
Bulletin

Institute for
Employment
Research

INDIVIDUALS' SKILLS PROGRESSION: MOBILITY THROUGH INTERMEDIATE OCCUPATIONS

1. Introduction

This *Bulletin* draws upon recent research, conducted by Peter Elias at the Institute for Employment Research and John Bynner, Social Statistics Research Unit, City University, for the Department for Education and Employment. This research project measured both the scale and the changing nature of occupational mobility in the 1980s and early 1990s, for a group of occupations termed 'intermediate occupations'.

Intermediate occupations are defined broadly as a group of craft, technician and various supervisory jobs. Information on patterns of mobility was derived from various national survey sources which yield data on movements into and out of the intermediate skills group and, within this group, from craft to technician and from craft to supervisory level jobs.

2. Defining intermediate occupations

There is no clear definition of what is meant by 'intermediate occupations'. Recent research (Rolfe *et al*, 1994; Ryan, 1991; Lindley, 1991, Hogarth *et al*, 1994; Hasluck, 1994) has defined 'intermediate skills' as somewhere between the skills required in professional occupations and those demanded in semi-skilled or operative jobs. There is a general measure of agreement that a significant amount of supervision of other employees may be required – thus placing intermediate occupations in the areas of supervisory/junior managerial/technical/skilled occupations.

Intermediate occupations were interpreted for the purpose of this research project as the set of jobs for which the constituent tasks require knowledge, skills and competencies at the National Vocational Qualification (NVQ) Level 3. Broadly speaking, these consist of jobs which require a significant amount of job-related training, often acquired via a formal and fairly lengthy period of training or through an equivalent time spent gaining experience of the work involved. Formal educational qualifications are usually required for entry into relevant training schemes associated with occupations at this level, but these qualifications are generally at a level below that associated with a university degree or its equivalent.

Certain occupational categories, particularly those in the clerical category and for some personal and protective service occupations, cover a wide range of skill levels, including competencies defined to NVQ Level 3. However, the research drew upon a number of different sources of occupational information, for which the only common element is the definition of occupations via the Standard Occupational Classification (SOC). Use of the SOC to delineate intermediate occupations places a number of restrictions upon the interpretation of intermediate skills. First, the amount of detail will vary from source to source, due largely to the limitations of sample size from survey data sources. For this reason, three different sets of aggregations of all SOC categories are used, with intermediate occupations highlighted within each set. At the most detailed level, 23 occupational

categories are identified which correspond closely with the *sub-major* groupings of the SOC. Above this, 16 categories are formed by aggregating sub-major groups within major groups of the SOC. This still remains too detailed a classification for some of the analyses which were undertaken. In such instances, four categories are formed by distinguishing between the high level managerial skills and professional jobs – termed ‘high skill’, aggregating Level 3 occupations into those which are craft and those which are non-craft and aggregating all other occupations. Table 1 shows these various aggregate categories and their interrelated structure.

3. Trends in intermediate occupations

Table 2 shows the changes in the occupational structure of male and female employment which took place between 1981 and 1991. While confined to England and Wales¹, the data indicate the general nature of the medium term trends in occupational structure which took place over this decade. The various intermediate occupational groups are shown in bold type in this table. The definition of employment covers both employees and the self-employed.

Examining first the managerial occupations, it can be seen that virtually all these categories exhibited strong growth over the decade, most notably for women employed in the category ‘Finance and office managers’. Female employment in this group increased by more than 125 thousand, a rate of increase of 180 per cent over the decade. Slower growth was exhibited in the category ‘Managers/proprietors in agriculture and services’, but with 16 per cent growth over the decade, this still well exceeds the economy-wide employment growth rate of 4 per cent between 1981 and 1991.

The associate professional categories (3a, 3b and 3c) also displayed much stronger than average growth, again being notably higher for women than for men. In contrast, two of the skilled craft categories (engineering trades and ‘other’ skilled trades) showed a significant decline in employment over the decade.

This was particularly the case for men employed in skilled engineering jobs, a category which declined by almost quarter of a million persons in England and Wales from 1981 to 1991. In the area of technical sales and sales representatives, female employment grew considerably while male employment fell by more than the average rate of decline across all occupations over this period.

4. Movement into and out of intermediate occupations

Information on occupational mobility was obtained from the New Earnings Survey Panel Dataset (NESPD). While these data do not provide details of the qualifications of respondents and, prior to 1990, used a different classification of occupations, they have two advantages over other possible data sources². In terms of its scale, the NESPD permits a fairly detailed analysis of occupational changes. For longitudinal analysis of change, no other source spans the period from the mid 1970s to the mid 1990s.

Mobility between occupational categories was examined at the level of the four broad occupational groups defined in Table 1: ‘high-skill’ (high and middle level management and professional jobs), intermediate non-craft, intermediate craft and a residual group termed ‘other’ occupations. Because occupational mobility is closely linked with other forms of labour market (eg changes of employer, geographical mobility) which, in turn, tend to be higher among younger workers, three age groups were differentiated in this analysis; 16-24 years, 25-49 years and 50+ year olds. Occupational information relating to surveys conducted prior to 1990 and contained within the NESPD was mapped first into sub-major groups of the Standard Occupational Classification (for details, see Elias and Gregory, 1994) then to the four broad categories used in this study. Occupational movements between 1976 and 1985 and between 1985 and 1994 were recorded for all persons in the NESPD who were in employment in either of these pairs of years.

Analysis of these data showed that, for 16-24 year olds, over 30 per cent of males and more than 60 per cent of

¹ These data are restricted to England and Wales due to the fact that a cross-mapping used to convert 1981 Census of Population data from the 1980 Classification of Occupations to the 1990 Standard Occupational Classification is only available with this geographical coverage.

² The Labour Force Survey can only provide mobility estimates over a one year period. The British Household Panel Study is relatively small and, prior to 1991, mobility information is based upon respondents’ recalled work histories.

Table 1:

Aggregate SOC categories and intermediate skills

23-fold categorisation	16-fold categorisation ¹	4-fold categorisation
1 Corporate managers	Part 1a	1 High skill
2 Office managers, stores managers	13 + 14 (rest 1a)	2 Intermediate non-craft
3 Managers/proprietors in agriculture and service	1b	2 Intermediate non-craft
4 Science/engineers professionals	2	1 High skill
5 Health professionals	2	1 High skill
6 Teaching professionals	2	1 High skill
7 Other professionals	2	1 High skill
8 Science/engineering associate professionals	3a	2 Intermediate non-craft
9 Health associate professionals	3b	2 Intermediate non-craft
10 Other associate professionals	3c	2 Intermediate non-craft
11 Clerical occupations	4	4 Other occupations
12 Secretarial occupations	4	4 Other occupations
13 Skilled construction trades	5a	3 Intermediate craft
14 Skilled engineering trades	5b	3 Intermediate craft
15 Other skilled trades	5c	3 Intermediate craft
16 Protective service occupations	6	4 Other occupations
17 Personal service occupations	6	4 Other occupations
18 Buyers, brokers, sales representatives	7a	2 Intermediate non-craft
19 Other sales occupations	7b	4 Other occupations
20 Industrial plant/machine operatives	8	4 Other occupations
21 Drivers/mobile machine operatives	8	4 Other occupations
22 Other occupations in agriculture	9	4 Other occupations
23 Other elementary occupations	9	4 Other occupations

Note: 1. The numbering system for the 16-fold categories refers to the sub-major groupings or minor groups of the Standard Occupational Classification.

Bold: Intermediate occupation groups are shown in bold type.

Table 2:
Changes in employment by occupation and gender, 1981-91
England and Wales

Major or Title sub-major group		Employment change 1981-91					
		thousands			% growth '81 to '91		
		Males	Females	Total	Males	Females	Total
1a	Corporate managers and administrators	380.7	404.2	784.8	32.6	177.6	56.2
	of which: Finance and office managers	57.6	125.6	183.1	34.0	180.1	76.6
	Managers in transport, storing	20.8	9.7	30.5	19.8	88.8	26.4
1b	Managers/proprietors in agriculture and services	55.1	138.7	193.7	6.4	36.5	15.7
2	Professional occupations	83.7	179.0	262.7	7.7	32.4	16.0
3a	Science and engineering associate professionals	58.5	39.7	98.2	16.4	63.2	23.4
3b	Health associate professionals	2.6	61.3	63.8	4.1	14.1	12.8
3c	Other associate professionals	90.2	173.7	263.9	20.6	94.5	42.5
4	Clerical and secretarial occupations	-199.3	149.6	-49.7	-18.3	5.6	-1.3
5a	Skilled construction trades	58.2	2.7	60.9	9.6	41.3	9.9
5b	Skilled engineering trades	-241.1	1.7	-239.3	-19.5	7.2	-19.0
5c	Other skilled trades	-159.1	-52.3	-211.4	-9.7	-13.6	-10.4
6	Personal and protective service occupations	41.3	390.1	431.4	5.5	42.4	25.7
7a	Buyers, brokers and sales representatives	-25.9	44.1	18.2	-7.5	75.1	4.5
7b	Other sales occupations	35.6	135.3	170.9	14.2	16.7	16.1
8	Plant and machine operatives	-344.9	-128.9	-473.8	-15.2	-19.2	-16.1
9	Other occupations	-261.1	-229.3	-490.4	-19.3	-19.3	-19.3
TOTAL	All occupations	-425.6	1,309.6	883.9	-3.1	15.3	4.0

Note: Intermediate occupation groups are shown in **bold type**

Sources: 1/2 % subsample of Census of Population 1981 (England and Wales)
10% sample of Census of Population 1991 (England and Wales)

females who were employed in 1976 and 1985 were recorded in the 'other' occupations category in both years³. Unsurprisingly, mobility from the 'other occupations' category to the intermediate or highly skilled occupational groups for this age-group is higher than that recorded between any other categories, reflecting both the large size of the category and the fact that young people are more likely to display upward occupational movement in the early stages of their working lives.

Between 5 and 6 per cent of all young males recorded in employment in the NESPD in 1976 and 1985 had moved into *each* of the three higher skill groups of occupations by 1985. These mobility rates fall considerably for males in the 25-49 year age group, with only about half as much mobility recorded over the same nine year period. For the oldest age group, males 50 years and over in 1976, just over 4 per cent of all those still employed in 1985 were classified to 'other' occupations in 1976, yet were recorded in an intermediate occupational category in 1985.

Occupational movement from the intermediate non-craft category to the intermediate craft category was negligible across the three age groups. However, a significant number of persons are recorded as switching from intermediate craft to other occupations. Such movements comprised 9 per cent of males who were aged 16-24 years in 1976 and employed in 1985, 5 per cent of 25-49 year olds and nearly 6 per cent in males aged over 50+ years. It is clear from these patterns that the decline in male employment in this occupational area evidenced in Table 2 is associated with deskilling and downward occupational movement on a not inconsiderable scale.

This analysis was repeated for the period 1985-94. The patterns of movement are broadly similar, but upward mobility from 'other' occupations to intermediate and high skilled occupational categories increased in comparison with the preceding decade, with a significant rise obvious in the movement of young males from 'other' occupations to the intermediate non-craft category.

For women, the intermediate craft occupational category is relatively small and mobility into and out of this group of occupations is not particularly significant.

The main contrast with the occupational movements of males is the extent to which women are recorded in the 'other' occupations category at the beginning and end of both nine year periods. Interestingly, the amount of movement from 'other' occupations to the intermediate non-craft group is on a par with the similar movements for men. Of those women aged 16-24 years in 1976 and observed in employment in 1985, more than 6 per cent show net movement from other occupations to intermediate non-craft jobs during these nine years. The corresponding figure for the occupational mobility of young women between 1985 and 1994 is 12 per cent.

5. Education, training and individuals' skills progression

To gain some indication of the role played by education and training in these patterns of occupational mobility, a different source of information was used. The National Child Development Study (NCDS) is a longitudinal birth cohort study which has followed up a sample of initially over 17,000 individuals born in 1958. Data were collected at birth, and subsequently at ages 7, 11, 16, 23 and 33 years. The attraction of the NCDS dataset for this analysis is that it contains data on up to 12,000 individuals who were still participating in the study at age 33, providing a longitudinal record which enables the life histories of individuals and groups with particular mobility characteristics to be charted.

A variety of data from the NCDS were used in this study: educational and family background preceding age 23, education, training and labour market experience between ages 23 and 33 and current employment at age 33, reported skills at age 33 and self-assessed improvements in skills over the previous ten years.

The particular focus was on movement to and from the intermediate occupations. What characterises the occupationally mobile individuals? This was studied by examining the occupational changes made by NCDS respondents between 1981 and 1991, when they were age 23 and 33 respectively. Occupations were classified to three broad groups: high level managerial/professional occupations, intermediate occupations (both craft and non-craft as defined in Table 1) and 'other' occupations.

Cohort members moving up the occupational scale tended to have superior education and labour market experience and in the case of women, more work-

³ It should be noted that age groups are defined with respect to age in 1976 for the 1976-85 analyses and with respect to age in 1985 for the 1985-94 analyses.

related training as well. Common skills, as reported by cohort members, were those typifying modern employment: computing, finance, selling and organising skills appeared to be at a premium. Writing and speaking skills were also important, especially for movement up from intermediate to management levels and from movement up from craft occupations within the intermediate group. Working against occupational progress of this kind appeared to be patchy labour market experience, including periods of unemployment and part-time work, coupled with the traditional male skills of using tools, reading plans and constructing things and the traditional female skill of caring.

The picture has much similarity with that produced in other analyses of these data which have investigated labour market experience (Bynner, 1994a and 1994b). A poor educational record followed by poor labour market experience seems to exacerbate a downward spiral to the margins of the labour market, with unemployment and casual work being the common experience of men and exit from the labour market to undertake child care at home, the common experience of women. This is reflected in the skills individuals possess and claim to have improved. Occupational achievement goes with acquisition of the 'core' modern work-related skills such as computing and finance identified here. Possession of manual skills by men and caring skills by women is associated with a lack of movement.

Particularly striking is the evidence of substantial skills improvement among those who improved their occupational position at the intermediate employment level. This points to exposure to both formal and on-the-job training of various kinds. It is notable that experience of such training was one of the significant factors associated with the upward mobility of women, but not men, allowing us to speculate that men's employment more easily absorbs the skills development needed for advancement. In the case of women, the motivation or perhaps requirement to undertake formal training, appears to be more of a factor in such movement. On the other hand, courses involving full-time education after the age of 23, though rare in this group, appeared to be important in the mobility of both men and women.

The findings point generally to the significance of education and training in occupational progression to and within the intermediate employment level. This of

course assumes that the basic potential for learning is present in the first place, giving added importance to ensuring that the 'basic skills' of literacy and numeracy are in place (Ekinsmyth and Bynner, 1994, Bynner 1994a). Other analysis with a younger cohort has demonstrated a strong connection between poor literacy and numeracy and lack of the core modern employment skills (Bynner and Steedman, 1994). Our findings here point to the increasing importance of these skills in progression through modern employment as well. They provide the target for the employment training that is needed.

References

- Bynner, J.M. (1994a). *Skills and Occupations: analysis of cohort members self-reported skills in the fifth sweep of the National Child Development Study*. Employment Department Report (mimeo).
- Bynner, J. M. (1994b). *Resisting Unemployment: the role of education and training in different labour markets*. Paper presented to the Conference, Challenges of Unemployment in a Regional Europe, Ameland, Friesland (in press).
- Bynner, J. and J. Steedman (1994). *Difficulties with Basic Skills*. London: Basic Skills Agency.
- Elias, P. and M. Gregory (1994). *The Changing Structure of Occupations and Earnings in Great Britain, 1975-90*. Research Paper No. 27 London: Department of Employment.
- Ekinsmyth, C. and J. Bynner (1994). *The Basic Skills of Young Adults*. London: Basic Skills Agency.
- Hasluck, C. (1994). 'The Prospects for Intermediate Skilled Occupations'. Paper presented at the Conference on 'The UK Labour Market: Prospects to 2001', University of Warwick, Institute for Employment Research: November.
- Hogarth, T., G. Siora, G. Briscoe and C. Hasluck (1994). 'The Net Costs of Training to Employers: Initial training of young people in intermediate skills'. Project report to the Department of Employment. University of Warwick, Institute for Employment Research.
- Lindley, R.M. (1991). 'Interactions in the Market for Education, Training and Labour: A European Perspective on Intermediate Skills', in P. Ryan (ed.) *International Comparisons of Vocational Education and Training for Intermediate Skills*.
- Rolfe, H., P. Taylor, B. Casey, I. Christie and S. McRae (1994). *Employers Role in the Supply of Intermediate Skills*. London: Policy Studies Institute.
- Ryan, P. (ed. 1991). *International Comparisons of Vocational Education and Training for Intermediate Skills*. London: Falmer.