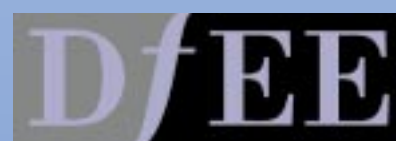


The Impact of Careers Guidance on Adult Employed People

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for Careers Education and Counselling
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Policy Studies Institute



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Education and Employment**

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As always, the findings and conclusions presented in the report are the sole responsibility of the authors.

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Executive Summary

1 Aim, Methods and Response

1.1 Aim

The aim of the study was to assess the net impact of a publicly provided, professional careers guidance service on the subsequent outcomes for adult employed clients.

The main outcomes evaluated were participation in education and training, qualifications gained, changes in job satisfaction, changes in earnings, and occupational progression.

1.2 Methods

The study was carried out by tracking a sample of participants in guidance over a two-year period, and comparing them with a non-participant sample over the same period. The guidance clients came from eight Training and Enterprise Councils and a Local Authority Career Service and the comparison sample was drawn from the same areas.

More specifically, the stages of the research were as follows:

(1a) Recruit the guidance sample, around 2-3 months after entry; obtain background information and experiences of guidance by postal questionnaire or telephone interview.

(1b) Recruit a pool of employed people, at about the same time, obtaining background information by telephone interview.

(1c) Make an initial selection from the non-participant pool, so as to match the guidance sample approximately on area, sex, age-band, qualification group, and job satisfaction band.

(2) Carry out a first follow-up survey, about 12-15 months later, of both the guidance sample and the matched comparison sample. Obtain detailed information by means of a personal interview.

(3) Carry out a second follow-up survey, about 8-10 months later, of those responding to the first follow-up survey. Obtain information by means of a telephone interview.

(4a) Analyse differences in background characteristics and motivation between the guidance sample and the comparison sample. Use this information to re-match the samples more precisely (this can also be thought of as a re-weighting procedure).

(4b) Analyse the outcomes making use of the results from 4a.

1.3 Response

At the recruitment stage, the net response rate for the guidance sample was 66 per cent and 1612 clients returned questionnaires or were interviewed by telephone. However, 12 per cent of this initial sample were unwilling to take part in further stages of research.

The comparison sample was recruited by a quota method. From a pool of 5500 employed individuals, nearly 2000 were selected for follow-up.

At the first follow-up stage, 65 per cent of the eligible guidance sample took part in a personal interview, and 59 per cent of the eligible comparison sample. Interviews were completed with 768 guidance clients and 1019 comparison sample members.

At the second follow-up, 72 per cent of the remaining guidance group, and 84 per cent of the remaining comparison group, took part in a telephone interview. The numbers available for analysis at this stage were 514 in the case of the guidance clients and 813 in the case of the comparison group.

Those lost to the research (through mobility etc.) tended to be younger than average and with fewer family ties.

2 The Guidance Sample

A very wide range of people used guidance services, but the mix was distinctive in a number of respects. Compared to the general working population, people who used

guidance services tended to be childless, young, and reasonably well-qualified in educational terms. Sixty per cent of them were women and the same proportion were in 'white-collar' jobs. Fewer of the guidance sample worked part-time or as self-employed, than among the employed population as a whole.

There was a high level of recent job mobility in the guidance sample, with 35 per cent changing job in the 18 months before guidance. They had on average an unusually low level of satisfaction with the current employment, and large proportions of them were seeking a new employer, new work, or a new opportunity for education and training.

Two-thirds said that they used a guidance service because they wanted to change career. More than half said that they used it because they wanted to change job. More than half said that they wanted to find out about education or training, and/or to improve their skills or qualifications. Just over a third said that they had sought guidance because they were 'at a loss to know what to do'. Another contributory factor was job insecurity. Preparation for self-employment was a significant minority aim.

The guidance clients generally reported receiving a range of different forms of assistance. The services covered the types of purpose which they had in mind when starting guidance, but often went wider. Most people saw the guidance services in a positive light, with 80 per cent declaring them very helpful or quite helpful.

An analysis showed that even after the preliminary matching, there continued to be significant differences between the guidance and comparison samples in terms of ethnicity, dependent children, employment status, occupation, qualifications, recent training, intentions concerning further education or training, and concerning job/work changes, and especially job satisfaction. These differences were corrected by means of the re-matching and re-weighting procedures.

3 Education and Training Outcomes

Taking part in guidance had a positive impact on many aspects of participation in education and training, over the ensuing two years. There was also clear evidence that this impact was continuing at the end of the study period.

Over the two-year follow-up period, about eight per cent of the guidance sample entered *full-time* education or training. This was more than four times the proportion in the comparison sample. In the period preceding and including guidance, however, there was virtually no difference in educational participation between the two groups.

Additional education and training (*not* full-time), paid for and organised by the individual rather than by the employer, was started by 30 per cent of the guidance sample in the first year of follow-up and by nearly 20 per cent in the second year. This was substantially higher than in the comparison sample. However, the comparison sample tended to have a slightly higher degree of training provided by the employer.

The guidance sample were more than twice as likely to get a qualification from a course which they had initiated, than the comparison sample. They also had a higher overall rate of qualification, even after taking account of employer-provided training in which the comparison sample did better. The gap is likely to increase with more time, since more of the guidance sample were in the middle of continuing courses when the research ended.

4 Job satisfaction

At recruitment to the research, individuals in both samples were asked to rate their own job satisfaction in global terms. A salient feature of the guidance sample was its low average level of global job satisfaction at the outset. One of the ways in which guidance might be expected to assist clients would be through improvements in job satisfaction, either by changing career or type of work or by becoming better equipped for the existing career or job through further training. The research methods permitted

comparisons with people not taking part in guidance but having similarly low levels of job satisfaction at the outset.

The guidance group experienced a major improvement in their average level of global job satisfaction between the initial recruitment stage and the first follow-up. There was some further improvement up the time of the second follow-up but this was relatively small. However, the comparison sample (equalised to the guidance sample in terms of initial job satisfaction) also had very substantial improvement in job satisfaction over the same period. There was no significant advantage for the guidance sample, in terms of its recovery to a higher level of global job satisfaction.

At the first and second follow-up interviews, questions were asked about satisfaction with pay, security, opportunity to use abilities, hours of work, variety in the job, and opportunity for career advancement. The main aspects in which the guidance sample made advances over the study period were in having more satisfactory hours of work and in more satisfactory prospects of advancement. Once again, though, these advances took place to a roughly similar degree in the comparison group as well. In addition, the comparison group appeared to make somewhat *greater* advances in satisfaction with the variety of their work.

These negative results are not wholly conclusive since there may have been underlying differences between the guidance and comparison groups which were not observable. Also, the impact of training and education on job satisfaction might appear at a later date.

None the less, the important practical point indicated by these results is that people with initially low levels of job satisfaction are generally able to recover to normal levels within a year or two, in the absence of guidance. The task for guidance services to achieve more than this is correspondingly a difficult one.

5 Earnings and Progression

Pay data were available from the first and second follow-ups, but not from the initial recruitment stage. Accordingly, the main outcome variables for pay concern changes between the first and second follow-ups.

The main analysis of earnings excluded self-employed people since their data seemed less reliable, especially at the second follow-up. In addition, however, an analysis based on the national average earnings *for each occupation* covered all categories of worker. The latter can be interpreted as an analysis of occupational progression.

The earnings of guidance and comparison groups did not differ significantly at either the first follow-up, or the second follow-up, once the samples had been rigorously matched. The same applied to the difference in earnings, for those who were employed and provided pay data at both follow-up interviews.

On the alternative measure (called 'occupational expected earnings'), there was also no clear evidence that the guidance sample had advanced more than the comparison sample.

Overall, therefore, there was no reliable evidence of guidance affecting earnings over a period of two years. There was, however, clear evidence that the guidance sample made more frequent moves in the external job market, and they were also more likely to move into full-time employment.

There was reasonably firm evidence that some career actions, notably changing jobs, moving into full-time work, or pursuing a qualification, could have different earnings outcomes for guidance participants than for non-participants. But these differential outcomes were sometimes negative, sometimes positive. Changing jobs was, at least in the short-term, not as beneficial to earnings for guidance participants as it was for the comparison group. The most positive outcome for guidance participants, in terms of change in earnings, was to move into work with longer hours. Self-initiated training with a qualification aim tended to have a detrimental effect on earnings for the guidance group, although not if it was deferred until the second year after guidance.

There was some indication that the impacts of guidance on earnings were relatively positive in some TEC areas. But the evidence for these differences was weak: conclusive results of this type would need research with larger samples.

6 Overall conclusions of the evaluation

The evaluation assessed the impact of guidance on employed adult clients by means of three main criteria: (a) further education and training, and associated qualifications; (b) change in job satisfaction; and (c) change in earnings. The analysis of changes in earnings included consideration of occupational progression.

The guidance participants benefited from guidance through an increased entry rate into both full-time continuing education and training, and through increased participation in other (part-time) education and training which was not arranged by their employers. The overall effect of this increased participation was an enhanced rate of qualification. Participants expressed appreciation of the value of guidance in helping them to access education and training opportunities. In these important respects, the guidance services appear to have been successful.

Initially the guidance clients tended to be dissatisfied with their jobs, and the majority of them recovered from this in the year following guidance. But this could not be attributed to the guidance they had received, because a matched comparison group also recovered from a similar initial level of dissatisfaction. Dissatisfied individuals may of course get advice and help from sources such as colleagues, supervisors, friends and family. The suggestion of the research is that it is difficult for guidance services to do better, in terms of job satisfaction, than these informal sources of help.

Earnings progression was examined in several different ways. In overall terms, there was no indication that the guidance group improved its earnings more than the comparison group. But some career steps or actions did appear to have different impacts on earnings for the guidance group than for the comparison group. Increased hours of work brought particularly clear earnings gains for the guidance group, relative to the comparison group, and this was a step taken more than twice as often

by guidance clients. There may be scope for guidance services to increase their beneficial impact on earnings by providing advice on the potential financial implications of career steps.

Chapter One: Introduction

This is a report on the first major British research study attempting to establish the impact of careers guidance on employed people. The outcomes on which the research focuses are continuing education and training, job satisfaction, and earnings and career progression. The research tries to identify how much difference is made to these outcomes by the use of a professional careers guidance service. To identify this difference, recipients of guidance are compared with employed people as similar to themselves as possible, who might have but did not receive guidance.

It is widely acknowledged that in a world affected by rapid technical change and intense international competition, people can no longer expect to remain within the same job, occupation or industry throughout their career. This suggests the need for careers guidance services to assist individuals in making mid-career adaptations and transitions, and more generally in advising and helping people to pursue continuing education and training. On the other hand, it might be argued that employed adults do not require the formalised careers guidance services that are provided for pupils and school-leavers, because they can access advice from colleagues and employers, and can afford to pay for professional services at market prices. The case for developing public provision for employed adults has to be made, and this has to establish the benefits against which new costs of provision may be set. The assessment of the benefits of publicly provided careers guidance for adults is the chief aim of the study reported here.

1.1 The evaluation problem

Publicly provided careers guidance for adults (from now on simply called 'guidance') can be thought of as a type of programme to improve the operation of the labour market. To evaluate a programme, one has to show what outcomes it produced *which would not have been produced in the absence of the programme*. This formulation points to the fundamental problem for evaluation. A person can either take part in a programme, or not

take part in it, but cannot do both at the same time. So, one can never directly observe what would have happened if the participants had not taken part. Yet, if we do not make a comparison of this type, the evaluation may be very misleading. For example, people may get a high rate of promotion after a particular training course, but that may be because their employers send them only if they have already been marked out for promotion so that the training in reality makes no difference. Or they may appear to do poorly after guidance, but they may only seek it because they are already at a crisis in their employment, and would have fared still worse without the guidance.

To cope with this problem, it is necessary to construct some substitute for what would have happened to the participants in the absence of participation. There are various possibilities (see Annex 1). One method which has many advantages is to use an experimental design, in which volunteers for the programme are selected *at random* either to take part or not to take part. Those who have been excluded are then used as the 'control group', representing what would have happened to the participants if they had been excluded. The effect, or net impact, of the programme is simply the difference in outcome between the participants and the non-participants, since the only thing which differs between the two groups is whether they took part.

In many situations, however, it is not practical to operate an experiment. The number of volunteers may be too few to split them into two groups, or it may be regarded as unfair to exclude some from a service that they want. An alternative is to select from non-participants a sample which matches the participants on as many as possible of the characteristics that affect, (a) the decision to participate and (b) the subsequent outcomes. This 'matched comparison group' method has similarities to the experimental control group method, but is more limited. It can only match on a limited range of observable characteristics, whereas the experimental method implicitly matches on all possible characteristics.

In the present study, it was not possible to use an experimental evaluation design. We used the matched comparison group method. Compared with previous British studies, we attempted to strengthen the matching methods that were applied. By progressively tightening the match between those who used guidance and those who did not, we attempted to get as close as we could to the experimental method. There always remains a possibility that some unobserved variable has not been taken into account, but we also included some powerful attitudinal or motivational measures in the matching, and in doing so we have minimised one of the main risks of incomplete matching.

A limitation with both the experimental control group design and the non-experimental comparison group design is that they cannot be readily generalised to a population such as all employed people. Experiments usually require volunteers and these volunteers (whether randomised into or out of the programme) do not constitute a sample from the relevant population. Similarly, in the non-experimental counterpart, the participants are volunteers - once more self-selected - and the comparison group is matched to be similar to these volunteers. Another factor which places a limit on statistical generalisation is that the nature of programmes (including guidance services) change from place to place and from time to time, and results could be more positive or less positive with a different version or in different circumstances. The *general* value of guidance, as of other programmes, can only be established by repeated studies. A single study contributes to the build-up of evidence, and may stimulate further investigations.

1.2 The aims and scope of the study

The overall aim of the study was to provide a rigorous evaluation of the net impacts of guidance on adult employed people, with particular emphasis on economic outcomes. The focus was on *publicly available* (usually free or subsidised) guidance services: the study *specifically excluded* guidance which was based within or given by the individual's employer. Only currently employed people (employees or self-employed) were to be included, and the services to be evaluated had to be specifically provided for this group (though not necessarily to the exclusion of unemployed people or those returning to the

labour market after a period away from work). It was further stipulated that the services should provide substantial inputs of information, advice and counselling, including at least one face-to-face interview with a counsellor. This requirement excluded services that offered only a careers library, a phone-in service, or a computer databank of educational or job opportunities, as opposed to a more personal service.

1.3 The practical conduct of the evaluation

The study presented considerable practical difficulties. Here we provide a brief outline of these problems and how they were dealt with in the research.

The chief practical difficulty was in obtaining a sample of employed adults who were taking part in guidance. Guidance for employed adults was not a nationally funded programme at the time of the study (commencing in late 1996), but had largely grown out of local initiatives by Training and Enterprise Councils (TECs; see Glossary for explanation). A prior feasibility study (White et al., 1996) had indicated that guidance services with substantial flows of clients were confined to a few areas, and had insecure funding arrangements. By the time of the full study, two TECs which had been among the chief supporters of adult guidance at the time of the feasibility study had closed down their services. The first stage in the study, accordingly, was a fresh search for TECs operating guidance services for employed people¹. Eventually, eight TECs with formal adult guidance activities were identified and took part in the study (two others identified dropped out after the pilot stage, for reasons described below). Of those participating, however, several proved to have only small volumes of employed clients. Fortunately, we were also able to include a careers guidance programme provided by a Local Authority, which had a substantial flow of clients. This helped us to reach a reasonable total of guidance participants although we ended with some shortfall.

¹ TECs sometimes operated these services directly, but in other cases contracted with providers to provide the services.

Originally we hoped to recruit guidance clients by means of a short questionnaire form that they would complete when they visited a guidance centre for their initial counselling interview. This would have the advantage of obtaining information about the participants very early in the guidance process, while assuring TECs of control over the contact procedure. However, a pilot exercise showed that this procedure was hard to operate effectively, possibly because the guidance staff having direct contact with clients were unfamiliar with this type of research. We therefore arranged with each TEC to take over the recruitment procedure ourselves, by a separate follow-up of clients after they had been registered and entered guidance. To fit in with the undertakings which each TEC was giving its clients about the terms of the service, including confidentiality, several different approaches were necessary. Two of the original 10 TECs dropped out at this point, since (with decentralised guidance providers in their areas) they felt it was not feasible for them to manage the process². Two TECs carried out postal questionnaire procedures on our behalf, so that we did not know the identity of participants until they replied (we did however know the numbers of clients being mailed). In three other cases, the TECs passed names and addresses to us, after offering clients an opportunity to opt-out, and we carried out the postal questionnaire procedures directly. In the case of three further TECs and the Local Authority careers organisation, they also passed us the telephone number of the client and we were able to arrange a telephone survey procedure instead of a postal survey. The telephone interviews were carried out by Public Attitude Surveys Ltd. on behalf of the research team. The postal questionnaire administration was conducted by the research team in direct co-operation with the TECs. The telephone interview and postal questionnaire contained identical questions though with some small differences of presentation. Those returning initial information, whether by postal questionnaire or by telephone interview, were given the option of either permitting or not permitting their details to be retained for follow-up in the subsequent research. Those giving a positive reply constituted the *recruited sample*.

² It appeared that these areas did not have large numbers of employed guidance clients so the effect on total sample size was probably slight.

We aimed to carry out the recruitment survey (whether postal or telephone) in batches of a month at a time (so that contacts would take place around six weeks after the individual had entered guidance). This was the shortest time over which details could be batched and put through the contact procedures. To the extent that this was achieved, we could be reasonably confident that the initial data obtained from the clients came from within the guidance period, since this typically continued over about three months. But this aim was only partially realised, because staffing pressures at the TECs and their guidance offices often resulted in batches being despatched two-monthly rather than monthly. Even with these delays, however, the great majority of contacts would have occurred while the guidance process was still 'live'.

We also needed to form a comparison sample. The basic idea here was to obtain a reasonably large pool of employed individuals, and then with the aid of the initial information collected, to select a matched sub-sample for follow-up. Ideally one would have recruited a random sample of employed people, but the cost of constructing such a sample would have been very high. Costs were greatly reduced by using a quota sampling method, with telephone interviewing. First, the areas served by the TEC or Local Authority adult guidance programmes were defined in terms of telephone dialling areas. Public Attitude Surveys Ltd. used a random-digit dialling procedure to call numbers within each designated area³. Employed individuals were recruited to fill a quota for each area, which was specified in terms of sex, age-group, and broad qualification level. Recruited individuals were those who answered a short telephone interview, which asked part of the questions posed to the guidance clients, and then agreed to have their details retained for follow-up in the subsequent research.

The recruitment procedure for the comparison sample lagged somewhat behind that for the guidance sample. The sampling quota were set on the basis of an interim analysis of the first two months of guidance sample data. They were thus initially running about

three months in arrears of the guidance procedure, but this gap had been eliminated by the end of the recruitment stage.

To get sufficient guidance sample numbers, it was necessary to continue the recruitment process for a period of up to six months in each locality, and three areas started earlier as pilots for the others. Altogether, the recruitment procedures were continuing from April to December 1997 though most of the work took place during June-November. We felt that this was as long as we could ask the TECs to continue with their generous administrative support for the study, so a practical limit was set to the size of the guidance sample.

The recruited guidance sample, and a matched comparison group from the comparison sample pool, were followed up by means of a personal interview survey in Autumn 1998. On average the interview, which was piloted in June, required about 30 minutes to complete. As far as possible, those recruited earlier were contacted in the earlier part of the survey fieldwork while later recruits were contacted later on. For most individuals, the follow-up interview would thus be about 10-12 months after the time of recruitment, though in some cases the gap could be as much as 15 months. There were particular difficulties in one area, because of the dispersed locations of the sample, and in this area the interviewing had to be extended into January 1999 for completion.

Respondents at the first follow-up interview were given the option of withdrawing from subsequent contact. From all those willing to continue, up-to-date telephone numbers were sought. The final contact was by means of a telephone interview of about 15 minutes' length. This second follow-up was carried out in August-September 1999, about 8-12 months after the first follow-up interview and (in most cases) 20-24 months from the time of recruitment into the study.

³ Since about 96 per cent of employed people have telephones, the omission of individuals without a phone number introduces very little bias. Random-digit dialling ensures that all telephone numbers in

Overall, then, the study had three stages, which extended from the time that guidance was taking place to about two years later. The design of the study permitted both short-term (one year) and medium-term (two year) outcomes to be tracked, while the initial recruitment procedure also provided information about individuals' basic characteristics which could be used for matching.

1.4 Sample numbers and response

Detailed information about sample numbers and responses are shown in Annex 2. Here we provide a broad picture and point out the main issues arising from the patterns of response.

In the case of the guidance sample, we can reasonably assume that the great majority of the participants during the initial fieldwork period were listed for contact, since we were told by the co-operating TECs that opt-outs were few. So our initial sample frame was virtually a census of guidance participants in the areas and within the time-period covered by the study. In total, some 2700 guidance clients were approached (either by letter/questionnaire or by telephone), and of these 1612 responded – an overall rate of about 60 per cent. But 245 of those approached by telephone were found to have non-existent numbers or were not known at the number called⁴. If these are considered invalid, the net response rate is 66 per cent. In the areas which were approached by letter/questionnaire, the average response was 58 per cent. A slightly higher response (61 per cent) was achieved on a gross basis in those approached by telephone, but when invalid cases are excluded, the telephone response rises to 70 per cent.

Unfortunately, there were two further sources of loss from the guidance sample which substantially reduced the effective sample size. One factor was an unexpectedly high rate of unwillingness to take part in the follow-up survey (12 per cent). This was more of a

the areas are selected with equal probability.

⁴ Some of these might result from recording errors and others from moves, but it is also possible that some clients gave false numbers because of anxieties concerning their employment.

problem with the postal survey (20 per cent) and much less of a problem with recruitment by telephone interview (7 per cent). The other factor was the inclusion of some non-

employed people in the lists of clients provided by the TECs (12 per cent of the initial sample). Part of this may have arisen because of changes of employment status between entering guidance and the time of the survey; a substantial number of participants reported that they sought guidance because they were anxious about the possibility of redundancy. At least half however were clearly included in error, since they had been unemployed for long periods before guidance. These two sources of loss, then, reduced the available sample for full analysis at the first follow-up from around 1600 to around 1250.

In the case of the comparison group, the recruitment stage was a quota sampling procedure. Recruitment was terminated when a quota of 5500 employed people was reached. From these, 1986 were selected in the initial matching procedure, which will be described in the next section of this chapter.

The personal interview at the first follow-up interview, in Autumn 1998, was completed with 1787 individuals, a gross response rate of 53 per cent of those recruited at stage 1 and eligible for the survey. The gross response rate was 57 per cent in the case of the guidance sample, and 51 per cent in the case of the comparison sample. A major source of sample loss between stage 1 and stage 2 was movement out of the survey area, which was influenced by the youth and lack of family ties of a large proportion of the sample. The guidance sample was more affected by movement than the comparison sample, with a rate of known movement of 17 per cent; the corresponding figure for the comparison sample was 12 per cent. After removing known movers from the sample as no longer valid, the net response rate was 68 per cent in the case of the guidance recipients and 59 per cent in the case of the comparison group⁵. The numbers available for analysis at stage 2 were 768 in the case of the guidance group and 1019 in the case of the comparison group.

⁵ The number of movers is likely to be under-estimated. Non-contacts after an average of 7 calls amounted to 10 per cent in the case of the guidance sample and 14 per cent in the case of the comparison sample, and some of these were likely to be movers who were not identified.

A further 6 per cent of those interviewed at the first follow-up were unwilling to be approached for the second follow-up. After removing these, 1678 members of the original members remained for survey, and 1327 of these took part in a telephone interview in Summer 1999. The response rate at the second follow-up was therefore 79 per cent, but it was lower in the guidance group (72 per cent) than in the comparison group (84 per cent), which roughly cancelled out the imbalance in response at stage 2. The numbers available for analysis at the second follow-up were 514 in the case of the guidance group and 813 in the case of the comparison group.

Throughout the study, there were large differences in response across areas (further details are shown in Annex 2). At stage 1, the response of guidance clients varied across postal survey areas from a low of 45 per cent to a high of 69 per cent. At stage 2, net response in the guidance group varied from 56 per cent to 85 per cent, and at stage 3, from 65 per cent to 85 per cent. Comparison group response at stage 2 was depressed by a very low response in two areas of London, with only 31 per cent and 46 per cent taking part: in the other areas, response was in the range 57-73 per cent.

The implications of the response patterns and numbers will be discussed in the final section of this chapter, after explanation of the matching procedures which form the main technical element of the study.

1.5 The matching procedures

The matching of guidance participants with non-participants is central to the method of the study. As explained earlier, the approach was to recruit a large pool of employed people, and then select from these a sub-sample that was similar to the guidance group. It was soon apparent that the guidance sample was highly distinctive - at the simplest level, they were predominantly female, young, and educationally qualified. Further analysis showed that the participants had very high levels of dissatisfaction with their current jobs, which suggested that this may have been an important influence on their decision to seek

guidance. An above-average proportion also had high levels of training participation funded by themselves in the previous year.

The selection of the non-participant sample for the first follow-up interview took account of the factors already noted - sex, age-group, qualification level, job satisfaction, prior training - and also the area of residence. The matching method, at this stage, can be visualised as selection from a large multi-way table incorporating these factors. If in a given cell of the guidance sample there are n_1 people, and n_2 people in the corresponding cell of the non-guidance sample pool, then individuals from the latter cell are drawn at random with probability n_1/n_2 ⁶. In order to implement this procedure, the banding of the variables in the table has to be adjusted so that there are sufficient numbers in the cells which need matching. The broader the bands adopted, the more coarse-grained is the matching. To implement the procedure here, it was necessary to use just three age-bands and to collapse the job satisfaction scale from seven categories to three bands again. Qualification was limited to four bands or levels.

A method often used to remove the roughness in the matching process is to apply multivariate statistical controls (often referred to as 'regression adjustment') at the analysis stage. This approach has been used in several British labour market evaluations (Payne et al., 1996, 1999; White et al., 1997). A disadvantage with this approach is that the presentation of findings can become weighed down by lengthy statistical output. Recent research in the USA (Dehejia and Wahba, 1998) has suggested an alternative approach, in which a much fuller matching process is applied. These researchers have shown that the results of an experimental evaluation can be rather closely simulated with this more refined matching. If the matching is sufficiently close, regression adjustment becomes less necessary and the effects of the programme can be represented by simple

⁶ This proportion was modified to give a matched comparison sample that was somewhat larger than the guidance sample.

differences between average outcomes, without (or with only slight) subsequent statistical adjustment.

This new matching approach is based on what is called the ‘propensity score’ method. This was first proposed by Rosenbaum and Rubin (1983). They showed that under plausible statistical assumptions, matching on a whole set of variables (collectively designated as, say, X) could be replaced by a suitable continuous function of X (this can be thought of as a kind of numerical index or summary measure). If the X-variables are used to predict the probability of participation in the programme being evaluated, this probability (known as the ‘propensity score’) is a suitable way to summarise the X-variables for purposes of matching. The practical implication is that a large number of variables can be replaced by a single variable. Instead of being confined to (at most) five or six matching variables, one can make use of all the relevant information which is available from many variables, via the propensity score.

There has also been recent progress in developing practical methods of implementing propensity score matching. One of these is the ‘nearest neighbour’ method. For each case in the guidance sample, the single counterpart is selected which is nearest to it on the propensity score; it is possible for several guidance cases to have the same ‘nearest neighbour’ in the comparison sample. Implicitly, cases in the comparison sample which are not nearest neighbours are discarded. The aim is to confine the comparison sample to cases which very closely resemble one or more members of the participant sample. Comparison group cases which match many of the guidance sample are given a higher weight than cases which match only one.

The main disadvantage of the above method is that many of the cases in the comparison sample are apparently wasted⁷. Another approach which makes fuller use of the

⁷ In fact these cases are not wasted since they have played a part in calculating the propensity score on which the matching procedure is based.

comparison sample is the ‘calliper’ method⁸. Cases in the comparison sample are included if they fall within a certain (small) tolerance around at least one of the guidance sample, even if they are not nearest neighbours. Each comparison case is given a weight which reflects how much it contributes to matching the guidance sample.

We have applied both nearest neighbour matching and calliper matching methods to the guidance study, in addition to the simpler type of matching which was described earlier. The first-stage recruitment questionnaire provided some 20 relevant variables, and it proved possible to generate a satisfactory statistical analysis of the influences on entry to guidance. The details of this will be explained further in Chapter Two of the report. However a few preliminary points are worth highlighting. The preliminary sample matching appears to have been reasonably effective, but (as would be expected) there were still considerable differences between the guidance and comparison groups, including on several of the variables used in the original matching. The nearest neighbour matching method used only one-third of the comparison group to provide the best matches to the guidance group. Again, though the calliper method used nearly all the comparison group, the weights which were calculated from this matching varied over a wide range, indicating that the statistical matching procedures had found scope for improving the match substantially.

No single method of matching can be considered to provide the best or most perfect match. However the availability of several different matching methods provides the evaluation with useful insurance. Through much of the report, we compare results using the initial sample matching procedure, the nearest neighbour method, and the calliper method. If the results from the different methods are in accord with one another, then we can be more confident that we have achieved a reliable and robust assessment of the impact of guidance. Where the results differ across methods, we should be much more cautious in drawing any conclusions.

⁸ This is also referred to as the ‘radius’ method.

1.6 Interpreting the study and its findings

A number of important points need to be borne in mind when interpreting the findings which are presented in the following chapters. The first of these has already been briefly noted. Like most evaluation studies, this one cannot be directly generalised to all employed people or even to those who might need or want guidance services. As usual, this evaluation starts with a volunteer group of participants who have untypical characteristics. Equally important, it is based on the local guidance services which happened to be available at a particular time. At a different time, guidance might be available in different areas, with a different mix of services on offer, and attracting a different mix of clients. Obviously, the outcomes could also be very different. As argued in an earlier publication (Killeen et al., 1992), sound knowledge about the economic value of guidance needs to be built up through repeated studies, supported by a “culture of evaluation”.

Even without these general considerations about evaluation, the particular limitations and difficulties of this study reduce the extent to which it can be generalised. The guidance sample was affected by substantial attrition over its three waves, and the comparison group quota sample was affected by subsequent attrition over two waves. Outcomes will very probably have been biased by this attrition. A major reason for attrition was the spatial mobility of a youthful sample with a high initial level of job dissatisfaction and a desire for improvement. We lost them because they went elsewhere. ‘Movers’ tended to be younger and to have fewer family ties, ‘stayers’ tended to be the reverse. The follow-up surveys therefore almost certainly show less change and more stability than was actually the case. We cannot infer whether less change and more stability translate into higher or lower outcomes – more or less educational development, more or less job satisfaction, more or less growth in earnings. It is necessary to recognise that this is *in effect* a study of guidance participants who were also ‘stayers’.

A further factor in the interpretation of the study arises because of the limitations on sample numbers. The statistical reliability of conclusions about outcomes depends on sample numbers. Accordingly, at many places in the report, there are apparent tendencies in the results, which fall short of statistical reliability. The 'gold standard' in statistical analysis is that findings should be significant at the 95 per cent confidence level: that is, results of the type reported would arise by chance only 1 time in 20, or less often. At some points, we report findings which are significant at the 90 per cent confidence level, rather than classifying these as non-significant. We do so in order to draw more pointers of potential interest from the study, but this does *not* mean that we regard these findings as reliable. They can only be regarded as tentative.

On the other hand, there are some unusual strengths in the data. The guidance group constituted a large fraction of all the adult employed people receiving publicly provided careers guidance in 1997. The dataset is a very rich source of information: many details were collected during the process of guidance, rather than retrospectively, and a great deal of further information, including information about outcomes and intentions, was collected at two subsequent stages. Methods of matching have been extended so as to provide a robust basis for evaluation. These considerations should increase confidence in the findings presented in this report.

Chapter Two: Who Took Part in Guidance, and Why

The purpose of this chapter is to gain an initial understanding about the employed people who took part in guidance. This has two main aspects: identifying what was distinctive about them, and learning something about their motives for seeking guidance. This information is of interest for several reasons. In the first place, it is highly relevant to assessing the potential demand for adult career guidance services, and in suggesting some aspects of the service which would be desired. That type of assessment, however, does not form part of the aims of the present research, so we do not comment on it further. Our concern is with the outcomes of guidance, and for this purpose background information about the guidance sample is of value in formulating and interpreting analyses. In addition, an essential part of our method (as outlined in Chapter One) is to identify a comparison group of non-participants which is closely matched to the guidance group. To do this, we will use information about both the characteristics and motives of the participants. Accordingly, the material in this chapter is not merely 'background', but constitutes a crucial step in the overall analysis.

2.1 Characteristics of the guidance group

Over-generalisation is one of the follies of quantitative research. We should, therefore, begin our description of the employed people who seek guidance on their own account by stating plainly that they are of all ages and in all kinds of work. They include the self-employed and both full-time and part-time employees. They include highly-qualified people and those with no qualifications at all; people who are satisfied with their jobs and people who are not; people who want to make radical changes in their careers and people who want nothing of the kind. In quantitative studies such as ours, questions of the sort 'what kind of people use guidance?' are really invitations to make comparisons to population parameters and to remark the differences of degree.

In this sense, there are certainly a number of features which stand out. Compared to the general working population, people who use guidance services tend to be childless, young, and reasonably well-qualified. They are often women, and are

usually employed on a full-time basis in white-collar occupations. They are often intent on changing their careers in some way, and are strongly-disposed to enter education or training.

We shall now attempt a more discriminating portrayal, based upon information obtained from almost all of those contacted at the recruitment stage, including some who did not wish to be contacted again, or for other reasons were not retained in the study (N= 1,576¹). We exclude only a handful who had not worked in the recruitment year, or who were below 18 years of age. The General Household Surveys (GHS) and Labour Force Surveys (LFS) are the chief sources used to provide comparative information concerning the general employed population.

2.1.1 Age, sex and dependent children

Employed people who use guidance are much younger than employed people in general (Table 2.1). Three-quarters of those replying at the recruitment stage were less than 40 years of age and mean age was just under 33 years. Their age distribution was positively skewed from a modal band of 24-26, tapering-off throughout the rest of the age range to the early sixties. In the general working population the age distribution is much flatter. In addition, the people who used guidance were disproportionately women: although inflated a little by large numbers of women in just one TEC area, 59 per cent of the total were women, but the UK labour force still contains more men than women. A precise comparison would depend upon the degree to which we wished to adjust for factors such as the age profile of the sample, retirement ages, and self-employment, where men predominate. An indication can, however, be given by considering those in employment and those economically active in the age range 18-49. On this basis we would expect our sample to contain not more than 61 per cent and not less than 54 per cent men – quite the reverse of the pattern of those using guidance services (Labour Market Trends, tables B2, D1, 1997 figures). In only one TEC area did the number of men equal that of women. The bias towards younger adults was approximately the same in each sex. Consistent with this, only

¹ Effective sample size varies down from this figure according to item non-response. Percentages are based upon valid responses.

one-third had dependent children; just over 10 per cent in the 20-29 age band, rising to 56 per cent in the 40-49 age band.

Table 2.1 Age distribution of Guidance sample compared to the General Household Survey¹

		Sex		
		Male	Female	Total
Age in years (banded)	20-29	42(22)	41(24)	41(23)
	30-39	34(27)	31(27)	32(27)
	40-49	16(26)	21(30)	19(28)
	50-60(59)	4(17)	4(17)	4(17)

Note: ¹the percentages in brackets are from the GHS

2.1.2 Education

Setting aside additional forms of vocational qualification, almost all of those who replied (93%) said that they had some sort of school or other educational qualification (Table 2.2). This leaves a smaller proportion of unqualified people than in the workforce as a whole but, of greater importance, there are fewer with no qualifications in *each* age group than indicated by corresponding GHS parameters. High rates of qualification are not, therefore, just a consequence of a youthful sample drawn against a background of rising levels of qualification. In addition, one-third, as opposed to one-quarter of the general population (GHS), held graduate or equivalent qualifications. There were, however, wide differences between TEC areas. Taking higher-level qualifications as a yardstick, four areas had rates in excess of 40 per cent, whereas others had rates below 25 per cent.

Table 2.2 Highest school or educational qualification in the Guidance sample

	Column percentages
Degree level	32.6
A level or equivalent	11.7
O level, GCSE ABC grade or equivalent	14.1
GCSE lower grades /CSE other than grade 1 or equivalent	17.8
Other	16.4
None	7.4
N	1548

2.1.3 Recent training

The number of people reporting training organised by their employers in the preceding year (37 per cent) was similar to available national information (EPTiUK, 1993). Although no suitable parameter exists for a comparison to be made, the number reporting *self-organised* education and training over the same period (29 per cent) appeared high, and perhaps indicative that many who use guidance are already embarked upon a course of self-improvement – an issue to which we shall return.

2.1.4 *Occupation and employment status*

As indicated earlier, all the main occupational groups – ranging from unskilled to higher professional levels – took part in guidance. Given an above-average level of qualifications in a disproportionately female sample, it is to be expected that a high proportion – around three-fifths (60 per cent) – were in managerial, professional and associated, or in clerical employment, with a particularly exaggerated peak of clerical employment (27 per cent).

It is also consistent with the age profile of those who used guidance, and the fact that only 30 per cent had dependent children, that most should have been in full-time employment, as opposed to part-time work or self-employment. Of those in work, only 5.5 per cent were self-employed. This is less than half the corresponding GB rate (13 per cent: LFS) . A relatively small proportion – 15 per cent of employees, as contrasted with 28 per cent of GB employees (LFS) - were in part-time work.

2.1.5 *Mobility*

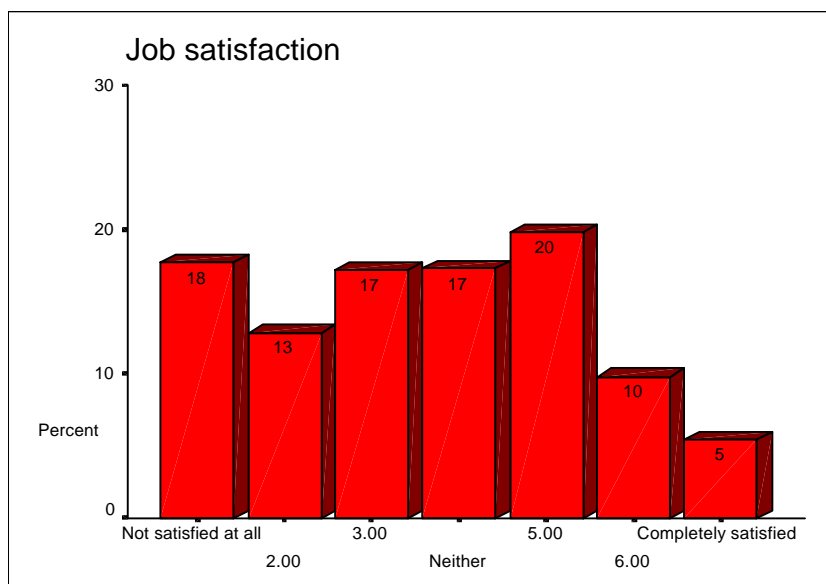
But although quite well-qualified and, in the main, employed on a full-time basis in occupational categories broadly consistent with their profile of qualifications, 6 per cent ceased working shortly before or soon after using guidance (leading to some exclusions from our later analysis) and, of the remainder, more than a third (35 per cent) had begun their current work in 1996/1997. Twenty-three percent had done so within 1997, the year of their recruitment to the research study. Some changed jobs in the interim between guidance and recruitment, but it is to the overall figure that we wish to draw attention. As recruitment took place *during*, not at the end of, 1997, this represents a very high rate of mobility which cannot be explained by entry to the labour market from non-employment, as it was subsequently found that only 6.4 per

cent (of the guidance sample retained to the first follow-up) were not in work at the beginning of that year, inclusive of unemployed people. Thus many people who use guidance appear already to have entered a period of heightened mobility.

2.1.6 Job satisfaction and short-term intentions

Associated with this exceptional mobility – possibly both as cause and effect – people using guidance services demonstrated extremely low levels of job satisfaction. In representative samples taken from the workforce, as distinct from very specialised samples, we are accustomed to see quite wide dispersion, but around a central mode, usually skewed so that considerably more people are satisfied than dissatisfied. At a time when job satisfaction studies were conducted in greater number than is now the case, it became accepted that better-educated people, older people, non-manual workers and women tended to be more satisfied than others. Only in one respect – its youthfulness – does the present sample depart from this. But almost half were below the scale mid-point and 18 per cent were at the lowest extreme, so that the distribution approaches bi-modality. Thirty-five per cent were satisfied with their jobs and only 15 per cent were very or completely satisfied. This is illustrated in Figure 2.1.

Figure 2.1 The distribution of job satisfaction in the guidance group



In view of this low aggregate level of satisfaction, some continued desire for change is to be expected. This is shown very clearly in the intentions people had for the coming year (Table 2.3), when it was hoped that the rapid pace of change would be continued. Forty-four percent intended to change employer. A similar number expected to change the type of work they did and in each case a quarter were unsure, so that only a minority were clear that they had no such intention or expectation. An even higher proportion (53 per cent) was planning to start new CET.

Table 2.3 Intentions and expectations for the coming year

	Row percentages			Total N
	Yes %	No %	Not sure %	
Intend to change employer	44.3	29.9	25.8	1460
Expect to change type of work	43.5	31.4	25.1	1461
Plan to start new education or training	53.1	23.7	23.3	1462

2.1.7 Use of guidance services

We can further fill-in the background by considering information about the ways in which these clients used guidance services. The main sources of information about guidance were media and advertising, leaflets, other agencies or advice centres (e.g. Citizens Advice Bureaux), and friends or family (Table 2.4). One-third found out about the guidance service through the media, advertising or leaflets. Substantial numbers were referred by other agencies. Almost a quarter learned of the service informally from family or friends. In addition, however, 13 per cent of the sample first heard of the service they used from their employers. This figure is attributable to large numbers hearing about the service in this way in one area, which must be regarded as atypical. Elsewhere the figure varied between 1 per cent and 7 per cent.

Table 2.4 Sources of information about guidance

	Column percentages
Employer	12.6
Friend at work	9.0
Other friend/family	16.0
Radio, newspaper, or other advert	18.9
Leaflet in college/library	14.5
Advice centre (e.g. CAB)	18.9
Other	16.2
Don't know	1.2
Total N	1532

Percentages sum to more than 100 because more than one source could be stated.

Information about the purposes for which guidance was consulted adds to our understanding of motivation (Table 2.5). Two-thirds said that they used a guidance service because they wanted to change career. More than half said that they used it because they wanted to change job. More than half said that they had wanted to find out about education or training, and/or to improve their skills or qualifications. A degree of exasperation, or even despair, is also evident: just over a third said that they had sought guidance because they were 'at a loss to know what to do'. Another contributory factor was job insecurity, which varied from 11 per cent to 32 per cent across TEC areas. Preparation for self-employment was a significant minority aim. In short, people used guidance to help them make the sorts of career moves which we have already considered.

Table 2.5 Reasons for seeking guidance

	Column percentages
To change job	55.2
To change career	67.2
Facing redundancy	11.1
Job insecurity	20.2
Newly arrived in the UK	3.6
Planning retirement	2.0
Planning self-employment	8.4
Education/training opportunities	54.3
To improve skills/qualifications	56.2
At a loss to know what to do	38.0
Other reason	7.1
Don't know	1
Total N	1572

Percentages sum to more than 100 because more than one reason could be stated

2.1.8 *The services received*

For the purposes of the evaluation, it is important to check that members of the guidance group in fact received guidance services. It is also of interest to consider how much these varied. A very small number (1 per cent) failed to indicate that they had received any of the particular services about which they were questioned and it is feasible that their responses were valid. But almost all got some sort of individual guidance directly from an adviser and approximately half used printed and/or computerised information sources along with the personal advisory service. A quarter were administered skill or interest tests. A summary of the services is shown in Table 2.6.

The topics covered in guidance mirrored the reasons people had for using it (Table 2.7). In most cases, this included the kinds of work they might do in future. Allied to this, nearly half covered career planning and a minority (12 per cent) covered self-employment. Two-thirds covered training and two-thirds covered education, and when these are combined the proportion who were given guidance covering at least one of them rises to 80 per cent. The average person had guidance covering six of the topics listed in Table 2.7. The implication is that advisers addressed the concerns which their clients brought to them, but often broadened the discussion, introducing possibilities which the individual may not already have considered. For example the discussion of future career may have entailed consideration of the implications for CET.

Table 2.6 Types of guidance received

	Column percentages
Talked to an adviser on an individual basis	93.5
Talked to an adviser in a group	6.1
Took skill or interest test(s)	25.6
Used leaflets or books	55.4
Used a computer to get information or other help	45.0
Total N	1561

Percentages add to more than 100 because more than one type of guidance could be received.

Table 2.7 Topics covered in guidance

	Column percentages
Your experience	84.9
What you are good at	77.7
The sort of work you might do in the future	90.0
Becoming self-employed	12.0
Training you can do	67.8
Education you can do	68.0
How to get recognition of your existing skills	30.0
National Vocational Qualifications (NVQs)	24.2
How to plan your future career	48.7
How to look for opportunities that interest you	61.9
How to make applications	28.9
Total N	1545

Respondents could select any or all from the above list

Guidance clients were appreciative of the help they had been given (Table 2.8). More than four-fifths said that it had been fairly or very helpful and only a very small proportion (5 per cent) believed it to have been of no help at all. Clients also reported a wide range of more specific positive benefits (Table 2.9). Approximately two-thirds said that they became more aware of the skills they could offer. A similar number said that they had been made more interested in education and training or had found how to get the kinds of CET which would suit them. More than half believed that they had been helped to search more effectively and just over one-third were given new ideas about applying for jobs. Given that so many had been ‘at a loss to know what to do’, it is worth noting that a substantial majority were made more hopeful about the future. The average client reported between three and four of these effects. Thus people looking for new jobs and careers, or for CET, or a combination of these things, believed themselves to have been given appropriate help. This help may also have had an impact on motivation, by raising flagging spirits. Our task, to be pursued in the following chapters, is to discover whether we can substantiate the positive beliefs people formed about the guidance they were given.

Table 2.8 Helpfulness of guidance service

	Column percentages
Very helpful	31
Quite helpful	52
Not very helpful	12
Not at all helpful	5
N	1568

Table 2.9 Perceived effects of guidance.

	Row percentages		
	Yes	No	Not sure
More aware of skills can offer	58.5	34.0	7.5
Given new ideas about how to make applications for jobs	36.5	60.2	3.2
Help to search more effectively	56.7	36.3	7.1
Made to feel more hopeful about the future	65.0	25.4	9.6
Made interested in getting more education or training	65.8	29.1	5.0
Told how to get suitable education or training	66.7	29.5	3.8

2.2 *Matching the guidance and comparison groups*

The design of the evaluation required the construction of a comparison group which should be as similar as possible to the guidance group. The initial steps in constructing such a comparison group, through the recruitment process and selection for the first follow-up interview, have been described in Chapter One. By the time of the first follow-up, the comparison group had already been to some extent aligned with the guidance group through these procedures. But as has just been shown, the people entering guidance were an unusual group in several ways, and there continued to be differences between them and the comparison group even after the initial procedures. By analysing and identifying these remaining differences, we place ourselves in a position to remove or correct them, and so achieve a more rigorous and reliable assessment of the effects of guidance.

Some key points about the method of analysis first have to be explained. In essence, it is a multivariate statistical method which simultaneously considers the whole set of

potentially different characteristics. This has two advantages over an analysis which takes one characteristic at a time. *First*, many characteristics (for example, qualifications and occupations) are correlated with one another, so that looking at each separately can be misleading (a kind of double counting). The multivariate analysis nets out the overlap between characteristics, showing the *independent* contribution of each characteristic towards separating the guidance group from the comparison group. *Second*, the multivariate analysis makes it possible to calculate, for each person, what their probability of entering guidance would be, given their characteristics. This can be thought of as an index of the propensity to use guidance if it is available. Such an index provides a convenient way of matching members of the two groups, while taking account of all the characteristics which are available to compare them. In the absence of the multivariate analysis method, we could only take a few of these variables into account and the matching would be less reliable. We would not therefore be able to go beyond the limited matching used in the preliminary sample construction procedures.

The matching index naturally depends upon the range of variables which are available for comparing the guidance and non-guidance groups. Ideally, we want to compare the two groups on information that relates to the period immediately *before* guidance took place. Any information from the time during or after guidance could be affected by guidance itself. In practice, the ideal is unattainable (since guidance participants can only be identified and followed-up once they have entered guidance). The information used in the analysis was mostly collected from the guidance group shortly after they entered guidance. How reasonable is the assumption that the guidance process has had no serious effect on the characteristics compared?

Some of the characteristics used in the comparison cannot be affected by guidance at all (gender, ethnicity and age), while others cannot be affected at an early stage of guidance (educational qualifications and dependent children). Again, it will mostly take some time for guidance to result in a change of job, so details of the job - such as occupation, full-time or part-time status, or size of firm - are likely to be comparable for the two groups. Measures looking back to previous years - such as work-history information - should also be safe, provided that recall would not be biased by

guidance. There is therefore a good range of information which seems reliable for comparing the two samples, even though the information was collected from the guidance sample after starting guidance.

A more controversial issue is whether to take account of attitudinal variables. The most important attitudinal measure which is available from the recruitment stage is individuals' overall satisfaction with their current job. It is not possible to assume that guidance had no short-term impact on job satisfaction, so it might seem necessary to exclude it from the analysis. On the other hand, dissatisfaction was manifestly a major factor in entry to guidance, and one which could only very roughly be taken into account in the preliminary selection of the comparison sample. If it is omitted, matching will certainly be imperfect. Since in our judgement the strength of the link between dissatisfaction and entry to guidance was much greater than any conceivable effect of guidance on dissatisfaction, we decided to include this variable in the analysis.

Similarly, it was a matter of judgement whether to compare the two groups on their intentions of starting a new education or training course in the next year, of changing employer, and of changing the kind of work they did. Evidently, the initial guidance provided to the guidance sample could have affected their intentions in any of these respects. Yet having such intentions would probably make someone more likely to look for careers guidance in the first place, so to ignore them might be a loss of valuable information. Again, we had to make a judgement about the relative strength of the link between intended change and entry to guidance, and the of link between guidance and intended change. As with the job satisfaction measure, we decided to include the 'intentions to change' variables in the comparative analysis.

One further complication has to be noted: the guidance sample changes its composition over time. This is because people drop out of the sample at successive stages, and particular characteristics (like being young and having no family ties) make it more likely that someone will move and be lost to the sample. Because of this complication, we carried out the analysis twice, once for the samples interviewed

at the first follow-up interview, and once for the samples interviewed at the second follow-up interview.

2.2.1 Results of the multivariate comparison

We now turn to the results. The analysis indicates how much weight each characteristic has in distinguishing the guidance sample from the comparison sample, and the statistical significance of this weight. Since the scale on which these weights are measured does not have an easy interpretation, we have also re-calculated the results on a percentage scale in the case of those characteristics which are significant. The percentage measure shows how much more (or less) likely it was for someone with a given characteristic to be in the guidance group rather than the comparison group. In deriving these percentage measures, all characteristics apart from the one being considered are controlled at the average for the sample, so that the measure is based on the assumption 'other things being equal'.

Gender and age were the primary characteristics used in the initial selection of the comparison sample. The analysis showed that the two groups remained well-matched on these basic characteristics at both the first and second follow-up interviews. Similarly, the proportions of guidance and comparison group members from each of the study areas were reasonably well-balanced, with no significant differences showing up at either the first or second follow-up.

The other main factor on which preliminary matching was carried out was educational qualifications. But the preliminary matching was in very broad terms, and the analysis showed that it was not very successful. Other things being equal, people with A-level qualifications (and, to a lesser extent, degree-level qualifications) were least likely to be in the guidance group, while those with qualifications below A-level, or with a vocational qualification as their highest qualification, were most likely to be in the guidance group. Those without qualifications were in the middle. It may be particularly likely that people with moderate levels of qualification seek guidance because they hope to improve them. People with advanced or higher qualifications perhaps have less incentive to do so, as they are likely to get employer-provided continuing education and training. People with no qualifications may tend to feel that

it would be difficult for them to gain qualifications and this may reduce their use of guidance.

It seemed possible that employees in the guidance group might have had a more unsettled working career than those in the comparison group, and this was examined in the course of the comparative analysis. But those in the guidance sample were if anything *less* likely to have had a break of employment in the past five years, although this difference fell well short of statistical significance². Various measures of how much time people had spent in unemployment, in long-term sickness, looking after the home, or otherwise out of work, were explored, but the differences between the two groups were negligible. Another surprise concerned the size of the employer: if anything, guidance group members were *less* likely to come from small establishments (less than 25 employees), although again the result was not statistically significant.

At the first follow-up, ethnic minority members were somewhat more likely than the white majority to be found in the guidance group (a difference of 10 percentage points, other things being equal), but by the second follow-up this difference was no longer significant. Over time, then, the ethnic minority members in the guidance group were more likely to disappear from the survey.

A more substantial difference was in dependent children. At the first follow-up, people with a pre-school child were less likely to be found in the guidance group than those without a child of this age, the difference being 14 percentage points. The majority of the sample were women, and it might have been thought that the influence of having a young child would be greater for women than men. However, the analysis indicated that men with young children were as much deterred from entering guidance as were women with young children. By the second follow-up interview, there was less difference between the guidance and comparison groups in terms of young children, and the reason for this was that those without dependent children were more likely to have moved away and disappeared from the survey. In fact, this was the clearest single factor associated with people leaving the survey.

² Note that this is after the initial matching of samples.

While previous work-history did not differentiate between the samples, those who had gone on a training course *at their own expense* in the year before the initial survey were somewhat more likely to be in the guidance group than people who had not taken any training initiative. The difference was not great once other background characteristics were controlled - some seven percentage points - and it ceased to be significant by the time of the final follow-up survey. There was no significant link between membership of the guidance group and employer-provided training.

One of the strongest associations with being in the guidance group was having a full-time job. The chance of full-time workers being in guidance was 15 percentage points higher than in the case of part-time workers. This is a potentially important policy finding since it indicates that the guidance services at this time either did not appeal to part-time workers or were not able to overcome barriers to access which these workers may experience.

An equally strong link was between intending to enter a new education or training course during the following year, and being in guidance. We have already pointed out that this could be upwardly biased by guidance itself, if for instance the advice and information provided had led some people to think of education and training when they had not done so previously. The same could be said of those intending to change the work they did within the next year, who were also somewhat more likely than others to be in the guidance group (this connection was less strong than for education and training intentions, however). Interestingly, though, there was *no link* between intentions of moving to a different employer, and being in guidance.

Finally, much the strongest distinguishing feature of the guidance group was their high level of dissatisfaction with the current job. Respondents describing themselves as completely dissatisfied or very dissatisfied with their jobs had about a 60 per cent chance of being in the guidance sample, while those describing themselves as very or completely satisfied had about a 20 per cent chance of being in the guidance sample (holding other things equal in both instances). This was despite attempts made earlier to select comparison group members who were towards the dissatisfied pole

(see Chapter One). It is possible that guidance itself may have made some people more dissatisfied with their jobs, but it is not plausible that it could have contributed more than a small proportion of the difference. Indeed, it is more plausible that effective guidance would help to reduce dissatisfaction since it would suggest ways of dealing with an unsatisfactory situation.

In summary, then, the characteristics which made it more likely that a person would appear in the guidance group up to the first follow-up stage of the study (the main personal interview) were as follows:

- A moderate (below advanced) level of educational qualifications
- No school-age child
- Ethnic minority member
- A full-time job
- Investment in own training in the preceding year
- Intention of starting new education/training in following year
- Intention of changing type of work in following year
- Dissatisfaction with current job.

Annex 3 shows the analyses from which these findings have been drawn. It also provides further technical details of the re-matching and re-weighting procedures used to improve the basis for the analyses of outcomes. Tables in Annex 3 show the average sample values on the variables before re-weighting and after re-weighting. It can be seen from those tables that the re-matching procedures made the samples much more comparable.

Chapter Three: Education and Training

This chapter considers education and training outcomes. If participation in guidance is followed by an increased rate of participation in education and training, then this will be regarded as a positive outcome of guidance. Again, if participation in guidance is followed by a higher rate of qualification, or other indications of the successful completion of education and training, this too will be regarded as a positive outcome. As always, the implicit comparison is with what would have happened in the absence of guidance, which is estimated through the comparison group.

In a moment we will consider potential outcomes in more detail. First however we will describe some features of the initial guidance sample, of relevance to the issue of education and training outcomes. By 'initial guidance sample', we mean the whole sample obtained at the recruitment stage, ignoring any subsequent attrition or exclusion from analysis. Of this whole sample, two-thirds said that they had used guidance services, at least in part, for educational reasons. Some wanted to improve their skills or qualifications and some were just looking for education or training opportunities, but almost half gave both of these reasons. Most using guidance for educational or training reasons - more than four-fifths - also said that they had done so because they wanted to change job or career and, of the employees, 10 per cent wanted help to plan for future self-employment. Although some were facing redundancy or felt insecure in their jobs, this was not an especially heightened factor, in comparison with the remainder of the sample. The dominant impression is of a very large sub-group which saw guidance as a means to make changes in their careers through access to education and training¹.

¹ One might also be interested in whether there was anything different in the background of those interested in education and training. They were somewhat younger, on average, as one would expect, but their marital status and the proportion of them with dependent children did not differ from others. They were a little more likely to be of moderate existing educational attainment, rather than to have high levels of qualifications or to have none at all, and were somewhat more often in occupations below the professional and managerial levels. But they were a trifle more satisfied with their current jobs. They had participated a little more often in education or training (both that provided by employers and that arranged by themselves) in the preceding year. They were also more satisfied, on average, with the guidance they got. However, as the repeated use of 'somewhat' and 'a little' should make plain, there is a danger of over-generalisation. Those seeking guidance for education or training were not very unlike the remainder of the sample.

The guidance service which they received usually covered the topic of education and training. Indeed, more said that this was so (82 per cent) than gave it as an initial reason for using the services available to them. But, despite this, a small connection remained between original purpose and what was actually covered. Even more of those seeking guidance with such things in mind (89 per cent) said that it covered education, training, NVQs, or, more commonly, a combination of these things. So not only does the sample include a sizeable majority of people who were seeking education and training, the services given to them had a similar orientation.

Most believed that guidance had been effective in this respect. Almost two-thirds said that it increased their interest in education or training (62 per cent) or that it showed them how to get access to education or training that would suit them (63 per cent). Three-quarters believed it to have done at least one of these things. It is, therefore, unsurprising that, shortly after their guidance, over half of the whole sample, and 62 per cent who had sought guidance for education or training, were planning to start a new course within the coming year. Many of the remainder were currently unsure about their intentions over that time-scale, but had not excluded this course of action.

Although guidance appears both to have strengthened, and even to have widened, the intention to participate in education and training, it is important that we should not treat intention to participate as its effect, for the obvious reason that this intention was such a common reason for using guidance in the first place. We have, therefore, treated intentions conservatively, by taking them into account in sample matching and associated procedures (see Chapter One for an introduction to the matching method, and Chapter Two for the matching results). This assumed, we can outline a number of hypotheses concerning educational participation, for the guidance sample relative to the comparison sample.

3.1 Education and training participation

Our study is one of people in employment and, as we have seen in Chapter Two, people who use guidance are not deficient in education when compared to the general working population. It would, therefore, be unrealistic to expect members of the guidance sample to enter full-time education *en masse*. However, it is plausible to

hypothesise that guidance helps people to enter this form of education when they wish it, so that their subsequent participation rate is raised. This hypothesis will be tested directly by means of the work history data. However, note that full-time education and employment are no longer mutually exclusive: for example, a person may enter a full-time course but maintain herself through a part-time job. This means that work histories, which record only 'main status', tend to underestimate participation in full-time education and training.

In view of the suspicion that any effect on full-time participation would be modest, it was important to obtain information about participation additional to that recorded in work histories and, of course, concerning the widest possible range, not merely that which might otherwise be thought 'full-time'. Accordingly at the first follow-up interview information about a wide range of education and training activities was elicited in a detailed manner, adapted from the 1997 National Adult Learning Survey. At the second follow-up interview, a shortened form of questioning was adopted. For the purposes of our study, it was also particularly important to distinguish between education and training provided or sponsored by employers and that more obviously within the individual's discretion. Guidance which employed people seek on their own account, rather than at the behest of their employers, is unlikely to have similar effects on each of these two forms of educational participation, although the possibility cannot be excluded that some individuals may persuade employers to meet part of the cost of education or training which they seek for themselves. We can, therefore, envisage that the form of guidance under consideration either has no effect on participation in education and training when their costs are met by employers, or has a small positive effect. Our second hypothesis is, therefore, that such participation is not less in the guidance sample. Our third - and more important - hypothesis, is that a positive influence is exerted on participation in education and training which is *not* funded by employers.

3.2 *Preliminary issues for the analysis*

But before presenting the evidence, the implications, both of the way in which the guidance sample was recruited and the way in which it was accumulated during 1997, rather than at a nominal point in time, must be considered.

First, the criterion for the identification of potential subjects by TECs was that they should be in work at the time of their guidance. These were recruited into the study on a rolling basis, but with an inevitable, short, delay – as explained in Chapter One. As also noted in Chapter One, there was some misclassification by TECs, so that a small proportion of people who had not worked at all during the sampling period was eventually detected. They are discounted in what follows. However, others had ceased work very recently, within 1997. In view of the brief interval between guidance and recruitment into the study, their employment status at the time of guidance could not be established conclusively. Of these, 51 remained in the study at the second stage. In view of the possibility that some of them may not have been employed at the time of their guidance, should they be retained in the analysis of education and training outcomes, or not? We believe that they should not. The principle of inclusion in each sample is that people should have been in employment at the recruitment stage. We should not pick and choose our samples in *ad hoc* ways, biasing the guidance sample through ill-considered tinkering. Thus if an alternative way of classifying people as in employment at recruitment were to be adopted, which might bring in some of these dubious cases, a consistent principle of selection should be used, which is even-handed in relation to all possibilities, including that of movement *into* employment in the short interval between guidance and recruitment, and even-handed between the two samples. The latter is not strictly possible, but an examination was made of an alternative method of guidance sample construction and its effects on the estimate of participation in full-time education.

At the first follow-up, data were gathered which permits identification of the employment status of guidance sample members in the months in which they recollected using guidance services. An alternative guidance sample was constructed composed only of people who were in employment in the month in which they first used guidance. The full-time educational participation in 1997 of this alternative guidance sample was similar to the one we have actually used, which is based on employment status at recruitment and which excludes the dubious cases. The alternative method of sample construction also had serious demerits. Since repeated use was sometimes made of guidance services, it was necessary to introduce an arbitrary element, selecting on *first* use, whereas the guidance bringing people into

our sample may have been later. Moreover, these data are retrospective and, due to failures of recall, sample size is reduced and a great many otherwise valid cases are excluded. Finally, of course, there is no strictly equivalent procedure which could be used to 'reselect' the comparison sample. That is to say, changing the method of guidance sample selection would degrade the quality of the study without altering our impression of effects on full-time participation in education.

Even so, what would be the consequence of illegitimately including these dubious cases in our guidance sample? Although, it must be emphasised, few in number, the proportion entering full-time education during 1997 was high (30 per cent). Moreover, the interval between earliest known month of guidance and entry into full-time education was usually short. But when work histories were examined, it was found that the first recorded month of guidance was just as likely to coincide with a period out of work, as with a period in work. While our inability to include these cases in analysis leads to only a small under-estimate of participation in main status full-time education within the guidance sample, their (illegitimate) inclusion would artificially inflate this figure.

The second important implication of the way in which the guidance sample was accumulated concerns the timing of entry into main status full-time education, and into additional forms of education and training, relative to guidance. As the time of recruitment into the sample varied within 1997, it was theoretically possible for an individual to enter full-time education in that year, leave it for employment and then seek guidance. It is, therefore, important to confirm, so far as possible, that entry into full-time education within 1997 followed guidance, rather than preceded it. The guidance start dates mentioned earlier can also be used for this purpose. Only one instance was found of entry into full-time education prior to earliest known guidance and only one case failing to give the latter information began a spell of full-time education within 1997. It was, therefore, concluded that no credible threat existed. A similar calculation cannot be made for additional forms of education and training, which were undated within year. This underlines the need to distinguish between courses begun in 1997 and thereafter.

As the last preliminary point, we should describe the test used in our analysis. Differential participation in education and training will be expressed as a ‘relative risk ratio’. This fits the study design (prospective comparison), but also has the great virtue of transparency. For example, if 10 per cent of the guidance sample, but only 5 per cent of the comparison sample, were eventually to enter education or training, members of the guidance sample would normally be described as twice as likely to enter it, or to have twice the ‘risk’ of entry. The relative risk ratio would be ‘2’. Of course, if the observed risk in each sample was the same, this ratio would be unity. The 95 per cent confidence interval for the relative risk ratio is computed, giving the upper and lower bounds within which the population value is estimated to fall, at that level of confidence. If these bounds enclose unity, we cannot be confident that the population ratio is not unity, which is to say that the observed sample difference is not significant.

3.3 *Full-time education and training*

At the beginning of 1997, similar proportions of each sample were in full-time education (guidance group 2.7 per cent; comparison group 2.8 per cent) although, of course, this was a temporary state of affairs². However, our purpose is to consider entry into education and training after the turn of that year and we do not, therefore, include this initial status in our estimates. For the reason already given, we must distinguish subsequent entry into FTE within 1997 from entry into FTE thereafter. In addition, due to sample attrition, it is desirable to distinguish participation up to the first follow-up survey from participation thereafter. This complicates exposition a little.

It is important to recollect that guidance was used at different times within, and not at the start of, 1997. This means that the average period to elapse from guidance to the end of that year was approximately six months. In 1997, 3 per cent of the guidance sample remaining in the study at the first follow-up began new (main status) full-time

² The weighting methods which we have adopted differ in their effects upon this statistic. Both calliper and nearest-neighbour weighting align the samples more closely on the *full range* of initial statuses, but in the latter case there is a small cost: the proportion of the weighted comparison sample in full-time education increases slightly, to 4.1 per cent.

education or training. In 1998, up to the first follow-up a similar number entered FTE. A few left, but 5.6% remained in FTE at that stage of the enquiry.

We now turn to that part of the guidance sample retained to the second follow-up (late June, 1999). Just over 5 per cent said that they entered full-time education or training in the interval since the first follow-up. We are not free to add this figure to those already given as the sample is diminished by attrition between the first and second follow-up and because, for example, this might double-count those starting more than one period of FTE. But if we confine ourselves to the second follow-up sample we can consider participation over the whole period of study. In that time, more than 8 per cent entered FTE at least once. In the eighteen months from January 1998 to June 1999, just over 7 per cent entered it.

In the un-weighted comparison sample, each of the corresponding proportions was much smaller. The consequent gap between samples was greatest in 1997, when a trivial number of the comparison sample entered FTE, but, for example, within the second follow-up sample only 2 per cent did so in the eighteen months following, to June 1999.

As explained more fully in Chapter One, the guidance and comparison groups were re-matched using both nearest-neighbour and calliper matching methods, and this generated new weights for the comparison group, which were applied in order to test the differences between samples more rigorously. The weighting methods allow us to compute adjusted relative risk ratios and then to determine their significance. We shall, with perhaps excessive caution, give the lower of each adjusted estimate in what follows: further details can be found in Table 3.1. (There are more detailed tables in Annex 4.) Except where stated, these ratios are all statistically significant.

Members of the guidance sample were seven times more likely to enter FTE in 1997 and more than four times as likely to enter it in 1998, up to the second stage of enquiry. Amongst those remaining in the study at the third stage, members of the

guidance sample were more than three times as likely to enter FTE subsequent to the first follow-up³. Again confining ourselves to this part of the sample, those receiving guidance were more than three times as likely to enter FTE, both over the entire period of study and in the eighteen month period from January 1998 to June 1999. They were five times more likely to be in FTE at the second follow-up. This all suggests a continuing differential between the samples, but our study is confined to the first two years in which this differential exists. It would be necessary to observe the samples over a longer period, until participation rates converged (or until a reasonable projection could be made) in order to describe the full extent of the difference between them. Members of the guidance sample were much more likely to have had at least one period of FTE by the end of the study. Plainly, we may not assume that the story was concluded by mid-1999.

3.4 Participation in additional forms of education and training

Both recent experience of education and training (prior to the recruitment stage of the study) and intentions/expectations for the coming year were included in the guidance participation models upon which each weighting method is based. Thus summary statistics for participation within 1997 may have been partially equalised between the guidance and comparison groups while the differential rates of participation after 1997 indicate how the samples fared, relative to a similar starting-point.

It was expected that larger numbers of people in each sample would participate in education and training other than FTE. A minor technical consequence of higher rates of participation is that large absolute differences between samples give rise to smaller relative risk ratios. This means that any ratio noticeably greater than unity may be important.

At the first follow-up, the questionnaire's elicitation procedure concerning participation in additional education and training (AET4) was hierarchical. That is, respondents were first asked whether they had begun courses with qualification aims,

³ If we assume that *all* those currently in FTE at the first follow-up who later claimed (at the second follow-up) to have entered new FTE since that time, did so falsely (e.g. by confusing a new academic year with a new course), we can deflate this estimate to 1.7 and it ceases to be significant, but, of course, this tests an extremely unrealistic scenario.

then asked about additional taught courses fully-paid, inclusive of salary, by employers, and so on to various other categories of training. The aim was to remind and encourage respondents to provide information on a very wide range of education and training activities.

Table 3.1 Summary of participation in full-time education and training (FTE)¹

Participation variable and basis of comparison ²	Guidance (%)	Comparison (%)	Relative risk ratio ³
Began new FTE in 1997	3	0.4	7.7
...re-matched/ re-weighted	3.1	0.4	7.0
Began new FTE, January 1998 to first follow-up	3	0.6	5.2
...re-matched/ re-weighted	2.7	0.6	4.5
Began new FTE 1997/98 to first follow-up	5.9	1	6.0
...re-matched/ re-weighted	5.7	1	5.4
In FTE at first follow-up	5.6	0.7	8.2
...re-matched/ re-weighted	5.1	0.6	8.7
Began new FTE between first and second follow-up	5.2	1.4	3.8
...re-matched/ re-weighted	5.1	1.6	3.3
In FTE at second follow-up begun since first follow-up	4.1	0.2	16.7
...re-matched/ re-weighted	4	0.4	9.0
In FTE at second follow-up	5.8	1.1	5.3
...re-matched/ re-weighted	5.6	1.1	5.0
Began new FTE after first follow-up and <i>not</i> in FTE as current <i>main status</i> at first follow up	2.6	1.4	(1.9)
...re-matched/ re-weighted	2.7	1.6	(1.7)
Began new FTE January 1998 to second follow-up	7.1	2	3.6
...re-matched/ re-weighted	6.7	2	3.3
Began new FTE 1997 to second follow-up	8.6	2.2	3.9
...re-matched/ re-weighted	8.3	2.2	3.7

Notes:

¹ For details, inclusive of sample sizes and alternative re-weighted results, see tables A4.1 and A4.2.

² For each participation variable, the first row describes the crude samples available at the appropriate follow-up. Re-matched/ re-weighted percentages and relative risk ratios are those giving the most conservative adjusted estimates of differentials favouring the guidance sample.

³ Ratios shown in brackets are **not** significant. All other ratios are significant at the 95% level of confidence or above and favour the guidance sample. Subsequent to re-matching, ratios may appear to decline or increase a little, at variance with alterations in sample percentages. This is due to rounding of all of these figures.

In 1997, 62 per cent of the guidance sample and fewer (50 per cent ; relative risk = 1.24) of the comparison sample started AET of any kind. Weighting reduces this disparity (nearest-neighbour relative risk = 1.13), but the difference between samples remains significant. However, neither in 1998 up to the first follow-up, nor for the

⁴ The term AET is more limited than the more familiar CET (continuing education and training) since it excludes full-time study, which was dealt with in the preceding section.

whole period from early-1997 to the first follow-up, do sample differences remain significant when weights are applied (see Tables 3.2, A4.3). The immediate impression is of a modest short-term boost to participation rates by guidance. But this impression is highly deceptive, since it is possible for people to participate in more than one kind of AET, even over the relatively short time-scale involved.

Nearly half of the guidance sample began AET with a qualification aim. Unadjusted relative risk was 1.56 and the most conservative adjusted figure was 1.27. All contrasts with the comparison group are significant. The apparent global similarity between samples is largely brought about by participation in AET *without qualification aims*. During 1997, 1998 (to the first follow-up) and in the period as a whole, high proportions of each sample participated in taught courses – however brief – without qualification aims and fully-funded by their employers. In 1997, this was true of more than two-fifths of each sample, but in 1998 (to the first follow-up), the rate was higher in the comparison sample (33 per cent) than in the guidance sample (28 per cent). In that year, relative risk was significantly adverse for the guidance sample and remains so when weighted. Other courses, open learning and personal instruction of all kinds were also undertaken in large numbers by members of each sample.

When the totality of courses in each year is considered, a clear pattern emerges. In 1997, equal proportions of each sample began courses funded, at least in part, by their employers. But in 1998 (to the first follow-up) the significantly adverse difference in employer-funded participation noted earlier is repeated. The difference in question is small, so that in view of higher rates of main-status FTE in the guidance sample, our initial hypothesis concerning employer provision is not hopelessly wide of the mark, but it is nonetheless false, for the samples as a whole. More striking, in both years members of the guidance sample were far more likely to start AET without employer support, as hypothesised. In 1997, 30 per cent of the guidance sample did so and the most conservative adjusted estimate of relative risk is 1.7. In 1998, up to the first follow-up, the corresponding values are 19 per cent and relative risk 1.4.

Between the first and second follow-up, this was repeated. Although similar numbers had short courses provided by their employers, appropriate weighting reveals that the

position was significantly adverse for the guidance sample. The incidences of longer courses with employer support and short courses without it do not differ significantly. However, 19 per cent of the guidance sample – over twice as many as in the comparison sample - undertook longer courses without employer assistance (relative risk, 2.3). There was an equally marked and significant difference in the numbers saying that the courses they did in this way were for career reasons. For further details see Tables 3.2, A4.3 to A4.5

3.5 *Participation: interim summary*

The conclusion must be that in the period of two years, on average, following their guidance, members of that sample self-invested in human capital at a substantially higher rate than members of the comparison sample. Every relevant indicator points to the same conclusion: participation in FTE, in AET with qualification aims, in AET without employer support and, in particular, in longer self-financed courses and AET with an avowed career purpose.

3.6 *Course completion and qualifications*

As we have seen, members of the guidance sample more often undertook education and training likely to lead to qualifications. Was there also an actual difference in qualification rates between the two groups?

Almost all of those entering FTE up to the first follow-up remained in it at that time. The trivial number completing courses by then were all members of the guidance sample⁵. It would complicate exposition and serve no purpose to consider these people separately. Information was also gathered on the period of AET which respondents considered most important to their careers, with and without employer support, begun in 1997 and in 1998. We shall, therefore, consider these courses and a summary variable which includes FTE. At the second follow-up, attainment of any additional qualification since the first follow-up was recorded. This allows computation of attainment during 1998/99 and includes qualifications arising from FTE begun earlier and completed in the interim.

⁵ Four in number. They were asked about their most recent FTE. Three had qualification aims, two attained them and one would not say.

Table 3.2 Selective summary of participation in additional education and training (AET): education and training *other than* that recorded as full-time¹

Participation variable and basis of comparison ²	Guidance (%)	Comparison (%)	Relative risk ratio ³
Began taught courses with qualification aim, 1997/98 to first follow-up	47.1	30.2	1.56*
...re-matched/ re-weighted	47.4	37.3	1.27*
- and/or began taught courses fully-paid by employer (inc. salary)	45.6	42.9	1.06
...re-matched/ re-weighted	46.8	47.1	0.99
-and/or began other taught courses, open learning, or other instruction	42.4	35.6	1.19
...re-matched/ re-weighted	43.1	41.8	1.03
Any of the above	77.6	66.6	1.17*
...re-matched/ re-weighted	78.2	75.9	1.03
Began any of the above within 1997	61.6	49.9	1.24*
...re-matched/ re-weighted	62.5	55.1	1.13*
Began any of the above within 1998 to first follow-up	43.3	39.5	1.1
Began course(s) paid/part paid by employer within 1997	40.3	41.2	0.98
...re-matched/ re-weighted	41.6	42.8	0.97
Began course(s) not paid/part paid by employer within 1997	32.3	15.1	2.14*
Cross-check of the above – basis for further questioning	30.2	13.1	2.31*
...re-matched/ re-weighted	30.1	17.3	1.74*
Began course(s) paid/part paid by employer within 1998 to first follow-up	28	32.9	0.85†
...re-matched/ re-weighted	27.8	34.5	0.81†
Began course(s) not paid/part paid by employer within 1998 to first follow-up	19	10.6	1.8*
...re-matched/ re-weighted	19.4	14.1	1.38*
Began longer course(s) paid by employer in the period between the first and second follow-up	9.7	8	1.21
...re-matched/ re-weighted	9.8	8.7	1.13
Began longer course(s) without employer support in the period between the first and second follow-up	19	8.2	2.3*
...re-matched/ re-weighted	19	7.8	2.43*
All courses begun after first follow-up without employer support: include courses undertaken for career reasons	15.5	5.2	3*
...re-matched/ re-weighted	15.8	5.8	2.74*

Notes:

¹ For details, inclusive of sample sizes, alternative re-weighted results and additional outcomes, see tables A4.3, A4.4 and A4.5.

² For each participation variable, the first row describes the crude samples available at the appropriate follow-up. *Where shown*, re-matched/ re-weighted percentages and relative risk ratios are those giving the most conservative adjusted estimates of differentials favouring the guidance sample.

³ Ratios followed by an asterisk (*) are significant at the 95% level of confidence or above and favour the guidance sample. Ratios followed by a cross (†) are significant at the 95% level of confidence or above and favour the *comparison* sample.

The pattern of course completion and attainment of qualifications follows closely from that of participation. First, we consider the AET which respondents thought most important to their careers. Courses of this sort begun in 1997 had usually finished by the first follow-up. Similar proportions – over 20 per cent – of each

sample completed courses without qualification aims which had been supported by their employers. Similar proportions – around 10 per cent - said that they got qualifications with the assistance of employers. As somewhat fewer of the guidance sample began these sorts of courses in 1998 (up to the first follow-up), fewer completed them or attained qualifications. However, as more of them undertook AET without employer support, the balance between samples is altered. This is most noticeable in 1997, when more than 12 per cent of the guidance sample, but less than 4 per cent of the comparison sample, attained qualifications in this way, so that, overall, a larger proportion of the former attained qualifications from the courses they regarded as most important to their careers. But the gap between samples continued to be wide in 1998 (to the first follow-up, unadjusted relative risk =2). Consequently, the imbalance brought about by employer provision in that year is corrected. In the whole period to the first follow-up, a quarter of the guidance sample, but 18 per cent of the comparison sample got qualifications from their most valued AET and – in trivial numbers - from completed FTE (Tables 3.3, A4.6).

It is equally important that more of the guidance sample remained eligible for qualifications from self-financed AET, as it had not yet been finished. Our analysis of participation has also shown that more of the guidance sample remained in FTE after the first follow-up and more of them began longer AET courses and/or AET with a qualification aim thereafter. Thus 15 per cent of them, compared to 11 per cent of the comparison sample got some sort of qualification between the first follow-up and the second follow-up and, once again, more remained eligible to get qualifications from education and training they had already begun. But does this withstand scrutiny?

The most important of the effects which we have outlined is upon qualifications arising from self-financed AET. This remains sizeable when weights are applied. We shall report the most conservative estimates, as before. Up to the first follow-up, the relative risk of qualifications from this source is 2.5 for courses begun in 1997 and 2.4 for those begun in 1998. Each is significant (Table 3.4). For this reason, the adjusted relative risk of qualifications from all recorded sources (1.4) is also significant. Although the relative risk of qualifications between the first and second follow-up stages is not greatly altered by weighting, the difference between samples is not significant in that period. In part, reduced sample size plays a role, but it is plausible

that a superior rate of qualification from self-investment by the guidance sample is counteracted by higher employer-investment in the comparison sample.

Table 3.3 Summary of selected educational outcomes: unweighted tables¹

Outcome and stage of study	Guidance sample %	Comparison sample %
Outcomes at the first follow-up		
'Most important' AET begun in 1997 with employer support		
Course continues (at first follow-up)	4.0	4.7
Completed course without qualification aim	23.2	22.1
Completed with qualification attained	9.4	10.9
'Most important' AET begun in 1997 without employer support		
Course continues (at first follow-up)	7.2	2.7
Completed course without qualification aim	6.2	4.0
Completed with qualification attained	12.3	3.6
At least one qualification from 'most important' AET begun in 1997	20.8	13.9
'Most important' AET begun in 1998 with employer support		
Course continues (at first follow-up)	5.6	5.9
Completed course without qualification aim	16.7	19.8
Completed with qualification attained	4.2	5.4
'Most important' AET begun in 1998 without employer support		
Course continues (at first follow-up)	8.9	4.5
Completed course without qualification aim	2.6	2.3
Completed with qualification attained	3.2	1.6
At least one qualification from 'most important' AET begun in 1998	7.2	6.9
At least one qualification from 'most important' AET begun in 1997/98	25.3	18.4
...and from FTE begun in 1997/1998	25.5	18.4
Base (N)	(693)	(1019)
Outcomes at the second follow-up		
AET 'most important to career' begun after first follow-up		
Qualification aim and course continues	18.3	10.7
Qualification aim and course has ended	9.3	7.3
No qualification aim and course continues	3.7	2.5
No qualification aim and course has ended	12.5	13.7
Qualifications from courses of any kind since first follow-up	15.1	11.4
Any recorded qualifications (as above), 1997 to second follow-up	35.1	26.3
Any recorded qualifications (as above), 1998 to second follow-up	20.5	16.7
Base (N)	(464)	(813)

Notes:

¹For greater detail, see table A4.6

3.7 Intentions

At the first follow-up, more of the guidance sample (48 per cent; comparison sample 39 per cent) said that they wanted to enter education and training in the following year and more (28 per cent; comparison sample 20 per cent) thought that there was a good chance that they would do so (Table 3.5). As we have seen, in global terms these

differences in intentions were reasonable predictors of self-investment. Some indication of the degree to which the time-horizon for the study influences our perception of effects upon participation and qualifications may, therefore, be gained from continuing differences in intentions. At the second follow-up, just over 40 per cent of the guidance sample, but less than 30 per cent of the comparison sample, intended to enter education in the following year (quite large numbers in each sample were unable to say, and are included in the base for these calculations). The numbers in each sample who had already applied to enter it were proportionate to this difference. Somewhat fewer in the guidance sample expected to do courses for which their employers would pay and the gross difference between samples is, therefore, the result of the continued determination of those who used guidance to self-invest. Fourteen percent more of the (whole) guidance sample expected to be self-financing. The proportions intending to enter FTE in each sample were small, but still a little higher in the guidance sample, and over 10 per cent more of them intended to do courses in colleges or universities and/or to seek qualifications.

3.8 Conclusions

One of the main reasons why clients used guidance services was to get advice about education and training, and the great majority received this advice and were appreciative of it. The evidence of this chapter indicates that they then became more active and more effective than the comparison group in regard to continuing education and training, whether full-time or through part-time courses. Members of the comparison group appeared to have slightly greater access to training that was provided or arranged by their employers, but the guidance group more than compensated for this through self-initiated training. The net result was a higher rate of qualification in the guidance group. At the end of the study period, more of the guidance group were in the midst of continuing courses and more of them expressed the intention of taking part in education and training in the near future. Overall, then, it can be concluded that guidance had a range of positive impacts on participation and achievement in continuing education and training.

Table 3.4 Tests of the attainment of qualifications: weighted comparisons

<i>Stage of study and source of qualifications</i>	Basis of comparison ^{1,2}	Guidance sample %	Comparison sample %	Relative risk ratios ³	Lower bound	Upper bound	Guidance N	Comparison N
Source of qualifications to stage 2								
AET begun in 1997 without employer support	Nearest neighbour	12.7	4.7	2.71	1.61	4.55	645	341
	Calliper weighted	12.3	4.9	2.49	1.68	3.67	669	669
AET begun in 1998 without employer support	Nearest neighbour	3.4	0.9	3.88	1.17	12.86	645	341
	Calliper weighted	3.3	1.3	2.44	1.13	5.27	669	669
All sources to first follow-up	Nearest neighbour	26.5	16.4	1.61	1.23	2.12	645	341
	Calliper weighted	25.9	18.2	1.42	1.16	1.74	669	669
Qualifications attained between first and second follow-up								
All sources between stage 2 and stage 3	Nearest neighbour	14.7	11.6	(1.27)	0.84	1.93	448	242
	Calliper weighted	14.7	11.8	(1.25)	0.89	1.74	448	448

Notes

¹Weights are those calculated for samples retained at the first or second follow-up

²Nearest neighbour weights are deflated to represent the real number of comparison cases. Calliper weighted sample size is less than the number of contributory cases and confidence intervals are, therefore, conservative.

³All comparisons except those in brackets are significant at the 95% level of confidence or above, and favour the guidance sample.

Table 3.5 Intentions to enter education and training beyond the second follow-up

Intentions for the year following the second follow-up(1999/2000)	Guidance Sample (%)	Comparison Sample (%)
Intend to start new education/training	40.5	28.2
-and expect employer to pay	10.3	13.4
-or expect to pay myself	25.0	11.1
-or expect costs will be paid in some other way	3.2	2.6
Intend that it should lead to a recognised qualification	33.8	22.0
Intend to start a full-time course	4.5	3.2
Intend to attend a college or university	28.7	17.6
Intend to start open learning	15.1	9.7
Intend to continue working whilst undertaking education/training	36.4	25.5
Have already applied (end June 1999)	13.6	9.8
<i>Base (N)</i>	<i>(464)</i>	<i>(813)</i>

Note 1: base is all cases within samples at the second follow-up (inclusive of not stated/uncertain)

Chapter Four: Job Satisfaction

Although earnings are conventionally regarded as the best single indicator, both of the utility of jobs to individuals and of their productivity, it is seldom asserted that wages are wholly determined by the latter or completely capture the former. For example, expected future earnings, not just current earnings, are relevant and at different times in their lives people attach greater or lesser importance to 'leisure' (activity outside the labour market), so that for each reason they may, on balance, be satisfied to earn below their current potential. Moreover, we may, with Adam Smith, think that differences in wages to some extent compensate people for different levels of dis-benefit at work, although others, following J.S. Mill, have treated wages as part of a bundle of correlated rewards. The suspicion that the truth may lie somewhere between these two points of view, coupled with the observation that tastes differ, has underlain many decades of vocational psychology, in which the non-wage utilities of work, such as correspondence to personality and interests, have been given great prominence under the rubric of 'person-environment fit'. In more recent times, the trade-off between wages and stress has received attention.

If people try to optimise current earned income against both future career benefits and non-wage utilities, then some wider consideration is desirable. Moreover, to ignore this issue would fly in the face of one of the most remarkable characteristics of the guidance sample – that it was, overall, an extremely dissatisfied group of people.

As before, we shall begin by considering some salient characteristics of the whole guidance sample, as it was recruited, but setting aside cases subsequently excluded from analysis. A quarter said that they used guidance services, at least in part, because they felt insecure in their jobs and/or at risk of redundancy (10 per cent of the sample included the latter among their reasons). It is unsurprising that approximately 18 per cent of the entire sample should couple such reasons with the use of guidance to change job, or to

change career, or to do both¹. However, they are only a small minority of all those who used guidance in order to do these things.

Most of those who wanted to change their work sought guidance for the more radical kind of change denoted by the word 'career'. In total, two-thirds of the sample used guidance because they wanted to change their careers, two-thirds because they wanted to change their jobs, but only 10 per cent did so *simply* to try to change their jobs. A trivial number (just over 1 per cent) used guidance because they faced redundancy and wanted *only* to change job and this figure is less than 3 per cent when all of those expressing insecurity are added. So, whatever the stimulus, people selecting themselves into the sample by using guidance services were generally seeking something more than, or different from, an employment agency.

As we have already seen in Chapter Two, an unusually high proportion of the guidance sample – almost half – suffered job dissatisfaction to some degree and little more than a third were prepared to say that they were, to some extent, satisfied. Only those *not* seeking to change their jobs or careers demonstrated a more conventional pattern of job satisfaction: less than a third were dissatisfied. There is a danger of over-generalisation, as nearly a quarter of the sample were currently satisfied (to some degree) with their jobs, but nonetheless sought guidance in order to make changes. However, approximately 40 per cent were both dissatisfied and wanted guidance for such reasons.

The general hypothesis is that guidance helps people to make changes or adjustments tending to improve their job satisfaction. This may be in at least four ways. First, by helping them to make direct changes, through movement into different jobs or career pathways, or by overcoming barriers to progression, with or without changes of employment status or employer. Second, guidance may reduce the incidence of unsuccessful change: people who have accumulated a stable employment record sometimes enter 'exploratory mini-cycles' when they do eventually make a change, this

¹ Some used guidance to investigate self-employment (9 per cent), one-third of whom also did so because at risk of redundancy and two-thirds to change career.

may reflect temporary working, but it may also be due to unsatisfactory transitions. Third, guidance may help people to find out about the alternatives and to conclude that their existing situations are optimal. Fourth, guidance may have an indirect effect on job satisfaction, by helping people to institute long-term courses of action which improve their prospects. Most obviously, as we have seen, it can help them to get CET, which may subsequently be translated into job satisfaction.

Each of these possibilities could, in principle, be tested independently but, as the implication of them all is raised job satisfaction, it is to the samples as a whole that we should look.

Just over half of the members of the guidance sample said that they had been made more aware of the skills they had to offer (see Chapter Two, Table 2.9). A similar number said that they had been helped to search more effectively (although this includes the search for education and training) and one-third said that they had been given new ideas about how to apply for jobs. But guidance agencies do not have new jobs or careers in their gift. As we have seen, there is an effect on CET, but, over the time-scale of this study, was there a similar effect upon job satisfaction?

Job satisfaction will be considered in three ways. First, by means of a simple seven-point global job satisfaction scale which was used, with respect to current job, at each stage of the study. Second, through a set of job satisfaction 'facet' (or, component) scales, which were deployed at the first and second follow-up stages. Third, our facet data met the conditions allowing us to compute an alternative summary measure of job satisfaction. Each facet of satisfaction proved to be sufficiently correlated with the others for it to be reasonable to think in terms of a general feeling of job satisfaction which suffused or coloured responses. On the other hand, the satisfaction facets were not so highly correlated that 'to know one is to know all', which would, of course, draw the initial distinctions between them into question. Finally, feelings were not (within the data available) organised around particular groups of facets in ways which would have made it important to consider computing more than one summary measure. That is to say, it is

reasonable to think that responses to the facet items represent, in part, a general feeling of job satisfaction.² But each facet was also considered by respondents in a sufficiently independent or discriminating way for it to be sensible to continue to examine it separately.

To obtain a general scale, satisfaction facet scores were simply added together. This gives a 42-point scale. It is 'reliable' in the sense that, given the conditions just noted, it has a sufficient number of constituent items (contributory facets) to offer a stable basis for comparison between the guidance and comparison samples.³ As some respondents did not answer all of the satisfaction facet questions, and as scores were not imputed where they were absent, total scores are available only for those making a complete set of responses within a stage of study. Thus, comparisons between stages can be made only when full information is present at each stage. In order to distinguish this composite scale from 'global' satisfaction we shall refer to it as 'total' satisfaction. It has two advantages. First, it improves discrimination between individuals, being a 42-point, rather than a seven-point scale. Second, it is *approximately* normally distributed. When scores are computed to represent change in 'total' satisfaction between the first and the second follow-up, they are also more discriminating and distributed in this way. This permits us to make alternative and, in principle, more sensitive tests of the differences between the guidance and comparison samples.

However, total satisfaction is highly correlated with global satisfaction, and to the same degree ($r = 0.77$), at both the first and second follow-up stages. For this reason it is used as an *alternative* to global satisfaction, not as a measure of 'something else'. That is to say, if a similar result were to be found using each scale, this would not mean that two, distinct kinds of job satisfaction were involved. Similarly, of course, as the facets contribute to total satisfaction, they must be read in conjunction with it.

² A principal components analysis of satisfaction data at the first follow-up gave a one-factor solution which explained 44% of facet variance.

³ The reliability of the scale ($\alpha=0.73$) was comfortably within the range for between-group comparisons.

To summarise, we shall consider:

- global job satisfaction (all stages)
- total job satisfaction (first and second follow-up stages)
- job satisfaction facets (first and second follow-up stages)
 - pay
 - job security
 - opportunity to use abilities
 - hours of work
 - variety of work
 - opportunity for career advancement

But before presenting our results, we must briefly outline some general constraints upon analysis and interpretation, particularly as they bear upon changes from the first stage.

First, although job satisfaction varied widely at the initial stage of recruitment to the study, those who used guidance were, and, hence, the *weighted* comparison samples are, by conventional standards, dissatisfied. This means that, whilst the samples are not uniformly selected to be extreme, they include many extreme cases. This leads to the possibility of some aggregate statistical regression (or, ‘regression to the mean’) in the comparison sample. All measurement is subject to error and samples selected to be extreme are characterised by more error in the direction of the extreme they represent. Members of the weighted comparison samples are *selected to be* more dissatisfied, on average, because members of the guidance sample were *found to be* dissatisfied. Thus we have more reason to expect a small amount of error-induced regression in the weighted comparison samples over the short term, leading to a small aggregate improvement in job satisfaction. This is an hypothesis we cannot test as we do not, of course, have a short-term retest of job satisfaction, so that we are able only to conjecture that, if they exist, movements of this kind are subsumed within our measurements at the first follow-up.

Turning to substantive matters, we would also expect improvement in *each* sample (when weights are applied) over the period we have studied, not because of statistical regression, but because circumstances change. The period of study is relatively short, so that we do not expect a great deal of age-induced improvement but, as the samples are quite young, this is a possibility. We are on firmer ground in expecting some amelioration of the work or work/life difficulties contributing to dissatisfaction. In part, this is for reasons that an experimentalist would summarily call 'history'. Temporary states of affairs leading to dissatisfaction, such as difficulties at work or work/family conflicts, may come to an end. In part, it would be because of deliberate activity, spurred-on by current lack of satisfaction. Most obviously this would involve changes in jobs and career paths of the sort which animated the guidance sample to use the services available to them.

Thus, the background assumption is that, for both technical and substantive reasons, job satisfaction will improve in both the guidance sample and the weighted comparison samples. The key issue for us is whether it improves more in the guidance sample, as hypothesised. If guidance (or, the guidance for which people have been selected into our study) confers an additional benefit, considered against the average case ('wise search'), things should be as our hypothesis predicts. But if guidance makes good a deficit, it may not. The matching and weighting procedures we have adopted are specifically designed to ensure that the samples are equated, in our analyses, on many factors which influence labour market outcomes, but the possibility of unobserved differences, constituting 'deficit', remains. These 'deficits' may be of a quite different order to those usually taken into account. For example, factors such as personality may influence access to informal networks carrying information and through which influence can be exerted. That is to say, the use of guidance may compensate for lack of, or be an alternative to, other means of improving job satisfaction. Thus a null finding would not be conclusive.

Moreover, the comparison sample is, inevitably, 'contaminated' by some people who used alternative provisions to those for which the guidance sample was selected. As weighting methods are based on the probabilities of being in the guidance sample, it may

prove that they tend to select and weight cases in the comparison sample in such a way as to reduce the guidance input differential between the samples. This would heighten the probability of a null result. As it was important to avoid stimulating the comparison sample to seek the kinds of service already used by the guidance sample, there were severe limits on the form of questioning which could be adopted in this regard at the first and second stages. It has been found in other studies (and is confirmed in this) that retrospective data collection leads to under-reporting of guidance, so that detailed questions at the end of the study would have been of doubtful value. Some members of the comparison sample (as also the guidance sample) did get help of various kinds other than that of concern here, such as advice by employers or from private agencies. However, our best estimate is that in the un-weighted comparison sample only a small proportion got the kind of help from agencies similar to those funded by TECs.

Finally, if increased job satisfaction is achieved after passing through an intervening stage or stages – most obviously, here, education and training, which may be a sequence of courses, rather than an isolated event – and if, in the main, guidance achieves effects on job satisfaction indirectly, the observation of a positive outcome depends upon a sufficient period of time having elapsed. Moreover, as there is an element of compensation in the self-investment which individuals undertake upon their own account, we are returned to the possibility of ‘deficit’, even in this regard – that increases in job satisfaction brought about in this way occur by alternative means, such as employer-investment, in the comparison sample⁴.

Thus our main question is, ultimately, ‘does guidance confer sufficient benefit, of a kind which does not remedy unobserved deficits relative to the comparison sample, and of a kind which impacts upon job satisfaction within a period no more than two years, for an effect to be detected in that period?’

⁴ Here we must issue a caution. There is a suggestion in each sample that provision of CET by employers may act as a partial indicator of job quality and that it is associated with job satisfaction throughout the period, rather than a cause of subsequently increased satisfaction. Those who left work for full-time education were less satisfied, at the recruitment stage, than others. However, they form quite a small sub-sample and too few were re-established in the labour market by the second follow-up for conclusions to be drawn about them in isolation. There are also indications that those who self-invested in AEL were a little less satisfied than those who did not, and that this may not have worked itself out by the second follow-up.

4.1 Job satisfaction at the recruitment stage

The global and facet job satisfaction scales give rise to a mass of tabular output which would make tedious reading, if presented on every occasion. We shall, therefore, normally attempt to present what this output tells us in summary form. However, Table 4.1 gives the details of global satisfaction at the recruitment stage. It shows that the guidance sample retained at the first follow-up had a similar initial job satisfaction profile to all of those recruited. With only very small shifts, this is repeated in the sample retained to the second follow-up stage. Whereas the guidance sample was highly dissatisfied, the comparison sample had a profile much closer to what one would normally expect in a sizeable sample drawn from the working population: sixty-five percent of the comparison sample were satisfied, to some degree, with their jobs and just under a quarter were dissatisfied.

But Table 4.1 also shows that each form of matching and re-weighting brings about satisfactory convergence of the comparison sample with the guidance sample (see also Annex 3 for technical details). This is true of the weights derived from both the first- and second-stage participation models. Exclusion of guidance cases as part of this process has only trivial implications for the job satisfaction profile. Hence we are able to treat the guidance samples as nearly-equivalent and each weighted sample as having a similar starting position to that of the guidance sample to which it is to be compared.

Total job satisfaction is not available for the recruitment stage. However, this scale is highly correlated with global job satisfaction and the coefficient has been found to be stable over a period of one year. This allows us to infer with reasonable confidence (a) that the difference between the total job satisfaction scores of the un-weighted samples was considerable at the recruitment stage and (b) that weighting would tend to equate them. Thus a significant difference between weighted sample means at the first follow-up stage would be *prima facie* evidence of an effect.

Table 4.1 Global job satisfaction at initial recruitment to the sample, for those remaining in the study at the first and second follow-up stages

	Samples at first follow-up					
	Unweighted		Nearest neighbour weighted		Calliper weighted	
	Guidance	Comparison	Guidance	Comparison	Guidance	Comparison
	Column percentages					
Completely dissatisfied	17.3	7.1	17.2	15.2	17.2	16.3
Very dissatisfied	13.6	4.7	12.6	14.1	13.0	16.3
Fairly dissatisfied	17.7	12.2	18.1	18.5	17.9	17.9
Neither satisfied nor dissatisfied	17.3	11.3	18.1	16.4	18.4	17.2
Fairly satisfied	19.3	30.1	19.1	20.8	18.8	18.5
Very satisfied	9.8	18.5	9.9	10.0	9.9	9.0
Completely satisfied	5.1	16.0	5.0	5.0	4.8	4.8
N	684	1019	645	341	669	669

	Samples at second follow-up					
	Unweighted		Nearest neighbour weighted		Calliper weighted	
	Guidance	Comparison	Guidance	Comparison	Guidance	Comparison
	Column percentages					
Completely dissatisfied	16.4	7.3	16.5	16.1	16.5	17.1
Very dissatisfied	15.9	4.2	15.0	14.5	15.0	14.3
Fairly dissatisfied	18.1	13.2	18.5	17.8	18.5	18.5
Neither satisfied nor dissatisfied	15.7	10.5	17.0	18.2	17.0	16.5
Fairly satisfied	19.2	30.6	18.8	18.6	18.8	18.5
Very satisfied	9.4	18.2	9.4	7.9	9.4	9.1
Completely satisfied	5.2	16.0	4.9	7.0	4.9	6.0
N	458	813	448	242	448	449

4.2 Global satisfaction

We begin by considering the samples retained to the first follow-up. By that time, a massive recovery had taken place in global job satisfaction so that, in the guidance sample as a whole, the profile became similar to that of the un-weighted comparison

sample *a year earlier*, at the time of recruitment. Now, only a quarter of the guidance sample was dissatisfied and two-thirds were satisfied to some degree.

In the un-weighted comparison sample there was a retreat from both extremes – of satisfaction and of dissatisfaction. But this was coupled with a small shift of the main body of the distribution. At the time of their recruitment, two-thirds had been satisfied with their jobs. But by the first follow-up this had risen to just over 78 per cent. Although this is far-outstripped by the progress made by the guidance sample it is, of course, to the weighted comparisons that we must attend. When weights are applied, there is a marked reduction in the satisfaction of the comparison sample. The job satisfaction profiles of the two samples become broadly similar. Thus, despite the huge gain in job satisfaction in the guidance sample, it is not clear that the members of this sample fared better than those to whom they are compared. This set of results is shown in Table 4.2.

Table 4.2 Global satisfaction at the first follow-up

	Unweighted		Nearest neighbour		Calliper weighted	
	Guidance	Comparison	Guidance	Comparison	Guidance	Comparison
	Column percentages					
Completely dissatisfied	5.1	2.7	5.1	5.9	5.1	4.5
Very dissatisfied	6.1	4.1	5.9	7.8	6.1	7.2
Fairly dissatisfied	12.3	6.1	11.7	9.7	12.3	10.6
Neither satisfied nor dissatisfied	12.3	8.2	12.2	11.8	12.3	10.3
Fairly satisfied	35.8	36.7	36.3	34.0	35.8	38.4
Very satisfied	23.9	31.2	24.1	24.3	23.9	22.7
Completely satisfied	4.6	10.9	4.6	6.5	4.6	6.3
N	628	897	606	321	628	622

Note: Reduced Ns due to item non-response and not in work

The large recovery in global satisfaction made by the guidance sample at the first follow-up is, of course, equally evident in the sample retained to the end of the study. By the second follow-up a further small increase occurred, so that, for example, just over 71 per

cent were satisfied to some degree. However, just as in the earlier period, there was also a small increase in the global satisfaction of the comparison sample; now 83 per cent of the comparison sample were satisfied with their work. Moreover, whilst both weighting methods reduce this disparity between samples at the second follow-up, neither of them does away with it completely. This is shown in Table 4.3.

Thus we must attend to *change* in *global* job satisfaction in some detail. This can be estimated in a variety of ways. The global satisfaction variable is ordinal (a ranking variable) and the forms of its distribution vary between samples and stages of the study, so that it will be necessary to come to conclusions taking these factors into account. We shall begin in an illustrative manner, showing what happened by means of a simple variable obtained by subtracting scores at the recruitment stage from scores at the first follow-up, to give the ‘amount’ of positive or negative change over that period. Figure 4.1 shows ‘box and whisker’ plots of this variable for each sample in each TEC area. These can be imagined as conventional histograms, oriented north-south, rather than east-west, and viewed from above. The central box contains the middle 50 per cent of cases (inter-quartile range) and is bisected by a line showing the middle case (median). The ‘whiskers’ show the upper and lower quartiles and, hence, the range (with very small numbers of extreme scores omitted). Detailed differences between areas should be disregarded, as sub-sample size varies and is sometimes small.

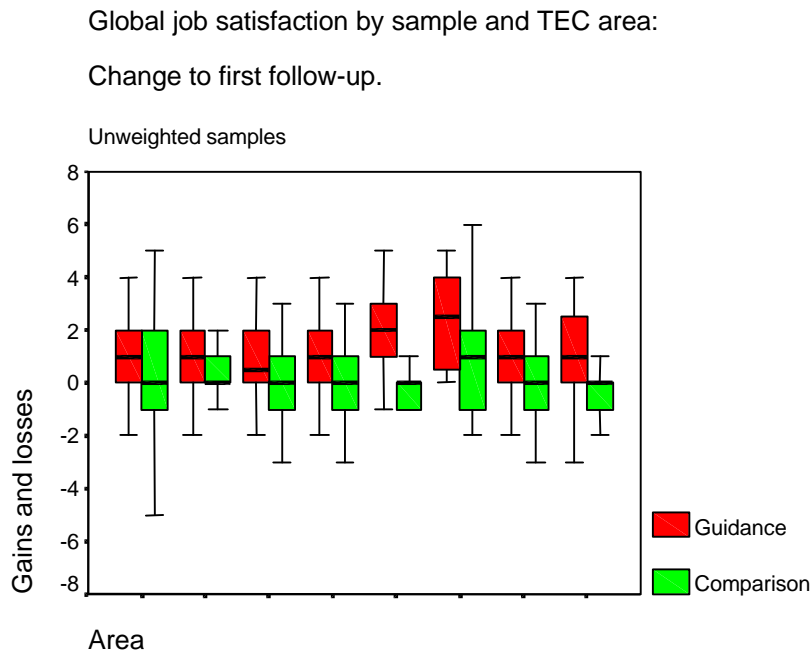
In this figure, the un-weighted comparison sample displays a conventional pattern of aggregate change. The median always falls close to zero and there is usually a fair amount of movement in each direction (that is, positive and negative change), both as a result of measurement error and of real changes in people’s circumstances and in their evaluations of their work. But in the guidance sample, things are very different. The median is positive in each of the eight TEC areas and the first quartile (the bottom of the central box) falls close to, or above zero. That is to say, in each TEC area, many more people experienced at least some improvement in job satisfaction. Relative gain can, therefore, be viewed as consistently replicated across areas and, hence, across very different local labour markets.

Table 4.3 Global satisfaction at the first and second follow-ups for those remaining to the second follow-up

	First follow-up				Second follow-up			
	Unweighted		Weighted		Unweighted		Weighted	
	Guidance	Comparison	Nearest neighbour Comparison	Calliper weighted Comparison	Guidance	Comparison	Nearest neighbour Comparison	Calliper weighted Comparison
	Column Percentages							
Completely dissatisfied	5.3	2.7	2.3	3.2	2.0	2.0	4.9	4.5
Very dissatisfied	4.8	4.9	10.9	9.3	5.3	2.9	1.3	2.8
Fairly dissatisfied	12.0	6.5	11.3	9.5	14.5	7.1	7.5	8.3
Neither satisfied nor dissatisfied	13.2	8.1	8.6	9.5	7.1	4.3	7.5	6.4
Fairly satisfied	35.0	34.6	36.2	35.1	43.7	45.1	42.0	44.3
Very satisfied	24.7	31.7	24.0	26.8	23.4	29.7	31.9	29.1
Completely satisfied	5.0	11.5	6.8	6.6	4.1	8.8	4.9	4.5
N	417	712	221	410	394	747	226	422

Note: Reduced Ns due to item non-response and not in work

Figure 4.1



However, as Figures 4.2 and 4.3 show, the picture changes when weights are applied. As the effect of weighting is to force the comparison sample to resemble the guidance sample at the time of its recruitment, there is now a tendency for positive change to occur more frequently in the comparison sample, too. When nearest-neighbour weights are applied, median change is approximately equated in four areas, favours the guidance sample in two and the comparison sample in two. Calliper weighting approximately equates the median in four areas, favours the guidance sample in three and the comparison sample in one – which is to say that in one area a reversal occurs according to weighting method. If we attend, instead, to the relative positions of the inter-quartile ranges, similar fluctuations are evident across areas. Thus, by simply looking at the plots, we can no longer see that the guidance sample fares better and replication across areas is, of course, lost.

Figure 4.2

Global job satisfaction by sample and TEC area:

Change to first follow-up.

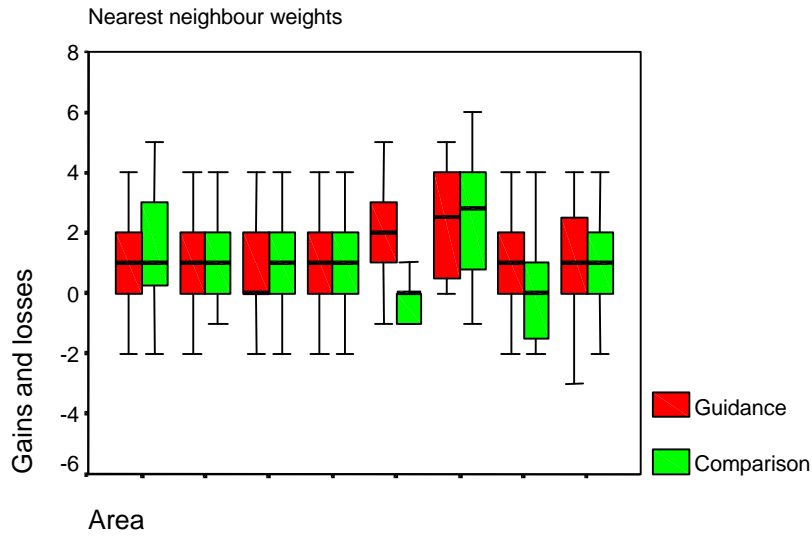
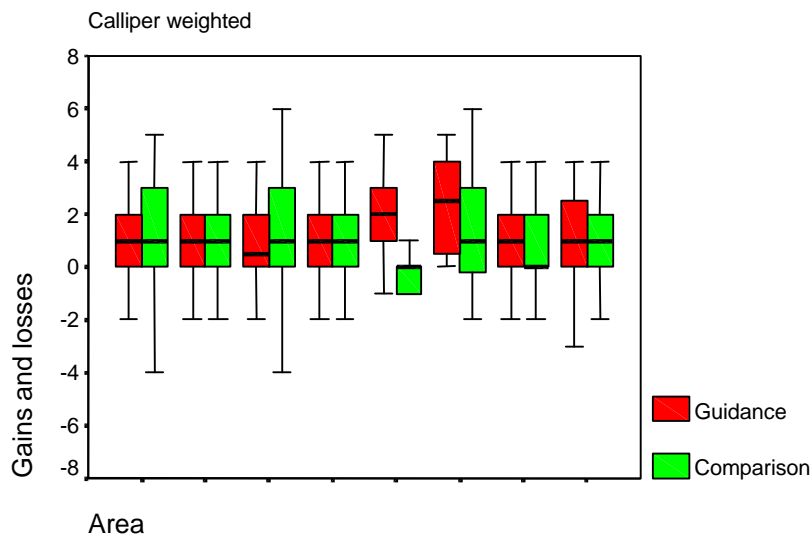


Figure 4.3

Global job satisfaction by sample and TEC area:

Change to first follow-up.



In order to test for any difference between samples, the question which we shall first ask is ‘does the mean *rank* of cases on this simple index of change vary significantly?’ In the un-weighted samples the answer is, of course, that it does. From recruitment to the second stage and from recruitment to the final stage of study, the guidance sample enjoys significantly more positive change, measured in this way (see the upper part of Table 4.4). The great bulk of this improvement, relative to the comparison sample, occurs between recruitment and the second stage, so that gains from the first follow-up to the second follow-up, taken alone, are not significant.

Tests of this sort demand that cases be assigned an unambiguous rank. This is not possible when fractional weights are applied. However, an alternative to weighting is to simulate cases proportionate to weight. This is not possible for calliper weighting but can be done using nearest-neighbour weights. The effect is, however, artificially to inflate the size of the comparison sample, with consequent effects on inference. Thus nearest neighbour mean ranks will be presented without test. These show that mean rank of change from recruitment to the end of the study and from the second to the final stage are both *lower* in the guidance sample than in the nearest-neighbour simulated sample (see the lower part of Table 4.4). Thus no test is necessary, in the sense that there is no relative gain in the guidance sample to subject to test.

This impression is confirmed by a range of further indicators which are appropriate to the level of measurement and to other properties of the data. The simplest of these merely records whether *any* positive (gain) or negative (loss) movement occurred. The second amalgamates the two most extreme points at each end of the scale prior to computation of change, reducing any differential impact of regression. The third takes a more radical approach, considering only movement from dissatisfaction to satisfaction, and *vice versa*.

Table 4.4 Differences in global satisfaction mean rank: Kruskal-Wallis test (unweighted samples only)

	From stage 1 to stage 2 (stage 2 sample)				From stage 2 to stage 3 (stage 3 sample)				From stage 1 to stage 3 (stage 3 sample)			
	Mean Rank	N	Chi - square	Sig.	Mean Rank	N	Chi - square	Sig.	Mean Rank	N	Chi - square	Sig.
<i>Unweighted samples</i>												
Guidance	850.8	628	44.26	0.000	523.8	373	0.77	0.379	667.6	394	53.49	0.000
Comparison	701.5	897			507.6	653			520.0	747		
<i>Nearest-neighbour: simulated</i>												
Guidance					359.7	373			399.2	394		
Comparison (<i>Simulated N</i>)					394.0	(380)			411.5	(416)		

Note: See text for explanation of nearest-neighbour results.

As the earlier discussion would suggest, the last of these yields the greatest differential between samples and it is this indicator that we shall subject to test in the sample retained to the second stage. Considering only positive movement, guidance sample relative risk of becoming satisfied is 1.7 and significant in the *un-weighted* samples, as one would expect, but reduces to insignificant proportions when nearest neighbour weights are applied and falls below unity under calliper weighting (relative risk = 0.88, not significant).

Going into matters in a little more detail, in the un-weighted analysis at the second follow-up it is evident that a higher proportion of the comparison sample was just as satisfied or dissatisfied at the end of the study, as upon recruitment. On the original scale, 30 per cent remained as they had been at the start of the study. Naturally, our second and third indicators increase this proportion, so that the great majority (79 per cent) remain 'unmoved' when only transitions between satisfaction and dissatisfaction are considered. Not only more change, but more frequent positive change, is evident in the guidance sample, so that nearly two-thirds made gains of some kind and twice as many moved from a dissatisfied to a satisfied condition (relative risk = 1.97; significant). However, when weights are applied, no significant difference in relative risk remains. These main results are shown in Table 4.5. Table 4.6 provides further details of results from other variants on the scale, which have been tried; these do not lead to substantially different findings. Thus on a variety of approaches to the data we are unable to assert that global job satisfaction is significantly increased in the guidance sample as a whole, relative to like cases in the comparison sample.

Table 4.5 Change in global satisfaction to the first follow-up

		Movement on original scale		Movement on collapsed scale		Movement across the scale mid-point	
		Guidance	Comparison	Guidance	Comparison	Guidance	Comparison
		Column percentages					
Unweighted	Gain	57.5	41.7	54.8	39.0	23.6	13.8
	No change/ none of type	26.1	33.2	31.4	42.7	73.2	81.8
	Loss	16.4	25.1	13.9	18.3	3.2	4.3
	<i>N</i>	628	897	628	897	628	897
Nearest neighbour weights	Gain	57.4	58.6	54.6	55.0	23.8	22.1
	No change/ none of type	26.1	24.6	31.5	32.3	72.9	72.9
	Loss	16.5	16.8	13.9	12.7	3.3	5.0
	<i>N</i>	606	321	606	322	606	321
Calliper weights	Gain	57.5	61.9	54.8	58.1	23.6	26.7
	No change/ none of type	26.1	22.7	31.4	30.1	73.2	70.4
	Loss	16.4	15.4	13.9	11.8	3.2	2.9
	<i>N</i>	628	622	628	621	628	622

Note: extreme scale points amalgamated

Table 4.6 Change in global satisfaction from the first to the second follow-up stage

		Movement on original scale		Movement on collapsed scale		Movement across the scale mid-point		Relative risk ratio (gain) Lower bound Upper bound			
		Guidance	Comparison	Guidance	Comparison	Guidance	Comparison				
		Column percentages									
Unweighted	Gain	63.5	41.1	60.7	39.2	32.2	16.3	1.97	1.590	2.451	
	No change/ none of type	19.3	30.1	23.6	39.9	61.9	79.0				
	Loss	17.3	28.8	15.7	20.9	5.8	4.7				
	<i>N</i>	394	747	394	747	394	747				
Nearest neighbour weights	Gain	63.5	61.9	60.7	60.9	32.2	34.1	0.95	0.751	1.192	
	No change/ none of type	19.3	22.1	23.6	29.3	61.9	65.0				
	Loss	17.3	15.9	15.7	9.8	5.8	0.9				
	<i>N</i>	394	226	394	225	394	226				
Calliper weights	Gain	63.5	61.5	60.7	61.0	32.2	34.9	0.92	0.751	1.120	
	No change/ none of type	19.3	22.8	23.6	27.9	61.9	62.7				
	Loss	17.3	15.7	15.7	11.2	5.8	2.4				
	<i>N</i>	394	421	394	420	394	421				

Note: extreme scale points amalgamated

4.3 *Total satisfaction*

The first test with this alternative measure that we shall make is of differences in the mean values of total job satisfaction at the first follow-up. This is in line with our earlier reasoning, in which we suggested that it was reasonable to infer a wide gap between samples upon recruitment. As is to be expected from our analysis of global satisfaction, in the un-weighted comparison, the guidance sample retained to the second stage remained significantly less satisfied ($t = -6.23$; $p < 0.001$). When weights are applied, however, no significant difference remains between samples. (Nearest neighbour: $t = 0.02$; $p = 0.988$; calliper: $t = -0.71$; $p = 0.479$) That is to say, the weighting process has a similar effect upon total, as upon global satisfaction. The absence of a significant difference favouring the guidance sample confirms the results from the comparison of global satisfaction.

Turning to the sample available at the end of the study, the guidance sample was significantly less satisfied to that time, but net change over the period was not significantly different. When weights are applied, there remains no significant difference between samples at the first and second follow-up stages, but under nearest-neighbour weighting, the greater total satisfaction in the *comparison* sample at the second follow-up is, in the time-honoured phrase, 'nearly significant', which is to say, falls short of significance at the 95 per cent confidence level. Differential movement over the period favours the comparison sample but is not significantly different. Thus the results available from our analysis of total satisfaction confirm those relating to global satisfaction. The results are summarised in Table 4.7.

Table 4.7 Total job satisfaction scale: results for those retained to the second follow-up

		First follow-up				Second follow-up				Net change			
		Guidance sample	Comparison sample	T equal variance	Sig.	Guidance sample	Comparison sample	T equal variance	Sig.	Guidance sample	Comparison sample	T equal variance	Sig.
Unweighted													
All responding	Mean	27.6	29.2	-4.253	0.000	28.3	29.9	-4.608	0.000				
	<i>N</i>	395	686			394	747						
Those responding at both follow-up stages	Mean	27.9	29.3	-3.600	0.000	28.4	29.8	-3.856	0.000	0.470	0.514	-0.121	0.904
	5% Trimmed Mean	28.0	29.5			28.5	30.0			0.498	0.360		
	Median	28	30			29	30			0	0		
	Std. Deviation	5.7	5.6			5.5	5.5			5.479	5.461		
	Interquartile Range	8	6			7	7			7	6		
	<i>N</i>	355	630			355	630			355	630		
Nearest neighbour weighted													
All responding	Mean	27.6	27.7	-0.196	0.845	28.3	29.1	-1.677	0.094				
	<i>N</i>	395	199			394	226						
Those responding at both follow-up stages	Mean	27.9	28.1	-0.288	0.773	28.4	29.3	-1.833	0.067	0.470	1.238	-1.498	0.135
	5% Trimmed Mean	28.0	28.3			28.5	29.6			0.498	1.022		
	Median	28	29			29	31			0	1		
	Std. Deviation	5.7	5.7			5.5	5.6			5.479	5.995		
	Interquartile Range	8	9			7	7			7	7		
	<i>N</i>	355	186			355	186			355	186		

Table 4.7 continued

		First follow-up				Second follow-up				Net change			
		Guidance sample	Comparison sample	T equal variance	Sig.	Guidance sample	Comparison sample	T equal variance	Sig.	Guidance sample	Comparison sample	T equal variance	Sig.
Calliper weighted													
All responding	Mean	27.6	28.0	-0.966	0.334	28.3	28.8	-1.173	0.241				
	N	395	379			394	420						
Those responding at both follow-up stages	Mean	27.9	28.2	-0.640	0.523	28.4	29.0	-1.426	0.154	0.470	0.792	-0.745	0.456
	5% Trimmed Mean	28.0	28.4			28.5	29.3			0.498	0.649		
	Median	28	29			29	30			0	1		
	Std. Deviation	5.7	5.5			5.5	5.5			5.479	6.014		
	Interquartile Range	8	7			7	6			7	7		
	N	355	354			355	354			355	354		

4.4 *Job satisfaction facets*

Total satisfaction, and the job satisfaction facets upon which it is based, were available only at the second and third stages. The most dramatic change in global satisfaction occurred during the year immediately after guidance. Global satisfaction is, however, highly correlated with total satisfaction. Thus we must assume that the main part of any change in global satisfaction and, therefore, the job satisfaction facets, had already occurred by the time that they were first measured. Moreover, aggregate improvement in total satisfaction was marginally greater in the re-weighted comparison sample over the interval in which it was measured. This means that it would be of particular significance if some facets behaved in a different way. We shall, therefore, consider the state of affairs at the first follow-up, and subsequent changes.

Table 4.8 shows the *differences* between samples at the first follow-up. It is computed by subtracting the percentage of the comparison sample at each point on the job satisfaction facet scale from the percentage of the guidance sample at the same point. Thus a positive value indicates the ‘excess’ of guidance sample members and a negative value the degree to which they are under-represented. In the table, these are summed for dissatisfaction and for satisfaction. In the un-weighted samples the greatest disparity – and largest contributor to the difference in total job satisfaction – lay in satisfaction with opportunity for career advancement. There was a 13.5 per cent ‘excess’ of guidance cases below the scale mid-point. This was followed by variety of work (11.7 per cent), opportunity to use abilities (11.3 per cent), and then by job security (9.8 per cent). Differences in satisfaction with pay and hours of work were less pronounced. Both weighting methods confirm the relative unimportance of pay and hours in the comparison between samples. Indeed, when weights are applied the guidance sample is, in the aggregate, a little *more* satisfied than the comparison sample with pay and hours of work.

Thus, at the second stage of our study, the differences in satisfaction of the two samples were mainly connected to ‘non-wage’ utilities. Satisfaction with the ‘quality’ of current jobs, as indicated by the opportunity to use abilities in varied work *and* satisfaction with the kinds of future they offered – which may imply expected future earnings – were both

lower in the guidance sample. We know from our analysis of total satisfaction that facet differences must persist to the end of the study, but what is the pattern of change?

Table 4.8 Job satisfaction facets at the first follow-up: differentials between samples¹

	Dissatisfied	Mid-point	Satisfied
<i>Un-weighted samples</i>			
Pay	4	3	-7
Job security	9	-0.8	-8.3
Opportunity to use abilities	11.3	1.7	-13.1
Hours of work	-0.5	2.8	-2.4
Variety of work	11.7	-0.3	-11.4
Opportunity for career advancement	13.5	-4.8	-8.7
<i>Nearest neighbour weighted samples</i>			
Pay	-5.4	5.5	0
Job security	3.1	3.5	-6.5
Opportunity to use abilities	4.8	6.1	-10.8
Hours of work	-4.1	1.6	2.4
Variety of work	7.7	-4.9	-2.9
Opportunity for career advancement	4.5	-2.6	-2
<i>Calliper weighted samples</i>			
Pay	-5.6	5.7	-0.1
Job security	5.7	2.1	-7.8
Opportunity to use abilities	6.7	4	-10.8
Hours of work	-1.9	2	0
Variety of work	7.1	-6.3	-0.6
Opportunity for career advancement	7.7	-5.5	-2.1

Note1 Positive indicates higher proportion of guidance sample, negative of comparison sample

Alternative exploratory analyses were conducted which tended to the same conclusion. We shall, therefore, employ two binary variables which make it possible, once again, to calculate relative risk ratios. These were computed to show *any* increase, or *any* decrease in satisfaction, respectively, from the first follow-up to the end of the study. The variables are not independent of one another. They are simply alternative ways of aggregating the same root variable, so as not to obscure declining satisfaction for some,

by focussing exclusively on the increasing satisfaction of others. Thus cases experiencing a reduction in satisfaction enter into the calculation of the odds of increased satisfaction, and *vice versa*. The set of results using this approach is reported in Table 4.9.

On this basis, changes in guidance sample job satisfaction were broadly neutral for pay, security, opportunity to use abilities and variety of work. The chief areas of gain were in satisfaction with hours of work and, especially, opportunities for career advancement⁵. Thirty-eight percent experienced an increase, but fewer, only 27 per cent, a decrease in the latter form of job satisfaction. Their jobs appear, therefore, to have become more *promising*.

Pay: More members of the guidance sample (27 per cent) experienced increasing satisfaction with pay, than did members of the comparison sample (22 per cent). The proportions experiencing reduced satisfaction were nearly-identical in each sample. However, the differential increase narrowly fails to reach significance and does not persist when weights are applied.

Security: The pattern of change was closely similar in each sample. Under nearest-neighbour weighting fewer members of the comparison sample experienced a reduction in satisfaction with job security (again narrowly failing to reach significance) but this result is not reproduced when calliper weights are applied.

⁵ The relationships between hours worked, changes in hours worked, satisfaction with hours of work and satisfaction with opportunities for career advancement are tenuous and not considered here.

Opportunity to use abilities: The pattern of change was as for satisfaction with job security and, in this instance, significantly more members of the guidance sample experience reduced satisfaction when nearest-neighbour, but not calliper, weights are applied.

Hours of work: Satisfaction with hours of work increased, in aggregate terms, in both samples. The un-weighted results marginally favour the guidance sample, but under both forms of weighting a higher proportion of the comparison sample experiences increased satisfaction, and a smaller proportion decreased satisfaction. One of the associated tests (nearest-neighbour) is significant.

Variety: The un-weighted differences between samples are small and not significant, but when weights are applied the comparison sample fares better and all tests are significant.

Opportunity for career advancement: Both samples experienced increasing job satisfaction relating to opportunities for career advancement. The pattern of change is similar across samples and neither form of weighting alters the picture.

The conclusion is, therefore, that the guidance sample held its own in terms of satisfaction with pay and opportunities for advancement, the latter of which was a major contributor to increasing global satisfaction in both samples. The position with respect to security, opportunity to use abilities and hours of work (a second important contributor to increasing global satisfaction) is ambiguous. When weights are applied, large gains in satisfaction with the variety of current work are induced in the comparison sample which are not paralleled in the guidance sample.

Table 4.9 Directions of change in job satisfaction facets between the first and second follow-ups

		Guidance sample %	Comparison sample %	Relative risk ratio	Lower bound	Upper bound
Pay	Unweighted					
	Increase in satisfaction	26.8	22.1	1.211	0.972	1.509
	Decrease in satisfaction	28.1	28.3	0.992	0.811	1.214
	Nearest neighbour weights					
	Increase in satisfaction	26.8	28.2	0.949	0.722	1.247
	Decrease in satisfaction	28.1	27.3	1.031	0.784	1.356
	Calliper weights					
	Increase in satisfaction	26.8	25.5	1.050	0.827	1.332
	Decrease in satisfaction	28.1	30.7	0.917	0.736	1.142
	Job security	Unweighted				
Increase in satisfaction		28.8	24.7	1.168	0.948	1.438
Decrease in satisfaction		27.0	26.5	1.016	0.823	1.254
Nearest neighbour weights						
Increase in satisfaction		28.8	31.9	0.905	0.700	1.170
Decrease in satisfaction		27.0	19.5	1.381	0.999	1.911
Calliper weights						
Increase in satisfaction		28.8	28.6	1.007	0.804	1.260
Decrease in satisfaction		27.0	27.3	0.986	0.780	1.245

Table 4.9 continued

	Guidance sample %	Comparison sample %	Relative risk ratio	Lower bound	Upper bound
Opportunity to use abilities					
Unweighted					
Increase in satisfaction	30.1	26.6	1.128	0.924	1.378
Decrease in satisfaction	29.0	25.9	1.120	0.913	1.374
Nearest neighbour weights					
Increase in satisfaction	30.1	29.3	1.026	0.787	1.338
*Decrease in satisfaction	29.0	20.6	1.407	1.027	1.929
Calliper weights					
Increase in satisfaction	30.1	28.9	1.039	0.832	1.298
Decrease in satisfaction	29.0	24.3	1.195	0.941	1.518
Hours of work					
Unweighted					
Increase in satisfaction	30.8	27.1	1.135	0.932	1.381
Decrease in satisfaction	23.6	23.8	0.992	0.791	1.246
Nearest neighbour weights					
Increase in satisfaction	30.8	37.0	0.831	0.658	1.049
*Decrease in satisfaction	23.6	15.3	1.542	1.068	2.225
Calliper weights					
Increase in satisfaction	30.8	34.0	0.904	0.737	1.110
Decrease in satisfaction	23.6	19.4	1.218	0.928	1.600

Table 4.9 continued

		Guidance sample %	Comparison sample %	Relative risk ratio	Lower bound	Upper bound
Variety of work	Unweighted					
	Increase in satisfaction	27.5	26.7	1.031	0.838	1.269
	Decrease in satisfaction	27.5	22.8	1.210	0.975	1.502
	Nearest neighbour weights					
	*Increase in satisfaction	27.5	39.0	0.706	0.557	0.895
	*Decrease in satisfaction	27.5	17.0	1.621	1.149	2.286
	Calliper weights					
	*Increase in satisfaction	27.5	41.0	0.672	0.548	0.824
	*Decrease in satisfaction	27.5	18.5	1.489	1.141	1.945
	Opportunity for career advancement	Unweighted				
Increase in satisfaction		38.0	37.0	1.025	0.868	1.210
Decrease in satisfaction		27.1	26.1	1.040	0.840	1.288
Nearest neighbour weights						
Increase in satisfaction		38.0	37.1	1.024	0.820	1.278
Decrease in satisfaction		27.1	26.3	1.031	0.775	1.370
Calliper weights						
Increase in satisfaction		38.0	40.6	0.934	0.781	1.118
Decrease in satisfaction		27.1	25.5	1.063	0.836	1.353

*Significant at 95%

4.5 Conclusion

The guidance sample made a dramatic recovery in job satisfaction during the period of study which was consistently replicated across each TEC area. However, this was not substantial enough to exceed that in the weighted comparison sample. In other words, a (re-weighted) comparison sample which was equally dissatisfied at the outset appeared to have its own means of recovery. We were careful, at the outset, to give our reasons for believing that a null result would be inconclusive, partly because of the possibility of unmeasured or unobservable factors. We therefore indicated that the hypothesis we were able to test derived from the question ‘Does guidance confer sufficient benefit, of a kind which does not remedy unobserved deficits relative to the comparison sample, and of a kind which impacts upon job satisfaction within a period no more than two years, for an effect to be detected in that period?’ We are unable to conclude that this is the case.

Chapter Five: Earnings and Progression

5.1 Introduction

Changes in earnings constitute one of the most important ways to assess economic benefits. Other things being equal, higher earnings provide individuals and families with a better material standard of living, and indicate an increased productive contribution to society. Education and training are generally regarded as increasing individuals' productive capacities and hence their earnings potential. Guidance should, in principle, help individuals to select career-related actions and pathways which lead to earnings progression – even if that is often not the primary motivation.

We expected to encounter difficulties with the analysis of earnings in this study, if many of those seeking guidance had broken employment in the subsequent year. In practice, this rarely happened. By the first follow-up interview, only 4 per cent of the guidance sample were unemployed (compared with 2 per cent in the comparison group), and 2 per cent of each were jobless and not seeking work. In addition, 6 per cent of the guidance sample were in full-time education, against less than one per cent in the comparison group, but even this is a small minority. The great majority were continuing in employment: 86 per cent in the case of the guidance group (82 per cent employees, 4 per cent self-employed) and 94 per cent in the case of the comparison group (84 per cent employees, 10 per cent self-employed). At the second follow-up, there were still 86 per cent of the guidance group in jobs and 92 per cent of the comparison group. In analysing wages, generalisation from the employed group to the whole sample is not a large step. Accordingly, the analysis of this chapter is reasonably straightforward.

5.2 The earnings data

Usable earnings data were obtained from 88 per cent of current employees and from about two-thirds of the self-employed at the first follow-up (Autumn 1998, around 12 months after the guidance period). Earnings data were also collected from those not in employment at the time of interview, referring to the last previous job: however, we have

excluded this information from all the analysis presented in this chapter because (as it involves recall and possibly untypical end-of-job payments) it is likely to be less reliable than the earnings data for current employment. The current earnings data posed few problems and appeared to be of good quality.

The second follow-up survey (in Summer 1999, around 21-24 months after the guidance period) was conducted by telephone. The coverage of earnings data was similar to the previous stage, with 89 per cent of employees and 75 per cent of self-employed providing information, but there were more problems with data quality (such as some absurdly high and some absurdly low values, and some inconsistencies between the pay amount and the pay period recorded). However these problems affected only 4 per cent of the cases and in the majority of cases a reasonable amendment proved possible, though the self-employed earnings data were generally less plausible than at the previous stage.

A different approach to the analysis of earnings is to use occupation as a key. Given an occupational code and the respondent's gender, one can attach the average earnings by gender within occupation as recorded in the annual New Earnings Survey (NES). This exercise was carried out for our data, for the occupations recorded in each of the three years of the study. Potentially this offers two advantages: we gain data for the initial stage (when questions about pay were not asked), and there is less problem with missing information. On the other hand, the coding of occupations is notoriously difficult and there is a substantial risk that an individual's change of occupation (and hence change of imputed earnings) from one year to another can be created by miscoding. In addition, much of the occupational data at the first stage (when we need it most) was collected by postal questionnaire, and the job titles or descriptions given are often sketchy, making the task of coding still more hazardous.

5.3 *Earnings at the first follow-up*

The impact of guidance on earnings will chiefly be assessed through analysis of *relative change* from one stage of follow-up to the next. However it is useful to start by seeing how the guidance and comparison groups compared, at the time of the initial follow-up when they were first asked questions about pay.

Table 5.1 shows results, initially for employees only and then for employees and self-employed together. The simple comparison of averages for employees (the first column of results) suggests that the guidance group were earning on average £20 per week less than the comparison group and that this difference was highly significant. However, introduction of the matching weights reduces this difference, as it should do. With the tightest form of matching (where only the 'nearest neighbours' in the comparison sample are used), the difference in average earnings is estimated to be £7.75 and this is not statistically significant. The 'caliper weights', which provide an intermediate degree of tightness in matching, suggest an earnings difference of about £17 which is statistically significant. Including the self-employed in the analysis widens all these estimated differences, but the 'nearest neighbour' matching still indicates that the difference is non-significant.

Further investigation indicated that a large part of any difference in earnings between the two groups arose from the small numbers of respondents at the top end of the earnings distribution. For example, there were altogether 33 employees earning more than £500 per week, and 28 of these were in the comparison group while only 5 were in the guidance group. When these 33 were omitted from the analysis, the simple difference in average earnings fell from £20 to £5 and this was non-significant. This figure is close to the estimate made by the 'nearest neighbour' matching method, which was referred to in the last paragraph. In fact, nearest neighbour matching excludes most of the highest-earning comparison group members from the outset, because they are too unlike the guidance group in other respects. It seems reasonable to conclude, therefore, that any appearance of different earnings at the first follow-up results from imperfect initial matching,

especially at the top end of the earnings distribution, which the nearest neighbour method corrects.

Table 5.1. Differences in average weekly earnings (guidance minus comparison) at the first follow-up interview.

	Original match (simple difference)	Caliper match (weighted difference)	Nearest neighbour match (weighted difference)
Employees	£ -20.0 t=-2.9	£ -17.06 t=-2.4	£ -7.75 t=-0.8
Employees and self-employed	£ -32.0 t=-4.3	£ -22.50 t=-3.1	£ -12.15 t=-1.3
Employees exc. 33 highest-paid	£ -5.38 t=-1.0	£ -11.82 t=-1.7	£ -6.33 t=-0.7

Note: negative values mean that the guidance sample has lower average earnings

As information was also collected about the hours worked in the pay period, it is possible to calculate an hourly earnings figure. Table 5.2 shows the results at the first follow-up. Once again, the simple comparison suggests that the guidance sample were lower paid at this time. However, when either the caliper matching or the nearest neighbour matching method was introduced, the estimated difference in hourly earnings was considerably reduced and became non-significant. So the use of hourly earnings does not change the conclusion.

Table 5.2. Differences in average hourly earnings (guidance minus comparison) at the first follow-up interview.

	Original match (simple difference)	Caliper match (weighted difference)	Nearest neighbour match (weighted difference)
Employees	£ -0.46 t=-3.2	£ -0.20 t=-1.2	£ -0.02 t=-0.1
Employees and self-employed	£ -0.66 t=-3.5	£ -0.26 t=-1.3	£ 0.08 t= 0.4

Note: negative values mean that the guidance sample has lower average earnings

5.4 *Earnings at the second follow-up interview*

Earnings at the second follow-up interview can be examined in the same way. Because of doubts about the reliability of the self-employed earnings data at this stage, we focus only on the employees. Table 5.3 shows the main results. A simple comparison of average weekly earnings for the two groups suggests that the guidance group were still earning less at this follow-up, but the difference, at about £9, was less than half the previous year. The weighted comparison using the caliper matching indicated a difference of £10, very close to the simple comparison. The weighted comparison using the nearest neighbour method showed the guidance group worse off by about £6. The point to stress, however, is that all these estimated differences are statistically non-significant. It is also notable that the estimated difference in earnings provided by the nearest neighbour method changed very little between the first follow-up and the second follow-up.

Table 5.3. Differences in average weekly earnings (guidance minus comparison) at the second follow-up interview.

	Original match (simple difference)	Caliper match (weighted difference)	Nearest neighbour match (weighted difference)
Employees	£ -9.31 t=-1.2	£ -10.38 t=-0.9	£ -6.33 t=-0.7

Note: negative values mean that guidance sample has lower average earnings.

Hourly earnings were also analysed, as for the first follow-up, but though all methods showed the guidance sample having lower average hourly rates, the differences were small and non-significant (table not shown).

5.5 *Relative change in earnings between the first and the second follow-up*

Comparing the earnings averages at one stage with the earnings averages at another stage can be misleading, since some of the people involved in the comparison at the first stage are non-respondents at the second, others have ceased to be employed or fail to give earnings data, and some who were not employed at the first stage or did not give earnings data provide earnings data at the second stage. In short, one is not comparing the same

group of people over time. To make a stricter comparison, it is necessary to calculate *differences in earnings for each person* and use these as the basis of the comparison. This of course excludes anyone who was not employed or failed to provide earnings data at either of the stages.

Table 5.4 shows the results of analyses limited to individuals who were employees at both follow-ups, and supplied usable earnings data. Those self-employed at either stage were excluded from the analysis, because of the problems with their earnings data at the second stage. On the basis of a simple unweighted comparison, members of the guidance group had gained in earnings by an average of £10.72 over the year, while members of the comparison group had gained by £7.66. This suggested some 'catching up'. However, the difference between the two groups was statistically non-significant. Furthermore, when weighting by either the caliper matching method or the nearest neighbour matching method was applied, the initial apparent difference between the groups disappeared completely. The conclusion to be drawn is that participation in guidance did not on average produce any differential increase in earnings between the first and second follow-up.

Table 5.4 Differences in the change in average earnings (guidance minus comparison) between the first and second follow-up interviews

	Original match (simple difference)	Caliper match (weighted difference)	Nearest neighbour match (weighted difference)
Employees	£ 3.06 t= 0.7	£ -0.63 t=-0.1	£ -0.95 t=-0.1

Note: Positive values mean that the guidance sample had on average a higher increase in earnings than the comparison group, whereas negative values mean that the guidance sample had on average a lower increase in earnings

5.6 Relative change in occupational expected earnings

We now turn to the alternative method of assessing change in earnings, which uses the average earnings that apply to an occupation (see explanation earlier). We will refer to this measure of earnings as 'occupational expected earnings'. Change on this measure

comes about if an individual moves from one occupation to another. So the analysis can also be interpreted in terms of advancement or occupational mobility, with average earnings acting as an occupational scale. The main technical problem with this form of analysis (which was referred to earlier) is that some apparent change will be induced by incorrect or inconsistent coding of occupations. The effect of this is to introduce random variation (or 'noise') into the analysis, which may tend to obscure any true effect. Another potential limitation with the method is that it relies on occupational movement to produce any discernible effect and would not be so useful for groups that were static in their jobs or careers. In the present case, however, there was in fact a great deal of movement taking place: over 1997 and 1998, for example, nearly 30 per cent of the whole sample changed jobs, and another 15 per cent moved jobs within their employer. There was also substantial movement over the 1998-99 period.

From the initial recruitment survey to the first stage follow-up, the analysis indicated that change in occupational expected earnings was essentially the same in the guidance group and the comparison group (table not shown). This could reflect difficulties in coding occupations, which were at their greatest at the initial recruitment stage when using the postal questionnaire responses. The change in occupational expected earnings between the first and second follow-up should be more reliable, since occupational information was collected by personal interview at the first follow-up and by telephone interview at the second follow-up.

Table 5.5 shows the results of the analysis of change between the two follow-up interviews. On all three methods of analysis, there is a suggestion of some gain on the part of the guidance group, but none of the results is statistically significant. The simple comparison of averages suggested a relative gain of 37p per hour, and the caliper matching method gave virtually the same result. The nearest neighbour matching method, however, estimated the gain as only 17p per hour. Because of the large variation which typically arises in measures of earnings change over time, to demonstrate that such a small gain was statistically significant would require a very large sample. The method does

appear to have some promise for assessing change over time, but it does not produce any firm evidence of relative gain for the guidance sample in the present study.

Table 5.5. Differences in the change in occupational hourly expected earnings (guidance minus comparison) between the first and second follow-up interviews

	Original match (simple difference)	Caliper match (weighted difference)	Nearest neighbour match (weighted difference)
Employees and self-employed	£ 0.37 t= 1.5	£ 0.36 t= 1.3	£ 0.17 t= 0.6

Note: Positive values mean that the guidance sample had on average a higher increase in occupational expected earnings.

5.7 *Other aspects of progression or mobility*

There will be some further analysis of earnings later in this chapter, but to lay the ground for this it will be helpful first to carry out a brief review of some of the other changes which respondents had experienced. Education and training activities are excluded here since they have been discussed in a previous chapter.

Two types of change over the 1997-98 period, covered in the first follow-up interview, are of particular interest: changes of job within the same employment, and moves to a new job with a different employer. Either type of change might have made an impact on earnings, and we consider whether each of them was associated with participation in guidance. In the case of internal job moves, a simple comparison suggested there might be a slight association, with 15 per cent of the guidance group experiencing such moves against 12 per cent of the comparison group. But when the table was weighted by the caliper matching method, most of this difference disappeared. It seems, then, that the guidance and comparison groups were about equally likely to experience internal moves.

There was a more marked difference in the case of external job moves, and this is summarised in Table 5.6. After weighting, 33 per cent (one third) of the guidance group made a job move in 1997-98, while the proportion in the case of the comparison group was 25 per cent (one quarter). This difference was statistically significant.

Table 5.6. External job moves during 1997-98

	Cell percentages		
	Guidance group	Comparison group	Significance (p <)
% making job move – unweighted basis	33	20	0.001
% making job move – weighted by caliper matching method	33	25	0.02

Similar comparisons were made on a range of changes reported at the second follow-up interview. The results – for the weighted method only – are reported in Table 5.7. Overall there was some tendency for the guidance group to be more mobile in their work, but the differences were generally slight, and the only significant item was moving into full-time work. Nine per cent of the guidance group moved into full-time work while the proportion was four per cent in the comparison group.

Table 5.7. Various types of change in work during 1998-99

	Cell percentages	
	Guidance group	Comparison group
Moved to a new employer	22	18
Moved into self-employment	3	3
Moved into full-time work *	9	4
Moved into part-time work	6	5
Had a promotion	15	13
Changed type of work	28	25
Stopped working for a time	12	12

Note: All percentages are weighted by the caliper matching method

* Statistically significant difference (p<0.01)

Over the period of the study as a whole, there was clearly more mobility in the guidance group than in the comparison group. Provided that mobility was helping individuals to improve their situation at work, then this could be seen as beneficial. But were any of these kinds of mobility linked to improvement in earnings, or more specifically, were moves of these kinds linked to improved earnings *to a greater extent for guidance clients than for the comparison group?*

5.8 *The influence of job changes and continuing education and training on earnings*

To answer the question just posed, we carried out further analysis of individual changes in earnings between the first and second follow-up interviews, to explore links with job changes. The method was regression analysis, with interactions between guidance and each type of job change. Initially only one type of job change was assessed per analysis¹.

The initial findings from this series of analyses were as follows:

- Job moves taking place in 1997-98, whether internal or external, had no effect on changes in pay during 1998-99, either for the guidance group or the comparison group. Information was separately available for 1997 and 1998, but the absence of a connection to earnings was as true when the years were considered separately as when they were considered jointly.
- Moving employer in 1998-99 was *less advantageous* for the guidance group than it was for the comparison group: in fact, the movers in the guidance group did slightly worse, in terms of changes in pay, than if they had stayed with the same employer, whereas the movers in the comparison group gained relative to those who stayed with the same employer.
- Moving into full-time work in 1998-99 was *more advantageous* for the guidance group than it was for the comparison group.
- Moves into part-time work, moves into different kinds of work, and promotions did not result in significantly different changes in earnings for the guidance group relative to the comparison group.

¹ The regression analyses were weighted by the caliper matching method (nearest neighbour matching resulted in too many cases being discarded from an already limited sample size). Interactions with a t-statistic of at least 1.0 were retained for further analysis (see later).

The results suggest that career actions can have different impacts on earnings when they are associated with guidance. Equally, they suggest that earnings outcomes differ between sub-groups of guidance clients who make different choices. These results should

not however be interpreted in terms of 'causation' by guidance: individuals may follow different pathways because of their varying characteristics and preferences, and these are not controlled in the analysis. None the less, there is supplementary information suggesting that both the relative gains and the relative losses for the guidance clients were such as might reflect the contributions or shortcomings of guidance processes. The guidance clients who moved to full-time work also tended to be moving to a higher occupational level, which complemented the gain in earnings from working longer hours. This suggests that these clients were being assisted to make a transition from low-status part-time work to full-time jobs which made use of personal experience or capacities. Supplementary analysis also showed that many of the people making job moves in 1998-99 had also made job moves during 1997-98, and the proportion was higher among guidance clients (28 per cent) than in the comparison group (19 per cent). This suggests that the early process of job search among the guidance group was not as successful as might have been hoped, and this instability may have contributed to lack of earnings progression.

The same type of analysis was then used to assess the link between guidance, continuing educational and training activities (CET) and changes in earnings. The question considered was whether CET in combination with or following upon guidance was associated with different financial returns than when CET took place without a guidance process.

To address this question, the following indicators of CET during 1997-98 (collected in the first follow-up interview) were included in the same type of analysis as just outlined:

- participation in any employer-funded course
- participation in any non-employer course
- participation in an employer-funded course leading to qualifications
- participation in a non-employer-funded course leading to qualifications
- achievement of qualifications from an employer-funded course
- achievement of qualifications from a non-employer-funded course.

Each of these measures except achievement was available separately for the years 1997 and 1998, and analyses were carried out both for the separate years and for the years taken together.

In addition, the following indicators of CET during 1998-99 (collected in the second follow-up interview) were also used:

- participation in a short course funded by an employer
- participation in a short course funded by the individual
- participation in a long course funded by an employer
- participation in a long course funded by the individual
- achievement of qualifications from an employer-funded course
- achievement of qualifications from a non-employer-funded course.

Most of these indicators of CET were *not significantly related to change in earnings* during 1998-99. However there was one clear and strong result, which related to taking part in a non-employer CET course leading to qualifications, during the period 1997-98 (taken as a whole). The subsequent change in earnings for those in the guidance group who took part in such courses was substantially *lower* (less positive) than the gain for the comparison group members taking part in such training. In fact, these qualification-seeking members of the guidance group were on average earning slightly less in 1999 than in 1998. The estimates are shown in full in Table 5.8.

Table 5.8 Estimated change in weekly earnings 1998-99 associated with self-funded CET with a qualification aim in 1997-98

	Guidance group	Comparison group
No self-funded CET with qualification aim	£15.53	£10.13
Self-funded CET with qualification aim	£ -2.30	£23.54

Note: estimates are weighted by the caliper matching method

A similar question was asked at the second follow-up interview, concerning CET during 1998-99. Both the members of the guidance group and the members of the comparison group who were pursuing a qualification aim with self-funded CET in 1998-99, had lower gains in earnings than the group members who were not doing so. Moreover, the guidance group members pursuing CET with a qualification aim were now maintaining their earnings *somewhat better* than their counterparts in the comparison group. Although this relative gain was not in itself statistically significant, the difference between qualification aims in 1997-98 and qualification aims in 1998-99 *was* significant². One possible explanation for this reversal is self-selection, with people dropping out of their qualification aim if they could not maintain their earnings at the same time. Some 70 per cent of the people with a self-funded CET aim in 1997-98 were no longer pursuing that aim in 1998-99, leaving a smaller group of qualification-seekers who continued into the latter year. These 'continuers' constituted one half of the qualification-seekers in the guidance group by 1998-99, but one-third in the comparison group. An alternative explanation is in terms of values or preferences. The large number in the guidance group who began a course with a qualification aim in 1997-98 may have contained most of those who placed educational or self-realization aims ahead of earnings. Those in the guidance group who started a qualification aim in 1998-99 perhaps did not give such a high priority to educational or self-realization aims, or took more care to establish progression in their jobs before considering a self-funded qualification aim.

To check the robustness of the results concerning job changes and CET, all four variables which appeared to interact with guidance in their associations with earnings were brought together in a combined analysis³. Each of the interactions remained significant in the ways already described, at least at the 90 per cent confidence level, so the results appear reasonably reliable although some caution must be exercised. This analysis can also be

² In statistical terms, we cannot reject the hypothesis that the interaction effect for the 1998-99 qualification-aim variable was zero, but we can reject the hypothesis that this effect was equal to the effect for the 1997-98 qualification-aim variable.

³ This was a multiple regression analysis with five variables plus the four interactions (guidance with each of the job-change and CET variables). The analysis was weighted by the caliper matching method.

used to estimate the magnitude of the relative differences involved, with the difference in earnings for guidance participants in each kind of activity compared to the difference in earnings for comparison group members in those activities⁴. Table 5.9 shows the results of this comparison.

Table 5.9 Relative differences in earnings between guidance and comparison group members experiencing each type of change or activity

	Relative difference (£) – Guidance minus comparison	Notes
Changed jobs 98-99	-25/week	Difference significant at 90 per cent confidence level
Moved to full-time work 98-99	+54/week	Difference significant at 90 per cent confidence level
Self-funded CET with qualification aim in 97-98	-35/week	Difference significant at 99 per cent confidence level
Self-funded CET with qualification aim in 98-99	+ 22/week	Result significantly different from the result for the similar 97-98 variable

Notes: (a) See text for explanation of analysis. (b) A negative figure means that the change in earnings was lower for the guidance group than the comparison group, a positive figure means that the change was higher for the guidance group.

Overall, the evidence linking guidance, career pathways, and change in earnings is somewhat inconclusive. Guidance participants were on average somewhat more active in changing their situation than the comparison group. But for most of the job moves or CET activities there was no specific financial improvement nor loss associated with participation in guidance. Changing jobs in 1998-99 was less beneficial for the guidance group than for the comparison group, but on the other hand, more of the guidance group moved into full-time work and their earnings rose more as a result. Actual achievement of qualifications at this stage appeared to make no difference to earnings. But entering self-funded CET with a qualification aim in 1997-98 was associated with a lower rate of earnings growth for the guidance group than for counterparts in the comparison group.

⁴ The difference in each case is calculated relative to those who took part in *none of these activities*.

This appeared to be reversed in 1998-99, but with a smaller proportion of participants. Different career pathways sometimes do have different financial consequences for guidance participants than for others, but the differences in outcomes are not always positive.

5.9 *Earnings, and differences in the delivery of guidance*

So far, it has been assumed that there is only one effect of guidance – *the* effect of an average type of guidance. It seems more likely that, in reality, different individuals receive different types, amounts and qualities of guidance. These variations are difficult to identify and capture, so we are obliged to average over them. But there are some simple ways in which possible differences in guidance can be considered.

The guidance services covered by this study were provided in eight distinct administrative areas, and there could have been differences in the type of guidance delivered across these. It might be objected that any area differences in delivery would be confounded with differences in the kinds of local labour markets and job opportunities available in each. But, if the relative position of the local labour markets remains about the same across the two-year period of the study, then they will 'cancel out' when the outcome measure is a difference over time. The interaction of guidance participation with area should therefore provide some indication of whether outcomes of guidance vary by area, independent of background labour market conditions.

Table 5.10 shows the average change in weekly earnings for each area, by guidance and comparison groups. Because of guarantees of confidentiality to the participating TECs, we cannot state their identity, and indeed we suppress all information which might reveal it. The areas are arranged in rank order of the relative earnings changes between guidance and comparison groups. It is notable that in five of the eight areas, the guidance participants had a greater increase in earnings than their counterparts in the comparison group. One of these five areas had an outcome that was significantly different from zero, and from each of the two areas with the least favourable earnings outcomes, though only

at the 90 per cent confidence level. Three of the five areas were, also at the 90 per cent confidence level, *collectively* different from zero and from the two areas with the least favourable earnings outcomes.

These results are far from conclusive: with *post hoc* comparisons such as these, one should not feel comfortable unless one has results significant at the 99 per cent confidence level. In general, apparent differences in Table 5.10 turn out to be unreliable because of the small sample sizes in a number of the areas (especially by the time of the second follow-up, and when confined to those providing earnings data)⁵. None the less, the descriptive findings suggest that larger studies in the future might be able to demonstrate differences between areas and to show that some kinds of local guidance service produce positive outcomes in terms of earnings.

Table 5.10 Average change in weekly earnings 1998-99 by area of guidance service

Area rank	Guidance group	Comparison group	Difference
1	35.42	9.15	26.27
2	3.71	-12.94	16.65
3	18.36	3.24	15.12
4	17.67	10.02	7.65
5	15.12	10.91	4.21
6	8.55	16.04	-7.49
7	5.55	19.88	-14.33
8	-3.64	13.49	-17.13

Note: The results are shown in rank order of differences between the guidance and comparison groups. Averages have been weighted by the caliper matching method.

Another way of investigating variation in the delivery of guidance is by using clients' ratings of the service. These were collected at the initial recruitment survey, when the guidance process was still continuing in most cases. Respondents were asked how

⁵ The total N for this analysis is 622. It is not possible to show the N by area because this might compromise confidentiality: the range was from 17 to 186.

helpful the guidance service had been, and the ratings were from 'not at all helpful' to 'very helpful' on a four-point scale. Average outcomes, in terms of change in earnings as before, were compared for those giving the various replies and those in the comparison group (who, of course, were not asked the question). However, there was neither an interpretable pattern in the results nor anything that was statistically significant. Clients' ratings of the service at the time they are receiving it do not appear to predict subsequent outcomes, at least in terms of earnings, at all well.

5.10 Summary and concluding comments

The analysis in this chapter has considered whether taking part in guidance is connected with subsequent relative gains in earnings. We found no evidence that there was an overall gain in earnings, on average, although there was also no evidence of any loss, on average. There was however moderately persuasive evidence that some career actions, notably *changing jobs, moving into full-time work, or pursuing a qualification*, could have different earnings outcomes for guidance participants than for non-participants. But these different outcomes were as often adverse for the guidance group as they were favourable. Guidance clients appeared to fare worse in terms of earnings if they changed jobs in 1998-99, and they fared worse if they funded a course with a qualification aim in 1997-98. But relative earnings change moved toward the positive for clients not beginning their qualification aim until 1998-99. And the clearest advantage came to a group of guidance clients who moved to full-time hours, often coupled with a rise in job level.

One possible reason for the lack of a significant overall effect of guidance might be that change in earnings was measured over the period 1998-99, starting more than one year after the guidance period. Is it possible that by 1998 the effect of guidance on earnings had already been completed (as in the case of job satisfaction)? This does not seem very likely, for several reasons. There was separate information about career actions taken in 1997 and 1998, and supplementary analyses gave no indication that the 1997 career

actions had increased the 1998 earnings baseline. Again, the use of occupational expected earnings as an alternative outcome measure, covering all the years, gave no indication of a relative gain for the guidance clients in 1997-98, but it did give a faint hint of a relative gain beginning in 1998-99. More generally, the importance of long-period education and training to the guidance clients implied that any earnings outcomes would be delayed, not immediate. Possibly 1998-99 was too soon as the outcome year, rather than too late.

Another general point of interpretation is that some guidance clients may not be particularly motivated by higher earnings. Their primary desire may be to improve their education, to get more satisfying work, to achieve a higher level of self-realization, or to find better ways of reconciling employment with family or leisure interests. If this is true of a large proportion, then it is not surprising that increased earnings are not especially linked to guidance, or to career actions following guidance (such as changing job or adopting a qualification aim). On the other hand, it may be that some guidance services are themselves more attuned to providing advice about education and training opportunities or helping people to think out their goals, than to steer them into job opportunities with improved financial prospects. The substantial proportion making repeated job changes, *especially* in the guidance group, suggests that job-search advice may have been relatively ineffective in some cases. Again, the fact that people starting CET with a qualification aim in 1998-99 fared better, in terms of earnings, than those starting sooner, may suggest that it is possible, *given time*, for individuals to balance educational goals with earnings progression. These interpretations are somewhat speculative. But what they point to in practical terms is the need for adult guidance services to have a good understanding of the financial implications of various career actions and pathways.

A final general point of interpretation concerns possible differences in earnings outcomes among the local guidance services. There is some suggestion in the results – though nothing stronger – that relative earnings outcomes for guidance may have been positive in some areas. To test such differences more reliably, the research would have needed to be

on a substantially larger scale. But, as explained in Chapter One, the research was in any case limited in scale by the scarcity of guidance services for adult employees. We followed-up all the guidance clients we could find, provided that they were willing to participate. There is therefore something of a ‘chicken-and-egg’ situation. It is only when larger-scale guidance services are in place, that one will have the sample sizes needed to assess the relative economic effectiveness of different local models of provision.

Annex 1: Methodology of econometric evaluation: key terms and concepts

a. Some main concepts and terms in evaluation

The econometric evaluation of labour market or social programmes is usually concerned with the estimation of the impact of a programme relative to what would have happened in the absence of the programme. Outcomes which would have occurred in the absence of the programme constitute deadweight. The evaluation therefore is concerned with estimating impacts which are net of deadweight, or more simply, net impacts. This differs from programme monitoring criteria which consider how many positive outcomes (such as jobs) follow a programme, or the average cost per positive outcome. In these latter cases, the measurement of positive outcomes is often on a gross rather than net basis.

Alternative terms often used in place of net impacts are 'net treatment effects'. The treatment is what the individual participant receives as a result of the programme or policy. In the context of econometric evaluation, the terms 'impact' and 'effect' are understood to be shorthand for the estimated net impact or estimated net effect.

The fundamental limitation on evaluation is that a given individual at a given period cannot both be in a programme and not in a programme. Only one of these situations can be observed per person per period. It is necessary to use information about other people or other periods to construct what would happen if the participating individual was not in the programme (or vice versa). This is known as 'constructing the counterfactual case'.

Because all evaluations involve a counterfactual case rather than direct observation, they are all subject to bias. Bias is the difference between the estimated impact of the programme and its true impact, but the true impact cannot be directly observed because of the limitation noted above. Evaluation methodology seeks to minimise bias.

There are two main approaches to constructing the counterfactual: experimental designs and non-experimental designs (the latter is often called 'quasi-experimental', and statisticians also

use the term ‘observational’). In an experimental evaluation, whether a particular individual becomes a participant or a non-participant is determined by a random process: usually, both the participants and the non-participants want to take part. This is often referred to as ‘random assignment’. In non-experimental evaluations, individuals have chosen whether or not to take part, and this process can affect the results.

If the evaluation is experimental, provided that the sample size is large and the allocation process is random, the participants and non-participants will have the same distribution of pre-programme characteristics (for example, they will have the same distribution of ages and the same distribution of pre-programme attitudes). This eliminates many of the sources of bias which affect non-experimental evaluations. It should be stressed, however, that this only applies to the group to which the random assignment process was applied. For example, the outcomes for randomly assigned participants in one spatial area cannot legitimately be compared with the outcomes for randomly excluded participants in a different spatial area. It should also be appreciated that, while experimental evaluation reduces many kinds of bias, it may also introduce other kinds of bias. For example, being randomly excluded from a programme may have different motivational effects from choosing not to take part in a programme. A necessary assumption for experimental designs is that bias resulting from assignment is insignificantly small.

In the case of non-experimental evaluation, there are two main strategies for reducing bias in estimating the programme impact. One is to obtain a non-participant comparison group which is similar to the participant group, while the other is to remove the bias due to dissimilarity by statistical means. In practice, both strategies are often used in conjunction.

To obtain a non-participant group which is similar to the participant group, one can make comparisons of the same group (or similarly constituted groups) before and after the introduction of the programme. This is often referred to as the ‘before-and-after’ design. This design necessarily assumes that other changes in context or in individuals’ lives have not affected the comparisons over time, or can be controlled by other means.

Alternatively, one can match the participant group with contemporaneous non-participants who have similar characteristics. The most relevant characteristics for matching are those which affect entry to the programme *and* are likely to influence subsequent outcomes. This approach is often referred to as a ‘matched comparison group’ design, or simply ‘matching’. This design necessarily assumes that factors which are important are all either included in the matching process, or can be controlled by other means.

There are various more elaborate versions of both before-and-after designs and matched comparison designs. For instance, there are various designs which make use of longitudinal follow-up over many periods (‘panel designs’) or collections of comparative samples drawn at several points in time (‘repeat cross-section designs’).

Annex 2. Response Rates

To preserve the anonymity of the guidance services taking part in the study, the areas are labelled from A to H. Two of the areas were in the London suburbs, two in other parts of the South-east, one in the Midlands, two in Yorkshire and Humberside, and one in the North-east.

a) Recruitment stage: Guidance sample

(Figures are not given for the comparison group as it was obtained by quota sampling)

Area	Issued (1)	Invalid telephone number (2)	Questionnaire or interview completed (3)	Response rate % (4)=(3)/(1)-(2)
A	438	67	265	71
B	838	157	531	78
C	140	21	88	74
D	421	postal	292	68
E	415	postal	187	45
F	76	postal	48	63
G	104	postal	60	58
H	246	postal	141	57
Total	2678	245	1612	66

First follow-up (personal interview)

Guidance sample

Area	Available Sample*	Moved from area/ other invalid	Interviewed	Response rate % (3)/(1)-(2)
A	246	52	105	54
B	495	80	237	57
C	83	15	45	66
D	232	28	173	85
E	147	25	92	78
F	38	8	25	83
G	52	8	23	52
H	116	16	68	68
Total	1409	232	768	65

*After opt-out from follow-up, and sampling for piloting.

Comparison sample

Area	Available Sample*	Moved from area/ other invalid	Interviewed	Response rate %
A	451	75	174	46
B	539	67	269	57
C	214	32	57	31
D	301	16	225	79
E	214	25	131	69
F	51	9	30	71
G	68	6	37	60
H	148	16	96	73
Total	1986	246	1019	59

*After opt-out from follow-up, and sampling for piloting.

Second follow-up (telephone interview)

Guidance sample

Area	Available Sample*	Interviewed	Response rate %
A	94	61	65
B	217	172	79
C	41	35	85
D	164	107	65
E	88	56	64
F	23	19	83
G	22	17	77
H	66	47	71
Total	715	514	72

*From first stage follow-up, minus opt-outs.

Comparison sample

Area	Available Sample*	Interviewed	Response rate %
A	165	138	84
B	254	221	87
C	50	39	78
D	212	172	81
E	126	111	88
F	29	22	76
G	34	30	88
H	93	80	86
Total	963	813	84

*From first-stage follow-up, minus opt-outs

Annex 3: Results of multivariate analysis of entry to guidance, and re-weighting procedures

a. Variables used in the analysis

Variable label	Description
guidgrp	Participation in guidance (yes/no)-dependent variable for the analysis
female	Female
age	Age (continuous)
depch02	Dependent child aged 0-2 - respondent male
depch34	Dependent child aged 3-4 - respondent male
depch511	Dependent child aged 5-11 - respondent male
depch16	Dependent child aged 12-16 - respondent male
fdep02	Dependent child aged 0-2 - respondent female
fdep34	Dependent child aged 3-4 - respondent female
fdep511	Dependent child aged 5-11 - respondent female
fdep16	Dependent child aged 12-16 - respondent female
nonwhite	Member of ethnic minority
anyquad	Educational qualification below A-level
degree	Degree-level qualification
alevel	A-level qualification
trnempd	Training provided by employer in last year
trnselfd	Training provided by self in last year
selfemp	Employment status is self-employed
ft	Employment status is full-time
tenure	Years in current job (continuous)
empbread	Employment broken during past 5 years
newedud	Intention of new educational course in next year
newempd	Intention of changing employer in next year
neword	Intention of changing type of work done in next year
areaa-areaag	Areas of the study
socal-soca9	Occupational groups (SOC major groups - see note below)
satal-sata6	Level of job satisfaction (1=lowest)
smallemp	Works for employer with less than 25 employees

Note: Unless otherwise stated, all variables are coded as dummy variables (1=yes 0=no). For qualifications, 'no qualification' is the reference variable. For occupational groups, 'other occupation' (SOC major group 9) is the reference variable, socal=occupation not stated or not codable, soca2=SOC major group 1, etc. For area, ahead is the reference variable. For job satisfaction, sata7=completely satisfied is the reference variable.

continued

b. Probit model of participation in guidance, based on those interviewed at the first follow-up and providing complete information.

Number of observations = 1684
 Chi-square(46 degrees of freedom)= 415.52
 Log likelihood = -923.69937

guidgrp	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
female	-.0791199	.0947319	-0.835	0.404	-.264791 .1065513
age	.0044313	.0049114	0.902	0.367	-.005195 .0140576
depch02	-.4233151	.1845538	-2.294	0.022	-.7850338 -.0615963
depch34	-.5456329	.2292798	-2.380	0.017	-.9950131 -.0962528
depch511	.1005626	.1565037	0.643	0.521	-.2061791 .4073043
depch16	.0766995	.2608743	0.294	0.769	-.4346047 .5880037
fdep02	.0043654	.2475851	0.018	0.986	-.4808925 .4896233
fdep34	.3164885	.3096319	1.022	0.307	-.2903789 .9233559
fdep511	-.310164	.1977261	-1.569	0.117	-.6977 .0773719
fdep16	-.2028912	.2941588	-0.690	0.490	-.7794319 .3736494
nonwhite	.2707356	.1376948	1.966	0.049	.0008587 .5406125
anyquad	.3880051	.1269104	3.057	0.002	.1392653 .636745
degree	-.174372	.0875497	-1.992	0.046	-.3459662 -.0027778
alevel	-.3698223	.1118862	-3.305	0.001	-.5891152 -.1505293
trnempd	.0930844	.0768878	1.211	0.226	-.057613 .2437819
trnselfd	.1967925	.0808582	2.434	0.015	.0383133 .3552717
selfemp	-.0749066	.1382065	-0.542	0.588	-.3457863 .195973
ft	.3731823	.0977545	3.818	0.000	.1815869 .5647776
tenure	-.0104575	.0066639	-1.569	0.117	-.0235185 .0026034
empbread	-.1030853	.0824852	-1.250	0.211	-.2647534 .0585828
newedud	.3904551	.0707369	5.520	0.000	.2518134 .5290968
newempd	-.0463477	.0952218	-0.487	0.626	-.2329789 .1402836
neword	.2554623	.0916565	2.787	0.005	.0758189 .4351057
areaa	-.3023931	.2173709	-1.391	0.164	-.7284322 .123646
areab	.1413291	.2058516	0.687	0.492	-.2621327 .5447908
areac	.2888095	.2029585	1.423	0.155	-.1089818 .6866008
aread	.0464093	.2164254	0.214	0.830	-.3777766 .4705952
areae	.008868	.2250839	0.039	0.969	-.4322883 .4500243
areaf	-.1692744	.2432275	-0.696	0.486	-.6459916 .3074428
areag	-.042923	.2737929	-0.157	0.875	-.5795473 .4937012
socal	2.196291	.445913	4.925	0.000	1.322317 3.070264
soca2	.0081495	.1865318	0.044	0.965	-.3574462 .3737451
soca3	.1354644	.183788	0.737	0.461	-.2247535 .4956823
soca4	.0151211	.1844834	0.082	0.935	-.3464597 .3767019
soca5	.3129404	.1675083	1.868	0.062	-.0153698 .6412505
soca6	-.2718082	.1944894	-1.398	0.162	-.6530005 .1093841
soca7	.4494028	.1782315	2.521	0.012	.1000754 .7987302
soca8	.3731555	.1955817	1.908	0.056	-.0101776 .7564887
soca9	-.3398365	.207302	-1.639	0.101	-.746141 .066468
sata1	1.206368	.163968	7.357	0.000	.8849966 1.527739
sata2	1.2823	.1728989	7.416	0.000	.9434242 1.621176
sata3	.8850554	.1497823	5.909	0.000	.5914875 1.178623
sata4	.9449783	.1477566	6.396	0.000	.6553807 1.234576
sata5	.4574894	.1358798	3.367	0.001	.1911699 .7238089
sata6	.2782906	.1476943	1.884	0.060	-.0111848 .5677661
smallemp	-.1092549	.0797722	-1.370	0.171	-.2656055 .0470957
constant	-1.937361	.3560788	-5.441	0.000	-2.635263 -1.239459

c. Probit model of participation in guidance, based on those interviewed at the second follow-up and providing complete information.

Number of observations = 1259
 Chi-square (46 degrees of freedom)= 307.36
 Log likelihood = -665.91193

guidgrp	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
female	-.0496203	.1119681	-0.443	0.658	-.2690738 .1698332
age	.0061939	.0057287	1.081	0.280	-.0050341 .017422
depch02	-.3108991	.218886	-1.420	0.156	-.7399078 .1181097
depch34	-.2672868	.2715316	-0.984	0.325	-.7994789 .2649054
depch511	.2266738	.1782624	1.272	0.204	-.1227141 .5760618
depch16	.0295427	.2983274	0.099	0.921	-.5551683 .6142536
fdep02	-.2203009	.3053474	-0.721	0.471	-.8187707 .378169
fdep34	.0740552	.3799764	0.195	0.845	-.6706849 .8187952
fdep511	-.3482661	.2292016	-1.519	0.129	-.7974931 .1009609
fdep16	-.0145257	.3338391	-0.044	0.965	-.6688383 .6397869
nonwhite	.1691062	.1700327	0.995	0.320	-.1641517 .5023641
anyquad	.4745075	.1551966	3.057	0.002	.1703279 .7786872
degree	-.1190888	.101784	-1.170	0.242	-.3185819 .0804043
alevel	-.4003322	.1353673	-2.957	0.003	-.6656473 -.1350172
trnempd	.0544583	.090923	0.599	0.549	-.1237475 .2326641
trnselfd	.1442403	.0946713	1.524	0.128	-.041312 .3297926
selfemp	.0163649	.1614441	0.101	0.919	-.3000597 .3327895
ft	.3945939	.1183638	3.334	0.001	.1626051 .6265827
tenure	-.0091218	.0077374	-1.179	0.238	-.0242867 .0060432
empbread	-.0146366	.0983556	-0.149	0.882	-.2074101 .1781368
newedud	.3401245	.0833719	4.080	0.000	.1767187 .5035304
newempd	-.073462	.1134201	-0.648	0.517	-.2957612 .1488373
neword	.2797179	.1091839	2.562	0.010	.0657214 .4937145
areaa	-.45317	.2586481	-1.752	0.080	-.9601109 .0537709
areab	-.0129671	.2447049	-0.053	0.958	-.4925798 .4666456
areac	.2386082	.2385757	1.000	0.317	-.2289916 .706208
aread	-.128253	.2551375	-0.503	0.615	-.6283134 .3718074
areae	-.0581602	.2647835	-0.220	0.826	-.5771264 .460806
areaf	-.0838949	.2873541	-0.292	0.770	-.6470985 .4793087
areag	-.1934219	.3234673	-0.598	0.550	-.8274062 .4405625
socal	2.545601	.6025929	4.224	0.000	1.364541 3.726661
soca2	.0630005	.2338215	0.269	0.788	-.3952812 .5212821
soca3	.1388484	.2292524	0.606	0.545	-.3104781 .5881749
soca4	-.0104191	.2317154	-0.045	0.964	-.4645729 .4437348
soca5	.2767048	.2158213	1.282	0.200	-.1462971 .6997068
soca6	-.3161785	.2469047	-1.281	0.200	-.8001027 .1677458
soca7	.4319679	.2262417	1.909	0.056	-.0114576 .8753934
soca8	.4336818	.2456903	1.765	0.078	-.0478623 .9152258
soca9	-.4898012	.2674114	-1.832	0.067	-1.013918 .0343154
satal	1.104533	.1963765	5.625	0.000	.7196425 1.489424
sata2	1.415223	.2042074	6.930	0.000	1.014984 1.815462
sata3	.8183417	.1768748	4.627	0.000	.4716734 1.16501
sata4	.8726731	.1776755	4.912	0.000	.5244354 1.220911
sata5	.4026344	.161021	2.501	0.012	.0870391 .7182297
sata6	.242936	.1755627	1.384	0.166	-.1011605 .5870326
smallemp	-.1330156	.0945148	-1.407	0.159	-.3182612 .05223
constant	-2.109902	.4331441	-4.871	0.000	-2.958849 -1.260955

d. Matching procedures

Two matching procedures were used, (i) nearest neighbour, (ii) caliper.

Under nearest neighbour matching, for each guidance case, the comparison case was identified which was closest to it in terms of its propensity score (see Chapter One for explanation). A comparison case was permitted to provide the match to more than one guidance case. The weight for a comparison case equals the number of guidance cases for which it is the nearest neighbour. Those which are never a nearest neighbour have weight=0 and so are excluded from analyses. The nearest neighbour matching at the first follow-up survey used 332 cases from the comparison sample to match the 669 cases available from the guidance group.

Under caliper matching, for each guidance case all cases in the comparison sample are identified which are either nearest neighbours, or fall within a given tolerance. The tolerance used was 0.005 on the propensity score (which varied from near zero to near unity). For each guidance case, the matched comparison cases are given a partial weight equal to the reciprocal of the number of matches: this implies that the weighted N for the comparison sample is equal to the N for the guidance sample. The total weight for each comparison case equals the sum of its partial weights. Caliper matching at the first follow-up survey used 977 cases from the comparison sample but this was re-weighted to 669 cases.

e. Effect of the matching procedures

The effect of the matching procedures can be checked by comparing the means for the guidance and comparison groups before and after weighting, on each of the variables predicting participation in guidance. This is shown in the table below, which covers the majority of the variables shown in part (b) of this Annex.

Variable label	Unweighted		After weighting (comparison)	
	Comparison	Guidance	Caliper	Nearest neighbour
female	61.7%	59.2%	59.7%	63.7%
age	34.9	34.0	33.2	33.0
*depch02	12.2%	7.0%	5.5%	3.6%
*depch34	6.9%	5.1%	3.8%	3.1%
*depch511	18.5%	15.8%	15.3%	15.5%
*depch16	8.4%	8.1%	6.9%	6.6%
nonwhite	7.5%	9.9%	11.3%	10.3%
degree	34.3%	33.1%	36.6%	38.9%
alevel	13.3%	10.8%	10.9%	11.1%
trnempd	37.6%	38.4%	40.2%	36.9%
trnselfd	22.6%	28.8%	28.2%	29.1%
newedud	35.0%	55.2%	58.0%	58.9%
newempd	24.5%	41.9%	43.1%	44.8%
neword	22.8%	43.5%	42.7%	42.6%
selfemp	11.5%	5.5%	5.1%	5.8%
ft	72.2%	82.8%	81.2%	77.6%
soca2	12.3%	9.5%	7.1%	7.8%
soca3	14.6%	13.8%	14.3%	14.2%
soca4	13.8%	10.7%	10.2%	11.1%
soca5	18.4%	25.8%	32.7%	34.7%
soca6	9.6%	5.6%	5.8%	5.1%
smallemp	36.4%	27.0%	27.0%	31.0%
+jobsatd	4.72	3.58	3.52	3.46

* Variable defined over both female and male respondents. + continuous scale.

Annex 4: Supplementary tables

Table A4.1 Participation in full-time education and training (FTE)¹:first follow-up

Basis of comparison ^{2,3}		Guidance (%)	Comparison (%)	Relative risk ratio	95%	95%	N (Guidance)	N ⁴ (Comparison)
					Confidence (lower bound)	Confidence (upper bound)		
Began new FTE in 1997	Crude samples	3	0.4	7.72*	2.66	22.39	693	1019
	Nearest neighbour (to t2)	2.9	0.3	10.05*	1.35	74.71	645	341
	Calliper weighted (to t2)	3.1	0.4	7*	2.1	23.36	669	669
Began new FTE, January 1998 to first follow-up	Crude samples	3	0.6	5.15*	2.09	12.69	693	1019
	Nearest neighbour (to t2)	2.8	0.6	4.76*	1.11	20.39	645	341
	Calliper weighted (to t2)	2.7	0.6	4.5*	1.53	13.23	669	669
Began new FTE 1997/98 to first follow-up	Crude samples	5.9	1	6.03*	3.04	11.95	693	1019
	Nearest neighbour (to t2)	5.6	0.9	6.34*	1.97	20.45	645	341
	Calliper weighted (to t2)	5.7	1	5.43*	2.44	12.07	669	669
Currently in FTE at first follow-up	Crude samples	5.6	0.7	8.19*	3.69	18.21	693	1019
	Nearest neighbour (to t2)	5.1	0.6	8.72*	2.11	36.13	645	341
	Calliper weighted (to t2)	5.2	0.6	8.75*	3.13	24.48	669	669

An asterisk(*) denotes significant at the 95% level of confidence or above and that this favours the guidance sample.

¹ Participation in FTE recorded as work history main status only.

² Weights are those calculated for the samples retained at the first follow-up

³ Nearest-neighbour weights are deflated to represent the real number of comparison cases.

⁴ Calliper-weighted sample size is less than the number of real contributory cases and confidence intervals are, therefore, conservative.

Table A4.2 Participation in full-time education and training (FTE)¹: second follow-up

	Basis of comparison ^{2,3}	Guidance (%)	Comparison (%)	Relative risk ratios	95% Confidence (lower bound)	95% Confidence (upper bound)	N (Guidance)	N ⁴ (Comparison)
Information gathered at second follow-up only								
Began new FTE between first and second follow-up	Crude samples	5.2	1.4	3.82*	1.9	7.73	464	813
	Nearest neighbour	5.1	0.4	12.42*	1.69	91.44	448	242
	Calliper weighted	5.1	1.6	3.29*	1.42	7.58	448	448
Currently in FTE begun since first follow-up	Crude samples	4.1	0.2	16.65*	3.9	71.14	464	813
	Nearest neighbour	4	0.4	9.72*	1.31	79.39	448	242
	Calliper weighted	4	0.4	9*	2.1	38.56	448	448
Currently in FTE begun at any stage	Crude samples	5.8	1.1	5.26*	2.49	11.08	464	813
	Nearest neighbour	5.6	0.8	6.75*	1.61	28.27	448	242
	Calliper weighted	5.6	1.1	5*	1.93	12.94	448	448
Information combined from both follow-up stages								
Began new FTE after first follow-up, and not in FTE as main status of first follow up	Crude samples	2.6	1.4	1.91	0.85	4.3	464	813
	Nearest neighbour	2.7	0.4	6.48	0.85	49.55	448	242
	Calliper weighted	2.7	1.6	1.71	0.68	4.31	448	448
Began new FTE Jan1998 to second follow-up	Crude samples	7.1	2	3.61*	2.01	6.49	464	813
	Nearest neighbour	6.7	1.2	5.4*	1.67	17.52	448	242
	Calliper weighted	6.7	2	3.33*	1.6	6.94	448	448
Began new FTE in 1997/98/99, to second follow-up	Crude samples	8.6	2.2	3.89*	2.26	6.71	464	813
	Nearest neighbour	8.3	1.2	6.66*	2.08	21.38	448	242
	Calliper weighted	8.3	2.2	3.7*	1.66	7.35	448	448

An asterisk(*) denotes significant at the 95% level of confidence or above and that this favours the guidance sample.

Notes: ¹Participation in FTE recorded as work history main status, to first follow-up and by unrestricted direct questioning, for the period from the first to the second follow-up

²Weights are those calculated for the samples retained at the second follow-up

³As table A4.1

⁴As table A4.1

Table A4.3 Participation in Additional Education and Training (AET)¹: first follow-up

	Basis of comparison ^{2,3}	Guidance (%)	Comparison (%)	Relative risk ratios	95% Confidence (lower bound)	95% Confidence (upper bound)	N (Guidance)	N ⁴ (Comparison)
Began taught courses with qualification aim, 1997/98 to first follow-up	Crude samples	47.1	30.2	1.56*	1.38	1.76	686	1014
	Nearest neighbour	47.8	33	1.45*	1.22	1.72	638	339
	Calliper weighted	47.4	37.3	1.27*	1.12	1.44	662	664
- and/or began taught courses fully-paid by employer (inc. salary)	Crude samples	45.6	42.9	1.06	0.95	1.18	682	1016
	Nearest neighbour	46.8	47.1	0.99	0.86	1.14	635	340
	Calliper weighted	45.8	43.8	1.05	0.93	1.18	659	666
-and/or began other taught courses, open learning, or other instruction	Crude samples	42.4	35.6	1.19*	1.06	1.35	684	1015
	Nearest neighbour	43.1	41.8	1.03	0.88	1.2	636	340
	Calliper weighted	42.7	38.6	1.11	0.97	1.26	660	666
Any of the above	Crude samples	77.6	66.6	1.17*	1.01	1.24	693	1019
	Nearest neighbour	78.8	76.2	1.03	0.96	1.11	645	341
	Calliper weighted	78.2	75.9	1.03	0.97	1.09	669	669
Began any of the above within 1997	Crude samples	61.6	49.9	1.24*	1.14	1.35	693	1019
	Nearest neighbour	62.5	55.1	1.13*	1.01	1.27	645	341
	Calliper weighted	62.2	53.4	1.17*	1.06	1.29	669	669
Began any of the above Jan 1998 to first follow up	Crude samples	43.3	39.5	1.1	0.98	1.23	693	1019
	Nearest neighbour	43.9	43.1	1.02	0.88	1.18	645	341
	Calliper weighted	43.3	41.7	1.04	0.92	1.18	669	669

An asterisk(*) denotes significant at the 95% level of confidence or above and that this favours the guidance sample.

Notes: ¹Participation in education and training additional to FTE recorded in work history as main status

²As table A4.1

³As table A4.1

⁴As table A4.1

Table A4.4 Participation in additional education and training (AET)¹ by year of entry and source of financial support: first follow-up

	Basis of comparison ^{2,3}	Guidance (%)	Comparison (%)	Relative risk ratios	95% Confidence (lower bound)	95% Confidence (upper bound)	N (Guidance)	N ⁴ (Comparison)
Courses begun in 1997								
Began course(s) paid/part paid by employer within 1997	Crude samples	40.3	41.2	0.98	0.78	1.1	693	1019
	Nearest neighbour	41.6	42.8	0.97	0.83	1.13	645	341
	Calliper weighted	40.7	41.3	0.99	0.87	1.12	669	669
Began course(s) not paid/part paid by employer within 1997	Crude samples	32.3	15.1	2.14*	1.79	2.56	693	1019
	Nearest neighbour	32.4	20.2	1.6*	1.26	2.03	645	341
	Calliper weighted	32.6	20.3	1.6*	1.33	1.93	669	669
Began course(s) not paid/part paid by employer within 1997 – alternative measure ⁵	Crude samples	30.2	13.1	2.31*	1.9	2.81	693	1019
	Nearest neighbour	30.1	17.3	1.74*	1.34	2.26	645	341
	Calliper weighted	30.3	17.3	1.75*	1.43	2.14	669	669
Courses begun in 1998								
Began course(s) paid/part paid by employer within 1998 to first follow-up	Crude samples	28	32.9	0.85†	0.73	0.99	693	1019
	Nearest neighbour	28.2	34.6	0.82†	0.67	0.99	645	341
	Calliper weighted	27.8	34.5	0.81†	0.69	0.95	669	669
Began course(s) not paid/part paid by employer within 1998 to stage 2	Crude samples	19	10.6	1.8*	1.42	2.27	693	1019
	Nearest neighbour	19.4	14.1	1.38*	1.01	1.87	645	341
	Calliper weighted	19.1	12.4	1.54*	1.2	1.99	669	669

An asterisk(*) indicates significant at the 95% level of confidence or above and that this favours the guidance sample, whereas a cross (†) indicates significant at the 95% level of confidence or above and that this favours the comparison sample.

¹As table A4.3

²As table A4.1

³As table A4.1

⁴As table A4.1

⁵This provides a reliability check. Only those asserting positively according to the alternative measure were questioned further about this type of AET

Table A4.5 Participation in Additional Education and Training (AET)¹ between the first and second follow-up by type of course and source of financial support

	Basis of comparison ^{2,3}	Guidance (%)	Comparison (%)	Relative risk ratios	95% Confidence (lower bound)	95% Confidence (upper bound)	N (Guidance)	N ⁴ (Comparison)
Began short course(s) paid by employer	Crude samples	19	21.4	0.89	0.7	1.12	464	813
	Nearest neighbour	19.4	29.3	0.66†	0.5	0.87	448	242
	Calliper weighted	19.4	27.9	0.7†	0.55	0.89	448	448
Began longer course(s) paid by employer	Crude samples	9.7	8	1.21	0.84	1.74	464	813
	Nearest neighbour	9.8	8.7	1.13	0.69	1.86	448	242
	Calliper weighted	9.8	6.7	1.47	0.94	2.29	448	448
Began short course(s) without employer support	Crude samples	5.6	3.7	1.52	0.91	2.54	464	813
	Nearest neighbour	5.8	4.5	1.28	0.64	2.54	448	242
	Calliper weighted	5.8	5.4	1.08	0.63	1.86	448	448
Began longer course(s) without employer support	Crude samples	19	8.2	2.3*	1.71	3.1	464	813
	Nearest neighbour	19	7	2.7*	1.64	4.44	448	242
	Calliper weighted	19	7.8	2.43*	1.68	3.52	448	448
All courses <i>without</i> employer support: include courses undertaken for career reasons	Crude samples	15.5	5.2	3*	2.09	4.32	464	813
	Nearest neighbour	15.8	5.8	2.74*	1.58	4.76	448	242
	Calliper weighted	15.8	5.6	2.84*	1.84	4.4	448	448

An asterisk(*) indicates significant at the 95% level of confidence or above and that this favours the guidance sample, whereas a cross (†) indicates significant at the 95% level of confidence or above and that this favours the comparison sample.

¹Participation in education and training other than on a full-time basis, as elicited by direct questioning at the second follow-up

²As table A4.2

³As table A4.1

⁴As table A4.1

⁵As table A4.4

Table A4.6 Educational outcomes: unweighted tables

Outcome and stage of study	Guidance sample %	Comparison sample %
Outcomes at the first follow-up		
'Most important' AET begun in 1997 with employer support		
None in period or incomplete response	60.5	59.5
Left course before completion	2.3	2.6
Completed course without attaining qualification aim	0.6	0.3
Course continues (at first follow-up)	4.0	4.7
Completed course without qualification aim	23.2	22.1
Completed with qualification attained	9.4	10.9
'Most important' AET begun in 1997 without employer support		
None in period or incomplete response	70.1	87.0
Left course before completion	3.6	2.0
Completed course without attaining qualification aim	0.6	0.6
Course continues (at first follow-up)	7.2	2.7
Completed course without qualification aim	6.2	4.0
Completed with qualification attained	12.3	3.6
At least one qualification from 'most important' AET begun in 1997	20.8	13.9
'Most important' AET begun in 1998 with employer support		
None in period or incomplete response	72.4	67.8
Left course before completion	1.0	1.0
Completed course without attaining qualification aim	0.0	0.1
Course continues (at first follow-up)	5.6	5.9
Completed course without qualification aim	16.7	19.8
Completed with qualification attained	4.2	5.4
'Most important' AET begun in 1998 without employer support		
None in period or incomplete response	83.1	91.0
Left course before completion	1.7	0.5
Completed course without attaining qualification aim	0.4	0.2
Course continues (at first follow-up)	8.9	4.5
Completed course without qualification aim	2.6	2.3
Completed with qualification attained	3.2	1.6
At least one qualification from 'most important' AET begun in 1998	7.2	6.9
At least one qualification from 'most important' AET begun in 1997/98	25.3	18.4
...and/or from FTE begun in 1997/1998	25.5	18.4
Base (N)	(693)	(1019)
Outcomes at the second follow-up		
AET 'most important to career' begun after first follow-up		
None in period	56.3	65.9
Qualification aim and course continues	18.3	10.7
Qualification aim and course has ended	9.3	7.3
No qualification aim and course continues	3.7	2.5
No qualification aim and course has ended	12.5	13.7
Qualifications from courses of any kind since first follow-up	15.1	11.4
Any recorded qualifications (as above), 1997 to second follow-up	35.1	26.3
Any recorded qualifications (as above), 1998 to second follow-up	20.5	16.7
Base (N)	(464)	(813)

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Glossary

General

AET	Additional education and training – CET not of a full-time nature.
CET	Continuing education and training of a vocational nature, whether full-time or part-time.
FTE	Full-time education or training.
NVQ	National Vocational Qualification.
TECs	Training and Enterprise Councils: responsible at the time of the study for managing the main public programmes concerning training and employment, and support for small business, within England and Wales.

Statistical

Alpha	Coefficient of reliability for a scale consisting of several items. Alpha varies (in most cases) between 0 and 1; a high alpha indicates a more reliable scale
N,n	The number of observations available in a particular sample or a particular analysis
p	The probability of the reported result, or one more extreme than it, being encountered purely by chance.
r	The coefficient of correlation, which can vary from -1 to $+1$. A value close to zero indicates that two variables are unrelated, a positive value indicates that they are positively related, and a negative value that they are negatively related.
t	The t-statistic derives from an approximation to the normal distribution and indicates statistical significance. An absolute t-value of about 2 (more precisely, 1.96) indicates that the reported result, or one more extreme than it, would be encountered by chance only 1 in 20 times. Greater absolute t-values indicate higher levels of statistic significance.
z	The z-statistic is similar to the t-statistic