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What Do People Really Do at Work? Job Analysis and Design

1

Stephen A. Woods and Daniel P. Hinton

Overview

What do people really do at work? Or to phrase the question differently, what is the content and nature of different jobs in organizations? What *should* people do in their respective jobs in order to deliver organizational strategy? This chapter introduces the means by which these questions are answered: job analysis. In this chapter, job analysis is defined, and its place within a number of wider organizational systems is explored. Following this, the distinction is drawn between two broad types of analysis: *work-oriented* and *worker-oriented* analysis in terms of their focus and the end products that they are used to generate. A number of both work- and worker-oriented methods for the collection of job analysis data are described, after which are considered some specific organizational contexts in which job analysis data is used in the form of training needs analysis and job design. Finally, two modern alternatives to the classical approach to job analysis are described: competency profiling and work analysis. These approaches are explored in terms of the benefits that they can provide to practitioners in overcoming some of the limitations of traditional approaches to job analysis in the modern working world.

1.1 What Is Job Analysis?

What do people really do at work? How do jobs vary such that one person excels in a role, while another struggles? When selecting someone for a job, how do recruiters know what to look for? And, when designing a training programme, how can we make informed decisions about what content should be included and what content is redundant? How can we analyse work design so that we know if it is motivating?

For a role with which you, the reader, are relatively familiar – for example, sales or retail positions – the answers to these questions might seem fairly straightforward.

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However, this becomes much more challenging for jobs with which you are less familiar. If someone were to ask you what makes an effective nuclear power plant operator, or what content might make up a training programme for pathology lab technicians, what would you say? How could a practitioner find out what people really do at work?

The answers to all of these questions may be uncovered through a process called job analysis. Job analysis allows practitioners to gain a thorough understanding of the nature of a job, and the characteristics required for someone to be able to be effective in that job, to a very fine level of detail. Brannick, Levine and Morgeson define job analysis as follows:

Job analysis is the systematic process of discovery of the nature of a job by *dividing it into smaller units*, where the process results in *one or more written products* with the goal of describing *what is done on the job* or *what capabilities are needed* to effectively perform the job.

(2007, p. 8; emphasis added)

Bound up in this definition is the idea that job analysis is a robust process whereby a job and the person doing that job are very closely scrutinized. The methods of job analysis all examine work and workers in extremely fine detail, allowing the job analyst the same level of understanding of them as an expert in that field, even if the analyst had, prior to conducting the job analysis, been unfamiliar with the role.

It may appear, at first glance, that job analysis is a rather laborious and unnecessarily complex approach to the understanding of a job. However, it forms the foundation of a diverse range of organizational processes. In recruitment and selection, it provides the criteria by which one can assess a candidate's degree of fit to the job, and their likely level of future job performance. In training and development, it helps to identify gaps between actual performance and the expected level of performance in a job (this gap representing the training needs of an employee or group). In performance management, it allows one to quantify an individual's performance in more objective, behavioural terms. In short, without job analysis, many of the things organizations do would be fundamentally flawed in their approach.

1.2 Types of Job Analysis: Work- and Worker-oriented Analysis

Classically, there are two broad forms of job analysis: *work-oriented analysis* and *worker-oriented analysis* (McCormick, 1976). These forms differ in their focus, and by extension, the types of data which they generate.

Work-oriented analysis seeks to break down a job into its constituent parts through a process of continual narrowing of focus. Within work-oriented analysis, the parts of a job are arranged in a sort of hierarchy. At the top of this hierarchy is the job, which is made up of a number of positions. Positions are composed of duties, which, in turn, are made up of tasks. Tasks can be viewed as collections of activities, which are, themselves, made up of elements, the smallest units of work, which make up the

Box 1.1: Constituent parts of a job

- *Job*: The totality of the work conducted by individuals working in similar *positions* across all organizations (for example, the job of 'receptionist').
- *Position*: A collection of *duties* for which a single individual in a specific organization is responsible (for example, 'the receptionist at Company X').
- *Duty*: A collection of *tasks* that contribute towards a shared goal (for example, customer communication).
- *Task*: A collection of *activities* that contribute towards a related set of specific job requirements (for example, communicating with customers via telephone).
- *Activity*: A collection of *elements* that contribute towards a single job requirement (for example, redirecting customer calls to relevant departments).
- *Element*: The smallest and most basic unit of work, beyond which further meaningful subdivision is impossible (for example, lifting the telephone's receiver).

bottom of the hierarchy. The nature of each of these constituent parts is explored further in Box 1.1. By systematically breaking down the job into increasingly smaller parts, work-oriented analysis allows the analyst to understand the nuances of a job role which would otherwise be hidden. The result of work-oriented analysis is a comprehensive picture of every aspect of a job, down to its finest details.

Worker-oriented analysis takes a fundamentally different approach to understanding a job. The aim of worker-oriented analysis is to understand the characteristics that define an effective worker in the role. These characteristics are, collectively, referred to by the abbreviation *KSAOs*, which stands for Knowledge, Skills, Abilities and Other Attributes, the four broad types of characteristics with which worker-oriented analysis is concerned. The distinction between these types of characteristics is explored in Box 1.2. Worker-oriented analysis, therefore, produces a profile of person characteristics that define the ideal person for a job, the person who, at least theoretically, should be a perfect fit to the job.

Box 1.2: KSAOs

- *Knowledge*: The learning necessary to be able to perform the tasks of a job effectively (e.g. product knowledge; knowledge of processes and procedures).
- *Skills*: Acquired physical, mental, and social capabilities related to specific job tasks, which are acquired through experience and strengthened through practice (e.g. machinery operation; leadership).
- *Abilities*: Innate physical and cognitive capabilities that can be applied flexibly to a number of different job tasks (e.g. verbal reasoning; manual dexterity).
- *Other Attributes*: Any other relevant characteristic of a person that cannot be classified into one of the categories above (e.g. motivation; attitudes; personality traits; values).

1.3 Products of Job Analysis

Work- and worker-oriented analysis can further be separated by their end products. As stated in the operational definition provided above, job analysis results in some form of written product. The end result of work-oriented analysis is the production of a job description. A job description is a statement of the overall purpose of the role and the key tasks and duties for which the job holder will be expected to be responsible.

By contrast, the product of worker-oriented analysis is a person specification. A person specification is a profile of the KSAOs, experience and overt behaviours necessary to perform effectively in the job. Typically, the characteristics in the person specification will be divided into those that are essential for the job (those which the job holder must possess to be effective), and those that are seen as desirable (which are non-essential for effectiveness, but might differentiate job holders in terms of their fit to the role and subsequent level of performance).

Both of these documents are critical to the understanding of the job role. Therefore, work- and worker-oriented analyses should not be viewed as competing processes. Rather, they should be viewed as complementary. Together, they provide a complete picture of the requirements of the job and the attributes which allow the job holder to be effective in it.

1.4 Methods

Job analysts have a very diverse range of methods available to help them understand jobs (see Brannick et al., 2007, for an overview). Different techniques have both strengths and weaknesses, and there is no single technique that can be relied upon to be the ‘magic bullet’ to be able to effectively analyse all jobs in all contexts. In practice, when conducting job analysis, an analyst is likely to draw upon a number of techniques, as each will provide him or her with a unique perspective on the nuances of the job, providing information that other techniques may well have missed.

1.4.1 Desk research

The easiest and most cost-effective way to find out about the nature of a job is to draw upon work that has already been done. For the vast majority of jobs, it is highly likely that some form of job analysis has been conducted in the past. In all cases, the starting point of job analysis should be an exploration of the data that are already available. Most HR departments hold job descriptions and person specifications for roles in the organization and sometimes retain some of the job analysis data on which they were based. The caveat to doing this is that it is quite possible that much of these data may be old, and, as such, may not be as

relevant to the role as they once were. For this reason, this kind of data should be treated as the foundation on which to build a thorough profile of the job and job holder, one that is complemented by current data acquired using other job analysis techniques.

One source of job analysis data that deserves special mention is called *O*NET*. *O*NET* is an expansive database of job analysis data, curated by the U.S. Department of Labor/Employment and Training Administration (USDOL/ETA). *O*NET* was created in 2001 as a publicly available database of occupational information that would be continually updated to reflect changes in job roles as technology and society changed. *O*NET*'s content comprises both work-oriented data such as tasks and work context, and worker-oriented data such as required knowledge, skills and abilities. The database contains detailed data on some 974 occupations, the vast majority of which are updated on an annual basis (*O*NET*, 2016). *O*NET* is an extremely useful resource, and should be consulted as part of the analysis of any job role. *O*NET* data have also been used in published research studies (e.g. Judge et al., 1999; Woods & Hampson, 2010), further underlining their robustness and empirical utility.

1.4.2 Work-oriented job analysis methods

Desk research has limitations. For example, it does not fully capture the contextual factors that influence the nature of specific positions within specific organizations. For these reasons, it is always sensible to complement desk research with one or more other job analysis data collection methods.

1.4.2.1 *Observation and shadowing*

One of the most straightforward ways to gather information about the tasks involved in a job is to go into an organization and observe current job holders at work. A job analyst could observe a group of employees, examining behaviour while they carry out specific job tasks. This kind of data collection lends itself particularly well to work that is procedural or repetitive, as specific behaviours in these contexts tend to be demonstrated multiple times a day in a fixed order.

For more complex jobs, the analyst might instead choose to *shadow* a single employee. When shadowing an individual, the analyst will accompany them throughout their working day, recording the behaviours they observe. These methods, however, have some disadvantages: They both represent a relatively narrow 'snapshot' of behaviour, and, as such, are unsuitable for recording behaviours that may be only displayed infrequently or under exceptional circumstances. Additionally, the interpretation of specific behaviours tends to fall to the analyst themselves, so may overlook some of the hidden detail of the observed work tasks. Finally, these methods are unsuitable for tasks in which confidentiality is an issue, as it may be the case that the analyst's presence would expose them to work practices or information to which they should not have access.

1.4.2.2 *Diary methods*

One approach that can address some of these shortcomings is to ask workers to keep diaries while they perform particular work tasks. Incumbents will typically record their behaviours at work over a relatively short period of time, after which they will pass their diary to the analyst to interpret. Note that diary methods could be quantitative or qualitative, depending on the need of the analysis. Quantitative data could be collected such as daily frequency of certain tasks, whereas qualitative data might capture more open descriptions of the work that people do day-to-day.

1.4.2.3 *Task analysis*

Observational and diary methods are likely to generate a large amount of data, but that data may not be organized in such a way as to allow for easy interpretation. Task analysis methods are a set of techniques that aim to impose some order upon data of these kinds. The broad aim of task analysis is to create structure to observational data to make it more systematic and quantitative in nature. The analyst observes and records behaviours, their frequency, their duration, the environment in which they occur, the equipment required to perform them, and so on. The analyst then tries to create order from these data to contextualize specific work behaviours as part of wider systems.

One form of task analysis that is widely used in job analysis is *hierarchical task analysis* (HTA). This method aims to understand a work task by breaking it down into a number of subtasks, and then describing how each interacts to contribute towards completion of the task. The task is described in terms of its *goal*, the *operations* needed to be carried out to achieve this goal, and the *plan* that provides the sequence in which these operations need to be conducted.

The HTA technique has the versatility to model tasks to a very fine level of detail. Lane, Stanton and Harrison (2006) used HTA to model the process involved by a medical professional administering a drug to a patient. Though there are only four operations at the top level of the hierarchy ('1. Check chart for medication details', '2. Acquire medication', '3. Administer drug to patient', and '4. Record dosage') that contribute to the goal, they are broken down into an incredibly detailed hierarchy, making for a total of 105 operations in the resultant model of this seemingly simple task.

One further form of task analysis worthy of note is *functional job analysis* (FJA) (Fine, 1955). FJA aims to classify tasks according to similarities in their functional requirements by using a system of coding what a worker does when performing the task. Tasks are broken down into three broad categories by target, the target of a task being data, people, or things. The task is assigned a code based on the action conducted on that target (for example 'analyse data'; 'supervise people'). The end result of FJA is the generation of a task statement that describes the task in terms of the skills needed (*training content*) to perform a specific function (*the task*) to the required standard (*performance standards*). Box 1.3 presents an example of FJA.

Box 1.3: An example of functional job analysis

Fine and Cronshaw (1999) provide an example of the typical form of a task statement generated by FJA, using the task of typing standard form letters and preparing them for mailing. In this example, the task is defined as follows:

Types/transcribes standard form letter, including information from records provided, following [standard operating procedure] for form letter, but adjusting standard form as required for clarity and smoothness, etc. in order to prepare letter for mailing.

(Fine and Cronshaw (1999, p. 71)

The training content required to do this task is identified as:

- Functional:
 - *How to type: letters.*
 - *How to transcribe material, correcting mechanical errors.*
 - *How to combine two written sets of data into one.*
- Specific:
 - *How to obtain records and find information in them.*
 - *Knowledge of S.O.P. for standard letter format: how/where to include information.*
 - *Knowledge of information required in letter.*
 - *How to use particular typewrite provided.*

(Fine and Cronshaw, 1999, p. 71)

Finally, the performance standards required are:

- Descriptive:
 - *Types with reasonable speed and accuracy.*
 - *Format of letters correct.*
 - *Any changes/adjustments are made correctly.*
- Numerical:
 - *Completes letters in X period of time.*
 - *No uncorrected spelling, mechanical or adjustment errors per letter.*
 - *Fewer than X omissions of information per X no. letters typed.*

(Fine and Cronshaw, 1999, p. 71)

1.4.3 Worker-oriented job analysis methods

While these methods will give the job analyst a thorough understanding of the tasks that make up the job in question, what they are unable to do is to provide any insight into the KSAOs that an incumbent requires for the role. By contrast, worker-oriented methods focus on what makes a competent job holder. These methods tend to emphasize the differences in key attributes between good, excellent and poor performers, allowing the job analyst insight into the most relevant person characteristics for the role.

1.4.3.1 Interviews

The most direct way to discover the characteristics that make an effective worker is to speak to some form of *subject matter expert* (SME). SMEs are chosen as they have some insight into the target job which the analyst does not, so they will typically be either job incumbents, or their supervisors or line managers. Interviews are typically conducted one-on-one, though *focus groups* of SMEs can be assembled, allowing the analyst to collect data much more efficiently. However, focus groups can be prone to bias. If one or two group members are substantially more vocal than the others, their opinions may be seen as representing the group as a whole, whereas, in actuality, this may not be the case.

A very useful form of interview for the purposes of job analysis is the *critical incident interview* (Flanagan, 1954). Critical incident interviews are semi-structured interviews in which the interviewee is asked to describe specific incidents in which an employee demonstrated particularly effective or ineffective behaviour. This approach serves two purposes. First, it serves to highlight the specific behaviours that separate good, excellent and poor performers. Second, it provides the analyst with insight into critical aspects of the job that may only occur infrequently, thus would be likely to be overlooked by observational methods.

1.4.3.2 Repertory grids

Repertory grids (Kelly, 1955) are a technique that aims to identify the characteristics that separate good from poor performers. SMEs are presented with sets of three workers drawn from a pool, two of whom have been judged to be alike in terms of their effectiveness and the other as different. The SME then defines a construct of some kind that differentiates between the pair and the single worker. This construct is bipolar, so that the effective worker (or pair) will be characterized by one pole of the construct, and the ineffective worker (or pair) by the other. The SME will then be asked to rate each of the remaining workers in the pool in terms of where they lie on this newly-created continuum. The process then repeats with a new selection of workers and a new construct.

For example, Workers A and B (effective) might be characterized as ‘organized’ by the SME, whereas Worker C (ineffective) might be characterized as ‘disorganized’. Workers D, E, F and G would then be rated according to where on the continuum the SME felt they belonged, assigning each a numerical value. In doing so, the analyst can get a rich understanding of the characteristics that separate effective and ineffective workers, and the relative importance of each aspect compared to others.

1.4.3.3 Questionnaires

While interview-based methods tend to provide the analyst with rich descriptions of the characteristics that make for effective job holders, they have a number of drawbacks. First, they tend not to be very quantitative, so can suffer from issues of reliability and validity. Second, they are relatively labour-intensive to run. As an alternative, a number of off-the-shelf questionnaires are available to help the analyst understand the target job quickly and efficiently, all of which are highly quantitative.

The *Fleishman Job Analysis Survey* (F-JAS) (Fleishman & Reilly, 1995) aims to identify the physical, cognitive and social abilities required to perform the tasks of a job. Multiple SMEs complete the survey by rating each of 73 separate abilities in terms of the level required to perform the tasks of a job. The real value of the F-JAS is in its relationship to Fleishman and Reilly's (1992) *Handbook of Human Abilities*. The handbook contains an index of published tests with which to assess each of these abilities, including details on the authors and publishers of the tests. This allows the analyst to interpret the results of the F-JAS in terms of the kinds of assessments that are best suited to measuring each of the abilities most relevant for the job. This allows the results of the job analysis to be easily integrated into other organizational systems such as selection (to identify the suitability of candidates for the job role) and training (to assess trainability and help identify likely training needs).

The *NEO Job Profiler* (Costa, 1996) is a questionnaire designed to identify the personality traits which are desirable for the job. Based on Costa's (1996) NEO PI-R personality trait questionnaire, it examines how desirable in a job incumbent are each of the Big Five Personality Traits (Openness, Conscientiousness, Extroversion, Agreeableness and Neuroticism) and their facets. This results in the generation of an ideal personality profile, against which future candidates' job fit can be assessed at selection, or which can be used in training contexts to identify potential areas of development.

One final questionnaire that deserves mention is the *Position Analysis Questionnaire* (PAQ) (McCormick, Jeanneret, & Mecham, 1972). Unlike the other questionnaires mentioned in this section, the PAQ's focus is work-oriented. It aims to uncover how a job is done through systematic exploration of 189 job elements, classified into seven categories. An SME rates each of these job elements according to six scales, designed to highlight the relative importance of each element. Though the PAQ tends to give very detailed and highly quantitative breakdowns of the tasks involved in a job, it has been suggested that the reliability of its ratings can suffer when analysing the more abstract, less observable elements of a job, such as decision-making and problem-solving (Morgeson & Campion, 1997). For this reason, the PAQ may be better suited to the analysis of highly procedural jobs than it is to those in which task behaviour is less easily observed, such as professional jobs.

Table 1.1 presents a detailed comparison of the job analysis techniques discussed in this chapter.

Table 1.1: Comparing job analysis techniques

<i>Technique</i>	<i>Work/ Worker?</i>	<i>Qualitative/ Quantitative Data?</i>	<i>Good to use when:</i>	<i>Output</i>
Desk research	Both	Neither – accumulation of evidence from pre-existing sources	Jobs are pre-existing, with extensive information available for review.	Portfolio of information concerning focal job
Observation	Work	Qualitative descriptions of behaviour Quantitative frequency data for observations	Procedural or repetitive work	Observed behaviour descriptions plus frequencies
Shadowing	Work	Qualitative – written accounts of work undertaken by a specific individual	Work is complex and varied, requiring a wide cross section of activity to be collected	Structured description of work activities undertaken
Diary Methods	Work	Qualitative: descriptions of work undertaken daily Quantitative: surveys about frequencies of particular activities collected at regular intervals	Work is complex, but privacy of work context prevents shadowing, or when shadowing does not adequately capture full range of tasks	Worker-developed diary return (whether written or survey based)
Hierarchical Task Analysis	Work	Qualitative	The job comprises many procedures that must be carried out precisely and accurately	Hierarchical flow diagram breaking down tasks into smaller subtasks and actions
Functional Job Analysis	Work	Qualitative: key job tasks are content-analysed and classified according to core functional content	Work is generally well defined and predictable in terms of the activities encountered	Set of task statements, that coherently link core tasks together
Interviews with Workers	Worker	Qualitative: exploration of the main person and KSAO requirements of the job	There are multiple stakeholders who may have unique insights (e.g. job holders, managers, customers).	Written outputs of interview sessions
Critical Incidents Interview	Worker	Qualitative: written descriptions of key behaviours differentiating effective versus ineffective performance	Jobs afford high levels of autonomy so that behaviour, decisions, and choices of actions can impact outcomes	Structured descriptions of behaviours influencing effectiveness of performance outcomes

Repertory Grids	Worker	Qualitative: descriptions of performance differentiating characteristics Quantitative: ratings of effectiveness that may be used to establish data structures or relative importance of characteristics	Jobs afford high levels of autonomy, so that individual differences clearly differentiate performance; when raters have a clear oversight of performance of multiple workers doing the focal job	Lists of performance differentiating characteristics and ratings of importance/ effectiveness of targets
Questionnaires (e.g. Position Analysis Questionnaire; Fleishman Job Analysis Survey)	Work or Worker	Quantitative	The nature of the job is poorly understood by the analyst, requiring wide assessment of the work tasks or worker characteristics required to perform them; multiple perspectives are to be collected efficiently; jobs are highly multifaceted; comparison with other jobs is necessary, such as in the case of job evaluation	Quantitative data (scores) based on scales and dimensions of the various questionnaires available to the analyst
Combination Job Analysis Methodology	Both	Qualitative: descriptions and statements of key job duties and KSAO requirements Quantitative: ratings of tasks and KSAOs to prioritize content	In-depth analysis is required, and mixed methodology desirable to establish how the outputs of analysis might be used in different Human Resource Management functions	Structured descriptions of key job tasks and duties, and KSAO components required to carry out the tasks and duties

1.4.4 Combination Job Analysis Methodology (CJAM)

A holistic approach to job analysis that considers both work- and worker-oriented approaches is *Combination Job Analysis Methodology* (CJAM) (Pearn & Kandola, 1988). CJAM combines aspects of many different job analysis approaches with the aim of achieving a thorough understanding of both a job’s content and the person characteristics that define effective workers in it. SMEs and job analysts form a team, which then uses work-oriented methods to compile a comprehensive list of job tasks. This list is then condensed to form a smaller list of duties of the role, which the team rates according to their

importance. A list of the required KSAOs for these duties is then compiled by the team using a variety of worker-oriented methods. This list is then refined, and the resultant KSAOs rated for their relative importance, as for the duties. Though labour-intensive in the extreme, this process results in a job description and a person specification which are likely to be both comprehensive and reliable (Brannick et al., 2007).

1.5 Job Analysis in Training Contexts: Training Needs Analysis

One application of job analysis methods to specific HRM practices is as part of training needs analysis (TNA). TNA is the foundational step in the development of any training programme. It is a systematic process of exploration that identifies where in an organization training is needed, the contextual factors that could influence its success, and the nature of the learning required. Goldstein and Ford (2002) propose a three-stage process for conducting TNA. The first stage is organizational analysis. The aims of this stage are two-fold: (1) this stage provides information about where and when training is required within the organization; and (2) it highlights potential contextual factors that might affect training delivery, such as the culture of the organization, its strategy, and the level of support for the programme from senior management.

The next stage is job/task analysis. This stage aims to define employees' expected level of performance. In doing so, the training needs analyst may draw upon any of the methods described earlier in the chapter. Additionally, it may be useful for the analyst to identify the types of learning necessary for the job. In this case, taxonomies of types of learning (e.g. Gagne, 1984; Merrill, 1983) may be used to match types of learning to training objectives.

Finally, person analysis seeks to assess employees' actual performance. This provides information about who needs to be trained and the content that should be included in the training programme. Any shortfall between the actual and expected performance identified in this stage and the previous one represents a performance gap, which then informs the training needs of the employees. Though the identification of an employee's training needs is traditionally conducted by the analyst, an alternative approach is to ask individuals to self-assess their own training needs. While this is potentially a quicker and more cost-effective alternative to traditional person analysis, data gathered in this way must be treated carefully, as it has been demonstrated that negative attitudes towards the utility of the training can reduce the reliability of self-assessments of an individual's training needs (Ford & Noe, 1987). As well as identifying training needs, person analysis may provide insight into key individual differences between trainees that might affect the delivery of the training.

Box 1.4: How to make ‘what people really do at work’ really positive, healthy and motivating

Job analysis can serve more than a descriptive function. In a broader sense it helps us to understand whether the work that people do presents a risk or benefit to their motivation and health. The literature on job design and motivation tells us that there are certain characteristics of jobs that make them intrinsically more or less motivating. For example, the Job Characteristics Model (Hackman and Oldham, 1980) included five key characteristics:

- Skill Variety
- Task Identity
- Task Significance
- Autonomy
- Feedback

These and a variety of other social and motivational aspects of jobs were analysed by Humphrey, Nahrgang and Morgeson (2007) in a meta-analysis. They reported that:

- Motivational and social characteristics accounted for 64% of variance in organizational commitment, 87% of variance in job involvement, 35% of variance in subjective job performance, 7% of variance in absence levels and 26% of variance in turnover intentions.
- Motivational, social and work context characteristics accounted for 55% of variance in job satisfaction, 38% of variance in people’s experience of work stress and 23% of variance in burnout and exhaustion.

The implications of their work are that by ensuring that certain characteristics and features are present in jobs, they can be designed to be more positive and motivating. These implications are completely consistent with the conclusions of other research into work and well-being (e.g. Warr, 2011), and work stress and health (e.g. Cooper & Marshall, 1976; Cox, 1993). In the case of work stress, job features are modelled as potential psychosocial hazards. So, for example, if role ambiguity (lack of clarity in the job specification), role overload (too much demand in the job specification) or role conflict (aspects of the job specification that clash with one another) are present in a job, the result will tend to be higher levels of stress at work.

The relevance to job analysis is reasonably clear; not only can it identify what people do at work, or what they need to do in a job role, it also serves as a potential diagnostic for whether jobs are likely to be motivating and positive, versus stressful or unhealthy, and demotivating. By intervening (e.g. in ways outlined in Chapter 16 on healthy workplaces), managers and practitioners can ensure that potentially stressful and unhealthy jobs are changed, and better designed to mitigate risks.

On an even broader level, there are potential social and ethical implications of using job analysis in this broader way. Woods and West (2014) highlight the relevance of job design to the “Decent Work Agenda” of the International Labor Organization (ILO). They describe Decent Work as reflecting the aspirations of all people for their working lives, stating it should have:

opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.

(ILO, 2013)

Continued

The ILO highlight some key aspects of decent work (creating jobs, guaranteeing rights at work, extending social protection, and promoting social dialogue) and provide framework guidelines for assessing it in countries, measuring hard indicators such as labour market participation (e.g. employment and unemployment; numbers of women and children at work), alongside more psychosocial aspects (e.g. number of working hours, and consequent opportunities for balancing work, social and personal life).

The recognition in the Decent Work Agenda is the potential for work to contribute in positive and rewarding ways to people's lives, provided it is organized fairly, ethically, and in the context of sound economic, societal, and governmental structures, with respect for people and their rights at work.

We might see many of the fundamental aspects of decent work as *critical hygiene factors* (this means hygiene in the way that Herzberg, Mausner, and Snyderman (1959) describe hygiene factors, i.e. extrinsic factors including pay and conditions): basic rights and features of work that make it decent.

Morgeson and Dierdorff (2011), in a conference speech, talked about *good work*, and talked about this in the context of job design and the Job Characteristics Model (JCM). Good work is not only *decent*, but is designed to enhance well-being and meaningfulness.

A further implication from the ILO Decent Work Agenda is the need for integrated perspectives on what constitutes decent or good work. From a psychology point of view, there is a need to capture core aspects of job design – the work that people really do – with literature on careers, women at work, diversity and fairness, alongside the real wider context (social, organizational, economic) within which work exists (ILO, 2013).

1.6 Modern Approaches to Understanding Jobs

For some years now, job analysis has been somewhat in decline (Sanchez & Levine, 2012). A key point of criticism that has been levelled at traditional job analysis is that it is static and inflexible: its implicit assumption is that the tasks that comprise a job and the KSAOs necessary to perform it will not change as time passes (Robertson, Bartram, & Callinan, 2002). Clearly this assumption is flawed, given the rapid economic and technological changes that the working world has undergone in the past 30 years. For this reason, many practitioners have sought alternatives to job analysis that are more flexible in their approach, and that can provide outputs that are more ‘future proof’ than are the outputs of traditional job analysis.

There are two broad approaches that have begun to replace the classical approach to job analysis as the preferred method of understanding jobs in practice. The first is *competency profiling* and the second is *work analysis*.

1.6.1 Competency profiling

One alternative to traditional job analysis that has seen growing popularity in organizations in recent years is competency profiling (sometimes referred to as competency modelling). Competency profiling is similar in its scope to worker-oriented analysis, though, rather than defining effective workers in terms of their KSAOs directly, it defines them in terms of the competencies required to be effective in the job. Competencies are “observable workplace behaviours [that] form the basis of a differentiated measurement [of performance]” (Bartram,

2005, pp. 1185–6). As such, they are patterns of observable, performance-related behaviour that draw upon aspects of KSAOs (Roberts, 2005). This practice of defining performance behaviourally allows competencies to be integrated coherently into a variety of HRM processes such as selection, training and performance management (Soderquist et al., 2010), allowing organizations to assess employees against the same criteria across often disparate processes.

Competencies are arranged into *competency frameworks*, i.e., sets of competencies that seek to cover a wide range of job roles. These frameworks vary widely in their scope. Many organizations have developed their own specific competency frameworks, designed only to describe the performance-related behaviour of their own employees. Other, broader frameworks have been designed to describe behaviour within a family of jobs across organizational settings. One such competency framework is Tett et al.'s (2000) taxonomy of managerial competencies, which describes 53 behaviours related to performance in managers, classifying them according to nine dimensions. At the broadest level, general taxonomies have been developed, such as Bartram's Great Eight (Bartram, 2005; see Box 1.5), which are versatile enough to be used to separate effective and ineffective performers in a wide range of job roles and contexts.

Box 1.5: Bartram's (2005) Great Eight competencies

- *Leading and Deciding*: Takes control and exercises leadership. Initiates action, gives direction and takes responsibility.
- *Supporting and Co-operating*: Supports others and shows respect and positive regard for them in social situations. Puts people first, working effectively with individuals and teams, clients and staff. Behaves consistently with clear personal values that complement those of the organization.
- *Interacting and Presenting*: Communicates and networks effectively. Successfully persuades and influences others. Relates to others in a confident and relaxed manner.
- *Analysing and Interpreting*: Shows evidence of clear analytical thinking. Gets to the heart of complex problems and issues. Applies own expertise effectively. Quickly learns new technology. Communicates well in writing.
- *Creating and Conceptualizing*: Open to new ideas and experiences. Seeks out learning opportunities. Handles situations and problems with innovation and creativity. Thinks broadly and strategically. Supports and drives organizational change.
- *Organizing and Executing*: Plans ahead and works in a systematic and organized way. Follows directions and procedures. Focuses on customer satisfaction and delivers a quality service or product to the agreed standards.
- *Adapting and Coping*: Adapts and responds well to change. Manages pressure effectively and copes with setbacks.
- *Enterprising and Performing*: Focuses on results and achieving personal work objectives. Works best when work is related closely to results and the impact of personal efforts is obvious. Shows an understanding of business, commerce and finance. Seeks opportunities for self-development and career advancement.

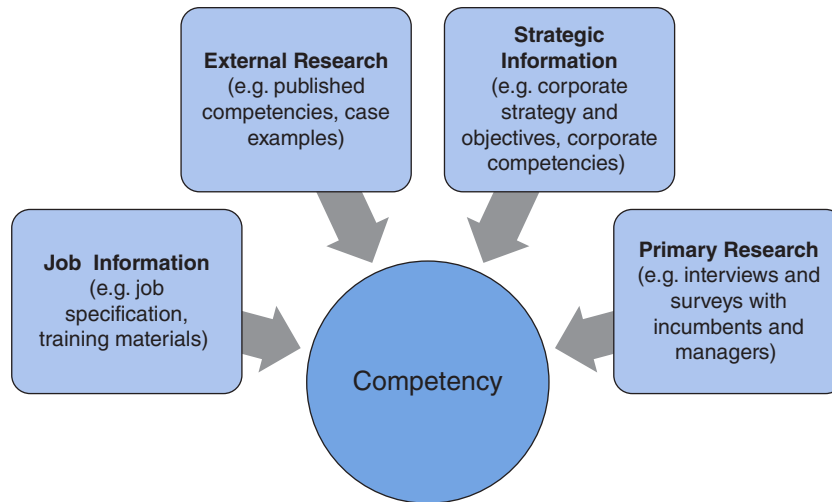


Figure 1.1: Information sources contributing to the design of competency models

Competency profiling is the practice of selecting the relevant competencies for a job. The analyst will select the competencies required for the role based on their own expertise, or will consult SMEs to ensure accuracy. Multiple sources of information (Figure 1.1) are integrated for developing competencies (Campion et al., 2011), for example, including:

- information from existing job analyses, e.g. job descriptions and person specifications;
- external research, e.g. published research papers, case studies;
- strategic information, e.g. corporate strategy, business objectives, corporate values;
- primary research, e.g. data collected using similar techniques to those reviewed earlier for job analysis.

The product of competency modelling is specifications for competencies in terms of what each comprises, and how performance is differentiated at various levels. This represents an advance on conventional job analysis, by specifying not only what people need to do in their role, but how to differentiate when they are doing it more or less effectively. Moreover, because competencies represent combinations of KSAOs, they are more closely aligned to the performance of people at work. This is because almost all job performance behaviour draws on various combinations of knowledge, skills, abilities, personality, attitudes and motivation, and so representing the behaviour in this way in competencies is conceptually sensible. An example competency is shown in Figure 1.2.

PROJECT MANAGEMENT			
The art of creating effective and accurate schedules with a well-defined scope, while being personally accountable for the execution and invested in the success of the project. People who exhibit this competency effectively and continuously manage risks and dependencies by making timely decisions while ensuring the quality of the project.			
Proficiency Level 1	Proficiency Level 2	Proficiency Level 3	Proficiency Level 4
Identifies risks and dependencies and communicates to stakeholders.	Develops systems to monitor risks and dependencies and report change.	Anticipates changing conditions and impact to risks and dependencies and takes preventative action.	Proactively identifies implications of related internal and external business conditions to risks and dependencies.
Appropriately escalates blocking issues when necessary.	Works effectively across disciplines and organizational boundaries to gain timely closure on decisions that impact own project/portfolio/solution.	Effects timely, mutually beneficial outcomes on decisions that impact the whole product, multiple projects or portfolios.	Instills a system and culture that facilitates effective decision-making across organizations, product lines or portfolios.
Understands project objectives, expected quality, metrics and the business case.	Develops methods to track and report metrics, gains agreement on quality and relates it to business value.	Evaluates quality and metrics based on return on investment and ensures alignment to business need.	Evaluates project results against related examples and incorporates best practices and key learning for future improvements.
Champions project to stakeholders and articulates business value.	Asks the right questions to resolve issues and applies creative solutions to meet project objectives.	Proactively inspires others to take action on issues and implications that could prohibit projects success.	Champions business value across multiple organizations and gains alignment and commitment to prioritization to ensure long-term project deliverables.

Figure 1.2: The Competency ‘Project Management’

Source: Adapted from Campion et al. (2011).

Campion et al. (2011) note that competency profiling has a number of other tangible benefits over traditional job analysis methods. Senior managers in organizations are likely to pay more attention to competency profiling than they do to traditional job analysis. Competencies tend to be linked directly to organizational goals, meaning they make the alignment of individual performance with these goals easier. They often contain descriptions of how competencies develop with

job level, giving them an element of flexibility. Finally, they may be able to accommodate a degree of future change to job requirements, overcoming some of the limitations of the more static traditional job analysis approach. These reasons are most likely why, in practice, competency profiling has overtaken traditional job analysis in recent years as the preferred method of analysing what people really do at work.

1.6.2 Work analysis

Rather than being a truly distinct concept, work analysis is a broadening of the concept of job analysis in response to the criticisms cited above. Work analysis puts greater emphasis upon ‘understanding the experience of work’ (Sanchez & Levine, 2012, p. 407) than does traditional job analysis. In addition to uncovering both work- and worker-oriented facets of the job itself, work analysis seeks to understand the context in which work is carried out within the role (Morgeson & Dierdorff, 2011). It includes a consideration of wider organizational factors that could affect how a job is done, such as the role’s place within a team and organization, and the organization’s goals and strategy. In this regard, there are parallels that can be drawn between work analysis and the organizational analysis aspect of TNA described earlier in this chapter. However, where organizational analysis is designed to identify potential barriers to successful delivery of training, work analysis identifies the factors that can influence how work is done. Though in its relative infancy, this approach shows the promise of being able to better understand jobs as the working world itself undergoes changes: Morgeson and Dierdorff (2011) reason that the impacts upon work of factors such as globalization, technological advances, and the changing nature of the global economy could all better be understood through work analysis.

1.7 Job Analysis: A Dynamic Perspective

Clearly, conventional job analysis needs to keep pace with perspectives on management and HRM to remain relevant. In assessing some of the limitations and areas for job analysis to develop, it is helpful to consider some wider aspects of the literature in work and organizational psychology. Techniques that have traditionally been employed to analyse jobs may not adequately capture some of the dynamics of jobs and the realities of how people perform them. A move towards a more developmental, and dynamic view of job analysis would be consistent with trends in other areas of research (e.g., in research on personality and work; Woods, Lievens, De Fruyt, & Wille, 2013). Two elements are particularly relevant to developing a more dynamic view: time, and person–environment fit.

Regarding time, it is critical for the understanding of job roles and the demands they place on incumbents that the influence of time is considered. The performance demands of a job in the first weeks of tenure are different from those that are encountered in year 2 of tenure, for example. Theorizing in this area has distinguished transitional and maintenance periods of job tenure (Zyphur, Chaturvedi, & Arvey, 2008). The transitional period represents the commencement of a new job role and the early months in which the job is learned. The maintenance phase is when the job has generally been learned or mastered. Research findings show that these phases of the job present different demands, such that performance is predicted by different characteristics in each phase (e.g., Lievens, Ones, & Dilchert, 2009; Thoresen, Bradley, Bliese, & Thoresen, 2004). Characteristics that may have been unimportant at the start of the job, become important later on. This is consistent with Trait Activation Theory (Tett & Burnett, 2003) and the idea that the demands of jobs across working life change so as to activate different kinds of KSAOs (Woods et al., 2013).

To account for this, job analysis should more explicitly examine and consider how demands change and evolve. Otherwise, in applying the results of job analysis in, for example, selection and recruitment, there is a real risk that selection decisions may lead to ineffective hiring in the long term.

Regarding person–environment (PE) fit, there is a further potential need for job analysis to extend its scope to encompass a wider perspective on fit. Models of PE fit include examination of fit at different levels of abstraction, for example, person–vocation (PV) fit, person–job (PJ) fit, person–organization (PO) fit, and person–group (PG) fit (Kristof, 1996; Lauver & Kristof-Brown, 2001).

Job analysis has traditionally focused most strongly on PJ fit. Yet, other aspects of PE fit could be equally influential for performance and effectiveness. For example, in a long-term career perspective, PV fit is important. From an organizational strategic point of view, PO fit is key to ensuring that people working in an organization are aligned to its values. PG fit is also critical for ensuring that teams are appropriately diverse, and to manage risks of conflict and cohesion. Moreover, maintaining an emphasis on the dynamic nature of jobs, the notion of fit must also be seen as changeable. That is, people themselves adjust and change in response to their jobs (Woods et al., 2013) and are able to change their jobs to better suit them, through job-crafting, for example (Wrzesniewski & Dutton, 2001).

In short, as job analysis as a technique continues to evolve, psychologists and other practitioners will need to consider not only *what* people really do at work, but also *when*, *where*, and *why* they do. Recent advances, including work analysis and competency modelling, have already taken steps in these directions.

Summary

Job analysis allows those within organizations to gain insight into what people really do at work. Its methods provide robust information to practitioners about what a job requires, and the key characteristics that predict success within it. As such, it represents a crucial first step in a wide variety of organizational practices. It is the foundation of selection, training, performance appraisal, and work design. However, it may be the case that job analysis in its classical form is no longer truly fit for purpose: The nature of work has changed rapidly in recent history, and it is likely that it will continue to do so in the future as technology advances and the world becomes increasingly globalized. This has led many practitioners to abandon the static and inflexible job analysis in favour of the more dynamic competency profiling. However, new, broader approaches to examining the experience of work in the form of work analysis could allow our understanding of jobs to be better understood in terms of the new contexts in which they may be situated. This has the potential to give many job analysis techniques a new lease of life, to allow them to once again contribute meaningfully to evidence-based practice within modern organizations.

Discussion Points

- 1 Imagine that you are an occupational psychologist who has been tasked with producing an up-to-date job description and person specification for the position of air traffic controller at a major international airport. What approach would you take to ensure that the end products of your job analysis were accurate reflections of the job and ideal job holder?
- 2 How can practitioners ensure that, when analysing the demands of jobs, they capture information as widely as possible (including the context, dynamic development of roles, motivational and work-related health aspects of jobs)?

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