

**Training Needs Assessment in Scotland:
An Analytical Overview**

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1. INTRODUCTION

The provision of training at a local level - whether by the public or private sector - has created new information challenges for local economic development bodies. In order to better utilize public resources in training programmes, these bodies commonly aim to ensure training provision is directed in such a way as to address gaps in the skills market with the minimum amount of additional training. This can only be accomplished with a strongly-founded understanding of the local labour market, in terms of the existing level of skills, the current demand for skills and the processes which lead to changes in supply and demand over time. As a result, the incidence of local skills audits has increased greatly in recent years, producing a diversity of effective methodologies that have been used to measure skills deficits.

On behalf of the National Audit Office in Scotland, this report examines the main methodological issues in undertaking skills audits. The report has the following objectives:

- to consider the principal methodological challenges in local skills audits;
- to provide an evaluation of different types of criteria for undertaking training needs assessments;
- to assess data availability for these different indicators; and
- to produce a checklist of 'good practice' approaches.

The research is principally based on a review of academic literature on labour market studies as well as a range of skills audits. At the outset, it should be noted that the focus of the report is on methods for examining skills shortages in the local economy, not on procedures for assessing the local education and training infrastructure. Although these would be an important complement to a training needs assessment, the subject is complex and beyond the limited scope of the current review.

Similarly, in drawing out the common methodological approaches that have been successfully employed in other studies, an idealized framework for skills audits has been developed here. As skills audits are frequently part of larger labour market studies, with a range of different research objectives, this paper endeavours to provide practical suggestions rather than prescribe a common approach to all skills audits. The best combination of approaches should always be determined by both the characteristics of the local labour market as well as the economic development body commissioning the audit.

In spite of the diversity of labour market studies, there remain certain common features in the most effective audits that are worth highlighting at the start.

1. *Comprehensive studies assess both the existing supply of certain skills and the existing demand for skills within the region with a view to considering skills shortages from an understanding of both processes* (Haughton and Peck, 1988). In its own recommendation of good practice to Training and Enterprise Councils undertaking local labour market studies, an Employment Department guide advocated the twin-track approach to examining skills trends (Employment Department, 1991a).
2. *Effective skills audits are not merely lists of skills shortages, but should provide an analytical framework for understanding underlying trends*, particularly with regards to the impact of local economic developments on the relationship of skills demand and supply. For example, in addressing the issue of skills shortages in the Grampian economy, the local labour market assessment produced for Grampian Enterprise placed changes in the supply and demand for jobs within a framework of changes within the local economy, particularly in key sectors such as oil/gas supply, agriculture and food, and services (Business Strategies, 1997).
3. *It is recommended that skills audits should not be one-off exercises*: initial studies act as a baseline for monitoring future changes by creating a detailed dataset and a common methodology and data definitions for future skills audits to follow. In this way, a series of local skills audits can build up an extensive range of data on the local labour market which can serve as a crucial tool for policy-makers while maximizing research resources. An example of how effective this can be is the Motherwell Labour Market Information Project, involving a series of three surveys of employer and unemployed groups at an annual interval in the mid-1980s (Hunter, Senior, Danson, 1988). The project measured information gaps in the local labour market, and the results produced a picture of how the information needs of firms and job-seekers changed over time.

The structure of this report examines these different features in successive chapters: the context for skills audit; skills supply; skills demand; and skill shortages. Each chapter will detail the different methodologies and data sources required to undertake the research, as well as drawing attention to good practice in each area in summary sections at the end of each chapter. A checklist of good practice is included at the end of the report to indicate the principal features of an effective skills audit.

2. CONTEXT FOR SKILLS AUDITS

2.1. Introduction

The context for a local skills audit is the essential starting-point for a study assessing training needs. Before determining the supply and demand for skills in a local area, it is important to define carefully the scope of the study, particularly if it is to form a baseline for monitoring changes in skills needs in future. The lack of a clear focus for the study and its constituent concepts can not only weaken assessment of existing trends, but make it difficult for the data to be used for future comparative analysis.

Setting the context for a skills audit can involve a series of research steps, including a description of the local area's economic performance, industrial structure, enterprise base and demographic trends. Such 'background' analysis is often essential for providing the explanation for shifts in local skill needs as well as forecasting future changes. Consequently, it will be examined in more detail in later chapters on skills supply and demand. Without such a wider understanding of local economic processes, a skills audit cannot provide any insight into the longer-term processes affecting skills creation and loss in a local labour market.

In addition though, there is a *methodological* context which should be explicitly considered in advance of a local skills study, arising from the need for a precise definition of the study's remit. The following are the most important areas in which care should be taken to define the study's framework and are discussed in detail in the sections below:

- *labour market*: the geographical area to be covered by the skills study;
- *skills*: the types of skills to be examined; and
- *time period*: the key national and local economic characteristics of the period in which the study is being conducted.

2.2. Defining the labour market

Skills audits are frequently undertaken as part of larger labour market studies or more general assessments of the local economy. The majority of these have been undertaken with the intention of providing information required to design and operate employment, training and business support policies at a local level. While there have been several studies with analysis of local differences that have been conducted by both national organisations - such as the *Skills Audit* by Department for Education and Employment (DfEE, 1998) - and regional agencies - such as Scottish Enterprise's report on *Scottish Labour Market and Skill Trends* (Scottish Enterprise, 1997) - the majority of local skills audits are carried out by local economic development bodies.

In the UK, such studies are often the responsibility of local councils, though they have proliferated in number with the creation of Training and Enterprise Councils (in England and Wales) and Local Enterprise Companies (in Scotland) (Haughton, 1992). Both TECs and LECs have been required to conduct annual assessments of their local labour markets, in order to influence the setting of strategic objectives and performance targets. The most effective studies tend to involve a pooling of the resources and information of several organisations and adoption of a common approach to labour market research, not just within the same area (such as TECs/LECs, local councils and chambers of commerce) but across neighbouring labour markets. In this respect, it is worth highlighting efforts to minimize the cost of studies through the creation of consortia of local economic development bodies. In Fife, a consortium of Fife Regional Council, the then-Training Agency and the Employment Department was formed in 1989 to improve the quality of labour market information in the region, involving close links with local training providers and labour market research units (Henderson, 1996). Increasingly, the importance of such cooperation is becoming prominent in regional skills strategies: for example, in the North-East of England, links between local development bodies on labour market research issues has been explicitly underlined as a key objective of the area's regional strategy (The North East TECs, 1998).

A key problem faced by local bodies undertaking studies is that labour market patterns do not necessarily fit their geographical responsibilities. In many cases, the maps of travel-to-work areas do not match TEC or LEC boundaries, resulting in potentially significant commuting of labour into and from different areas. This is particularly evident when the local area under examination may be part of larger labour markets, especially large population centres, where an accurate depiction of the flow of skills supply and demand cannot be made without an understanding of the interaction of the focus area with neighbouring labour markets. Careless definition of the geographical focus for analysis can result in significant distortion of results. For example, in order to avoid such problems, in its own labour market assessments, Surrey TEC has addressed the impact of London as an attractor on its skills pool explicitly, as the resulting commuting flows are perhaps a more significant influence on the area's skills levels than the majority of internal factors (Employment Department, 1991b).

Such labour demand 'pull' can sometimes be limited to specific occupations. For example, demand for certain highly-skilled jobs might be wider than the local labour market, particularly if local demand has declined. For instance, the decline of the shipbuilding industry in the Tyneside area has led to a partial dilution of its pool of marine design workforce, many of whom have searched outside of the region to find jobs in other areas (in many cases, while remaining resident in the North-East) (Pike, Tomany and Cornford, forthcoming). Consequently, local skills studies need to be aware of the possible existence of different labour markets for different types of jobs, each with their own geographical 'catchment' area, distinguishing between markets at local level (eg. lower-level administrative staff), regional (eg. technical staff), national (eg. marketing and management staff) and international (eg. accountants and specialized engineers) (Pearson and Walsh, 1983).

In addition, local skills audits should also be cognizant of smaller, self-contained labour markets within the local area. Where local labour markets are fragmented, it is

important to avoid generalizing across areas as a whole. The characteristics of certain sub-regions may explain strong local variations in skills needs, for example as a result of highly-localized unemployment blackspots or through the location of a large employer with specific skills requirements. A failure to do this can result in generalized policy conclusions which may exacerbate problems in sub-regions differing greatly from regional averages. An example of the successful application of this approach can be seen in the Forth Valley Market Review and Baseline Report, which paid particular attention to the existence of three distinctive and separate urban sub-regions within the Forth Valley labour market - Alloa, Falkirk and Stirling - within a region characterized by traditional industrial villages and rural areas (McGregor and Richmond, 1996).

2.3. Defining skills

The definition of 'skills' presents some methodological problems. In most skill surveys, a combination of different national classification series tends to be used to determine skills levels. From the perspective of labour demand, analysis usually involves examining filled jobs and vacancies in terms of both the employer's industry - using Standard Industrial Classification (SIC) codes - and occupation within that industry - using Standard Occupational Classification (SOC) codes - allowing a matrix of skills needs to be developed for a local area. Similarly, labour supply analysis requires examination of educational and training qualifications and previous employment as proxies for skills levels. While the two approaches provide strong indications of skills needs in a local area, they have limitations in the degree to which they capture the specific skills needs of individual employers and the extent to which those needs will be met by the available pool of labour.

The chief problem is that employers often view skills in both more narrow as well as wider terms than this analytical approach suggests. Different firms may often be seeking specific sets of skills which may be classified under the same SIC and SOC headings, but which differ greatly. Where this problem occurs in individual instances, this would not greatly affect the overall results, but in cases where local areas are dominated by clusters of companies with highly-specialized skills needs, care needs to be taken to find out how specific are the skills sought by the employer.

In addition, firms often require more broadly-based 'core' skills that are not defined using standard classification systems. These include general skills such as communication skills and familiarity with information technology systems as well as skills that overlap with personal characteristics: aptitude for learning, a positive attitude to work and the ability to work with other people. Such skills are becoming more important in many industries, where companies are developing new, more flexible production systems. These frequently require multi-tasking and team-based work practices, leading employers to tend to favour workers who can develop additional skills quickly, adapt to changes in their job responsibilities and work well with others. Studies that are not sensitive to the importance of these skills may be able to identify sectoral and certain technical gaps in the supply of skills in a region, but miss potential structural deficiencies in the workforce.

The following example illustrates how surveys can be sensitive to these types of skills: in the Coventry and Warwickshire Employer Survey, employers identified skills according to the following categories: practical skills (20 percent of the surveyed employers); personal skills such as motivation and the ability to fit in (again, 20 percent of employers); customer care skills (16 percent); recognized technical skills (12 percent); computer literacy (11 percent); verbal communication skills (10 percent); and flexible skills, or the ability to do more than one job if needed (8 percent) (BMG Research and GFA Consulting, 1997).

2.4. Defining the time period

If the skills study is to form a baseline, the characteristics of the time period in which the study is being conducted need to be known. In particular, if the study is to forecast changes in skills needs, an understanding of the general economic background to the study is key.

First, it is important to determine the point of the economic cycle in which the study is being developed. Economic downturns and periods of growth can affect the results of a skill needs analysis in terms of both the number of employers, size of the unemployed workforce and the composition of skills supply and demand. Any conclusions based on the results should take into consideration their validity with different economic scenarios, which can only be achieved by comparing survey results over a longer period of time to pick out trends.

Second, studies should assess the extent to which the local economy varies from the national. While macroeconomic influences will have a significant impact on the local economy, differences in the industrial structure and other factors will determine to what extent the national economic cycle can be applied locally.

Third, skills audits should also take account of forthcoming major local economic events. The anticipated (or indeed, merely potential) closure of a major employer will have a significant influence on both skills demand and supply, differing in many cases by occupation. Similarly, the future entry of a large foreign investor into the local economy will undermine any labour survey studies based on a projection of existing skills demand and supply conditions.

Lastly, with regards to forecasting of skills shortages, the number of variables and the limitations of the data make specific long-term estimations impossible to achieve. Medium-term indications of shortages - perhaps for up to a period of three years - are feasible, but for longer periods, predictions will be weakened by the increasing number of assumptions of which analysis will have to take account.

Key steps

- Skills audits should be based on the cooperation of relevant economic development bodies at local level, involving the pooling of resources and information and agreement to a common labour market research strategy.
- Defining the labour market under study is key. Account should be taken of the influence of neighbouring labour markets, the existence of different geographical markets for different skills and local variation in labour market conditions within the area.
- Skills audits should be aware of the different definitions of 'skill' held by different groups in the labour market. Special attention should be given to less-easily defined skills such as attitudes to learning and work and communication skills.
- A sensitivity to the timing of audits is essential. Analysis must be aware of longer-term economic trends and local differences from national trends, as well as anticipate future economic events.

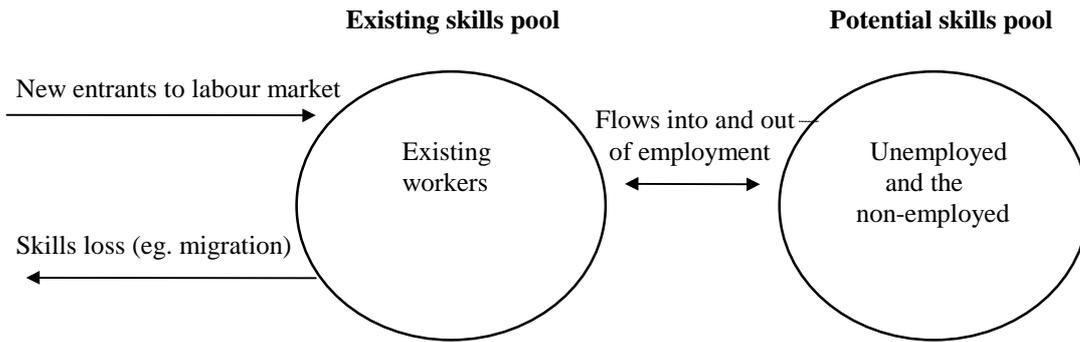
3. SKILLS SUPPLY

3.1. Introduction

Determining the training and skills needs of a particular area requires an assessment of both skills supply and demand as well as an understanding of the relationship between the two. The flow of skills in a local area is a complex interaction of different processes of skills creation and skills loss. An assessment of local skills needs is unlikely to provide a full understanding of the development of skills within an area. However, comprehension of the main processes in skills supply and the resulting levels of skills creation and loss is possible (Haughton and Peck, 1989). These processes are best regarded as the contribution of four separate labour groups to overall skills supply. Consequently, a full skills supply analysis should consider:

- *existing employed*: the skills of existing workers in the area and how often they move between jobs;
- *unemployed*: the skills of unemployed and non-employed people and the difficulties they experience in job-finding;
- *new entrants into the labour market*: skills of school-leavers and beneficiaries of government training programmes; and
- *skills loss*: the impact of activity rates and migration trends on skills levels.

Ignoring the influence of any one group will result in only a partial picture of skills supply in a local area being developed. The contribution of each group to overall skills supply can be seen in the following diagram.



Methodologies for measuring the skills in each group are discussed in the sections below. In addition, acting on each group is a range of general factors which influence the capacity of the skills in each group to meet local skills needs. In practice, the most important factors tend to be those affecting job-finding patterns, particularly those features of the local economy likely to affect the willingness of the different groups to meet local skills demand and mobility issues.

3.2. General factors

Skills supply can be thought of as a combination of two elements: the factors affecting the size of the skills pool (as determined by the net interaction of the four labour groups discussed below) and the ease with which the skills in this pool can meet employer needs. Before turning to a discussion of how to measure skills levels for the different groups, it is important to highlight the factors affecting the latter element, especially in terms of job-finding. A skills audit should conclude whether any local skills shortages are the result of the absence of particular skills in the labour market or the consequence of barriers to the ability of skills supply and demand being met. The main barriers that should be addressed in the skills audit are workforce mobility and quality of life factors.

Workforce mobility can affect the extent to which the labour market will clear. Where local geography and transport patterns add considerable costs and work disincentives to individuals having to commute, particularly to areas and employers where skills demand is most acute, skills shortages are likely to remain persistent. A skills audit should consider how the following factors influence commuting:

- peripherality within the local area;
- travel-to-work patterns, particularly average travel times;
- provision of local transport infrastructure, notably public transport, and any anticipated changes in infrastructure likely to influence commuting patterns; and
- the extent to which commuting difficulties may be affecting job-seeking.

At the same time, the willingness of different labour groups to seek work will be affected by *quality of life* issues. Factors influencing job choices can act on the region as a whole - particularly where the quality of life of the region under study compares unfavourably with a neighbouring region with a strong demand pull - or on particular parts of the region, where skills demand may be high. Such factors cover a number of

different issues, but among the more important are housing stock and the provision of adequate community facilities close to the place of work.

An example of a survey dealing with both sets of issues is the Wakefield Employment Skills Survey in its postal survey of households in the Wakefield area (Policy Research Unit, 1989). Respondents were questioned about how they travelled to work and how long commuting took, and if they were unemployed, how far they would be willing to travel to take a new job. When questioning individuals about self-employment and starting new businesses, questions were asked about what needed to be done to make their working area a better place to live (eg. environmental improvements, reduction in crime, better childcare provision, better social facilities).

3.3. Skills of the existing employed

The first labour group whose skills level needs to be assessed is the existing employed workforce in the local area. Data on their skills can be generated from two principal sets of sources: existing statistical information (principally found on nationally-available sources) and local surveys conducted specially for the skills audit. Existing data is best found within the Labour Force Survey and Census of Employment - both of whose results are published in *Labour Market Trends* (previously in *Employment Gazette*) and contained within the National On-Line Manpower Information System (NOMIS) - as well as the Census of the Population. Specifically, each dataset provides the following information (Blakemore and Townsend, 1991).

- *Labour Force Survey*. This provides harmonized sample-based data on the structure of employment and unemployment across the EC, conducted annually. Information is provided on demographic changes, economic activity rates, educational qualifications, training and working time, by industry and by occupation. The data can be disaggregated to the regional and county level.
- *Census of Employment*. Published in *Labour Market Trends* (and *Employment Gazette* before), the biennial survey of the national workforce, providing information on occupation and industry which can be examined at a sub-regional (ward) level.
- *Census of the Population*. This is the most comprehensive data series on labour market information, providing detailed information on occupation (last and current), industry, socio-economic group, gender, marital status and household type, again available at ward level. However, care should be taken with this data, given that it is only available at ten-year intervals (the last one was conducted in 1991). Also, comparing its figures with the Census of Employment reveals some discrepancies, as the latter surveys individuals at their place of work (and is consequently confined to employees) while the Census of Population survey targets households.

Such datasets provide a statistical background to local labour market trends. Local skills audits may want to supplement this with additional sources of information, derived from local surveys, whether those already carried out or specially-

commissioned. The information on national databases may not be detailed enough at the local level, or be based on samples which are so small at the local level as to raise issues of sample reliability. Consequently, skills audits may survey workers with jobs in the area, not only questioning them on their occupations and skills level, but also covering related issues such as difficulties in finding the current job and the extent to which they needed to learn new sets of skills. Workforce surveys can provide useful additional information for a skills audit, but they need to be designed and conducted carefully. It is important that a representative sample of companies - and workers within those companies - is formed for the survey results to have strong validity. Questionnaires need to be constructed that can guarantee employee confidentiality and minimize direct personal assessments of own skills levels. Some studies have circumvented some of these problems by supplementing postal surveys with face-to-face interviews with existing workers.

A good example of this approach was shown in the skills audits overseen by the DTI Inner City Task Force on Nottingham (Haughton, 1991). Following an initial audit of existing worker occupations and job-search experience, a follow-up study was conducted to track the progress of the original respondents over time, not just their destinations but their motives for moving and the difficulties they experienced. While this research proved difficult to conduct, it did highlight key issues of worker mobility and the flow of skills within a local labour market.

In conducting workforce surveys, attention would also have to be given to the operation of other relevant factors. Company size can influence the range of skills likely to be employed by individual workers: perhaps more defined and specialized in larger companies. Similarly, skills will change with the sector of the company. The existence of company clusters in the same industry raises issues of worker mobility between different companies and job-‘poaching’, as, for example, has been an issue in the electronics sector in Scotland. An awareness of the importance of clusters can be seen in the Institute of Manpower Studies’ large-scale survey of UK occupational trends in the late 1980s, which examined a series of industrial clusters of companies as case studies to assess skills flows between firms in close proximity (Rajan and Pearson, 1986). Lastly, the role of the public sector as an employer should be highlighted in addressing the skills of the existing employed, particularly where the public sector may account for a large share of local employment.

3.4. Skills of the unemployed

The unemployed in a local area represent one of the largest sources of potential skills to local employers as well as the immediate focus of government training programmes. Their skills - as well as their skills deficits - need to be measured in a skills audit. As with the existing employed, two sets of data exist to measure their skills levels. Existing unemployment data can be found through the NOMIS database, which not only contains information on unemployment rates, age, gender and duration disaggregated to ward level, but also breakdowns of unemployment by former occupation and industry.

Existing statistics are often usefully supplemented by fresh surveys of the unemployed. In the case of the unemployed, surveys can yield important additional information pertaining to local conditions which is lacking in national datasets. This is particularly true with regards to the problems experienced by the unemployed in obtaining jobs, both in terms of a lack of skills which may not be captured in the national dataset classifications - such as 'core' skills - but also the barriers to job-finding mobility. Where these surveys have been conducted, they tend to take place in unemployment benefit offices and Jobcentres: while these locations make it easier to develop a sample, they require caution because of their effect on the reliability of the data (unemployed persons may be less forthcoming about their job search).

Examples of this approach are the studies commissioned by the then-Employment Department in the late 1980s on the West Midlands and London labour markets. The surveys involved face-to-face interviews with claimants who had been unemployed for six months or more with approximately 2,200 people being interviewed in each area. Personal interviews guaranteed a high response rate and went some way to minimizing respondent concerns about confidentiality (Cooper, 1989, and Meadows, Cooper and Bartholomew, 1988).

As well as focusing on the unemployed, there is a potentially large and often invisible pool of skills in the 'non'-employed. Prominent in this group are women currently working at home, who may be considering entry into the workforce. In areas containing employers with large female workforces, knowledge of this skills pool may be important in a skills audit, as well as the willingness of such women to work and the difficulties they experience in going out to work (eg. the absence of childcare facilities). Such information is frequently uncovered using household surveys, such as the widespread postal survey recently commissioned by the Welsh Office for the whole of Wales.

Similarly, it is worth highlighting the methodology used by the Institute for Employment Research in skills studies of Coventry, Gloucestershire and the Kirklees/Calderdale region (Hasluck, 1992). In its postal survey of households, it collected information on the following issues:

- personal details (eg. age, sex, ethnicity, marital status);
- working status;
- job search behaviour;
- reasons for inactivity or returning the labour force;
- educational qualifications;
- perceptions of training needs;
- perceptions of barriers to obtaining adequate training;
- travel to work information; and
- full work history.

Lastly, the use of community panels and discussion groups in this aspect of skills research should be highlighted (Haughton, 1992). They have proved effective in interpreting survey results of households in several studies, especially on issues of barriers to job-seeking. The Centre for Urban Development and Environmental

Management (at Leeds Metropolitan University) made strong use of this approach in its skills survey of the Bradford area in the early 1990s.

3.5. Skills of new entrants into the labour market

A local labour supply is constantly being replenished by new entrants into the labour market, particularly from those having received some form of education and training. The broad limits of the labour market - and trends in its development in recent years - can be viewed using demographic data on overall changes in the size of the population, sources of population growth and loss, and the composition of the population by age and gender, as well as the share of the population that is economically active.

The different types of new entrant into the labour market can be estimated using available statistical sources. Data on school-leavers can be obtained from local councils, not just in terms of past and projected numbers, but whether school-leavers are going onto further education or employment as well. The data is available at district level and, using time series data, can be helpful in forecasting trends over time for different sub-regions.

Data on new entrants from higher education is also provided by local councils. Skills from this group can be measured using the standardized national qualifications, such as NVQ2 and GN/SVQ3. Higher level qualifications are available from graduation rates of local colleges and higher education institutions, broken down by subject, as well as some data tracking graduates after graduation. While these statistics do not indicate which percentage of these skills remain in the local labour market, they do show the skills-generating capacity of local educational establishments.

Lastly, data is available on local training programme 'graduates'. Schemes such as Skillseekers and Training for Work contain information on the job destination of people on the programmes. Private sector training's contribution to skills supply can be found in the Labour Force Survey data, though it would be usefully supplemented with direct local employer surveys.

3.6. Potential skills loss

As well as measuring the rate at which skills exist or are being created within the local area, it is important for a skills audit to be sensitive to skills flows in and out of the local labour market. The most important way that this takes place is through migration. The Census of Population contains information on migration by age, gender, occupation and industry, though this should be supplemented by NHS data on people registering with doctors (through the National Health Services Certificate Register). The latter source provides important information on the movements of NHS patients between Family Health Service Authorities in England and Wales and Area Health Boards in Scotland. However, it is limited by its inclusion of only NHS-registered patients and its absence of data on internal migration within Scotland.

Key steps

- Any analysis of skills supply should draw distinctions between: those factors which affect the current size of the skills pool; those which limit how far skills within the pool are available to meet employer needs; and those which have influenced past trends and are likely to impact on future developments.
- The current stock of skills should be considered in four separate components: the skills of the currently employed; the skills of the unemployed and non-employed; the skills of school leavers and graduates; and skills loss caused by migration.
- The skills of the currently employed should be assessed using both nationally-available statistical sources on local trends - notably the Census of Employment and the Census of Population - and specific local surveys of workforces.
- The skills of the unemployed and non-employed should be determined through national sources on unemployment as well as household surveys on job-finding difficulties. Household surveys can be designed to target the existing employed as well. Postal surveys can be supplemented by a selection of face-to-face interviews and community panel discussion groups.
- Data on the skills of school-leavers and graduates are available from local councils and higher educational institutions.
- Data on skills loss caused by migration can be found in the Census of Population and the National Health Services Certificate Register.
- Analysis of obstacles in skills supply should include assessment of workforce mobility (eg. problems arising from geographical peripherality and transport deficiencies) and quality-of-life issues (eg. housing and community facilities).
- As well as analysing the current stock of skills and access thereto, reviews should be made of past trends and likely future developments, bearing in mind changes in demographic and economic factors.

4. SKILLS DEMAND

4.1. Introduction

As with the analysis of skills supply, skills demand is best approached by examining the different components of demand. Surveys of *existing* skills demand in a local labour market are relatively common, but other types of skills demand should be assessed as well to provide a more complete picture. These include the demand for potential skills - ie. the extent to which employers need but do not actively seek certain skills because of well-known shortages in the labour market - and anticipated changes in skills demand. These are examined in the sections below.

Again, as with skills supply, skills demand is influenced by general background factors which shape the development of skills demand over time. These factors include the industrial structure and general economic trends within the local labour market. As a result, analysis of skills demand needs to take into account the overall economic background, as discussed in the following section.

4.2. General factors

As with the supply side, interpreting local skills demand requires a knowledge of the local economic context of the labour market. The sectoral structure of demand, the local economy's performance compared to developments nationally and the changes in both over time all influence the development of skills demand. Such information is regularly analyzed by regional and local economic development bodies: its use in skills audits underlines the importance of linking labour market research with assessments of the wider economy (Pearson and Walsh, 1983).

With skills demand, it is particularly important to be sensitive to the role of large individual employers. The dominance of a labour market by a single company - both directly in terms of its own employment needs as well as indirectly through tied supplier and service companies - will shape skills demand. The individual factors affecting single companies - such as their overall corporate performance - should also be considered, especially with respect to forecasting.

4.3. Existing skills demand

Skills demand is most commonly measured by national statistical sources and local employers surveys (Green, 1991). Nationally-available data on employer skills needs at local level is based on figures for occupational vacancies. Notifications of vacancies are reported through Jobcentres across the country and are available on NOMIS. Information is provided on notified, unfilled and filled vacancies at ward level, including the type of occupation advertised and the duration of vacancies.

As a data source, the limits of vacancies statistics should be emphasized. On average, only about a third of all vacancies are reported to Jobcentres, though these can vary by the nature of the local economy and its stage in the economic cycle. In this regard, the UK is no different than its European neighbours: for example, the Netherlands and Germany have similar reporting systems (Van Bastelaer and Laan, 1994). Reported vacancies tend to be skewed towards manual and lower-skills intensive jobs. Secretarial and other administrative positions may be filled from specialized agencies. Research on company recruitment practices confirms that higher-level skills are usually sought from a variety of sources, many of which are not collected in a systematic manner (ranging from newspaper advertisements to non-advertised recruiting).

Moreover, vacancy data requires careful interpretation. Apparent skills shortages could be the result of structural gaps in the provision of skills in the local labour market, but they can also be a function of wider economic trends. When the economy is strong, the demand for labour tends to rise overall, and an analysis deriving conclusions about skills shortages during a boom period must take account of how the picture may change should the economy contract.

It is therefore useful to supplement any analysis of vacancy statistics with direct surveys of local employers. Many existing surveys were collected and made available in the Computer Assisted Local Labour Market Information System (CALLMI). As well as providing more detailed information about actual vacancies, new surveys can provide useful information on recruitment difficulties. First, they can highlight the range of 'core' skills that an employer may be seeking in addition to job-specific skills, as discussed in an earlier chapter. For example, many employer surveys encourage companies to list the types of qualities they seek in their workforce and the difficulties they have experienced in obtaining employees, as in the Coventry and Warwickshire Employer Survey, mentioned above (BMG Research and GFA Consulting, 1997).

Second, they can give greater detail on the types of vacancies held by employers, for example, whether the nature of the work may be temporary or part-time. Survey responses can also assist in forecasting future skills demand. In a survey of the Grampian Region's manpower needs in the early 1980s, the Manpower Services Commission asked firms to estimate their personnel needs in different occupational categories for two and six years into the future (Manpower Services Commission, 1983).

Lastly, surveys may provide insights into the extent to which job vacancies are not being met as a result of other factors, such as poor pay and conditions. Identifying whether skills shortages are the result of supply issues (such as the absence of key skills) or demand factors (such as insufficient wages) is central to a skills audit, an issue that will be returned to in the next chapter.

4.4. Potential skills demand

The impact of skills shortages on the demand for skills cannot always be easily detected. At a wider regional level, the absence of certain types of skills will be reflected in the sectoral structure of the economy, business start-up rates and the area's ability to attract incoming investment. At the level of the individual firm, persistent skills shortages can result in a kind of 'shadow' skills demand. Where vacancies cannot be filled, employers will often restructure their work and business organization to prevent an unfilled vacancy or skills lack greatly disrupting the company's activities. This can occur in some cases by redistributing work, in others, by a more radical restructuring of the company's internal structures. For key skills, the inability to fill the vacancy might substantially undermine the firm's efficiency and performance, but the skills shortage may not be immediately detectable because the firm does not advertise the job. Employer surveys can assist in uncovering the degree to which firms may be accommodating such vacancies by finding out not only what key skills companies lack, but how they have coped with the absence of these skills and whether they would actively search for the skills if they were locally available.

Similarly, firms may be filling vacancies by going outside the local labour market for the skills which they require (or at least advertising outside of the local area because companies are aware of the difficulties that might be encountered in searching for the skills within the local area). In other words, there may be vacancies but they are not 'local' ones. Again, survey data can identify how widespread this may be, usefully supplemented with generally-available information on commuting patterns.

4.5. Anticipated changes in skills demand

Future skills demand can be identified through awareness of events likely to have significant impacts on local skills demand. As noted already, the impact of single companies on demand forecasting can be critical, whether involving the new entry or expansion of large investors with key skills demand or expansions, or closures and contractions of major employers. Indeed, the increasing demand for skills audits is often linked to the need to provide such information to potential inward investors and policy-makers who may have to respond to significant investment decisions. In many cases, the information required may be available through organizations involved in investment promotion (such as Locate in Scotland).

Key steps

- Analysis of skills supply should focus on three areas: the current size of demand; the extent to which demand is being 'hidden'; and the impact of future developments on demand.
- An assessment of skills demand should be placed in the wider context of changes in the local economy and its industrial structure over time.
- The existing skills needs of employers are usually measured through a combination of nationally-available statistical sources on local occupational vacancies reported and direct surveys of local employers. Surveys can generate more information on recruitment difficulties and anticipated skills shortages.
- Employer surveys can be used to reveal 'invisible' skills shortages, where employers do not advertise for certain skills.
- Analysis of skills demand should take account of anticipated changes in demand arising from shifts in the structure of local industry as well as impacts of significant individual employers, such as closures and inward investment decisions.

5. SKILLS SHORTAGES

The final stage of the skills assessment of a local labour market involves combining the analyses of skills demand and supply. In theory, a comparison of the two processes should reveal which skills are not being met by local supply and which skills are in excessive supply, trends that can be confirmed with analyses conducted over time to build up a dynamic picture of the labour market. Over time, this will allow policy-makers to design training programmes to address the gaps in the skills market.

Nevertheless, caution must be used in bringing together the results of demand and supply analyses. Given the unavoidable imprecision in the methodologies for both types of analyses and the complexity of labour market behaviour, a skills assessment should not be used to *quantify* skills shortages. The aim of an assessment should not be to estimate the amount of training that needs to be undertaken by the public sector. Rather, it should aim to indicate on which areas training and other policies should be focused. In this context, there are three areas where skills assessment can comment most effectively on skills shortages.

1. *Current absence of certain types of skills.* The skills assessment should be able to identify:
 - the industries suffering from skills shortages;
 - the types of skills that are lacking in those industries;
 - whether certain types of companies - eg. small firms - may be experiencing particular types of skills shortage;
 - whether certain areas are experiencing certain skills shortages; and

- the extent to which ‘core’ skills may be missing in the local labour supply, rather than a particular set of occupation skills.
2. *Future absence of certain types of skills.* Skills assessments should be able to conclude on wider trends of future skills shortages. Repeated skills audits at regular intervals can allow policy-makers to determine long-term patterns in the local labour market, but even if the assessment is initially conducted as a one-off exercise, it should contain sufficient information to undertake informed forecasts regarding future skills developments. The value of this can be seen in the body of information and analysis on the Tayside labour market developed by the Tayside Economic Research Centre in the University of Abertay Dundee, in its quarterly labour market report (TERC, 1998). In this way, skills audits should assist training programmes in pre-empting potential future skills shortages. By placing the analyses of skills supply and demand within an understanding of changes in the local economy (especially in terms of the composition of the industrial structure), assessments can indicate which skills may be lacking in existing industries (as a result of sectors growing faster than the supply of skills) as well as where new sectors with new skills needs may be developing.
 3. *Recruitment problems.* The skills assessment should distinguish between skills *shortages* and skills *gaps*. Shortages occur where skills are absent in the local labour market; gaps result from obstacles preventing local skills demand being met by existing skills supply. These obstacles can be both supply and demand side in nature. Supply-side barriers may be problems with a region’s transport infrastructure, the concentration of labour demand in areas within the local labour market with poor community facilities and the effects of greater competition from demand in neighbouring labour markets. Demand-side problems include the extent to which local companies are not offering sufficient remuneration to attract the necessary skills.

Key steps

- Skills shortages can be determined by comparing the results of the skills demand and supply analyses. The comparison of the results of the should be used to indicate those skills areas where training and other policies should be focused.
- Future skills shortages can be forecast over a limited period through comparison of skills supply and demand trends.
- Skills audits should distinguish between skill shortages and recruitment problems, arising from obstacles in either the supply or demand sides.

6. CHECKLIST OF GOOD PRACTICE IN LOCAL SKILLS AUDITS

In producing a checklist of good practice for local skills audits, the following points ought not be regarded as rigidly prescriptive. Training needs assessments are bound to differ, depending on the nature of the local labour market, the data available for analysis and the resources which the sponsoring research body can dedicate to the research. Instead, the checklist represents an idealized account of approaches that have been successfully employed by skills assessors, although sections have been highlighted in bold as being particularly important in the conduct of audits. In this sense, any local skills audit should at least consider the use of the following methodologies.

The checklist is broken down into four different stages of skills audits (which can run in parallel):

- the context of the skills audit;
- skills supply analysis;
- skills demand analysis; and
- skills shortages analysis.

The checklist has been drawn up by Philip Raines and Professor Douglas Yuill. It should be used in conjunction with the main report.

Context

- **The framework for studies should be based on separate analyses of skills supply for certain skills and skills demand, carried out over the same time period.** The identification of skills shortages would proceed from a broad comparison of the two analyses.
 - **Skills audits should begin with an analytical framework for skills shortages, particularly with regards to the impact of local economic structures and trends.** As well as interpreting past developments, this should enable forecasting of both skill supply and demand trends for up to three years. In particular, analysis should be made of changes in:
 - the industrial composition of the economy, with specific regard for significant changes in the main sectors; and
 - overall local economic growth patterns.
- Furthermore, appropriate attention should be paid to developments in neighbouring labour markets, suggesting both coordination and cooperation with exercises undertaken by adjacent LECs.
- **Skills audits are more effective when they are not one-off exercises, but part of a regularly updated research series, perhaps most usefully on an annual basis.** The appropriate frequency of review should be justified with reference to:
 - the availability of resources;
 - data availability; and
 - the sensitivity of analyses over time (especially with regards to sudden economic ‘shocks’).
 - **Cooperation on labour market research between the relevant economic development bodies at local level - notably the Local Enterprise Councils and local councils - is important.** This should include the pooling of information and financial resources in the conduct of research to avoid duplication. Cognizance should also be taken of chambers of commerce, trade unions, local training providers, educational establishments, economic research units and key local employers, as well as larger bodies such as EU Structural Fund partnerships, Scottish Enterprise and the Scottish Office.
 - Defining the labour market under study is critical. Where appropriate, analysis should be made of:
 - neighbouring labour markets;
 - different geographical markets for different skills groups; and
 - smaller, self-contained labour markets within the locality.
 - Skills audits should take account of different perceptions of ‘skill’ by employers, particularly less-easily identified ‘core’ skills (such as communication skills and attitudes to work). This is likely to be based on survey data on the need for ‘core’ skills and the specific requirements of dominant local employers (or key groups of local employers).
 - Care should be taken on the extent to which the timing of audits may distort results, especially with respect to longer-term economic cycle (both national and local), but also with respect to the time-sensitive nature of vacancy statistics.

Skills supply

- **Any analysis of skills supply should draw distinctions between:**
 - those factors which affect the current size of the skills pool;
 - those which limit how far skills within the pool are available to meet employer needs; and
 - those which have influenced past trends and are likely to impact on future developments.

Current pool of skills

- **To examine the current stock of skills supply, four separate groups should be examined:**
 - the currently employed;
 - the unemployed and non-employed;
 - school-leavers and graduates; and
 - migrating workers.
- The skills of the currently employed should be assessed using nationally-available statistical sources - notably the Labour Force Survey, the Census of Employment and the Census of Population, which provide considerable information on localities - in conjunction with local surveys of workforces on specific issues and ongoing contact with key players in the local labour market (major employers, including the public sector).
- The skills of the unemployed and the non-employed should be determined through a combination of national sources on unemployment; local household surveys on the difficulties in job-finding and the willingness of the currently non-employed to seek work; and Jobcentre/unemployment office surveys. There may also be a role for community panels and discussion groups.
- Data on the training of school-leavers and graduates are available from local councils for district areas and higher educational institutions. In spite of some migration out of the locality, this should assist in giving broad indications of the skills levels of new entrants into the local labour force.
- Data on skills loss caused by migration can be found in the Census of Population and the National Health Services Certificate Register (both by class of occupation).

Barriers to the pool of skills

- **A skills audit should conclude whether any local skills shortages are the result of the absence of particular skills in the labour market or the consequence of barriers to the ability of skills supply and demand being met - in particular, workforce mobility and 'quality of life' factors.**
- As regards workforce mobility, a skills audit should consider:
 - peripherality within the local area;
 - average travel times;
 - provision of local transport infrastructure; and
 - the extent to which commuting difficulties may be affecting job-seeking.
- As regards quality of life issues, relevant factors include:
 - the availability of accessible housing for the skills group in question;
 - the provision of adequate community facilities close to the place of work; and
 - child-care provision for working parents.

Developments of the pool of skills

- **As well as analysing the current stock of skills and access thereto, reviews should be made of past trends and likely future developments.** In particular, research should consider changes in:
 - demographic factors, influencing the supply of skills;
 - economic factors (eg. general developments in the local economy); and
 - other local factors (eg. future job losses in major employers).

Skills demand

- **Any analysis of skills supply should focus on three areas:**
 - **the current size of demand;**
 - **the extent to which demand is being ‘hidden’; and**
 - **the impact of future developments on demand.**
- The current size of demand should be measured by analysis of the existing skills needs of employers. These should be assessed using a combination of different sources: nationally-available statistical information on local occupational vacancies (through NOMIS), as well as direct surveys of local employers.
- Hidden demand can be detected through employer surveys to reveal ‘invisible’ skills shortages. This is especially important where companies may have adapted to key skills shortages rather than advertise for jobs that are unlikely to be filled.
- Future demand will depend on a variety of factors. General changes in the local economy, particularly the structure of industry and employment, will need to be taken into account. Moreover, anticipated changes in the demand of significant single employers (such as the expansions or contractions of existing sites as well as new inward investors, where known) should also be considered.

Skills shortages

- **Skills shortages can be determined by comparing the results of the skills demand and supply analyses.** The comparison of the results should be used to indicate those skills areas where training and other policies should be focused. In other words, relevant *policy* conclusions should be drawn from the analyses. These should allow the identification of :
 - the industries suffering from skill shortages;
 - the types of skills that are lacking in those industries;
 - whether certain types of companies - eg. small firms - may be experiencing particular types of skills shortages;
 - whether certain areas are experiencing certain skills shortages; and
 - the extent to which 'core' skills may be absent in the local labour supply.
- **Future skills shortages can be forecast through comparison of anticipated skills supply and demand trends.** However, the time period should be limited because of the number of variables (perhaps up to three years).
- **Skills audits should distinguish between skill shortages and recruitment problems, arising from obstacles in either the supply or demand sides.** Audits should assess whether recruitment problems may be caused by obstacles to skills supply (such as problems with commuting) and/or skills demand (such as insufficient remuneration from employers) rather than an absence of the required skills in the labour market.

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