately, there is no single agreed and validated definition of job quality in social science which can be picked off the shelf and applied in survey work. There are differences in emphasis and approach between economics, sociology and psychology; and even within disciplines there are a multitude of indicators, with conflicting conceptual bases, and usually requiring far too many items to be suitable for a multi-purpose international survey with limited interview time for each topic. So choices must be made and defended (Green, 2006).

First, job quality might be seen as a subjective concept, lying in the individual's subjective well-being. There is a range of domains of well-being across the different spheres of life, and in the context of this survey the relevant domain is that of work, and also the fit between work life and other parts of life. Therefore, it will be important in the survey to include indicators of well-being, and the closely-related concept of job satisfaction. However, many commentators would maintain that the subjective concept of job quality has shortcomings. It relies on an individualistic view of goal-seeking in the utilitarian tradition, and does not allow room for a notion of human needs satisfaction. From a practical point of view, responses to well-being questions are known to be considerably influenced by individual norms and expectations; so one can expect considerable divergence in employees' subjective responses even if objective work characteristics are the same for all. Since norms and expectations are affected by social environment, cultural factors may be expected to play a significant role when making international comparisons.

Consequently, we propose that indicators for worker well-being are included in the survey, but these must be seen alongside other indicators of objectively-conceived job quality. In this way, the relationship between objective and subjective job quality, and how it might vary across countries, is something that can be investigated by researchers, and not simply be assumed to be the same across all countries. The concept of worker well-being, together with associated indicators is discussed in section II.8 below.

An objective concept of job quality should be based, at least implicitly, on a theory of human needs at work (Green, 2006). It is likely to comprise both outcomes, such as the work rewards, and processes, such as the span of decision-making over which workers have influence. However, there is neither a single list of concepts that researchers have agreed upon, nor a ranking of importance of concepts. Below, we propose and defend several concepts for inclusion in the survey.

Our proposal for the employee questionnaire seeks to avoid a confusion that pervades some existing literature, in which the notion of job quality is broadened to encompass also the objectives of employing organisations. In the perspective drawn up for the purposes of the Lisbon agenda of striving for "more and better jobs", the concept of "quality in work" was developed, and several indicators have been proposed and monitored (European Commission, 2001, 2002). These indicators cover both aspects of the workers' experience that are related to human need, for example, intrinsic job quality, and aspects that are relevant primarily to their employers, for example productivity. Though productivity is expected to be related to the level of employees' wages, the association is far from perfect. From the perspective of MEADOW, the concept of productivity belongs to the sphere of the employer. The level of wages is not included among the indicators of "quality in work" which the Commission monitors, though recently the perspective on job quality has been broadened to include wages in the Commission's analyses (European Commission, 2008). The level of wages is a very important aspect of job quality, yet quite hard to measure well in a survey, even more so in a cross-national survey. Later, in section II.4, we propose a method of capturing wages directly, which will give a comparable banded measure of hourly wages. From the perspective of economists, not to include wages would seem very strange (Green, 2006).
While economics approaches job quality by emphasising the importance of indicators of wages and other forms of extrinsic material rewards, other social sciences also stress the importance of the intrinsic aspects of work. The two measurable aspects of intrinsic quality that have received most attention, both theoretical and empirical, are the extent to which people have autonomy at work (particularly Over their own job), and the extent to which they are able to utilise and develop their skills. These features of work are quite often covered in large scale surveys about work behaviours or attitudes; an example is the European Survey on Working Conditions (ESWC). Both aspects are rooted in the view that humans are creative beings. Workers who have no autonomy in their jobs, and who are just following very detailed job descriptions, can become like robots. A chance to influence aspects of their work helps to satisfy the need to think about as well as to do work. Equally, employees have a need to be able to develop their potential to operate effectively in whatever sphere they are working. Those whose potential and skills are underused become alienated, and are likely to register low levels of well-being. For these fundamental reasons, we consider it essential that both skills utilisation and job autonomy/ control are included in our list of indicators. Ultimately, the question at issue is whether organisational changes in the modern era are affording employees a full satisfaction of these fundamental needs, and how this varies across countries with very different labour market institutions. Job control is discussed in section II.3, while skills utilisation is taken up in section II.5.

Overall, in the light of these conceptual arguments and our principles and selection criteria noted above, the following eight concepts are included in the indicators to be described in sections II.2 through II.8: wages, employment security, working time, work-life balance, skills utilisation, job control, job demands, and employee participation and representation. The first four of these are extrinsic features; the remaining four are key intrinsic features. These objective aspects of job quality are to be measured as well as the subjective concept of work well-being, and the employees' perspective of organisational change. This selection means inevitably that some aspects of job quality are excluded, especially those concerned with the multiple facets of working conditions, or with qualitative features of job that are difficult to capture with survey instruments. The former are measured well in the ESWC, so the fact that they are to be poorly covered in the proposed MEADOW survey is perhaps less of a concern. For those wishing to map job quality across Europe, the ongoing ESWC will continue to be the obvious source of information. The intention here, however, will be to link organisational change with workers' experiences, including their job quality. To a considerable extent, we have used items from existing international surveys like the ESWC where suitable internationally validated items have been available for our purposes, though in many cases the items have had to be adapted for telephone delivery.

These concepts and indicators are developed into questions in the employee survey questionnaire, which is given as an appendix to the chapter. Box 1 presents the general structure of the questionnaire. Sections A through G of the questionnaire reflect concepts developed in sections II.2 through II.8. In the following, boxes will provide lists of indicators associated with each concept and the acronym of the corresponding questions which start with the section letter. For example, questions from the section on occupation will all start with an A. Of course, some questions can be related to different concepts. They will only appear in one section of the questionnaire, but they can be referred to in different boxes. For instance, questions about training are relevant to measuring both HRM practice and skills utilisation. In the questionnaire, questions about training (DTRAINED, DTRAINTIME) are located in section D, but they are referred to in boxes 2 and 5 from section II.1 and in box 10 from section II.5.

### Box 1: Structure of the employee survey questionnaire

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### II.1 Work Organisation and Types of Organisation

How work is organised, how the firm is structured and how the firm is changing its organisation will be crucial factors for this project that will be captured to a large extent in an employer-level survey. At the same time, though, many indicators of work organisation and organisational change can be found at the employee level. Indeed, in many cases it will be the workers who are key in carrying out organisational change. Also some indicators of work organisation, for example indicators on coordination mechanisms, will be easier to capture at the employee level than at the employer level. In addition to this, views of work organisation and organisational change from the employee perspective can shed light on the reliability of the employers' measures and also their ability to communicate changes to the organisation to their workers.

#### 1) Definition and rationale for survey inclusion

**Management practices and techniques**

Organisations are not only composed of people and objects, they also embed values and beliefs, knowledge and rules allowing managers to evaluate the way they perform and to orient behaviours and choices. Management practices and techniques are models of organised activity used by managers to rationalise actions they take in organisations. They contribute to shaping rules and methods of work.
Management practices and techniques are interesting from two standpoints. First, while they have proliferated, their use has progressively changed from the 1980s, from normative tools for collective action to analytic tools for building knowledge on the organisation. Molod (1997) identifies three different types of "modern" management practices and techniques: for investigating how organisations operate, for managing changes and for innovating. Thus, the implementation of new management techniques and practices are likely to be correlated with organisational changes. Second, managers have a discourse on management practices and techniques. They use it to communicate to stakeholders that organisations conform to their underlying rationale (Abrahamson and Fairchild, 1999). A caveat is that they follow fashion waves and they are periodically renewed, creating a semantic instability.

Chapter I has identified four management practices that form part of strategies for greater organisational flexibility and innovativeness and which are relevant for understanding the direction of organisational change: Human Resource Management (HRM) practices, Total Quality Management (TQM), lean production, and Knowledge Management (KM).

Organisational structure
The structure of an organisation is the product of its history. It is defined by the grouping of people and objects (like equipment or buildings) into sub-units, the systems to ensure coordination and integration of activities both horizontally and vertically within the boundaries of the organisation and outside these boundaries, with suppliers, customers and other business partners.

The prevalent designs of organisational structures or organisational forms have constantly evolved over time. From the mid-1800s to the late 1970s, organisations were seen as self-contained within closed boundaries. The functional, divisional and matrix structures, now viewed as "traditional forms", were spreading over that first period in large private corporations and in public settings (Chandler, 1962; Galbraith, 1973; Mintzberg, 1979). Decentralisation, horizontal organisational designs, with team and process based emphasis, developed in the 1980s until the mid-1990s. Internal boundaries of the organisation were reshaped in order to improve coordination and communication (Mintzberg, 1979; Cherns, 1976; Hammer and Champy, 1993). Since the mid-1990s, external and internal boundaries of organisations have opened up, resulting in a restructuring of value chains. The shape of networks relating business partners has become the critical element in organisational design (Dombberger, 1998, Davidow and Malone, 2003, Anand and Daft, 2007).

A crucial issue with regard to organisational structure is whether standardisation or mutual adjustment is becoming more prevalent. Organisational change can also lead to increased costs of coordination.

Information and Communication Technologies
Information and Communication Technologies (ICTs) are tools (equipment or software) that are used to produce, process, transmit and store information. ICTs are part of the management practices and techniques used by employers to shape rules and methods of work.

Information used in firms has undergone major changes since the mid-1800s. Just a century ago, firms were in the midst of an information revolution that introduced many to the office machinery and equipment that dominated over the first half of the twentieth century - 'from telephones and typewriters to tabular forms, stencil duplicators and filing cabinets' (Yates, 1994). New machines and also new techniques for handling information were produced like the use of forms to gather data and the use of graphical techniques to display information. Currently we are in the midst of a new information revolution with the marketisation on new waves of equipment (hardware) and techniques for handling information (software). The new techniques for handling information are described in the methodological manual for statistics on the information society (Eurostat, 2006) and include: computers, networks, internal and external connections, portable phones are the "new" equipments; e-mail software, databases and integrated software (for example workflow management and supply chain management).

Yates (1994) reminds us that an information revolution is driven by three important forces: information demands of firms, connected with their structure evolution (Chandler, 1977), supply of technologies and techniques and managerial ideology. During the initial information revolution from the mid-nineteenth century, the prevalent managerial ideology was a response to crises of coordination in growing firms. Yates labelled this ideology, after Littler (1961), as "systematic management" which involved two types of activities: recording and rationalising knowledge previously embedded in individuals only and collecting and drawing operating information up the hierarchy and using it to compare and evaluate performance of individuals and of the organisation's constitutive units.

The underlying ideology of the new information revolution does not break completely with "systematic management", but structural forms have evolved, opening their internal and external boundaries, creating more complex networks of communication channels than the traditional hierarchical ones. As a result, it is increasingly difficult to characterise trends in the evolution of organisations connected with the use of ICTs. The last waves of ICTs appear flexible, able to adapt to the organisational perspective of managers and workers’ needs.

Types of organisations
Work organisation encompasses the division of work into tasks, the bundling of tasks into jobs, the interdependencies between workers in the job done, the grouping of workers into teams, the workload and work rhythm and the systems of decision rights, support and control over the work done.

According to the strand of literature that describes and discusses work organisation and developments in organisational design, emphasis is put either on the ways to improve employee performance or on the ways to improve employee well being. There are four ideal types of organisational designs that are captured in the survey. The first strand of literature tries to identify what makes a high performance work system (HPWS) (Becker and Huselid, 1998), while the second strand sees the work system as the building block of a healthy organisation (Guest, 1999; Wood, 2005).^1

^1 See chapter III for a definition of HPWS.
When describing organisational designs, the literature often refers to a list of workplace practices. In HPWS studies, emphasis will be on functional flexibility, team work, increased role breadth and suggestion schemes while studies on healthy organisations will focus more on job enrichment, employee involvement, autonomy, employee participation, competence development and information sharing.

A flexible organisation is able to alter the allocation of its resources in response to demand or supply variations. The term “flexibility” has various definitions. As pointed out in Huws (ed.) (2008), these definitions have arisen since the 1980s. During the 1960s and 1970s the term was used by women’s organisations and trade unions to describe their demands for forms of work organisation which were more responsive to the needs of workers with responsibilities for caring for children or dependent adults, in order to achieve a better work-life balance. However, Huws (ed.) (2008) also indicates that flexibility can apply to: products, with the ability to produce products in shorter runs tailored to particular customer requirements, or to use the same workforce and machinery to make multiple products; production volume, with the ability to adjust the volume of production at short notice; organisation of the value chain (spatial flexibility), where there is the ability to transfer work from one location to another or to outsource insource the activity; staffing levels (numerical flexibility); number of hours (flexibility of working time); work (work flexibility), which is the ability to adjust the work system through workplace practices like semi-autonomous teamwork and functional flexibility (for example two job rotation practices: multitasking versus multi-skilling); and wages (wage flexibility), which is the ability to adjust wages both positively and negatively through workplace practices like profit sharing schemes or bonuses.

A healthy work organisation is able to foster employee development and to improve employee well being and working conditions. In particular, employees will be protected from detrimental effects connected with organisational changes. Two strands of literature emphasise healthy organisations: the first one puts the emphasis on labour relations (voice model), while the second one stems from work and organisation psychology and management science (Human Relations School; Sociotechnics, De Sitter 1981, 1994; Karasek and Theorell, 1990).

A learning organisation is an organisation where individuals learn as agents of the organisation and where the knowledge is stored in the organisation memory so that learning is also accomplished by the organisational system as a whole. Such an organisation is designed to be able to adapt continuously its means and people to changing requirements emerging from its environment or from its internal processes.

Organisational change
Organisational changes are the result of changes in organisational structure or in work organisation. These changes may or may not be directly intended by the employer and employees may or may not have direct influence on them. Organisational redesign results from employers' decisions about organisational structure or work organisation, often implemented through the adoption of management practices and techniques deriving from new management concepts. Greenan and Mairesse (2006) observe that organisational redesign is strongly connected with a higher intensity of meetings reflecting the coordination cost of organisational change. The nature of interactions between employers and employees around the process of organisational changes plays a critical role in stimulating economic and social performance and can be usefully captured at the employee level.

2) Factors relevant to the choice of indicators
Management techniques and practices
Most management practices can be best examined in the employer questionnaire, like just-in-time production and other logistic principles, customer orientation or value chain orientation. However, the employee questionnaire may be used to capture the perception of employees about whether and how specific work methods which are described as part of a given management concept are applied in the workplace. For example, employees can describe their experience of performance appraisal which are a HRM practice or indicate whether they are involved in problem-solving or service-improvement groups which are part of TQM. Employees may also give information about areas of work that are interesting to relate with a given practice identified in the employer level questionnaire. For instance, lean practices should have some consequences for job demand and job control.

Organisational structure
When looking at organisational structure it is necessary to identify both the grouping of people and objects and the levels of coordination and integration. There are some caveats that must be borne in mind when looking at coordination mechanisms. Chapter I of the guidelines outlined Mintzberg’s (1979) five coordination mechanisms: direct supervision; standardisation of work; standardisation of outputs; standardisation of skills; and mutual adjustment.

However, the work of Mintzberg does not take into account that computers and ICTs have come into the workplace on a wide scale and now play a role in coordination. Paying attention to this is also relevant, for example because it can be stress producing among workers (McGovern, Hill, Mills and White, 2007). Moreover, the principle of ‘management by trust’ (cf. Mishra, 1993; Spreitzer and Mishra, 1999) is another coordination principle that is not accounted for in the work of Mintzberg. Such coordination can be assumed to become more and more relevant, for example in relation to innovative performance. Lastly, the combination of coordination principles is also interesting to capture. For instance, workers may exercise some autonomy with a view to discovering new, more efficient, ways of performing their jobs. Subsequently, these ideas may be the basis on which tasks become standardised. Van Hooftegem (2000) describes it as ‘autonomisation’ (autonomy plus standardisation).

Information and Communication Technologies
In employer level surveys it is easy to capture the type of equipment, hardware and software adopted by the organisation. Employees can deliver complementary information about their use of ICT, for example, the time they spend using a computer or whether they are able to access the company’s IT system when working away from the
employer's premises. They can also give some information about how ICT is used at
the workplace, for example, whether the tasks they perform are recorded by a com-
puterised system.

**Types of organisation**

HPWS is best measured at the employer level. The employer survey developed by
Bloom and Van Reenen (2007) and the literature review by de Waal (2008) focuses on
HPWS. However, the employee survey can be used to relate characteristics of the or-
ganisational design described by the employee with HPWS indicators from the employer.
Additionally, specific questions could be designed for employees in a management
position.

For the flexible organisation, product, production, spatial and numerical flexibility are
better captured at the employer rather than at the employee level. Indicators for work
flexibility relate with organisational design indicators, while indicators of wage flexibility
also pertain to the category of HRM workplace practices and wages (see section II.4).
Finally, working time flexibility relates to work-life balance particularly (see section II.6).

As with the flexible organisation, the employee level indicators of healthy work organis-
ation are a combination of already mentioned indicators or indicators covered elsewhere
in the chapter: employee participation (see section II.2 of this chapter); job control and
job demands (II.3); job quality (II.6-II.7); and worker well being (II.8).

Indicators for learning organisations are covered by work organisation indicators as well
as indicators about participation (section II.2) and about skills utilisation (section II.5).

**3) Proposed indicators**

**Management practices and techniques**

The four management practices and techniques that are covered in the core employee
level questionnaire are HRM, TQM, lean production and Knowledge Management.
The proposed indicators for management techniques and practices that are included in
the survey are outlined in Box 2. In all cases, these indicators pertain to the employee's
perceptions about the area of interest.

<table>
<thead>
<tr>
<th>Box 2: Indicators for management techniques and practices</th>
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<td><strong>Indicators</strong></td>
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<td>Seniority in the company, on the work post</td>
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<td>Perception about job security</td>
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<td>Formal and informal training</td>
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<td>Performance appraisal/evaluation scheme</td>
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<td>Flexible or contingent component in wages</td>
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<td>Fringe benefits</td>
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<td>Organisational commitment</td>
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<td><strong>HRM indicators</strong></td>
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<td><strong>TQM indicators</strong></td>
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<td>Quality assessment and monitoring</td>
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<td>Participation in problem solving groups</td>
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<td>Continuous Improvement Process</td>
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<td><strong>Lean production</strong></td>
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<tr>
<td>High levels of work effort</td>
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<td>Influence of the customer on the pace of work</td>
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<td>Job rotation</td>
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<td><strong>Knowledge Management</strong></td>
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<td>Learning new things in work</td>
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<td>Problem solving</td>
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<td>Continuous Improvement Process</td>
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<td>Central database</td>
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| **Chapter IV sections**                                  |
| ACONTRACT, AFULLTIME                                     |
| AJOBTENURE                                               |
| FLOSEJOB, FGETNEWJOB, BUOBRISK                           |
| DTRAINED, DTRAIMTIME                                     |
| CAPPRAIS, CAPPRES                                       |
| EOVERTIME, IREMU                                        |
| HCHILDCARE                                               |
| CJOBLIKE                                                 |
| BQUALMON                                                 |
| BCIRCLE                                                  |
| DINNOVBEH                                               |
| BWEFFORT                                                 |
| BWORKPRESS                                               |
| BJOBROT                                                  |
| DLRNEW, DHELPWORKER                                      |
| DPROSSOLVE                                               |
| DINNOVBEH                                               |
| BDATABASE                                                |

**Organisational structure**

The first set of proposed indicators looks to identify the position of the employee in
the structure of the organisation (see box 3). It is very important to understand
the occupation that the employee has. This must be described fully using an internationally
accepted scale (see section III of this chapter).

Organisational changes in the modern economy mean that more and more workers are
working at places away from their employer's premises. It is important to know how
much time they spend away from their employer's premises, and how this has changed
over time as the organisation changes. Use of a computer and access to a company IT
system are also areas of interest that are to be examined in this survey (see indicators
on types of ICT use below).
The position of the employee within the establishment can be assessed according to their level of authority over other workers. Formal authority over other workers is examined directly in the survey as well as described by respondents when describing the kind of work they do for coding their occupation.

Respondents will also have some level of authority above them in many cases and so this needs to be examined. Again, this should be found in the description of the worker of their own occupation, but also included in the survey are questions about the ability of a manager or supervisor to affect the pace at which they work, to assess the quality of work, and if a manager or supervisor offers assistance to the worker.

Knowing how the establishment is organised will also involve knowing if workers work on their own or work with other employees within the organisation. Questions are to be included in the survey which ask if the respondent ever works in a group, where the other people in the group come from (within the organisation, outside the organisation or a combination of both), and what decisions the others in the group can influence.

Organisational changes may also lead to more work with other firms, and as such groups may be set up with workers from these other firms. Organisational change may also lead to employees dealing with work outside of their normal work hours.

For indicators of coordination and integration, it is proposed that we use indicators similar to the European Working Conditions Survey (EWCS). The EWCS focuses its measurement of coordination on dependencies in one’s pace of work on:

- the work done by colleagues
- direct demands from people
- numerical production targets or performance targets
- the direct control of a superior
- the automatic speed of a machine or movement of a product

The direct control of a superior is an indicator of direct supervision. Standardisation of work can be seized through the dependence of the work pace on colleagues or machines. Standardisation of output can be captured through the productive target item and through questions on quality standards, focusing on whom or what monitors the quality of work. In the EWCS, standardisation of work is also captured through questions on repetitive or monotonous tasks but because of the time constraint with this survey it is not included. The survey also includes a measure of computerised control of work (see section on ICT indicators below).

Mutual adjustment is examined by questions on assistance and support from other employees (see proposed indicators of work assistance in section II.3). It is also examined by looking at the employee’s own influence. These measures capture dimensions of the work systems. For example, they can be used as a base for measuring work intensification. The standardisation of skills is not easy to capture.

As outlined earlier in the section, organisational changes can increase coordination costs. Meetings are a good indicator of these costs (see section II.2 of this chapter).

Moreover, coordination mechanisms involve more and more written forms as well as the use of other languages in a context of globalisation, and this can also be an indicator of coordination costs.

### Box 3: Indicators for organisational structure

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td>AOECCUPATION</td>
</tr>
<tr>
<td>Places of work</td>
<td>BAWAY, BCWAWAY</td>
</tr>
<tr>
<td>Formal/informal authority over other employees</td>
<td>BSUPERVISE</td>
</tr>
<tr>
<td>Formal/informal authority of employees over respondent</td>
<td>BQUALMONb, BWORKPREb, BWRKASSISa</td>
</tr>
<tr>
<td>Isolated work and regular work with other employees</td>
<td>BWRKGROUP, BGROUPCHG</td>
</tr>
<tr>
<td>Regular work with people outside the firm</td>
<td>BWRKGROUPa</td>
</tr>
<tr>
<td>Standardisation</td>
<td>BWORKPRE, BQUALMON, BTARGETS, BSTANDARDSCHG</td>
</tr>
<tr>
<td>Mutual adjustment</td>
<td>BWRKASSIS, CAUT, DHELPWORKER</td>
</tr>
<tr>
<td>Coordination and integration</td>
<td>BWORKPRE, CMANMEET, BDATABASE</td>
</tr>
<tr>
<td>Coordination costs</td>
<td>CMEECHG, BFORLANG</td>
</tr>
</tbody>
</table>

### Information and Communication Technologies

Organisational change should involve increased levels of ICT use within firms, so it is important to include indicators of ICT within the employee survey. However, due to the time constraint that this survey faces, many of the things that could be examined at the employee level must be left out (see box 4).

The indicators selected for measuring ICTs include looking at employee's use of a computer, how often they use it and to what level of skill is their computer use in their job (see proposed indicator on use of computer skill in section II.5).

Do the employees have access to a central database? Do they use a computer when they are working away from their organisation's premises and can they access their organisation's ICT systems when working away from the organisation's premises (see also the proposed indicator on places of work in section II.1)? What type of hardware and other forms of software use cannot be included because of the timing issues previously mentioned but these indicators could be developed in a module of the core questionnaire.
Finally, do computers track an employee's performance? Is this information, which is recorded on the system, used to check how they are performing in their job?

**Box 4: Indicators for Information and Communication Technologies**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer use</td>
<td>BUSECOMP, BCOMPTIME</td>
</tr>
<tr>
<td>Self assessment of computer skills</td>
<td>BCOMPLVL</td>
</tr>
<tr>
<td>Types of ICT use</td>
<td>BDATABASE, BWORKPRES, BWAYAYb-c</td>
</tr>
<tr>
<td>Change in ICT use</td>
<td>BCGHCOMPTIME</td>
</tr>
<tr>
<td>ICT monitoring</td>
<td>BTASKREC</td>
</tr>
</tbody>
</table>

**Types of organisation**

The proposed employee level indicators for organisational design are shown in box 5. The job rotation indicator will look at the functional flexibility of the organisation. The groupwork indicator will look at whether the employee is involved in working with groups or teams, and at what things a group can influence, for example what tasks it is to do and who is to join the group? (See proposed indicator on isolated work earlier in section II.1)

In addition, task complexity, skill development (see section II.5), job demands and workload (see section II.3) and job control and autonomy (see section II.3) are also indicators of the organisation of work that are included in the employee survey but are discussed elsewhere in this chapter.

At the employee level, indicators for HPWS include performance targets, incentives and tracking, as well as whether an employee has access to information about the organisation and their ability to express views about the organisation.

As outlined earlier in section II.1 the proposed indicators for flexible organisation and healthy work organisation are covered elsewhere in this chapter or else are better captured at the employer level. Indicators for the learning organisation at the employee level are discussed elsewhere in the chapter: learning new things, and helping others to learn; formal and informal training; assistance and social support; access to information; participation in problem solving groups, brainstorming or suggestion schemes; and Continuous Improvement Process and innovative work behaviour.

**Box 5: Indicators for types of organisation**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job rotation</td>
<td>BJOBROT</td>
</tr>
<tr>
<td>Groupwork</td>
<td>BWROGROUP</td>
</tr>
<tr>
<td>Task complexity</td>
<td>BPROBSOLVE,</td>
</tr>
<tr>
<td>Skill development</td>
<td>DLRNNEW, DTRAINED, D.TRAINTIME</td>
</tr>
<tr>
<td>Job demands and workload</td>
<td>BWEFFORT, BWORKPRES</td>
</tr>
<tr>
<td>Job control and autonomy</td>
<td>CAUTC, CAUTS, CAUTH</td>
</tr>
<tr>
<td>Setting of performance targets</td>
<td>BTARGET</td>
</tr>
<tr>
<td>Performance incentives</td>
<td>IREMUN</td>
</tr>
<tr>
<td>Performance tracking and tracking feed-backs</td>
<td>BTASKREC, CAPPRAISE, CAPPRES</td>
</tr>
<tr>
<td>Access to information about organisation</td>
<td>CMAANMEE, BINOLVE</td>
</tr>
<tr>
<td>Ability to express views about organisation</td>
<td>CMETEVIEWS, CEXPVIEWS, CMEE-TIMPACT</td>
</tr>
</tbody>
</table>

**Measurement of changes in work organisation**

A selection of core work organisation indicators are expressed both in level and in terms of perceived change over the two-year period chosen in the general survey framework presented in Chapter II of the Guidelines. Areas covered are given in box 6: amount of time spent in teams, difficulty to meet targets, frequency of high intensity work, time spent away from the employer's premises, time spent using a computer, time spent in meetings and change in skill requirement. This will help to better trace trends in employees' work experience. Moreover, the linked survey structure will allow relating these trends to organisational change measured at the employer level. A one-year follow up wave of the employee survey with a panel design is also proposed in the general survey framework. This second wave of the employee level survey would allow going further into the measurement and analysis of trends in employees' work experience. It would also contribute to the analysis of the adaptation process of employees when employers implement organisational changes.

Another set of questions contribute to a general assessment of organisational change from an employee perspective. They conclude section B of the questionnaire. In a first question, the employee is asked whether the following changes have taken place in the workplace: implementation of new or significantly changed machines, techniques or ICT systems, relocation of employees, implementation of a new or significant change in the method of work and introduction of a new or significantly changed product or service. Next, the strength of the impact of the change on the employee's tasks and duties is assessed. After that, the employee is asked whether he/she values these consequences positively or negatively, whether his/her feeling of job insecurity is affected and what the
involvement in the change process was like.

**Box 6: Indicators of changes in work organisation**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in the amount of time spent working in teams</td>
<td>BGROUPCHG</td>
</tr>
<tr>
<td>Change in the difficulty to meet targets</td>
<td>BSTANDARDSCHG</td>
</tr>
<tr>
<td>Change in frequency of work to tight deadlines or at very high speed</td>
<td>BCHGWEEFT</td>
</tr>
<tr>
<td>Change in the amount of time spent working at places other than employer’s premises</td>
<td>BCHGWAWAY</td>
</tr>
<tr>
<td>Change in the amount of time spent using a computer</td>
<td>BCHGWAWAY</td>
</tr>
<tr>
<td>Change in the amount of time spent in meetings</td>
<td>CMEETCHG</td>
</tr>
<tr>
<td>Change in the skill needed to do the current job</td>
<td>DSKILLCHG</td>
</tr>
<tr>
<td>Perception of changes that have occurred at the workplace</td>
<td>BCHANGES</td>
</tr>
<tr>
<td>Impact of these changes on tasks and duties</td>
<td>BCHANGESb</td>
</tr>
<tr>
<td>Point of view about the consequences of changes</td>
<td>BCHANGESc, BJOBISK</td>
</tr>
<tr>
<td>Involvement in the change process</td>
<td>BINOLVEA-e, BINOLVESAT</td>
</tr>
</tbody>
</table>

II.2 Employee Participation and Representation

1) **Definition and rationale for survey inclusion**

Employee participation is an important form of labour relations in contexts of innovation and organisational change. Social dialogue is playing a key role in the establishment of the European social and economic space. Social dialogue is taking place in the form of labour relations systems (LRS) that are usually defined as "the multi-level framework relating employees and their organizations with employing enterprises and their organizations." (Müller-Jentsch: 1997, quoted by Höland: 2007). In the last 10-15 years it can be argued that labour relations have become less regulated and more unstable and flexible. This is the result of the wider process of decentralisation in which the transfer of organisational and entrepreneurial power is moving downwards from the enterprise or enterprise groups to smaller units. As Höland puts it: "The increase in flexibility and adaptability of market conditions on enterprises, and the decrease in transaction costs have contributed to the managerial approach of reducing the importance of central decision making instead favouring greater decision making at the smaller unit level".

However, this argument is not necessarily verified empirically, and so in considering an employee survey one must make sure that there are a balanced set of variables that can both capture decentralisation and centralisation so as to challenge whether which view is correct.

Employee participation is also crucial for innovation and organisational change. Nielsen (2001) argues that employee involvement and participation play a key role in mobilising the organisational knowledge that is the so-called "embedded competence which rely on the ability of the human assets continuously to learn and develop knowledge as a collective resource, as well as power to make use of and get through with new knowledge and ideas in the organization". This is especially important in the situation of organisational change when the appropriate knowledge flow is crucial in handling growing internal and external uncertainties.

Also important for workers is the influence they can achieve over their managers. Traditionally, this was achieved through trade unions, providing wage bargaining representation and a way for employees to voice any issues that they had with their work. However, there has been a large decline in union coverage in several countries over the last twenty years. There is evidence that other types of communication with management have grown and may have taken the place of unions in providing workers with a 'voice' (e.g. Millward et al., 2000). This may take the form of work committees, regular meetings to consult with workers, regular meetings to inform workers or suggestion schemes (Green, 2006).

Not surprisingly, there is a plethora of definitions on employee participation. Many of them (see for example Heller et al., 1988; Poutsma, 2001) agree that participation is a group process in which employees and their employers take part. For the purposes of the MEADOW project the definition of participation adopted by Heller et al. is simple and objective: "Participation is a process which allows employees to exert some influence over their work, over the conditions under which they work and over the results of their work."

There are seven axes along which MEADOW will investigate employee participation, each of which will briefly be discussed. The seven axes investigated are:

- The form(s) it may take involving individual(s) or collectives
- The issues it may deal with
- The timing of employees' involvement
- The influence employees may exert through the forms of participation
- Permanency
- Independence
- Facilitation

---

2 The term 'industrial relations' is used almost exclusively in the literature. Contrary to this practice, we intend to use 'labour relations'. In our view, the term of 'labour relations' is more general and it indicates the growing importance of the idea and practice of social partnership not only in the field of traditional industrial economic activities but in the service sector and especially in the fast growing branches of the New Economy.

3 Höland, ibid, p. 171.

4 Nielsen, 2001, p. 34.

5 Poutsma, 2001, p.5.
Poutsma (2001) distinguishes "four basic pillars" that employee participation within organisations may take. These are: direct participation, where an employee can influence work related issues on a daily basis; indirect or representative participation, where an employee has an indirect influence on work related matters through their employee representatives; financial participation, where an employee can participate in effectiveness of the enterprise through profit sharing for example; and collective bargaining, where different groups within the organisation will attempt to influence labour conditions within the company or even the sector of employment.

What issues will employee participation look to solve? The issues can be put into four broad categories: task-related issues (day to day challenges and improvements to the processes or the tasks an employee faces for example); working conditions (improvements to the day-to-day surroundings and tasks an employee faces, the wage they receive for example); employment practices (training issues for example); and strategic issues (selecting managers, major investment decisions for example).

Nielsen and Lundvall (2007) distinguish between three phases of employee participation: the idea phase, decision phase and implementation phase. The idea phase is where employees are involved in the search for the solution to a problem, the decision phase is where employees are involved in deciding between different possible solutions, and the implementation phase is where employees cooperate in determining how the solution is to be implemented.

How much influence will an employee exert through their participation on the organisation? Interestingly the employees and employer could easily see this from different point of views.

How permanent is the participation? Some forms of participation may be temporary, lasting for only a short period of time (for example a working group convened to discuss impending redundancies), whilst other forms of participation may be more permanent (for example a permanent staff consultative committee).

How independent is the participation of the employee? Many forms of participation are employer initiated or exist only as long as the employer deems them to be useful (for example many forms of direct participation). Others (such as trade union forms of participation) have a level of independence and are not generally subject to an employer's control.

Finally, how is participation facilitated by the organisation? Does the employer embrace the existence of staff associations or do they try and work against it? Does the employer encourage staff to become members of a trade union or do they discourage it?

2) Factors relevant to the choice of indicators

Some issues about employee participation are going to be difficult to approach in an employee survey. One key factor with employee participation is that the level of influence depends on different forms and institutions of participation. Furthermore, the legal framework in each country is important, too. Hence, the level of influence may be measured by observing the form of employee participation and the actual involvement of employees at the workplace. Additionally, the permanency and independence of employee participation is obviously also dependent on the same factors.

Additionally, when considering a randomly chosen employee it is very unlikely that they will be able to know all the issues that are currently being discussed or are to be raised with the employers by any employee representatives. What a respondent will know is their own participation in issues such as those discussed in the previous section. Therefore, many of the areas of participation, such as the existence of trade unions and the existence of collective agreements, will be better analysed at the employer level.

It will also prove difficult to look at any financial participation as this will also mean that the question is asking about wages. If too many questions are asked about wages this may put off respondents and deter them from answering the questions correctly.

In terms of European comparison, one must be very careful with the type of questions that are asked. For example when considering trade union membership it may be that union membership does not have the same meaning in one country as in another. For example, in France nearly all employees are covered by a branch level collective bargaining agreement whether or not they are a union member. These remarks also remain true for employee representation.

3) Proposed indicators

Membership of a trade union or staff association can be examined at the employee level (see box 7). Existence of these institutions cannot be examined at this level as not all employees will know of their existence. Additionally, organisational change may lead to changes in the level of union membership or staff associations, so the survey needs to find out if their membership is longstanding or not.

The survey can examine the direct participation of the employee on their daily work tasks. (See proposed indicator on freedom to make decisions in section II.3 below)

As mentioned in the previous section, employees are asked retrospectively about their views on the changes that have occurred in the workplace over the past two years. When changes are identified, the survey asks employees about how they have been involved in the process of change: Did they personally take part in deciding them or negotiating them? Was a trade union or work council involved? Have they been personally consulted or informed before the changes were introduced? Are they satisfied with their level of involvement in decisions about the changes?

The involvement of employees at the workplace through meetings is also generally assessed in the survey, to identify participation around current topics of working life. Are they involved in meetings that inform them about changes to the organisation, are they involved in meetings where they can express their views over the changes that are going to take place, and if so, what areas of the organisation can they express their
views on? Involvement of all employees at the establishment can be examined at the employer level. Organisational change may also involve changes in the level of meetings that employees attend, and so the survey needs to include a measure of whether or not the level of meetings has increased or decreased over the past two years.

While the existence of a performance appraisal system and of any type of incentive pay or profit sharing is best examined at the employer level, it is useful to investigate how it translates at the employee level. Does the pay of the employee include flexible parts? Has the employee had a performance appraisal in the last year? How does this appraisal affect her/his prospects on pay, promotion or training?

Box 7: Indicators for employee participation and representation

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership of trade union or staff association</td>
<td>UNIONMEM</td>
</tr>
<tr>
<td>Change in trade union membership or staff association</td>
<td>UNIONMEML</td>
</tr>
<tr>
<td>Participation in decision making regarding own duties</td>
<td>CAUT</td>
</tr>
<tr>
<td>Involvement in the decisions about change</td>
<td>BINVOLVE, BINVOLVESAT</td>
</tr>
<tr>
<td>Involvement of employee through meetings</td>
<td>CMAANMEET, CMEETVIEWS, CEXPVIEWS, CMEETIMPACT</td>
</tr>
<tr>
<td>Change in involvement level of employee through meetings</td>
<td>CMEETCHG</td>
</tr>
<tr>
<td>Use of incentive pay schemes and/or profit sharing</td>
<td>IREMUN</td>
</tr>
<tr>
<td>Involvement in performance appraisal</td>
<td>CAPRAISE, CAPPRES</td>
</tr>
</tbody>
</table>

II.3 Job Control and Job Demands

1) Definition and rationale for survey inclusion

Job demands and job control are two dimensions of the working situation that will have an impact on the well-being of employees. Job demands look at the tasks that need to be completed and in what time frame, and is often referred to as 'work load'. Job control looks at the amount of decision making a person has in the work he/she does in a given working day, which is referred to as 'decision authority', and the ability to use and possibly improve his/her skills at the same time, which is referred to as 'skill discretion'. So a given person will find his/her well-being depending on his/her in which there will be a certain job demands and a certain level of job control. Together, job demands and job control provide an assessment of the quality of the job content not of the quality of working life.

Both job demands and job control can be looked at using different models. An example that looks at both is the widely used and validated 'Karasek's JDC model'. This model states that in the work situation a number of stress inducing circumstances occur that can be reduced to two basic dimensions, namely job demands and job control (JDC).

Karasek's JDC model states that the greatest risk to physical and mental health from stress occurs to workers facing high psychological workload demands or pressures combined with low control or decision latitude in meeting those demands. In addition, the model contains important predictions regarding the socialisation of personality traits and behaviour patterns which occurs at work. Chronic adaptation to low control-low demand situations can result in reduced ability to solve problems or tackle challenges, and feelings of depression, or 'learned helplessness'. Conversely, when high job demands are matched with greater authority and skill use, more active learning and greater internal locus of control develop. This can enable individuals to develop a broader range of coping strategies. As such, the model provides a justification and a public health foundation for efforts to achieve greater worker autonomy as well as increased workplace democracy.

The JDC model is especially useful for looking at organisational change as it allows the creation of a link between the subjective perception of employees (the psychosocial perspective that can be asked in an employee questionnaire) and the objective work situation (the organisational perspective that emerges from the organisation questionnaire (see chapter III). The model relates the psychosocial load to work characteristics as workload and possibilities for control. These work characteristics, however, do not just happen to be as they are. They are determined by the way work is organised in companies and offices. In other words, they are determined by the structure of the division of labour in the organisation. When this structure leads to a job design in which the employee is continuously confronted with problems, while at the same time the job design is such that it does not offer the possibilities for control to tackle these problems, then stress risks are present.

The JDC model has been extended by Johnson and Hall (1988) to include a third factor, the beneficial effects of workplace social support. The way in which jobs allow employees to support one another or receive support from superiors will influence the extent to which stress risks will eventually lead to stress. Therefore, the Karasek-model is often referred to as the Job Demands-Control-Support (JDCS) model. In this model the lack of social support combines with job strain to increase the likelihood of stress-related conditions.

One of the major inconsistencies in the JDC model (and hence the JDCS model as well) is the inclusion of 'skill use' which makes a comparison between the job (required qualifications) and the employee (available qualifications). Although the model focuses on objective constraints or action in the work environment, here a person-environment fit perspective is introduced. While it is important that the design of the job is such that it offers learning opportunities during work, the matching with the employee concerned is sometimes left out in order to maintain a purely structural approach.

Another option that therefore could be used is the Effort-Reward Imbalance (ERI) model as developed by Siegrist (1996) that was discussed in chapter I of the Guidelines. This model adds a personal component to the Karasek model. The ERI approaches job demands and job controls by integrating personal characteristics as an intervening factor. The worker exerts effort (job demands and obligations) in accordance to the
How much skill is required to perform the job can be examined using the employees' report of what level of education would be required to get the job today (see proposed indicator on level of educational achievement required for a job in section II.5).

Skill discretion involves being able to perform various different tasks in a job, and this is captured in this survey by examining how often individuals can change the content of the tasks in their job, using the four point scale outlined above.

A lack of skill discretion will mean that the tasks involved in a job are very repetitive. Within the survey this is not examined directly. Instead this is measured through questions about how often an employee can alter the order in which they do their tasks; whether an employee's tasks are recorded on a computerised system; and whether the pace of the employee's work is determined by computer or machine or assembly line. Individuals whose job is repetitive in nature are more likely to be working on an assembly line, having their work monitored by a computerised system, and they will not be able to alter the order of their tasks very often if at all.

Decision latitude is also measured by decision authority, and the measures of decision authority are employees' ability to: make their own decisions in their job; choose how they perform their tasks; have a lot of say in their job. This is measured using four questions on how often the employee has the ability to alter the content of their work, the speed at which they work, the order in which they undertake tasks and how they undertake tasks.

Finally, to look at the support part of the JCDS model, work-related social support is examined by asking if the employee ever feels the need for assistance, and then asking if he/she receives assistance from their managers and co-workers.

### Box 8: Indicators for Job Control and Job Demands

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working to tight deadlines or at speed</td>
<td>BWEFFORT</td>
</tr>
<tr>
<td>Change in working to tight deadlines or at speed</td>
<td>BCHGWFFORT</td>
</tr>
<tr>
<td>Conflicting demands</td>
<td>BTARGETC</td>
</tr>
<tr>
<td>Learning new things</td>
<td>BDLRNNNEW, DHELPWORKER</td>
</tr>
<tr>
<td>Job requires high skills</td>
<td>DEDGETJOB, DEDDOJOB</td>
</tr>
<tr>
<td>Task variety</td>
<td>CAUTC</td>
</tr>
<tr>
<td>Repetitiveness of tasks</td>
<td>CAUT, BTASKREC, BWORKPRES,</td>
</tr>
<tr>
<td>Freedom to make decisions</td>
<td>CAUTC, CAUTS, CAUTU, CAUTH</td>
</tr>
<tr>
<td>Work assistance</td>
<td>BWORKASSIS, BWRKASSISa-b</td>
</tr>
</tbody>
</table>
II.4 Wages

1) Definition and rationale for survey inclusion

The wage is the monetary remuneration that an employee receives from their employer in return for the use of the employee’s labour as a factor of production. The employee’s labour supply is typically measured in hours. The hourly wage then provides a measure of the monetary reward for the supply of one unit of labour. Total remuneration is the monetary wage paid to the employee plus other forms of employee remuneration such as employers’ pension contributions, health insurance payments and benefits in kind. Wages form a central part of any employment relationship. For employers, the wage is the cost of securing the worker’s productive capacity, and often accounts for a significant share of total costs. For most employees, the wage is the primary form of compensation that they receive in return for their labour, and is usually their principal source of income.

In the context of organisational change, high labour costs may serve as the prompt for an employer to alter certain aspects of the production system. This may occur by the employer either substituting capital for labour, substituting high-cost labour for lower cost labour of the same ability (e.g. through off-shoring) or seeking to increase the productivity of existing workers through the re-organisation of working methods (see Forth and O’Mahony, 2003, for a discussion). From an employee perspective, high wages may serve as a motivation to resist organisational change if that change may offer some risk of job loss. Employees may also seek to secure wage increases as a form of compensation for reorganising their working methods (Bryson et al., 2005), particularly if the new working arrangements are to require greater levels of effort.

More broadly, payment systems are an important aspect of theories of HR innovation, since wages are accepted as a key motivating factor for employees. This is seen in the theory of efficiency wages (Akerlof, 1982, 1984; Akerlof and Yellen, 1990), in which increases in wages are argued to have the potential to elicit increases in worker productivity, and in approaches to contingent pay, in which greater effort is induced by establishing a direct link between output and reward.

Wages also have a value in serving as a proxy for overall job quality, since higher wages tend to be positively correlated with better non-wage terms (e.g. redundancy payments) and good working conditions (see, for example, Dale-Olsen, 2006). On the other hand, the theory of compensating wage differentials suggests that some jobs offer high wages because they are particular physically taxing or dangerous (Smith, 1982). Equally, some low-paid jobs offer considerable job security, hours flexibility, job autonomy and so on. The level of the wage should also not be taken in isolation from its social context. An employee’s degree of satisfaction with their wage is positively associated with their wage rank within the workplace (Brown et al., 2005). In other words, wage differentials are important to employees as well as the actual level of wages.

Given these various issues, a survey that seeks to investigate ‘the economic and social impacts of organisational change’ ought naturally to have some interest in the following: wage levels; wage inequality; wage dynamics; the composition of wages; and total remuneration.

2) Factors relevant to the choice of indicators

What are the factors that will affect the choice of indicators? The first issue concerns pinning down exactly the concept to ask about. For example, the difference between the monetary wage and total remuneration is often ignored in survey enquiries (and thus in data analysis) because of the greater difficulties of measuring the latter. However, the difference between the two may not be trivial. What is more, the proportion of total remuneration accounted for by the monetary wage differs across sub-groups of the population, typically being lower for men than women (Joshi and Paci, 1998; Anderson et al., 2001) and lower for higher-skilled workers, while it would also likely differ across countries due to differences in work-based pensions and different health insurance systems for example.

Total labour costs may be of interest, since organisational change may involve additional recruitment costs or training costs. However, in the context of the employee, one would ideally wish to measure total remuneration. As indicated above, surveys of individuals typically do not seek to measure total remuneration because the non-wage components are often not well known by employees. For instance, an employee’s payslip will not list his/her employers’ pension contributions or social security payments. Some surveys address this problem by additionally asking employees whether they receive certain non-wage benefits, for example asking the employees whether their employer makes pension contributions or pays for private medical insurance on their behalf. However, such measures are of only limited use without any associated valuations. Accordingly, surveys of individuals typically seek to measure the wage.

The average wage per hour ideally should take into account their usual hours, any overtime they work which is paid, any pay that is unrelated to hours of work (for example tips, clothing allowances) and any unpaid work they may undertake. However, when trying to find out an individual’s average wage by asking for it directly there will be three reasons why individuals may not answer the question accurately:

- They know their overall earnings and their overall hours of work but are unable to accurately divide one by the other
- They know their earnings and hours of work and have the ability to do the maths but are unwilling to expend the effort
- They do not know one of either their earnings or their hours of work.

Therefore, to remove any potential non-response because of the first or second reason, it is usually best to ask for earnings and hours of work separately. Indeed, one probably wishes to measure hours of work independently anyway, in order to provide one indicator of effort.

The second major question that affects the choice of indicator is whom to ask, given that both employees and employers are usually party to information about an individual...
employee's wage. Wages are also sometimes recorded in administrative data sources. Typically, the various sources do not tend to provide the same value (see Bound et al., 2001, pp. 374-3765 for a review of validation studies). For instance, an employee is less likely than his/her employer to refer to records when asked about their wage, and this necessarily offers more scope for recall errors and rounding. On the other hand, employers are likely to be aware only of paid hours, and in that case would understate the overall hours of work and so over-state the wage when compared with an accurate employee report.

More broadly, however, employers are likely to have significant concerns about data protection if asked to report the wage of a named employee, unless the request comes as part of a mandatory government survey. And the availability of wage data from administrative sources is likely to be uneven and also to involve considerable barriers to access. Accordingly, it is most likely that the measure of wages would be obtained from the employee. The employer may, nonetheless, be a willing and valuable informant on the distribution of wages at the establishment, thus providing a measure of wage inequality.

3) Proposed indicators

Given the preceding discussion, the proposed indicator is the hourly wage of respondents. To do this it will be necessary to have both their salary and their hours of work so as to gain their hourly wage.

However, when asking about wages to individual respondents there are additional issues that have to be addressed that are associated with the measurement of the wage and overall hours of work. First, one would ideally wish to measure the wage gross of any taxes or other deductions, since the level of such taxes may differ for reasons unrelated to the wage/effort bargain, for example family circumstances or levels of non-work income. Some respondents may only know net wage and, in this case, a questionnaire may accept net wage rather than register no response. The estimation of gross wage is necessarily fraught with error in such cases, but may result in less measurement error overall than if the case is to be excluded from any analysis.

Second, what period of measurement should be used when looking at wages? Ideally the wage and hours of work should be measured for the same period. This can be defined in the questionnaire (for example asking respondents to state gross earnings and hours in the month or year prior to the survey). However, the respondent may not know their wage for that particular period. The normal practice is to ask respondents about their weekly hours, reflecting the fact that this is the period they will know best. For the wage, however, the easiest period for most is the month. For those who are paid for a different period a simple calculation will need to be made, which introduces the possibility of error; however, this problem is mitigated by the use of wage bands, shortly to be discussed.

Third, wages are likely to vary because of changes in the wage and hours of work from period to period. This may occur because of sickness absence (which will reduce hours of work and may also reduce the wage) or because of the irregular payment of bonuses (which will raise the wage in a particular period although the bonus may actually relate to performance over a longer period, say a year). As a result, it is common to ask the respondents to state their usual earnings and usual hours. Some surveys also have a separate question to ask about total earnings from bonuses or commission over the year.

Fourth, is the issue of whether or not to ask for an exact figure of the wage. A question that seeks to obtain an exact figure for the wage will offer more information to the analyst than one which seeks to categorise the respondent into one of a number of categories or bands based on the level of the wage. However, questions that ask for an exact figure for the wage typically attract higher rates of non-response, either because people do not know the exact figure, are unwilling to look it up or are reluctant to release the information. Furthermore, this propensity to respond varies considerably across countries within Europe (Parent-Thirion et al., 2007, p. 89) raising the prospect of differential non-response biases.

It is more feasible to request an exact figure if the survey is administered via a personal interview, since the interviewer is then able to reassure the respondent about confidentiality and so on. In a face-to-face interview, the interviewer may also be able to encourage the respondent to refer to a payslip. Respondents who do not refer to pay slips have been shown to approximate their earnings by rounding. Accordingly, in the absence of a payslip, an 'exact figure' may not be exact: rather, there may still be some degree of measurement error.

An alternative is to employ a categorical response list, in which respondents are invited to place themselves within one of a number of earnings bands (e.g. deciles). If a banded earnings question is used but continuous data are collected on hours worked, the method of interval regression devised by Stewart (1983) allows for the estimation of traditional wage equations. An alternative is to assign each respondent in a particular band the value of the mid-point of that wage interval, and then to employ traditional OLS. However this cannot be expected to yield unbiased estimates.

A more fundamental problem with banded earnings data however, is that it makes the analysis of income dynamics very difficult. Yet, this final problem with earnings bands has to be discarded because of the usefulness of bands when looking at the international comparability of the proposed question.

An important issue is the equivalence of bands for the earnings question. Since earnings levels differ markedly across Europe, employing the same absolute bands in different countries would lead to within-country bunching across few bands, and hence too little within-country dispersion would be captured. In addition, absolute bands would fluctuate according to currency shifts between the Euro and other European currencies.

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4 Moreover, these biases are not random, being more likely among salaried workers.
To circumvent these problems, one can devise country-specific bands determined by the decile points in each countries hourly wage distribution (as provided from another source). When these bands are compared at the relevant purchasing-power-parity exchange rates, analysts will be able to undertake international comparable analyses; while within-country analyses of the distribution across the deciles will have plenty of scope.

In sum, to measure the wage it is recommended to ask for a respondent's monthly gross salary or wage, using a categorical response list of earning bands determined by country-specific decile ranges, and for the usual hours of work (see proposed indicator on the working week in section II.6).

**Box 9: Indicators for Wages**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross salary</td>
<td>WAGE, IREMUN</td>
</tr>
<tr>
<td>Hours of work</td>
<td>AHOURLS, AFULLTIME, EOVERTIME</td>
</tr>
</tbody>
</table>

**II.5 Skills Utilisation**

1) **Definition and rationale for survey inclusion**

Perhaps more than other concepts discussed in this chapter, skill or competence is a key issue both for employees and for employers. By the general phrase "skills utilisation", we encompass three main concepts that are relevant to the employees' experience of organisational change: the level of skills or job competences, their development or enhancement, and the extent to which the job skills match the skills possessed by employees. All three concepts need to be captured in the survey.

The relevance of skills needs little justification. Theories of "skill-biased technological change", or equivalently of the "knowledge economy", are at the heart of a widely shared understanding of what has been happening to labour markets across the industrialised world in the last several decades. An important school of thought puts these theories at the forefront of explanations of changing inequality, though this is not a consensus view point. The general belief, however, is that the prevailing technology of the current era is such as to increase the relative demand for more skilled labour, at the expense of unskilled labour, in the advanced economies. Specifically, it is held that new information technologies based on computers, aside from requiring widespread acquisition of computing skills, are substituting for much of the low-skilled work that traditionally offered opportunities for the large proportions of populations that left school without higher qualifications or training, and generating jobs needing graduates or equivalently trained labour. The idea that we live in a knowledge economy provides the reason for this increasing demand for highly-educated labour, namely that better educated workers are needed to enable companies to compete in a world where the prime source of competitive advantage comes through innovation and efficiency, which derive from superior knowledge and competences among the workforce. Economists typically encompass these arguments in the phrase "skill-biased technological change".

Recent thinking emphasises, however, that new technologies may not be able to replace all types of low-skilled labour (Autor et al., 2003). Rather, it is primarily the routine jobs and tasks that can be automated, while non-routine manual jobs persist. Such jobs might still be low-paid, if only because there is an abundance of supply of workers able to perform such jobs. As a result there can over time develop a polarisation of a nation's workforce, in which high-paid jobs for university-educated workers expand the fastest, followed by those at the lowest end, where jobs expand because of demographic demand and other factors. In this scenario, it is the middle-level jobs that disappear, even those requiring cognitive skills, if the required tasks are fairly routine and replaceable by computerised equipment. The higher-level jobs expand fastest, however, because there is a complementarity between computing skills and the analytical and interactive skills needed to introduce and make effective new technological and organisational systems.

In this perspective, what is important is the change in deployment of generic functions and skills, categorised according to the extent to which they are seen as routine or non-routine, and along other dimensions (Spitz-Oener, 2008).

Ideally, the key generic skill to be measured is computing skills, but other generic skills have been found to be increasingly important, in particular communication skills and literacy skills (Felstead et al., 2007). Higher-level interactive and analytical skills are argued to be complementary with technological and organisational change. Distinction is frequently made also between basic skills – literacy and numeracy and IT skills up to a threshold level that facilitates both employability and the ability to learn – and other higher level skills. Equally, we must distinguish between such generic skills and the attitudes and orientations that are important for doing good work – for example, good time-keeping, customer orientation, service sensitivity, honesty. Often it is the latter that employers emphasise in their recruitment, rather than technical skills.

To these categories must be added the distinction between competence and skill. The former has been defined as an "underlying characteristic of an individual which is causally related to effective or superior performance in a job" (Mansfield, 2004). The latter is seen by economists as a productive input or an asset of "human capital". However, "skill" is also seen in more narrow terms across a range of perspectives, and has undergone a certain evolution in its meaning over time.

For practical purposes the distinction between skills and competence is likely to be of less relevance in a survey context than in detailed job analyses in qualitative case studies. In either case, what is particularly relevant is the distinction between the skills or competences that an individual possesses and those that are needed to perform jobs. This distinction is important both for theoretical and for practical reasons.

The theoretical justification for wanting to capture this distinction by one or more indicators in the survey is that a mismatch between own-skills and job-skills is an indication that employees may not be fulfilling their potential in the workplace; or conversely that they are struggling to keep up because of deficient skills. There is evidence that skills mismatches and qualifications mismatches lead to a loss of subjective well-being (Green, 2006, pp. 162-163).
The practical reason for stressing the distinction is that it is very difficult to measure workers’ own skills or competences in a survey. Unless one were able to somehow test respondents’ skills, the only reliable way to measure own-skill is through indicators of education and prior work experience. However, educational achievement and prior work experience are only partly valid as indicators of competence at work. Education inculcates other attributes apart from purely work skills, and a high level of education is no guarantee of great competence at work. Subjective self-assessment might be a more reliable method, but its reliability is dubious and is subject to too many potential biases, which would be exacerbated in the context of an international survey. Testing respondents’ skills is only feasible for a narrow range of skill domains (primarily in literacy, numeracy and IT), and then requires very large resources, and considerable interview time. This is the objective of the OECD’s Programme for the International Assessment of Adult Competences, and should definitely not be part of the current survey.

Thus, this survey should concentrate on measuring some of the important dimensions of job-skills. Generic skills have already been noted above. To this can be added the notion of the “broad skill” or competence required for a job. The latter is typically related in sociological literatures to the complexity of the job, which cannot be measured directly, but which can be proxied by the extent of the prior education, training and learning inputs needed.

In addition to the level of skills or competences, it is also useful to capture the extent to which employees are being required and facilitated to develop their skills through training and other forms of learning in the workplace. The measurement of learning is important, given the focus on organisational change, and the likelihood that often such changes will accompany technological innovation. Employees may need, in this perspective, to acquire training both to renew and expand their technical skills and to deal with the enhanced importance of interactive skills in the workplace. The form that the learning takes may also be relevant: in some cases new skills are acquired through participation in formal training courses, but in others, especially with small enterprises, skill acquisition often proceeds more informally.

2) Factors relevant to the choice of indicators
As has already been noted, the measurement of own-skill is largely restricted to indicators for formal educational development and work experience, because direct measures are infeasible given time and resource constraints. Considerable progress has been made in recent years, however, in the development of indicators to capture job-skills. For broad skills or competence, while one cannot measure job complexity directly, one can obtain a proxy indicator of complexity in terms of the education level and prior experience needed to acquire the skills to do the job. For generic skills, the idea is to question respondents about what generic tasks they are performing in their jobs. Behaviour-related and factual questions are seen as preferable to items asking about personal competences.

While time limitations are relevant to all parts of this survey, the measurement of several generic skills runs up against this constraint with a vengeance. To capture the full range of generic skills might require 30 to 40 items, which will be hard to justify in competition with other space. We have therefore proposed that the survey is restricted to the most important generic skill, namely computing skills and problem-solving skills. Computing skills complement the indicators for the role of ICT in work organisation discussed above, and can be measured at the individual level using tested instruments. Problem-solving skills are widely thought to be increasingly important. We are aware that organisational change has possible implications for other generic skills, especially communication skills, but have reluctantly omitted these from the proposed telephone questionnaire.

The skill change measures should where possible have a time span that corresponds to the period of organisational changes being interrogated in Chapter III.

3) Proposed indicators
A person’s own educational achievement is one measure of a person’s competence, though it is only a loose measure. It will also be an input into a derived measure of educational mismatch (see box 10).

Before moving on to the next indicator, it is important to expand a little on what aspects of educational attainment might be most relevant. Educational attainment can be considered to comprise of two components: the level of attainment; and the field of study. The progressive nature of educational systems means that the level is the more informative concept of the two for determining the labour market value of the education a subject has acquired. It is also the more commonly measured concept. The field of study is much less commonly measured in survey research. It has been shown to be important in some studies of wages (for example see Shannon, 2001). However, it is also the case that the field of study only tends to become relevant after post-compulsory education, and is not relevant for many labour market participants. In view of the limited space that is likely to be available to measure educational attainment, we therefore focus solely on the level of attainment.

We recommend that ISCED-97 is adopted as the initial indicator of educational attainment, both because some detailed work has already been done to map the classification in Europe and because ISCED will have broader comparability than the new European Qualifications Framework (EQF) outside the EU. At the same time, however, we recommend that we should monitor developments in the European Social Survey, for which Schneider, who has undertaken detailed evaluations of ISCED-97, has recently proposed a variant of ISCED-97 (Schneider, 2007). We also recommend that we should monitor developments with the EQF, as this may represent the most attractive classification once it takes on a more definite form.

The second indicator of a person’s own competence is the extent of their prior work experience. The intention is to capture the total amount (in time) of work experience, as a measure of the transferable skills acquired while working. As with education, this is also an imperfect measure, because the extent to which a person’s competence is enhanced through work experience depends on the person’s qualities and on the quality of  

*The EQF looks at the outputs of education rather than inputs.
the previous experience, neither of which can be properly measured in a survey. Nevertheless, the length of work experience is widely found to be positively related to wages received, and this gives some reassurance that this indicator is positively correlated with competence. The relationship is normally found to be quadratic, with the interpretation that later years of work experience contribute successively less than earlier years to the acquisition of skills. Thus, this indicator is supplemented by its square.

The education achievement required for a job is the counterpart of own educational achievement, and is designed to capture the concept of broad job-skill. The complexity entailed in a job is partly indicated by the level of education that must be achieved in order to be able to do the job.

Items should distinguish between whether an educational qualification/certificate is needed just to get the job, or whether it is needed actually to do the job. This distinction affords a measure of the extent to which employers may be using educational qualifications as a signal of other ability.

The level of prior work experience required for a job complements the previous indicator, in recognising that another part of the competence required to do the job is acquired in doing relevant work experience. This work experience will be accompanied, in some but not all cases, by periods of training. In some surveys an attempt is made to capture separate indicators for this period of training; however, a simpler method is to capture the total length of the period of relevant experience.

New organisational structures and practices are often found to be accompanied by the introduction of information technologies, and to need problem-solving skills. Computing skill is the fastest-growing generic skill in the current era, whether it is the majority of the working population which has been learning to use computers at relatively low levels for word processing, e-mails and simple uses of the internet, or the minority which has been acquiring programming skills or at least familiarity with sophisticated packages tailor-made for each industries’ purposes. The survey develops indicators for the frequency of computer use by employees, and for the level of sophistication with which they are used. As regards problem-solving skills, it has been found to be important to distinguish between relatively trivial problems and those that require sustained thought to resolve. The latter are thought to be those at stake when organisations change, so our proposed indicator focuses on problems that take at least 30 minutes to resolve. Communication and literacy skills have been noted to be increasingly important generic skills but measuring them would require considerable interview time. The use of a foreign language at work, which reflects a job requirement connected with the globalisation process, captures a component of communication and literacy skill. It is a very simple and objective question with straightforward answers and relevance in the European area where many different languages coexist.

Skills mismatch is another important area that this survey develops indicators for. There are two kinds of mismatch indicators that can be developed.

First, there can be a mismatch between a person's own educational achievements and the achievements that are required for the job. An indicator for this can be derived from the other indicators already described above. An addition that could be considered, though not further developed here, is an indicator of whether there is a mismatch between the field of education and the type of job. Though this indicator of field mismatch has been developed in some survey contexts, it has not received widespread use by mismatch analysts. The concept of field of education may also be less appropriate for those only reaching lower educational levels.

Second, there can be a mismatch between a person's own skills and those required for the job. While surveys will not normally generate an indicator for own skill, a subjective indicator for skills mismatch can be obtained, which measures under-utilisation of skill. This indicator could refer either to skills in general (as proposed here) or to particular skill domains.

In several perspectives, it is recognised that companies vary in the extent to which employees are expected to continue learning new skills while working. In the context of organisational change, learning of new skills and possibly also the development of new orientations is paramount. This indicator should capture the employees' perception of whether learning is something that goes with the job.

In distinction from the previous indicator, which refer to the requirements for learning (the demand side), the survey also collects indicators of the supply side of learning (though not with the same attention to detail used in other surveys that focus only on training and learning). Here, it should be possible to tailor the indicators to the same period over which questions about organisational change are being asked. Of interest, first, is whether or not the employee participates at all in training, and it will be important to try to pick up evidence of any of a multiple variety of training forms. Second, the quantity or intensity of training can be captured by the total number of hours spent in training.

However, it is widely recognised that training is not the only means by which employees acquire new skills. Especially in smaller enterprises learning takes place informally, by trial-and-error with advice from supervisors, by watching others, etc. Employees in such situations may not recognise them as "training"; hence it will be useful to include an indicator for participation in a learning activity while not actually in training.

The outcome of training and learning activities would be expected to be greater skills. While it is not possible to ask about own-skill levels, a possibility is to obtain an indicator of the extent of skills change over the period of organisational change (two years). An addition or an alternative would be to obtain an assessment of how job-skills have changed over the period. In both cases, the indicator would have to be captured by subjective instruments, with attendant problems of social esteem bias. Such bias might or might not be assumed to be similar across countries. Nevertheless, the theoretical relationship between organisational change and new skill demands could be additionally supported and investigated if such an indicator were present, alongside the other indicators for training and learning.
Box 10: Indicators for skills utilisation

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own educational level/achievement</td>
<td>HEDU</td>
</tr>
<tr>
<td>Extent of prior work experience</td>
<td>HEXP</td>
</tr>
<tr>
<td>Level of educational achievement required for a job</td>
<td>DEDGETJOB, DEDDOJOB</td>
</tr>
<tr>
<td>Extent of prior relevant work experience required for a job</td>
<td>DWKEXPJOB</td>
</tr>
<tr>
<td>Use of computing skills</td>
<td>BCOMPLVL</td>
</tr>
<tr>
<td>Problem solving skills</td>
<td>DPROBSOLVE</td>
</tr>
<tr>
<td>Language skills</td>
<td>BFORLANG, BFORLANGa-b</td>
</tr>
<tr>
<td>Skills mismatch</td>
<td>DOVERSKL, DUNDERSKL</td>
</tr>
<tr>
<td>Learning requirements</td>
<td>BLRNEW, DHELPWORKER</td>
</tr>
<tr>
<td>Participation in, and intensity of, training and other learning</td>
<td>DTRAINED, DTRAINETIME</td>
</tr>
<tr>
<td>Skills change</td>
<td>DSKILLCHG</td>
</tr>
</tbody>
</table>

II.6 Working Time and Work-life Balance

1) Definition and rationale for survey inclusion

Working time is an important component of the majority of people’s lives (work-life balance). Therefore, it is important to consider what impact organisational change will have on individuals both in terms of their working hours and in terms of how their work affects their social and family life, the so-called work-life balance.

The communication entitled "Employment and social policies: a framework for investing in quality" (COM(2001) 313 final), that was presented by the European Commission to the European Council, the European Parliament, the Economic and Social Committee, and the Committee of the Regions, contains a list of 10 dimensions of the quality of work life (OWL) and this list includes work organisation and work-life balance. The key policy objective regarding work organisation and work-life balance is: "To aim to ensure that working arrangements, especially concerning working time, together with support services, allow an appropriate balance between working life and life outside work." (COM(2001) 313 final, p. 13)

In this section we consider those factors of employment time that could be affected by organisational change and also the effects of organisational change on work-life balance. However, there is likely to be some level of overlap between the two discussions as working time will be a large part of work-life balance for any employee.

It is important to note that working time can also be seen to be part of job demands. We can separate out the effects of job demands and working time in terms of organisational change by considering that changes in working time can be due specifically to changes in the organisation (working time changes) or be an effect of other changes within the organisation (job demands change thus affecting working time). When it comes to indicators and items to assess changes in working time it will be well worth considering whether we can separate out these two effects.

What must also be considered is that while working time is a major part of working people’s lives, it is not the only part and so what happens at work can affect the rest of an individual’s life. This is especially so now with the rapid increase in female participation rates which now means that the household and the workplace are no longer so easily separable. This work-life balance has become a key policy objective of the EU.

Work-life balance will be of interest to the MEADOW project because organisational change is likely to have a major impact on an individual’s work-life balance and vice versa. For example, a company that cuts some of its workforce and re-allocates the work to the remaining employees could mean that the workers are more pressed for time and find that they have to work harder than before. This will then impact on their work-life balance as their social and family life may become more strained because of the added working pressures.

2) Factors relevant to the choice of indicators

The Canadian Policy Research Networks (CPRN) research on job quality suggests that working time comes under the indicator of job demands. In this chapter we have separated out the terms although it must be borne in mind that there is a large degree of overlap between job demands and working time, with working time likely to be a large factor in the former10. However, working time is a measure of job quality in its own right since a worker is more likely to work a job with fewer hours than an otherwise equivalent job with longer hours. Therefore we consider, amongst others, the indicators of job demands from the CPRN research as indicators of working time. Those indicators are: workload, long hours of work, and unpaid overtime.

The European commission suggested that the following could be good indicators of work-life balance: the proportion of workers with flexible working arrangements; the opportunities for maternity and parental leave and take-up rates; and the scale of child-care facilities for pre-school and primary school age groups.

However, the CPRN suggests that indicators of work-life balance include the following: overall work-life balance; how work-life conflicts affect organisations; how work pressures affect families; how work-life balance impacts individuals; and solutions to work-life imbalance.

Given the issue of the amount of time constraints on questionnaire length, we will for now only consider the indicators suggested by the European Commission. This choice is in line with the principles for item design outlined in the introduction, as the CPRN indicators would involve subjective assessment. However, opportunities for maternity and parental leave is not used as an indicator in this survey as it is better suited to be analysed at the employer level.

10 Also see the discussion above.
3) Proposed indicators

How many hours an individual works could be an indication of organisational change or an indication of changes in job demands due to organisational change (see the definition and rationale for survey inclusion for this section). Therefore, it is important that we know how many hours an individual usually works (see box 11). This is also important when considering the hourly wage that an employee earns (see section II.4). Whether employees work part time or full time is also important here, as well as the contract type that they have, as organisational change may lead to changes in both (see section II.7).

The amount of overtime that an individual works could also be an indication of changes in the organisation. Increased overtime could indicate that an enterprise is increasing production due to increases in demand for their products and so they expand their employment levels in terms of man hours. This would be a good indication of increased flexibility within the enterprise.

Organisational change can also be seen from changes in when an employee will work. It may be that employees are able to work earlier hours or later hours because of commitments outside work (also see the discussion of flexible working hours below), or they may be becoming more adaptable and can work hours that are not necessarily 9-5, Monday to Friday.

The length of holiday entitlement that an employee may receive may also be important in terms of organisational change. Any increases or decreases will have an impact on an employee’s life outside of work.

As already outlined in this chapter, working time is a key component of workers’ lives. Therefore, any processes that allow an employee to choose their hours of work to some extent or allow them to change their working hours because of changes in their lives outside work are likely to improve the work-life balance of an individual. In addition, the contract type and type of employment that a worker has may also account for some flexibility in the working time (see section II.7).

Increasing numbers of single parent households and dual working households means that the availability of child care at the workplace (or elsewhere) or help in covering the cost of child care, and being able to take time off work during school holidays or only work during term times are important in improving the quality of jobs.

<table>
<thead>
<tr>
<th>Box 11: Indicators for working time and work-life balance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Working time</strong></td>
</tr>
<tr>
<td>Overtime</td>
</tr>
<tr>
<td>Working outside “normal” hours</td>
</tr>
<tr>
<td>Holiday entitlement</td>
</tr>
<tr>
<td><strong>Household composition</strong></td>
</tr>
<tr>
<td>Partner</td>
</tr>
<tr>
<td>People dependent for care</td>
</tr>
<tr>
<td><strong>Work-life balance</strong></td>
</tr>
<tr>
<td>Flexibility of working week</td>
</tr>
<tr>
<td>Child care arrangements</td>
</tr>
</tbody>
</table>

II.7 Employment Security

1) Definition and rationale for survey inclusion

Flexibility and security were included as one of the 10 dimensions of the quality of work life (QWL) that were contained in the communication entitled ‘Employment and social policies: a framework for investing in quality’ (COM(2001) 313 final) that was presented by the European Commission. Employment security will be a key component of the quality of a job, and organisational change is likely to have a significant effect on the employment security of the workers.

Flexicurity is also a key of the Lisbon strategy for Growth and Jobs (European Commission, 2007). Workers, according to the Lisbon strategy, need to become more adaptable (as well as enterprises) to allow EU member states to compete in the global economy. Combined with the increased adaptability of workers there should also be increased security of employment.

It is necessary to separate and define at this juncture exactly the difference between employment and job (in)security. Formally, when looking at insecurity, the former is the loss of welfare that arises due to uncertainty at work, and therefore entails all forms of employment, while the latter is the probability of individuals losing their current job.11 (Green, 2006, p. 130) Employment insecurity also includes the cost of job loss, which is the risk of job loss actually takes place (Green, 2006, ibid).

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11 Insecurity can also arise due to uncertainty in job continuity because of a possible promotion or job cuts for example. In the definition above only the welfare loss due to job loss is considered.

12 See also Klammers, Muffels and Willhagen (2008).
2) Factors relevant to the choice of indicators

The European commission suggests the following indicators for employment security and flexibility:
- The effective coverage of social protection systems – in terms of breadth of eligibility and level of support – for those in work or seeking work
- Proportion of workers with flexible working arrangements – as seen by employers and workers
- Job losses – proportion of workers losing their job through redundancies, and proportion of those finding alternative employment in a given period.
- Proportion of workers changing the geographical location of their work

The first indicator is a general indicator that cannot be examined by looking at employees. The flexibility of the workers has already been examined in section II.6, so the second and last indicators have already been discussed. The third indicator can be examined best at the employer level to see how many workers have lost their jobs, while the latter part of the indicator can be examined imperfectly by asking employees how difficult they would think it would be for them to get an equivalent job if they were to lose their current one.

The "Canadian Policy Research Networks" (CPRN) on job quality also suggests the following indicators for security: temporary employment and job security. The latter will be analysed as defined above, and therefore includes both the probability of job loss and the cost of job loss. The former of these can be measured using survey techniques to a high level while the latter indicator can be measured to a good, but not perfect, level. (Green, 2006, pp. 130-149)

3) Proposed Indicators

The type of job that individuals are employed in will affect their security (see box 12). It is very likely that those in temporary jobs will be less secure than those who are in permanent positions. In addition, part time and full time work may have different levels of security associated with them.

How likely it is that individuals will lose their job is going to be a good indicator of job security and therefore employment security also. Here, what can be used is respondents' ex ante insecurity associated with the likelihood that they will lose their job within a given period of time, in this case the next 12 months. The questionnaire also captures whether this ex ante insecurity is connected with workplace changes (see section II.1).

The cost of a job loss cannot be measured perfectly using survey techniques. One imperfect measure of the cost of job loss is to ask the respondent ex ante how difficult it would be to regain employment that is 'as good as' their current employment. The harder it is that an individual believes it will be in getting an 'equivalent' job the higher would be the associated cost of job loss.

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**Box 12: Indicators for job security**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment type</td>
<td>ACONTRACT, AFULLTIME</td>
</tr>
<tr>
<td>Probability of job loss</td>
<td>FLOSEJOB, BJOBISK</td>
</tr>
<tr>
<td>Cost of job loss</td>
<td>FGETNEWJOB</td>
</tr>
</tbody>
</table>

II.8 Worker well-being

1) Definition and rationale for survey inclusion

When considering organisational change and its implications for the experience of employees, an important and relevant outcome will be their affective well-being. Are employees more or less engaged, and how much engagement is generated by their work? Does individual job becomes more intensified because of organisational change, has this led to them becoming stressed, possibly also to the extent of suffering mental ill-health?

We begin with the potential downside, namely stress, since this has received considerable attention by researchers across Europe in the light of the intensification of work effort and increased skill requirements of jobs in many countries. "Stress", however, is somewhat ambiguous and has become an ‘umbrella’ concept: it has been used in many ways and in relation to many different topics. D’Amato and Ziljstra (2003) provide an extensive overview of the literature on occupational stress and, as pointed out in their overview also, stress is often considered to be primarily an emotional process, but can affect physical health as well.

Historically, there are four dominant stress approaches:
- Stress as a stimulus (cf. input), i.e. an external load or demand originating from an event or situation that affects the individual and is potentially harmful;
- Stress as a psychological or physiological response (cf. output) of the organism to external stimuli;
- The interactional approach, which describes stress as a process in which the organism responds to particular situations or events (i.e. stressors) by developing strain reactions. Different constructs are used to indicate mental health in the stress/strain process, sometimes they are called negative emotions as anxiety, depression, and anger.
- The cognitive appraisal approach, which defines stress as the response when people appraise a situation and perceive an imbalance between the demands imposed upon them and the resources they have available to meet those demands (Moore and Cooper, 1998; Buunk et al., 1998; D’Amato and Ziljstra, 2003).

In the past 20 years, many studies have looked at the relationship between job stress and a variety of ailments. Mood and sleep disturbances, upset stomach and headache, and disturbed relationships with family and friends are examples of stress-related problems that are quick to develop and are commonly seen in these studies. These early signs of job stress are usually easy to recognise. But the effects of job stress on chronic

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10 See [http://www.jobquality.ca](http://www.jobquality.ca) for more information.
diseases are more difficult to see because chronic diseases take a long time to develop and can be influenced by many factors other than stress. Nonetheless, evidence is rapidly accumulating to suggest that stress plays an important role in several types of chronic health problems - especially cardiovascular disease, musculoskeletal disorders, and psychological disorders.

The definition by Houtman, Jettinghoff and Cedillo (2007) for the World Health Organisation (WHO) goes much along the same lines with central attention to the (pattern of) reactions which may result from a perceived imbalance between demands and environmental or personal resources. Reactions may include physiological responses (for example increased heart rate), emotional responses (for example feeling nervous or irritated), cognitive responses (for example a reduction in attention) and behavioural reactions (for example aggressive, impulsive behaviour).

When in a state of stress, one often feels tense, concerned, less vigilat and less efficient in performing tasks. When exposure to stress persists over prolonged periods, workers do not have enough time to recover from it. Stress may eventually cause mental and physical disorders and impair the immune system, resulting in sickness and absence from work and work disability. Other adverse consequences of work-related stress consist, for employers and their companies, for example of increasing personnel turnover, decreasing performance and productivity, decreasing quality of work and products and increasing complaints from clients/customers (Houtman, Jettinghoff and Cedillo, 2007).

Another school of thought, however, has argued that stress has become an overused concept in the analysis of modern workplaces, and that it is necessary also to consider the resilience of workers, as well as the positive emotions that may result from work situations (Warr, 2007; Walnwright and Calnan, 2002). Emotional affect has been theorised in a variety of ways. A relatively simple construct is the 2-dimensional framework in which emotional affect is seen in terms of, on one hand, the extent of emotionality or passiveness, and on the other hand of the extent of feeling good or bad feelings. Distinction is also made between domains of emotional feelings (work, home etc.). For the purposes of this survey, it will be important to measure the concept of emotions in the domain of work, including the positive emotions.

Another indicator of organisational change may be the health and safety of workers as they perform their job. Health and safety was included as one of the 10 dimensions of the quality of work life (QWL) by the European Commission. Therefore, as organisations change, one would expect to see improvements in the health and safety of workers in their roles. However, organisational change could also negatively impact health and safety at work. As organisations adapt to new working practices or new technologies, so workers come into contact with new machines, techniques or working methods which can increase the risks and challenges that workers face.

2) Factors relevant to the choice of indicators

Indicators should focus on the mental state of employees. Furthermore, it will not be adequate to address this topic using retrospective questions, and that is why the panel design is the appropriate method.

From a methodological point of view, a panel design with a time lag of one year among employees can be assumed appropriate to study the relationship between job characteristics and mental health (De Lange et al., 2004). The relationship between job characteristics (that is the Demand-Control-Support dimensions) and mental health are reciprocal: apart from the (stronger) ‘normal’ causal order of job characteristics influencing health, several (high-quality) longitudinal studies also show reversed causality (with health influencing job characteristics across time) (De Lange, 2005). This implies that the relationship is reciprocal, which affirms the use of a panel design.

The correspondence and content analyses, conducted by D’Amato and Zijlstra (2003), of the abundant stress literature shows that stress is often defined operationally by means of mental health or psychological disorders. These researchers conclude that when speaking about ‘stress-related mental health problems’ one should particularly look at people with the following psychological complaints: ‘depressive feelings’, and ‘feelings of exhaustion’ or ‘fatigue’. It is also quite likely that this person will experience a reduction of self-efficacy, as [s]he cannot really ‘get to things’ or ‘get things done’. Also a study by De Lange, Tars, Kompier, Houtman and Bongers (2003) founds that mental health indicators were included in the majority of the longitudinal, high-quality studies on the job strain hypothesis of the Job Demand-Control-Support model (Karasek, 1979; Karasek and Theorell, 1990; see also section II.3 of this chapter).

The indicators need also to be able to pick up potential positive effects of organisational change on employees’ emotions.

When looking at health and safety the European Commission suggests using the following indicators:

- Composite indicators of accidents at work, fatal and serious, and including costs
- Rates of occupational disease, including new risks, such as repetitive strain
- Stress levels and other difficulties concerning working relationships

Looking at the first two of these indicators would require a lot of time and is more the remit of a detailed survey on health and safety at work. Consequently, a quick measure of work accidents is needed for this survey. The latter of these indicators has already been discussed in the previous paragraphs looking at job stress, and so will be included in the employee survey.

3) Proposed indicators

Employees’ well-being could come from many parts of their life (see box 13). Therefore, any questions on how employees are feeling should look at how their job has made them feel recently and not how they have been feeling in general. While of course it may be true that stress at work may lead them to feel differently in their everyday life, it is also true that feelings from everyday life that have nothing to do with work could be included in answers by employees to this latter indicator. To address this issue directly, the questionnaire will adopt the work-related well-being scale developed and tested at the Institute of Work Psychology (Warr and Parker, 2008). Although the size of the full scale, encompassing also other dimensions of work-related well-being, comes to 28 items, parts of two separate 6-item scales are adopted here. First, 3 items on depres-
Another indicator used in the survey for worker well-being is how the employee feels overall about their job when everything is taken into consideration. This could be broken down to look at satisfaction by areas of employees’ job, for example their satisfaction with their wages and the tasks they perform, but given the time constraint for the survey this will not prove possible. A four point scale is used for this which could be adapted further if the survey delivery mode changed. The questionnaire also captures on a four point scale whether the employees are satisfied with the way they have been involved in decisions concerning workplace changes (see section II.1).

Organisational change could also lead to changes in the health and safety of workers. Indicators that are used in the survey to analyse this are the number of days taken off work because of health problems and whether any days are taken off work because of accidents or other health problems caused by work.

**Box 13: Indicators for worker well-being**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee well-being</td>
<td>GWELL</td>
</tr>
<tr>
<td>Job satisfaction/dissatisfaction</td>
<td>AJOBSTAT, BINVOLVESAT</td>
</tr>
<tr>
<td>Days of absence</td>
<td>GABSENCE</td>
</tr>
<tr>
<td>Whether any days of absence due to work accidents</td>
<td>GABREASON</td>
</tr>
</tbody>
</table>

**II.9 Modules**

The principle of a core questionnaire plus modules has been established in chapter II of the Guidelines. What would be interesting areas for module development? Modules could be useful to cover topics that need to be covered using questions with different scales or formulated differently than the ones in the core questionnaire. An example could be a module on time use at work. The employee could be asked to note during one day how much time he or she spent travelling to work, doing his main task, coordinating with colleagues, discussing about organisation matters etc. This could be a good way to build up a reliable quantitative measure of time spent in organisational matters which could capture part of what is meant by “organisational capital”. Modules could also be used to go more deeply into topics that are only partly covered in the core survey and that would need some national development to be covered in more detail. For instance, to further assess employment relations, there is a need to take into account differences in industrial relations systems at the national level. A module could be used to go more deeply into policy issues like active aging policies, family friendly policies, equal opportunity policies or to develop a complementary topic that is not covered in the core like for example health at work or diversity and minority group situation.

**III. Background demographics and job characteristics**

This section of the chapter provides a discussion of how the demographic characteristics of employees and their job characteristics might be conceptualised, defined and measured in an employee questionnaire.

There are a variety of rationales for including background demographics in the employee questionnaire. First, the experience of organisational change may vary in systematic ways according to characteristics such as sex and age for example. This may be because of direct causal mechanisms (for example through discrimination) or because these characteristics serve as reasonable proxies for other characteristics which are more difficult to measure (lifetime work experience for example). The availability of data on background demographics then enables the analyst to explain a greater degree of variation in the experience of organisational change than would otherwise be possible. Second, the presence of background demographics enables analysts to categorise subjects into sub-groups that are commonly the focus of policy-makers (men and women; younger and older workers). Third, the collection of data on background demographics provides information which may be used to assess the degree of bias in the achieved sample, and the nature of any corrective weighting, since the profile of the population according to background demographics such as sex, age and occupation can typically be observed in official data.

This section focuses on those characteristics that were identified as variables of interest. They were: sex, age, migration, occupation and job tenure. The discussion that follows also mentions some possible extensions to this list where additional measures are directly related to those which have already been proposed (for example, a discussion of the merit of including a measure of gender job segregation is included).

It is vitally important that the measures of background demographics are comparable with other surveys, and so therefore it has been decided to explicitly use cross-validated measures of the following areas of interest from other international surveys.

**1) Definition and rationale for survey inclusion**

**Sex**

Organisational change may affect men and women differently. Such differential treatment may come about directly through discrimination (e.g. in hiring or firing). It may also come about as an indirect result of differences in the jobs that they hold. For example, women are more likely to work in subordinate positions and to be employed on insecure forms of contract, making them more vulnerable to organisational change. That is not to say that outcomes are necessarily less advantageous for women: organisational change also offers an opportunity to address existing imbalances (Edwards et al., 1999). Accordingly, it is important to measure the sex of an employee in order to have the opportunity to examine such differences in the experience of organisational change.

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14 Educational attainment was also identified but has been discussed in section II.5 of this chapter.
Equality between the sexes is also a broad policy concern of the European Commission, with the EC Treaty providing that the Commission should aim to eliminate inequalities, and promote equality, between men and women in all of its activities (Article 3(2)). Accordingly, one can expect that differences in the experience of organisational change between men and women will be a major interest for policy makers at the European level.

It is common to use the term ‘gender’ rather than ‘sex’. In common discourse they are treated as equivalent. However, sex is the more precise as it refers to the dichotomous biological classification into male and female.

**Definition**
**Sex:** "whether one is born male or female".

**Age**

In common with sex, age is a demographic characteristic that is commonly found to be associated with differential employment experience (e.g. higher wages, higher occupational attainment). In the most part, this is because age serves as a reasonable proxy for lifetime work experience and thus accumulated human capital. In relation to organisational change more specifically, it is also the case that the impact of any job losses that might arise from organisational restructuring is likely to be felt most adversely by older workers. This is partly because older workers may suffer from discrimination due to employers’ expectations about patterns of withdrawal from the labour market and assumptions about health, vitality and competence (Metcalfe and Meadows, 2006). The age of the employee may thus serve as an important variable with which to depict varying experiences of organisational change.

The provision of employment opportunities for younger workers and the retention of older workers are also important objectives for the EC. In respect of younger workers, the EU is primarily concerned with providing access to employment, with providing access to training and development, and with the protection of young people at work (see The Protection of Young People at Work Directive, 94/33/EC). In respect of older workers, the EU has set itself the target of having 50 per cent of the EU population aged 55-64 in employment by 2010 (currently 44 per cent). The ‘Council of the European Union Joint Employment Report 2006/07’ also highlights the need to retain older workers in the labour market by creating new job opportunities, training and incentives to remain in the workplace. Accordingly, one can expect that differences in the experience of organisational change between workers of different ages will be a major interest for policy makers.

**Definition**
**Age:** "elapsed time since the subject’s date of birth”.

**Migration**

Migration is of significant interest because of the large inflows of workers that many countries have experienced in the past two or three decades. Some 22 of the 27 EU member states experienced positive net migration in 2007, whilst the EU as a whole experienced estimated net migration of plus 1.9 million people. (Eurostat, 2009). Taking one country as an example, the UK Labour Force Survey shows that 13 per cent of all those in employment in the UK in 2008 were non-UK born, and that around half of the current stock of migrants had arrived since 1997 (Clancy, 2008). The Lisbon strategy pays particular attention to the need to better integrate immigrants and their descendants into host labour markets. Nevertheless, few surveys can say much about the employment experience of migrants (as opposed to their employment prospects, which can be investigated using household surveys). MEADOW has the ability to make a substantial contribution in this area.

**Definition**
**Immigrant:** "when one moves to a country other than that of his or her usual residence”.

**Occupation**

An occupational classification is a tool for organising jobs into clearly defined groups, based on the tasks and duties undertaken in the job. So in common with the other background variables discussed here, occupation provides a framework within which to identify differences in labour market behaviour and experience. In the context of organisational change, a standardised classification of occupations can be used to compare the types of work undertaken by those employees in different countries who are subject to organisational change. For example, professional workers may be found to account for differing proportions of those workers affected by organisational change in different countries. This may help one to better understand any differences in attitudes towards - or experience of - organisational change across countries. A standardised classification of occupations can also be used to compare the experiences of specific occupations in different countries. For example, one might compare the experiences of office clerks across countries. One is then comparing individuals performing broadly similar tasks.

**Definition**
**Job:** "A set of tasks and duties performed, or meant to be performed, by one person”

**Occupation:** "A set of jobs whose main tasks and duties are characterised by a high degree of similarity”

**Job Tenure**

Job tenure is a useful background variable in a survey of employees, since it can help to explain variations in other job-related characteristics such as wages, occupational attainment, risk of injury and job strain. These associations arise since job tenure provides one measure of those aspects of firm-specific human capital that are not measured by indicators of formal learning. The direction of causality may, of course, run in either direction, since wage levels, prospects for career progression, and risks to health may also prompt quitting. However, this only confirms job tenure as an important variable in labour market research.
At the same time, job tenure is also of direct interest in a survey of organisational change. One traditional means of selecting employees for redundancy has been the "last in, first out" system, in which job tenure thus provides the criteria for selection. Whilst this method of selection is thought to be declining in use, not least because it may be discriminatory when tenure does not correlate perfectly with ability, the role of job tenure in explaining who exits the firm remains a relevant concern for a study of organisational change. More broadly, the continuation (or otherwise) of tenure from one wave to the next is also of interest.

**Definition**

Job tenure: "years of continuous employment with the current employer".

2) Factors relevant to the choice of Indicators

**Sex**

There are no issues that arise in respect of grouping or classification and no apparent cross-national issues. The main choice would seem to be whether one uses the terms 'male' / 'female' or 'man' / 'woman'. We have chosen the former as these are the terms most commonly in use in existing research applications.

Research into labour market outcomes has shown that sex may also have a second order effect, such that the concentration of male or female employment may have an impact on outcomes over and above any first-order effect associated with the gender of the subject themselves. For instance, it is well established that female-dominated jobs offer lower wages than male-dominated jobs, even for men (Anderson, 2001): a pattern that is thought to be explained by biases in the valuation of skill. Moreover, Abrahamsson (2002) has shown that gender-segregation can be an obstacle to the implementation of organisational changes such as job enlargement, job rotation and decentralisation.

Accordingly at the employee level, it could be of interest for an employee questionnaire to collect data on the extent of sex segregation within the employee's work group. However, given the time constraint issues that have been discussed in this chapter, these issues will not be examined but could be included if the survey format were to change.

**Age**

It is usually considered sufficient to measure the number of whole years that have elapsed since the subject's birth, in preference to measuring the elapsed time in more detail. This is because most age-related conditions that apply in socio-economic contexts are based on the elapsed number of years.

**Migration**

The most pertinent means of identifying immigrants is to ask about country of birth and date of arrival in the host country, as was done in the EU-LFS 2008 ad hoc module on migration. Country of birth is to be preferred to citizenship, as the former cannot change over time.

**Occupation**

The most widely-recognised international standard classification scheme for occupations is the International Classification of Occupations (ISCO) published by the International Labour Organisation (ILO). ISCO is a hierarchical classification scheme with four levels that represent increasing levels of aggregation as one moves from the most detailed classification level (termed "unit groups") to the least detailed level (termed "major groups"). ISCO-88 is the current version of ISCO. However, a variant ISCO-88(COM) has been developed for use in the European Union, because of the difficulties that some EU countries had in mapping their established occupational classifications to ISCO-88. ISCO-88(COM) represents the most detailed level of ISCO-88 which all community countries consider feasible to relate to their national classifications (Elias and Birch, 1994).

It is important to note, however, that the ILO have recently completed an updating of ISCO and have published a revised classification named ISCO-08 (ILO, 2007). The new ISCO-08 was disseminated in 2008 and materials have been made available for use in national settings, with the intention that the updated classification – or national adaptations of it – will be used in the round of national population censuses to be conducted from 2010 onwards. It is clear, then, that ISCO-08 will become the international standard. However, it is not yet clear how useable the classification will be across the EU: an important question given the issues noted above in respect of ISCO-88.

There are also issues to be noted in the coding of occupations. In choosing the appropriate level of detail to aspire to, it is relevant to consider the likely reliability of codes at different levels. Coders working with the same information may assign different codes, and may do so for a variety of reasons, including poorly formulated instructions, poor training procedures and simple human error. Some degree of variability is unavoidable but naturally this variability increases as one attempts to code to more detailed classifications (see Bound et al., 2001, p. 3802; Elias, 1997, pp. 13-14). Elias (1997, p. 13) summarises the results of four validation studies in the UK in which agreement rates were computed for one, two and three-digit codes. The evidence suggests that levels of reliability deteriorate significantly at higher levels of detail. It is then instructive to note that two-digit ISCO-88(COM) is the level aspiring to in pan-European surveys such as the EWCS and EU-SILC. It is also the stated minimum requirement in the Eurostat manual on harmonised core variables (Eurostat, 2007, p. 31). That said, Hoffman (2003, p. 150) recommends that data are coded to the most detailed level supported by the responses, even if such detail is unlikely to be used in analysis.

A further issue is the comparability of coding operations across countries. Even though ISCO-88(COM) is an international standard, the mapping from national occupational classifications is still not straightforward across the EU, being particularly difficult for Italy and the UK (see Elias, 1997, pp. 23-26). One should also note that the nature of the coding is country-specific: nurses and teachers, for example, require different levels of

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9 The inter-coder agreement level is the percentage of pair-wise comparisons in which coders assigned the same code to identical information.

education to practice in different countries, and so nurses and teachers can appear in major groups 2 or 3 depending on the national context.

**Job Tenure**

Two pertinent questions arise when deciding upon an indicator. First, is it necessary to measure only continuous employment? Specifically, if an employee has worked for the employer at some point in the past, had a break in employment, and then later resumed his/her employment with that employer, should one count only the most recent spell or sum all spells of employment with that employer? Few employees are likely to have had multiple spells, and those dates of these spells for those that have will be potentially difficult to ascertain. Added to this any firm-specific human capital that was gained during previous spells may no longer be relevant. A further observation is that the duration of the current spell of employment (rather than the duration of all spells) is typically the criteria that determine eligibility to certain employment rights, at least in the UK. For example, employees in the UK must have at least one year of continuous service to become eligible to claim unfair dismissal, and must have at least six months of continuous service to become eligible for maternity pay. Therefore, one should only focus on the current spell.

A second question is whether one should measure employment with the organisation as a whole, or only with the specific workplace at which the employee is currently employed. And further to this, should one measure employment in all jobs or only the current job? If we consider a single spell of employment, then an employee will accumulate firm-specific human capital across all of the jobs in which they have worked with the current employer, whether at current workplace or not. And so, it seems appropriate to measure employment with the organisation as a whole. If the employee has had multiple jobs, there will be some element of accumulated human capital that is specific to the current job. But it may be difficult to determine when the current "job" began, particularly if only some features of the job have changed over time (for example, the level of responsibility). Accordingly, it seems sensible to measure employment in all jobs within the current spell of employment with the organisation.

3) **Proposed Indicators**

**Sex**

The proposed indicator is as follows:  
**Sex: male or female.**

Asking this question may provoke an adverse reaction from a respondent since a person’s sex is usually taken to be obvious. For this reason, sex tends to be coded by the interviewer in interviewer administered surveys (as is the case in the European Working Conditions Survey and the European Social Survey). Also note that the characteristic is not likely to change except in very exceptional circumstances and so in a panel it only needs be measured once.

**Age**

The proposed indicator is:  
**Age: elapsed time in completed years since the subject’s date of birth.**

Following Wolf and Hoffmeier-Zlotnik (2003, p. 262), we propose that a continuous measure of age should be sought, removing age groupings as an option. The Eurostat Task Force on Core Social Variables (Eurostat, 2007, pp. 59-60) recommends asking for the month and year of birth. They argue that asking directly for the exact age may lead to rounding to the nearest 0 or 5 years by some respondents. They also argue that the adoption of age ranges faces the difficulty of identifying appropriate age groupings. We agree with the latter concern but the Eurostat Task Force put forward no evidence to support their former claim. It is also the case that asking for month and year of birth would lead to similar concerns about anonymity that would arise from asking for a respondent’s date of birth.

**Migration**

The proposed indicator is:  
**Immigrant: country of birth and time elapsed since the subject has first come to a given country.**

This indicator of geographic origin is complemented by an indicator on membership to a minority ethnic group which could contribute to the identification of second-generation immigrants. However, this question will not be considered acceptable in every European country. For instance, there is an on-going debate in France about the measurement of ethnicity.

**Occupation**

The recommendation is to code occupations using ISCO-08 for any future implementation of the Guidelines, given that this will become the standard measure of classifying occupations. However, there is only limited knowledge to date on the methods used in implementing this classification. Looking at the survey questions on occupation, it is not sufficient to ask the employee to state “his/her occupation” as this will often not yield sufficient detail to code to ISCO. Instead, it is necessary to ask the employee to state the following:  
- Job title  
- Main tasks and duties  
- Number of employees in the organisation.

The final item in the list is required in order to distinguish between sub-major group 12 (corporate managers) and sub-major group 13 (managers of small enterprises). However, this item will be collected in the employer questionnaire, and so we require questions only to address the first two items.

Once data on job title and tasks are obtained, these data must subsequently be used to assign an occupation code to each respondent. When coding occupations we
recommend that the source data on job titles and tasks are coded to the full four-digit ISCO-08 where possible, but that the classification is limited to sub-major group during cross-country analysis.

Further, we recommend that the underlying survey data are coded directly to ISCO-08, rather than coding first to individual national classifications and then mapping across from these national classifications to ISCO-08. We also recommend that a subset of the data in each country is coded twice, by separate coders, to provide a measure of reliability that can be compared across countries.

A final issue is that coding errors can naturally compromise the accuracy of comparisons of occupational codes over time, and thereby compromise any attempt to investigate occupational mobility when using longitudinal surveys. In common with Bound et al. (2001, p. 3904), we therefore recommend that, in subsequent waves of a longitudinal study, one asks the subject whether their occupation has changed since the previous wave of the survey, rather than inferring change from a comparison of the current and the previously-reported occupational code. This does rely on the subject being able to accurately recall their occupation at the time of the previous wave, unless their response can be fed back to them, which only would be possible in a computer-assisted survey environment.

### Job Tenure

The indicator is as follows:

**Job Tenure**: elapsed time in completed years in the current spell that the subject has been in employment with the organisation.

Further we propose that the longitudinal element of the employee survey should also measure exit from employment with the current employer. This requires that the panel element of the employee survey distinguishes between: (a) employees who remain in employment with their Wave 1 employer but who do not respond at Wave 2; and (b) employees who no longer work for their Wave 1 employer. Furthermore, among this second group, one would ideally wish to code reason for exit (quit / layoff).

It is also critical to know whether the job that the employee holds is a main job or a second job. It is important to keep in mind that given the structure of the survey, the employee is not asked about his main job, but about his job at a given employer for which he has been selected. In total, the survey will allow identifying the characteristics of second jobs in countries where this phenomenon is prevalent and to control for main jobs/second jobs when looking at global employee outcomes like well being.

### Box 14: Indicators for background demographics and job characteristics

<table>
<thead>
<tr>
<th>Sex</th>
<th>HSEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>HAGE</td>
</tr>
<tr>
<td>Geographical origin</td>
<td>HWORK, HMINORITY</td>
</tr>
<tr>
<td>Occupation</td>
<td>OAOCUPATION</td>
</tr>
<tr>
<td>Job tenure</td>
<td>AJOBTENURE</td>
</tr>
<tr>
<td>Main job / second job</td>
<td>ASECDNJOB, AMAINJOB</td>
</tr>
</tbody>
</table>

### References


De Lange A.H., 2005, What about causality? Examining longitudinal relations between work characteristics and mental health, PhD thesis Radboud University Nijmegen, Ridderkerk.


Warr P. and Parker S., 2008, The measurement of job-related affect: a questionnaire for general use, University of Sheffield, mimeo.


Appendix to chapter IV

The employee survey questionnaire
Introduction

[ ] Designates notes for the programmer and () are interviewer notes.

[Note for programmer: Include two additional response options for all questions: 8 = ‘Don’t know’ and 9 = ‘Refused’. ]

(Interviewer note: Never read out loud the response options ‘Don’t Know’ and ‘Refused’. Use these options only if given by the respondent.) [Use ‘organisation’ instead of ‘firm’ if the employee works in the public sector]

Thank you for participating in this survey. I am going to ask some questions about your work, and how you feel about it. Please answer the questions based on your employment for [name of employer]. First, I would like to ask some questions on your occupation.

Section A: Occupation

AOCUPATION [Ask all]
What is the full name or title of your job?
Record verbatim response

What kind of work do you do most of the time in this job? Please describe as fully as possible
Record verbatim response
(Interviewer note: Verbatim responses to be coded to ISCO-08(COM) post-interview)

AJOBTENURE [Ask all]
When did you start working for [name of employer]?

............. Year ............. Month

(Interviewer note: If the respondent says they have had more than one spell of employment with this company or organisation, please consider only the most recent.)

If unwilling or unable to answer AJOBTENURE

AJOBTENUREC
Have you been working for [name of employer]?
1. Less than one year
2. One year up to two years.
3. Two years up to five years.
4. Five years or more.

ACONTRACT [Ask all]
Which of the following best describes your job with [name of employer]?
1. Permanent job
2. Contract job with a fixed end date, even if several years in the future
3. Seasonal job
4. Casual job
5. Internship
6. Job through an agency that finds temporary employment

AFULLTIME [Ask all]
Are you working full-time or part-time?
1. Full-time
2. Part-time

AHOURS [Ask all]
How many hours do you usually work in your job each week? Please include paid and unpaid overtime, but do not include meal breaks and time taken to travel to work.

............... hours per week (to nearest hour)
997: no usual hour

AHOURSa [Ask if AHOURS = 997]
Please give me your best guess of the average hours you worked per week over the last month.

............... hours per week (to nearest hour)

ASECNDJOB [Ask all]
Besides your job at [name of employer], do you have any other paid jobs?
1. Yes
2. No

AMAINJOB [Ask if ASECNDJOB=1]
Is your job at [name of employer] your main paid job?
(Interviewer note: If in doubt, the main job is the one from which you earn most money.)
1. Yes
2. No

AJOBSAT [Ask all]
All in all, how satisfied are you with this job?
1. Very satisfied
2. Satisfied
3. Not very satisfied
4. Not at all satisfied
Section B: Work organisation

BUNPERVISE [Ask all]
Do you supervise or manage the work of other employees?
1. Yes
2. No

BWRKGROUP [Ask all]
In performing your tasks, do you ever work together in a permanent or temporary team? (Interviewer note: People could be from your firm [organisation] or from another firm [organisation].)
1. Yes
2. No

[Ask BWRKGROUPa-BWRKGROUPg if BWRKGROUP=1]
Interviewer introduction: For the following set of questions, think of the team or group you work with most often.

BWRKGROUPa
Where do the other members of your team come from?
1. Only from within your own firm [organisation]?
2. Only from other firms or organisations?
3. From both your firm [organisation] and other firms or organisations?

BWRKGROUPb
Does this team have a team leader?
1. Yes
2. No

BWRKGROUPc [Ask if BWRKGROUPb=1]
Can the team members influence the selection of the team leader?
1. Yes
2. No

BWRKGROUPd
Can the team members influence the work targets for the group?
1. Yes
2. No

BWRKGROUPe [If BWRKGROUPb = 1]
Excluding the team leader, can the others in this team influence what tasks you do yourself?
1. Yes
2. No

BWRKGROUPf [If BWRKGROUPb = 1]
Excluding the team leader, can the others in this team influence how you do your own tasks?
1. Yes
2. No

BWRKGROUPg
How much of your time at work is spent working with a team?
(Interviewer: if they state '25%' or '50%', code to 2 and 3 respectively, etc.)
1. Less than 25% of your time
2. 25% up to 50% of your time
3. 50% up to 75% of your time
4. 75% or more of your time

BGROUPCHG [Ask all]
Since [enter month two years ago/ or, if AJOBTENURE < 2 years, enter "you started working for <name of employer>"], has the amount of time you spend working in teams increased, decreased, or stayed the same?
1. Increased
2. Decreased
3. Stayed the same

BQUALMON [Ask all]
Thinking of your job as a whole, who usually monitors the quality of your work? You may answer yes to one or more of the following:
[Rotate order of questions randomly]
- You yourself
- Your supervisor or manager
- The team you work with most often [Ask if BWRKGROUP=1]
- A person from a separate department
- Customers or clients
1. Yes
2. No

BTASKREC [Ask all]
Are the tasks that you perform in your job recorded by a computerised system? Exclude simple time keeping or the number of hours you work with word processing or other software programmes.
1. Yes, all tasks recorded
2. Yes, some tasks are recorded
3. No
BWRKASSIS [Ask all]
Sometimes people want to get assistance with a work overload or difficult situation. Do you ever feel the need for assistance?
1. Yes
2. No

BWRKASSISa [Ask if BWRKASSIS=1]
In these situations, how often do you receive assistance from your supervisor or manager?
1. Always
2. Sometimes
3. Never
4. Not applicable

(Interviewer note: A ‘not applicable’ answer is only correct if the respondent does not have a supervisor or manager)

BWRKASSISb [Ask if BWRKASSIS=1]
In these situations, do you receive assistance from other co-workers?
1. Always
2. Sometimes
3. Never

BTARGETSa [Ask all]
In your work, do you set targets related to quantity? For example, for sales, the number of products produced, or the number of customers served.
1. Yes
2. No
3. Not relevant to my job

BTARGETSb [Ask all]
Do you set targets related to quality? For example, percent of defaults or customer satisfaction.
1. Yes
2. No

BTARGETSsc [Ask if BTARGETSa and BTARGETSb=1]
Is it sometimes impossible to reach both the quality and quantity targets?
1. Frequently
2. Sometimes
3. Never

BSTANDARDSCHC [Ask all]
Since [enter month] two years ago/ or, if AJOBTENURE < 2 years, enter “you started working for [name of employer]”, have these targets become easier to reach, more difficult to reach, or has there been no change?
1. Easier to reach
2. More difficult to reach
3. No change

BFORLANG [Ask all]
Does your job require you to write or speak a foreign language, that is, a language other than [enter national language(s)]?
1. Yes
2. No

BFORLANGa [Ask if BFORLANG=1]
How often do you use a foreign language as part of your work?
1. Less than 25% of the time
2. 25% up to 50% of the time
3. 50% up to 75% of the time
4. 75% or more of the time

BFORLANGb [Ask if BFORLANG=1]
Which foreign languages do you use as part of your work?
Record verbatim response
(Interviewer note: If various foreign languages are used, specify the most frequently used one)

BWEFFORT [Ask all]
How often does your job involve working to tight deadlines or at very high speed?
1. Less than 25% of the time
2. 25% up to 50% of the time
3. 50% up to 75% of the time
4. 75% or more of the time
**BCHGWEFFORT [Ask all]**

**Thinking of your job** (enter month two years ago/ or, if AJOBTENURE < 2 years, enter “when you started working for <name of employer>”), how often did your job involve working to tight deadlines or at very high speed?
1. Less than 25% of the time
2. 25% up to 50% of the time
3. 50% up to 75% of the time
4. 75% or more of the time

**BWAWAY [Ask all]**

Does your job ever involve working in places other than [<name of employer>]'s premises?
1. Yes
2. No

**BWAWAYa [Ask if BWAWAY=1]**

How much time do you spend working at places other than [<name of employer>]'s premises?
1. Less than 25% of the time
2. 25% up to 50% of the time
3. 50% up to 75% of the time
4. 75% or more of the time

**BCHGWAWAY [Ask all]**

Compared to [in <enter month> two years ago/ or, if AJOBTENURE < 2 years, enter “when you started working for <name of employer>”), has the amount of time you spend working at places other than [<name of employer>]'s premises:
1. Increased?
2. Decreased?
3. Stayed approximately the same?

**BWAWAYb [Ask if BWAWAY=1]**

When working away from <name of employer>’s premises do you use a computer as part of your job?
1. Yes
2. No

**BWAWAYc [Ask if BWAWAYb=1]**

Can you access the company IT system, when working away from <enter name of employer>’s premises?
1. Yes
2. No

**BCIRCLE [Ask all]**

Are you involved in a group of employees who meet regularly to think about improvements that could be made within [<name of employer>], for example a problem-solving or service-improvement group or a quality circle?
1. Yes
2. No

**BWORKPRES [Ask all]**

Are any of the following important in determining the pace of your work:
(Rotate order of questions randomly)
- a. Clients or customers?
- b. Supervisor or manager?
- c. Your co-workers?
- d. Your own discretion?
- e. Pay incentives?
- f. A computer or computer system?
- g. A machine or assembly line?
- h. Targets you have been set?
1. Yes
2. No
3. Not applicable

(Interviewer note: For question b, the ‘not applicable’ only applies if a respondent does not have a supervisor or manager)

**BUSECOMP [Ask all]**

Do you ever use a computer at work?
(Interviewer note: Interviewer to explain, if asked, that a computer refers to the use of personal computers, micro-computers, mini-computers, mainframe computers or laptops. It does not include the use of other equipment such as sales terminals, scanners, or machine monitors.)
1. Yes
2. No

**BCOMPTIME [Ask if BUSECOMP=1]**

What proportion of your time do you spend using a computer?
1. Less than 25% of the time
2. 25% up to 50% of the time
3. 50% up to 75% of the time
4. 75% or more of the time
**BCOMPLVL [Ask if BUSECOMP=1]**

*What level of computer use is needed to perform your current job?*

(Interviewer note: Code only the highest. Code null if respondent says doesn't use computer at all.)

1. Basic – For example, data entry or sending and receiving e-mails
2. Moderate – For example, word-processing, spreadsheets, database use
3. Advanced – For example, computer aided design, software development, statistical analysis packages or managing computer networks

**BCHGCOMPTIME**

*Compared to* [enter month two years ago/ or, if AJOBTENURE < 2 years, enter "you started working for <name of employer>"], *has the amount of time you spend using a computer for your job:*

1. Increased?
2. Decreased?
3. Stayed approximately the same?

**BDATABASE [Ask if BUSECOMP=1]**

*Do you have access to a central database in the course of normal duties?*

1. Yes, but I have only rights to read the information (‘read-only’)
2. Yes, I can read data and add or modify documents on the database
3. No

**BCONOUT [Ask all]**

*How often are you contacted by phone or in person on work related matters outside your usual working hours?*

1. Every day
2. At least once a week
3. At least once a month
4. Less often than once a month / never

**BJOBROT [Ask all]**

*Have you been trained by your current employer to undertake more than one job requiring different skills?*

1. Yes
2. No

**BCHANGES [Ask all]**

*Since* [enter month two years ago/ or, if AJOBTENURE < 2 years, enter "you started working for <name of employer>"], *have any of the following changes taken place in your workplace?*

a. Implementation of new or significantly changed machines, techniques or ICT systems
b. Relocation of any employees
c. Implementation of a new or significant change in the method of work
d. Introduction of a new or significantly changed product or service

1. Yes
2. No

**BCHANGESb [Ask if any BCHANGES=yes]**

*Did any of these changes have a significant impact on your tasks and duties?*

1. Yes
2. No

**BCHANGESc [Ask if BCHANGESb=yes]**

*In general, is your point of view about the consequences of these changes:*

1. Positive?
2. Negative?
3. Neither positive or negative?

**BJOBRISK [Ask if one or more of BCHANGES=1]**

*Were you at risk of losing your job as a result of any of these changes?*

1. Yes
2. No

**BINVOLVEa [Ask if one or more of BCHANGES=1]**

*I now want to ask you about your level of involvement that you had in the decisions about the change(s):*

*Did you personally take part in deciding the change(s)?*

1. Yes
2. No

**BINVOLVEb [Ask if BINVOLVEa=2]**

*Did you personally take part in negotiating the change(s)?*

1. Yes
2. No
BINVOLVEc [Ask if BINVOLVEb=2]
Was a trade union or works council involved in negotiating the change(s)?
1. Yes
2. No

BINVOLVEd [Ask if BINVOLVEc=2]
Were you personally consulted on the change(s)?
1. Yes
2. No

BINVOLVEe [Ask if BINVOLVEd=2]
Were you personally informed of the change(s) before they were introduced?
1. Yes
2. No

BINVOLVESAT [Ask if one or more of BCHANGES=1]
How satisfied were you with your level of involvement in decisions about the changes?
1. Very satisfied
2. Satisfied
3. Not very satisfied
4. Not at all satisfied

Section C: Participation and Control

CMANMEET [Ask all]
At your workplace, does management organise meetings where you are personally informed about what is happening in the organisation?
1. Yes
2. No

CMEETVIEWS [Ask all]
At your workplace, does management hold meetings in which you can express your views about what is happening in the organisation?
1. Yes
2. No

CEXPVIEW [Ask if CMEETVIEWs=1]
At these meetings, can you express your views about the following work issues:
a. Planned changes in working methods?
b. Planned changes in products or services?
c. Health and safety issues?
d. Training plans?
e. The investment plans of your firm [organisation]?
f. The financial position of your firm [organisation]?
g. The environmental impacts of your firm [organisation]?
1. Yes
2. No
3. Not applicable

CMEETIMPACT [Ask if CMEETVIEWs=1]
Does expressing your views in such meetings ever have any effect on what is done?
1. Yes
2. No

CMEETCHG [Ask all]
Compared to [enter month two years ago/ or, if AJOBTENURE < 2 years, enter "you started working for <name of employer>"], has the amount of time you spend in meetings:
1. Increased?
2. Decreased?
3. Stayed the same?

CUNIONMEM [Ask all]
Are you a member of a trade union or staff association?
1. Yes
2. No

CUNIONMEML [Ask all]
Were you a member of a trade union or staff association [enter month two years ago]?
1. Yes
2. No