Education Maintenance Allowance: The First Year

A Quantitative Evaluation

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Executive Summary

Chapter 1 Introduction

One of the main aims of the Government's Connexions Strategy is to provide financial support for young people who might otherwise be unable to remain in full-time education post-16; that is, after the end of compulsory schooling. EMA is a means-tested allowance available to 16 to 19 year olds. It aims to encourage participation, retention and achievement among young people, particularly those from low-income families. **Section 1.1**.

This evaluation focuses on the four models of EMA that were introduced into the original 15 pilot LEAs in September 1999. The pilots have subsequently been extended to a further 41 LEA areas. **Section 1.2**.

As well as evaluating the impact of EMA on participation, retention and achievement, the evaluation must also make recommendations on the level at which EMA should be set; the effectiveness of bonuses for retention and achievement; and to whom EMA should be paid (parent or young person). The evaluation will also address a range of subsidiary issues relating to the effect of EMA on young people's lives.

The evaluation has four main elements, which combine both qualitative and quantitative research methods. This report focuses on the impact of EMA on those most directly affected, young people and their parents. It describes quantitative findings from the first wave of interviews with the first cohort of young people potentially eligible for EMA; those who completed compulsory education in summer 1999. **Section 1.3.**

Large samples of young people and their parents were interviewed in ten of the EMA pilot areas and eleven matched control areas. The selection of LEA areas to participate in the EMA pilot was not random – areas were chosen where there was most scope for EMA to have an impact (for example, they were known to have relatively high levels of deprivation, low participation rates in post-16 education and

low levels of attainment in Year 11 examinations). In order to estimate the effect of EMA it was necessary to find similar areas where no EMA was available (a 'counterfactual'). This was achieved by using matching techniques at both the LEA and individual level. **Section 1.4.**

Chapter 2 Young People, EMA and Education

Following a description of how LEA areas were selected to act as controls, or 'matched' to the rural and urban pilot areas, basic characteristics of the young people and their parents are described. **Sections 2.1 - 2.3.** The remainder of the chapter examines what young people were doing in the months immediately following the end of compulsory education to provide a context for the statistical modelling in Chapter 5.

Although firm conclusions cannot be drawn from this descriptive analysis, there are two patterns in the data that are consistent with a possible EMA effect. The first is participation rates in post-16 education amongst income eligible young people in those areas where EMA is being piloted. These were higher than amongst young people in the control areas who would have been eligible on income grounds if EMA had been available in these areas. The second is that this pattern was reversed amongst those young people who were not eligible for EMA. This is important for two reasons: (1) it suggests that estimates of increases in participation in full-time education among young people eligible for EMA in this analysis are on the low side (also confirmed by later results); and, (2) it shows that differences in participation rates amongst EMA eligible young people between the pilot and control areas may genuinely be the result of EMA, rather than because of other differences between the areas not measured in the survey.

The only setting where the second pattern was not observed was in rural areas where participation rates (which were the highest of any variant) were higher in those areas where EMA is being piloted for both groups: eligible and ineligible.

EMA has drawn young people into education who might otherwise have entered each of work/training, unemployment and 'other' destinations. The main exception to this

seems to be the rural pilot area, where the difference between destinations in the pilot and controls suggest that EMA has drawn most young people from work/training. **Section 2.4.**

In general LEAs had been very successful in promoting EMA to eligible young people and their parents, particularly in the light of the late announcement of EMA. Levels of awareness of EMA were high, particularly among eligible young people in full-time education (overall, 96% were aware of EMA). Eligible young people not in full-time education were much less likely to have heard of EMA. **Section 2.5.1.**

Overall, 63% of young people in lower income families in the pilot areas had applied for EMA and, despite some differences between LEAs, the vast majority of applications had been successful, and almost all young people had taken up their award by the time of interview. More than half of EMA awards were for the maximum amount of EMA. However, less than one per cent were for the minimum amount, which allows young people to access retention and achievement bonuses that are available to all EMA recipients, irrespective of the level of weekly payment. **Sections 2.5.1 – 2.5.4.**

Almost all young people reported that a learning agreement had been signed. Parents were said to have signed less often than young people or the school or college, except in variant 3 areas where EMA is paid to parents. Almost three-quarters (72%) of young people had retained a copy of their learning agreement. Almost all young people recalled at least one specific commitment that it contained, particularly attendance requirements and learning goals. **Section 2.5.5.**

Qualifications attained at the end of Year 11 by young people in the sample were lower than the national average. Confirming the findings of earlier research on the relationship between socio-economic status and examination performance, young people eligible for EMA on income grounds had much lower qualifications than the more affluent ineligible young people in both pilot and control areas. Young people in the pilot areas were slightly less well qualified than those in the control areas. This suggests that higher participation rates in the pilot areas were not simply the result of

young people in these areas having achieved more or better examination passes in Year 11. **Section 2.6.**

Young people in full-time education in the pilot areas were more likely to be studying for vocational qualifications than those in the control areas. **Section 2.7.**

Part-time work is associated more with socio-economic circumstances than receipt of EMA. Young people eligible for EMA on income grounds were less likely to work part-time than those who were ineligible. However, there were differences in levels of part-time work among EMA recipients across the variant areas. In particular, EMA recipients in the variant 3 areas, where EMA is paid to the parent, were more likely to be working than EMA eligible young people in the variant 3 control areas. **Section 2.8.1.**

EMA appears to have had very little effect in encouraging young people to give up part-time work. There was almost no difference between recipients and non-recipients who had given up work since Year 11, although EMA recipients in variant 3 areas were less likely to have stopped work than non-recipients. As with participation in part-time work it seems that eligibility for EMA is more important than receipt in explaining giving up work in Year 12. **Section 2.8.3**

EMA recipients were less likely to have worked part-time in Year 11 than non-recipients, but those who did work achieved better exam results at the end of Year 11 than those who did not. The same picture emerged for all EMA eligible young people who worked part-time, in both the pilot and control areas – better results were associated with part-time work during Year 11. **Section 2.8.4.**

EMA recipients were less likely to get pocket money from their parents than either non-EMA recipients or eligible young people in the control areas and, when they did, received lower average monthly amounts. Non-recipients in the pilot areas who were eligible on family income grounds for EMA were more likely to get pocket money and received larger amounts than recipients. In variant 3 areas, where EMA is paid directly to parents, although EMA recipients were less likely to receive pocket money than non-recipients or ineligibles in the control areas, this was not as marked as in

other variants; in addition, when young people in variant 3 did receive pocket money, they received the highest average amounts. It may be that when young people receive EMA directly, parents take the opportunity to stop giving pocket money or to reduce the amount given. **Section 2.9.**

It seems that, on these measures, EMA is not being used to supplement young people's spending on entertainment. Young people who were receiving EMA were more likely than other groups of eligible young people to be making a contribution to housekeeping costs, transport and books and equipment for school. They were also more likely to say that transport or books and equipment was their main item of expenditure. The exception seems to be recipients in the variant 3 areas where EMA is paid to parents. EMA 'recipients' in these areas had patterns of expenditure more similar to those of non-recipients and eligible young people in the control areas than to EMA recipients in other variant areas. **Section 2.10.**

Chapter 3 Intentions, Destinations and Decisions: What to do after Compulsory Education?

EMA seems to have influenced EMA eligible young people who had intended, during Year 11, to remain in education post-16. Their participation rate was significantly higher in the pilot areas than in the controls. It is also possible that young people in urban areas who had originally intended not to participate had also been influenced by EMA to remain in education. **Section 3.2.**

The group of young people who are not involved in education, employment or training (NEET) are of major concern to policy makers. One of the main objectives of EMA is to provide financial support to young people in low-income families who are disproportionately represented in the NEET group. Evidence from the survey suggests that fewer EMA eligible young people in the urban pilot than the urban control areas were in the NEET group following the introduction of EMA. **Section 3.3.1.**

Many EMA eligible young people in the NEET groups had found their post-16 decision more difficult to make than had young people who had gone into education,

work or training. However, some eligible young people in the economically inactive NEET group found their decision very easy. Mainly these were young people who were carers, or sick or disabled. Similarly, young people in the NEET groups were less likely than those in employment, work or training to think they had made the right post-16 decision. **Section 3.3.2.**

Financial reasons were a major factor in the decisions of EMA eligible young people in the NEET group not to continue in post-16 education. Other reasons included poor exam results, a dislike of their previous school and difficulties in accessing courses or a suitable institution. This suggests that financial incentives offered by EMA may need to be supplemented by other policy responses. **Section 3.3.3.**

EMA eligible young people in the NEET groups were much less likely to be aware of EMA than other eligible groups. Awareness was generally lower among eligible young people who had not intended to remain in education. Promoting the EMA more thoroughly to these young people might have influenced their decision-making. **Section 3.3.4.**

Further evidence for this was found in the substantial proportions of eligible young people not in post-16 education who said that a financial incentive would have made them consider staying-on. **Section 3.3.5**.

EMA eligible young people who were in the NEET groups were less likely to have had any source of advice to assist them in deciding their post-16 destinations. When they did have sources of advice, they had fewer advisors (**Section 3.4.1**). Young people in the NEET groups also reported less individual and group contact with the Careers Services. Overall, the majority of young people reported that Careers Services had little or no influence on their decision-making. However, one-quarter also said that they had played a major role (**Section 3.4.2**).

Eligible young people in the NEET groups reported more problems with their school experience. Their attendance rates had been lower and exclusions, truancy, bullying and sickness higher than for other young people. Their participation in work experience during Years 10 and 11 had been lower. **Section 3.4.3**.

Chapter 4 Methodological Approach to Estimating The Effect of EMA

The main set of estimates of the impact of EMA were derived using a matching approach. Carefully matching pilot area individuals to their closest counterparts in the controls solves the problem that the pilot and control areas may be quite different in their demographic composition. This approach is valid so long as all relevant differences between pilots and controls can be accounted for by characteristics of individuals which are observable in the survey data. Once individuals have been matched, the impact of EMA is measured by taking the difference in participation rates between pilots and their relevant controls. **Section 4.1 and 4.2.**

A regression model is used to obtain further understanding of important policy issues relating to the design of EMA, such as the effectiveness of each of the different variants being tested. This allows estimates of the impact of incremental changes in the amount of EMA offered. **Section 4.3.**

The final methodology contends with the problem that the pilot and control areas may differ from one another in ways that are not directly observable in the survey data, but which may be important for explaining differences between them in post-16 participation in education. For example, the labour market opportunities available to young persons could be different in our pilot and control areas. A methodology is outlined based on a matching and difference of differences approach designed to deal with this potentially serious evaluation issue. **Section 4.4.**

Chapter 5 The Impact of EMA

The first set of results using one-way matching techniques to show the overall impact of EMA on participation in post-16 full-time education *among young people eligible for EMA* showed that:

- The best estimate of the overall impact of EMA, before taking into account any possible area specific effects, is that there has been a gain in the pilot areas in

comparison to the control areas, amongst eligible young people, by around 5.0 percentage points**;**

- The estimated impact of EMA is larger in rural areas than in urban areas. In rural EMA areas the estimated gain in participation in post-compulsory education is 9.2 percentage points, compared with an estimated gain of 3.8 percentage points in urban areas;
- EMA is estimated to have had a larger effect on young men than on young women in both the urban and rural areas, which suggests that EMA may go some way towards closing the gap between males and females in participation in post-16 education;
- EMA has had a significantly larger effect on young people who are eligible for the full amount of EMA available compared to those who are eligible for a partial amount, although these results vary between urban and rural areas and by gender. Taking all areas together, the overall effect of EMA is a gain in participation amongst those eligible for the full EMA by seven percentage points, compared to 2.9 percentage points for those on the taper. **Section 5.2.**

Taking into account differences according to gender, area and the amount of EMA allowance received, these findings suggest that in the first year of EMA, there has been a gain in participation in full-time education in the pilot areas, amongst eligible young people, of **3 to 11 percentage points.**

The next set of results that used regression analysis to estimate the effects on participation in education of each extra £1 per week of EMA offered found that:

- Each additional £1 per week of EMA, ignoring the effects of bonuses, is associated with a 0.42 percentage point increase in post-16 school participation for rural men, and 0.12 percentage points increase for rural women. For urban males this figure is 0.21 percentage points and for urban females 0.13 percentage points. The estimated impact for urban variant 3 where EMA is paid directly to the parent is not significantly different than for the other urban variants. Taking into account the additional retention bonuses paid does not alter these results significantly.
- If the more generous EMA in urban variant 2 had been made available to all the urban pilot areas, this would have increased the overall participation rate by an

additional 1.2 percentage points amongst eligible young people over and above the participation rate obtained under variants 1 and 3. **Section 5.3.**

The final results tested the robustness of these estimates by using several two-way matching techniques. These techniques allowed further unobserved differences between pilots and controls which may affect educational participation, (referred to as 'area specific effects'), to be taken into account. Although the results do not provide a clear-cut picture of the size and direction of possible area specific effects, the overall picture was as follows:

- Although not significant, most of the estimates suggest that the overall impact of EMA may be somewhat higher than the results presented above once area specific effects are taken into account. Estimates of the additional overall impact of EMA range from -1.7 percentage points to 6.6 percentage points once these effects are considered.
- Again, although not statistically significant, when urban and rural areas are considered separately, it appears that the impact of EMA in urban areas may be somewhat higher than the main set of estimates suggests, but somewhat lower in rural areas. This result for the rural areas accords with Careers Services data which show that school participation was higher in the rural pilot area than in its control areas before EMA was introduced. **Sections 5.4 and 5.5.**

The findings presented in this report cover just one aspect of the first phase of the evaluation of the EMA. Further data to be collected and refinements to the analysis mean that these findings must be regarded as *interim only*. Indeed, while all of the results reported from the one-way matching are found to be statistically significant, at least at the five per cent level, it is important to remember that the true effect of EMA could differ from that found in year one of the evaluation.

1 Introduction

The Department for Education and Employment (DfEE) has commissioned a consortium of organisations to evaluate the piloting of Education Maintenance Allowances (EMAs). The consortium, led by the Centre for Research in Social Policy (CRSP), includes the National Centre for Social Research, the Institute for Fiscal Studies (IFS) and the Institute for Employment Research (IER).

This report contains results from the first wave of quantitative interviews with young people and their parents following the introduction of EMA. This chapter first describes the policy context for EMA and its structure and coverage. This is followed by a brief description of the overall evaluation and of the design of the quantitative element. Chapter 2 then contains descriptive analysis of some of the characteristics of young people in the survey. In addition to providing information about previously under-researched areas, this chapter also provides a context for the analyses in Chapter 5. Chapter 3 continues the descriptive theme, examining young people's intentions about their future after the end of compulsory schooling and their actual destinations. It focuses on the group of young people who, at the time of interview, were not in education, employment or training (NEET) – a group currently of major concern to policy makers and on whom it was hoped EMA might have a major impact (see further, below). Chapter 4 describes in detail the methodological approach adopted to estimate the effect of EMA on participation in post-16 education. Finally, Chapter 5 contains the results of the statistical modelling of the effect of EMA on participation rates, amongst eligible young people in full-time education.

1.1 Policy Context

The education and training needs of young people continue to be a key issue within government policy. An integral part of this agenda is to expand learning opportunities for all young people in order to improve economic competitiveness and success at two levels. First, to meet the need for a stronger vocational education and training system in order to fill the skills gap in relation to technical and associate professional skills. This has been identified as an area in which the UK lags behind its European competitors (National Skills Task Force; 2000). Second, despite overall increases in the rates of participation in post-compulsory

education, research evidence has highlighted the influence of social class differences on levels of participation and attainment rates. Young people from lower socio-economic groups appear to be much less likely than other young people to remain in full-time education after the age of 16 (Newburn, 1999; Dearden, 1998). Recent policy initiatives have been designed to overcome recognised barriers to participation in learning and in so doing, to transform education into a tool to tackle social exclusion and economic disadvantage. As the Prime Minister stated in his forward to the Social Exclusion Unit's (SEU) report 'Bridging the Gap: New Opportunities for 16 - 18 year olds not in education, training or employment':

> *'The best defence against social exclusion is having a job, and the best way to get a job is to have a good education, with the right training and experience.'*
>
> (CM4405/SEU, 1999b)

In order to achieve these policy objectives, the Government intends to move to a more integrated model of education and training for 14-19 year olds. This is to be implemented under the Connexions Strategy (SEU, 1999a; DfEE, 2000), which will ensure the development of:

- Information, advice, support and guidance services, including outreach facilities, to connect and reconnect young people with learning;
- An appropriate, flexible curriculum that engages all young people and leads to relevant, sought-after qualifications by young people and employers;
- High-quality provision in school sixth forms, in FE colleges and in work-based training; and,
- The targeting of financial support for young people in learning.

While the strategy covers all young people, it is particularly focused on ensuring inclusion for young people who are vulnerable - that is those who may be at risk of long-term exclusion This will therefore include those young people who are defined in policy terms as the NEET (not in education, employment or training) group. One component of the strategy is the Learning Gateway, which aims to identify young people at school who are at risk of underachieving and of failing to participate in post-16 education and training, as well as offering support and advice to young people in the NEET group.

There are links between a young person's family and school background and their participation in post-16 education. Young people who have been excluded from school are at least twice as likely to be non-participants in post-16 education as young people who have attended school on a regular basis. There is also a clear link "between disadvantaged family circumstances and difficult school backgrounds (a history of bullying, truancy and exclusion, and poor attainment pre-16) on the one hand and lower participation and performance post-16 and other problems such as crime, drug misuse and ill-health on the other" (DfEE, 2000, p.14).

One barrier to remaining in post-compulsory education for many young people is lack of financial support. Indeed, many disaffected young people perceive one of the key obstacles to participation in further and higher education to be a lack of money (Istance, Rees and Williamson, 1994; Wilkinson, 1995). In addition, post-16 student support is subject to variations in local decision-making, so that where a student lives will determine how much or how little financial support they will receive (Herbert and Callender, 1997; Kennedy, 1997). The current system of financial support was criticised by the Social Exclusion Unit as being unable to offer disadvantaged young people sufficient incentives to participate in learning, as opposed to moving into employment (Cm 4405/SEU, 1999b). Moreover, a lack of financial support for young people in post-16 education may also impact on retention rates, in that young people from disadvantaged backgrounds may be forced to abandon full-time education, in favour of the 'guaranteed' financial incentives offered within employment or government-supported training.

The Education Maintenance Allowance (EMA) provides young people, in particular those from low-income families, with some financial support to encourage them to remain in post-16 learning. The purpose of EMA is to encourage participation, retention and achievement in post-16 learning amongst young people who otherwise could not afford to remain in education, who may be at risk of disaffection, or who might opt for the short-term financial benefits accruing from semi-skilled or unskilled and often low-paid work.

1.2 Education Maintenance Allowance

The EMA is an allowance paid to 16-19 year olds (or in some areas to their parents), eligibility for which is dependent on parental income. The pilot provision started in September 1999.

There are four models of the EMA, which are being tested in 15 pilot Local Education Authorities (LEAs) (see Box 1). Variations exist in terms of the weekly amount of EMA available, to whom it is paid (either the young person or their parents), and in the amounts which are paid for retention and achievement bonuses. The full weekly allowance is payable if the total parental taxable income does not exceed £13,000, while for those with a total parental income of between £13,000 and £30,000 (£20,000 for the London pilot), EMA is progressively tapered, down to a minimum weekly allowance of £5. From September 2000, the availability of EMA was extended to young people living in an additional 41 LEAs.

Box 1.1 The Four Variants of EMA

Variant 1: £30 per week plus £50 retention and £50 achievement bonus;

Variant 2: £40 per week plus £50 retention and £50 achievement bonus;

Variant 3: £30 per week paid to the parent plus £50 retention and £50 achievement bonus;

Variant 4: £30 per week plus £80 retention and £140 achievement bonus.

1.3 The EMA Evaluation

The main aim of the evaluation is to assess the impact of EMA on 16-19 year olds' participation, retention and achievement in full-time education. In addition, the evaluation must also make recommendations on:

- The level at which EMA should be set;
- The effectiveness of bonuses for retention and achievement; and,
- To whom EMA should be paid (young person or to parents).

There are other subsidiary questions that will be addressed in the course of the evaluation, including:

- What is the take-up rate for EMA?
- Does EMA affect Year 11 decision-making?
- Does EMA reduce reliance on part-time work and/or increase expenditure?
- Does the availability of EMA improve attendance, retention and achievement in post-16 education?
- Does EMA reduce post-Year 11 participation rates in employment and training?
- Does EMA reduce the number of young people not in education, employment or training (NEET)?
- Does EMA affect the transfer of money within households?
- Does EMA affect education and work decisions made at the age of 18 or 19?
- How are EMA allowances spent?

The evaluation started in 1999 and will be completed in 2003 and is being undertaken with the first 15 pilot areas. It has four main elements, each of which has been designed to inform and be informed by the other three. This report presents the findings from interviews with young people and parents in Cohort 1 Wave 1 of the quantitative evaluation (1.3.3). Further reports are produced by the EMA evaluators on the implementation of EMA, the contextual data relating to EMA pilot areas, a statistical evaluation of LEA and Careers Services' databases in Leeds and London and the qualitative research with young people and parents. Additional evaluations of transport provisions and flexibilities to the scheme for vulnerable groups are also being conducted.

1.3.1 Implementation of EMA

The evaluation will need to provide advice to policy makers on good practice in implementing EMA if the decision is made to roll out the policy nationally. Interviews with administrators of EMA in each pilot LEA are being undertaken annually throughout the life of the pilot. These usually take the form of round table discussions with members of the Implementation Groups that have been set up in each pilot LEA to oversee the administration of EMA. Implementation Groups are made up of representatives from the Local Education Authority (LEA), schools and colleges, and local careers service companies.

Also, in 1999, individual interviews were undertaken with key informants such as representatives from local employer organisations, TECs and other relevant local bodies to

ensure that the full range of opinions about, and experiences of, EMA are represented in the evaluation.

1.3.2 The context of EMA

In order to measure the effect of EMA across the pilot areas it is vital to understand the context in which it is operating. Contextual information is being collated for each area on an annual basis to provide essential data about variations in education, labour market and socio-economic factors.

1.3.3 Direct experiences of EMA

Qualitative and quantitative methods are being used to evaluate the impact of EMA on those most directly affected - young people and their parents. The quantitative design is a longitudinal cohort study involving large surveys of random samples of young people in both the pilot and control areas. A fuller description of the quantitative design is given below (Section 1.4) and details of how the control areas were selected can be found in Annex A1.

Two cohorts will be studied; young people who completed Year 11 (the end of compulsory schooling) in summer 1999 and those completing Year 11 in summer 2000. The first round of interviews with each cohort is conducted face-to-face and includes an interview with a parent or guardian of the young person. Findings from these interviews with the first cohort are the subject of this report. Two subsequent waves of telephone interviews are to be undertaken at annual intervals and, for the first cohort, a fourth wave in 2002 to assess any longer term effects of EMA on labour market and other outcomes for young people.

Box 1.2 Survey Design

Cohort 1

Wave 1 →	Wave 2 →	Wave 3 →	Wave 4
Face-to-face	Telephone	Telephone	Telephone
1999	2000	2001	2002

Cohort 2

Wave 1 →	Wave 2 →	Wave 3
Face-to-face	Telephone	Telephone
2000	2001	2002

A small sub-sample of young people and their parents from the first cohort (in each pilot area) are also taking part in a qualitative study. The purpose of these interviews is to understand more about the processes underlying the decisions which young people make about post-compulsory education and, specifically, about the impact of EMA on their lives. A sub-sample of these young people will be re-interviewed in 2001.

1.3.4 Leeds and Inner London

The Local Education Authorities (LEAs) in Leeds and Inner London (Lambeth, Southwark, Lewisham and Greenwich) were allocated EMA in the first year of pilot provision using different local arrangements. They could not, therefore, be included in the main evaluation. Instead a smaller-scale statistical evaluation, based on data which is available from the LEAs and local careers services, is being undertaken on an annual basis. This will provide some limited information about the impact of EMA on participation rates in post-compulsory education. In addition, using a case study approach, a number of schools and colleges will be visited each year to assess the effect of EMA pilot provision on local attendance and retention rates.

1.4 Design of the Statistical Evaluation of EMA

The basis of the statistical evaluation is surveys with young people and their parent(s) in ten EMA pilot areas and eleven control areas. The sample for this first cohort was of young people who completed Year 11 in the summer of 1999. Two questionnaires were designed in consultation with the DfEE.

A household and parent or guardian's questionnaire to provide information about:

- Household composition, relationships, tenure, income and ethnicity;
- Education decisions and current activities of the young person's siblings;
- Parent's occupation and educational qualifications;
- Involvement of parents in the young person's decisions about what to do at the end of Year 11;
- The young person's childhood;
- Parent's attitudes to education; and,
- Sources of funding for the young person post-16, including EMA.

A young person's questionnaire which covers:

- Activities since Year 11 and at the time of interview, including courses being studied and part-time work for those in full-time education;
- Experiences during Years 10 and 11 at school, including qualifications entered for and obtained;
- Year 11 decisions about what to do next, sources of advice and help, and reasons for decisions;
- Sources and amounts of income, including EMA; and,
- Expenditure patterns and amounts.

1.4.1 Sample sizes and source

Sample sizes drawn for the first wave of interviews were chosen to be sufficiently large to:

- Allow statistically significant differences of approximately five percentage points in participation, retention and achievement between pilots and controls and between the different EMA variants to be measured; and,
- Take account of the proportion of young people who would inevitably drop out of the evaluation in subsequent waves of interviews (sample attrition).

The sample was drawn by the Department for Social Security (DSS) from Child Benefit records, following specifications provided by the National Centre for Social Research. Eligible young people were those who were born between 01 September 1982 and 31 August 1983 and lived in one of the 21 pilot and control LEA areas covered by the study, as defined by postcode. A small proportion of 'cases in action', that is cases where special arrangements were being made by the Benefit Office, were excluded by the DSS.

The National Centre specified a random method for selecting the required number of young people for each LEA, to form a total sample of 17,000. The additional sample above target was to allow for attrition arising from 'opt-out' (see below) and non-response.

The target number differed between LEAs according to whether they were pilot or control areas. For urban LEAs a simple random sample of eligible young people was drawn. For rural LEAs, which covered larger distances, a two stage sampling method was followed with a first stage of selecting postcode sectors with probability according to their populations of eligible young people, and a second stage of selecting a fixed number of young people.

Following selection of the sample, an opt-out mailing was administered by the DSS at the start of October 1999. The letter was addressed to the parent or guardian who received Child Benefit for the young person. Eight per cent of the original sample opted out, leaving 15,704 young people to be contacted for the main stage. The remainder of the sample was then provided to the National Centre, which was then clustered into sample points containing approximately 20 records each.

The total target sample size was 11,169. A detailed breakdown of the target sample sizes for each area is provided in Appendix A1.1.

1.4.2 Fieldwork and response rates

Fieldwork was undertaken by the National Centre for Social Research between November 1999 and April 2000 using Computer Assisted Personal Interviewing (CAPI). Of the original target sample size of 11,169 interviews with young people, 10,646 were achieved. A post opt-out response rate of 72 per cent was achieved. This increased to 78 per cent when young people who had moved or those who could not be contacted because details of the address provided were insufficient were excluded from the issued sample. In 96 per cent of cases a successful interview was also obtained with the parent.

Details of the achieved sample size in each area are compared with the original target sample size in Appendix A1.2.

1.4.3 Weighting

Weights were constructed to correct for potential sources of bias. In what follows, all data are weighted unless stated otherwise.

1.4.4 Analytic strategy

The selection of LEA areas to participate in the EMA pilot was not random. Urban areas were chosen that were known to have relatively high levels of deprivation, low participation rates in post-16 education and low levels of attainment in Year 11 examinations. In short, areas were chosen where there was most scope for EMA to have a positive impact. In addition, one pilot area was selected to enable the potential impact of EMA in rural areas to be evaluated. It was essential that as far as possible control areas mirrored pilot areas, otherwise differences in characteristics associated with participation in post-16 education

between individuals in pilot and control areas could have led to observed differences in participation that might incorrectly be attributed to an EMA effect. Conversely, depending on the direction of such 'confounding' differences, an EMA effect could exist but be masked and not identified. For example, if young people in the pilot areas were more likely than those in the control areas to have characteristics known to be associated with low participation in post-16 education, results of the area matching would under-estimate the effect of EMA.

In order to obviate potential problems with such confounding, statistical techniques were used to ensure that individuals in the pilot areas were as alike as possible in terms of their characteristics that are known to be related to participation in post-16 education. In other words, differences were controlled statistically using matching procedures. This 'matched statistical control' design was a two-stage process, the first matching pilots and controls at an area level, and the second matching at an individual level. Each stage is discussed more fully below (see also Chapter 4 and Appendix A2).

LEA matching and descriptive analysis

The first stage matched the pilot areas as closely as possible to control areas. This is the basis of the findings reported in Chapters 2 and 3. Chapter 2 also describes this matching process in greater detail.

The descriptive analysis in these chapters plays a number of important roles in the evaluation, the most significant of which for this report are:

- To provide a unique statistical account of young people in the initial period following the end of compulsory schooling;
- To compare individuals in the pilot and control areas in order to detect any differences which may confound the evaluation of the effect of EMA; and,
- To set the scene for the more sophisticated statistical modelling in Chapters 4 and 5.

Individual matching and statistical modelling

The second and subsequent stage of matching was at the individual level. Each individual in the pilot area was matched with an individual in the control area on a range of characteristics, information about which was collected from young people and their parents during the survey. This post hoc matching was necessary because, despite the care taken in matching

pilot with control areas, there remained the possibility that the areas were different in ways that might effect the decisions of young people about their future after compulsory education.

Normal regression techniques are a form of individual matching, but these will only produce unbiased estimates of the EMA effect under certain assumptions. If the range of important characteristics in both pilot and control areas are the same, then regression techniques will provide unbiased and efficient estimates of the EMA effect. If, however, the range of important characteristics vary between control and pilot areas, then regression estimates may be seriously biased (see Heckman, Ichimura and Todd, 1998). In order to overcome this potential problem, more sophisticated individual matching techniques need to be used and this is the approach taken in the report.

Initial matching at the individual level allowed comparisons only between the pilot and control areas. Further matching exercises were undertaken to allow more sophisticated modelling of the differential impact of EMA in urban and rural areas, in the different variants of EMA, and on young men and young women. Estimates were also made of the effect on participation in post-16 education of setting EMA at different levels and of retention bonuses. Further details of this matching process can be found in Chapter 4 with a more detailed statistical explanation in Appendix 5. The results of the modelling are described in Chapter 5.

2 Young people, EMA and education

2.1 Introduction

This chapter provides background information about young people included in the quantitative survey of the first cohort of the EMA evaluation. The aim is to provide a context for analysis contained in later chapters. Therefore, the focus is on evidence that provides interesting and useful information about young people and their experiences, rather than seeking to identify direct EMA effects that are the subject of the econometric modelling contained in Chapter 5.

The chapter begins by explaining how the LEA control areas were chosen and subsequently matched to the pilot areas (Section 2.2). Some of the personal and family characteristics of the young people and their parents are then described (Section 2.3). Next, what young people were doing at the time they were interviewed – their 'post-16 destination' – is examined (Section 2.4). This is followed by an exploration of awareness of EMA and levels of EMA applications and awards (Section 2.5). The qualifications gained by young people at the end of Year 11 are described in Section 2.6 and the courses chosen by young people who had remained in full-time education in Section 2.7. The extent to which young people combined full-time education with part-time work is the subject of Section 2.8. Finally, Section 2.9 reports on young people's receipt of pocket money and, in Section 2.10, how young people were spending their money.

Throughout this chapter the general approach is to distinguish first between all young people in the pilot and control areas as a whole, then between urban and rural pilot areas and finally between young people in each of the variants. In terms of EMA, the chapter divides young people between those who are potentially eligible for EMA on income grounds and those who are not. This division can be done for all young people in the sample, both in the pilot and control areas. Second, eligible young people in the pilot areas in full-time education are divided into those who had been awarded EMA at the time of interview and those who had not. (For simplicity, young people who had been awarded EMA at the time of interview are referred to as EMA recipients, although a small number of them had not actually received their award. See further, below, Section 2.5.3).

2.2 Matching Pilot and Control Areas

Chapter 1 has explained the need to find LEAs that could act as control areas for the pilot LEAs. These control areas had to match the pilot LEAs as closely as possible. This matching was undertaken in two stages. First, data from the two most recent Youth Cohort Studies (YCS) were used to select LEA control areas for the EMA evaluation which were as similar as possible to the pilot LEAs. On the basis of this analysis, LEAs that could potentially serve as control areas were provisionally assigned to each of the four variants. A number of these LEAs were intended to serve as control areas for more than one variant. There were, however, a number of problems in using YCS for this analysis that limits the accuracy of the matching. Therefore, once data from the EMA survey were available, the analysis originally undertaken on the YCS data was repeated on the EMA data, to improve the matching at the LEA level and finalise the allocation of control LEAs to pilots.[1] This enabled basic descriptive analysis to be undertaken at a very early stage and the findings of this analysis are reported in this chapter and Chapter 3. However, the quality of the matching varies to some extent by variant, with the best results being for urban Variant 3. This needs to be borne in mind when interpreting the analysis in these chapters.

2.3 Characteristics of young people and their parents

This section provides basic information about the characteristics of young people and their parents. Throughout, comparisons are made between samples in the pilot and control areas. (Further details of the sample and its characteristics can be found in Appendix 2).

[1] The matching at LEA level involved a three stage procedure which is described in detail in Appendix 2.1, along with the results of the matching.

2.3.1 Young people

Box 2.1 Summary

The overall sample contained:

- Equal numbers of young men and women;
- 8 per cent from non-white ethnic backgrounds;
- 14 per cent with some form of special educational needs;
- 73 per cent who lived with two parents and 26 per cent with a lone parent;
- 147 young people who were not living with a parental figure, of whom 10 per cent were teenage parents; and,
- Only 56 per cent who lived with two parents at least one of whom was in full or part-time work.

In addition,

- 48 per cent in pilot areas lived in families with annual incomes of £13,000 or less and so were eligible for the maximum award of EMA; and,
- 31 per cent were eligible for a partial EMA award.

As would be expected from a randomly drawn sample, there were equal numbers of young men and women in both the pilot and control samples. All young people in the sample were aged either 16 (64 per cent) or 17 (36 per cent). Approximately eight per cent were from non-white ethnic backgrounds and the largest proportion of these were of Indian or Pakistani origin (Table 2.1). The proportion of non-white young people in each ethnic group was slightly larger in the pilot areas. Fourteen per cent of the overall sample had some form of special educational needs. Five per cent of young people had a statement of special educational needs, and a further seven per cent had special educational needs but were not statemented. Two per cent had special needs but did not know whether they were statemented or not. These proportions were very similar between the pilot and control areas.

Table 2.1 Characteristics of the Young People

	Column per cent within categories		
	Overall	**Pilot**	**Control**
Age Last Birthday			
16 years	64	63	66
17 years	36	37	35
Ethnicity			
White	92	91	94
Indian	2	2	2
Pakistani	3	3	3
Bangladeshi	<1	<1	<1
Black	<1	1	<1
Other	2	2	1
Special Needs			
No	87	87	86
Yes – statemented	5	5	5
Yes - not statemented	7	7	8
Yes – don't know if statemented	2	2	1
Living with Parent(s) or Parental Figures			
Lone parent	26	27	26
Two parents	73	72	74
Guardian/foster parents/grandparents	1	1	1
Not Living with Parent(s) or Parental Figures			
With partner (with or without child)	30	29	31
With child but no partner	(10)	(4)	(17)
Without partner/child	60	68	51

Base: All young people
Note: Percentages in ( ) represent less than 20 cases.

The vast majority of young people were still living with their parent(s) or a parental figure such as a grandparent. Of those living with their parents or a parental figure, almost three-quarters lived with two parents and more than one quarter lived with a lone parent. Among the 147 young people who were not living with a parental figure at the time of interview, the largest proportion (60 per cent) were living without a partner or child and ten per cent were lone parents. There were four times more lone parents in the control than in the pilot areas.

Just under one third of young people not living with their parents had formed new relationships and were living with a partner, with or without a child.

2.3.2 Parents' and families' circumstances

The pilot and control areas were selected by the DfEE to provide a sample that over-represented young people who were least likely to stay on in education, to have lower levels of achievement at GCSE and higher levels of deprivation. It would therefore be expected that young people in the sample might display these and other characteristics known to be associated with low participation rates in full-time education post-16: low family income, living in rented housing, living in workless households and with parents themselves having low or no educational qualifications (participation rates in post-16 education and levels of achievement at GCSE are described later in this chapter).

Almost half of young people were living in families with annual incomes of £13,000 per annum or less, and therefore met the income eligibility criteria for the maximum award of EMA (Table 2.2). Just under one-third were eligible for a partial EMA award, and less than one quarter were not eligible for EMA because their family income was too high – more than £30,000 per annum. The income profile shows small differences between the pilot and control areas, with families in the control areas being slightly better off than those in the pilot areas. A similar pattern of slightly lower deprivation in the control areas also emerges for housing tenure, with young people slightly less likely to be living in rented housing in the control than in the pilot areas. Overall, 70 per cent of young people lived in owner-occupied housing and 28 per cent in rented accommodation.

The young people in the sample also experienced relatively high levels of labour market inactivity among their parents. Only just over half of young people lived with two parents where at least one was in full-time work. Almost one-quarter of the young people's parents had no educational qualifications; again, slightly more had no qualifications in the pilot than in the control areas.

Table 2.2 Characteristics of Parents and Family Circumstances

Column per cent within categories

	Overall	Pilot	Control
Family Income			
£13,000 and less	46	48	43
£13,001 - £21,500	18	17	18
£21,501 - £30,000	14	14	15
> £30,000	23	21	25
Tenure			
Owned outright	12	12	12
Buying with a mortgage	58	57	60
Rent	28	30	26
Other	2	1	2
Parent's Economic Activity			
2 parents – at least one in full-time work	52	51	54
2 parents – at least one in part-time work	4	4	3
2 parents – both inactive	7	8	6
1 parent – in full-time work	13	13	14
1 parent – in part-time work	10	10	10
1 parent – inactive	15	15	13
Highest Parental Qualification			
Degree and above	15	14	16
Higher education below degree	12	11	12
A level/vocational level 3	13	12	13
Trade apprenticeship	7	6	7
GCSE/O level A-C/vocational level 2	21	21	21
Vocational level 1 and below	7	8	7
Other	3	3	3
No qualifications	24	25	22

Base: All young people. Unweighted N=9804

This section has provided a brief snapshot of young people and their family circumstances. It has suggested that young people in the pilot areas were slightly less affluent than in the control areas. This should be borne in mind in comparisons between the pilot and control areas in what follows. In the remainder of the chapter, the focus is on young people's lives in the months immediately after the end of compulsory education.

2.4 Post-16 Destinations

Box 2.2 Summary

Although firm conclusions cannot be drawn from the following descriptive analysis, there are two patterns in the data that are consistent with a possible EMA effect:

- Participation rates in post-16 education amongst income eligible young people in the pilot areas are higher than among income eligible young people in the control areas;
- This pattern is reversed amongst those young people who are not eligible for EMA.

This suggests that: Estimates for young people eligible for EMA in this analysis may be on the low side (see Chapter 5); and that differences in participation rates amongst EMA eligible young people between the pilot and control areas may genuinely be the result of EMA, rather than of other differences between the areas not measured in the survey.

EMA appears to have drawn young people into education from work/training, unemployment and 'other' destinations, except in the rural pilot area where EMA seems to have drawn young people mostly from work/training.

This section describes young people's activities once they had finished compulsory schooling and how these 'destinations' varied between young people:

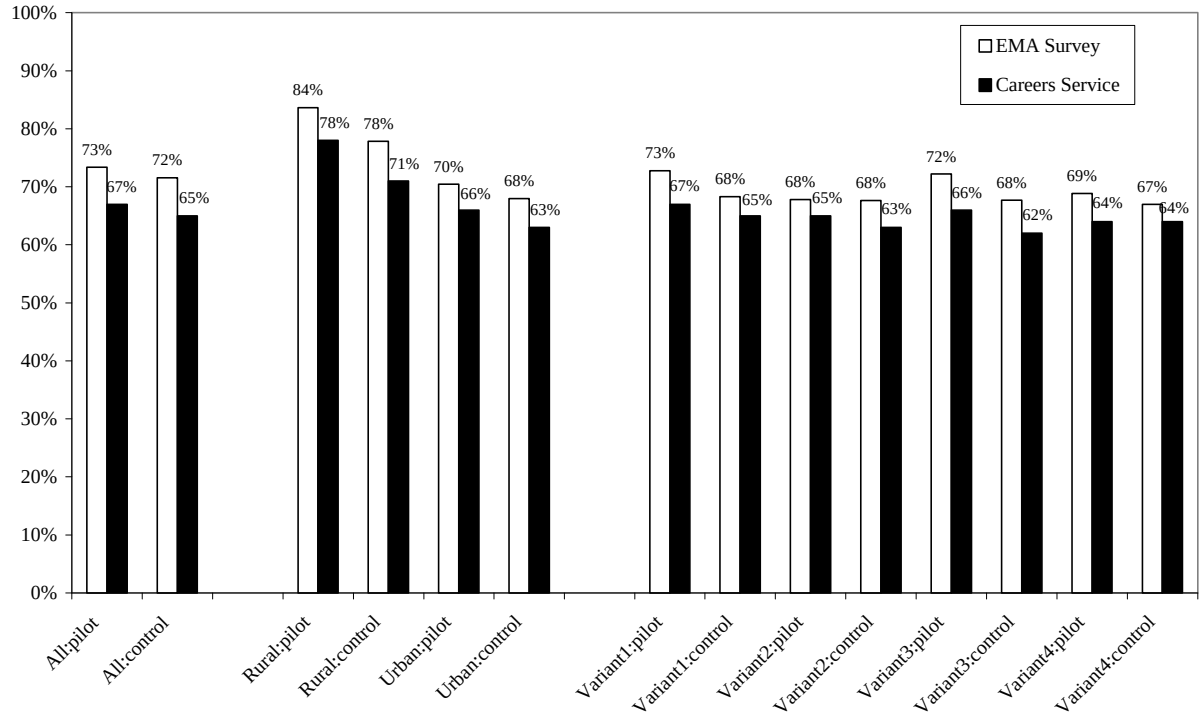
- In pilot and control areas;
- In rural and urban areas;
- In differing EMA variant areas;
- Who were or were not eligible for EMA on income grounds; and,
- Who were or were not receiving EMA.

Amongst all 16 and 17 year olds in the sample – eligible and ineligible, pilot and control – approximately three-quarters (73 per cent) said that they were in full-time education at the time of interview. Slightly less than one-fifth (17 per cent) said they were in work and/or training, and the remaining tenth described themselves as either unemployed and looking for work or involved in some other activity.

'Other activities' include part-time education; looking after the home or family; taking a break or on holiday; voluntary work; joining the armed forces; waiting to start a new job or training course or education course; or another, unspecified activity. This destination category also covers those young people who report an absence from education, employment or training on the grounds of disability, illness or pregnancy.

Participation rates for all young people in the survey (i.e. irrespective of eligibility for EMA) were compared with those produced by the Careers Services (CS) for the same LEA areas. The rates for the EMA sample were higher by on average six to seven percentage points (Figure 2.1). There are at least two possible explanations for this. First, the data were collected over different periods. CS data will have been collected earlier than the survey data - between August and November 1999 - whereas the survey fieldwork ran from November 1999 to April 2000. It may be that in the intervening period some young people changed their minds and decided to enter education after all. Second, the survey sample was drawn in October when at least some young people might have already left Child Benefit records if they went into work. Therefore, the sample might over-represent those who stayed on. Steps have been taken to try and ensure that this does not recur in the Cohort 2 survey.

Figure 2.1 Comparison of EMA and Careers Services Participation Statistics



Nevertheless, the patterns in participation rates are encouragingly similar between the two sets of data. CS data show overall participation rates to be two percentage points higher in the pilot areas than the controls (compared to a one percentage point difference in the survey data), seven points higher in the rural variant (compared to six points in the survey), and three points higher in the urban variants (two in the survey).

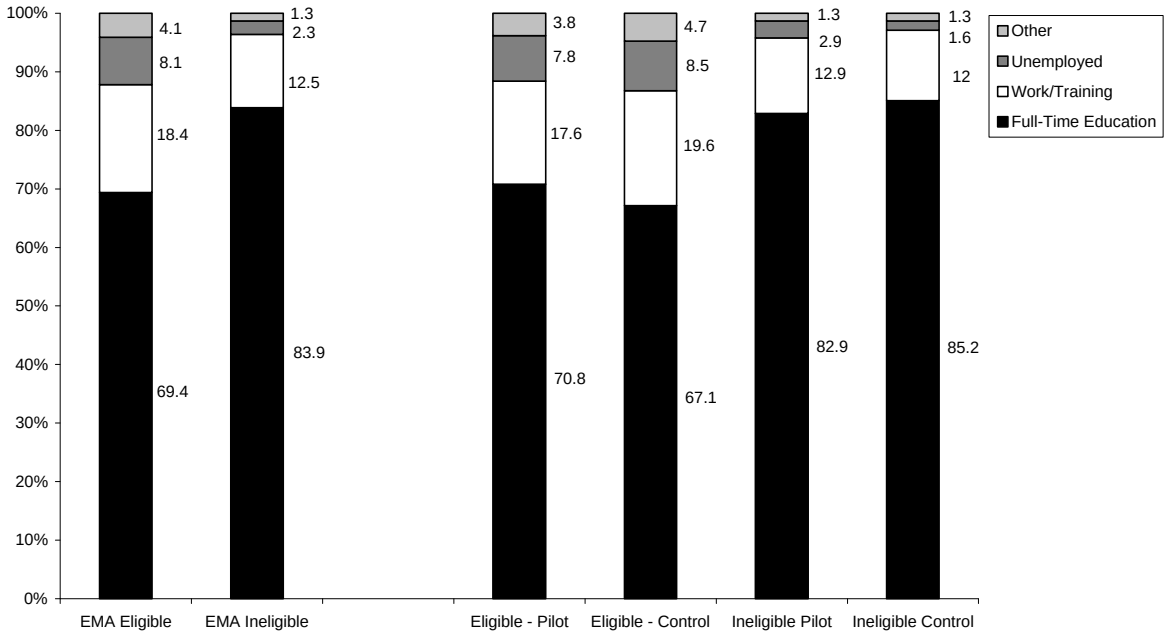
2.4.1 Post-16 destinations in the pilot and control areas

The effect of EMA will have been limited for this first cohort because of the short time between the announcement of the scheme and the start of the academic year. Many young people would therefore already have decided upon their post-16 destination before EMA was announced. Nevertheless, as Chapter 5 will show, EMA has had a significant effect on participation, which is partly masked in the results of this and the next chapter by differences in the distribution of socio-demographic and other characteristics between the pilot and control areas.

The proportion of young people eligible for EMA who were participating in full-time education was much lower (69.4 per cent) than for young people ineligible for EMA (83.9 per cent) (Figure 2.2). This pattern of lower participation rates among EMA eligible young people was found in both the pilot and control areas, urban and rural areas and in each of the four EMA variants (see below). This is as expected, given that eligibility for EMA is dependent on having family income below £30,000 per annum and that young people from low-income families are less likely to remain in post-16 education (Pearce and Hillman, 1998).

Almost four percentage points more young people who were eligible for EMA in the pilot areas were in full-time education at the time of the survey than in the control areas (Figure 2.2).

Figure 2.2 Destinations: EMA Eligible and Ineligible Young People



The four percentage point difference in participation between young people from lower income families in the pilot and control areas is lower than estimates of the effect of EMA described in Chapter 5. This is because the full effect of EMA is being partially masked by differences in socio-demographic and other characteristics between the pilot and control areas that are controlled for in the analysis in Chapter 5. Among those young people not eligible for EMA, a *smaller* proportion of young people in the pilot areas were in full-time education (82.9 per cent) than in the control areas (85.2 per cent). This also seems to suggest that the full effect of EMA may be masked here, in that young people in the pilot areas may have been less likely to remain in education than in the control areas before the introduction of EMA. Evidence from Careers Services data from previous years confirms that this is the case – on average participation rates in the pilot areas were slightly lower than in the control areas prior to the introduction of EMA.

The Government's aim of encouraging all young people completing compulsory education to continue in learning is supported by the establishment of the Connexions Services. This will focus in particular on young people who might otherwise drop out of learning. One objective of the EMA is to encourage young people from the NEET (not in education, employment or training) group to stay in or return to education. It is therefore important to consider from

which of the alternative post-16 destinations - of work and training, unemployment or 'other' - EMA seems to have drawn young people.

It seems that EMA may have drawn young people into education from each of the other three destinations:

- Two percentage points fewer EMA eligible young people were in work/training in the pilot than in the control areas;
- Unemployment was very slightly lower among EMA eligibles in the pilot areas (0.7 percentage points); and,
- 0.9 percentage points fewer eligible young people in the pilot areas were in the 'other' destination.

Comparing young people in the pilot and control areas who were not eligible for EMA shows that those in the control areas were *less or as likely* to be in each of these three destinations as those in the pilot areas. Again, the effect of EMA may be masked by unobserved differences between the pilot and control areas.

2.4.2 Destinations in the rural and urban areas

Structural factors, such as the availability of opportunities in the local labour market, the range and accessibility of education providers, and transport will all have an impact on young people's decisions about what to do at the end of Year 11. The contrast between rural and urban areas reflects many of these structural factors and is therefore useful in comparing young people's post-16 destinations.

Overall, a larger proportion of young people were participating in post-16 education in rural areas (81 per cent) than in urban areas (70 per cent). As a result, smaller proportions in rural areas were in each of the other three destinations, especially work or training and unemployment. Only 13 per cent were in work or training in the rural areas compared with 18 per cent in the urban areas. The corresponding figures for unemployment were three per cent and eight per cent respectively.

In the rural areas, among young people who were eligible for EMA, almost eight percentage points more were in education in the pilot than in the control areas (Figure 2.3). However, unlike the sample as a whole or, indeed, the urban areas, participation rates have been higher

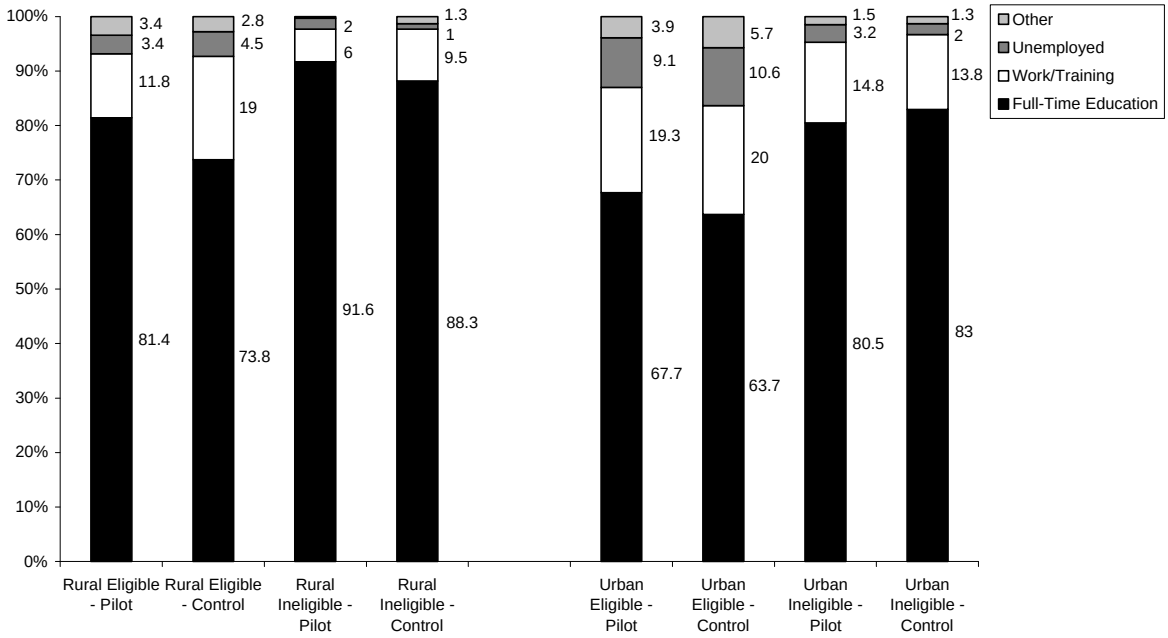
historically in the rural pilot area than in its controls and 3.3 percentage points *more* ineligible young people in the rural pilot area were in full-time education than in the control areas. Therefore, the figure of eight percentage points may be an over estimate of the impact of EMA. Nevertheless, although this figure is slightly lower than the initial estimate of the effect of EMA in rural areas of 9.2 percentage points shown in Chapter 5, it is much closer to the estimates of between 6.4 and 7.8 per cent that attempt to take account of area differences such as these (Table 5.15).

The impact of EMA in urban areas has apparently been smaller than in the rural areas. Four percentage points more eligible young people were in full-time education in the urban pilot areas than in the urban controls. As with the overall impact of EMA, this may be an under-estimate given that 2.5 percentage points *fewer* ineligible young people were in education in the urban pilots than in the urban controls. This is confirmed by evidence from the econometric modelling described in Chapter 5. Whilst the initial EMA effect in urban areas is estimated at 3.8 percentage points, more sophisticated analysis which controls for unobserved area effects suggests that the 'true' figure is somewhat higher (Table 5.15).

Entrance to destinations other than post-16 education in the urban and rural areas inevitably mirrors the figures for participation in full-time education. More young people in the urban areas, both eligible and ineligible, pilot and controls, are in work/training, unemployed or in some 'other' destination than in the rural areas (Figure 2.3). Young people from low-income families who are eligible from EMA were more likely to be in each of these three destinations than young people from higher income families who are ineligible for EMA.

In the rural areas, although work/training was the destination of 3.5 percentage points more EMA ineligible young people in the control than the pilot areas, the difference for eligible young people was very much greater. 7.2 percentage points fewer EMA eligible young people were in work/training in the pilot than in the control areas. In contrast, in the urban areas the proportion in work/training in the pilot areas was only 0.7 percentage points lower among EMA eligible young people than in the control areas. It seems that EMA may have drawn more young people from the work/training route in the rural than in the urban areas.

Figure 2.3 Destinations of EMA Eligible and Ineligible Young People: Urban and Rural Areas



Unemployment was generally more prevalent among young people in the urban than the rural areas. However, unemployment among young people from lower income families was lower in both the urban and rural pilot areas than in their respective control areas. Unemployment was:

- 1 percentage point lower among EMA eligible young people in the rural pilot than in the rural controls; and,
- 1.5 percentage points lower in the urban pilot areas than in the urban controls.

Unemployment was also *higher* among ineligible young people in both the urban and rural pilot areas than in their respective control areas. It may be, therefore, that unemployment among EMA eligible young people would have been higher without the introduction of EMA.

EMA also appears to have diverted some young people from the 'other' destinations, particularly in the urban areas:

- 1.8 percentage points fewer EMA eligible young people in the urban pilot areas were in the 'other' destination group than income eligible young people in the control areas.

Slightly less ineligible young people in the control than in the pilot areas were in one of these 'other' destinations.

- 0.6 percentage points more eligible young people in the rural pilot area were in the 'other' group than eligibles in the control areas. One percentage point more ineligible young people in the control areas were in this category than in the pilot areas.

It seems, therefore, that EMA may have been drawing young people into full-time education from all three alternative destinations: work/training (particularly in the rural areas); unemployment; and the 'other' destinations (particularly in the urban areas).

2.4.3 Destinations in the different EMA variant areas

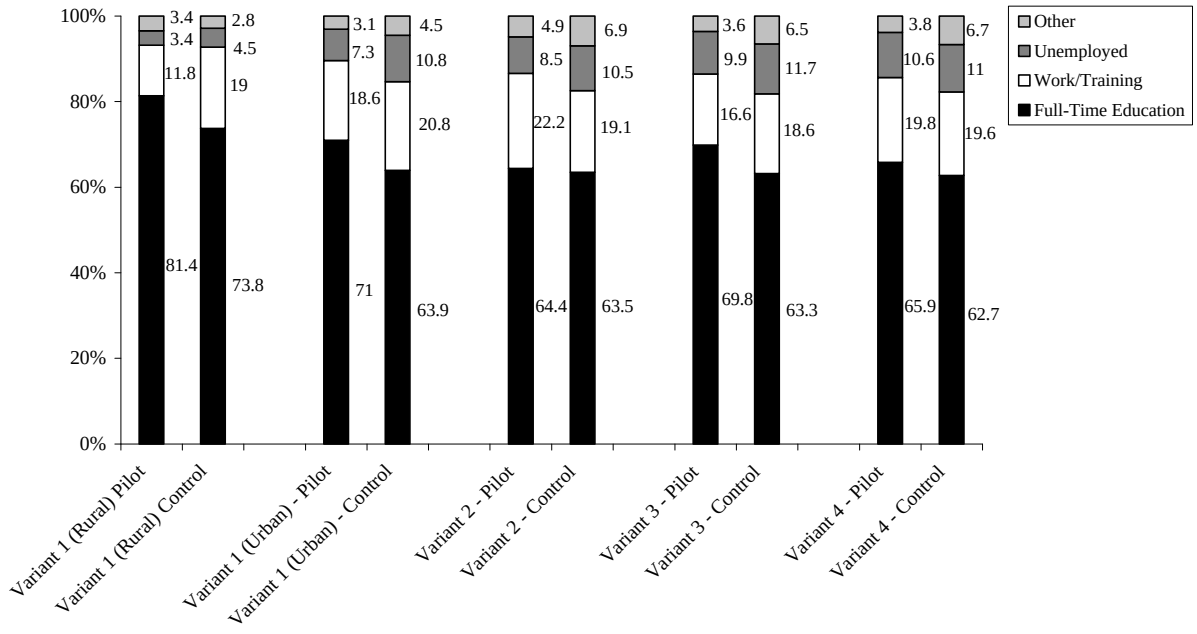
The four different variants of EMA that are being piloted in the areas included in this evaluation are summarised in Box 2.3.

Box 2.3 EMA Variants

	Maximum Weekly Payment	Bonuses
Variant 1	£30 per week	£50 per term retention £50 achievement
Variant 2	£40 per week	£50 per term retention £50 achievement
Variant 3	£30 per week PAID TO PARENT	£50 per term retention £50 achievement
Variant 4	£30 per week	£80 per term retention £140 achievement

Across variants, participation rates in full-time education in the pilot areas among EMA eligible young people varied from a high of 81.4 per cent in the Variant 1 (rural) pilot area to a low of 64.4 per cent in Variant 2 (Figure 2.4**).**

Figure 2.4 Destinations of EMA Eligible Young People: by EMA Variant



Across the urban variants, there was little variation in the control area participation rates. The percentage point differences observed between the pilot and control areas would seem therefore to suggest that these differences may be the result of EMA (see further, Chapter 5). However, although participation rates were higher in the pilot areas than in the controls for each variant (Box 2.4), there were also differences *between* the pilot area participation rates in each urban variant – a high of 71 per cent under Variant 1 (urban) down to a low of 64 per cent under Variant 2.

Box 2.4 Participation Rates in Full Time Education in Each EMA Variant

There were larger proportions of young people eligible for EMA in full-time education (FTE) in each Variant's pilot areas than in the respective control areas.

Variant 1 (Rural)	**7.6 percentage points** more young people in FTE than in the control areas
Variant 1 (Urban)	**7.1 percentage points** more young people in FTE than in the control areas
Variant 2	**0.9 percentage points** more young people in FTE than in the control areas
Variant 3	**6.5 percentage points** more young people in FTE than in the control areas
Variant 4	**3.2 percentage points** more young people in FTE than in the control areas

At first sight it seems that differences in the amounts of EMA potentially available to young people had little effect on participation rates. The largest differences were in the Variant 1 areas, both urban and rural, that pay the lower maximum weekly amount and the lowest bonuses. The Variant 2 areas, where the highest maximum weekly amount is available, showed the *lowest* difference in participation rates between the pilot and control areas – less than one percentage point. There is no immediately apparent explanation for this. As will be shown later in this Chapter, levels of awareness of, and applications for, EMA were amongst the highest in the Variant 2 pilot areas and these LEAs did not have particularly large numbers of rejections or claims awaiting decisions. However, the statistical modelling undertaken in Chapter 5 suggests that the higher maximum weekly allowance in Variant 2 areas does have an added and significant effect on participation rates. It must be concluded that the small differences identified here are the result of differences in socio-economic characteristics of young people in the pilot and control areas that are controlled for in the analysis in Chapter 5.

Box 2.4 also shows that the difference in participation rates between pilot and controls in the Variant 3 areas, where EMA is paid to parents, is almost as high as in the Variant 1 areas (6.5 percentage points). This is somewhat surprising given that levels of awareness of, and applications for, EMA were amongst the lowest of all the variants and one of the Variant 3 areas was having some difficulties in processing applications (see below Sections 2.5.2 and 2.5.3). Regression analysis undertaken prior to the statistical modelling for Chapter 5 also suggested that payment to the young person or the parent made no significant difference to participation rates. Nevertheless, differences in outcomes other than participation between Variant 3 and the other urban variants will be observed in much of what follows.

The pattern shown earlier of EMA apparently drawing eligible young people from each of the other three destinations, of work/training, unemployment and 'other', does not hold across the EMA variant areas. Work/training was a less popular option for EMA eligible young people in the pilot areas than in the control areas for Variant 1 (urban and rural) and Variant 3. However, for Variant 2 more eligible young people entered work or training in the pilot than in the control areas and in Variant 4 the proportions were almost identical. These are the variants that had the lowest rates of participation in full-time education among EMA eligible young people and the lowest differences in participation between eligible young people in the

pilot and control areas. Therefore, it might be anticipated that differences between entry into the other destinations would also be smaller.

This is shown to be so for unemployment in Variant 4 areas but not in Variant 2. The difference in unemployment amongst eligible young people between the pilot and control areas was only 0.4 percentage points in the Variant 4 areas but two percentage points in Variant 2. This difference is *larger* than in any other variant, with the exception of Variant 1 (urban) where unemployment was 3.5 percentage points lower in the pilot than the control areas. Unemployment was generally much lower among eligible young people in the rural areas, both pilot and controls, than in the urban areas.

EMA also may have drawn young people from the 'other' group of destinations in each variant except Variant 1 (rural). Smaller percentages of eligible young people were in this category in the pilot areas than in the control areas in each of the urban variants but particularly Variants 2 (two percentage points lower in the pilots than in the controls) and 4 (2.9 percentage points lower in the pilots than in the controls). However, as shown above, in Variant 2 pilot areas, the lower proportions in the 'other' and unemployed destinations seemed to be largely the result of more eligible young people entering work and training, rather than full-time education. In Variant 4 areas, in contrast, it seems that most of the difference between the pilot and control areas in the percentages of eligible young people in the 'other' destinations can be accounted for by an increase in participation in education.

In Variant 1 (rural) there was a *higher* proportion of young people in the 'other' destinations in the pilot than in the control areas. As shown above, this is accompanied in the pilot areas by low rates of entry into work/training, low levels of unemployment and high levels of participation in full-time education. This would seem to suggest that in the rural areas increased participation in education is drawing young people from work/training rather than unemployment or the 'other' destinations.

In Variants 1 (urban) and 3, young people seem to have been drawn into education from each of the other three destinations.

2.4.4 Summary and conclusions

Although firm conclusions cannot be drawn from this descriptive analysis, there are two patterns in the data that are consistent with a possible EMA effect. The first concerns participation rates in post-16 education amongst income eligible young people in those areas where EMA is being piloted. These are higher than amongst young people in the control areas who would have been eligible on income grounds if EMA had been available in these areas. The second is that this pattern is reversed amongst those young people who are not eligible for EMA.

This second point is important for two reasons: (1) it suggests that estimates for young people eligible for EMA in this analysis are on the low side (also confirmed by later results); and, (2) it shows that observed differences in participation rates amongst EMA eligible young people between the pilot and control areas are consistent with a genuine EMA effect.

The only setting where the second pattern was not observed was in rural areas where participation rates (which, incidentally, were the highest of any variant) were higher in those areas where EMA is being piloted, for both groups: eligible and ineligible.

EMA appears to have drawn young people into education who might otherwise have entered each of work/training, unemployment and 'other' destinations. The main exception to this seems to be the rural pilot area where the difference between destinations in the pilot and controls suggest that education has drawn most young people from work/training.

2.5 EMA Applications and Awards

Box 2.5 Summary

- LEAs had been very successful in promoting EMA with high levels of awareness among young people and parents;
- Awareness of EMA was much lower among eligible young people not in full-time education;
- Application rates were high and the vast majority of applications had been successful;
- More than half of EMA awards were for the maximum amount;
- Less than one per cent of awards were for the minimum amount – this is despite the fact that all young people, regardless of the allowance received, are eligible for retention and achievement bonuses; and,
- Almost all young people recalled signing a learning agreement and at least one specific commitment it contained, particularly attendance requirements.

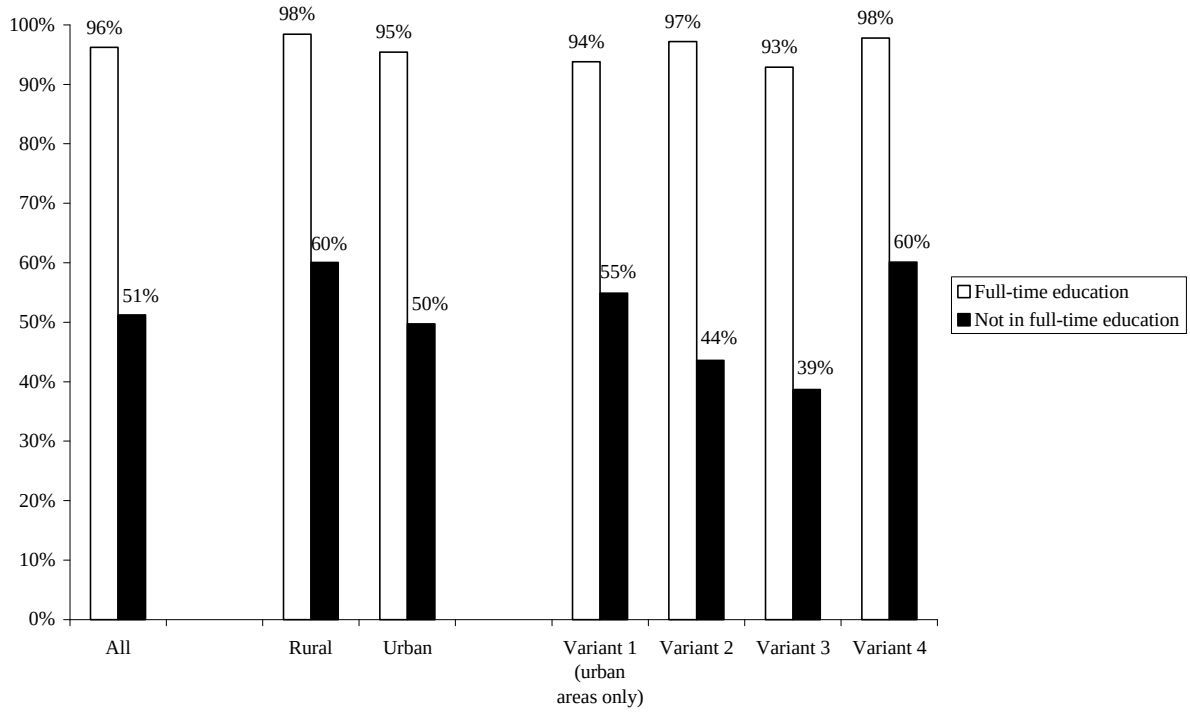
In order to be in receipt of EMA at the time of interview, young people (and/or their parents) would have had to know that EMA exists, have translated that awareness into a successful application, and signed a learning agreement with the school or college attended by the young person. This section examines this process of claiming EMA among those young people who were eligible for it on income grounds. Since EMA is, by definition, not available in the control areas, the analysis includes only eligible young people in the pilot areas[2].

2.5.1 Awareness

Despite its relatively late introduction, EMA appears to have been well publicised amongst eligible families: 83 per cent of eligible young people and 78 per cent of parents had heard of it. Across all variants, eligible young people were more likely to be aware of EMA than their parents.

[2] Further information about the process of claiming EMA can be found in Legard et al., 2001.

Figure 2.5 Awareness of EMA amongst Eligible Young People



However, there was variation between LEAs. Four-fifths or more of eligible young people had heard about EMA in six of the pilot areas. Although awareness was lowest among both young people and parents in one of the Variant 3 areas where EMA is paid to the parent rather than to the young person (70 per cent), awareness was among the highest in the other area where EMA is paid to the parent. This suggests that payment of EMA to the parent rather than the child was not an important factor in determining awareness, rather that one area had been more successful than the other in promoting EMA.

There was also variation in awareness between EMA eligible young people who, at the time of interview, were in full-time education and EMA eligible young people who were not (Figure 2.5). Overall, 96 per cent of eligible young people in full-time education had heard of EMA compared to just 51 per cent of those in some other main activity. This again may be linked to the timing of the launch of EMA. Many young people might only have found out about EMA when they enrolled for their post-16 courses at school or college. This is confirmed by evidence from qualitative interviews with young people. Most, particularly those who had remained in full-time education, had found out about EMA from their school. Among those who had left full-time education, contact with the evaluation was the first time that some had heard of EMA (Legard et al., 2001).

Lower levels of awareness among young people in activities other than full-time education was particularly pronounced in Variants 2 (where the highest maximum weekly payment of EMA is available) and 3 (where EMA is paid to the parent rather than the young person). Yet the previous section has suggested that, although differences between participation in full-time education between eligible young people in the pilot and control areas were very small in Variant 2, they were among the largest for Variant 3.

Levels of awareness are likely to have increased among the second cohort of young people who will be able to be informed of EMA during Year 11, unlike the first cohort. Variations in awareness between LEAs might also be expected to be ironed out by the time that the second cohort of young people is interviewed.

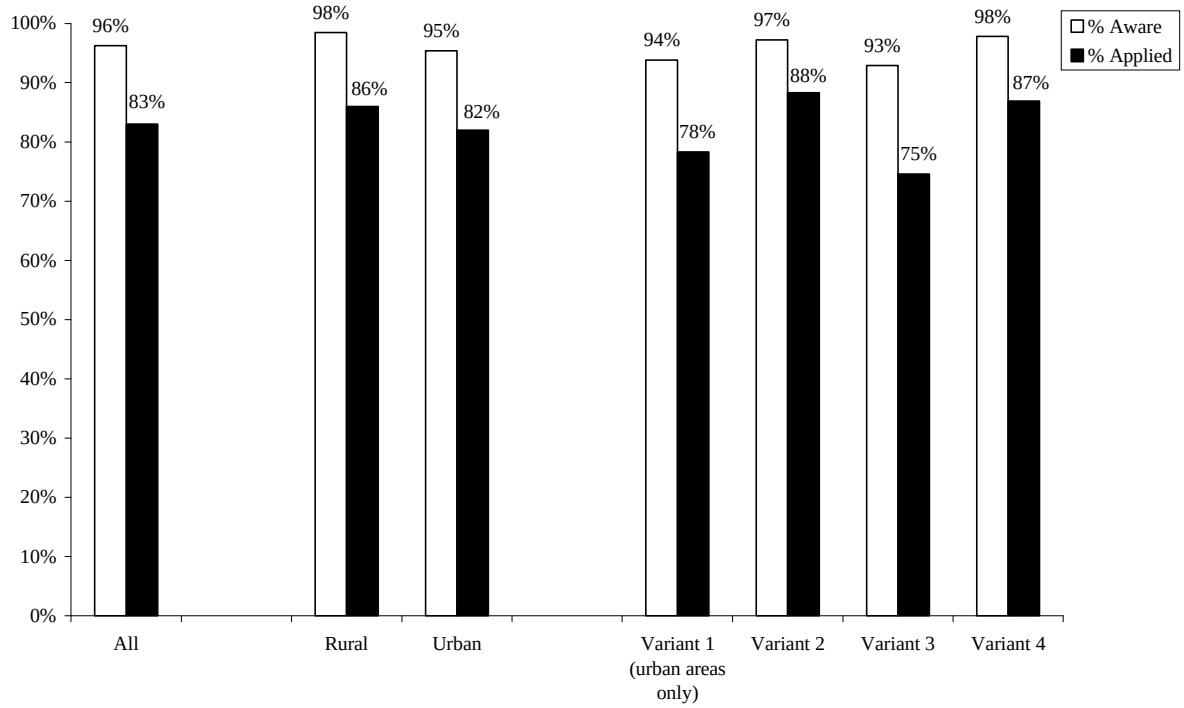
2.5.2 Applications

Overall, 63 per cent of young people in lower income families in the pilot areas had applied for EMA[3] with application rates highest in one of the Variant 2 areas, and lowest in one of the areas where EMA is paid to parents and where awareness was seen to be low. Again, this does not seem to relate to findings about participation in education shown in the previous section.

Amongst those eligible young people who had gone on to full-time education, the EMA application rate was 83 per cent (Figure 2.6). However, not all applications had been made by young people who were in full-time education at the time of interview. Eleven per cent of eligible young people who were in work or training had applied; 15 per cent who were categorised as unemployed and looking for work; and 23 per cent who identified themselves as undertaking some other main activity, such as looking after the home or family. (See below for a discussion of applications by those not in full-time education).

[3] There were also applications from 23 per cent of ineligible young people.

Figure 2.6 Awareness of and Applications for EMA amongst EMA Eligible Young People in Full-time Education



In general, applications for EMA tended to be higher in LEAs where awareness was greater and vice versa. However, there were exceptions. In the rural variant, where awareness was highest, 86 per cent of eligible young people in full-time education had applied, an application rate lower than one of the Variant 4 areas and both Variant 2 areas – the three authorities with the highest rate of applications (Figure 2.6). The Variant 2 areas provide £10 more EMA than the basic variant and applications in these areas were among the highest.

Other noteworthy exceptions were one of the Variant 1 urban and one of the Variant 3 areas, both of which showed a markedly weaker association between levels of awareness and levels of applications amongst eligible young people in full-time education. Thus this Variant 3 area seems to have had far less success at 'translating' awareness – the lowest level of awareness of any area - into applications and ended up with the lowest level of applications of any area by some margin. Similarly, this Variant 1 urban area, in spite of a reasonably high level of awareness amongst eligible young people, had the second lowest level of applications of any area.

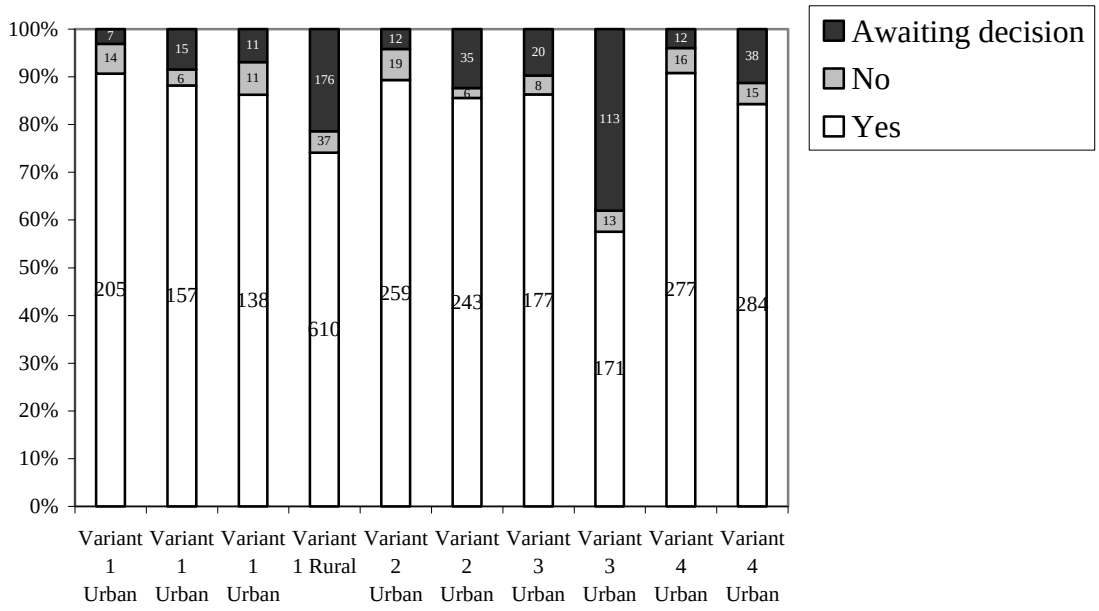
Applications by eligible young people not in education

Applications for EMA had been made by only 198 income eligible young people who were not in education at the time of interview. Of these, 121 (61 per cent) had been awarded EMA but most had not yet received their award. It will be interesting to see how many of these – and, indeed, of other young people not in education at the first wave of interviews – will have returned to education by the time of the second wave interviews.

2.5.3 Application outcomes

The vast majority of eligible young people in full-time education who had applied for EMA had been successful – a high of 93 per cent in one of the Variant 4 areas (Figure 2.7). Awards were lowest in one of the Variant 3 areas and in the rural area, not because of high levels of refusals but because over one-third in the Variant 3 area and one-fifth in the rural area were still awaiting the result of their application. These two areas are known to have had problems processing applications and less developed administrative systems (Maguire et al., 2001).

Figure 2.7 Outcomes of EMA Applications by EMA Eligible Young People in Full-time Education *



* Figure shows number of applications as well as percentages.

Take-up and receipt of awards

Less than one per cent of young people who had been awarded an EMA (including those not in full-time education at the time of interview) had subsequently decided not to take it up. In the overwhelming majority of cases this was because of a decision not to continue in education. The highest level of young people who decided not to take up their award (three per cent) was in a Variant 1 urban area.

Of those awarded an EMA (including those not in full-time education at the time of interview), 89 per cent had received it by the time they were interviewed. Even in the two areas where awards were lowest (one Variant 3 area and the rural area), over 80 per cent of those awarded an EMA had received it, rising to over 90 per cent receipt in the other areas. The unanticipated length of the fieldwork period meant that many of the delays in processing at the start of EMA may have been ironed out by the later months of the survey period.

Reasons for refusal

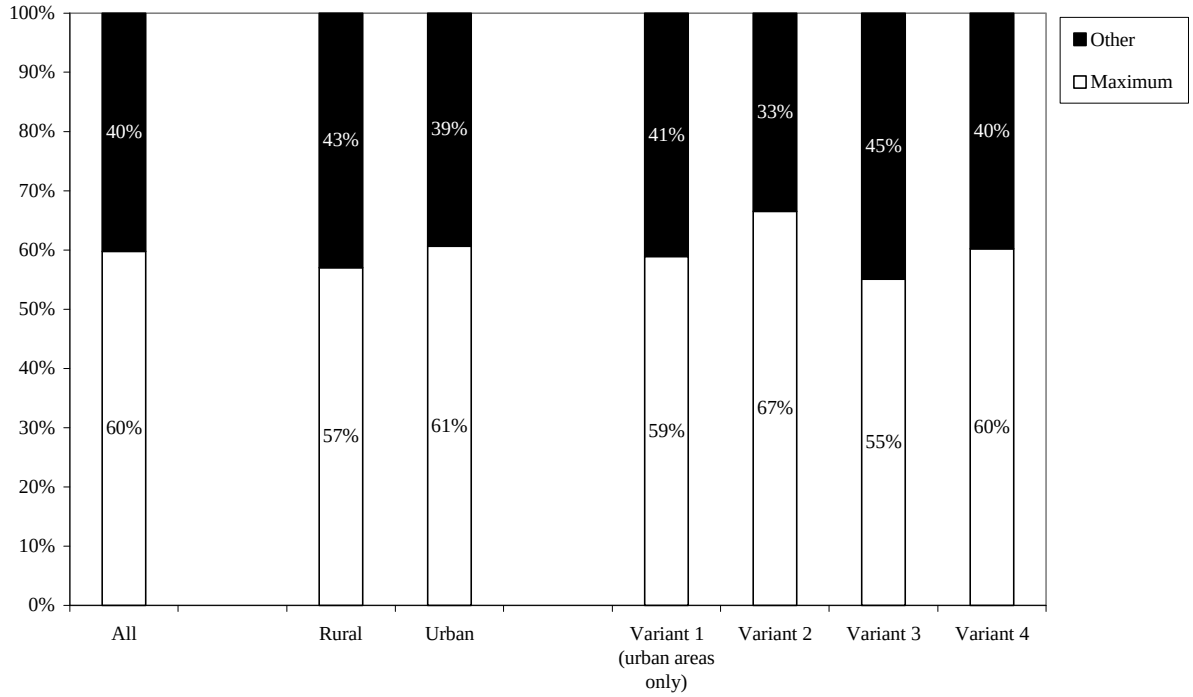
Of the 246 young people who had applied for EMA and been refused, and who gave reasons why they had been turned down, 66 per cent said that their family income had been too high. However, 13 per cent had been turned down because of incomplete information; their application had been filled in incorrectly, the LEA was not satisfied with the information provided or the learning agreement had not been signed. Again, this confirms findings from the evaluation with administrators and stakeholders (Maguire et al., 2001). These difficulties might be expected to be eased for Cohort 2 by the introduction of a common application form across all pilot areas.

2.5.4 Amount awarded

In the areas running Variants 1, 3, and 4, the maximum weekly amount of EMA payable is £30. For Variant 2 areas the maximum is £40 per week.

In each pilot area except one of the Variant 1 urban areas, more than half of EMA awards to young people in full-time education were for the maximum amount (Figure 2.8). The Variant 2 areas – which provide the highest maximum weekly allowance – had the largest percentage of EMA applicants who were awarded the full amount of EMA.

Figure 2.8 Weekly Amounts Awarded to Young People in Full-time Education



Less than one per cent of young people in total across the pilot areas had been awarded the minimum amount. This bears out concerns expressed in the interviews with administrators and stakeholders about the low number of applications from families with incomes just below £30,000 per annum. Although young people from these families would be eligible only for the minimum amount of EMA, they would be eligible for the full retention and achievement bonuses. Evidence from the qualitative interviews suggest that,

> *there were misunderstandings about how allowances and bonuses were calculated which meant that some young people who knew they were eligible but thought that they would only receive a minimal weekly payment decided against applying because they felt financially the return would not be worth the effort. They were surprised to learn, either from fellow students or during the interview, that they would have received the same bonus payments as fellow students in receipt of maximum weekly allowances.*
>
> (Legard et al., 2001, p.31).

The implication of this is that information and publicity needs to be re-assessed to ensure that **all** those who may be eligible are made aware of the possibility of an EMA. Despite the overall success that LEAs had in publicising EMA, 37 per cent of income eligible families in the pilot areas, with young people both in and out of full-time education, had not applied for EMA.

2.5.5 Learning agreements

All students in receipt of EMA are required to have a Learning Agreement signed by themselves, their parent and a representative of the school or college at which they are studying. As well as details about the student, the course they are undertaking and their entitlement to a weekly allowance and additional bonuses, the document sets out the criteria against which entitlement to the retention and achievement bonuses will be assessed, the conditions which have to be satisfied in order to receive the weekly allowance and the responsibilities of parents.

The vast majority of EMA recipients in full-time education reported that they had signed a learning agreement (94 per cent).[4] The proportion of recipients reporting having signed an agreement was higher in the urban (96 per cent) than in the rural areas (90 per cent), and reached 98 per cent in the Variant 4 areas. In nine of the pilot areas, 90 per cent or more of young people awarded EMA and in full-time education reported that a learning agreement had been signed by either themselves or a parent/guardian. In the remaining pilot areas, a Variant 1 urban area proved to be the exception with only 77 percent reporting that a learning agreement had been signed.

Overall, among the 94 per cent of cases where a learning agreement had been signed:

- 99 per cent of young people identified themselves as signatories;
- 92 per cent indicated that their parents had signed the agreement; and
- 96 per cent said that the agreement included the signature of a representative from school or college.

Parents were reported as having signed slightly less often than either the young person or the school or college, irrespective of the variant. Signatures were reported from between 91 per cent of parents in the Variant 1 (urban) pilot areas and 94 per cent in Variant 3 areas, where the EMA is paid to parents. This was also the only variant where more parents had signed the agreement than school or college representatives (93 per cent). In general almost all young people who remembered signing a learning agreement also said that their school or

[4] Data on whether a learning agreement was signed or not are available for 92 per cent of these respondents.

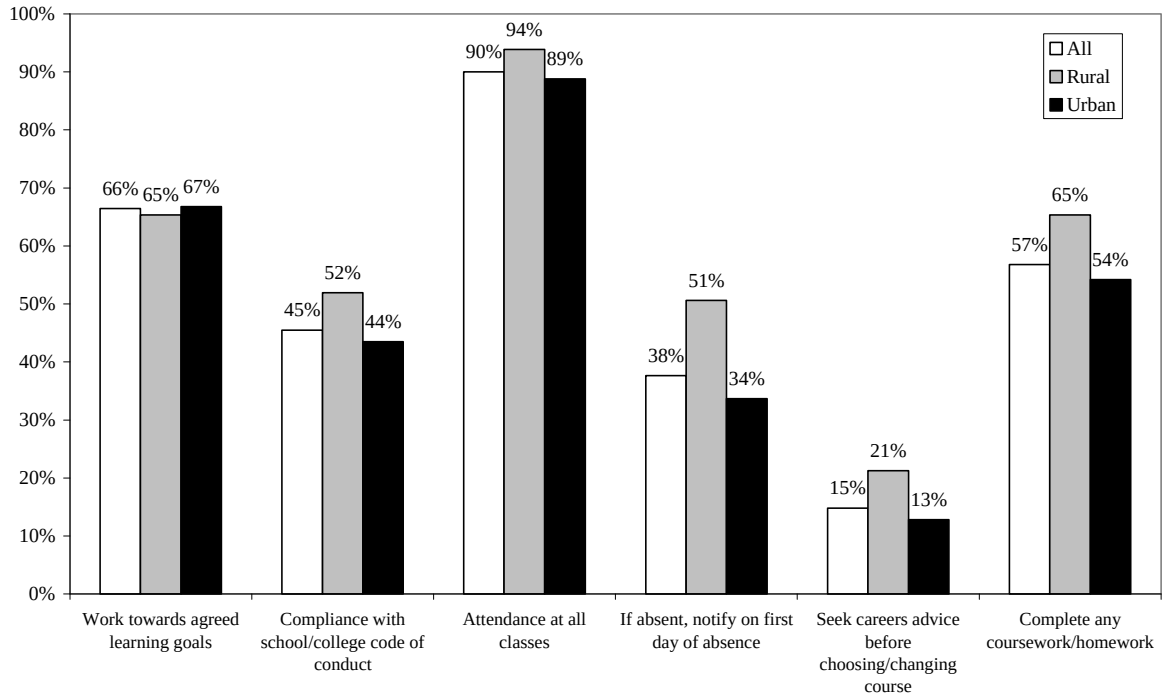
college representative had also signed (up to 97 per cent in Variant 1(rural) and Variant 2 areas).

Almost three-quarters (72 per cent) of young people who had signed a learning agreement had retained a copy (Table 2.3). Although young people in rural areas were most likely to have kept a copy of the agreement and those in Variant 4 the least likely, there was large variation between – and within - the urban variants. Ninety one per cent of young people retained a copy of the agreement in one of the Variant 1 urban areas and this was by far the largest proportion of any urban area, a Variant 2 area being the next largest with 76 per cent. The smallest proportion of young people who had kept a copy of the agreement was in one of the Variant 4 areas (49 per cent).

Table 2.3 EMA Recipients who Retained their Learning Agreement

	Cell per cent
All	72
Rural	87
Urban:	67
Variant 1 (urban)	80
Variant 2	72
Variant 3	61
Variant 4	56

Figure 2.9 EMA Recipients in Full-time Education – Recall of Commitments in Learning Agreements



Overall, in cases where a learning agreement had been signed, almost all young people (97 per cent) recalled at least one specific commitment, such as attendance requirements or learning goals. This was fairly constant across each pilot area – the lowest proportion being 92 per cent in an area running Variant 2.

As Figure 2.9 shows, by far the most frequently identified commitment in both rural and urban areas was attendance (90 per cent on average). Working towards agreed learning goals (such as completing a course or working towards a qualification) was the next most recalled commitment (66 per cent on average), although, in rural areas, the requirement to complete coursework/homework was mentioned almost as frequently (65 per cent). The commitment identified least frequently (15 per cent on average) was that careers advice must be sought before choosing or changing a course. Evidence from the qualitative interviews with young people suggests that while the link between attendance and payment was clearly understood there was less certainty about the connection between completion of coursework and weekly payments (Legard et al., 2001).

Apart from 'working towards agreed learning goals', each broad type of commitment was identified more often in the rural areas. A broadly similar pattern of identification was observed across each urban variant, although each commitment tended to be recalled more often in Variants 1 and 4.

2.5.6 Summary and conclusions

Levels of awareness of EMA were high, particularly among eligible young people in full-time education. Eligible young people not in full-time education were much less likely to have heard of EMA. Application rates were also high, and despite some differences between LEAs, the vast majority of applications had been successful, and almost all young people had taken up their award by the time of interview. More than half of EMA awards were for the maximum amount of EMA. But less than one per cent were for the minimum amount which allows young people to access retention and achievement bonuses that are available to all EMA recipients, irrespective of the level of weekly payment.

Almost all young people reported that a learning agreement had been signed. Parents were said to have signed less often than young people or the school or college, except in Variant 3 areas where EMA is paid to parents. Although less than three-quarters of young people had retained a copy of their learning agreement, almost all young people recalled at least one specific commitment that it contained, particularly attendance requirements and learning goals.

2.6 Year 11 Qualifications

Box 2.6 Summary

- Qualifications attained at the end of Year 11 were lower than the national average;
- Young people eligible for EMA on income grounds had much lower qualifications than more affluent young people in both pilot and control areas; and
- Young people in the pilot areas were slightly less well qualified than those in the control areas. This suggests that higher participation rates in the pilot areas were not simply the result of better qualifications in Year 11.

Year 11 qualifications are a good predictor of whether a young person will move into post-16 education (Steedman and Green, 1996). Therefore, any differences in Year 11 qualifications between the pilot and control samples need to be identified since, if young people in the pilot areas had greater success in examinations than their counterparts in the control areas, higher observed participation rates in the pilot areas could be the result of this rather than the EMA. In this section, the qualifications achieved by young people in Year 11 are described, focussing on GCSE and GNVQ qualifications. The equivalence between GNVQ and GCSE grades is shown in Table 2.4.

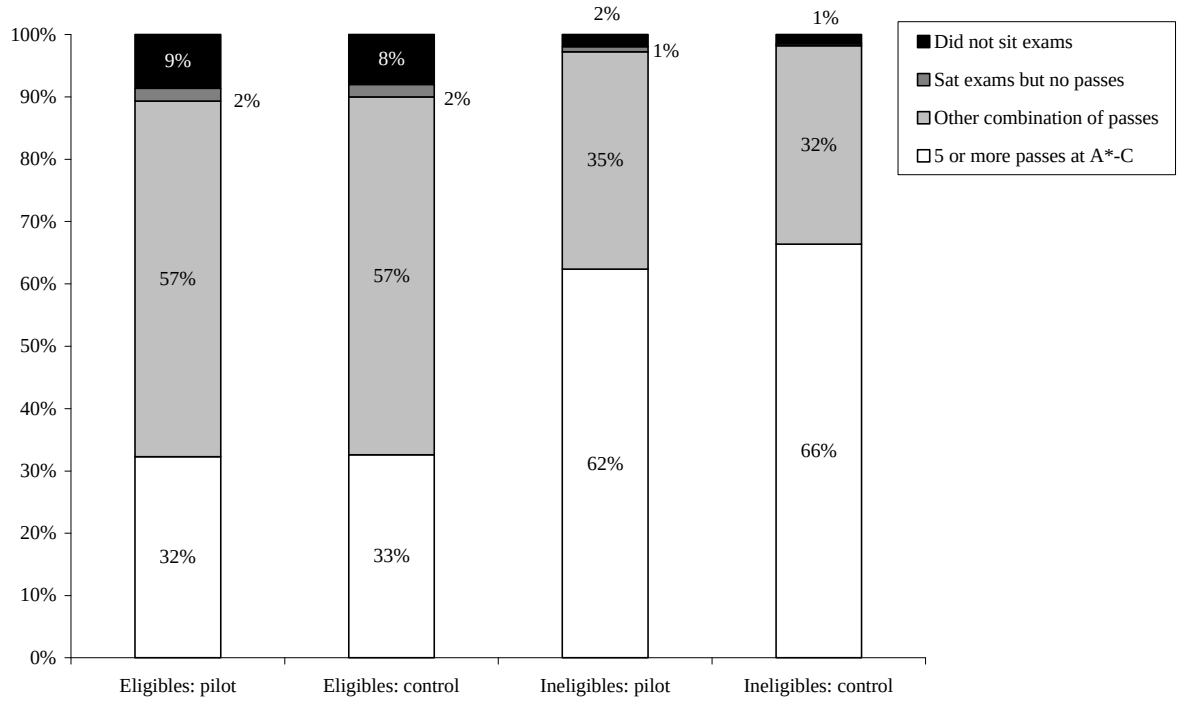
Table 2.4 GCSE and GNVQ Equivalence

Qualification	Number of GCSEs	GCSE Grades
GNVQ Part One		
Intermediate	2	A*-C
Foundation	2	D-G
GNVQ Full		
Intermediate	4	A*-C
Foundation	4	D-G
GNVQ Language Unit		
Intermediate	½	A*-C
Foundation	½	D-G

The vast majority (91 per cent) of young people in the sample had gained at least one pass at GCSE/GNVQ and 40 per cent achieved five or more passes at grades A*-C. This is eight percentage points lower than the national average on this measure of 48 per cent (DfEE, 1999). Of young people in the sample who achieved no passes, more than three-quarters had not taken examinations at the end of Year 11.

Figure 2.10 provides a breakdown of success in GCSE/GNVQ examinations for young people from lower income families across pilot and control areas.

Figure 2.10 All Young People - GCSE/GNVQ Examination Performance



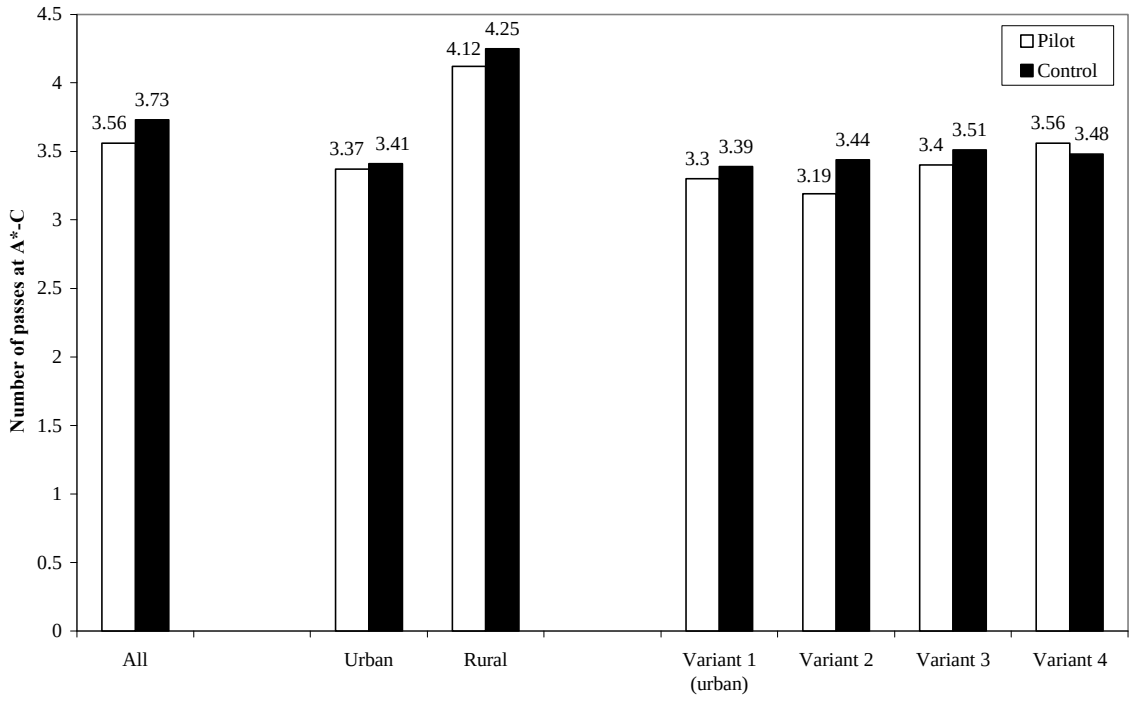
Overall there was a large difference between the proportions of EMA eligible and ineligible young people achieving 5 or more passes at the higher A*-C grades. This was not unexpected given the well-documented relationship between socio-economic status and examination performance. Young people from lower socio-economic groups have lower levels of attainment on average than those from higher groups (see for example, Newburn, 1999; Dearden, 1998). The proportion of EMA ineligible young people who sat exams but achieved no passes was much smaller than among EMA eligible young people, as was the proportion of ineligible young people who did not sit exams.

The differences between pilot and control groups, for both EMA eligible and ineligible young people, were very small but indicate that pilot areas had slightly less exam success at the 5+A*-C level and also had slightly larger proportions of young people not sitting exams. This pattern was roughly similar across urban and rural areas and across EMA variants. This suggests that better examination results are not the explanation for the higher rates of participation in post-16 full-time education in the pilot areas.

2.6.1 Qualifications of young people in full-time education

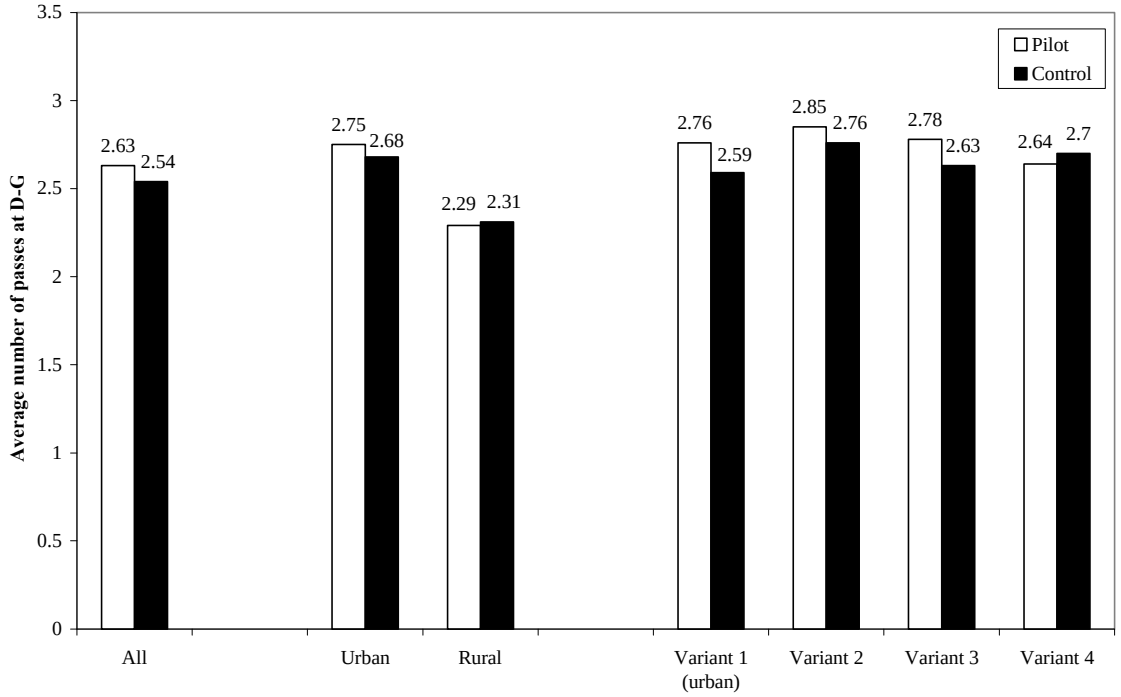
Entry to post-16 education depends not simply upon the number of passes, but also on the grades achieved, with the higher grades of A*-C being particularly important in gaining access to study for A/AS level examinations or the more advanced vocational qualifications.

Figure 2.11 EMA Eligible Young People in Full-time Education: GCSE/GNVQ Grades A*-C



There was a significant difference at the overall sample level between EMA eligible young people in the pilot and control areas in the achievement of the higher grade A*-C passes (Figure 2.11). This suggests that, on this measure of performance at least, those in the pilot areas were less well qualified at Year 11 than were their control counterparts. The same pattern was observed in both rural and urban areas and across each variant, although differences here were not statistically significant. The one exception was Variant 4 where EMA eligible young people in full-time education were slightly better qualified than those in the control areas.

Figure 2.12 EMA Eligible Young People in Full-time Education: GCSE/GNVQ Grades D-G



One impact of EMA might be to bring into education young people who are less well qualified and there is some evidence that this may have been the case (Figure 2.12). Overall, eligible young people entering post-16 education in the pilot areas were less well qualified than those in the control areas, in that they not only had significantly lower numbers of A*-C grades but also higher – although not significantly so – numbers of D-G grades. In Variant 4 areas this trend was reversed with the controls having a lower number of A*-C passes and a greater number of D-G passes.

2.6.2 Summary and conclusions

Qualifications attained at the end of Year 11 by young people in the sample were lower than the national average. Confirming the findings of earlier research on the relationship between socio-economic status and examination performance, young people eligible for EMA on income grounds had much lower qualifications than the more affluent young people in both pilot and control areas.

Young people in the pilot areas were slightly less well qualified than those in the control areas, suggesting that higher participation rates in the pilot areas were not simply the result of young people in these areas having achieved more or better examination passes in Year 11.

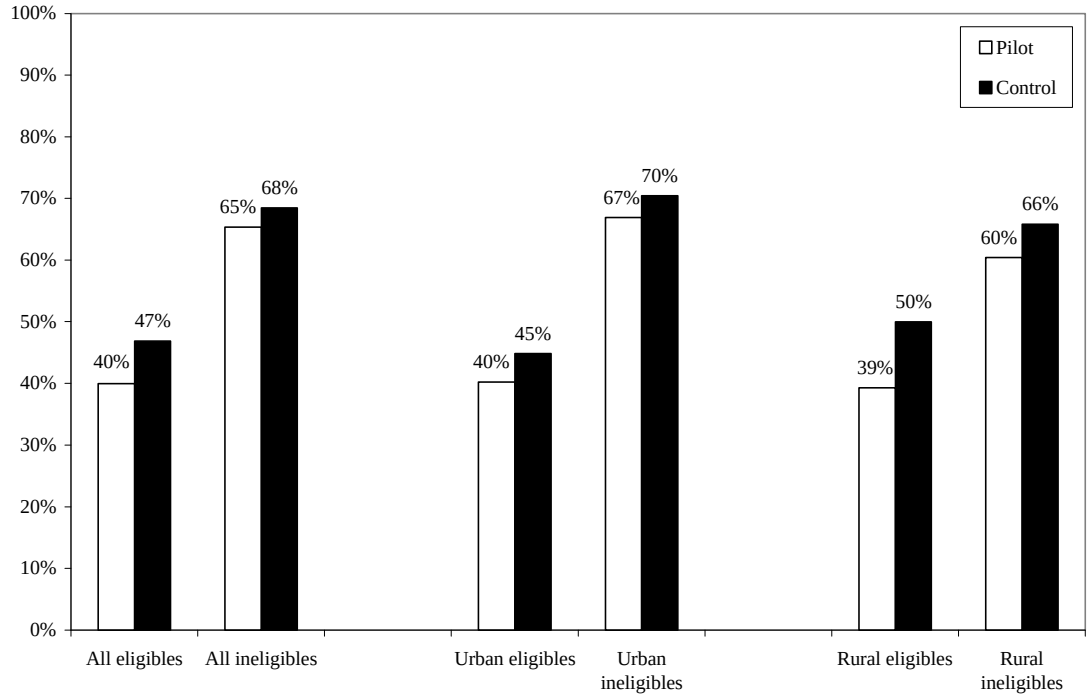
2.7 Post-16 Courses

Box 2.7 Summary

- Young people in full-time education in the pilot areas were more likely to be studying for vocational qualifications than those in the control areas; this was probably the result of lower Year 11 attainment.

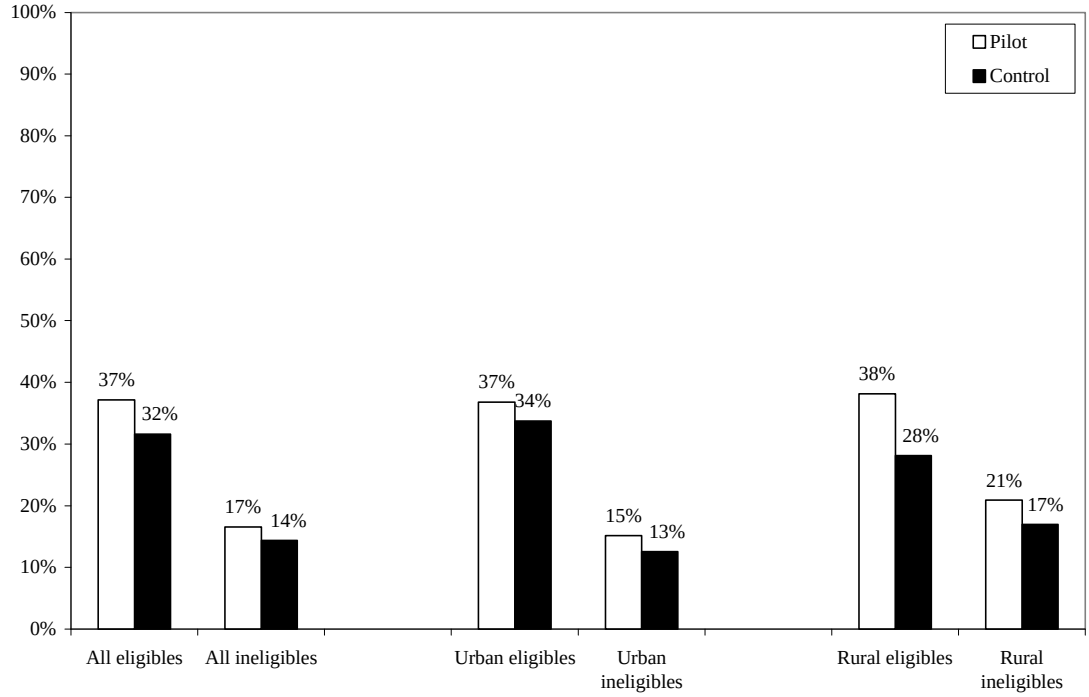
Larger proportions of young people in pilot than control areas were studying for vocational rather than academic qualifications. At first sight it seems, therefore, that EMA may have had an impact on the types of qualifications being undertaken.

Figure 2.13 Young People In Full-time Education Taking Academic Courses



However, the proportion of both EMA eligible **and** ineligible young people studying for academic qualifications was lower in the pilot areas than in the control areas in both urban and rural areas (Figure 2.13). Conversely, more eligible and ineligible young people were studying for vocational qualifications in the pilot than in the control areas (Figure 2.14).

Figure 2.14 Young People in Full-time Education Taking Vocational Courses



This suggests that the larger proportions studying vocational qualifications in the pilot than in the control areas may be the result of the lower Year 11 attainment among young people in full-time education in the pilot areas described in the previous section, rather than a specific EMA effect.

Amongst young people from lower income families, the gap was biggest between pilot and controls in the Variant 1 areas (both urban and rural). Fewer students were studying academic courses in the rural pilot area than in the control areas by 11 percentage points, and the majority of the difference (ten percentage points) was accounted for by the larger proportion studying towards vocational qualifications in the pilot areas.

Figures 2.13 and 2.14 also show a sizeable difference between young people from higher and lower income families in the proportions studying for academic and vocational qualifications. This confirms the findings of earlier research (Steedman and Green, 1996), which has suggested that young people from low-income families are more likely to opt for vocational qualifications.

2.8 Education and Part-time Work

Box 2.8 Summary

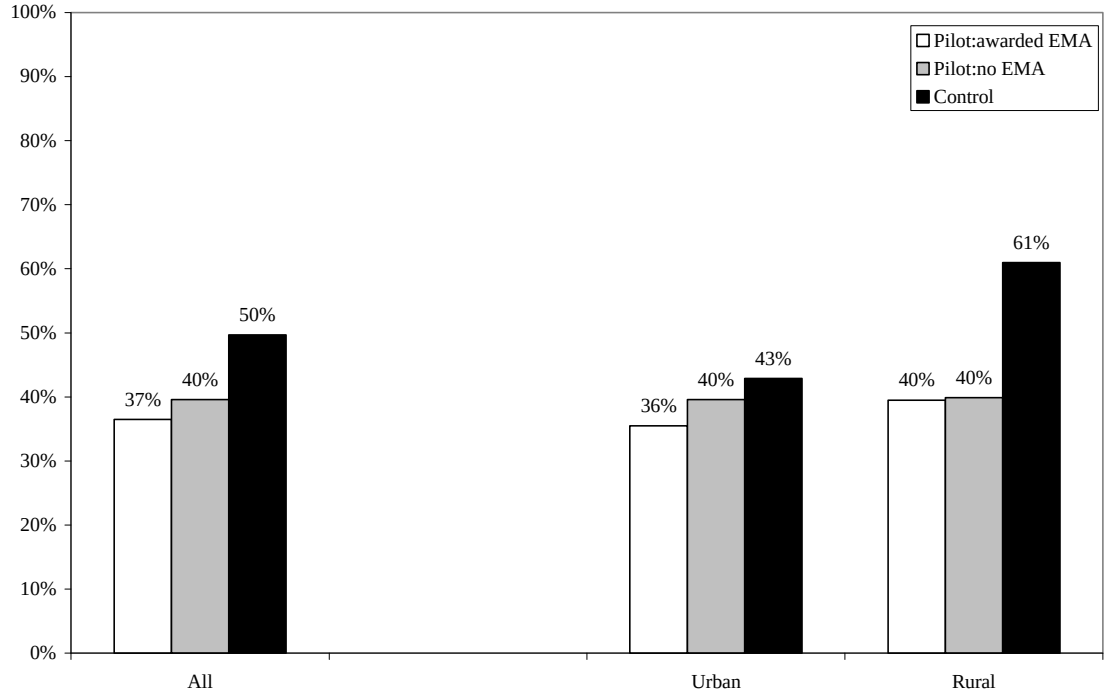
- Part-time work is associated more with socio-economic circumstances than receipt of EMA; Young people eligible for EMA on income grounds were less likely to work part-time than those who were ineligible;
- However, EMA recipients in the Variant 3 areas where EMA is paid to the parent, were slightly more likely to be working than low-income young people in the Variant 3 control areas;
- EMA appears to have had very little effect in encouraging young people to give up part-time work. As with participation in part-time work, it seems that eligibility for EMA is more important than receipt in explaining giving up work in Year 12; and,
- EMA recipients were less likely to have worked part-time in Year 11 than non-recipients, but those who did achieved better exam results at the end of Year 11 than those who did not.

It was anticipated that EMA might reduce young people's participation in part-time work by providing them with an alternative source of income. This section describes the extent to which young people combined education and part-time work during Year 11 and at the time of interview, focussing on the impact of EMA.

2.8.1 Combining post-16 education and part-time work

Part-time work seems to be associated more with socio-economic circumstances than with receipt of EMA. In other words, being from a low-income family (that is, being eligible for EMA) seems to be more important than whether or not the young person is actually receiving EMA in predicting whether a young person will combine studying with working.

Figure 2.15 Part-time Work amongst EMA Eligible Young People in Full-time Education



Young people in full-time education in the control areas were far more likely to be combining their education with part-time work than were those in the pilot areas (Figure 2.15). Young people in the pilot areas who were receiving EMA were also less likely to have part-time work than those who were not receiving EMA. Although this would seem to suggest that EMA may be discouraging young people from working, further analysis (results not shown) showed that, except in the rural areas, young people from lower income families in both the pilot and control areas were *less* likely to work than those from higher income families (who were ineligible for EMA).

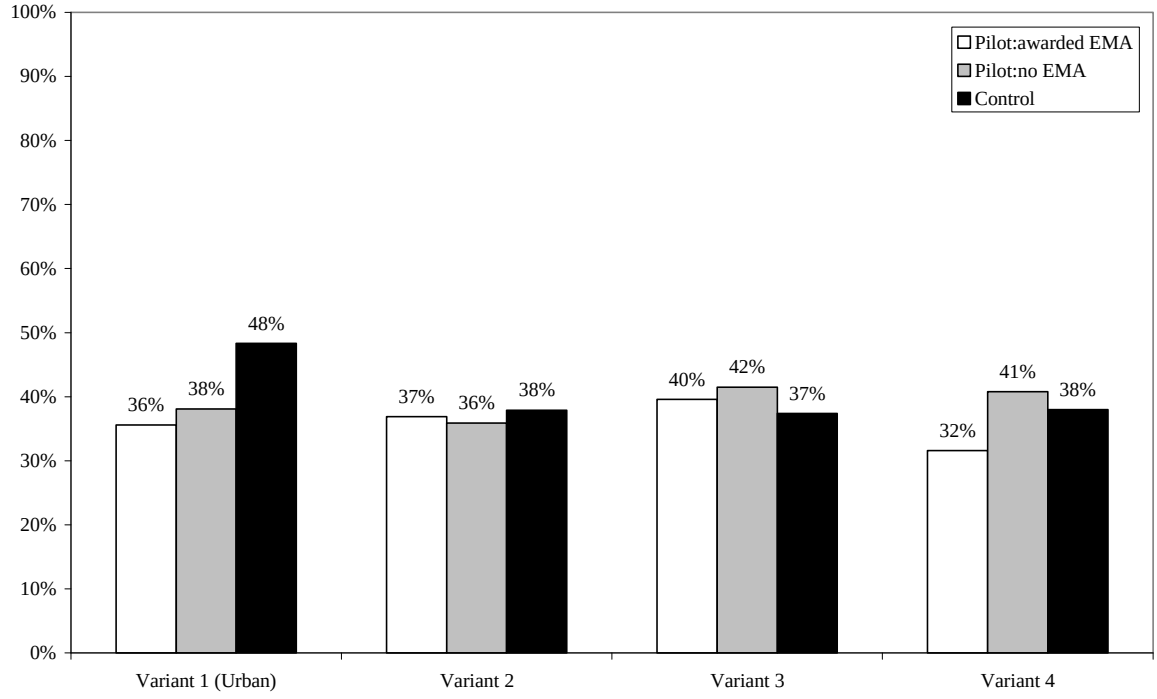
By far the largest proportion of young people who were working was in the rural control areas where 21 percentage points more young people worked than in the rural pilot areas (compared to both EMA recipients and non-recipients).

Differences were generally very much smaller in the urban areas and did not seem to be associated with the maximum level of EMA available under the different variants (Figure 2.16). Approximately the same proportion of young people in receipt and not in receipt of EMA were working in the Variant 2 areas, which pay the largest maximum weekly amount. EMA recipients in Variant 2 were also no less likely to be working than recipients in other

variant pilot areas, where the maximum weekly amount is lower. Variant 2 recipients were also only slightly less likely to be working than young people from low-income families in the control areas.

Payment of EMA to the parent appears to have had a small impact on part-time working. A higher proportion of young people in receipt of EMA was working part-time in the Variant 3 areas, where EMA is paid to the parent, than in either the Variant 3 control areas or in the other variant pilot areas. However, an even higher proportion of non-recipients was working.

Figure 2.16 Part-time Work amongst EMA Eligible Young People in Full-time Education by Urban Variant

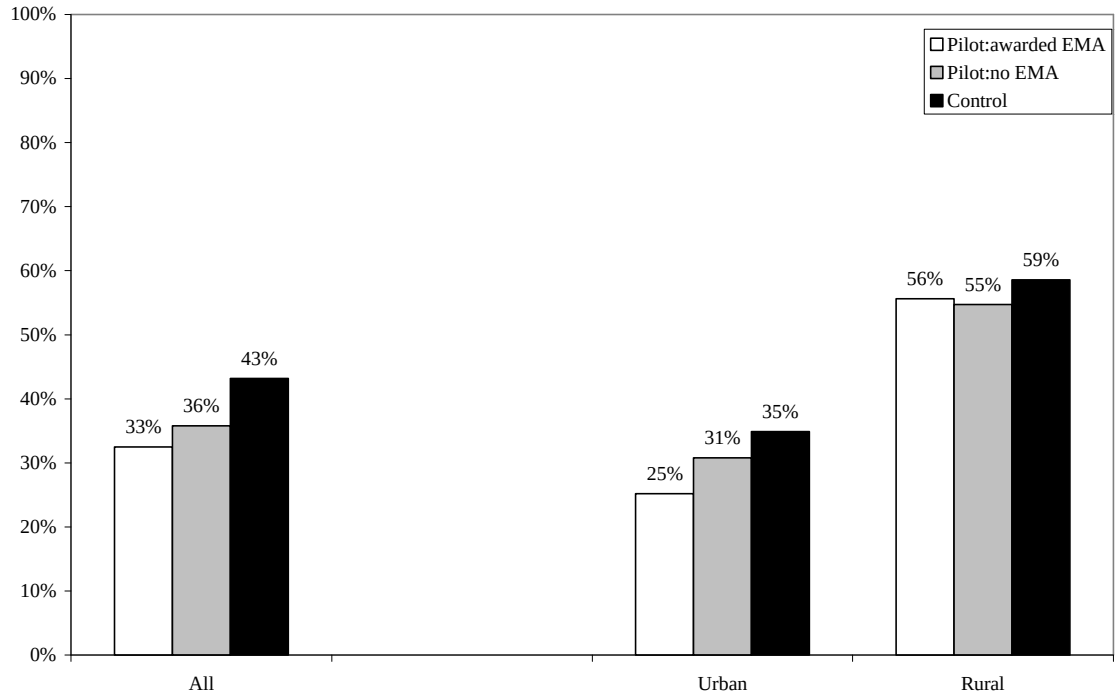


2.8.2 Working part-time during year 11

Young people were also asked whether they had combined education with a part-time job during Year 11, that is between September 1998 and the end of August 1999, and just over one-third of the sample as a whole had done so. Overall, young people in receipt of EMA at the time of interview were less likely to have worked part-time in Year 11 than non-recipients or eligible young people in the control areas (Figure 2.17). This suggests that EMA has been a new source of income for many young people in low-income families, rather than a replacement for income from part-time work.

The pattern in the rural areas was, however, somewhat different. Young people from low-income families in rural control areas were only slightly more likely to have worked part-time in Year 11 than EMA recipients in the rural pilot area, who were slightly more likely to have done so than non-recipients. The reasons for this are unclear.

Figure 2.17 Part-time Work in Year 11 amongst EMA Eligible Young People in Full-time Education



The pattern of EMA recipients having been less likely than non-recipients or eligible young people in the control areas to have worked during Year 11 was maintained across the four urban variants.

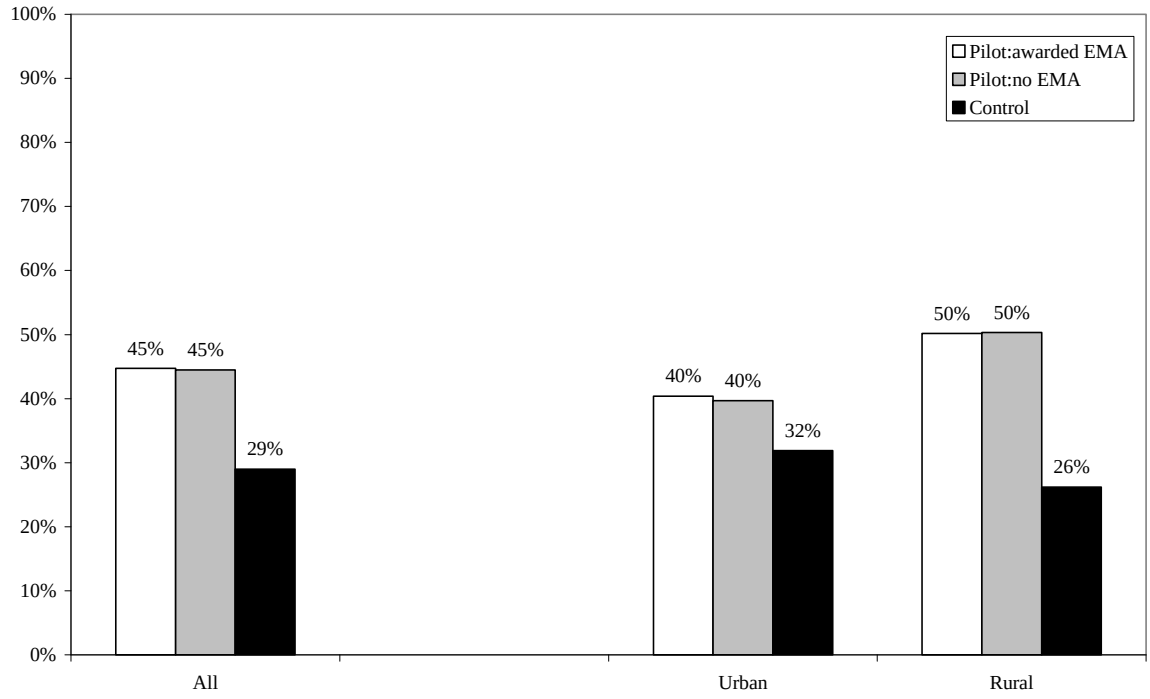
2.8.3 Changes in young people's working behaviour

Another way of looking at the impact of EMA on part-time work is to explore changes in young people's working behaviour between Year 11 and the time of interview. If EMA is discouraging young people from working part-time, it might be expected that greater proportions of EMA recipients who were working in Year 11 would have stopped working than either EMA non-recipients or eligible young people in the control areas.

It seems that EMA has had very little impact on whether or not young people continue to work part-time (Figure 2.18). Overall, there was no difference between recipients and non-

recipients in the proportions who had given up work since Year 11 (45 per cent of both groups). Eligible young people in the control areas were less likely than those in the pilot areas to have given up work (29 per cent). In other words, area differences appear to have affected the chances of giving up part-time work, but receipt of EMA seems to have had no effect. Further evidence from the qualitative interviews with young people confirms that, for young people already in part-time work, EMA had had little impact on their working patterns (Legard et al., 2001).

Figure 2.18 EMA Eligible Young People in Full-time Education who Stopped Working



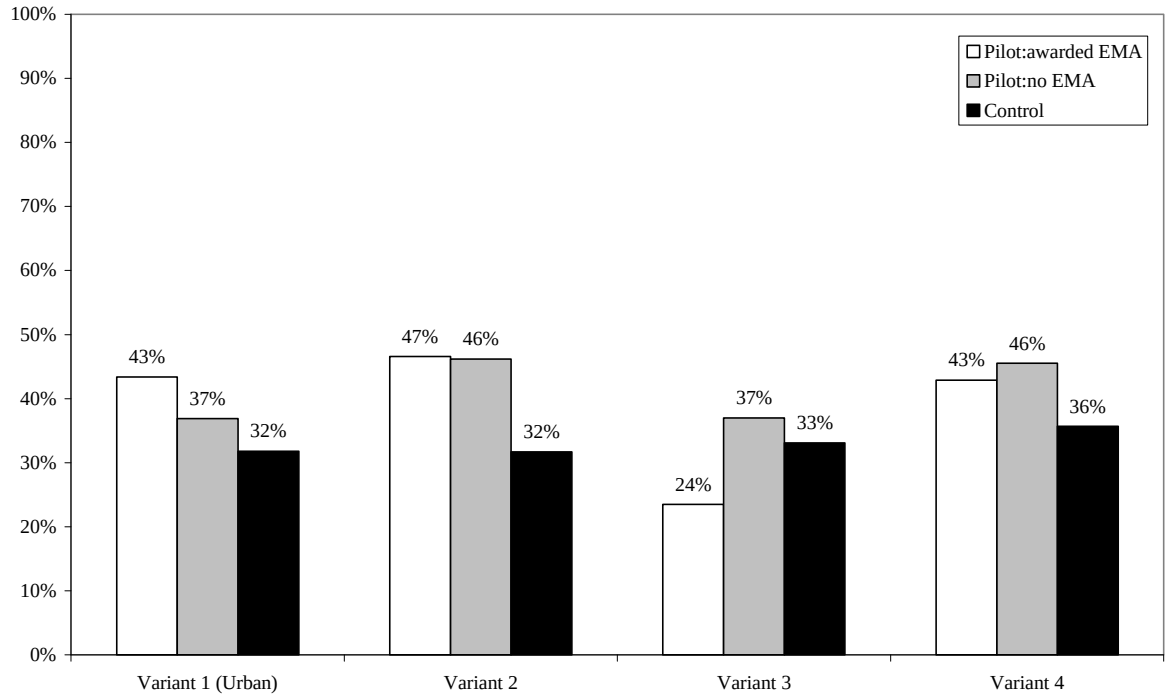
However, some differences emerged between the different variant areas. Both EMA recipients and non-recipients in the rural pilots were more likely (by ten percentage points) to have given up work than those in the urban pilots. In contrast, in the control areas, young people from low-income families in the urban controls were six percentage points more likely to have given up work than those in the rural controls.

Further evidence again emerged of a different pattern in the Variant 3 areas, where EMA is paid to the parent. Recipients in these areas were less likely to have given up work than either non-recipients or low-income young people in the Variant 3 control areas (Figure 2.19). Evidence from the qualitative interviews with young people and their parents confirms

that by no means all parents in the Variant 3 areas pass on all or any of the allowance to their child (Legard et al., 2001).

Recipients in the Variant 2 areas, which pays the maximum weekly amount of EMA, were the group most likely to have stopped work in any variant. It seems, though, that this is not associated with the level of EMA, since non-recipients were almost equally as likely to have stopped working.

Figure 2.19 EMA Eligible Young People in Full-time Education who Stopped Working by Variant



As with participation in part-time work, it seems that eligibility for EMA is more important than receipt in explaining giving up work in Year 12. EMA eligible young people were more likely to have given up work than ineligibles in both the pilot and control areas, although differences between eligibles and ineligibles tended to be smaller in the control areas (figures not shown).

2.8.4 Working in year 11 and qualifications

Although more and more young people are combining full-time education with part-time work both during and after compulsory education (Hodgson and Spours, 2000), there is little research evidence at the national level about the effect on educational outcomes.

From these data it seems that young people from lower income families in full-time post-16 education who had worked part-time in Year 11 had done better in Year 11 examinations than those who had not worked. EMA eligible young people who had worked part-time in Year 11 achieved a higher average number of GCSE/GNVQ passes at grades A*-C than those who did not (Table 2.5). Higher levels of qualifications for low-income young people who worked part-time held for EMA recipients and non-recipients and for eligible young people in the control areas. These patterns of higher achievement among those who worked part-time were similar for examination passes at all grades (figures not shown).

Table 2.5 Average Number of GCSE/GNVQ Passes at Grades A*-C by Part-time Working

	Pilot		EMA Eligible in Control Areas
	EMA Recipients	Non-Recipients	
Worked part-time in Year 11	3.9	3.9	3.9
Did not work part-time in Year 11	3.4	3.3	3.6

These findings seem to confirm evidence from a recent study in Gloucestershire that for some young people who work part-time, work makes them more organised and disciplined in their approach to their studies (Hodgson and Spours, 1999). It might also be that young people who worked part-time came from relatively higher income families and that the link is between family income and achievement. A further possibility is that employers select the most able young people for part-time employment. Whatever the reason, there is no evidence in these data to suggest that part-time work impacts negatively on young people's academic achievements, at least at GCSE.

2.8.5 Part-time work and EMA applications

EMA eligible young people combining full-time education and part-time work were less likely to have applied for EMA (80 per cent) than those who were only studying (85 per cent). It is possible that this is because young people who were studying and working tended to be from families who believed themselves to be ineligible on income grounds and so did not apply. Some supporting evidence for this is found in:

- The slightly higher refusal rates among those working part-time who had applied for EMA (four per cent) than among applicants who were not working (two per cent); and,
- The lower proportion of successful applicants working part-time who received the maximum award.

In addition there is some anecdotal evidence from the evaluation in Leeds and London that:

- Young people are not applying for EMA in areas where part-time jobs are easy to come by; and,
- Because EMA recipients are subject to more rigid attendance requirements, some eligible young people do not apply for EMA as receipt would restrict their part-time work.

2.8.6 Summary and conclusions

Part-time work is associated more with socio-economic circumstances than receipt of EMA. Young people eligible for EMA on income grounds were less likely to work part-time than those who were ineligible.

However, there were differences in levels of part-time work among EMA recipients across the variant areas. In particular, EMA recipients in the Variant 3 areas where EMA is paid to the parent, were slightly more likely to be working than EMA eligible young people in the Variant 3 control areas.

EMA appears to have had very little effect in encouraging young people to give up part-time work. There was almost no difference between recipients and non-recipients who had given up work since Year 11, although EMA recipients in Variant 3 areas were less likely to have stopped work than non-recipients. As with participation in part-time work, it seems that eligibility for EMA is more important than receipt in explaining giving up work in Year 12.

EMA recipients were less likely to have worked part-time in Year 11 than non-recipients, but those who did achieved better exam results at the end of Year 11 than those who did not. The same picture emerged for all EMA eligible young people who worked part-time, in both the pilot and control areas – better results were associated with part-time work during Year 11.

2.9 Young People's Pocket Money

Box 2.9 Summary

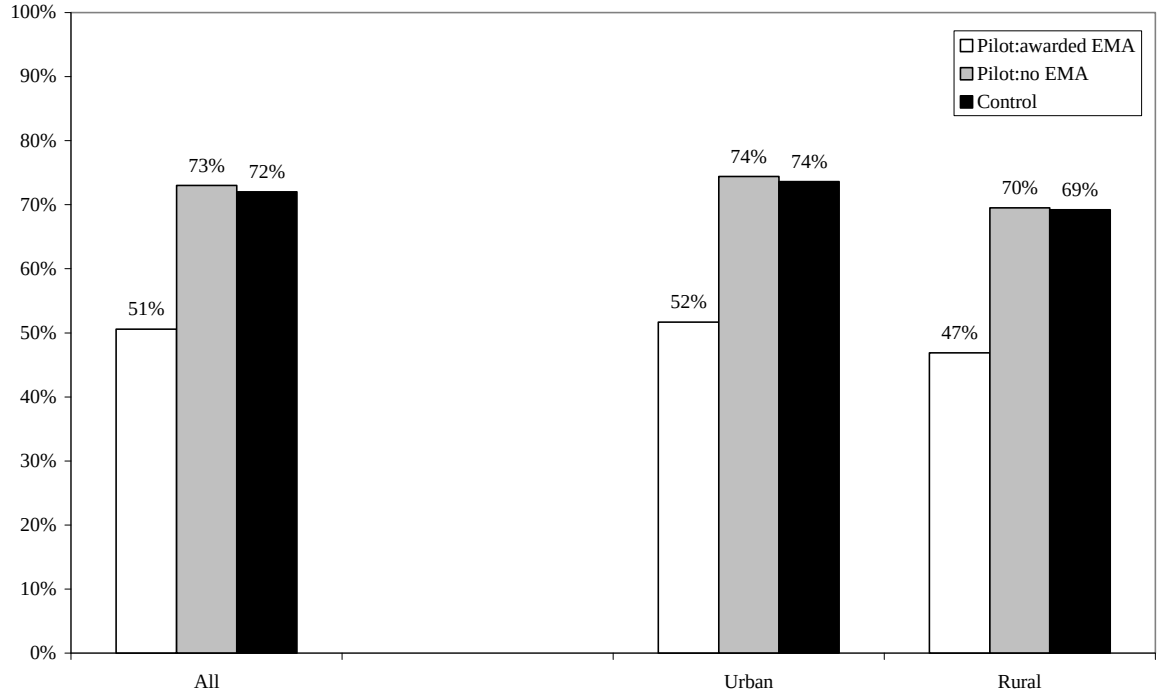
- EMA recipients were less likely to get pocket money from their parents than either non-EMA recipients or eligible young people in the control areas and, when they did, received lower average monthly amounts; and,
- It seems that when young people received the EMA directly, parents took the opportunity to stop giving pocket money or to reduce the amount given.

It might be expected that many young people in this age group, particularly those in full-time education, would continue to receive pocket money or an allowance from their parents. This could either be in addition to, or instead of, other sources of income such as earnings or EMA. In this section, analysis focuses on comparisons of receipt and amounts of pocket money between EMA recipients and non-recipients. Earnings from part-time work are also likely to impact on pocket money but disentangling these effects must await later analysis.

2.9.1 Receipt of pocket money

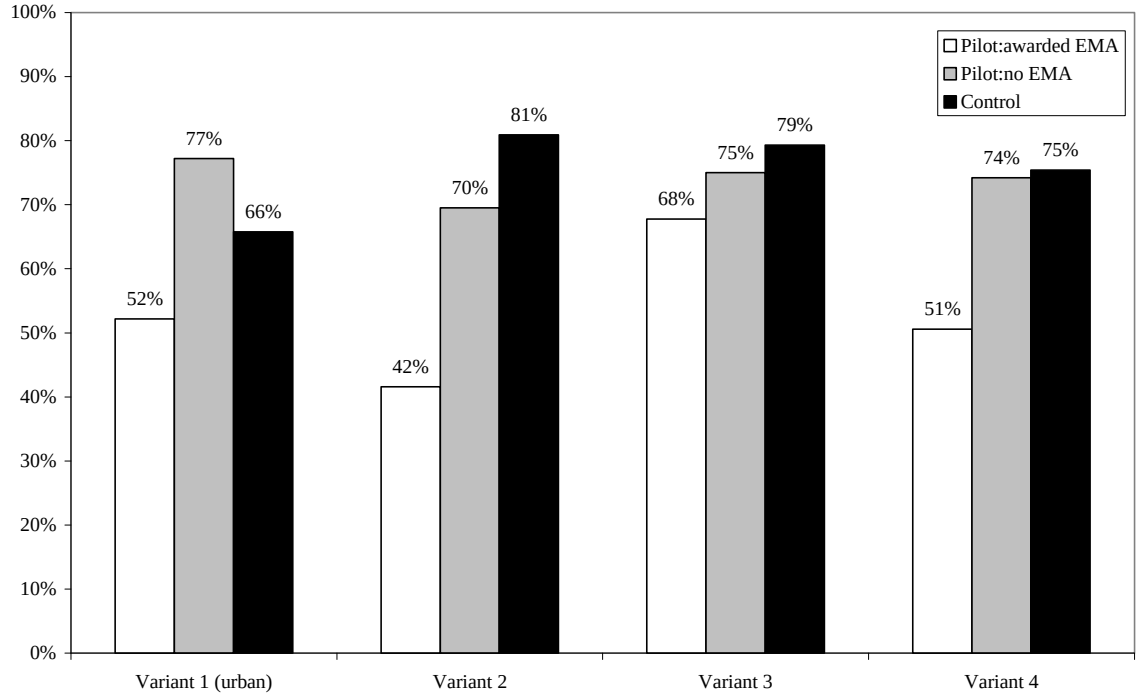
It seems that the parents of young people in full-time education who are receiving EMA are less likely to give pocket money than the parents of either non-EMA recipients or EMA eligible young people in the control areas (Figure 2.20). EMA recipients were 22 percentage points less likely to get pocket money than non-EMA recipients, and 21 percentage points less likely than eligible young people in the control areas.

Figure 2.20 EMA Eligible Young People in Full-time Education – Receipt of Pocket Money



These patterns were similar for rural and urban areas and across the different variants (Figure 2.21). The exceptions were the Variants 2 and 3 areas. For Variant 2 areas, where the maximum amount of EMA is highest, EMA recipients were the least likely of any group to receive pocket money. This group was 28 percentage points less likely to get pocket money than non-recipients, and 39 percentage points less likely to get it than young people from low income families in the control areas. In Variant 3 areas, where EMA is paid to the parent, although recipients were less likely to get pocket money than non-recipients and income eligible young people in the control areas, the differences were very much reduced, seven and eleven percentage points respectively.

Figure 2.21 EMA Eligible Young People in Full-time Education – Receipt of Pocket Money by Variant



2.9.2 Amounts of pocket money

Eligible young people who received pocket money from their parents were paid on average approximately £45 per month (Figure 2.22). However, EMA recipients who received pocket money were given lower average amounts (£43.22) than either non-recipients (£49.13) or eligible young people in the control areas (£46.19). Eligible young people in the rural areas generally received lower average amounts than those in the urban areas, but pocket money for EMA recipients in the rural areas, at £33.51 per month, was by far the lowest of all groups.

Figure 2.22 EMA Eligible Young People in Full-time Education who Receive Pocket Money – Average Amount Received

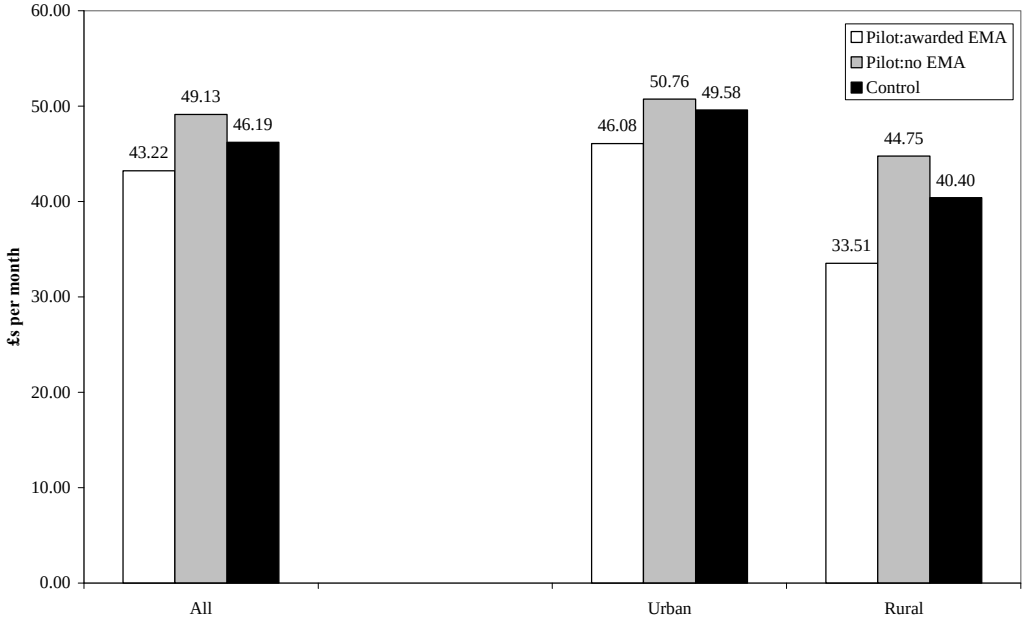
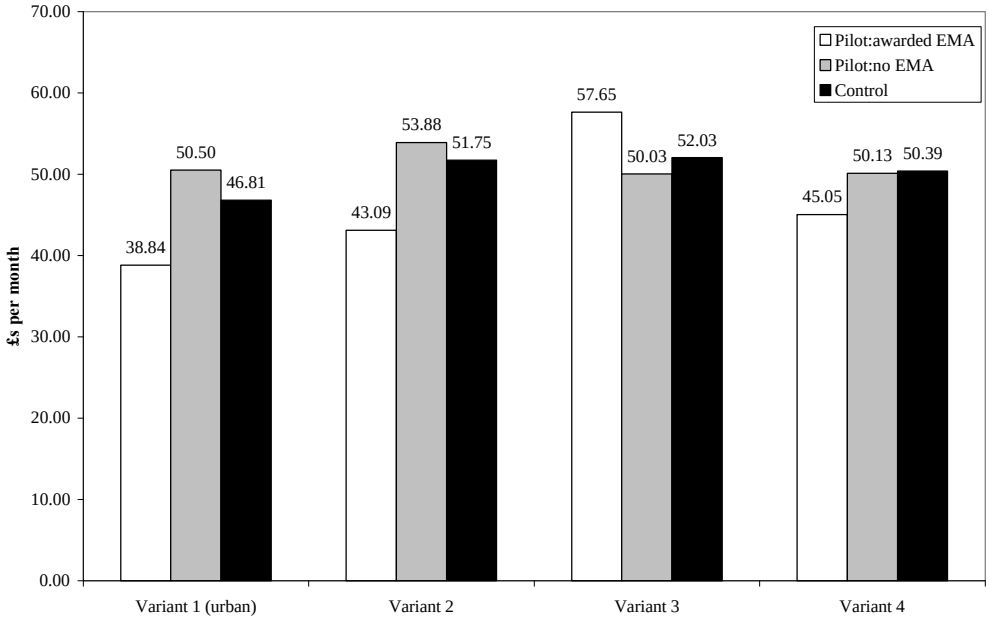


Figure 2.23 EMA Eligible Young People in Full-time Education who Receive Pocket Money – Average Amount by Variant



This pattern, of lower average amounts of pocket money for EMA recipients, was maintained across all the urban variants, again with the exception of Variant 3 (Figure 2.23). In these areas EMA recipients were receiving the largest amounts of pocket money, £57.65 per month.

2.9.3 Summary and conclusion

EMA recipients were less likely to get pocket money from their parents than either non-EMA recipients or eligible young people in the control areas and, when they did, received lower average monthly amounts. Two explanations are possible:

- First, it may be that young people awarded EMA would have been less likely to get pocket money even if they had not been awarded EMA and, when they did get pocket money would have received lower amounts; and,
- Second, it may be that when young people received the EMA directly, parents took the opportunity to stop giving pocket money or to reduce the amount given.

It is not possible to say which of these explanations is more likely at this stage. However, the findings that non-recipients in pilot areas who were actually income eligible were more likely to get pocket money and received larger amounts than recipients, and the fact that the situation in Variant 3, where EMA is paid directly to parents, was different, tend to suggest that the second of these explanations may be correct.

2.10 Young People's Spending

Box 2.10 Summary

- Young people in receipt of EMA were more likely than other groups of eligible young people to be expected by their parents to contribute to their keep;
- It seems that EMA was not being used to supplement young people's spending on entertainment;
- Young people who were receiving EMA were more likely than other groups of eligible young people to be making a contribution to housekeeping costs, transport and books and equipment for school;
- EMA recipients were more likely to say that transport and books and equipment were their main item of expenditure; and,

- In the Variant 3 areas where EMA is paid to parents, EMA 'recipients' had patterns of expenditure more similar to those of non-recipients and eligible young people in the control areas.

EMA might also be expected to impact on how young people spend their money. They might decide to (or their parents might insist that they) use it to contribute to the living expenses of their relatively less well off families. Alternatively, EMA might be used for spending directly on the young people themselves. Whilst resources did not allow for a full and detailed investigation of what young people spent their money on, the data include information on young people's contributions to housekeeping and to other areas of their personal spending. Findings from descriptive analyses of these issues are the subject of this section. As with previous sections, the focus is on how EMA seems to have influenced young people's behaviour. Future analysis will consider young people's total incomes, from both part-time work and EMA.

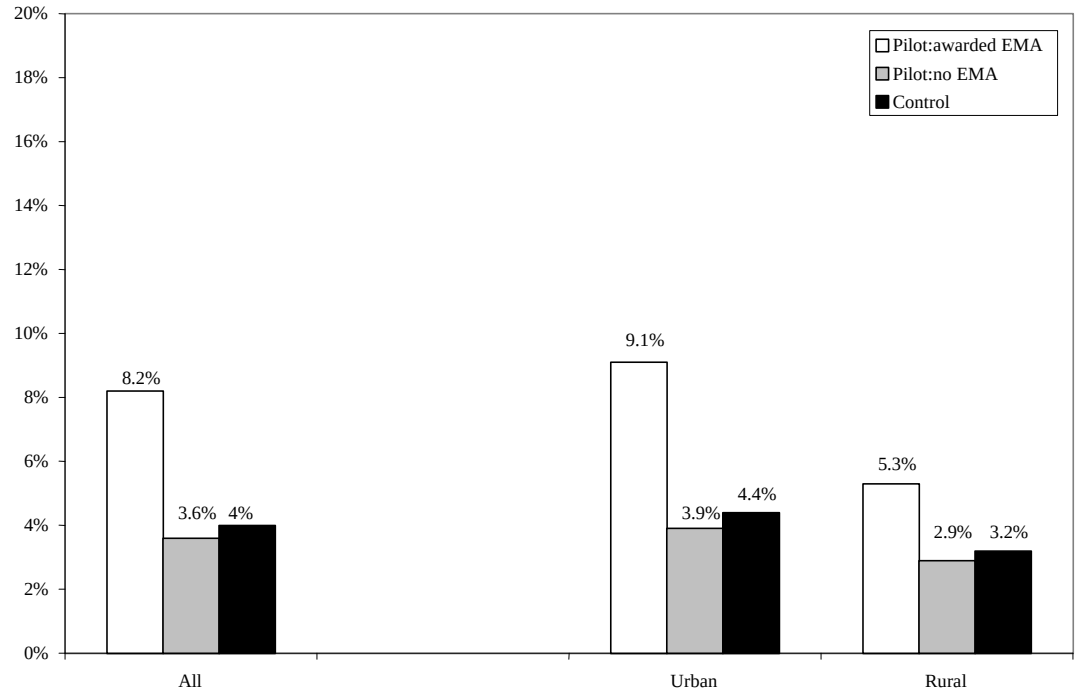
2.10.1 Housekeeping

Young people were asked whether they contributed to housekeeping costs and, if so how much they contributed. This was based on the premise that young people who received EMA might have been more likely than other young people in full-time education from low-income families to be asked to contribute to their keep. This might also, of course, be true of EMA income eligible young people who work part-time, as well as of other groups of young people who were not in full-time education and had incomes from work. However, since the focus of this report is EMA, the analysis concentrates on a comparison of EMA recipients and non-recipients, and EMA eligible young people in the control areas.

Contributing to housekeeping

Only small percentages of young people who were eligible for EMA contributed to their keep on a regular basis in both the pilot and control areas, approximately four per cent.

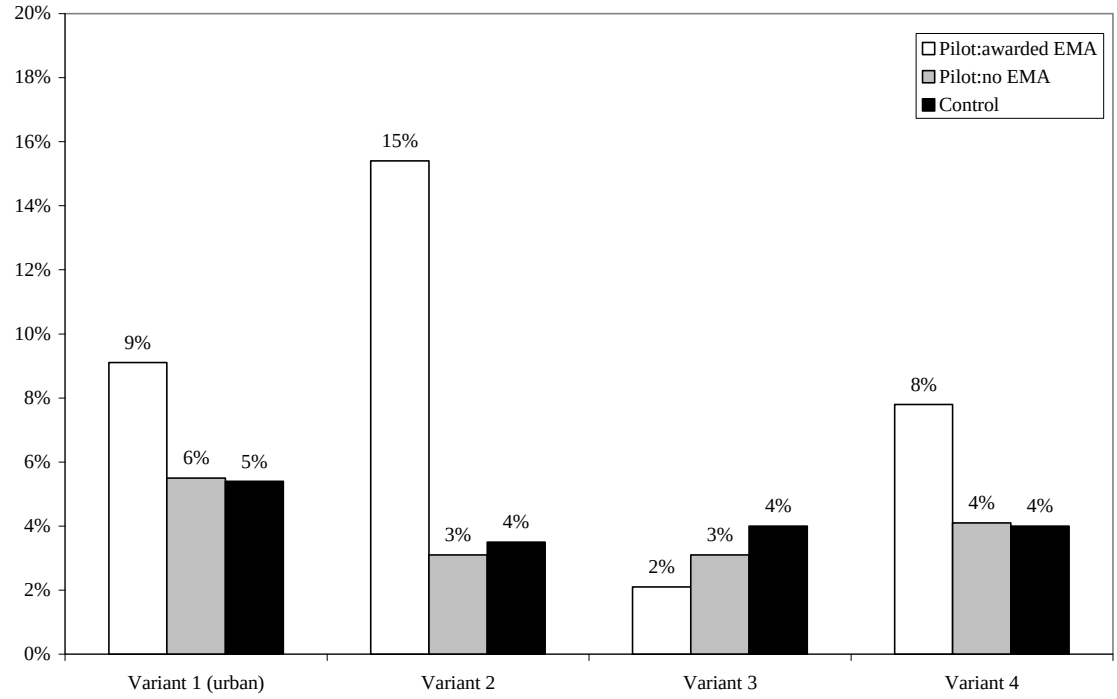
Figure 2.24 EMA Eligible Young People in Full-time Education – Contribution to Housekeeping



However, EMA recipients were at least twice as likely to make such a contribution as non-recipients, or eligible young people in the control areas (Figure 2.24). Patterns were very similar between non-recipients and eligible young people in the controls. In general, eligible young people in urban areas were slightly more likely to contribute to their keep than those in rural areas, with EMA recipients in urban areas (9.1 per cent) most likely to contribute of all groups.

However, differences emerged among the urban variants (Figure 2.25). EMA recipients were more likely than other groups to be paying towards their keep in each variant except variant 3, where EMA is paid to the parent. Here only two per cent of recipients contributed, less than either of the other two groups. The situation in Variant 2 areas was very different. In these areas, where a higher maximum amount of EMA is paid, 15 per cent of EMA recipients were contributing to housekeeping – five times more than among non-recipients and almost four times more than among income eligible young people in the Variant 2 control areas.

Figure 2.25 EMA Eligible Young People in Full-time Education – Contribution to Housekeeping by Variant



It has already been reported that EMA recipients in Variant 3 were more likely than recipients in any other variant to receive pocket money from their parents and, as shown above, were less likely to be contributing to housekeeping. The relationship between receipt of pocket money and EMA, and contributing to housekeeping costs was explored further. The results show that low-income young people in Variant 3 were generally less likely than similar young people in other variant areas to contribute to housekeeping, whatever combination of pocket money and EMA they were receiving (Table 2.6). However, the differences were particularly large for young people whose parents were receiving EMA and, particularly, young people whose parents were receiving EMA and who were not providing pocket money. Unless these young people had income from part-time work there would, presumably, be no point in parents asking for contributions to housekeeping since the young person would have no income. In Variant 2 areas, in contrast, where the maximum weekly amount of EMA is largest, one in five young people who were receiving EMA but no pocket money were contributing to housekeeping costs, by far the highest proportion of any variant.

Table 2.6 Contributions to Housekeeping by Receipt of Pocket Money and EMA

Cell per cent

	Variant 1 (Rural)	Variant 1 (Urban)	Variant 2	Variant 3	Variant 4
Receives pocket money and EMA	5.1	6.0	8.7	1.8	5.8
Receives EMA but no pocket money	5.6	12.6	20.1	2.8	9.8
Receives pocket money but not EMA	2.3	1.9	2.2	0.9	0.9

Base: EMA eligible young people in full-time education in pilot areas

Amounts contributed to housekeeping

Although EMA recipients were most likely to contribute to their keep, the amounts that they contributed tended to be lower than among eligible young people who contributed in the control areas (Figure 2.26). Among young people who made a contribution to housekeeping, the average amount was approximately £12 per month. Overall, eligible young people in the control areas paid more on average (£13.95) than either EMA recipients (£11.83) or non-recipients (£11.44). Differences between recipients and non-recipients were small except in the rural areas where recipients were contributing higher average amounts than non-recipients. However, each of the three groups of eligible young people in the urban areas contributed more on average than those in the rural areas.

Figure 2.26 EMA Eligible Young People in Full-time Education who Contribute to Housekeeping - Average Amount Paid

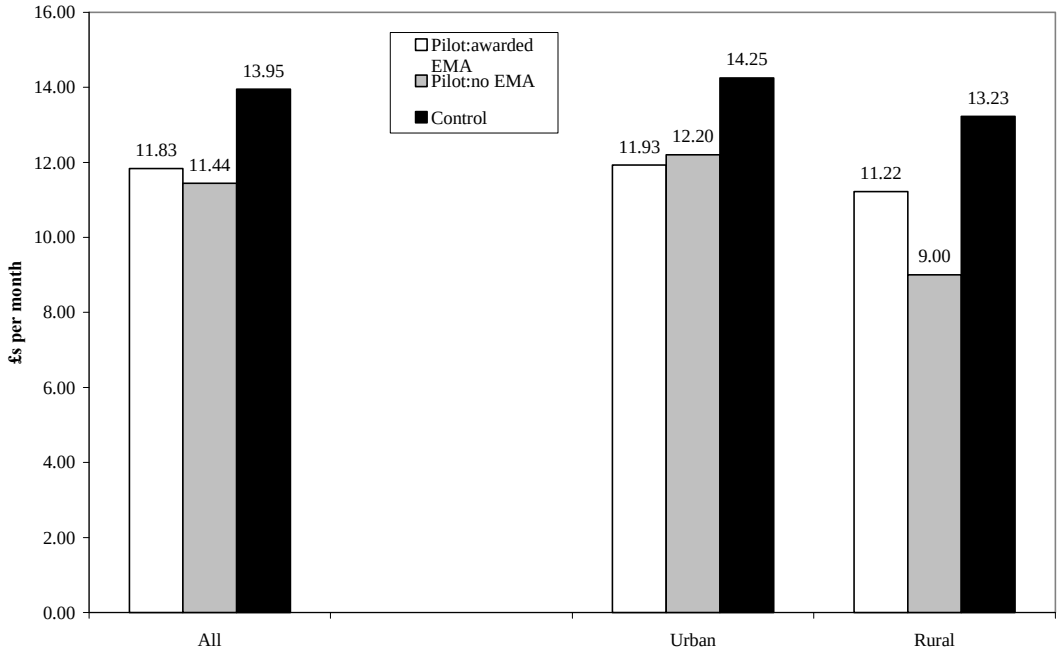
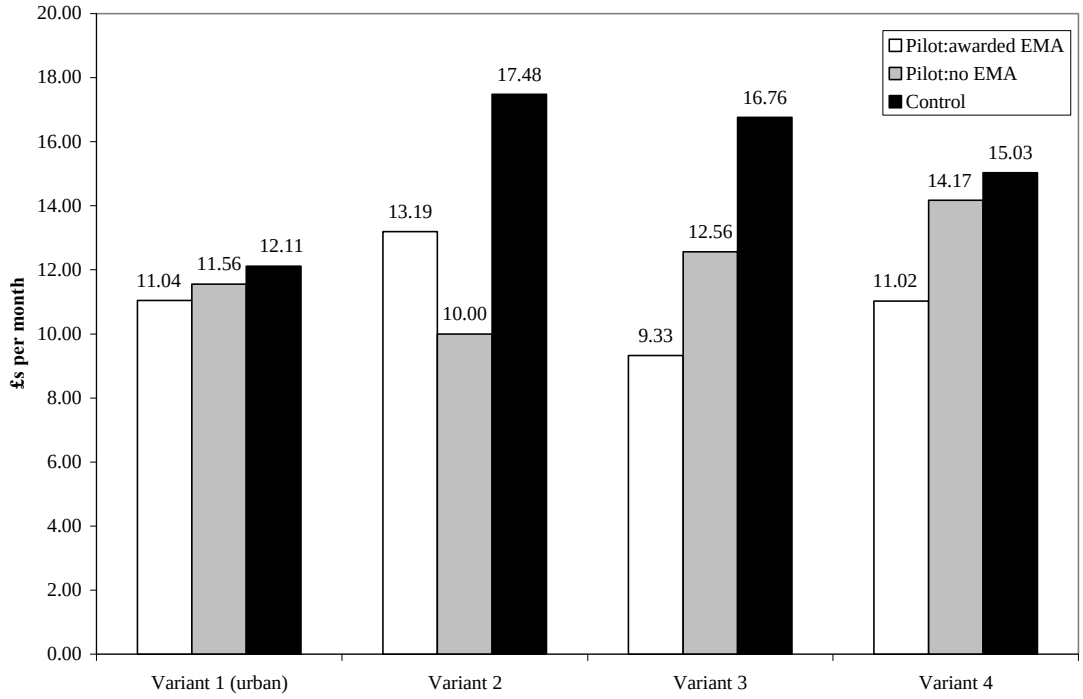


Figure 2.27 EMA Eligible Young People in Full-time Education who Contribute to Housekeeping - Average Amount Paid by Variant



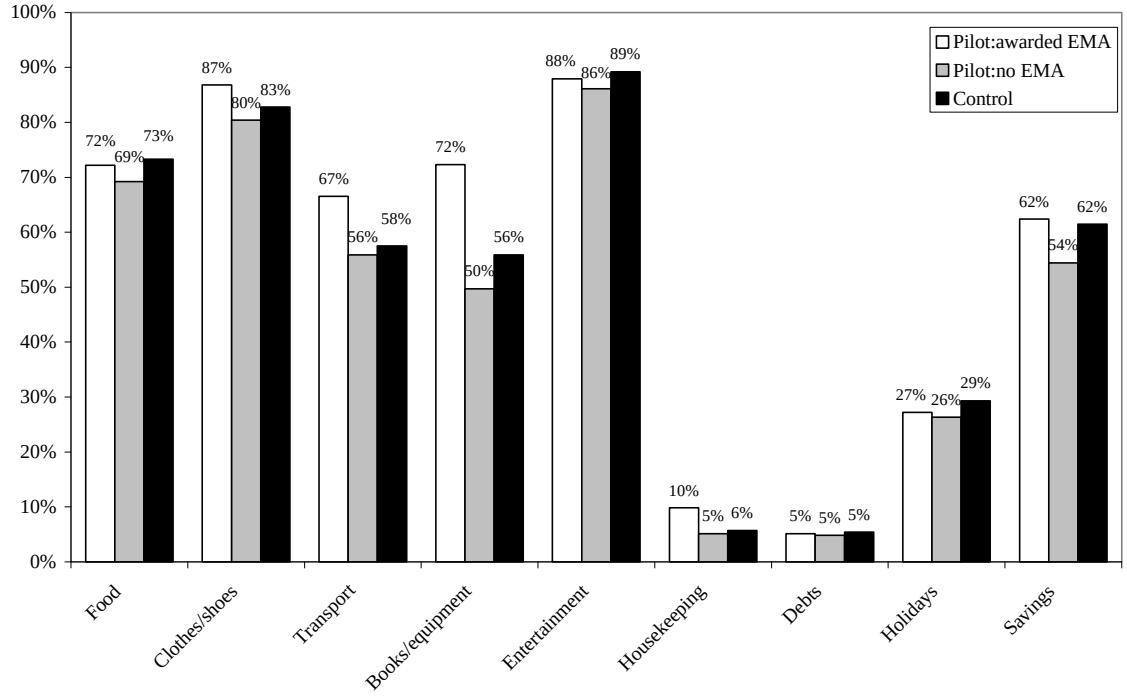
EMA recipients who contributed to their keep paid less on average than either non-recipients or eligibles in the control areas in each urban variant except Variant 2 (Figure 2.27). Here recipients were contributing more on average (£13.19) than non-recipients (£10.00), but still less than eligible young people in the control areas who contributed the highest average amounts of all groups (£17.48). In Variant 3 areas EMA recipients who contributed paid the lowest average amounts of any group (£9.33).

2.10.2 Contributions to personal spending

In addition to housekeeping, young people were asked whether they were personally contributing to their costs for food, clothes and shoes, transport, books or equipment for school or college, entertainment, paying off their debts, holidays and savings. The availability of EMA might be expected to make recipients more likely to have to pay something towards their costs. Again, income from part-time work is also likely to have an effect on contributions to expenditure, but for now the analysis focuses on EMA.

All EMA eligible young people were most likely to be making contributions to the cost of entertainment, clothes, shoes and food (Figure 2.28). EMA recipients were slightly more likely than non-recipients to contribute to all items and more likely than control eligibles to pay towards clothes and shoes, transport, books/equipment, housekeeping (as seen above), and savings. However, differences between groups were relatively small except for transport and books/equipment. EMA recipients were eleven percentage points more likely than non-recipients to contribute towards spending on transport, and 22 percentage points more likely to be paying towards their books and equipment for school.

Figure 2.28 EMA Eligible Young People in Full-time Education – Contribution to Various Items of Expenditure



Very few differences emerged between the urban and rural areas or among the urban variants for items other than clothes and shoes, transport, books and equipment, housekeeping (which has already been dealt with in some detail) and savings (Figures 2.29 and 2.30). Differences in the proportions of young people contributing to these items were sustained for urban areas, rural areas and for urban Variants 1, 2, and 4, with recipients more likely to have been paying towards these items than non-recipients. Variant 3, where EMA is paid to parents, again proved to be the exception. Variant 3 recipients were less likely than recipients in any of the other variants to be paying towards each of these items, particularly books/equipment and transport.

Figure 2.29 Contributing to Selected Items of Expenditure

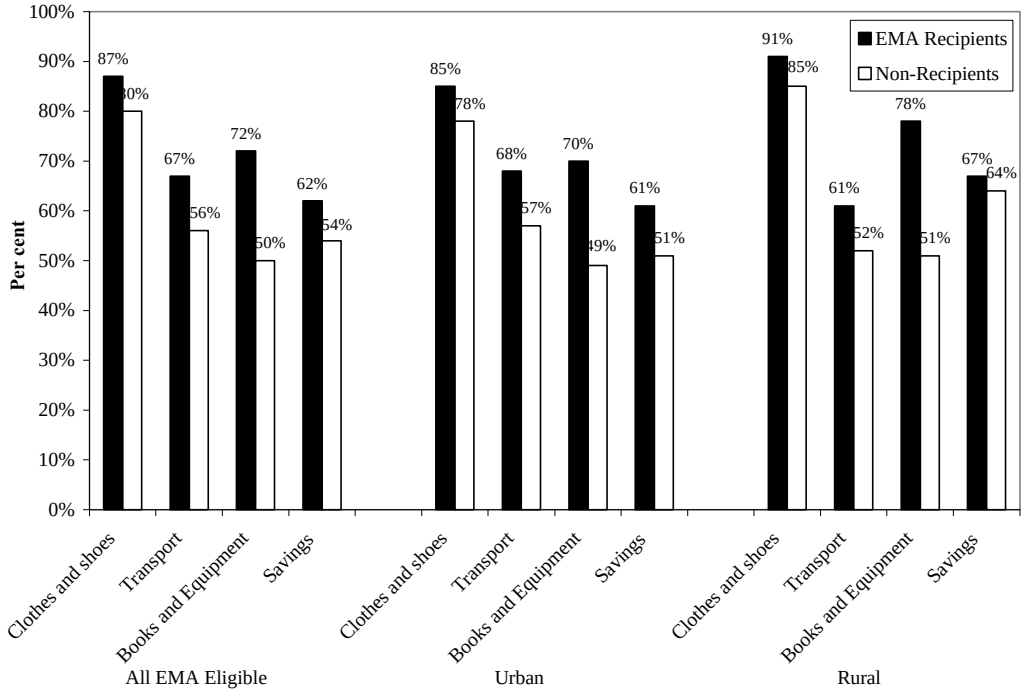
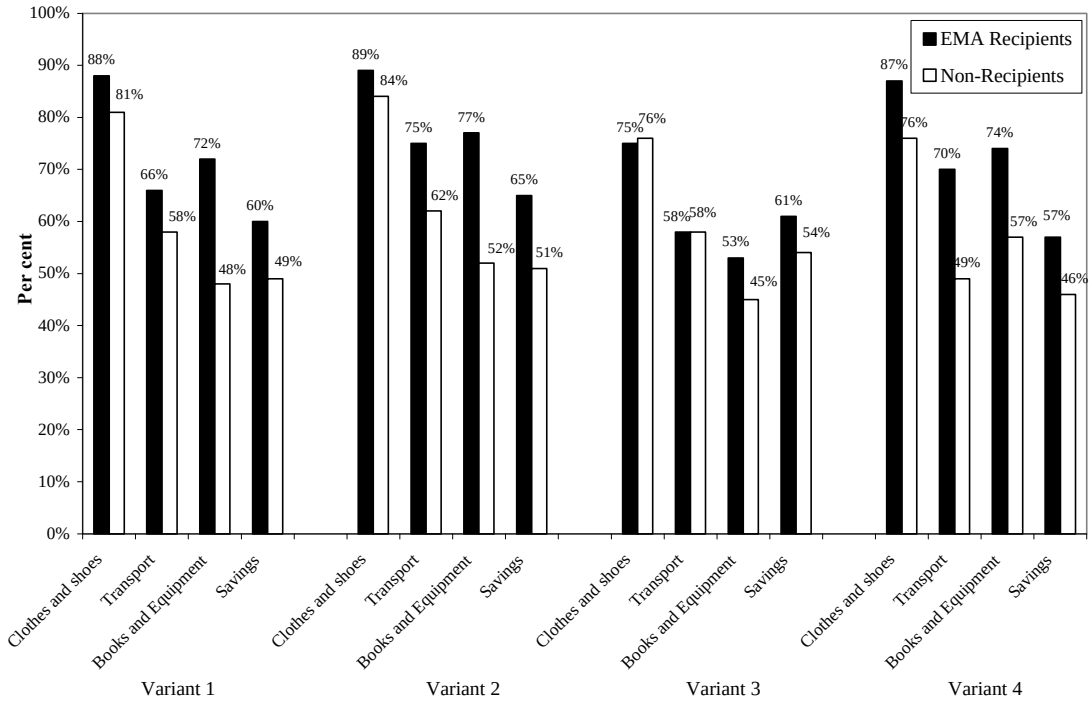


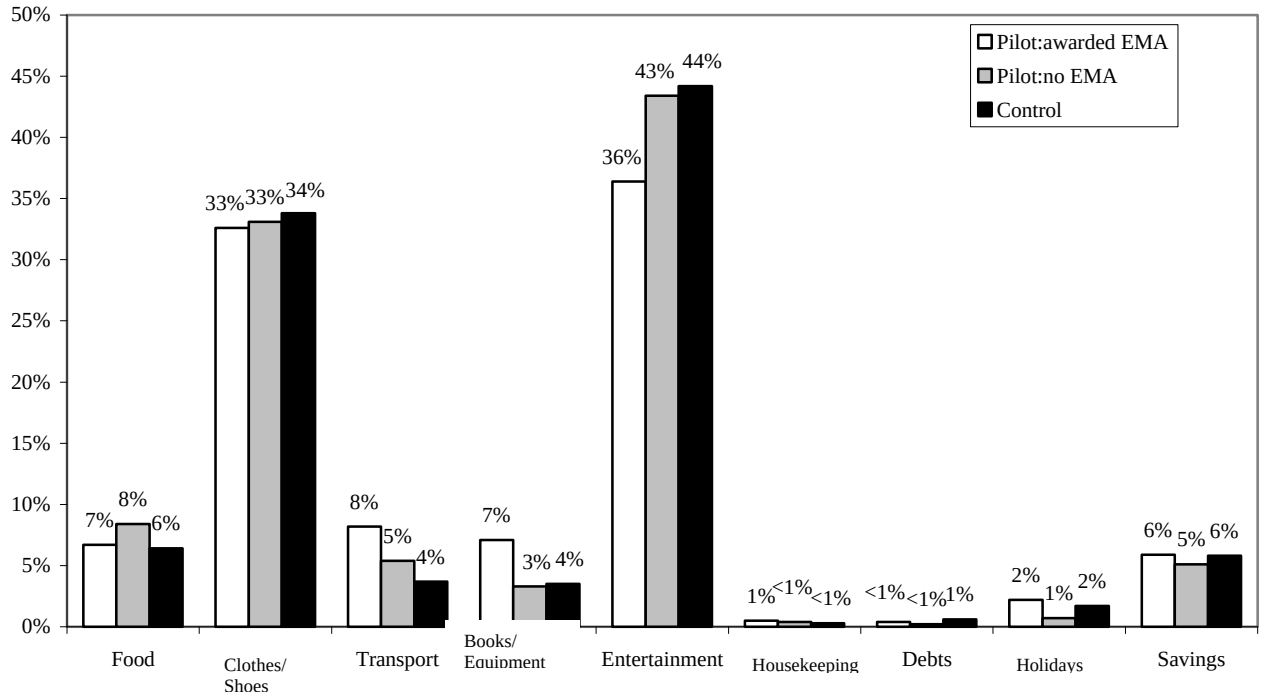
Figure 2.30 Contributing to Selected Expenditure by Variant



2.10.3 Main expenditure

Young people were also asked which of the items they spent most of their money on. Entertainment was most frequently cited as the largest item of expenditure by EMA recipients, non-recipients and eligible young people in the control areas, with clothes and shoes coming a close second (Figure 2.31). However, mirroring the findings from the previous section, young people receiving EMA were less likely to say that entertainment was their main expenditure than either of the other two groups. EMA recipients were seven percentage points less likely to say entertainment was their main expenditure than non-EMA recipients. Although only small percentages of young people said that transport or books and equipment were the items they spent most on, EMA recipients were more likely than either non-recipients or eligible controls to say that these were their largest outgoings.

Figure 2.31 EMA Eligible Young People in Full-time Education – Largest Item of Expenditure



Focusing on the most frequently cited areas of main expenditure by EMA recipients, (entertainment, clothes/shoes, transport, and books/equipment), EMA recipients in the rural area showed a similar pattern to EMA recipients as a whole with the exception of clothes and

shoes (Figures 2.32 and 2.33). EMA recipients in the rural area were more likely than non-recipients to say that clothes and shoes were their main item of expenditure.

Patterns across the urban variants were similar to the overall picture, again with the exception of Variants 2 and 3. Young eligibles in the Variant 2 areas, both recipients and non-recipients, were more likely than any other group to say that their main expenditure item was transport. However, EMA recipients in Variant 2 (ten per cent) were five times more likely than non-recipients (two per cent) to give books and equipment for school or college as their main spending item.

Figure 2.32 Largest Item of Expenditure: Urban and Rural

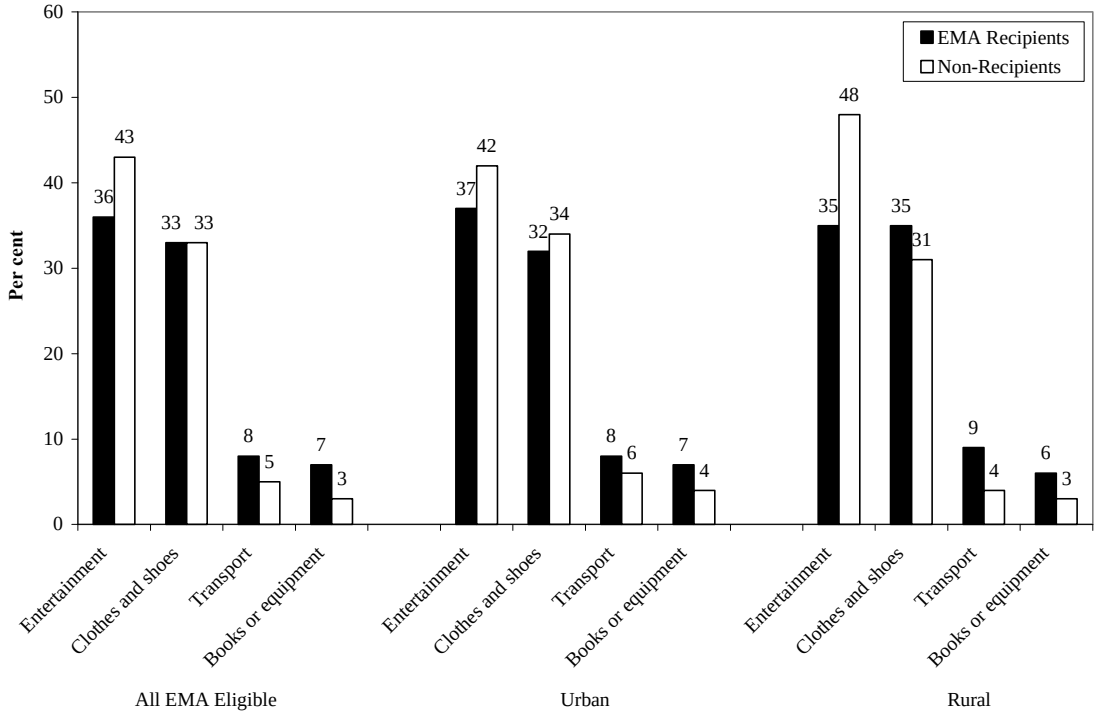
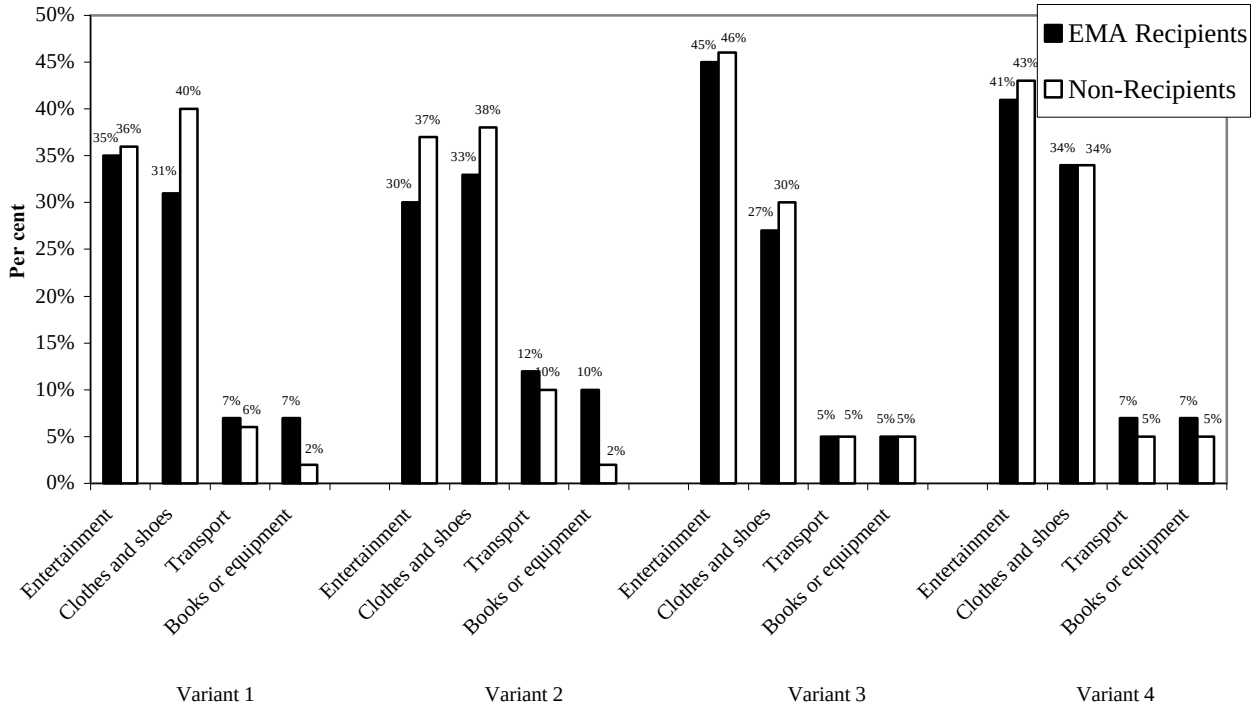


Figure 2.33 Largest Item of Expenditure: By Variant



In Variant 3 areas, recipients were no more likely than non-recipients to say that clothes and shoes, transport or books and equipment were what they spent most on. Except for entertainment, Variant 3 recipients were also less likely than recipients in any other variant to cite each item as their main item of expenditure. Again, it seems that EMA in Variant 3 areas is not being passed on to young people.

2.10.4 Summary and conclusions

Young people in receipt of EMA were more likely than other groups of eligible young people to be expected by their parents to contribute to their keep. However, among those who did contribute, EMA recipients paid similar amounts on average to non-recipients. Eligible young people in the control areas contributed the highest average amounts.

It seems that, on these measures, EMA was not being used to supplement young people's spending on entertainment. Young people who were receiving EMA were more likely than other groups of eligibles to be making a contribution to housekeeping costs, transport and books and equipment for school. They were also more likely to say that transport and books

and equipment were their main item of expenditure. The exception seems to be recipients in the Variant 3 areas where EMA is paid to parents. EMA 'recipients' in these areas had patterns of expenditure more similar to those of non-recipients and eligible young people in the control areas than to EMA recipients in other variant areas.

3 Intentions, Destinations and Decisions: What to do after compulsory education?

The previous chapter has suggested that EMA eligible young people in pilot areas were more likely to participate in post-16 education than eligible young people in control areas; evidence suggestive of an EMA effect that is substantiated in Chapter 5. However, by no means all eligible young people were in post-16 education and the EMA evaluation provides the opportunity to ask how resistant those young people not in post-16 education are to learning and to explore potential barriers to participation.

Box 3.1 Summary

- EMA appeared more influential in bolstering the intentions of young people who were thinking about entering post-16 education, rather than in encouraging those intending to leave to change their minds. However, this finding is based on recall of Year 11 intentions at the time of the interview and these might be biased by actual destinations;

- The introduction of EMA appears to have led to a smaller proportion of eligible young people joining the NEET group in the pilot compared to the control areas in urban locations. In rural areas, most movements appeared to be away from work and training courses; and,

- Young people whose destination was not education, employment or training appear to have had less support in deciding what to do after leaving compulsory education, both formal and informal, than young people entering other destinations.

The chapter has three aims:

- To examine briefly how EMA might have affected EMA eligible young people's decision-making by comparing what they intended to do before the end of Year 11 with their destination at the time of the interview (post Year 11);
- To describe the circumstances of EMA eligible young people who were not in education, employment or training (NEET) at the time of interview. These young people are arguably those who might potentially benefit most from EMA if it encouraged greater levels of participation in post-16 education; and,

- To explore how various influences on young people's decision-making relate to destinations and to examine the extent to which financial concerns form a barrier to participation compared with other constraints. Results from this section of the analysis will help to inform policies that might complement the EMA as a part of the wider Government strategy on expanding opportunities for learning.

Two cautionary notes are worth making in relation to findings in this chapter. First, there are differences in the distribution of characteristics of young people in pilot and control areas, so that differences using the pilot-control distinctions should be treated as indicative rather than conclusive. Second, while Local Education Authorities (LEAs) appear to have been largely successful in publicising EMA in the short time available (Chapter 2), knowledge of its availability was not universal. As knowledge of EMA becomes more widespread there are two possible outcomes. First, those young people who did not move into post-16 education immediately after leaving Year 11 might be drawn into education at a later stage, perhaps through a delayed gain in knowledge of the existence and working of EMA. Second, young people leaving compulsory schooling after EMA has been in operation for a year or so may be more aware of its existence and benefits, and so take EMA into account when planning their future.

The design of the evaluation means that the first issue - that of a delayed EMA influence - will be addressed when the first cohort of respondents are followed up a year after their first interview. The second issue will be addressed through comparing the EMA effect in the first interview with the 1999 cohort of respondents to the first interview with the 2000 cohort.

As the key focus of this report is the group of young people eligible for EMA, all analysis in this chapter is based on the sub-group of respondents who were 'EMA income eligible', that is, their family's gross taxable income did not exceed £30,000. All results are based on weighted data (see Chapter 1).

3.1 Intentions and Destinations

The piloting of EMA was announced by the Chancellor in his Comprehensive Spending Review White Paper statement in July 1998 and was implemented in time for the start of the 1999-2000 academic year. Given the relatively short time span between the announcement of EMA and the beginning of the pilot, it is unlikely that many students were able to take EMA into account when deciding what to do after the end of Year 11. This was confirmed in the qualitative interviews with young people who reported that decisions about whether or not to continue in education were taken before they or their parents had learned of EMA (Legard et al., 2001). The extent to which EMA plays a role in decision making over the longer-term will be more apparent with the second cohort of respondents.

Young people were asked what, during Year 11, i.e. before leaving school, they had intended to do at the end of Year 11, i.e. when they had finished compulsory schooling. In general, at the time of interview, a large proportion of EMA eligible young people were doing what they had intended to do during Year 11. In other words, for 76 per cent of young people their post Year 11 destination matched their Year 11 intention.

This was particularly so for those who had intended to remain in full-time education. Almost nine in ten eligible young people (86.5 per cent) who intended to remain in education were in full-time education at the time of interview (Table 3.1). This is substantially greater than the 69.4 per cent staying-on rate overall amongst all young people meeting the EMA income eligibility condition. Legard et al., (2001) reported that people who had changed their minds from their original intention of continuing in education sometimes had specific reasons for doing so, for example, lower than expected GCSE performance, experiences of bullying at school and pregnancy/childcare.

Table 3.1 Destinations by Intentions of Staying-on in Post-16 Education

Row per cent

	Destination				N
Intention:	**Full-time Education**	**Work /training**	**Unemployed**	**Other**	
Full-time Education	86.5	7.2	3.5	2.9	5,588
Work/training	19.6	52.6	21.8	6.0	1,653
Other	39.9	30.0	14.9	15.2	316

Base: all young people meeting the EMA family income eligibility criterion. The 'N' is unweighted, but does not sum to 7,560 because of missing values.

Among eligible young people who had changed their minds between Year 11 and the time of interview, a significant proportion had actually remained in full-time education. Almost two-fifths of those who had an 'other' intended destination were in full-time education and 30 per cent were in work or training. Perhaps of most concern is that over two in ten young people (21.8 per cent) who had intended to go into work or training were unemployed at the time of interview.

There are two ways in which EMA may have influenced young people to remain in full-time education. First, it may have encouraged those eligible young people who had intended to stay in education but who were wavering in that decision. Second, it might have changed the minds of those originally intending to leave and move into some other activity at the end of Year 11. The group who originally intended to leave was arguably, at least initially, more resistant to post-16 education than those who had originally intended to remain in education when they were in Year 11. It is therefore of interest to explore how EMA seems to have affected groups of eligible young people who were initially more or less resistant to participation post-16. However, it is important to bear in mind the possibility that because information on intentions was collected at the time of interview, the actual destination at the time of interview might have biased young people's recall of their intentions.

If EMA has had a role in persuading young people to remain in education, then a larger proportion of EMA eligible young people who intended to participate should actually have been participating in the pilot areas compared with the control areas at the time of interview.

Similarly, a greater proportion of eligible young people in the pilot areas who intended to leave should have actually remained in education than in the control areas.

It would appear that EMA might have encouraged those who intended to remain in education not to change their minds. Overall, 87.6 per cent of EMA eligible young people in the pilot areas who intended to remain in education actually did so, compared to 84.6 per cent in the control areas (Table 3.2). This would appear to imply a significant participation gain of 3.0 percentage points among those originally intending to stay on.

Table 3.2 Young People Intending to Stay-on in Post-16 Education and their Destinations

Cell per cent (varying base size)

	Pilot			Control		
	All	**Urban**	**Rural**	**All**	**Urban**	**Rural**
Intending to stay-on	73.9	70.6	85.3*	72.1	69.4	77.3
Intending to stay-on and stayed-on	87.6*	86.2*	91.4*	84.6	82.7	87.9
Intending to leave and stayed-on	23.4	23.4	24.2	22.1	20.5	26.0

Base: all young people meeting the EMA family income eligibility criterion.
Note * indicates a significant difference (P<0.05) between the variant in the pilot group and its counterpart in the control.

In contrast to those who intended to stay-on, EMA eligible young people who intended to leave education after Year 11 appear not to have been influenced by EMA. The difference between pilot and control areas was 1.3 percentage points[1] and statistically was not significantly different, so may have emerged purely by chance. In urban areas just under three percentage points more young people in the eligible pilot group remained in education than in the eligible control group although, again, this difference was not statistically significant (Table 3.2). However, there was a large difference in the sample sizes between

[1] It is important to remember that the two percentage point difference figures between pilots and controls (3.0 percentage points for those intending to stay and 1.3 percentage points for those who intended to leave) cannot simply be summed to get the corresponding difference for the sample overall. These figures are based on two sub-samples of different sizes, which would need to be accounted for in aggregating to the 3.9 percentage points obtained for all eligibles, as would differences between pilot and control areas in levels of intentions to stay on.

the two groups so that it was not possible to detect percentage effect changes for the two groups with the same degree of statistical certainty.

3.2 Young People Not in Education, Employment or Training

This section of the report examines the circumstances of young people who were not in education, employment or training at the time of interview, the NEET group. This group is of particular importance to the evaluation, since the proportion of young people becoming NEET after Year 11 has remained stubbornly persistent at around 10 per cent in recent years, although falling significantly to 8 ½ percent in 1999 (DfEE, 2000).[2] A lack of financial support is recognised as a barrier to participation in learning (Herbert and Callender, 1997; Kennedy 1997; see Section 1.1). Therefore the introduction of EMA may act as a stimulus to some young people who have entered the NEET group, or are at risk of doing so, to remain in education.

3.2.1 The NEET groups

Two groups of young people who were NEET at the time of interview have been identified for this report:

- The economically active group: includes unemployed young people and those waiting to take up work; and,
- The economically inactive group: includes young people who were not in the labour market through ill-health, caring for others or simply taking a break.

Young people in part-time education (N=59) have been included with those in full-time education for the purposes of the following analysis, in order to keep the NEET groups as close as possible to the definition of not undertaking education, employment or training. Again, only young people income eligible for EMA have been included in the analysis.

Overall, it would appear that higher levels of participation in post-16 education in the pilot areas than in the control areas were the result of lower proportions of young people entering work or training and the NEET groups (Table 3.3). The pilot-control difference for the

[2] Definitional and measurement issues mean that estimates of the NEET group vary (Pearce and Hillman, 1998).

work/training group was not quite statistically significant, whereas that for the active NEET group was just statistically significant.

Table 3.3 Young People's Destinations: NEET, Education and Work or Training

Column per cent

	Pilot			Control		
	All	**Urban**	**Rural**	**All**	**Urban**	**Rural**
Full/part-time education	73.7*	70.7*	83.8*	70.7	66.9	77.8
Work/training	15.4	17.0	10.1*	16.8	17.2	15.9
NEET: active	8.2*	9.6*	3.5	9.4	11.8	4.9
NEET: inactive	2.7	2.7*	2.7*	3.1	4.1	1.4

Base: all young people meeting the EMA family income eligibility criterion (N=7560).
Note * indicates a significant difference (P<0.05) between the variant in the pilot group and its counterpart in the control.

Confirming the findings in Chapter 2, there were substantial differences between urban and rural areas in the destinations of eligible young people and the size of the NEET groups. In urban areas the pilot-control group differences were suggestive of an EMA effect that had taken young people from the NEET groups into education, but this was not so in rural areas. Thus, in pilot urban areas the number in the active NEET group was some 2.2 percentage points lower than in the control areas (Table 3.3); for inactive NEET young people the corresponding difference was 1.4 percentage points.

A different picture emerged in rural areas. EMA eligible inactive NEET group members were **more** prevalent in the rural pilot areas than in the controls, but there was no statistically significant difference in active NEET young people between pilot and control rural areas. It is extremely unlikely that EMA has increased the inactive NEET group, and this difference is likely to have arisen because of pre-existing differences between the rural pilot and control areas.

In the remainder of the chapter, the EMA eligible sample is considered as a whole, rather than making distinctions between those in the pilot and control areas. The timing of the announcement of EMA for this first cohort makes it difficult to disentangle the effect of

EMA on decision–making processes between pilot and control individuals. This will be possible for Cohort 2.

3.2.2 Decision-making in Year 11

This section of the report explores how easy EMA eligible young people had found it to make their decision about post-16 destinations, and also examines whether or not they thought they had made the right decision. As Legard et al. (2001) report, some young people had had a clear idea about what they wanted to do after Year 11. It is likely that many of these would find their decision easier to make though it is possible that later experience might lead them to decide it was not the right decision. Other young people had been undecided about their destination after Year 11 (Legard et al., 2001), either because they had no clear idea of what they wanted to do, or because they could achieve their goal through education or work based training.

Again, it should be borne in mind that this information was collected retrospectively and it is therefore possible that recall of the decision making process might be coloured by events between Year 11 and the time of the interview. Nevertheless, these data provide valuable evidence about how young people experience the transition out of compulsory schooling, and their responses to these questions offer important insights into that process.

The majority of eligible young people (60 per cent) said that they had found it either very or fairly easy to make their decision about what to do after Year 11, with only 7.7 per cent finding it very difficult (Table 3.4). However, young people in the two NEET groups had generally found their decision harder to make than had those in education, training or employment. Forty per cent in the active group said they had found the decision fairly or very difficult.

Table 3.4 Post-16 Decision-Making: An Easy Decision?

Row per cent

	Very Easy	Fairly Easy	Neither	Fairly Difficult	Very Difficult
Full/part-time education	25.8	36.3	12.3	19.0	6.5
Work/training	28.3	32.1	11.8	19.0	8.8
NEET: economically active	17.7	25.6	16.7	27.0	13.0
NEET: economically inactive	32.2	21.6	11.5	17.8	16.8
All	25.7	34.3	12.6	19.7	7.7

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

EMA eligible young people in the inactive NEET group had a somewhat mixed experience. A large proportion of the group found their decision very easy (32.2 per cent); many members of this group described themselves as looking after the home or family, or who were sick or disabled. Therefore, their decision may have been easy because they saw themselves as having no choice. However, young people in the inactive NEET group were also likely to have found it very difficult to make their decision (16.8 per cent). Generally, these young people described their current activity as taking a break or on holiday, or were unable to give a coherent response as to what they were currently doing.

Young people's reflections on whether their decision had been the correct one were very dependent upon the option they had chosen. The vast majority of EMA eligible young people in education, work or training felt they had made the right decision (Table 3.5). In contrast, eligible young people in either the active or inactive NEET groups were less certain they had made the right decision, particularly those in the active NEET group.

Table 3.5 Post-16 Decision-making: The Right Decision?

Row per cent

	Definitely Right	Probably Right	Probably Wrong	Definitely Wrong
Full/part-time education	67.4	29.1	2.6	0.9
Work/training	59.8	27.6	8.0	4.6
NEET: active	23.9	35.3	25.4	15.4
NEET: inactive	40.7	30.9	15.7	12.7
All	61.8	29.4	5.7	3.1

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

There is clearly scope for assisting the 40 per cent of economically active young people in the NEET group, and the 29 per cent of inactive who felt they had made a wrong decision about their post-16 destination to change direction. Perhaps more important, these findings show the need to identify this group at an early stage to assist in the decision-making process.

The analysis was then taken a stage further to explore whether there was a relationship between finding the decision about post-16 destinations easy and whether the young person perceived the decision to have been correct. The easier the young person found it to make the decision, the more likely they were to believe the decision had been correct (Table 3.6). The vast majority of EMA eligible young people in education felt their decision had been correct, irrespective of whether it was easy or difficult. However, for eligible young people in work or training, it was more readily apparent that those who found the decision difficult were less likely to think they had made the right decision (76.1 per cent). In contrast, 93.2 per cent who found it easy said they had made the correct decision.

Table 3.6 Finding the Post-16 Activity Decision Correct by Ease of Making the Decision

Cell per cent

Found Decision Correct:	Found Decision: Easy	Neutral	Difficult
Education	98.1	95.0	93.4
Work/training	93.2	83.2	76.1
NEET: economically active	72.9	62.6	43.3
NEET: economically inactive	87.4	50.0	54.3

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

EMA eligible young people in the active NEET group were the least certain about the decision they had taken, and those who found the decision difficult were least likely to think they had made the correct choice. Nevertheless, 43 per cent of young people who had found the decision difficult still maintained that they had been correct, despite being in the NEET group at the time of interview. Furthermore, 72.9 per cent of young people in the active NEET group who had found the decision easy felt that they had made the correct choice.

A substantial majority of young people in the inactive NEET group who thought their decision had been easy still said that their decision had been correct (87.4 per cent). It seems likely that this again stems from caring duties or sickness restricting their perceived options.

3.2.3 Reasons for not entering post-16 education

As Legard et al., (2001) report, there are numerous reasons why young people do not stay on in post-16 education. For some, it is an active decision to do something else, whereas others might have negative feelings towards education in general; in some cases these feelings might have been learned from experiences in school.

All respondents not in post-16 education at the time of interview were asked a series of questions relating to possible circumstances that could help explain why they had not continued in education. Responses have been summarised for all EMA eligible young people

in the NEET groups, and distinctions are again made between active and inactive NEET groups (Table 3.7).

Wanting a job or training place was the reason most young people in the active NEET group gave for not having continued in education (82.1 per cent), though this was less apparent for inactive NEET group members (36.9 per cent) (Table 3.7). Financial need also appeared important for many in the active NEET group, for example 53.4 per cent said they had needed to earn more money, but less so for those inactive (23 per cent). EMA appears to have at least some potential for encouraging these respondents to continue in education.

However, bad exam results and a dislike of school had also deterred many labour market active NEET respondents from remaining in education, with 45.6 per cent and 44.2 per cent respectively citing these as reasons for not continuing their education. Legard et al., (2001) found that, particularly for males who ended up unemployed, dislike of school was associated with inadequacy arising from low achievement, a resentment of teacher's control and peer pressure. Table 3.7 also shows that about one fifth had been discouraged from continuing their education because their friends were not doing so.

Inadequate educational opportunities also seem to have played a part in discouraging post-16 participation, among some young people. Over one-third of active NEET group respondents (35.4 per cent) stated that they had been unable to find suitable courses and 16.7 per cent said they could not get a place at a school or college. More positively, only 6.5 per cent had been discouraged from entering post-16 education by their parents; travelling difficulties discouraged 11.7 per cent.

Table 3.7 Reasons for Not Remaining in Education - NEET Group Members

Cell per cent

	Active	Inactive
Bad exam results	45.6	27.5
Disliked old school	44.2	30.2
Could not get a place at another school/college	16.7	12.6
It would have been difficult to travel to school or college	11.7	9.3
Could not find any courses wanted to do	35.4	17.4
Needed to earn more money than could have got in education	53.4	23.0
Could not find a suitable part-time job to combine with education	29.5	13.5
Could not afford to remain in education	25.2	15.2
Wanted to look for a job or training place	82.1	36.9
Found a job/training place wanted more than education	29.8	21.1
Friends were not continuing in education	19.9	13.0
Parents did not want me to continue in education	6.5	3.3
Parents could not afford for me to continue in education	12.1	7.4
Could not fit in with family caring responsibilities	4.1	26.3
N (unweighted)	599	187

Base: all young people NEET meeting the EMA family income eligibility criterion and giving a response for not continuing in post-16 education.

The inactive group had some similar concerns to those who had entered the labour market. However, a barrier to which members of the inactive group were particularly prone was that of caring for someone in the family (26.3 per cent).

3.2.4 Awareness of EMA

In most EMA pilot areas, publicity information was given to all Year 11 students in 1999 and, even though publicity about EMA was delayed in the first year, the message had still reached large numbers of eligible young people (see Chapter 2). However, for many this information was too late because the decision about what to do after Year 11 was already made (Legard et al., 2001).

Of those eligible young people intending to remain in education in the pilot areas, 93.3 per cent knew about EMA compared to only 55.4 per cent of those not intending to do so (Table 3.8). Furthermore, 90.8 per cent of eligible young people in education who had originally intended to leave had heard about EMA, although it is not possible to determine if they had heard about EMA prior to deciding to remain in education or afterwards.

Table 3.8 Awareness of EMA

Cell per cent

Destination:	All	Pilot Intend to stay	Intend to leave
Education	95.7	96.2	90.8
Work/training	53.2	68.9	47.4
NEET: economically active	45.8	69.8	34.2
NEET: economically inactive	48.8	65.1	33.3
All	83.8	93.3	55.4

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

As shown in Chapter 2, nearly all of the eligible young people who had entered post-16 education had heard of EMA (96 per cent). This is much greater than the comparable percentages for those doing other activities. Young people who intended to leave full-time education at the end of Year 11, and who did so, were far less likely to have heard of EMA than were their counterparts who originally had intended to remain in education but who had left.

However, the comparatively low levels of knowledge about EMA amongst those intending to leave and doing so, particularly in the NEET groups, is of concern. Only just over one-third of eligible young people in both the NEET active and inactive groups who had intended to leave education had heard of EMA. If EMA is to encourage young people who might otherwise become NEET to remain in education, it appears that much more needs to be done to promote its existence, particularly amongst those not intending to enter post-16 education. This is not to say that this group of people had not been exposed to information about EMA; rather, as a result of having had no intention to stay on they may simply have ignored it. Possible opportunities for promoting EMA further, particularly in a way that increases its salience, would be through individual Careers Service interviews and group sessions or in Personal, Social and Health Education classes (but see Sections 3.3.2 and 3.3.3, below).

3.2.5 Financial barriers: is EMA the key?

Young people not in education were asked whether or not a weekly payment would make them more likely to consider post-16 education.

Of eligible young people in the active NEET group, 52 per cent said that a financial payment would make them likely to consider post-16 education (Table 3.9). Of those in work or training, half were unwilling to consider post-16 education even with a weekly payment, although 38.8 per cent would definitely consider it. These findings parallel those of Legard et al., (2001) from qualitative interviews with young people, that many of those keen to leave studying, as well as those strongly wanting to work, felt that the level of EMA was too low to change their minds.

The inactive NEET group was most likely to state that they would not enter education even if given a weekly payment (54.2 per cent). However, this was not simply a reflection of caring duties or ill-health, since this group included proportionately similar numbers who described themselves as being on holiday or taking a break and those 'doing something else'. In fact, 41 per cent of this group had originally intended to enter post-16 education, of which only 16 per cent considered that their exam results were not good enough (figures not shown). Clearly, further work is required to determine the reasons for this group's resistance to a financial incentive to remain in education.

Table 3.9 Willing to Stay in Education if paid a Weekly Allowance?

Row per cent

	Yes	Stay in Education Depends on Amount	No
Work/training	38.8	10.8	50.4
NEET: active	52.0	9.3	38.7
NEET: inactive	41.1	4.7	54.2

Base: all young people meeting the EMA family income eligibility criterion who were not in full-time education after Year 11.

Respondents who said that a weekly payment would make them more likely to consider post-16 education were then asked at what level this would need to be. They were first asked if £20 per week would be an acceptable allowance, if not £30 and, finally, £40. If this was still not sufficient, they were asked how much they would require each week to remain in education. The levels of payment respondents were asked to consider include the maximum basic EMA weekly rate of £30 per week and the higher rate of £40, which are both being piloted, as well as a lower band of £20.

EMA eligible young people in work or training would require the highest levels of payment. Just over half of young people in work or training would want amounts of over £40 per week (Table 3.10), a figure that coincides approximately with current training allowances payable to young people. However, it is not known if young people set this level because of their experience of current pay from work or training, or if such high inducements would have been required prior to their entry into work or training.

Respondents in the NEET groups were, however, more limited in the amounts they would require. Even so, 60 per cent of the active group wanted £40 a week or more, as did 56 per cent of the inactive group.

Table 3.10 Amount of Weekly Allowance Required to Consider Staying in Education

	Weekly Amount (£)			Average
	20	30	40	Over 40
Work/training	12.5	11.8	24.1	51.6
NEET: economically active	21.4	18.9	30.5	29.2
NEET: economically inactive	27.8	16.5	25.8	29.9

Base: all young people meeting the EMA family income eligibility criterion who were not in full-time education after Year 11 but would consider Post-16 learning if given a weekly payment.

3.3 Influences on Decisions

This section explores the range of advice and support that was available to EMA eligible young people during Year 11 and the value they attached to the guidance and support they received. Although personal factors, such as motivation and career goals, are important influences, as well as ability and achievement, other external factors are also influential (Legard et al., 2001). These include school experiences, some of which have already been touched upon above, and the influence of family and friends.

First, the role of informal guidance networks such as family and friends on young peoples' decision-making is explored. Second, the influence of formal channels of careers guidance and education, which are primarily offered through Careers Services and schools, is examined. Finally, the extent of work experience and Personal, Social and Health Education (PSHE) classes in schools are considered. The main aim is to explore the extent to which young people in the NEET groups had received a similar range of support to those who had entered post-16 education, training or employment.

3.3.1 Sources of advice for Year 11 decisions

Young people were asked about the sources of advice they had used and valued in their Year 11 decision-making. In general, EMA eligible young people were most likely to have turned to their parents for advice about what they should do after leaving compulsory education (Table 3.11). However, young people in the inactive NEET group were much less likely to

have discussed their options with their parents. More than two-fifths of these inactive NEET young people had not, for whatever reason, turned to this source of support and advice in making, potentially, one the most important decisions about their futures.

Table 3.11 Sources of Advice for Deciding upon Post-year 11 Destinations

Cell per cent

	Destination			
	Education	**Work/ Training**	**NEET: Economically Active**	**NEET: Economically Inactive**
Parents	81.4	77.1	70.0	56.9
Friends	42.9	32.0	39.0	30.7
Siblings	23.1	18.1	20.1	20.6
Careers teachers	76.2	67.0	58.7	53.2
Subject/form teachers	49.2	30.1	31.8	28.9
Careers Service	48.2	48.2	41.4	35.8
Employer/Training provider	6.3	15.7	6.5	6.9
None	1.6	3.9	8.3	16.5

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

In contrast, 81.4 per cent of young people who remained in education had discussed their options with their parents. The role of parents in influencing young people to stay on is, in turn, dependent on the young person's intentions. Legard et al., (2001) found that when young people had a clear idea of their goal and intended to stay on parents tended to have a minor, though supportive role. However, when young people were less clear about their intentions, parents were often highly influential in encouraging young people to stay on.

Eligible young people in the NEET groups, particularly the labour market inactive group, were also much less likely to have discussed their options with a careers teacher than were those in education, training or employment. Careers Services also appeared to play a less prominent part in the decision-making of young people in the NEET groups than for those in education, work or training[3]. Legard et al., (2001) reported that Careers Advisers generally

[3] However, these young people's school experiences were largely at a time before the Careers Service had to focus its efforts more on students at risk of poor transitions into learning or work at 16.

encouraged young people to stay on, where possible, so the lower incidence of contact between Careers Advisers and young people in the NEET groups is of some concern, (though see Section 3.3.2, below).

Young people in education relied to a considerable extent on advice from subject teachers, whereas young people in work or training were more likely than other groups to have talked to employers or training providers.

In addition to differences in the range of sources of advice, the number of sources of advice used by young people to assist them in their decision-making also differed. The NEET groups were more likely to report that they had not used any source of advice and, when they did, they received advice from fewer sources (Table 3.12). Eligible young people in the active NEET group received slightly more support than their inactive counterparts. In fact, young people in the active NEET group were fairly similar in the degree of advice they had received to those in employment or training. Young people who had remained in education cited by far the greatest number of advisors.

Table 3.12 Number of Source of Advice for Deciding upon Post-year 11 Destinations

Cell per cent

	Destination:			
	Education	**Work/ Training**	**NEET: Economically Active**	**NEET: Economically Inactive**
Zero	1.6	3.9	8.3	16.5
One	8.0	12.1	14.8	14.7
Two	19.2	23.8	19.6	22.5
Three	28.1	29.4	29.9	22.5
Four or more	43.1	30.8	27.5	23.9

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

3.3.2 Influence of the Careers Services

The role of the Careers Services is to help guide young people 'to enter appropriate education, training and employment' (DfEE, 1998, page 5, a1).

Young people were asked if they had attended either a group and/or individual session at school with a Careers Services Adviser. For the sake of brevity, both group sessions and individual interviews were taken into account. Eligible young people who said they had attended an interview could be separated from those who had not, and this latter group divided into those who chose not to attend and those who were not invited to an interview.

The majority of young people reported attending an interview with a Careers Adviser. However, one-quarter of young people in the inactive NEET group stated that they had not been invited for an interview, as did 17.8 per cent of young people in the active NEET group (Table 3.13). In contrast, only around six per cent of young people who were in education, employment or training stated they had not been invited to attend an individual interview.

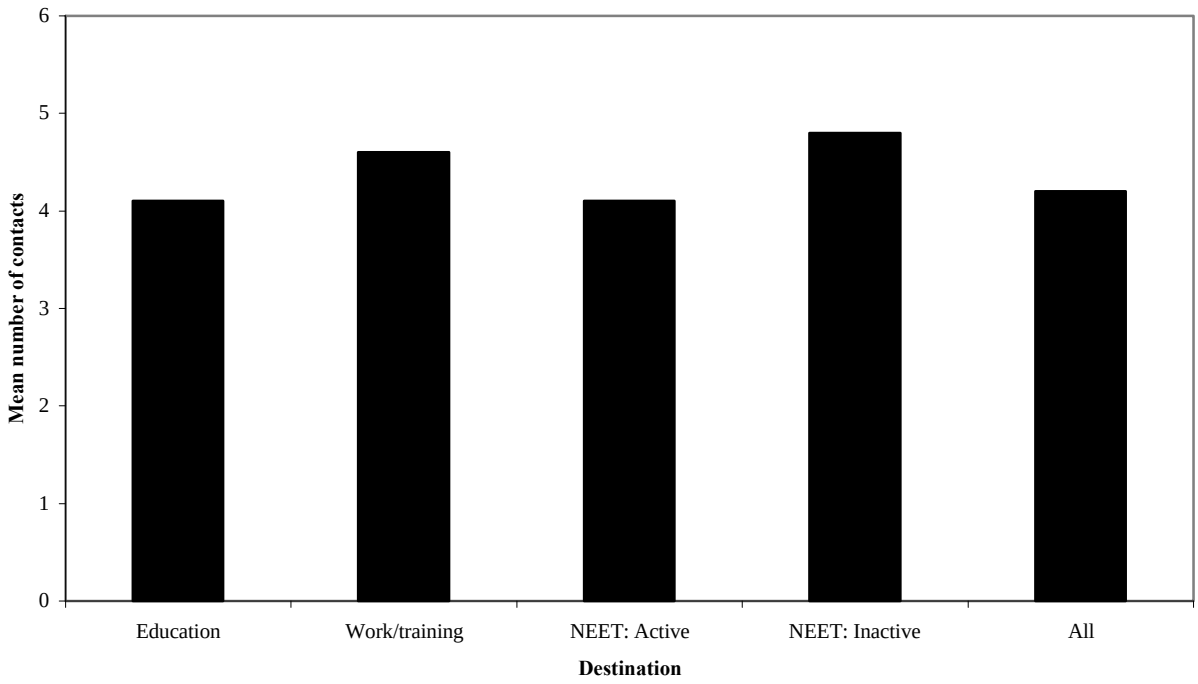
Table 3.13 Contacts and Reasons for Non-contact in Year 11 with a Careers Officer

Column per cent

	Destination			
	Education	**Work/ Training**	**NEET: Economically Active**	**NEET: Economically Inactive**
Attended	91.9	90.5	74.4	72.6
Invited: did not attend	2.4	3.5	7.9	2.3
Not invited: did not attend	5.7	6.0	17.8	25.1

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

Figure 3.1 Average Number of Contacts in Year 11 With a Careers Service Adviser



Base: all young people meeting the EMA family income eligibility criterion and who had contact with a Careers Service Adviser in Year 11.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

Young people in the inactive NEET group who did have contact with a Careers Services Adviser were likely to have more interviews in comparison to other eligible young people, with an average of 4.8 contacts (Figure 3.1). This contrasts with an average number of 4.6 contacts for those in work or training and 4.1 for those in education or those who were in the active NEET group.

Young people who stated they had had contact with their Careers Service were asked about the part this had played in their decision making. Just under one-quarter of young people in post-16 education said that the Careers Service had played a major role in their decision-making (Table 3.14). This suggests that without advice from the Careers Service they might not have entered post-16 education, or perhaps undertaken a different course. In contrast, one-quarter of young people in education stated that the Careers Service had played no role at all in their decision to continue in school or college. Just under 53 per cent stated that the Careers Service played a minor role in their decision to remain in school or college.

Both the NEET groups were more likely to say (approximately one third) that the Careers Service had played no part in their decision-making. However, the inactive NEET group was the group most likely to say that the Careers Service had played a major role in their year 11 decision-making (28.2 per cent), and the active NEET group the least (22.4 per cent). This active NEET group appears slightly more likely to have pursued their own routes irrespective of Careers Service advice than those young people in education, employment or training.

Table 3.14 Part Played by Contact with the Careers Service in Post-Year 11 Decision-making

Column per cent

	Destination			
	Education	**Work/ Training**	**NEET: Economically Active**	**NEET: Economically Inactive**
Major	23.7	26.5	22.4	28.2
Minor	52.8	48.5	47.1	39.0
None	23.5	25.0	30.4	32.8

Base: all young people meeting the EMA family income eligibility criterion and who had contact with a Careers Service Adviser in Year 11.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

3.3.3 School experiences

There is a paucity of information regarding the impact of school experience both on intentions to remain in education and actually doing so. It is known that many young NEET people have a history of truancy, particularly persistent truancy, (Payne, 2000; Stone et al., 2000; Cm4405, 1999b; Policy Action Team 12, 2000), and that this group of young people tend to be academic underachievers and/or have special educational needs. The links between truancy, educational underachievement and special educational needs are not necessarily causal. Truancy is often a symptom of personal and family circumstances which, in turn, lead to educational problems. In addition, negative interactions with teachers might lead to 'disaffection, disruption and truancy at school' (Morris et al., 1999) which in turn can lead to negative attitudes to remaining in education. Therefore, truancy is a useful indicator of potential problems post-16. Morris et al., (1999) also noted dissatisfaction amongst some young people with the content of the school curriculum, which may orient some away from post-16 education.

In this section, three aspects of school experience in Years 10 and 11 are explored. All data were self-reported by the young people during the interview:

- attendance and absence;
- work experience; and,
- Personal, Social and Health Education Classes.

Attendance and absence

The previously established link between school absence and a NEET destination was confirmed by data gathered for this study. Five and a half per cent of the inactive NEET group stated they had not attended school throughout Years 10 and 11, almost twice as many as in the active NEET group and over seven times more than those who entered work or training (Table 3.15). Less than one per cent of those in post-16 education said they had continually missed school in Years 10 and 11. Over a third of inactive (35.8 per cent) and active (37 per cent) EMA eligible young people in the NEET groups had missed some school, compared to only 14.8 per cent in work or training and 4.4 per cent in education.

Table 3.15 School Attendance and Absence in Years 10 and 11

Column per cent

	Destination			
	Education	**Work/ Training**	**NEET: Economically Active**	**NEET: Economically Inactive**
Attended throughout	95.4	84.5	59.9	58.7
Missed some school	4.4	14.8	37.0	35.8
Did not attend at all	0.2	0.7	3.2	5.5

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

The most common reason EMA eligible young people gave for school absence was truancy. One quarter of young people in the active NEET group said they had truanted from school, together with 12.4 per cent in the inactive group and 10.3 per cent of those in work or training (Table 3.16). Only 1.6 per cent of young people in post-16 education said they had played truant.

Exclusions from school were also most common amongst young people in the NEET groups. Over six per cent of those inactive who had missed school had been excluded, as had nearly seven per cent of young people who were economically active. Illness was also more common amongst young people in the NEET groups, particularly in the inactive group and, for many, this may account for their NEET status. Missing school through bullying or being educated at home was also most likely to occur among those young people who became economically inactive.

Table 3.16 Reasons for Absence in Years 10 and 11

Cell per cent

	Destination			
	Education	**Work/ training**	**NEET: Economically active**	**NEET: Economically inactive**
Educated at home	0.4	0.9	0.8	2.8
Excluded from school	0.4	1.8	6.9	6.4
Truancy	1.6	10.3	24.6	12.4
Illness	1.7	1.9	6.9	9.6
Bullied	0.2	0.6	1.1	2.7

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

Work experience

Work experience offers young people a chance to taste the world of work and may offer a chance to mature and learn some of the 'soft' skills associated with work, such as social skills, punctuality and cleanliness. The potential importance of work experience is demonstrated by its inclusion as one of the options available under 'Life Skills', a key element of the Learning Gateway, that Personal Advisers may recommend for young people, particularly those in the NEET groups, once they have left Year 11. Work experience is also available in schools and offers young people an early opportunity of tasting the world of work and can be a tool to enhance young people's employability.

Nearly one-quarter of EMA eligible young people in the inactive NEET group said they had not been offered work experience, and 17.2 per cent of young people in the active NEET

group (Table 3.17). In contrast, only 5.6 per cent of young people who remained in education said they had not been offered work experience during Year 11. Of those young people in work or training, eight per cent said they had not been offered a work experience programme. It is not possible to ascertain from the data why young people in the NEET groups reported lower levels of work experience offers. However, it is possible that they were absent when work experience was being organised.

Table 3.17 Work Experience in Years 10 and 11

Column per cent

	Destination			
	Education	**Work/ Training**	**NEET: Economically active**	**NEET: Economically inactive**
Undertaken work experience	90.8	86.7	71.3	65.6
Offered work experience but refused	3.7	5.3	11.5	10.1
Not offered work experience	5.6	8.0	17.2	24.3

Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

However, young people in the NEET groups were also more likely to have refused work experience. Somewhat surprisingly, young people in the active NEET group were most likely to have refused work experience (11.5 per cent). This is three times the proportion of young people who had entered post-16 education, and over twice the proportion of young people who entered work or training. Young people in the inactive NEET group also had a comparatively high level of work experience refusals (10.1 per cent).

EMA eligible young people, on the whole, had found work experience either very or fairly useful in helping them to decide what to do after Year 11 (Table 3.18). Young people in work or training (39.8 per cent) or in the inactive NEET group (39.4 per cent) were most likely to say they found work experience very helpful. Otherwise, the pattern was similar regardless of young people's current activity.

Table 3.18 Helpfulness of Work Experience in Years 10 and 11

Column per cent

	Destination			
	Education	**Work/ Training**	**NEET: Economically active**	**NEET: Economically inactive**
Very helpful	34.3	39.8	32.8	39.4
Fairly helpful	33.0	29.5	34.7	28.9
Not very helpful	18.9	15.2	18.2	19.0
Not at all helpful	13.9	15.5	14.4	12.7

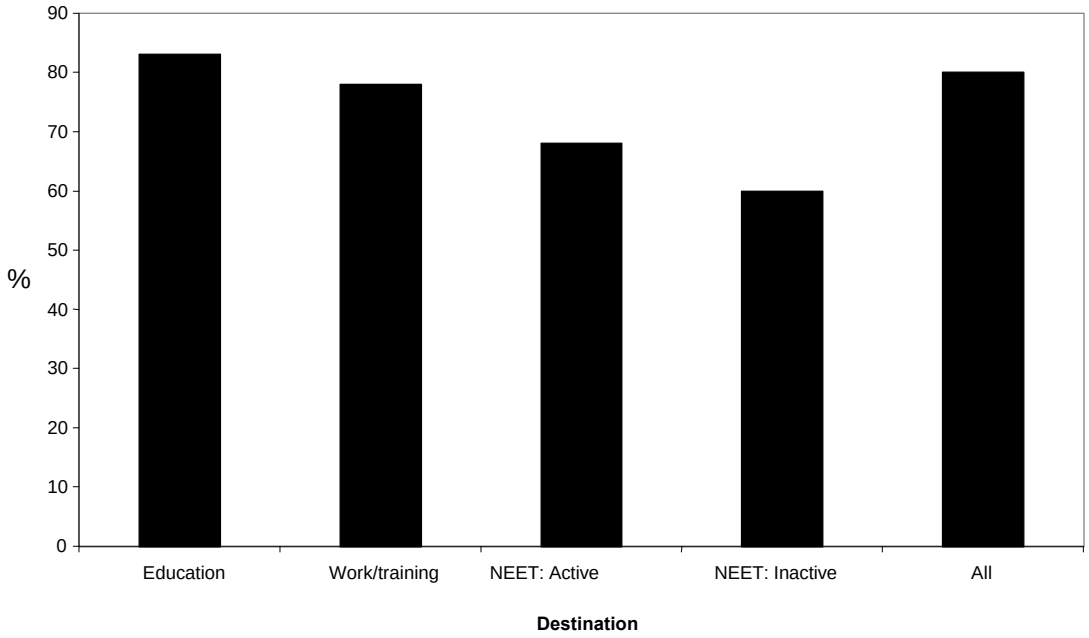
Base: all young people meeting the EMA family income eligibility criterion who had work experience in Years 10 or 11.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

Personal, Social and Health education

Personal, Social and Health Education (PSHE) helps, 'to give pupils the skills, knowledge and understanding to lead confident, healthy and independent lives and to become informed, active and responsible citizens' (National Curriculum Online, 2001). Within the consultation review paper of the National Curriculum at Key Stage 4, it is recommended that pupils should understand their post-16 options and the financial implications of their decisions.

Young people in the survey were asked if they received PSHE classes in Year 11 that covered careers topics. The EMA eligible young people who were least likely to report having PSHE classes in Year 11 were those who would potentially have benefited most. Of the eligible young people in the NEET groups, only 60 per cent of the labour market inactive had had PSHE classes covering careers topics in Year 11 and 68 per cent of the active NEET group (Figure 3.2). In contrast, 83 per cent of young people in education had attended relevant PSHE classes and 78 per cent of young people in work or training.

Figure 3.2 PSHE Classes in Year 11



Base: all young people meeting the EMA family income eligibility criterion.
Note: 59 young people were in part-time education and were combined with those in full-time education in order to avoid contamination of the NEET groups.

3.4 Summary and Conclusions

The principal aim of this chapter was to explore the influence of EMA on young people's decision-making, and to consider the wider influences on young people in Year 11 in relation to their post-16 choices.

EMA is one element in a much wider ranging strategy aimed at ensuring that all young people reach their learning potential. Its primary incentive effect is financial, and, as demonstrated in this chapter, nearly all of those young people who left education and entered the NEET groups gave financial concerns as one or more of their reasons for not continuing in education (Table 3.7). This fact offers some potential for EMA to become an incentive, either for the next cohort or, with a lagged effect, for young people in the NEET groups in this cohort. Moreover, over half of EMA eligible young people in the active NEET group, and just under half of the inactive group, said they would have considered staying in education if they had received a weekly allowance.

However, finance was not the only reason many young people gave for leaving school. Previous negative school experiences were also important in deterring many young people

from post-16 education, as were: access to college or school; the availability of the right courses; and friendship networks. A substantial minority also faced caring responsibilities, which they saw as a constraint to remaining in education.

It is possible therefore that the financial bridge into education provided by EMA might need to be supported by other policies to provide a wider incentive. The exact nature of such policies would require a more detailed understanding of the causes of negativity towards school. However, they might include providing greater awareness of the range of provision available within post-16 education, better transport provision, remedial support, the emphasis of opportunities for new friendships and crèche facilities.

Knowledge of EMA might be obtained at school through PSHE classes and/or Careers Service contact. EMA eligible young people in the pilot areas who intended to leave education, and who did so, had a relatively low awareness of EMA. It seems plausible that if more eligible young people had known about EMA at an earlier stage in Year 11, increased numbers might have considered staying-on in education.

The Careers Services, in particular, have an important and influential role, particularly under the new Learning Gateway and the Connexions Service. The evidence presented here suggests that many EMA eligible young people in the NEET groups are those who most required advice but were least likely to have received it during Year 11. In general, they also had fewer sources of advice and were less likely to have received advice from teachers, both careers and subject teachers, and from Careers Officers. In particular, they were less likely to have been invited to attend an interview with a Careers Officer at school. Young people in the NEET groups were more likely to have found their post-16 decision hard to make and were more likely to think they had made the wrong decision.

4 Methodological Approach

Box 4.1 Summary

This chapter outlines the methodological approach for the quantitative work in Chapter 5.

- Measuring the impact of EMA on the decision to remain in full-time education post-16 requires matching individuals in pilot areas to individuals in control areas with similar characteristics. Matching is based on the assumption that all differences relevant to school participation between those in a treatment (pilot) area and those in a control area can be accounted for by controlling for observable characteristics in the data. Once individuals have been matched, the impact of the EMA is measured by taking the difference in participation rates between pilots and their relevant controls.
- In order to examine the incremental effect of EMA on participation and to make detailed comparisons between variants, it is necessary to place more structure on this simple matching procedure. The determinants of education participation are examined using a regression model and estimated EMA entitlement is included in this model.
- For matching to work, it is crucial that no factor (relevant to school participation), other than the observed characteristics controlled for, varies significantly between the pilot and the control areas. If this seems likely not to be true, then a procedure needs to be developed that can eliminate these unobserved area effects. This chapter discusses a number of ways that could be used to try to estimate these unobserved effects and, hence, check the robustness of the matching results.

4.1 Introduction

This chapter outlines the methodological approach for the quantitative work in Chapter 5 of the report. In this report, the quantitative evaluation focuses on the impact of EMA on initial decisions to participate in post-16 full-time education. Chapters 2 and 3 of this report have already focused on a wider range of issues, and some of these wider issues will themselves be the subject of further work when more data are available.

The methodological approach involves matching at the individual level to estimate the impact of EMA for different groups of individuals. This matching procedure is discussed in detail in

Section 4.2. In these simple matching models, participation rates in pilot areas are compared with matched controls to estimate the impact of EMA. While this provides a useful foundation for the evaluation, the approach does not allow an estimation of the effects of incremental changes in the amount of EMA on post-compulsory full-time education participation. This is of particular importance to policy makers when considering the overall design of a programme like EMA. In order to do this, therefore, more structure needs to be placed on the model and the way this is done is discussed in Section 4.3. More complex estimation techniques are also used (difference-of-difference estimators) to check the robustness of the results and these two-way matching techniques are described in Section 4.4.

4.2 One-way Matching at the Individual Level

In estimating the effect of EMA, the problem is that the pilot and control areas may be quite different in demographic composition in ways that may be relevant for participation decisions. If the pilot areas have individuals whose characteristics imply lower participation than in the control areas then, unless this is effectively taken into account, the impact of EMA will tend to be under-estimated. The approach for estimating the impact of EMA addresses this problem directly by using the latest matching techniques. These are an improvement on straightforward regression techniques because they ensure that only the behaviour of individuals with characteristics similar enough to one another are compared. Regression estimates generated without careful matching might be seriously biased if the range of important characteristics vary significantly between control and pilot areas (see Heckman, Ichimura and Todd (1997)). However, matching is combined with regression techniques to carry out policy simulations (see Section 4.3 below). Next, robustness checks are undertaken using difference-of-difference estimation techniques to take account of possible unobserved area effects (under certain assumptions). For example, the labour market opportunities available to young persons could be different in the pilot and control areas. These difference-of-difference estimators are discussed in Section 4.4.

Matching is based on the assumption that all differences relevant to school participation between those in a treatment (pilot) area and those in a control area can be accounted for by controlling for observable characteristics in the survey data. The participation rate of individuals in a control area, with the same set of characteristics as those in the pilot area, estimates the participation rate that the subjects in the pilot area would have had, had they not

been subjected to the policy. In other words, so long as only similar individuals are compared, the control areas provide the *counterfactual* participation rate for the pilots.

The survey data contain a wealth of background characteristics and, ideally, matching is needed on all of these characteristics. The more characteristics controlled for, the harder it becomes to find individuals in pilots and controls who are identical in all their characteristics in order to match them to one another. Following a theorem by Rosenbaum and Rubin (1985), individuals do not need to be matched to others who are identical to them in all their characteristics. Instead, a weighted index of each individual's characteristics can be constructed, and individuals can be matched according to their score on this index (referred to as the "propensity score index"). This allows different characteristics to be traded off against one another according to their importance to find a 'best match' amongst the controls.

Matching is designed to provide counterfactual outcomes based on the assumption that all differences in school participation between pilots and controls can be explained by differences in observed characteristics only – hence the detailed and elaborate survey design including numerous characteristics.

Matching solves two problems:

1. When comparing the average outcome in the population that has been subject to the policy with the population that has not, the observations in each population receive the same weights; hence if the group not subject to the policy has a different composition from the group that is, matching reweights the samples to solve this problem.
2. The group subject to the policy may contain individuals who have no obvious comparison group; for example, the pilot area may contain individuals from a very poor background while the control area may have none of these individuals. Matching solves this problem as well, as observations for which no suitable match can be found are dropped to ensure that the comparisons between pilot and control areas take place over a range of characteristics where suitable comparisons do exist.

It has been shown in practice that reweighting and making sure that comparisons take place over a suitable range is crucial for removing biases in evaluations. (Heckman et al., 1998). The procedure used is as follows:

1. A weighted index of characteristics, or "propensity score index" is calculated for each individual using a statistical regression technique;
2. For each individual in a pilot area an individual is located in a control area with the closest propensity score. This is the matched individual;
3. All individuals for whom a satisfactory match has not been found are deleted; and
4. The impact of EMA on individuals in pilot areas is then the difference between the average participation rate in the pilot area and that for their matches in the controls. The average is taken over individuals for whom satisfactory matches have been found.[1]

The matching process needs to take place for each sub-sample of individuals of interest, so that the correct counterfactual comparison can be made. For the purposes of most of the work, it was decided to match our pilot and control samples by:

- Eligibility (those estimated to be eligible for EMA and those who are not);
- Gender; and,
- Urban and rural status.

This involves dividing the sample into eight groups (eligible rural men, eligible rural women, eligible urban men, eligible urban women, ineligible rural men, ineligible rural women, ineligible urban men, ineligible urban women). For each of these eight groups, the index is estimated and each individual in the pilot area is then matched with the closest match from amongst individuals in the control area who are in the same group. An individual in a control area can be used as a match for more than one individual in a pilot area. When estimating more aggregated effects, the matching can take place at a more aggregated level.

The matching procedure which has been used means that calculating the standard errors associated with the different estimated EMA effects is very complicated analytically.[2] Instead, numerical bootstrapping methods[3] have been used, which allow corrected standard errors to be derived. A large number of random draws are taken from the sample, and the

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[1] The sensitivity of the results to different degrees of 'closeness' in matching is examined in Chapter 5.

[2] This is because the propensity score index on which individuals have been matched have been calculated using a regression approach.

[3] Bootstrapping involves taking a random draw with replacement from the sample and undertaking the whole matching procedure on this sample and obtaining estimated EMA effects from each of these random draws. The bootstrapped standard error is simply the standard deviation of the mean of all these estimated effects. All standard errors are calculated on the basis of a large number of replications.

variation in the EMA effect estimated from each of these draws is used to derive corrected standard errors.

4.3 Placing More Structure on the Model

The basic matching procedure produces the average effects of EMA for different sub-groups of the population. This basic one-way matching approach, however, does not allow for easy comparisons across different variants as it does not allow pure EMA effects to be disentangled from take-up effects (which appear to vary widely across variants – see Chapter 1[4]) and from differences arising from the varying composition of young people in the different urban pilot areas. However, more structure can be imposed on the methodology to allow a more detailed examination of the differences between the four variants and to look at the effect of other possible policy changes.

This structure is imposed by estimating a regression model that models the decision to remain in full-time education as a function of the characteristics used in the matching procedure above. The model also includes the estimated level of EMA award that the person would receive if they remained in full-time education. In the initial model, the effects of the retention and achievement bonuses are ignored. This means that the estimated EMA is more generous for people in variant 2 than in the other three variants. The effect is allowed to be different for variant 3, where EMA is paid to the parent rather than the child. The second model also incorporates the effect of the flat-rate retention bonus. This assumes that the termly EMA bonus covers a period of 12 weeks and this weekly amount is added to the estimated weekly EMA entitlement variable (i.e. £4.17 a week is added for all eligibles in variants 1, 2 and 3 and £6.67 for all eligibles in variant 4). The possible retention effects of the achievement bonus is ignored as converting this to a weekly sum is more difficult (because of the varying lengths of courses). This will be the focus of later phases of the evaluation which will examine the impact of EMA on academic achievement. The weekly EMA variable is set to zero for all individuals in control areas. The model is estimated on the sample of eligibles only, so that direct comparisons with the simple one-way matching

[4] Take-up effects refer to the different rates of take-up of the scheme in different areas and within different groups. These may impact on the estimates produced.

estimators can be made. From this model, the impact of varying the maximum amount of EMA paid can be examined, as well as the effect of changing the slope of the taper.

The advantage of the regression approach is that by controlling for important family characteristics in the model, any differences in the range of characteristics that individuals in pilot and control areas might have are directly controlled for. The regression approach does not, however, ensure that the effect of EMA is estimated on a sample of individuals over which the range of characteristics is common in both the pilot and control areas.

In the preferred model, the regression model is estimated using only observations from the matched sample (rather than the whole sample) to ensure that unbiased estimates of the EMA effect are obtained. This loss in sample numbers will necessarily involve some loss in the statistical certainty with which results are presented.

4.4 Difference-of-Difference Estimators

The key assumption for matching to work is that there are no other factors (relevant to the outcome variable of interest) other than the observed characteristics X which differ significantly between the pilot and the control areas. For example, if a control area had another policy to promote post-16 participation, or had better schools or colleges, or had individuals with some unobserved propensity to undertake schooling, then the matching assumptions would be violated. If this is the case, a procedure is needed that can eliminate these unobserved area effects.

To achieve this, more structure is imposed on the estimation procedure to try to 'difference out' these area effects. Without pre-experiment data, the critical assumption that there are no area-specific effects is difficult to test. Careers Services data reveal that average participation rates in post-16 education in the two years prior to the introduction of EMA were, on the whole, roughly similar in the pilot areas and their selected controls.[5] These are shown in Table 4.1. The biggest divergences in staying-on rates prior to the introduction of EMA were in the rural areas, where participation in education post-16 was considerably higher in the

[5]Where the control areas have been chosen by the preliminary LEA matching technique described in Section 2.2 and Appendix A2.

pilot area than in the controls. By contrast, participation rates in the control areas of variants 2 and 4 were somewhat higher than in the pilots.

Table 4.1 Participation in Post-16 Full-time Education (PCE)

Variant	Participation rate in PCE (per cent)			
	1998		1997	
	Pilot	Control	Pilot	Control
Variant 1 (urban)	59.1	60.0	59.8	59.9
Variant 1 (rural)	75.2	69.0	77.0	71.1
Variant 2	59.3	62.2	59.9	59.7
Variant 3	59.2	60.8	60.7	59.4
Variant 4	57.2	60.9	54.1	59.1
Total	62.5	64.0	62.8	62.3

Note: The control areas for each pilot variant used here are those chosen by our preliminary LEA matching technique, described in section 2.2 and set out in Table A2.2 in Appendix A2.

Such differences in average participation rates do not indicate, however, the presence or otherwise of area-specific effects because they do not take into account the differences in the characteristics of individuals in those areas. To take account of such differences in characteristics would require individual-based data collected prior to the introduction of EMA, and these are not available for the purposes of this evaluation. The only option is to use individual data in the sample to identify a group of individuals in both pilot and control areas, who are unaffected by the policy change to identify this unobserved area effect.

There are two potential groups of individuals in the data who can be used to identify this unobserved area effect. The first is the group of ineligibles in the sample. The second is the older siblings of individuals in the pilot and control areas who made education decisions before EMA was introduced.

4.4.1 Using ineligibles

The basic idea here is to obtain an estimate of unobserved area effects by comparing the full-time education outcomes of ineligibles in pilot areas with ineligibles in control areas. This requires a number of assumptions:

- The policy does not affect ineligible individuals. This is a strong assumption and precludes peer effects or, more generally, general equilibrium effects. For example, the labour market opportunities for those young people not staying in full-time education is likely to be affected by the number of young people who do choose to stay in full-time education. However, at this stage it may be quite credible, since EMA was announced quite late and implemented in a small number of areas. Hence one might believe that the ineligibles did not have time to change their decisions as a reaction to what the eligible individuals may have decided to do;
- The impact of the area effect on eligible individuals is the same as the impact on ineligible individuals. For example, if participation is ten per cent higher in control areas than in pilot areas for ineligible individuals, it is also ten per cent higher for the eligible individuals in the control areas in the absence of the policy; and,
- The impact on school participation of being ineligible (having higher income) should be the same in pilot and control areas.

Under these assumptions, matching can be combined with a difference-in-differences approach. The (proportional) change in participation given (potential) eligibility in a pilot and a control area is compared with the change for ineligible individuals, who share the same characteristics X (other than income, of course). This is key, since eligible and ineligible individuals may have completely different characteristics and may not be comparable. To do this, the following calculations are made (see also Figure 4.1, below):

1 Two different weighted indexes of characteristics, or propensity scores are calculated for each individual.[6]

2. For each eligible individual in a pilot area, three matches are found (eligible in a control area, ineligible in a pilot area and ineligible in a control area). The matches are based on whether both propensity scores are similar enough;[7]

3. The average participation rates are calculated for those eligible individuals in a pilot area who did have three matches. The participation rates for all three matches are also found; and,

[6] For this two-way matching, two different propensity scores must be generated, one which ensures the composition of pilot and control areas will be correctly balanced once matching has taken place, the other which balances the characteristics of the eligible and ineligible population.

[7] In Chapter 5 the sensitivity of the results to different measures of closeness are examined.

4. The impact of EMA is then calculated as the difference between eligibles in the pilot areas and eligibles in the control areas (the raw effect) *minus* the difference between ineligibles in the pilot area and ineligibles in the control area (the unobserved area effect).

Figure 4.1: Description of how the two-way matching works

		Similar characteristics in pilot and control areas (pilot) (control)	
Similar characteristics of income eligible and ineligible (poor) (rich)	Eligibility by income	Income eligible Pilot areas	Income eligible Control areas
		Income ineligible Pilot areas	Income ineligible Control areas

As with the basic approach, the matching process needs to take place for each sub-sample of individuals of interest, so that the correct counterfactual comparison can be made. Again, deriving standard errors analytically is very complicated and so numerical bootstrapping methods, described above in section 4.2, have been used to derive corrected standard errors.

Clearly, this exercise requires a large amount of data. The main problem is that the number of possible matches of sufficient closeness between eligibles and ineligibles is likely to be small. This is because many of the characteristics on which matching is taking place are related to socio-economic status and therefore tend to differ widely between eligibles and ineligibles. Because of this, it is also likely that the sample for which matches are found will have characteristics that are very different from those of the eligible population as a whole. If this is the case, then the effect of EMA on this sub-group of people may be very different from that on the eligible population as a whole. Nevertheless, this is used as a robustness check to see whether unobservable area effects are likely to overturn the results.

4.4.2 Using older siblings

Another way of obtaining a distribution of characteristics of individuals in pilot areas who were unaffected by EMA, is to examine the post-16 participation decisions of the older siblings of our existing set of 16-year-olds. This allows a comparison of participation in post-compulsory education between pilots and controls with a reasonably full set of individual controls, prior to the introduction of EMA in those areas, to identify any unobserved area effects.

For the results derived in this way to be valid, a number of strong assumptions are required, including that:

1. The sample of older siblings is representative of the population at large, at least in the dimensions that determine continuation in post-compulsory education;
2. Differences in schooling between older and younger siblings are the same between pilot and comparison areas;
3. Differences in the macroeconomic environment at the time when the older siblings were at the relevant age affect education participation decisions in pilot and control areas in a similar way;
4. The family has not moved between LEAs since the older sibling(s) was (were) making their educational choices;
5. Changes in background characteristics that determine choices are such that the impact on aggregate participation change is the same in pilot and control areas; and
6. Unobserved characteristics of the older siblings that determine their educational choices do not vary systematically between pilot and control areas.

Differences in birth order[8] and parental age can be controlled for within the data. Requirements 1, 4 and 5, however, cannot be adequately taken account of in the methodology due to lack of data. Additionally, requirement 6 may not be fulfilled. Most seriously, the gender of those siblings who have already left the household (who make up 55 per cent of all siblings) is not known.[9] This is potentially a very serious omission, as educational choices of males and females tend to be differently determined. Further information about each

[8] Although notice that youngest siblings will never appear in the older siblings' dataset.
[9] This information will be available for the second cohort.

sibling's ability, as measured by GCSE results, is not available to control for possible differences between pilots and control areas on these characteristics.[10] Nevertheless, the exercise may still be informative and provide a further check of robustness of the results.

Information on the post-16 education decisions of older siblings can be used in two different ways, each with different underlying assumptions and each generalisable to a different degree.

1. The first methodology automatically matches those young people with an older sibling in the pilot areas to the closest young person with an older sibling in the control areas. This means that each pilot and control area young person is matched to his or her own older sibling only. Individuals with more than one older sibling, are matched to the next youngest sibling.[11] The education decisions of young people and their older siblings in pilot areas can then be compared with those of young people and their older siblings in control areas. This methodology has the advantage of controlling for all household characteristics that affect education decisions and that do not change over time. The disadvantage is that the analysis only provides the impact of EMA on those with older siblings – among whom participation in post-16 education tends to be lower.
2. The second methodology matches all young people to an older sibling who looks most similar to them on the basis of their characteristics. This may or may not be their own biological sibling. Some of these characteristics will be different between older and younger siblings – for example, parents' ages.

4.5 Conclusion

The quantitative evaluation of the impact of EMA involves matching individuals in control areas with similar individuals in the pilot areas to estimate the impact EMA has had on initial decisions to remain in full-time education post-16. Matching is based on the assumption that all differences relevant to school participation between those in a treatment (pilot) area and those in a control area can be accounted for by controlling for observable characteristics in the data. The participation rate of individuals in a control area with the same set of

[10] The 16-year-old's GCSE results are used to proxy the GCSE results of the older sibling.

characteristics as those in the pilot area estimates the participation rate that the respondents in the pilot area would have had, had they not been subjected to the policy.

In order to examine the incremental effect of EMA on participation and to make detailed comparisons between variants, it is necessary to place more structure on this simple matching procedure. This is done by looking at the determinants of education participation using a regression model and including estimated EMA entitlement in this model. The structure of this model allows the effects of policy changes to be simulated.

For matching to work, it is crucial that no factor (relevant to the outcome variable of interest), other than the observed characteristics controlled for, varies significantly between the pilot or the control areas. If this seems likely not to be true, then a procedure needs to be developed that can eliminate these unobserved area effects. This chapter has discussed a number of ways that could be used to try to difference out these unobserved effects and, hence, check the robustness of the matching results. The results of all this quantitative work are discussed in Chapter 5.

[11] This reduces the possibility that household characteristics that influence education decisions, such as family income, will have changed substantially between the two siblings reaching the age of 16.

5 The Impact of EMA

Box 5.1 Summary

The results from this Chapter suggest that compared to the control areas, EMA has led to a significant gain in post-16 full-time education participation in pilot areas, among those eligible for the EMA; this gain is estimated to be between 3 and 11 percentage points. The effect is, however, found to vary by both gender and by rural and urban status.

The results which use one-way matching techniques to show the overall impact of EMA on participation in post-16 full-time education of those eligible for the EMA have found that:

- the estimated impact of EMA is larger in rural areas than in urban areas. In rural areas, the gain in participation in post-compulsory education is estimated to be by 9.2 percentage points, compared with an estimated gain of 3.8 percentage points in urban areas (Table 5.2);
- EMA is estimated to have had a larger effect on young men than on young women in both the urban and rural areas; this suggests that EMA may go some way towards closing the gap between males and females in participation in post-16 education (Tables 5.3 and 5.4); and
- EMA has had a significantly larger effect on young people who are eligible for the full amount of EMA available, compared to those who are eligible for a partial payment (although these results vary between urban and rural areas and by gender). Taking all areas together, the overall effect of EMA is a gain in participation rates amongst those eligible for the full EMA by 7 percentage points, compared to 2.9 percentage points for those on the taper, (Tables 5.5 to 5.7), (Section 5.2). When a regression model is used which imposes linearity on the EMA effect, the corresponding estimates are 6.1 percentage points for those on the full EMA and 3.3 percentage points for those on the taper (Table 5.12), (Section 5.3).

The next set of results use regression analysis to estimate the effects on participation in education of each extra £1 per week of EMA offered. Two models are used which provide a lower and upper bound of the incremental effect of the EMA.

These models show that:

- Each additional £1 per week of EMA is associated with a 0.36 to 0.42 percentage point gain in post-16 participation for rural males, and a 0.11 to 0.12 percentage points gain for rural females. For urban males this figure is between 0.18 and 0.21 percentage points, and for urban females between 0.13 and 0.15 percentage points (Tables 5.9, 5.10 and 5.11).
- The estimated impact for the urban variant 3, where EMA is paid directly to the parent, is not significantly different to the estimated effect in the other urban variants (Tables 5.9 and 5.11).
- If the more generous EMA offered in the urban variant 2 had been made available to all the urban pilot areas, this would have led to a gain in the overall participation rate by an additional 1.2 percentage points amongst eligible young people over and above the participation rate obtained under Variants 1 and 3 (Table 5.12).
- If the more generous EMA bonus offered in urban variant 4 had been made available to all the urban pilot areas, the gain in the overall participation rate is estimated to be by an additional 0.3 percentage points (Table 5.12).

The final results test the robustness of these estimates by using several two-way matching techniques. These techniques allowed further unobserved differences between pilots and controls which may affect educational participation (referred to as 'area specific effects') to be taken into account. Although the results do not provide a clear-cut picture of the size and direction of possible area specific effects, the overall picture is as follows:

- Most of the estimates suggest that the overall impact of EMA may be somewhat higher than the results presented above once area specific effects are taken into account. Estimates of the additional overall impact of EMA range from 1.7 percentage points to 6.6 percentage points once these effects are considered. It should be noted that these area effects tend not to be statistically significant (Tables 5.14 and 5.15).
- Considering urban and rural areas separately, it appears that the impact of EMA in urban areas may be somewhat higher than the main set of estimates suggests, but somewhat lower in rural areas. Again, these area effects are not found to be statistically significant. This result for the rural areas accords with Careers Services data which show that school participation was higher in the rural pilot area than in its control areas before EMA was introduced (Table 5.15), (Sections 5.4 and 5.5).

5.1 Introduction

The impact of EMA has been measured using a series of techniques that match each pilot area individual to the individual closest to them in a control area according to a weighted range of their personal and background characteristics. As discussed in Chapter 4, the basic matching approach involved constructing control areas which were as similar to the pilot areas as possible. The samples arising from these techniques are considered in Section 5.2[1] along with a core set of results from this one-way matching.

An important part of the evaluation involves assessing the comparative effectiveness of different variants of EMA in improving young people's participation in full-time education post 16. This requires more structure to be placed on the evaluation model, and the results of this are discussed in Section 5.3. In this section, a regression model is used on both the unmatched and matched samples and an estimate of EMA entitlement is incorporated in the model. This shows by how much participation rates are estimated to increase for every additional pound of estimated EMA entitlement. The model also allows a comparison of the estimated increase in participation under each of the different variants.

The chapter concludes by examining the robustness of results of the basic matching. If the EMA has been targeted on LEAs with particularly bad educational outcomes, and these area effects cannot be controlled for, the basic matching estimators may under-estimate the effect of EMA. If this is the case, then two way matching needs to be used to try and eliminate these possible unobserved area effects. In Section 5.4, ineligibles in the control and pilot areas are used to eliminate any possible unobserved area specific effects. In Section 5.5, older siblings of individuals in pilots and controls are used instead of ineligibles to difference out these unobserved area effects. Findings and conclusions are summarised in Section 5.6.

[1] Note that for initial descriptive purposes only, the LEAs in each of the urban and rural variants were originally matched to control area LEAs using another propensity score matching method. Details of this matching process have been set out in Chapter 2 and Appendix A2, and are not considered further here, except when these control groups are presented for comparative purposes.

5.2 One-way Matching

This section sets out some basic descriptive statistics about the different matched samples used. It illustrates how the matching techniques greatly improve the similarity of the demographic composition of the individuals in our pilot areas with those in our control areas. This allows us to attribute any differences in rates of participation in post-16 full-time education between eligible individuals in pilot and control areas to the impact of EMA. Differences in average participation rates in full-time education after 16 are then considered for each of the matched samples used.

5.2.1 Sample sizes and characteristics

The first matching estimator was derived by matching each individual in a pilot area to the individual in a control area whose demographic characteristics were closest to theirs according to their 'propensity' to be in a pilot area. This involved examining the characteristics of young persons in the pilot areas and seeing whether they were similar to the characteristics of young persons in the control areas. The 'propensity' is a weighted index of all the observable characteristics that are believed to be an important influence on education decisions. Information was used on family income; family structure; education; age; labour market status and occupation of parent(s); ethnicity; early childhood experience; gender; housing tenure; and whether the young person lived in an urban or rural area. It was not possible to match individuals on the type of school attended in year 11 because this question was only asked of those who continued in post-16 full-time education.[2] This exercise was undertaken only for young people in pilot and control areas who were, or would have been, eligible for EMA. The quality of the data meant that only very close matches were accepted.[3] Table A5.1 in Appendix A5 assesses the impact of the matching process by comparing sample sizes and the mean characteristics of individuals in pilot and control areas, both before and after matching took place. The population considered contains EMA eligible individuals only, or those in control areas who would have been eligible. Males and females in urban and rural areas are presented separately in accordance with the methodology used.

The first rows of Table A5.1 show the sample sizes in each of these groups. Consider first the pilot area population used in the matched and unmatched samples, as shown in the first

[2] This question will be asked for those interviewed in cohort 2, wave 1, and cohort 1, wave 2.
[3] Only those whose propensity score was within 0.005 or less were accepted as a suitable match.

row of the table. Individuals who could not be well matched have been dropped during the matching process, so that the pilot area population used for the analysis for urban males declined from 1795 in the unmatched sample of urban males to 1752 in the matched sample, or by 2.4 per cent. For urban females, the drop in sample size was from 1832 to 1773 or by 3.2 per cent. The losses to the sample in rural areas were somewhat higher, at 6.5 per cent for males and 12.2 per cent for females. The reduction in sample size was necessary to ensure that valid comparisons were made. Since the one-way matching retains the majority of the sample and Table A5.1 in Appendix 5.1 shows that the reduction in sample size does not change the composition of the pilot group in any important way, these reductions should not be of concern.

Consider next the control area populations used. As a result of the experimental design, the unmatched data contains more pilot area individuals than control area individuals. As can be seen in Table A.5.1, almost twice as many interviews were conducted in urban pilot areas than in urban controls. However after matching, each individual in a pilot area was directly linked to his or her closest match in a control, and the numbers compared in pilots and controls were therefore identical. Note that this means that many of the control area individuals were used as matches for more than one pilot area individual. The maximum number of times any one control area individual was used as a match is 14, although the average number of times a control area individual was used in urban areas is approximately 4.1 times, falling to 2.5 times in a rural area (not shown on the Table). This is because in the rural sample, the numbers in the pilot and control areas were almost identical (by design).

Some of the characteristics used in the matching process differed between pilots and controls in the unmatched and matched samples; Table A.5.1 shows this be indicating the mean characteristics in pilots and controls. The rows marked ‘difference’ show the difference between the pilot and control means. Unless otherwise marked, these will be differences in proportions, but for family income the difference given is a percentage difference. Differences marked by a star are significant at the five per cent level.

On many characteristics, the samples were well balanced between pilot and control areas prior to matching and, for this reason, matching did not alter the mean sample characteristics significantly. As would be expected, some of the mean characteristics converged between pilot and control areas after matching has taken place. This demonstrates that the education

decisions of young persons in the pilot areas are being compared to that of genuinely similar young persons in the control areas. Most notably, differences in family income were less pronounced in all of the matched samples compared to the unmatched samples. Note, however, that since matching allows differences in characteristics to be traded off against each other, some characteristics also became slightly more divergent between pilots and controls after matching. Examples of this include the proportion of rural females who live in council or housing association accommodation.

5.2.2 Comparing propensity scores

Comparing the distribution of propensity scores in pilot and control areas in each of the rural and urban variants before individual matching took place, and again after the individual matching had been undertaken, provides a clearer illustration of how the one-way matching between individuals brought the overall distribution of characteristics in the pilot and control areas closer together. Figures A4.1 – A4.5 in Appendix A4 compare the distribution of the propensity scores on which individuals have been matched; the better the match, the closer the pilot area and control area distributions will appear to each other.

In all instances, the propensity score distributions for the control areas are nearly identical to the pilot areas after individual matching has taken place. In contrast, despite the care with which each of the control area LEAs were chosen to match to each of the EMA Variant pilot areas, the propensity scores for pilot and control areas differ. For all these groups, the propensity to be in a pilot area is noticeably higher for those actually found in pilot areas than for those in the controls; the individual matching procedure can therefore be expected to improve estimates of the effect of EMA considerably.

5.2.3 Impact of EMA on participation in full-time education among young people eligible for EMA: one-way matching results

This section discusses the results of the one-way matching of individuals in the pilot and control areas. In the matched samples the difference in average participation rates between pilot area individuals and their chosen controls may be attributed to the impact of EMA, since all other relevant observable demographic factors were taken into account by the matching.[4] This estimate is calculated for the entire eligible population, regardless of whether young

[4] The two-way matches which follow provide a robustness check for these results.

people had actually taken up EMA or not. Thus the estimate does not assume that everyone was taking up EMA and when the effect for different groups of individuals is estimated, different rates of take-up within a group may impact on the estimate. As Chapter 2 has shown, there has been considerable variation in take-up across the different variants and between urban and rural areas. In each case the difference in full-time education participation from the unmatched sample is shown since it provides information on the importance of matching, and an indication of the representativeness of the matched sample.

The basic matching approach involved separately matching eligible urban males in pilot areas with eligible urban males in control areas; eligible urban females in pilot areas with eligible urban females in control areas; eligible rural females in pilot areas with eligible rural males in control areas; and eligible rural females in pilot areas with eligible rural females in control areas. The discussion in the previous section was based on this matching. This is necessary if the differential impact of EMA on these groups is to be estimated (to ensure the composition of the control group is directly comparable to the pilot group).

Overall results and the importance of matching

This section first examines estimates of the overall impact of EMA. To obtain the best estimate of this the closest match among all those in control areas (not distinguishing between gender and location) is chosen. The results are shown in Table 5.1.

Table 5.1 Impact of EMA on all Eligible Young People

Per cent

	Unmatched sample	**Matched sample**
1. Young persons in pilot areas in full-time education	71.7	71.5
2. Young persons in control areas in full-time education	67.8	66.6
EMA effect (1-2)	**3.9**	**5.0**
(Standard Error)	(1.1)	(1.0)
Observations in pilot	*4,716*	*4,512*
Observations in control	*2,843*	*4,512*

Note: Bootstrapped standard errors are reported based on 1000 replications. Figures in bold are significant at conventional levels.

Table 5.1 shows that the difference in average participation rates in education between the pilots and controls is increased during the one-way matching process. The overall impact of EMA in our sample is that there is a gain in participation rates amongst eligible young people by 5.0 percentage points.[5] The results indicate that working with a correctly matched sample may increase the estimated impact of EMA amongst all eligible individuals (though the estimated increase, over and above that estimated from the unmatched sample, is not statistically significant).

The EMA effect is then estimated separately for urban and rural areas (Table 5.2). The procedure involved the matching only of individuals in urban pilots with individuals in urban controls, and in rural pilots with rural controls. Again, the estimated EMA effect is compared using both matched and unmatched samples.

Table 5.2 Impact of EMA on all Eligibles in Urban and Rural Areas

Per cent

	Rural Areas		**Urban Areas**	
	Unmatched sample	**Matched sample**	**Unmatched sample**	**Matched sample**
1. Young persons in pilot areas in full-time education	81.8	81.7	68.7	68.7
2. Young persons in control areas in full-time education	73.9	72.4	64.5	64.9
EMA effect (1-2)	**7.9**	**9.2**	**4.2**	**3.8**
Standard Error	(1.8)	(1.8)	(1.3)	(1.1)
Observations in pilot	*1089*	*987*	*3,627*	*3,525*
Observations in control	*994*	*987*	*1,849*	*3,525*

Note: Bootstrapped standard errors are reported based on 1000 replications. Figures in bold are significant at conventional levels.

This shows that the estimated EMA impact is larger in rural areas (9.2 percentage points) than in urban areas (3.8 percentage points). Matching increases the estimated impact of the EMA in rural areas and slightly decreases it in urban areas. Again, none of these changes are significant at conventional levels.

[5] Our sample overweights the contribution of rural participants and underweights those of urban participants

Having established the basic results, the differential impact of EMA on young men and young women is now examined and by whether they are receiving the maximum amount of EMA or a lesser amount on the taper. In all of this work only results from the preferred matched samples are reported.

Gender differences

Tables 5.3 and 5.4 describe the impact of EMA by gender and location. Table A.5.2 in Appendix 5.2 reports results from both the matched and unmatched samples, which again show important differences in estimates obtained from the matched and unmatched samples.[6]

EMA has a larger effect on young men than young women (6.0 percentage points for males compared to 3.9 percentage points for females). This difference is only significant at ten per cent levels.

This finding also holds when the sample is split further by urban and rural areas. However, none of these differences are significant at conventional or even ten per cent levels. It is also important to remember, however, that young women in the control group have significantly higher participation rates than young men in the control group (by around eight percentage points on average). The results suggest, therefore, that EMA may be playing an important role in closing this substantial gap between young men and young women's participation in post-16 full-time education in the pilot areas.

Focusing more closely on the rural and urban results, for both young men and young women, the effect of EMA is significantly larger in rural areas (10.9 percentage points for males and 7.4 percentage points for females) compared to urban areas (4.6 percentage points for males and 2.9 percentage points for females).

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because the evaluation was designed to estimate the effects of rural and urban participants separately.

[6] For young men and women in urban areas, the difference in the average participation rate in education between the pilots and controls (as shown in Table A.5.2) is decreased during the one-way matching process, although this decrease is small and not significant. For young men and women in rural areas, the differences are increased somewhat after matching. This again indicates that working with a correctly matched sample may slightly decrease the estimated impact of EMA amongst those in urban pilots, but will increase its impact amongst those in the rural pilot area.

Table 5.3 Impact of EMA on Males by Location

Per cent

	Males	Males in Rural Areas	Males in Urban Areas
1. Young persons in pilot areas in full-time education	68.7	78.0	66.0
2. Young persons in control areas in full-time education	62.7	67.1	61.4
EMA effect (1-2)	**6.0**	**10.9**	**4.6**
(Standard Error)	(1.4)	(2.7)	(1.6)
Observations	*2,266*	*514*	*1,752*

Note: Bootstrapped standard errors are reported based on 1000 replications. Figures in bold are significant at conventional levels.

Table 5.4 Impact of EMA on Females by Location

Per cent

	Females	Females in Rural Areas	Urban Areas
1. Young persons in pilot areas in full-time education	74.4	85.6	71.3
2. Young persons in control areas in full-time education	70.5	78.2	68.4
EMA effect (1-2)	**3.9**	**7.4**	**2.9**
(Standard Error)	(1.3)	(2.2)	(1.5)
Observations	*2,246*	*473*	*1,773*

Note: Bootstrapped standard errors are reported based on 1000 replications. Figures in bold are significant at conventional levels.

Maximum and other amounts of EMA

In the results so far, the impact of EMA on the *whole* group of eligible individuals in pilot areas has been considered. Yet there may be greater financial incentives for those who receive the full amount of EMA to undertake full-time education compared to those who only receive a partial payment. To look at this in more detail, pilots and controls were split by whether they were fully or partially eligible for EMA. Therefore, individuals in pilot areas were only matched to those living in the same location (rural or urban), of the same gender

(male or female) **and** the same estimated eligibility (fully eligible or partially eligible). The results are presented in Table 5.5 (eligible males and females), Table 5.6 (eligible males) and Table 5.7 (eligible females).

This more disaggregated matching further reduces the sample size in pilot areas (and, therefore, control areas) from 4512 to 4097 – a reduction of 9.2 per cent.[7] As a result of the loss in sample size and the different matching procedure used, the estimated total effect (which is a weighted average of the constituent effects) is slightly different to that contained in Table 5.1 (5.4 percentage points versus 5.0 percentage points, though this difference is not statistically significant). It should be remembered that the estimate contained in Table 5.1 remains our best estimate of the overall effect. This is true of all the weighted averages shown in Tables 5.5, 5.6 and 5.7.

Analysis shows that EMA has a significantly larger effect on the group of individuals who are eligible for the full EMA payment compared to those who are only eligible for a partial payment (7.0 percentage points compared to 2.9 percentage points). This suggests that higher EMA payments do exert a greater influence on those who are eligible for them. However, the results vary by rural and urban areas and by gender. In particular, in rural areas the effects for those on the taper are significantly higher than for those who get the full amount. The effects are once again bigger for young men than young women, with the biggest difference on the taper. There is in fact, no significant effect of EMA on young women who are only eligible for a partial payment.

[7] This reduction in sample size made little difference to the average characteristics of those in the pilot areas.

Table 5.5 Impact of EMA by Eligibility

Per cent

	All	Rural	Urban
1. Young persons in pilot areas in full-time education	71.0	81.3	68.6
a. Fully Eligible	68.7	78.3	66.7
b. Taper	74.8	85.6	72.0
2. Young persons in control areas in full-time education	65.6	72.2	64.0
a. Fully Eligible	61.7	72.0	59.5
b. Taper	71.9	72.4	71.7
EMA Effect – Fully Eligible (1a-2a)	**7.0**	**6.3**	**7.2**
(Standard error)	(1.3)	(2.8)	(1.5)
EMA Effect -Taper (1b-2b)	**2.9**	**13.2**	0.2
(Standard error)	(1.5)	(3.2)	(1.8)
Weighted Average (1-2)	**5.4**	**9.2**	**4.6**
(Standard error)	(1.0)	(2.1)	(1.2)
Total Observations	*4097*	*765*	*3332*
Fully eligible	2536	446	2090
Taper	1561	319	1242

Note: Bootstrapped standard errors are reported based on 1000 replications. Figures in bold are significant at conventional levels.

Table 5.6 Impact of EMA on Males by Eligibility

Per cent

	All	Rural	Urban
1. Young persons in pilot areas in full-time education	68.4	79.2	65.8
a. Fully Eligible	67.9	77.0	66.0
b. Taper	69.1	82.0	65.7
2. Young persons in control areas in full-time education	61.6	67.6	60.1
a. Fully Eligible	59.7	68.5	57.9
b. Taper	64.4	66.5	63.9
EMA Effect – Fully Eligible (1a-2a)	**8.2**	**8.6**	**8.1**
(Standard error)	(2.0)	(4.3)	(2.2)
EMA Effect -Taper	**4.7**	**15.6**	1.8
(Standard error)	(2.4)	(4.9)	(2.7)
Weighted Average (1-2)	**6.8**	**11.6**	**5.7**
(Standard error)	(1.5)	(3.1)	(1.7)
Total Observations	*2037*	*389*	*1648*
Fully eligible	1247	222	1025
Taper	790	167	623

Note: Bootstrapped standard errors are reported based on 1000 replications. Figures in bold are significant at conventional levels.

Table 5.7 Impact of EMA on Females by Eligibility

Per cent

	All	Rural	Urban
1. Young persons in pilot areas in full-time education	73.6	83.5	71.4
a. Fully Eligible	69.4	79.5	67.3
b. Taper	80.5	89.5	78.4
2. Young persons in control areas in full-time education	69.5	76.9	67.9
a. Fully Eligible	63.5	75.4	61.0
b. Taper	79.5	78.9	79.6
EMA Effect – Fully Eligible (1a-2a)	**5.9**	4.0	**6.3**
(Standard error)	(1.8)	(4.0)	(2.0)
EMA Effect -Taper	1.0	**10.5**	-1.3
(Standard error)	(2.0)	(4.1)	(2.3)
Weighted Average (1-2)	**4.1**	**6.6**	**3.5**
(Standard error)	(1.4)	(2.8)	(1.5)
Total Observations	*2060*	*376*	*1684*
Fully eligible	1289	224	1065
Taper	771	152	619

Note: Bootstrapped standard errors are reported based on 1000 replications. Figures in bold are significant at conventional levels.

5.3 Refinements of the Matching Methodology and Policy Simulation

5.3.1 How does varying the amount of EMA impact on participation?

In the simple matching models presented above, only average stay-on rates in pilot areas versus the matched controls have been compared in order to estimate the impact of EMA. While this provides a useful foundation for the evaluation, the approach does not allow an exploration of the effects of incremental changes in the amount of EMA on post-16 full-time education participation. This is of extreme importance to policy makers when considering the overall design of a programme such as EMA.

Furthermore, the one-way matching approach does not allow easy comparisons across different variants as it does not enable pure EMA effects to be disentangled from take-up effects (which appear to vary widely across variants)[8] and differences arising from the varying composition of young people in the different urban pilot areas.

In order to overcome these problems more structure needs to be imposed on the estimation procedure. This is done using regression techniques. The basic model involves estimating the determinants of education participation *including the impact of estimated EMA entitlement.*[9] There is an issue about how estimated EMA entitlement is measured. The EMA consists of a weekly payment during term time as well as retention and achievement bonuses. In all this work it is assumed that the achievement bonus will only impact on results and not participation. If the assumption is that an individual's participation decision is based purely on the weekly EMA payment they would be entitled to receive, ignoring bonuses, then all the incremental effect of the EMA will be attributed to this weekly amount. The retention bonus is assumed to have no effect on initial participation at all. Given that the overall EMA effect is constant, estimates based on such an assumption will provide the upper limit of the incremental effect of the EMA. On the other hand, if it is assumed that the EMA retention bonus has just as much impact on participation decisions as the EMA weekly payment, the estimated incremental effect will necessarily be lower as more money (the weekly payment plus the retention bonus) is assumed to be driving the same EMA effect. Incremental

[8] As was pointed out in the introduction to Section 5.2.3, the estimation procedure takes place on the whole eligible sample regardless of whether they haven taken up EMA or not. The approach, therefore, does *not* assume full take-up.

estimates derived in this way will therefore provide a lower bound of the incremental effect of the EMA. In this section both models are used and these estimates provide the likely range of the incremental effect of EMA.

The EMA entitlement variables are measured in pounds per week. The weekly EMA entitlement variable is between £5 and £40 for those in pilot areas and zero for all individuals in control areas.[10] The actual amount of entitlement varies according to where a person lives. For those in urban variants 1, 3 and 4 and in the rural pilot area the maximum amount is £30 (for those with gross taxable family incomes less than or equal to £13,000) and the minimum £5 (for those with gross taxable family incomes of £30,000), with a linear taper between these two amounts. For those in urban variant 2, the maximum payment is £40 rather than £30 (again for those with gross taxable family incomes less than or equal to £13,000). The minimum payment is the same. This variant therefore involves a steeper linear taper.

EMA also involves retention and achievement bonus payments. In variants 1, 2, and 3 the retention bonus is £50 per term and the achievement bonus £80 payable on successful completion of the course. In urban variant 4, the bonuses are more generous with a retention bonus of £80 per term and an achievement bonus of £140.

In the model where the retention bonus is included in the entitlement variable the bonus is assumed to cover a period of 12 weeks (the average length of a term). Hence £4.17 is added to weekly EMA payments for all individuals in pilot areas in variants 1, 2 and 3 and £6.67 for those in variant 4. The retention bonus is the same for all eligible individuals regardless of their income. Including the retention bonus in this way assumes that when young people are making their decision about whether or not to continue in full-time education, they include the retention bonus in their calculations. In the modelling, models are used which both exclude and include this retention bonus in the estimate of EMA entitlement.

Finally, in variant 3 the EMA is paid to the parent rather than the young person. This may have a different impact on a young person's education decision and this is allowed to be the

[9] In all of the work carried out in this section a probit maximum likelihood procedure is used to model the determinants of full-time education participation.

[10] This probit model is only estimated on those in control and pilot areas who are eligible for EMA, hence all individuals in pilot areas are entitled to some EMA payment if they remain in full-time education.

case in our model specification.[11] From the model, the percentage point increase in full-time education participation from a £1 increase in the weekly EMA payment can be estimated. The model can also be used to compute the average effects for different sub-groups of the eligible population (as with the basic matching estimator).

Once the model estimates are available, predictions can be made about how changes in the level of EMA entitlement affect full-time education participation decisions. This allows estimates of the comparative effects of the different EMA Variants on the whole pilot population (rather than just those who live in the particular pilot area of interest) to be made. The model will also allow other policy simulations to be carried out.

First the regression results based on the unmatched sample are examined. Regression is a form of matching which ensures that pilot and control areas are appropriately weighted (the first sources of bias identified in Chapter 4). Regression techniques do not, however, ensure that all those in the pilot areas have an obvious match in the control areas, and if there is not the estimates may be biased (see Chapter 4).

Tables 5.8 and 5.9 show the estimate of the incremental effect of EMA (excluding retention bonuses) on the probability of staying in post-16 full-time education on the unmatched and matched samples respectively. As stated earlier, these estimates will provide upper limits on the likely incremental effect of EMA. Models are estimated separately for males and females in urban and rural areas using the same unmatched and matched sample as in Section 5.2. Tables report the estimated *marginal effects*. The marginal effect gives the percentage point gain in full-time education participation as a result of a £1 increase in weekly EMA entitlement. It is clear from comparing the results in Tables 5.8 and 5.9 that estimated effects increase in the matched sample for individuals in rural areas and decrease slightly for those in urban areas.

[11] This is done by interacting the weekly EMA entitlement variable with a dummy variable identifying those in Variant 3.

Table 5.8 The Incremental Effect of the EMA Excluding Bonuses: Whole Sample

	Rural Males	Rural Females	Urban Males	Urban Females
	Marginal Effect	***Marginal Effect***	***Marginal Effect***	***Marginal Effect***
Weekly EMA Entitlement	**0.3854**	0.1060	**0.2427**	**0.1530**
(Standard Error)	(0.1036)	(0.0802)	(0.0705)	(0.0646)
Weekly EMA Entitlement × Variant 3			0.0849	0.0974
(Standard Error)			(0.1047)	(0.0968)
Observations	*1024*	*1059*	*2719*	*2757*

Note. The marginal effect gives the *percentage point* increase in the participation rate for very extra pound per week of EMA allowance. Coefficients in bold are significant at conventional levels.

Table 5.9 The Incremental Effect of the EMA Excluding Bonuses: Matched Sample

	Rural Males	Rural Females	Urban Males	Urban Females
	Marginal Effect	***Marginal Effect***	***Marginal Effect***	***Marginal Effect***
Weekly EMA Entitlement	**0.4159**	0.1194	**0.2085**	*0.1495*
(Standard Error)	(0.1895)	(0.1306)	(0.0932)	(0.0863)
Weekly EMA Entitlement × Variant 3			0.0566	0.1020
(Standard Error)			(0.1141)	(0.1107)
Observations	1028	946	3504	3546

Note: The marginal effect gives the *percentage point* increase in the participation rate for every extra pound per week of EMA allowance. Standard Errors are based on 300 replications. Coefficients in bold are significant at 5 per cent levels and coefficients in italics are significant at 10 per cent levels.

Focusing on the estimates in Table 5.9, for rural young men a £1 increase in weekly EMA entitlement increases participation rates by an average of 0.42 percentage points. For rural young women the corresponding average increase is 0.12 percentage points for every

additional £1 of EMA entitlement, though this effect is not significant. For urban males in variants 1, 2, and 4, an additional £1 of EMA entitlement increases average participation rates by 0.21 percentage points. The corresponding figure for urban females is 0.15 per cent points for every additional £1 of EMA entitlement.

The model suggests that, for both males and females, the estimated incremental effect of EMA on post-16 participation in education is the same regardless of whether it is paid to the parent or the young person. The estimates also suggest that education participation increases with family income, but that a £1 increase in weekly family income has a much smaller effect on participation than a £1 increase in the weekly EMA payment, even when that EMA payment is made to the parent. This finding will need to be explored in more detail in future research. Chapter 2 has shown, however, that there is evidence that paying EMA to the parent rather than the child has differential effects on other outcomes. These issues will also be explored in more detail in future work.

The EMA entitlement variable used in these models ignored the possible influence of retention bonuses. If the bonus also influences a young persons decision (as would be expected), then the estimated marginal effects contained in Table 5.8 and 5.9 will overstate the incremental effect of EMA. They will be attributing all the effect to the weekly payment when, in fact, part of the effect is the result of the additional incentives provided by bonuses.

In this model, the level of EMA entitlement has been increased by between £4.17 and £6.67 a week for all individuals in the pilot areas, with EMA entitlement ranging between £9.17 and £44.17 per week (available for those who stay in full-time education for the whole term). For those on low weekly amounts of EMA, the bonus component forms a relatively large portion of the payment (in variant 4 it could constitute over 50 per cent of the payment). As discussed earlier, the estimates from this model should provide a lower bound on the incremental effect of an extra pound of EMA on full-time education participation.

The results from including bonuses in the EMA entitlement variable are shown in Tables 5.10 for the rural sample and 5.11 for the urban sample. The results indicate that the model which

includes these bonuses performs better in explaining education participation than the one where they are excluded.[12]

In this model, an extra £1 of EMA entitlement increases average participation for rural young men by 0.36 percentage points and for rural young women by 0.11 percentage points. Again, this effect is not significant for rural females. The corresponding urban results are given in Table 5.11. Once again there is no significant difference between variant 3 where it is paid to the parent and the other urban variants where it is paid to the young person (see column 1 for urban males, column 3 for urban females). Our preferred estimates do not make a distinction between payments made to the parent and young person (columns 2 and 4). On the basis of these preferred estimates, a one pound increase in EMA entitlement (including the retention bonus) increases urban male participation by 0.19 percentage points and urban female participation by 0.15 percentage points.

Table 5.10 The Incremental Effect of the EMA Including Bonuses: Matched Rural Sample

	Rural Males	**Rural Females**
	Marginal Effect	***Marginal Effect***
Weekly EMA Entitlement	**0.3618**	0.1083
(Standard Error)	(0.1251)	(0.1128)
Observations	1028	946

Note: The marginal effect gives the *percentage point* increase in the participation rate for every extra pound per week of EMA allowance. Standard Errors are based on 300 replications. Coefficients in bold are significant at conventional levels.

[12] In terms of goodness of fit measures. The full set of regression results are available from the authors.

Table 5.11 The Incremental Effect of the EMA Including Bonuses: Matched Urban Sample

	Urban Males		Urban Females	
	Marginal Effect	***Marginal Effect***	***Marginal Effect***	***Marginal Effect***
Weekly EMA Entitlement	**0.1769**	**0.1856**	*0.1347*	**0.1497**
(Standard Error)	(0.0776)	(0.0645)	(0.0794)	(0.0692)
Weekly EMA Entitlement × Variant 3	0.0475		0.0869	
(Standard Error)	(0.0872)		(0.0861)	
Observations	3504	3504	3546	3546

Note: The marginal effect gives the *percentage point* increase in the participation rate for every extra pound per week of EMA allowance. Standard Errors are based on 300 replications. Coefficients in bold are significant at 5 per cent levels and coefficients in italics are significant at 10 per cent levels.

These regression models allow estimates of the average effects for different groups of individuals according to the level of their eligibility, as with the basic matching approach. Results of this are shown in Table A6.1 in Appendix A6 for the whole unmatched sample; the matched sample where no bonuses are included in the EMA entitlement variable; and the matched sample where bonus payments are included in the EMA variable. Despite imposing more structure, the estimated overall effect of EMA in both of the models estimated on the matched sample is 5.0 percentage points, identical to that found from the basic matching estimator (see Table 5.1). In both these models, the estimated impact of EMA on each sub-group of interest is extremely close. The important difference between the estimates contained in Table A6.1 in Appendix A6 and those in Tables 5.5, 5.6 and 5.7 is that it is assumed in the former that EMA entitlement has a linear impact on participation. This means that the model imposes a restriction that EMA will have a larger impact on individuals receiving the full amount compared to those only receiving partial payments. This assumption was not made in the estimates contained in Tables 5.5 to 5.7. Reassuringly, the urban results are very similar to the earlier findings. For urban males, the estimated overall effect is slightly lower than that found in the one-way matching procedure. For urban females, EMA only significantly impacts on the group of females who are entitled to the full amount.

For rural males and females the estimated impact of being entitled to the full amount of EMA is, by construction, larger than for those individuals who are only entitled to a partial payment. This was not found to be the case with the earlier results. This disparity may reflect the fact that in rural areas the linearity assumption is not valid or, as is more likely, it may indicate that the estimates of entitlement in the rural areas are less precise. This is a common problem in household surveys where there are large proportions of self-employed households (as is the case in rural areas). It is likely that a number of households which are being classified as entitled to the full amount are in fact under-reporting their income. This will be investigated more fully in future work.

Overall, the results presented in Table A6.1 in Appendix A6 are very similar to those presented in Section 5.2. It is also clear that estimates of the *overall* impact of the EMA whether the model that includes bonuses or excludes bonuses remain the same.[13] There is an effect, however, on estimates of the incremental effect of an additional pound of EMA.

5.3.2 Comparing different variants

In this sub-section the model which includes the effects of the retention bonuses is used to estimate the different effects associated with the four urban variants. Variants 1 and 3, which have a maximum payment of £30 per week, and the standard bonuses are used as the base.[14] What each individual in a pilot area would have been entitled to if they were living in variant 1 or 3, is calculated and their probability of staying on in full-time education is predicted. This can then be compared to the predicted probability of these same pilot individuals staying on in the absence of EMA (by setting the EMA variable to zero). The average difference in these probabilities gives the base effect reported in Table 5.12. The average estimated effect of the basic urban variant is 4.3 percentage points, with the effect higher for young men (4.6 percentage points) than young women (3.9 percentage points), though once again this difference is not significant. The overall effect on those who are eligible for the full EMA amount is 5.2 percentage points, a 5.5 percentage point effect for males and a 4.9 percentage point for females.

[13] All estimates are almost identical, with most being within 0.1 percentage points and the biggest difference being 0.4 percentage points. None of these differences come close to being significant.

[14] The regression models suggested that it did not make a significant difference if the EMA was paid to the child (Variant 1) or the mother (Variant 3) so these two variants have been grouped together.

Next, what each individual in the urban pilot areas would be entitled to if living in urban variant 2 is calculated, and their probability predicted of staying on in full-time education given this level of entitlement. The *extra effect* on full-time education participation of the more generous EMA entitlement is then estimated for all individuals in the pilot areas, by subtracting this variant 2 probability from the base probability. This is shown in the columns headed variant 2. The more generous payments given in variant 2 are estimated to increase the overall participation rate by 1.2 percentage points compared to that obtained under variants 1 and 3. This difference is significant at conventional levels. Hence the estimated overall effect on stay-on rates of variant 2 compared to no EMA is 5.5 percentage points (4.3 percentage point base effect plus 1.2 percentage point extra effect). The results also show that variant 2 has an unambiguously significantly higher effect on all groups of individuals compared to variants 1 and 3 (the base scheme). The incremental improvement is very similar for males and females and higher for those eligible for the full EMA payment.

In the final two columns headed variant 4, the extra effect of the more generous bonuses received under variant 4 is calculated. These more generous bonuses (of around £2.50 per week) increase average participation rates for all groups by between 0.3 and 0.4 percentage points. This additional effect is again significant for all groups.

Table 5.12 Estimated Differences Between Urban Variants

	Matched Sample						
Group	***Variants 1 and 3***		***Variant 2***		***Variant 4***		***Number of observat-ions***
	Base Effect	***(SE)***	***Extra Effect***	***(SE)***	***Extra Effect***	***(SE)***	
Urban Males							
Full Amount	**5.5**	(2.3)	**1.6**	(0.6)	**0.4**	(0.16)	1052
Taper	**3.3**	(1.4)	**0.7**	(0.3)	**0.4**	(0.14)	700
All	**4.6**	(1.9)	**1.2**	(0.5)	**0.4**	(0.15)	1752
Urban Females							
Full Amount	**4.9**	(2.4)	**1.4**	(0.7)	**0.4**	(0.17)	1077
Taper	**2.5**	(1.3)	**0.6**	(0.3)	**0.3**	(0.13)	696
All	**3.9**	(2.0)	**1.1**	(0.5)	**0.3**	(0.15)	1773
All Urban							
Full Amount	**5.2**	(1.7)	**1.5**	(0.5)	**0.4**	(0.11)	2129
Taper	**2.9**	(0.9)	**0.7**	(0.2)	**0.3**	(0.10)	1396
All	**4.3**	(1.4)	**1.2**	(0.4)	**0.3**	(0.11)	3525

Note: All standard errors are based on 300 replications.

5.4 Two-way Matching: Pilots and Controls, and Eligibles and Non-eligibles

All of the results presented so far give an estimate of the impact of EMA assuming that there are no unobserved area effects which affect participation in post-16 education. Despite the fact that control areas have been chosen on the basis of having similar characteristics to the EMA pilot areas, the historic aggregate data on post-16 participation presented in Chapter 4 (Table 4.1) indicate that area effects are potentially important. Such effects would mean that estimates of the impact of EMA obtained from the one-way matching method set out in the previous section would be incorrect. Given the lack of any pre-reform micro data, two techniques have been developed to test whether area effects are important and, if so, in which direction they bias the results:

- those who are ineligible for EMA; and,
- older siblings who made their educational choices prior to the introduction of EMA.

The data set contains two groups of individuals who are not eligible for EMA: all those who live in the control areas and those who live in pilot areas but whose relevant family incomes[15] are above £30,000 a year. Using data on the post-16 education decisions of those who are income ineligible for the EMA in both the pilot areas and the control areas allows direct estimates of the size of any area effects. This requires two assumptions. First, that any area effects have the same impact on those who are eligible and ineligible for the EMA. This assumption would be violated if, for example, in one area the local labour market for young persons changed in a way which only impacted on those from low-income families. Second, there must be no impact of EMA on the behaviour of those who are ineligible. This second assumption would be violated if there were peer group effects, so that increased participation in post-16 education among eligible young people led to increased participation among ineligibles. An alternative way in which EMA could effect the education decisions of the ineligible population would be if labour market opportunities for the ineligible population were changed as a result of the introduction of EMA.

The timing of its announcement, and the fact that EMA is currently being piloted in specific local areas, rather than being implemented nationally, may make the assumption of no EMA effect on the ineligibles more realistic. In addition, this analysis only compares the post-16 education decisions of those eligible and ineligible individuals who have similar characteristics (aside, obviously, from family income). This makes it more likely that an area effect will be similar for those who are eligible and those who are ineligible for EMA.

In this two-way matching method, each EMA eligible individual in a pilot area has been matched to three other individuals, and the education participation behaviour of each is compared:

- An ineligible individual in a pilot area;
- An eligible individual in a control area; and,
- An ineligible individual in a control area.

Using the 'difference of difference' approach discussed in Chapter 4, the basic method is as follows. The difference is taken in participation rates between pilots and controls amongst the ineligibles, who are assumed to be unaffected by EMA, as the best estimate of the area

[15] This is parental gross taxable income, as calculated using the methodology shown in Appendix A3.

effect. This area effect is then subtracted from the 'raw estimate' of the impact of EMA to obtain the final estimate of the EMA effect[16].

5.4.1 Sample sizes and mean characteristics

All the same individual characteristics are used for matching as in the one-way matching methodology described in Section 5.2. In order to obtain sufficient accuracy in the matching, and at the same time to retain sufficient sample sizes, young men and women in rural and urban areas have been considered together for this two-way matching.[17] Not surprisingly, the characteristics of those eligible for EMA and those who are ineligible tend to be significantly different in a number of respects, particularly income and socio-economic status. For this reason once people are matched according to their propensity to be eligible for EMA, as well as according to their propensity to be in a pilot area, there are quite a number of individuals who cannot be matched at all. The smaller matched samples contain individuals who are much more similar to each other than the unmatched groups and there is, therefore, considerable convergence in mean characteristics of the different groups once matching has taken place.

The original unmatched sample sizes and sample sizes after matching has occurred are shown in Appendix 5.3. Details are included for two sets of matching rules, depending on how similar it is insisted that individuals and their nearest match need to be for them to be included in the analysis. The first set uses a maximum closeness of 0.7, while the second imposes a maximum closeness of 0.3.[18] Considering the group of eligible individuals in a pilot area to whom each of the other individuals have been matched, the original unmatched sample contains 4,716 young people. Once all those who could not be closely enough matched to a young person in each of the other three groups have been dropped from the analysis, the sample sizes are reduced to 2,373 using the 0.7 matching rule, or approximately one half of the original sample. Using the 0.3 rule, the usable matched sample decreased even more, to 1,457 or less than one-third of the original sample. Such large losses in sample sizes arise because only those who look most like the ineligibles in their characteristics (i.e.

[16] Raw effect is the effect from comparing education participation in a matched sample of those eligible for the EMA in the pilot areas with those who would have been eligible in the control areas, i.e. before any area specific effects are controlled for.

[17] Unfortunately this means that it is not possible to calculate disaggregated results looking at the effect of EMA on subgroups that may be of interest, for example males and females in urban and rural areas.

have the lowest propensity score to be eligible for EMA) will be similar enough to be matched to an ineligible individual. Similarly, amongst the ineligible groups, only those who look most like the eligibles in their characteristics (i.e. have the highest propensity score to be eligible for the EMA) can be used as matches. Again, as with the one-way matching, the numbers in each cell (pilots, controls, eligibles and ineligibles) are identical after matching.

The sample selection employed by matching can be seen clearly by the difference in mean characteristics of the samples before and after matching has taken place. Whereas there are wide divergences in the average characteristics of the unmatched samples between eligibles and ineligibles, the differences are much smaller amongst those who have been successfully matched. The stricter the matching rule, the closer the balance of characteristics amongst the final matched samples. Table A.5.3 in Appendix 5.3 also shows the mean of some of the characteristics upon which matching has taken place in each of the groups, both in the matched and unmatched samples.

The first characteristic described in the table is average family income in each of the groups. Note that this variable was not in fact used in the matching process itself because income itself determines eligibility through the EMA means test, so no matching could take place at all on this basis. However, through the process of matching on other related variables it can be seen that average family incomes in the different groups are also drawn considerably closer. Prior to matching, the mean family income amongst the group of eligibles in the pilots and controls was approximately £15,400 per annum, compared to approximately £46,000 amongst the ineligible groups. After matching, it is mostly young people at the upper end of the income scale amongst eligibles who have been used (in practice these young people will tend to be on the EMA taper rather than eligible for the full EMA). Therefore, the average incomes of the group of eligibles used in both pilots and controls rises to approximately £18,400 when the 0.7 rule is applied, and to £19,500 when the 0.3 rule is in operation. The average incomes of the ineligibles who have been used as matches are also considerably lower than amongst the unmatched group, at approximately £40,000.

[18] A 0.7 rule means that the maximum difference in the estimated probability (which lies between 0 and 1) is 0.25 and a 0.3 rule means that the maximum difference in the estimated probability is 0.12. The rule that the difference in pilot area propensity scores must not be more than 0.005 also remains.

Examining some of the other characteristics upon which the matching has taken place, prior to matching as many as 31 per cent of the EMA eligible population in the pilot areas lived in council or housing association accommodation, compared to only two per cent of the ineligible pilots and controls. By contrast, only seven per cent of the 0.7 rule sample of eligibles in pilot areas are of this tenure type, and just four per cent of those who have been matched using the 0.3 rule. The proportion of those in the matched sample of ineligibles who live in such accommodation is also higher than in the unmatched samples, so that matching achieves near convergence in the sample characteristics. A similar pattern can be seen in many of the other characteristics. For example, the proportion of eligible young people in pilot areas whose father is in full-time work is 41 per cent in the unmatched sample, compared to approximately 85 per cent of those ineligibles in pilot and control areas. Using the samples matched according to the 0.3 rule, the proportion of each group whose father works full-time is more or less equal, at between 68-70 per cent.

The implications of dropping such a large proportion of eligible young people from the sample, and using this smaller group of relatively better-off eligible individuals and relatively worse-off ineligibles to test for area effects, are not necessarily as serious as they might seem. This smaller sample is being used only to see whether it is likely that unobserved area affects are biasing the estimated EMA effects. Given that these are unobserved area effects rather than unobserved individual effects that we are trying to control for, it is unlikely that these effects will vary greatly for different groups of individuals. This however, is untestable in these data. If we are willing to assume that these area effects, such as differences in school quality between areas, impact similarly on all groups, then the estimate of the unobserved area effect can be used for the eligible EMA population at large, not just that sub-group from whom the effect is estimated.

5.4.2 Propensity scores

Comparing the distribution of propensity scores before and after this two-way matching has taken place illustrates dramatically how different the balance of characteristics between eligibles and ineligibles are before matching, and how the matching process brings the two distributions sufficiently into line for the impact of EMA to be assessed (Figure A4.6). Although the matching considered here has taken place on the basis of two sets of propensity scores, (those which determine whether the individual is in a pilot or a control, and those which determine whether an individual is eligible or ineligible for the EMA), only those

which determine eligibility are considered here.[19] Figure A4.6 shows how the propensity to be eligible for EMA varies between eligible and ineligible young people (both pilots and controls taken together), before and after matching. Before matching, it can be seen that the propensity scores to be eligible for EMA differ widely between eligibles and ineligibles. As would be expected, those who are in fact eligible for EMA have much higher propensity scores than those who are not, and the overlap between them is relatively small. Once each eligible individual is matched to the ineligible individual whose score is the closest, and once those who cannot be matched closely enough are dropped, the distributions of those remaining in the sample move much closer in line with one another. The stricter the matching rule, the closer the distributions between eligibles and ineligibles become.

5.4.3 Impact of EMA on educational participation: two-way matching results using eligibles and ineligibles

Table 5.13 shows how differences in participation in post-16 education are affected by this two-way matching. Note that the differences described are for all males and females, in urban and rural areas grouped together. Results for the unmatched sample show that, among those eligible for EMA in the pilot areas, 71.7 per cent continued in post-16 full-time education compared to 67.8 per cent of those eligible for EMA in the control areas. This gives a 'raw effect' of EMA of some 3.9 percentage points. An estimate of the area effects is provided by looking at participation rates among those not eligible for EMA. Among these young persons, 83.3 per cent in pilot areas continue in post-16 full-time education compared to 85.2 per cent in the control areas. The fact that a lower percentage of ineligible young people are participating in education in the pilot areas compared to the controls suggests that, if anything, the area effect is dampening down the overall EMA effect estimated in the previous section. This implies that overall, subject to the important assumptions discussed above, the impact of EMA on the unmatched eligible population is some 5.8 percentage points.

Using the matching rules of 0.7 and 0.3, among those eligible for EMA, participation rates are higher amongst the samples who have been successfully matched in both the pilot and the control areas than among the original, unmatched sample. This is not surprising since those individuals are being selected who have similar characteristics to the ineligible population.

[19] Divergences between pilots and controls were considered fully in the section describing the one-way matching above.

The 'raw effect' of EMA is found to be 4.7 percentage points if either the 0.7 or the 0.3 matching rule is used. This is larger than the 3.9 percentage points found in the unmatched sample. The matching process also increases the magnitude of the differences in staying on rates between ineligible young people in pilots and controls. Once the matched samples are used, this difference rises to 3.8 percentage points for the 0.7 rule matched sample and 3.1 percentage points in the 0.3 sample, compared to 1.9 percentage points in the whole sample. This negative area effect suggests that the estimates provided in the one-way matching analysis will, if anything, have *under-estimated* the impact of EMA. Once the area effect is taken into account, the EMA effect is some 8.4 or 7.8 percentage points, depending on whether the 0.7 or the 0.3 matching rule is used.

Table 5.13 Impact of EMA on the Eligible Population, Using 'Matched Difference of Difference' Methodology

		Stay on rate, by maximum distance from match		
Matched sample		**Unmatched**	**0.7**	**0.3**
1	Eligibles in pilot areas	71.7	78.8	79.7
		(0.7)	(1.6)	(2.4)
2	Eligibles in control areas	67.8	74.2	75.0
		(0.9)	(2.2)	(3.5)
3	***Estimate of 'raw' EMA effect (1–2)***	***3.9***	***4.7***	***4.7***
		(1.1)	**(2.7)**	**(3.9)**
4	Ineligibles in pilot areas	83.3	74.8	75.7
		(1.0)	(3.1)	(3.8)
5	Ineligibles in control areas	85.2	78.6	78.8
		(1.2)	(3.2)	(3.7)
6	***Estimate of area effect (4–5)***	***-1.9***	***-3.8***	***-3.1***
		(1.6)	**(4.6)**	**(4.9)**
	EMA effect allowing for area effect (3–6)	**5.8**	**8.4**	**7.8**
		(1.9)	(5.8)	(6.8)
	Observations	*4,716*	*2,373*	*1,457*

Note: 0.7 & 0.3 are based on 74 bootstraps.

5.5 Two-way Matching Across Pilots and Controls, and Older Siblings

Another method of estimating the size of any area effects is to generate micro-data from before the EMA was introduced by using information about the educational choices of the older siblings of young people in the EMA dataset. This is an extremely useful source of information on whether there were any differences between participation rates in post-16 education across our pilot and control areas, prior to the introduction of EMA, and once observable family characteristics are controlled for. Using information on older siblings is not as ideal as using information which was actually collected prior to the reform since, in addition to assuming that any area effects have persisted over time, some additional assumptions need to be made. First, the area effects which are estimated from the sample of older siblings need to be the same as those operating on the population as a whole. For example, the sample of older siblings can never contain the youngest child in a family. This would be problematic if it was thought that any area effects affected the education decisions of the youngest child in the family differently from that of other young persons. Second, details of household income and composition at the time the older sibling made their education decisions are not known, so it has to be assumed that these have remained constant. This is a relatively strong assumption. Third, older siblings need to have made their post-16 education decisions while living resident in the same LEAs as their younger siblings. If a significant proportion of families have moved between LEAs then it will not be possible to identify any area specific effects. The large size of English LEAs suggest that this should not be overstated as a problem.

However, there are also strong advantages in using older siblings to test for area specific effects rather than the group of contemporary ineligibles used in the previous section of this chapter. The assumption that EMA has had no impact whatsoever on the group on whom area specific effects are tested is much safer when using older siblings because it is impossible that EMA could have had any direct effect on them. In addition, using older siblings allows the analysis to concentrate on the participation rates of young people from low-income backgrounds, thereby avoiding strong assumptions about differences between high and low-income families which had to be made in the previous section.

In order to obtain estimates of area specific effects using a group of comparable older siblings, each EMA eligible individual in a pilot area has been matched to three other individuals, and the education participation behaviour of each is compared:

- An older sibling in a pilot area;
- A 16 or 17 year old in a control area; and,
- An older sibling in a control area.

Just as the comparative participation rates between ineligible individuals in pilots and controls were used in the previous section to provide an estimate of area specific effects, here the differences are taken between the participation rates of older siblings in pilots and controls as the best estimate of these effects. These area specific effects can then be stripped out of the EMA 'raw effect'; the differences which remain make up the final estimates of the impact of EMA.

There are two ways in which the information on siblings is used to establish an estimate of any area effects. The first methodology automatically matches those young people with an older sibling in the pilot areas to the closest young person with an older sibling in the control areas. This means that each pilot and control area young person is matched to his or her own older sibling only. Individuals with more than one older sibling are matched to the older sibling closest in age. By always matching a young person to an older sibling from the same household, this technique has the advantage that all characteristics of households, even those that are unobservable in the data, will be taken into account when differences between them are compared.[20]

Since young people with older siblings are an unrepresentative subgroup of the population[21], the second sibling matching method matches *all* young people to any older sibling who looks most similar to them on the basis of their characteristics. This technique has the advantage of allowing the impact of EMA on all individuals, whether they have an older sibling or not, to be investigated. Even for those who have an older sibling, their best match may or may not be their own brother or sister and, in cases where someone else's brother or sister is a better statistical match, then he or she is used instead. In this second sibling matching method, only

[20] This is true so long as these characteristics are invariant over time.

[21] See Appendix 5 for details of how the sub-sample of the population who have one or more older siblings differs from the rest of the population who do not.

those whose propensity scores are within either 0.7 or 0.3 of one another are matched, and all others who cannot be matched this closely are dropped. In order to estimate results for urban and rural areas separately, matching using this method has taken place separately for rural and urban areas. This separation of urban and rural has not been applied in the other two-way matching methods because the achieved sample sizes would have been too small. All these sibling matches have been conducted on eligible individuals only.

5.5.1 Sample sizes and mean characteristics

The sample sizes and mean characteristics of the different samples resulting from these techniques are shown in Appendix A5.5, Tables A5.5 and A5.6. For the unmatched sample, there are 4,716 eligible 16 or 17 year olds (referred to as YP in the Table) in the pilot areas[22], between them they have a possible 4,200 older siblings from whom matches could be drawn. The 2,843 eligible individuals in the control areas have a total of 2,518 older siblings from whom matches could be drawn. Of the eligible young people in the pilot area, 2,427 have been able to be matched to their own older sibling. The 0.7 matching rule restricts the sample size to 2,605 of which 2,030 are in urban areas and 575 in rural areas. The more restrictive 0.3 matching rule reduces the sample to 1,148, of which 916 are in urban areas and just 232 young persons are in rural areas. This small number of matches achieved from the second sibling matching method arises because many of the matches on the propensity to be an older sibling between each of the four groups are often not sufficiently close for a successful match to be made. In addition, it arises because matching has taken place separately between urban and rural areas, making the population from which possible matches can be drawn that much smaller. This is particularly true for rural area matching, since the majority of interviews were in urban areas.

Again, the degree to which results based on these smaller samples can be generalised to the population at large, depends on whether differences between pilots and controls amongst this matched group is the same as differences that would obtain if everyone in the pilots could be matched to an appropriate control. Although this cannot be tested in the data, it seems a reasonable assumption to make in order to enable estimates of area specific effects to be derived at all.

[22] Of these, 2,498, or 53 per cent have one or more older siblings who can be used for the purposes of matching.

Mean characteristics of the unmatched samples do not diverge as dramatically between the four relevant groups as when eligibles were matched to ineligibles. However Appendix 5.5, Tables A5.5 and A5.6 show that family characteristics of the original unmatched sample of young people, and the group of older siblings from which possible matches can be drawn, do differ from one another in some important respects. In general, the group of older siblings amongst the EMA eligible families come from somewhat lower socio-economic backgrounds than the whole group of young people (containing both those who do have older siblings and those who do not). Mean family incomes amongst the families of the group of older siblings are roughly £1,000 per annum lower than amongst the group of young people as a whole. This implies that amongst young people eligible for EMA, those young people with older siblings come from predominantly lower income families than those without older siblings. Similarly, the average attainment in maths GCSE of the young person, (the older siblings' GCSE results are not known), is lower amongst the group of older siblings than the group of young people taken as a whole; more of the older siblings' families live in council or housing association accommodation; and fewer have a father in full-time work. Appendix 5.4 to this chapter examines this issue more directly by showing how the characteristics of young people with older siblings differ to those without using regression analysis.

Once each individual is matched to his or her older brother or sister only, the family characteristics in each of the matched groups becomes, by definition, identical between the young person and their older sibling.[23] Thus when following this matching rule, the mean characteristics of the young people in pilot areas and the matched older siblings in pilot areas are exactly the same, whilst the same is true of the mean characteristics of the control area young people and their matched older siblings. The only divergence in characteristics permitted by this method is between pilots and controls (where the rule applied is that only matches of 0.005 or closer are permitted) but, as shown in Appendix 5.1 Table A5.1, after matching has taken place these differences are small.

The second sibling matching technique allows the group of young people who could be matched to be drawn from the population at large, not just those who have older siblings, although this is at the expense of the near identical convergence in the characteristics between groups which was seen in the matching rule adopted above. The composition of the four

[23] As discussed in Chapter 4, it is not possible to take into account possible changes in family circumstances occurring between the older sibling's and the young person's schooling choices.

groups in this final matched sample is nevertheless much more closely matched than in the original unmatched sample, most notably in terms of family income, but also in terms of some of the other characteristics described. The matching process allows characteristics to be traded off against each other in order to make the best statistical match, so some attributes have become on average slightly more divergent in the matched sample than in the unmatched one. An example of this is in the proportion whose father's occupation is professional or managerial.

5.5.2 Propensity scores

Figures A4.7 and A4.8 show how this two-way matching allows samples of older siblings and young people of similar characteristics to be compared. Only the propensity scores for the second sibling matching technique, where each person is matched to any older sibling, are shown. The propensity scores for the first set of sibling matches are not shown since, according to the methodology, when each young person is matched to his or her next youngest sibling only, their propensity scores are by definition identical. Urban and rural areas are shown separately.

Before individuals have been matched according to their propensity to be an older sibling, the distribution of characteristics of siblings and young people are both widely dispersed, with the older siblings showing higher propensity scores (as would be expected). Once matching has taken place, the remaining samples show a very similar distribution of scores, which are heavily concentrated within a much narrower band.

5.5.3 Impact of the EMA on educational participation: two-way matching results using eligibles and their older siblings

The results from this two-way matching methodology are shown in Table 5.14. As before, the difference in post-16 education participation rates between young persons in pilot and control areas is 3.9 percentage points in the unmatched sample. Among the unmatched older siblings there is a higher participation rate among those in control areas compared to pilot areas, which suggests that the area effect may be placing a downwards bias on initial estimates of the impact of EMA. Taking into account area specific effects without matching would, therefore, lead to an upward revision of estimates of the overall impact of EMA. However, as discussed when explaining the methodology, these unmatched differences do

not provide the best estimates of relevant differences between areas, since they do not take into account differences in demographic composition.

The effect of matching makes the results somewhat less clear-cut. When young people are matched to their own older sibling only, post-16 education participation rates are actually higher in the pilot areas than in the control areas, so that the area effect estimated is positive; this may suggest that original estimates of the overall impact of EMA were too high. Importantly, however, this difference is not statistically different from zero. Taking into account this area effect, the estimate of the overall effect of EMA is reduced to some 3.4 percentage points amongst this matched sample. However, by extension, this is not significantly different from the estimated 'raw effect' of 5.2 percentage points amongst this matched group. It should also be remembered that this group of young people who have an older sibling is an unrepresentative subgroup of the overall population, so it is possible that the area effects are different for this group than for the population at large.

The results where young persons are matched to any older sibling again show estimated area specific effects that are negative but not significantly different from zero. This again suggests that initial estimates of the overall impact of EMA may be biased downwards, by an estimated 3.0 percentage points when the 0.7 matching rule is applied, and as much as 6.6 percentage points using the 0.3 rule. Amongst these relatively small matched samples, the estimated 'raw effect' of EMA is also somewhat higher than the original estimates of the impact of EMA would suggest. Clearly the impact of EMA on these subgroups (whose characteristics are described in Table A5) is higher than its impact on the population at large. This need not alter the estimates of area specific effects, so long as we assume that these pre-EMA effects are not different for this segment of the population.

Table 5.14 The Impact of EMA on Those with an Older Sibling, Using the Older Siblings Education Decisions to Control for Area Effects

		Unmatched	Own sibling	Any sibling: closeness 0.7	0.3
1	Young persons in pilot areas	71.7	68.1	70.4	67.7
		(0.9)	(1.0)	(1.2)	(2.0)
2	Young persons in control areas	67.8	63.0	63.3	61.6
		(0.7)	(2.2)	(1.8)	(2.8)
3	***Estimate of 'raw' EMA effect (1–2)***	***3.9***	***5.2***	***7.0***	***6.1***
		(1.1)	**()**	**(2.1)**	**(3.5)**
4	Older siblings in pilot areas	43.1	49.5	45.9	41.9
		(0.8)	(1.0)	(1.9)	(3.1)
5	Older siblings in control areas	44.6	47.8	48.9	48.5
		(1.0)	(2.4)	(4.0)	(4.7)
6	***Estimate of area effect (4–5)***	***-1.3***	***1.7***	***-3.0***	***-6.6***
		(0.6)	**(1.4)**	**(4.3)**	**(5.4)**
	EMA effect allowing for area effects	**5.2**	**3.4**	**10.0**	**12.7**
		(1.7)	(1.7)	(4.5)	(6.0)
	Observations	*4,716*	*2,427*	*2,605*	*1,148*

Note: Standard errors for the 'own siblings' matchings are based on 1,000 bootstraps; those for the 0.7 and 0.3 matching rules are based on 170 bootstraps.

The sibling analysis contains sufficient sample sizes and close enough matches to look at whether EMA has a differential impact on certain subgroups of the population. Unfortunately, as discussed in Appendix 5.4, it is not possible to use older siblings to look at differential area specific effects between young men and young women at this stage. This is because the data do not currently contain the gender of those older siblings who have already left the home.[24] However, urban and rural areas can be analysed separately and the results of this analysis are shown in Table 5.15. The results for urban areas again suggest that the main estimates of the effect of EMA set out in earlier sections of this chapter if anything under-estimate the impact of EMA in urban pilot areas. The possible downward bias on our original estimates range from 6.6 percentage points (if the 0.7 matching rule is used) to 10.4 percentage points using the stricter matching rule. Again, these results are not significantly different from zero.

In rural areas, however, the estimated area effects are positive, although again not significantly different from zero. This would suggest that our original estimates of the impact of EMA in the rural pilot may be too high, by as much as 8.2 to 9.7 percentage points amongst these matched samples. This accords well with evidence from Careers Services data presented in previous chapters which showed that participation rates in the rural pilot area were considerably higher than in the rural control areas before EMA was introduced. Upward revisions to the estimated impact of EMA in urban areas and downward revisions in the rural pilot would bring estimates of the impact of EMA in these two area types closer into line, although the exact degree of convergence would depend on which of the matched samples were used.

[24] Data from cohort 2 will contain this information.

Table 5.15 The Impact of EMA on all Eligible Young Persons Using Closest Matched Siblings to Assess Area Effects, by Urban/Rural

		Unmatched	Closeness 0.7	0.3
	Urban			
1	Young persons in pilot areas	68.7	67.2	64.7
		(0.8)	(1.3)	(2.1)
2	Young persons in control areas	64.5	63.2	60.8
		(1.1)	(2.1)	(3.2)
3	***Estimate of 'raw' EMA effect (1–2)***	***4.2***	***4.0***	**3.9**
		(1.3)	**(2.3)**	**(3.9)**
4	Older siblings in pilot areas	39.5	41.0	37.3
		(0.9)	(2.1)	(3.3)
5	Older siblings in control areas	41.5	47.6	47.7
		(1.2)	(4.7)	(5.3)
6	***Estimate of area effect (4–5)***	**-2.1**	**-6.6**	**-10.4**
		(1.5)	**(5.2)**	**(6.0)**
	EMA effect allowing for area effects (3-6)	**6.3**	**10.6**	**14.3**
		(2.0)	(5.3)	(6.7)
	Observations	*3,627*	*2,030*	*916*
	Rural			
1	Young persons in pilot areas	81.8	81.6	79.3
		(1.2)	(2.2)	(5.0)
2	Young persons in control areas	73.9	63.1	64.7
		(1.4)	(3.4)	(6.1)
3	***Estimate of 'raw' EMA effect (1–2)***	***7.9***	***17.5***	***14.7***
		(1.8)	**(4.2)**	**(8.0)**
4	Older siblings in pilot areas	55.3	63.1	59.9
		(1.6)	(3.8)	(7.0)
5	Older siblings in control areas	50.9	53.4	51.7
		(1.8)	(5.2)	(8.1)
6	***Estimate of area effect (4–5)***	***4.4***	***9.7***	***8.2***
		(2.4)	**(6.5)**	**(10.7)**
	EMA effect allowing for area effects (3-6)	**3.5**	**7.8**	**6.4**
		(3.0)	(7.3)	(12.7)
	Observations	*1,089*	*575*	*232*

Note: Standard Errors for the 0.7 and 0.3 matching rules have been generated from 170 bootstraps.

5.6 Conclusion

This chapter has analysed the impact of the first year of EMA on post-16 participation in education using a series of matching and regression techniques. These techniques have allowed the overall impact of EMA to be shown, and also its impact on a number of sub-groups of policy interest. The modelling has also allowed an examination of a number of policy issues, including the comparative effectiveness of the different variants being piloted. Finally the analysis has attempted to take into account the fact that staying-on rates may differ between pilot and control areas for a host of reasons, unobserved in the survey data, but which may be important for assessments of the impact of EMA. The possible size and direction of biases arising from these unobserved differences were the subject of the final section of this chapter, and some revised estimates have been described.

- The first set of results used one-way matching techniques to show the overall impact of EMA on participation in post-16 full-time education, as well as how this impact varies between urban and rural areas, between males and females, and between those with differing levels of eligibility for EMA. The results of this section show that EMA has a significant impact on post compulsory full-time education participation of those eligible for the EMA of between three and eleven percentage points. These effects tend to be larger for males than females.
- The next set of results used regression analysis to estimate the effects on participation in education of each extra one pound per week of EMA offered. Using this model has allowed an assessment of the differential impact of the four EMA variants which have been piloted. Each additional pound of EMA has a significant incremental effect on education participation and there is also evidence that the more generous weekly payment under variant 2 and more generous bonus under variant 4 result in even higher participation. At this stage no significant difference has been found between variant 3 where it is paid to the mother and the other variants where it is paid directly to the child.
- The final results tested the robustness of these estimates by using several two-way matching techniques. These techniques allowed further unobserved differences between pilots and controls which may affect educational participation, (referred to as 'area specific effects'), to be taken into account. Such effects might include differences in school quality or local labour market conditions. The results arising from these

robustness checks do not provide a clear-cut picture of the size and direction of possible area specific effects but it appears likely that the overall impact of the EMA may be somewhat higher than the results presented in the first two sections imply.

These findings cover just one aspect of the first phase of the evaluation of the EMA. Further data to be collected and refinements to the analysis discussed in this report mean that these findings must be regarded as *interim only*. Indeed, while all of the results reported from the one-way matching are found to be statistically significant, at least at the five per cent level, it is important to remember that the true effect of EMA could differ from that found in year one of the evaluation.

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APPENDIX A1

The Sample for Analysis

APPENDIX A1 THE SAMPLE FOR ANALYSIS

A1.1 Target and Achieved Sample Sizes

Target sample sizes for the survey are shown in Table A1.1 below. For subsequent waves of interviews, the Table shows the anticipated number of interviews with only those young people found to be income eligible for EMA in Wave 1. Some amendments to this strategy have since been agreed with DfEE.

A number of problems arising from the sample provided meant that the achieved number of interviews (10,828) was less than originally expected (11,169).

A1.2 Reductions in the Sample Available for Analysis

Individuals had to be dropped for whom there was insufficient usable information for the estimation procedures (a further 1,025). This left a final sample of 9,803 individuals (90.5 per cent of the achieved sample) of whom 7,559 (77.1 per cent) were judged to be eligible for EMA. Table A1.2 shows the achieved usable sample by LEA and compares this with the target sample size set out in Table A1.1.

Individuals were only excluded from the sample on a number of carefully chosen grounds, as shown in Table A1.3. For some individuals, information was only available from the parent's questionnaire (205), while for others insufficient information had been provided about their current activity (2) or on their eligibility for EMA (818).

Table A1.1 Original Sampling Assumptions

	Both cohorts					One cohort				
	Wave 1 sample drawn	Ints Wave 1 all young people + parents	Ints Wave 2 EMA eligibles	Ints Wave 3 EMA eligibles	Ints Wave 4 EMA eligibles	Wave 1 sample drawn	Ints Wave 1 all young people	Ints Wave 2 EMA eligibles	Ints Wave 3 EMA eligibles	Ints Wave 4 EMA eligibles
Matched treatment areas										
Middlesborough (V1)	1,417	931	525	420	168	708	465	262	210	168
Walsall (V1)	1,417	931	525	420	168	708	465	262	210	168
Southampton (V1)	1,417	931	525	420	168	708	465	262	210	168
Oldham (V2)	2,125	1,396	787	630	252	1,063	698	394	315	252
Nottingham (V2)	2,125	1,396	787	630	252	1,063	698	394	315	252
Bolton (V3)	2,125	1,396	787	630	252	1,063	698	394	315	252
Doncaster (V3)	2,125	1,396	787	630	252	1,063	698	394	315	252
Stoke-on-Trent (V4)	2,125	1,396	787	630	252	1,063	698	394	315	252
Gateshead (V4)	2,125	1,396	787	630	252	1,063	698	394	315	252
Total	17,000	11,169	6,299	5,039	2,016	8,500	5,585	3,149	2,519	2,016
Rural treatment area										
Cornwall (V1)	4,250	2,792	1,575	1,260	504	2125	1,396	787	630	504
Control areas										
Area 1 (V1)	1,063	698	394	315	126	531	349	197	157	126
Area 2 (V1, V2)	1,063	698	394	315	126	531	349	197	157	126
Area 3 (V1, V2, V4)	1,063	698	394	315	126	531	349	197	157	126
Area 4 (V2, V3)	1,063	698	394	315	126	531	349	197	157	126
Area 5 (V2, V3)	1,063	698	394	315	126	531	349	197	157	126
Area 6 (V3)	531	349	197	157	63	266	175	98	79	63
Area 7 (V3)	531	349	197	157	63	266	175	98	79	63
Area 8 (V4)	1,063	698	394	315	126	531	349	197	157	126
Area 9 (V4)	1,063	698	394	315	126	531	349	197	157	126
Total	8,500	5,585	3,149	2,519	1,008	4,250	2,792	1,575	1,260	1,008
Rural control areas										
Area 10	2,125	1,396	787	630	252	1,063	698	394	315	252
Area 11	2,125	1,396	787	630	252	1,063	698	394	315	252
Total	4,250	2,792	1,575	1,260	504	2,125	1,396	787	630	504
Control areas by Variant of matching treatment Area (includes double-Counting)										
Variant 1	3,188	2,094	1,181	945	378	1,594	1,047	590	472	378
Variant 2	4,250	2,792	1,575	1260	504	2,125	1,396	787	630	504
Variant 3	3,188	2,094	1,181	945	378	1,594	1,047	590	472	378
Variant 4	3,188	2,094	1,181	945	378	1,594	1,047	590	472	378

Table A1.2 Achieved Sample Sizes

Local Education Authority	Target sample size	Achieved usable sample size	Proportion of target
Pilot areas			
Middlesborough (V1)	465	410	0.882
Walsall (V1)	465	391	0.841
Southampton (V1)	465	359	0.772
Oldham (V2)	698	563	0.807
Nottingham (V2)	698	529	0.758
Bolton (V3)	698	548	0.785
Doncaster (V3)	698	624	0.894
Stoke-on-Trent (V4)	698	615	0.881
Gateshead (V4)	698	599	0.858
Total	5,583	4,638	0.830
Rural treatment area			
Cornwall (V1)	1,396	1,382	0.990
Control areas			
Area 1 (V1)	349	277	0.794
Area 2 (V1, V2)	349	298	0.854
Area 3 (V1, V2, V4)	349	276	0.791
Area 4 (V2, V3)	349	295	0.845
Area 5 (V2, V3)	349	293	0.840
Area 6 (V3)	175	159	0.909
Area 7 (V3)	175	168	0.960
Area 8 (V4)	349	331	0.948
Area 9 (V4)	349	299	0.857
Total urban controls	2,793	2,396	0.858
Rural control areas			
Area 10	698	699	1.001
Area 11	698	688	0.986
Total	1,396	1,387	0.994
Grand Total	11,169	9,803	0.878

Table A1.3 Reasons for Excluding Young Persons from the Final Simple

	Observations
Total sample	10,828
Those with no young person's questionnaire	205
No information on current activity	2
Insufficient income information	923
(excluding 105 who do not live with biological or adoptive parents)	(105)
Total sample usable in quantitative analysis	9,803

A detailed investigation of any possible bias arising from the exclusion of individuals has been undertaken. Table A1.4 shows the results from the regression analysis which examined characteristics that determined the probability of being dropped from the sample (using a probit model). The results in columns two and three show which characteristics were important in determining which young people did not fully participate in the interview process. The marginal effect is reported which shows the percentage point increase or decrease in the likelihood of being dropped from the sample attributable to a one unit increase in the explanatory variable. The final two columns show the corresponding regression results that identify how the characteristics of those dropped due to lack of income information differed from those retained in the final sample used in the analysis.

Table A.1.4 Characteristics of Individuals Dropped from the Sample: Probit Regression Results

	No young person's interview or no response to activity question		No income information	
	Marginal effect	z-statistic	Marginal effect	z-statistic
Young person is male	0.010	4.55	-0.001	-0.23
Family income/10,000	-0.010	-2.59		
(Family income/10,000) squared	0.003	1.98	*No data*	
(Family income/10,000) cubed	0.000	-1.65		
Receiving means-tested benefits	0.003	0.82		
Young person is white			-0.025	-3.43
GCSE English A*–C	*No data*		0.009	1.92
GCSE Maths A*–C			0.002	0.49
Both mother and father in household	-0.028	-2.82	-0.016	-1.4
Father figure in household	-0.003	-0.85	0.017	2.37
Owner-occupier	0.001	0.2	0.008	1.17
Council or HA tenant	0.012	2.28	-0.031	-4.6
Has a statemented disability	-0.005	-1.51	0.007	1.07
Mother's age (if present)	0.001	1.93	0.003	4.27
Mother's age squared (if present)	0.000	-1.88	0.000	-2.04
Father's age (if present)	0.000	0.63	0.004	5.74
Father's age squared (if present)	0.000	-0.55	0.000	-3.18
Mother with A level or above	0.005	1.49	-0.025	-4.82
Mother has O level or equivalent	-0.001	-0.28	-0.017	-3.56
Father with A level or above	0.001	0.19	-0.013	-2.18
Father has O level or equivalent	0.001	0.19	0.006	0.93
Father a manager/professional	-0.004	-1.11	0.035	4.65
Father clerical or equivalent	-0.003	-0.9	0.005	0.89
Mother a manager/professional	0.001	0.18	0.031	4.03
Mother clerical or equivalent	0.002	0.55	-0.007	-1.44
Father details missing	-0.007	-1.01	0.173	14.03
Parents in work during childhood	0.001	0.19	-0.043	-5.84
Attended 2 primary schools	0.002	0.73	-0.003	-0.56
Attended >2 primary schools	0.003	0.67	-0.011	-1.49
Received form of childcare	0.000	0.03	-0.111	-11.99
1 grandparent around at birth	0.002	0.5	-0.020	-4.3
2 grandparents around at birth	0.001	0.5	-0.022	-4.4
Grandparents helped look after	0.001	0.31	-0.005	-0.97
Ill between ages of 0 and 1	0.015	2.86	-0.022	-2.22
Illness persisted between 1 and 5	-0.012	-2.97	0.019	1.37
Illness persisted beyond 5	0.000	0.09	0.000	-0.01
Number of older siblings	0.003	3.5	-0.005	-2.51
Number of younger siblings	0.000	0.22	-0.003	-1.78
Father works full-time	0.005	1.05	0.047	6.64
Father works part-time	0.007	0.73	0.051	3.07
Mother works full-time	0.004	1.11	-0.047	-10.17
Mother works part-time	0.005	1.65	-0.050	-11.37
Older sibling educated >18	-0.006	-2.13	-0.004	-0.77

Of the 1,025 young people who were excluded from analysis, 207 were excluded because information about the young person was inadequate, either because they had not answered anything on the young person's questionnaire or they had not answered the activity question. These young people were more likely to be male and, in general, came from lower socio-economic backgrounds. For example, they were more likely to have been living in council or housing association accommodation, had lower family income or had a larger number of older siblings. They were less likely to have older siblings educated to age 18 or over or to have been living with both their biological parents.

For the 818 who were excluded because of inadequate income information, the picture was more complex. It appears that this group may have come from both ends of the socio-economic spectrum. Whilst they showed no significant gender difference when compared with those who remained within the sample, there were significant differences in their family circumstances. They were less likely to have answered questions about any father figure (either because of omission or reduced contact), but those for whom such information was available were more likely to have fathers who were in work and, if so, were more likely to have managerial or professional jobs. This is consistent with those households for whom income information was more complex (or possibly unknown), either because of an absent father or because the household was in a more highly paid vocation. Both these groups were less likely to provide adequate information for analysis. Similarly, the mothers of young people for whom income details are missing were less likely to be in work and were, on average, less highly qualified. Where the mothers were in employment, they were more likely to be in managerial or professional occupations. In addition, parents of those with no income information were older on average. The young person was less likely to have been looked after by people other than their parents while they were a child and was also less likely to be living in council accommodation at the time of interview.

APPENDIX A2

Methodological Approach

A2.1 Matching at the LEA Level

The LEA matching used the same methodological approach as was used originally with Youth Cohort Study data in preliminary matching of pilot LEAs to control LEAs before the surveys took place. This involved a three stage procedure.

Stage 1

A probit model was used to estimate the determinants of staying on in full-time education in the control areas, distinguishing between urban and rural areas and young men and young women.[1] The explanatory variables used were those summarised in Table A3.3 and included family income, GCSE variables, family background variables and parents' education and occupation, as well as variables capturing early childhood outcomes. It was assumed that from these models, *for both the control and pilot areas*, the probability of continuing in full-time education in the absence of EMA could be predicted. This assumes that, for each of the four groups (rural young men, rural young women, urban young men and urban young women), the determinants of educational choices in the absence of EMA were the same in both the control and pilot areas. In the probit model, the estimated probability of continuing in full-time education for each individual in the sample is a non-linear function of the estimated linear index ($X_i\hat{b}$) where $\hat{b}$ are the estimated coefficients from the probit models and X the vector of explanatory variables used in the model.[2] This linear index is called the 'propensity score'.

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[1] The initial analysis suggests that the factors determining young men's and young women's participation decisions are significantly different, as are the factors affecting continuation decisions in rural and urban areas. For example, current family income is a much more important determinant of participation in urban areas than it is in rural areas.

[2] In the probit model, the probability of staying in full-time education is given by $\phi(X_i\hat{b})/\Phi(X_i\hat{b})$ where ϕ is the normal probability distribution function, Φ the normal density function, $\hat{b}$ the estimated coefficients from the probit models and X the vector of explanatory variables used in the model.

Stage 2

The distribution of the propensity scores in each of the pilot areas was then compared with that in the control areas to choose the best matches. Under the assumption that the determinants of education participation in control and pilot areas are the same, this matching process matches each pilot area to the control area(s) that has (have) the most similar distribution of background characteristics (placing the most weight on those that are important in determining education participation). In order to do this matching, the distribution of the propensity scores is approximated using a univariate kernal density technique. This technique allows the distribution or density function of each propensity score at LEA level to be conveniently summarised without imposing any distributional assumptions (for example, normality). It also allows a direct examination of how similar the distributions of the propensity scores are, both visually using graphs and through simple correlation techniques (as the densities can be forced to be estimated at identical values of the propensity score[3]). A direct comparison can then be made of which LEAs in the control group most closely match each LEA in the pilot areas.

Stage 3

In the final stage, the best control groups are found for each of the different urban Variants at the LEA, rather than the individual, level. Again using kernal density techniques, the group of control areas is found which is the best match for each of the urban pilot Variants.

A2.2 Optimal Control Areas for each Pilot Area

Table A2.1 lists optimal matchings *at the LEA level* for each of the urban and rural pilot areas and the number of observations involved. All of the control areas are used at least once, though the mapping is slightly different from that originally suggested by the initial analysis that used the YCS data (see Tables A1.1 and A1.2). How good the matches are is examined below for each of the pilot areas in turn.

[3] In all the work, 50 values of the propensity score are used to estimate the density function.

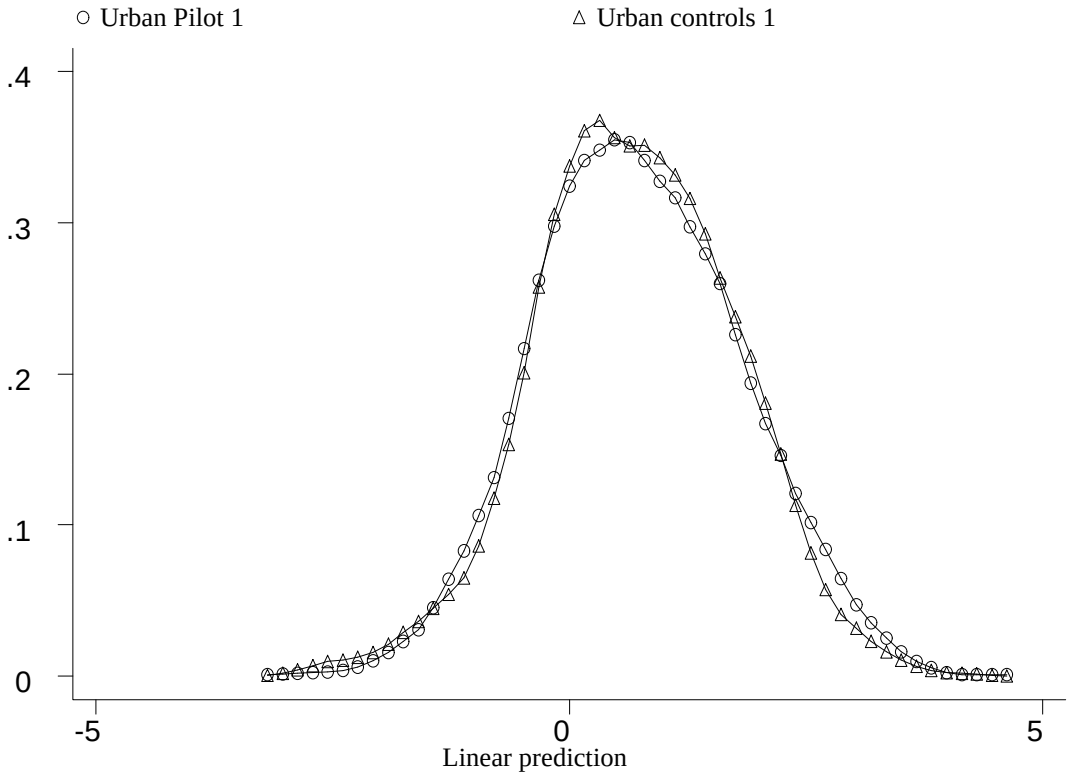
Table A2.1 Matching at the LEA Level

Pilot areas	No. of obs.	Control areas	No. of obs.
Variant 1: Middlesbrough, Walsall, Southampton	1,160	Area 1, Area 2, Area 6, Area 5, Area 7	1,196
Variant 2: Oldham, and City of Nottingham	1,092	Area 3, Area 4, Area 9, Area 8	1,201
Variant 3: Bolton, Doncaster	1,172	Area 3, Area 4, Area 7, Area 9, Area 6	1,197
Variant 4: Stoke-on-Trent, Gateshead	1,214	Area 5, Area 9, Area 4, Area 8	1,218
Rural Variant: Cornwall	1,382	Area 10, Area 11	1,387

Urban Variant 1: Middlesbrough, Walsall and Southampton

The methodological approach suggests that the best control areas for urban Variant 1 are Areas 1, 2, 6, 5, and 7. Figure A2.1 shows the graphs of the distribution of the propensity score to continue in full-time education (or linear prediction) in the pilot areas and the suggested control areas. If matching was perfect, these two lines would be on top of each other.

Figure A2.1 Matching Urban Variant 1



Urban Variant 1

The graphs of the predicted propensity score are very similar, which suggests that the distribution of characteristics that are most important in determining full-time education participation were similar in both these areas.

Table A2.2 at the end of this Appendix shows mean characteristics of all the explanatory variables appearing in the model in both the pilot and suggested control areas. All the mean characteristics were very similar with the exception of ethnicity. The control group has a much higher proportion of white children (94.2 per cent) than the pilot area (87.3 per cent).

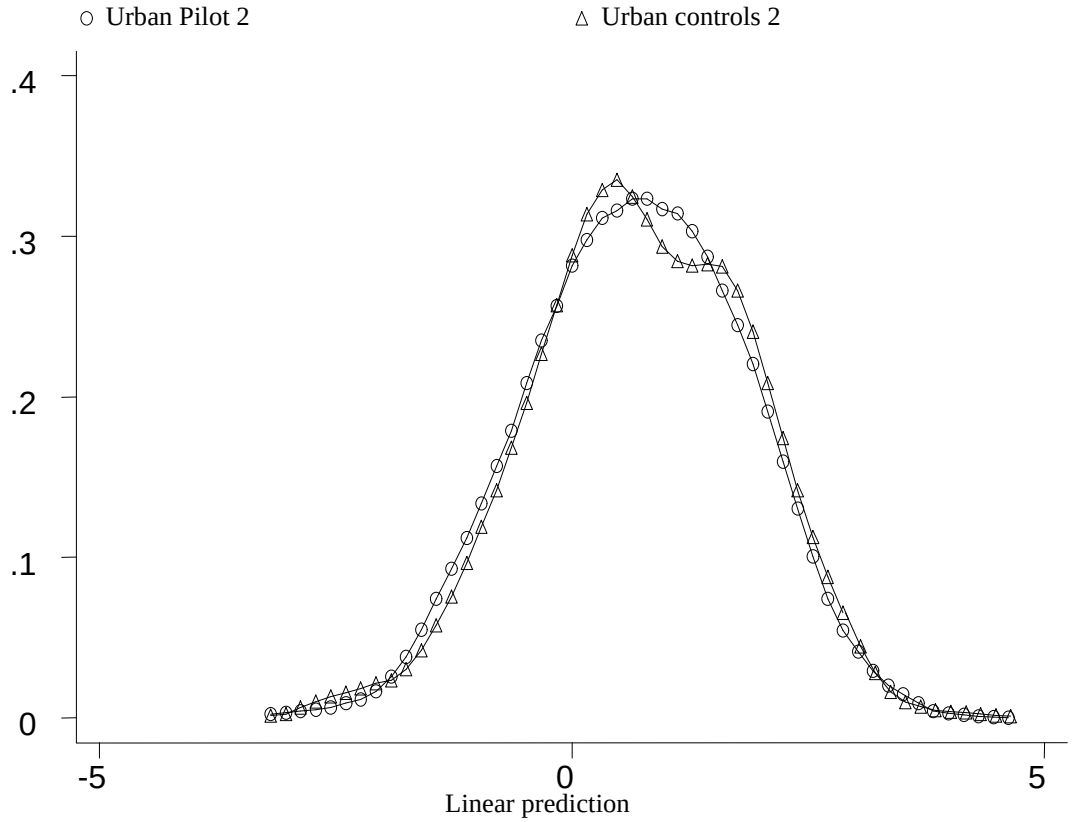
The average participation rate in full-time post-16 education was almost 5 percentage points higher in the pilot area than in the control area based on data from the sample. Data from Careers Services' records suggest that the participation rate was just over three percentage points higher in 1999 in the pilot areas than in the control areas after the introduction of EMA. All of these participation rates are for the entire student population, not just those targeted by the EMA scheme. The average participation rates in 1998 and 1997 based on Careers Services' data at the LEA level are reassuringly similar.

The evidence presented above suggests that the matching for model 1 in urban areas is very good, with the exception of the ethnic mix of the two groups.

Urban Variant 2: Oldham and the City of Nottingham

The best control areas for urban Variant 2 are Areas 3, 4, 8 and 9. Figure A2.2 shows graphs of the distribution of the propensity score to continue in full-time education (or linear prediction) in the pilot areas and the suggested control areas. Again, the match is quite good, although there is some divergence in the middle of the distribution.

Figure A2.2 Matching Urban Variant 2



Variant 2

Table A.2.3 at the end of this Appendix shows the mean characteristics of all the explanatory variables appearing in the model in both the pilot and suggested control areas for Variant 2. Family income was higher in control areas than in pilot areas and the numbers receiving means-tested benefits were lower in the chosen control areas. There was also a larger proportion of white children in the controls (86.6 per cent) than in the pilot areas (82.9 per cent). GCSE results were better on average in the control areas, and parents were on average

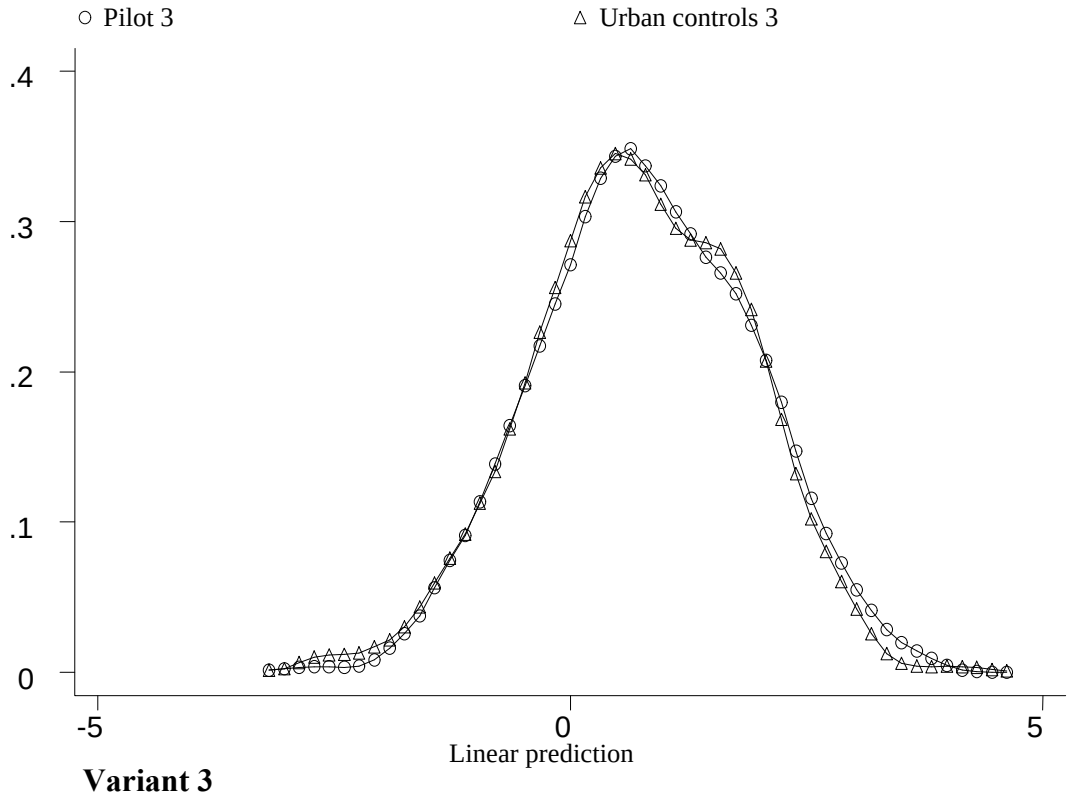
better educated and in more skilled occupations. A much higher proportion of households in the control areas were owner-occupiers and a correspondingly smaller proportion were in council or housing association properties.

The evidence therefore suggests that the matching for Variant 2 is reasonable. However, it is clear that the chosen control areas were slightly better off than the LEAs in the pilot areas. This means that some caution is needed in interpreting the descriptive analysis in Chapters 2 and 3.

Urban Variant 3: Bolton and Doncaster

The best control areas for urban Variant 3 are Areas 3, 4, 6, 7 and 9. Figure A2.3 shows the graph of the distribution of the propensity score to continue in full-time education (or linear prediction) in the pilot areas and the suggested control areas. The match for this Variant is extremely good.

Figure A2.3 Matching Urban Variant 3

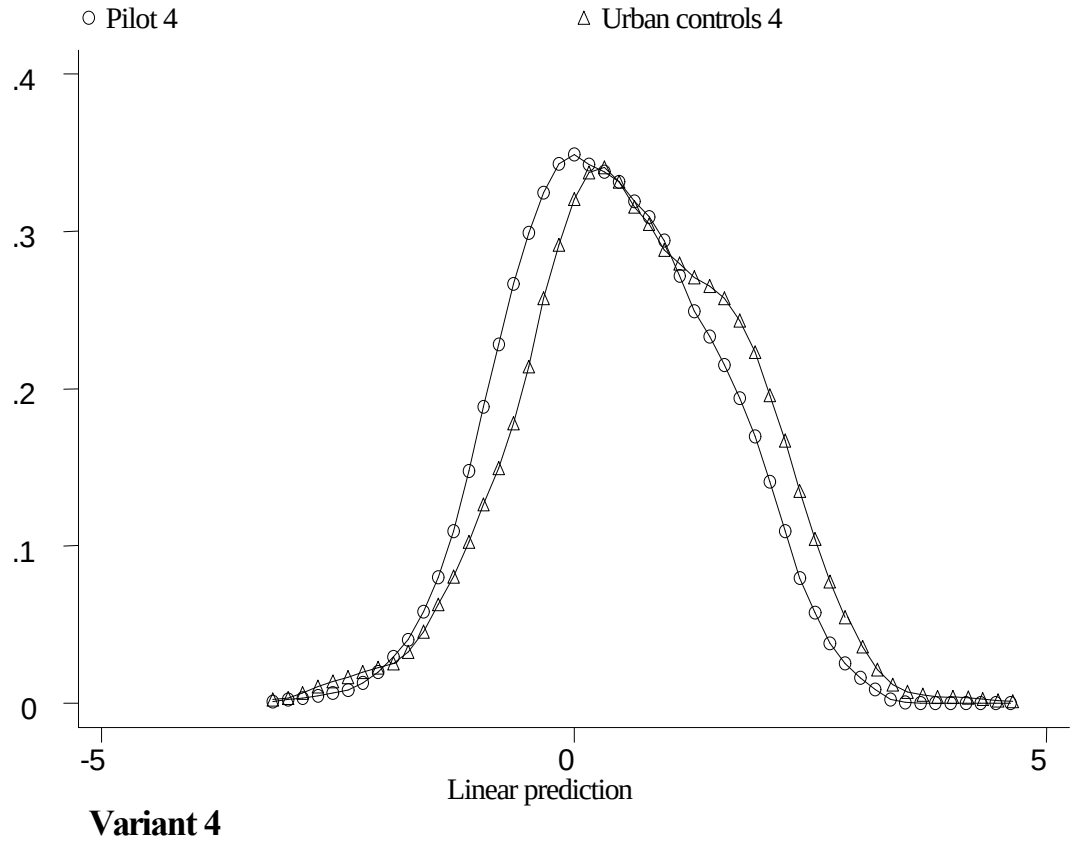


The summary statistics in Table A2.4 are reasonably similar for pilots and controls. The control areas had a lower owner-occupation rate than the pilot areas and parents in these areas tended to be less well educated. The LEA participation rates in 1998 and 1997 were reassuringly similar. By 1999 the LEA participation rate calculated from LEA level Career Services' information was just under 4 percentage points higher in the pilot areas than in the controls. The average participation rate in the survey was 4.3 percentage points higher in the pilot areas than in the controls.

Urban Variant 4: Stoke-on-Trent and Gateshead

The best control areas for urban Variant 4 are Areas 4, 5, 8 and 9. Figure A2.4 shows that although the match is satisfactory, there is some divergence in the distributions of propensity scores in the middle of the distribution. It can be seen from the summary statistics in Table A2.5 that in earlier years average participation rates in the control areas were significantly higher than those in the pilot areas. With the introduction of EMA, however, participation rates in the pilot areas were slightly higher than those in the controls (whether data are used from Careers Services' records or from EMA survey data). Other mean characteristics were quite similar with the exception of ethnicity. The proportion of white children in the pilot areas (95.3 per cent) was considerably higher than in the control areas (88.7 per cent).

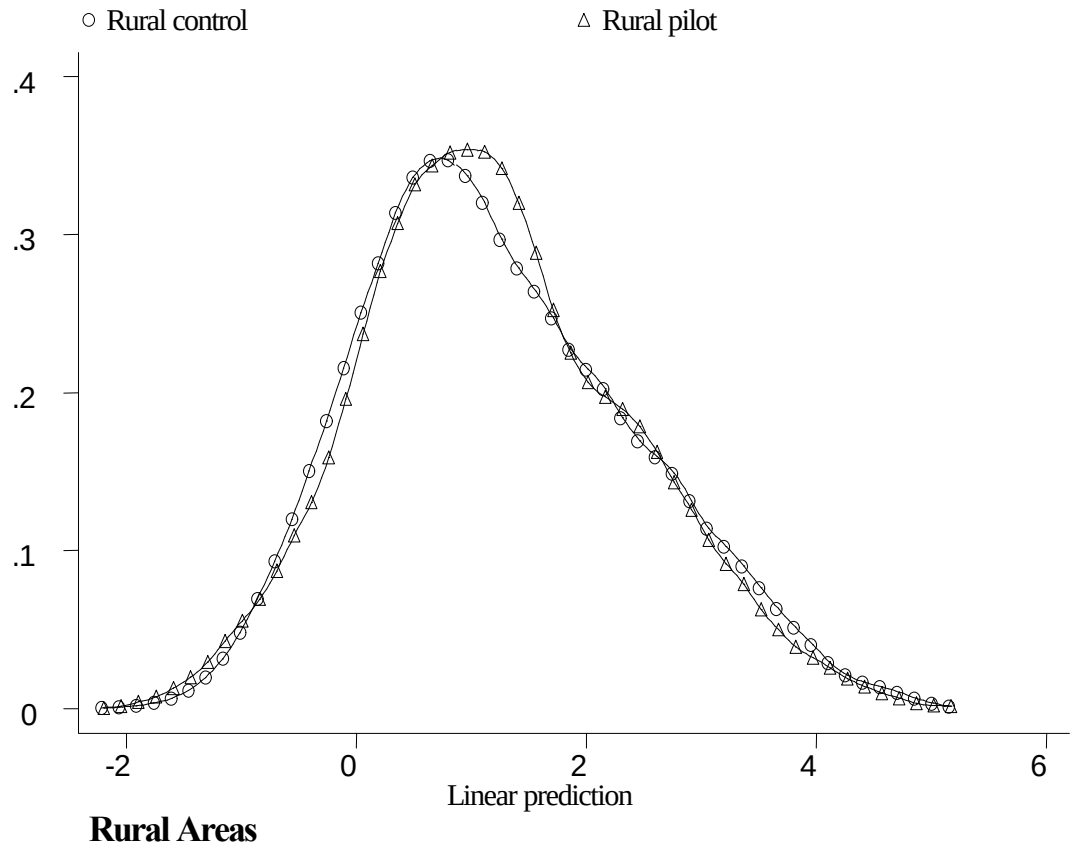
Figure A2.4 Matching Urban Variant 4



The rural pilot

The rural control areas for Cornwall are Areas 10 and 11. These were already chosen by the time the first wave of interviews took place. Nevertheless, the same methodology has been used to look at how good the match is. As Figure A2.5 shows, again, the matching seems quite good, although there is some divergence between propensity scores in the middle of the distribution.

Figure A2.5 Rural matching



The summary statistics in Table A2.6 show that average family income was considerably higher in the control areas than in Cornwall. The proportion of families receiving means-tested benefits was also considerably higher in Cornwall than in the controls. Of more concern is the big divergence in participation rates between the control and pilot areas in 1998 (no data are available for 1997). The average participation rate in Cornwall in 1998 was 75.2 per cent, compared with 69.0 per cent in Areas 10 and 11. This divergence increased slightly in 1999 after the introduction of the EMA.

Table A.2.2 Summary Statistics for Urban Variant 1

	Pilot Areas		Control Areas	
	Mean	SD	Mean	SD
	1160 Observations		1195 Observations	
Male	0.497	(0.500)	0.500	(0.500)
In full-time education	0.734	(0.442)	0.688	(0.464)
Family income	21764	(18187)	22170	(16854)
Eligible for full EMA	0.485	(0.500)	0.454	(0.498)
Eligible for partial EMA	0.297	(0.457)	0.308	(0.462)
White	0.873	(0.333)	0.942	(0.233)
Receiving means-tested benefit	0.276	(0.447)	0.233	(0.423)
Both mother & father in household	0.614	(0.487)	0.586	(0.493)
Father in household	0.745	(0.436)	0.737	(0.440)
English grade A to C	0.522	(0.500)	0.540	(0.499)
Mathematics grade A to C	0.405	(0.491)	0.439	(0.497)
Owner-occupier	0.671	(0.470)	0.724	(0.447)
Council or HA tenant	0.280	(0.449)	0.201	(0.401)
Has a statemented disability	0.098	(0.298)	0.089	(0.284)
Mother's age (if present)	42.722	(4.989)	42.635	(4.992)
Father's age (if present)	46.105	(6.097)	45.802	(5.863)
Father with A level or above	0.219	(0.414)	0.204	(0.403)
Father has O level or equiv.	0.151	(0.358)	0.187	(0.390)
Mother with A level or above	0.234	(0.424)	0.263	(0.440)
Mother has O level or equiv.	0.234	(0.423)	0.259	(0.438)
Father a manager/professional	0.153	(0.360)	0.157	(0.364)
Father clerical or equivalent	0.244	(0.430)	0.230	(0.421)
Mother a manager/professional	0.105	(0.307)	0.150	(0.357)
Mother clerical or equivalent	0.290	(0.454)	0.289	(0.453)
Father details missing	0.378	(0.485)	0.401	(0.490)
Parent in work during childhood	0.804	(0.397)	0.839	(0.367)
Attended 2 primary schools	0.276	(0.447)	0.297	(0.457)
Attended >2 primary schools	0.069	(0.254)	0.089	(0.284)
Received form of childcare	0.927	(0.261)	0.909	(0.288)
At least 1 set grandparents present when child	0.322	(0.467)	0.317	(0.466)
Both sets grandparents present when child	0.455	(0.498)	0.432	(0.496)
Grandparents helped look after	0.319	(0.466)	0.306	(0.461)
Ill between ages of 0 and 1	0.251	(0.434)	0.240	(0.427)
Illness persisted between 1 and 5	0.203	(0.403)	0.195	(0.396)
Illness persisted beyond 5	0.153	(0.361)	0.141	(0.348)
Number of older siblings	1.003	(1.146)	0.926	(1.142)
Number of younger siblings	0.967	(1.073)	0.940	(1.058)
Mother works full-time	0.281	(0.450)	0.340	(0.474)
Mother works part-time	0.349	(0.477)	0.339	(0.474)
Father works full-time	0.501	(0.500)	0.498	(0.500)
Father works part-time	0.015	(0.120)	0.021	(0.143)
Older sibling educated >16	0.212	(0.409)	0.162	(0.369)
LEA stay-on rates 1999	66.573	(3.039)	63.395	(1.809)
LEA stay-on rates 1998	59.083	(8.348)	59.975	(4.213)
LEA stay-on rates 1997	59.798	(3.078)	59.854	(2.033)

Table A2.3 Summary Statistics for Urban Variant 2

	Pilot Areas		Control Areas	
	Mean	SD	Mean	SD
	1092 Observations		1201 Observations	
Male	0.517	(0.500)	0.501	(0.500)
In full-time education	0.690	(0.463)	0.686	(0.464)
Family income	20995	(17584)	22393	(19433)
Eligible for full EMA	0.510	(0.500)	0.480	(0.500)
Eligible for partial EMA	0.293	(0.455)	0.301	(0.459)
White	0.829	(0.377)	0.866	(0.341)
Receiving means-tested benefit	0.290	(0.454)	0.268	(0.443)
Both mother & father in hh	0.577	(0.494)	0.631	(0.483)
Father in household	0.718	(0.450)	0.757	(0.429)
English grade A to C	0.495	(0.500)	0.542	(0.498)
Mathematics grade A to C	0.401	(0.490)	0.437	(0.496)
Owner-occupier	0.638	(0.481)	0.684	(0.465)
Council or HA tenant	0.302	(0.459)	0.255	(0.436)
Has a statemented disability	0.097	(0.296)	0.088	(0.284)
Mother's age (if present)	42.482	(5.114)	42.689	(4.928)
Father's age (if present)	46.388	(6.247)	45.724	(5.895)
Father with A level or above	0.203	(0.403)	0.234	(0.424)
Father has O level or equiv.	0.133	(0.339)	0.165	(0.371)
Mother with A level or above	0.218	(0.413)	0.253	(0.435)
Mother has O level or equiv.	0.218	(0.413)	0.234	(0.424)
Father a manager/professional	0.150	(0.357)	0.180	(0.384)
Father clerical or equivalent	0.212	(0.409)	0.241	(0.428)
Mother a manager/professional	0.116	(0.321)	0.137	(0.344)
Mother clerical or equivalent	0.289	(0.454)	0.271	(0.445)
Father details missing	0.403	(0.491)	0.347	(0.476)
Parent in work during childhood	0.797	(0.403)	0.831	(0.375)
Attended 2 primary schools	0.236	(0.425)	0.201	(0.401)
Attended >2 primary schools	0.072	(0.259)	0.059	(0.236)
Received form of childcare	0.888	(0.315)	0.884	(0.320)
At least 1 set grandparents present when child	0.312	(0.464)	0.349	(0.477)
Both sets grandparents present when child	0.422	(0.494)	0.385	(0.487)
Grandparents helped look after	0.279	(0.449)	0.359	(0.480)
Ill between ages of 0 and 1	0.211	(0.408)	0.197	(0.398)
Illness persisted between 1 and 5	0.159	(0.366)	0.161	(0.367)
Illness persisted beyond 5	0.136	(0.343)	0.116	(0.320)
Number of older siblings	1.043	(1.246)	1.010	(1.225)
Number of younger siblings	1.080	(1.247)	0.991	(1.204)
Mother works full-time	0.343	(0.475)	0.357	(0.479)
Mother works part-time	0.264	(0.441)	0.264	(0.441)
Father works full-time	0.459	(0.499)	0.494	(0.500)
Father works part-time	0.020	(0.141)	0.030	(0.171)
Older sibling educated >16	0.198	(0.399)	0.221	(0.415)
LEA stay-on rates 1999	64.711	(1.950)	63.347	(2.080)
LEA stay-on rates 1998	59.273	(3.950)	62.201	(0.916)
LEA stay-on rates 1997	59.909	(3.500)	59.718	(1.775)

Table A2.4 Summary Statistics for Variant 3

	Pilot Areas		Control Areas	
	Mean	SD	Mean	SD
	1172 Observations		1197 Observations	
Male	0.508	(0.500)	0.495	(0.500)
In full-time education	0.730	(0.444)	0.687	(0.464)
Family income	23512	(19736)	22752	(19596)
Eligible for full EMA	0.445	(0.497)	0.479	(0.500)
Eligible for partial EMA	0.300	(0.459)	0.285	(0.452)
White	0.910	(0.286)	0.876	(0.329)
Receiving means-tested benefit	0.224	(0.417)	0.279	(0.449)
Both mother & father in hh	0.661	(0.473)	0.617	(0.486)
Father in household	0.797	(0.402)	0.740	(0.439)
English grade A to C	0.560	(0.497)	0.554	(0.497)
Mathematics grade A to C	0.456	(0.498)	0.444	(0.497)
Owner-occupier	0.756	(0.430)	0.693	(0.462)
Council or HA tenant	0.197	(0.398)	0.246	(0.431)
Has a statemented disability	0.084	(0.277)	0.085	(0.279)
Mother's age (if present)	42.493	(5.024)	42.656	(4.849)
Father's age (if present)	45.595	(5.616)	45.783	(5.838)
Father with A level or above	0.264	(0.441)	0.229	(0.420)
Father has O level or equiv.	0.189	(0.392)	0.170	(0.375)
Mother with A level or above	0.275	(0.447)	0.246	(0.431)
Mother has O level or equiv.	0.265	(0.441)	0.246	(0.431)
Father a manager/professional	0.209	(0.407)	0.180	(0.384)
Father clerical or equivalent	0.253	(0.435)	0.236	(0.425)
Mother a manager/professional	0.153	(0.360)	0.136	(0.343)
Mother clerical or equivalent	0.292	(0.455)	0.265	(0.441)
Father details missing	0.320	(0.467)	0.363	(0.481)
Parent in work during childhood	0.851	(0.357)	0.826	(0.379)
Attended 2 primary schools	0.276	(0.447)	0.211	(0.408)
Attended >2 primary schools	0.096	(0.294)	0.063	(0.244)
Received form of childcare	0.910	(0.287)	0.890	(0.313)
At least 1 set grandparents present when child	0.314	(0.464)	0.335	(0.472)
Both sets grandparents present when child	0.457	(0.498)	0.409	(0.492)
Grandparents helped look after	0.295	(0.456)	0.343	(0.475)
Ill between ages of 0 and 1	0.202	(0.402)	0.202	(0.402)
Illness persisted between 1 and 5	0.157	(0.364)	0.167	(0.373)
Illness persisted beyond 5	0.124	(0.329)	0.125	(0.331)
Number of older siblings	0.846	(1.028)	1.017	(1.225)
Number of younger siblings	0.974	(1.050)	0.982	(1.176)
Mother works full-time	0.343	(0.475)	0.338	(0.473)
Mother works part-time	0.303	(0.460)	0.271	(0.444)
Father works full-time	0.544	(0.498)	0.485	(0.500)
Father works part-time	0.029	(0.168)	0.027	(0.161)
Older sibling educated >16	0.157	(0.364)	0.219	(0.414)
LEA stay-on rates 1999	66.090	(1.697)	62.279	(1.205)
LEA stay-on rates 1998	59.155	(0.699)	60.756	(1.987)
LEA stay-on rates 1997	60.729	(4.942)	59.372	(1.582)

Table A2.5 Summary Statistics for Variant 4

	Pilot Areas		Control Areas	
	Mean	SD	Mean	SD
	1214 Observations		1218 Observations	
Male	0.487	(0.500)	0.506	(0.500)
In full-time education	0.698	(0.459)	0.677	(0.468)
Family income	21816	(16627)	21559	(18985)
Eligible for full EMA	0.460	(0.499)	0.505	(0.500)
Eligible for partial EMA	0.338	(0.473)	0.287	(0.452)
White	0.953	(0.212)	0.887	(0.317)
Receiving means-tested benefit	0.285	(0.452)	0.271	(0.445)
Both mother & father in hh	0.624	(0.485)	0.611	(0.488)
Father in household	0.733	(0.443)	0.740	(0.439)
English grade A to C	0.556	(0.497)	0.539	(0.499)
Mathematics grade A to C	0.441	(0.497)	0.433	(0.496)
Owner-occupier	0.651	(0.477)	0.689	(0.463)
Council or HA tenant	0.309	(0.462)	0.235	(0.424)
Has a statemented disability	0.095	(0.293)	0.089	(0.286)
Mother's age (if present)	42.416	(5.021)	42.800	(4.995)
Father's age (if present)	45.758	(5.802)	45.906	(6.016)
Father with A level or above	0.183	(0.387)	0.209	(0.406)
Father has O level or equiv.	0.191	(0.393)	0.175	(0.380)
Mother with A level or above	0.208	(0.406)	0.249	(0.432)
Mother has O level or equiv.	0.255	(0.436)	0.238	(0.426)
Father a manager/professional	0.137	(0.344)	0.162	(0.368)
Father clerical or equivalent	0.263	(0.440)	0.238	(0.426)
Mother a manager/professional	0.105	(0.307)	0.144	(0.351)
Mother clerical or equivalent	0.312	(0.464)	0.269	(0.444)
Father details missing	0.366	(0.482)	0.372	(0.484)
Parent in work during childhood	0.825	(0.381)	0.830	(0.376)
Attended 2 primary schools	0.232	(0.422)	0.209	(0.407)
Attended >2 primary schools	0.072	(0.258)	0.059	(0.236)
Received form of childcare	0.918	(0.274)	0.897	(0.305)
At least 1 set grandparents present when child	0.325	(0.469)	0.358	(0.480)
Both sets grandparents present when child	0.516	(0.500)	0.375	(0.484)
Grandparents helped look after	0.326	(0.469)	0.356	(0.479)
Ill between ages of 0 and 1	0.231	(0.421)	0.214	(0.410)
Illness persisted between 1 and 5	0.183	(0.387)	0.177	(0.382)
Illness persisted beyond 5	0.141	(0.348)	0.122	(0.328)
Number of older siblings	0.853	(1.067)	1.025	(1.256)
Number of younger siblings	0.907	(1.042)	0.939	(1.127)
Mother works full-time	0.332	(0.471)	0.355	(0.479)
Mother works part-time	0.319	(0.466)	0.281	(0.450)
Father works full-time	0.491	(0.500)	0.478	(0.500)
Father works part-time	0.015	(0.121)	0.028	(0.165)
Older sibling educated >16	0.157	(0.363)	0.195	(0.396)
LEA stay-on rates 1999	64.137	(0.950)	62.707	(2.183)
LEA stay-on rates 1998	57.212	(0.900)	60.905	(3.126)
LEA stay-on rates 1997	54.066	(1.250)	59.068	(2.112)

Table A2.6 Summary Statistics for Rural Areas

	Pilot Areas		Control Areas	
	Mean	SD	Mean	SD
	1382 Observations		1387 Observations	
Male	0.510	(0.500)	0.492	(0.500)
In full-time education	0.840	(0.367)	0.780	(0.414)
Family income	21765	(17833)	24907	(20198)
Eligible for full EMA	0.447	(0.497)	0.363	(0.481)
Eligible for partial EMA	0.341	(0.474)	0.354	(0.478)
White	0.985	(0.122)	0.983	(0.128)
Receiving means-tested benefit	0.207	(0.405)	0.157	(0.364)
Both mother & father in hh	0.639	(0.480)	0.645	(0.479)
Father in household	0.788	(0.409)	0.802	(0.399)
English grade A to C	0.663	(0.473)	0.658	(0.474)
Mathematics grade A to C	0.538	(0.499)	0.545	(0.498)
Owner-occupier	0.748	(0.434)	0.767	(0.423)
Council or HA tenant	0.151	(0.358)	0.143	(0.350)
Has a statemented disability	0.123	(0.329)	0.116	(0.320)
Mother's age (if present)	43.679	(5.097)	43.687	(4.880)
Father's age (if present)	47.166	(6.142)	46.950	(5.744)
Father with A level or above	0.303	(0.460)	0.291	(0.455)
Father has O level or equiv.	0.177	(0.381)	0.200	(0.400)
Mother with A level or above	0.323	(0.468)	0.337	(0.473)
Mother has O level or equiv.	0.271	(0.444)	0.273	(0.445)
Father a manager/professional	0.248	(0.432)	0.255	(0.436)
Father clerical or equivalent	0.241	(0.428)	0.230	(0.421)
Mother a manager/professional	0.165	(0.371)	0.203	(0.402)
Mother clerical or equivalent	0.295	(0.456)	0.307	(0.461)
Father details missing	0.334	(0.472)	0.326	(0.469)
Parent in work during childhood	0.890	(0.313)	0.911	(0.284)
Attended 2 primary schools	0.279	(0.448)	0.371	(0.483)
Attended >2 primary schools	0.110	(0.313)	0.147	(0.354)
Received form of child care	0.933	(0.251)	0.921	(0.270)
At least 1 set grandparents present when child	0.340	(0.474)	0.301	(0.459)
Both sets grandparents present when child	0.318	(0.466)	0.360	(0.480)
Grandparents helped look after	0.229	(0.420)	0.234	(0.424)
Ill between ages of 0 and 1	0.224	(0.417)	0.211	(0.408)
Illness persisted between 1 and 5	0.184	(0.387)	0.179	(0.383)
Illness persisted beyond 5	0.156	(0.363)	0.141	(0.348)
Number of older siblings	1.004	(1.152)	0.913	(1.082)
Number of younger siblings	0.808	(0.938)	0.849	(0.970)
Mother works full-time	0.326	(0.469)	0.346	(0.476)
Mother works part-time	0.365	(0.482)	0.392	(0.488)
Father works full-time	0.538	(0.499)	0.603	(0.489)
Father works part-time	0.030	(0.170)	0.019	(0.138)
Older sibling educated >16	0.232	(0.422)	0.217	(0.412)
LEA stay-on rates 1999	77.910	(0.000)	70.794	(0.105)
LEA stay-on rates 1998	75.230	(0.000)	69.031	(1.420)

APPENDIX A3

Variables Used in the Analysis

A3.1 Income Measures

Information on income from different sources was used to estimate two separate income measures. The first was used to calculate whether an individual was deemed to be eligible for receipt of any EMA payment, and the second was used as a direct measure of household income.

A3.1.2 EMA eligibility

As a large number of young people do not live with both their biological parents, each family structure is considered separately.

Young people living with both biological parents

The first step was to reconstruct gross taxable family income using information on parental income from individual sources (wages, self-employment, pensions etc.). If this information was only given net of taxes and NI contributions, these were modelled to arrive at an estimate of gross income. If the income information from different sources was unavailable, the parents' assessment of their overall income for the previous year was used, or the current year if the former was not given. Finally, if no information was still available, the family's receipt of means-tested benefits was examined (Income Support, Jobseeker's Allowance, Council Tax Benefit or Housing Benefit), using this as a proxy for full EMA eligibility, thereby allowing these individuals to be kept within the final sample. This group was given an income estimate of zero that was interacted in the analyses with a dummy variable for receipt of these benefits.

Young people living with one biological parent

First, the attempt was made to reconstruct gross taxable income from individual sources, as in the two-parent case, taking care to consider only income from the biological parent if there was a step-parent in the household. To this was added the estimate of the absent parent's income. If no such estimate was available, any maintenance payments received were added.

If income information was available from individual sources for the biological parent and there was no step-parent in the household, estimated household income for the previous year was used, or the current year if the former was unavailable. To this was added the income

estimate for the absent parent if available, and any maintenance payments received were subtracted to avoid double-counting.

In cases where there was a step-parent in the household but no information about the biological parent's income from individual sources, the estimate of family income for the previous year was still used (or the current year where the former was unavailable), with the new partner's income being a proxy for that of the absent parent. If an estimate of the absent parent's income was available and this was higher than that of the young person's household, the estimate of the absent parent's income was used instead. If this estimate existed but was lower than the household income, maintenance payments were still subtracted from the household's income, as long as they were lower than the household income. This, again, avoided double-counting.

If the only available income information was the estimate of the absent parent's income, this was used as the best estimate of gross taxable income. Finally, for those for whom no income information was available, receipt of taxable benefits was used as a proxy for full EMA eligibility.

All those for whom none of the above information was available were excluded from the analyses.

Young people living with no biological parents

Where possible, the estimate for absent parent's or parents' income was used to determine EMA eligibility. If this was not available, the young person was considered to be eligible for full EMA: if both parents were deceased; if the young person was no longer in contact with either parent; if the young person was living with foster parents or guardians; or if the young person had a legal guardian within their household.

In order not to exclude other individuals with no biological parents, for whom the impact of the EMA could potentially be different from that for other groups, any available income information about the young person's household was used as a proxy for income on which their EMA eligibility would have been assessed. Where no such information was available, the young person was considered to be fully eligible for EMA and retained in the analysis.

A3.1.3 Quality of the EMA eligibility variable

EMA eligibility was determined using the measure of biological (or adoptive) parent's or parents' income. Those with income below £13,000 per annum are eligible for the full amount of EMA, those with income between £13,000 and £30,000 are eligible for some but not the entire amount of EMA, while those with income above £30,000 are ineligible. Table A3.1 shows how the estimates of EMA eligibility compare with actual receipt in pilot areas for young people in full-time education.

Table A3.1 How Good is the Assessment of EMA Eligibility?

The assessment of eligibility	**No EMA receipt**	**Receive some but not full EMA**	**Receive full EMA**	***Total***
Not eligible for EMA	**920** (85%) [46%]	**124** (11%) [12%]	**42** (4%) [3%]	***1,086*** *(100%) [24%]*
Eligible for some but not full EMA	**494*** (35%) [25%]	**721** (50%) [68%]	**217** (15%) [15%]	***1,432*** *(100%) [32%]*
Eligible for full EMA	**570*** (29%) [29%]	**222** (11%) [21%]	**1,158** (59%) [82%]	***1,950*** *(100%) [44%]*
Total	***1,984*** *(44%) [100%]*	***1,067*** *(24%) [100%]*	***1,417*** *(32%) [100%]*	***4,468*** *(100%) [100%]*

Note: Figures in bold represent absolute numbers, figures in parentheses ( ) represent row percentages, while those in square brackets [ ] represent column percentages. Numbers along the leading diagonal show cases where the assessments of eligibility coincide with actual receipts.
* See text.

Eligibility estimates differ from the LEAs' decisions for three potential reasons – imprecisions in the data on whether or not the young person was in full-time education and, more likely, either imprecisions in the income data or incomplete take-up amongst the eligible population. Table A3.1 shows that the assessment of young people's eligibility coincided with the decision of the LEAs (numbers along the diagonal) in over 60 per cent of cases. This figure is somewhat higher among those living in urban areas than among those living in rural areas (not shown in the table). This could either be the result of lower take-up in rural areas or of a greater tendency for the income measure to underestimate actual income in these areas, possibly because of higher levels of self-employment.

Incomplete take-up can be seen from the two starred cells which represent the number of individuals believed to be eligible for EMA but who were not receiving it. While some of these cases will be the result of inaccurate measurement, the fact that they represent a more substantial group than those off the main diagonal in the last two columns suggests a substantial number of young people are not receiving the allowance while being entitled to it.

It would be expected that take-up would be lower among those eligible for some EMA than among those eligible for full EMA for two reasons. First there would be less benefit from applying to those eligible for only some EMA. Second, some of this group will have assumed that they would be ineligible for any means-tested benefits and will thus not have taken the time to find out about EMA. In Table A3.2 this issue is examined in more detail. The table shows the proportion of individuals in different eligibility categories who were actually receiving EMA for all those individuals in full-time education in pilot areas. These figures are shown for each of the pilot LEAs and show that 32.9 per cent of those considered to be eligible for full EMA were not receiving a payment compared with 38.1 per cent of those who we assessed to be eligible for a partial EMA payment. It is also clear that there were wide differences between LEAs in the estimated proportions taking up the EMA.

Table A3.2 Percentage Receiving EMA by LEA

LEA	Partially eligible young people in full-time education receiving EMA (per cent)	Fully eligible young people in full-time education receiving EMA (per cent)	Eligible young people in full-time education receiving EMA (per cent)	Ineligible young people in full-time education receiving EMA (per cent)
Variant 1				
Middlesborough	62.0	76.7	72.0	15.9
Walsall	66.7	68.2	67.6	13.9
Southampton	72.9	59.4	65.5	15.1
Variant 2				
Oldham	75.0	85.5	81.3	20.2
Nottingham	59.5	82.3	73.2	10.7
Variant 3				
Bolton	51.3	62.6	57.8	12.0
Doncaster	40.9	41.7	41.4	5.8
Variant 4				
Gateshead	73.1	82.7	78.7	15.7
Stoke-on-Trent	67.8	76.1	72.3	23.1
All urban areas	62.4	71.0	67.5	14.3
Cornwall	60.8	55.3	57.8	12.6
ALL	61.9	67.1	64.9	13.9

Note: Receipt of EMA is based on whether the family was receiving EMA at the time of interview. Young people have not been included who had applied and were either awaiting a decision or who had been granted EMA but had not actually received a payment. Similarly, young people have not been included who had had their payments stopped.

In order to obtain a more complete picture of the reasons behind these disparities between estimated eligibility and receipt, data have been requested from LEAs which will provide the actual income data used to assess eligibility for individuals in the survey. This will allow take-up problems to be disentangled from measurement error problems, if only for the subset of LEAs from whom it is possible to obtain this information.

A3.2 Education Participation and Achievement Variables

The data contain information on the young person's activity at the time of interview, including participation in education, from both the household and the young person's questionnaire. Although the two variables tended to be consistent, where there were inconsistencies the answer provided by the young person was taken, since this was assumed to be more reliable. One possible cause of inaccuracies is if the young person had more than one activity.

In order to be able to assess educational achievement in the last year of compulsory schooling, the dataset contains information about results in 12 core GCSE subjects, as well as details of any other GCSE exams passed. The individual matching exercise that forms the basis of analysis in Chapter 5 has concentrated on English and Maths grades, for which full information was available for every individual in the sample. Moreover, the grades achieved in these two subjects are likely to be a good indicator of overall exam performance.

A3.3 Family Background Variables

A whole range of family background characteristics are likely to be important influences on a young person's decision about whether to remain in education post-16. Information on some of these likely influences was collected in the survey. This includes the age of the young person's parent(s), their housing tenure, the education, employment status and occupation of their parent(s), the number of younger and older siblings and whether any older siblings remained in education beyond the age of 16. Also potentially important are factors that influenced the young person during their early childhood.[4] Information has been used on the number of primary schools the young person attended, whether they lived near any grandparents as a child, whether their parents used any form of childcare and whether the young person had any serious illnesses during early life. A summary of this information for urban and rural areas is provided in Table A3.3.

[4] Dearden (1998) looks at the importance of these factors using National Child Development Survey data.

The proportion of individuals in full-time education was higher in rural areas (81.0 per cent) than in urban areas (70.4 per cent). More young people were potentially eligible for EMA in urban areas and this was because a larger proportion of those in urban areas were eligible for the full EMA payment (47.2 per cent in urban areas compared with 40.5 per cent in rural areas). Just over 98 per cent of individuals in rural areas were white compared with a little under 90 per cent in urban areas. The average family income was lower and the proportion of people in families receiving means-tested benefits higher in urban areas. GCSE results were considerably better in the rural areas than in urban areas. Similarly, children in rural areas tended to come from families with better-educated parents and parents working in more-skilled occupations. Family size was also higher in urban areas than in rural areas.

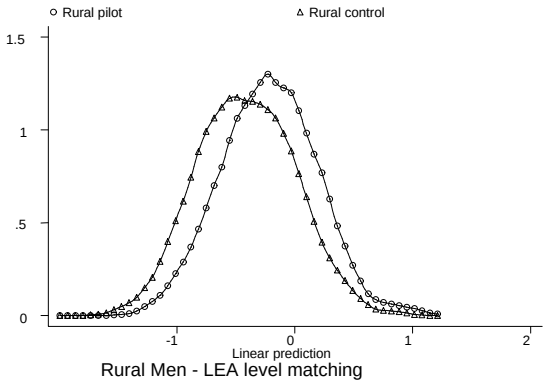
Table A3.3 Summary statistics

	Rural Areas		Urban Areas	
	Mean	SD	Mean	SD
	2769 Observations		7034 Observations	
Male	0.501	(0.500)	0.501	(0.500)
In full-time education	0.810	(0.392)	0.704	(0.456)
Family income	23339	(19115)	22121	(18117)
Eligible for full EMA	0.405	(0.491)	0.472	(0.499)
Eligible for partial EMA	0.347	(0.476)	0.307	(0.461)
White	0.984	(0.125)	0.897	(0.304)
Receiving means-tested benefit	0.182	(0.386)	0.262	(0.440)
Both mother & father in hh	0.642	(0.479)	0.616	(0.486)
Father in household	0.795	(0.404)	0.748	(0.434)
English grade A to C	0.661	(0.474)	0.536	(0.499)
Mathematics grade A to C	0.541	(0.498)	0.430	(0.495)
Owner-occupier	0.758	(0.429)	0.688	(0.463)
Council or H.A. tenant	0.147	(0.354)	0.257	(0.437)
Has a statemented disability	0.120	(0.324)	0.092	(0.289)
Mother's age (if present)	43.683	(4.988)	42.572	(5.010)
Father's age (if present)	47.057	(5.945)	45.880	(5.915)
Father with A level or above	0.297	(0.457)	0.218	(0.413)
Father has O level or equiv.	0.188	(0.391)	0.170	(0.376)
Mother with A level or above	0.330	(0.470)	0.242	(0.428)
Mother has O level or equiv.	0.272	(0.445)	0.244	(0.430)
Father a manager/professional	0.251	(0.434)	0.164	(0.371)
Father clerical or equivalent	0.235	(0.424)	0.241	(0.428)
Mother a manager/professional	0.184	(0.387)	0.128	(0.334)
Mother clerical or equivalent	0.301	(0.459)	0.291	(0.454)
Father details missing	0.330	(0.470)	0.369	(0.483)
Parent in work during childhood	0.901	(0.299)	0.825	(0.380)
Attended 2 primary schools	0.325	(0.468)	0.253	(0.435)
Attended >2 primary schools	0.129	(0.335)	0.076	(0.265)
Received form of childcare	0.927	(0.261)	0.906	(0.292)
At least 1 set grandparents present when child	0.321	(0.467)	0.323	(0.468)
Both sets grandparents present when child	0.339	(0.473)	0.445	(0.497)
Grandparents helped look after	0.231	(0.422)	0.315	(0.464)
Ill between ages of 0 and 1	0.217	(0.413)	0.222	(0.416)
Illness persisted between 1 and 5	0.181	(0.385)	0.177	(0.381)
Illness persisted beyond 5	0.148	(0.355)	0.135	(0.342)
Number of older siblings	0.958	(1.118)	0.945	(1.146)
Number of younger siblings	0.829	(0.954)	0.975	(1.114)
Mother works full-time	0.336	(0.472)	0.333	(0.471)
Mother works part-time	0.378	(0.485)	0.307	(0.461)
Father works full-time	0.571	(0.495)	0.498	(0.500)
Father works part-time	0.025	(0.155)	0.022	(0.145)
Older sibling educated >16	0.224	(0.417)	0.184	(0.388)
LEA stay-on rates 1999	74.346	(3.559)	64.692	(2.366)
LEA stay-on rates 1998	72.125	(3.259)	59.485	(4.419)
LEA stay-on rates 1997	NA		58.977	(3.766)

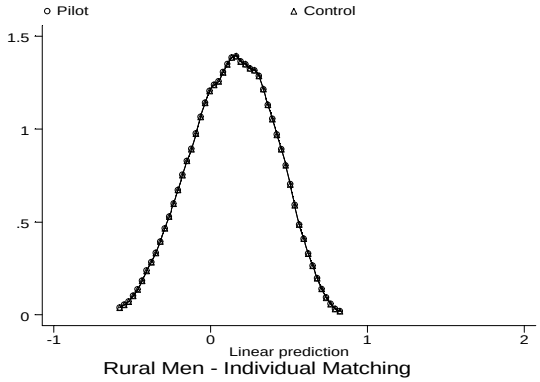
APPENDIX A4

PROPENSITY SCORE DISTRIBUTIONS

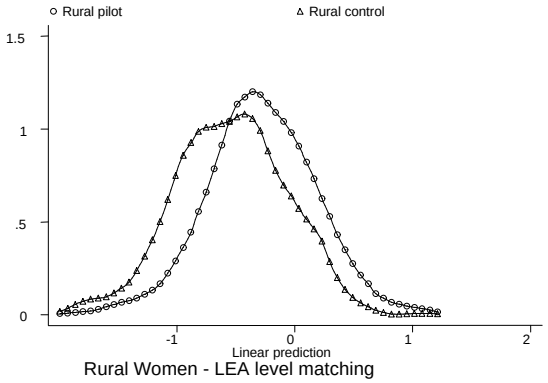
Figure A4.1 Propensity Score Distributions (Propensity to be in a Pilot Area) in Pilots and Controls, Before and After Individual Matching. Rural Areas, Males and Females. Eligible Individuals Only.



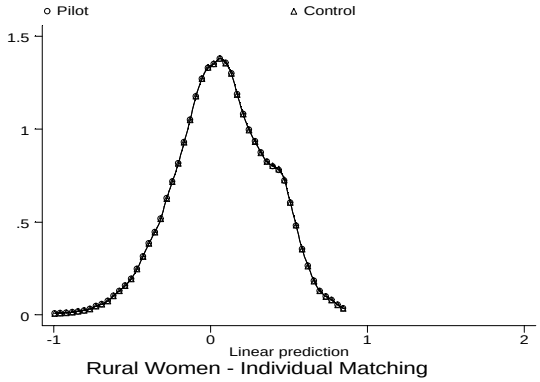
Rural Men - LEA level matching



Rural Men - Individual Matching

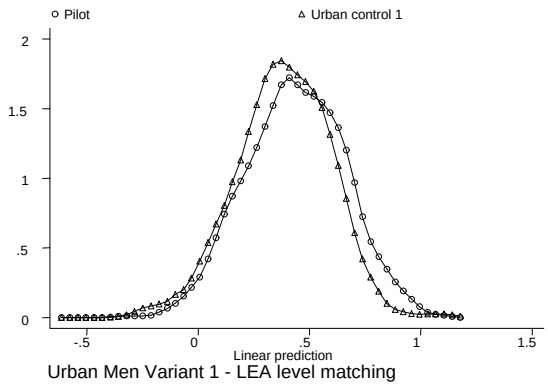


Rural Women - LEA level matching

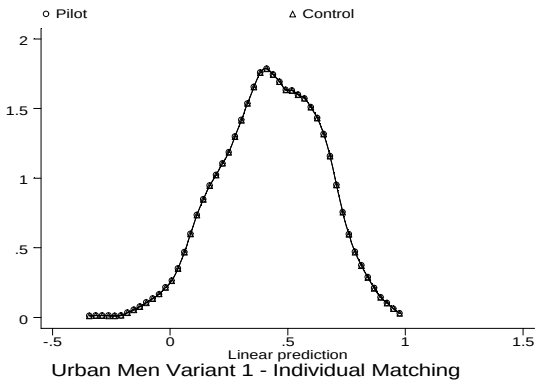


Rural Women - Individual Matching

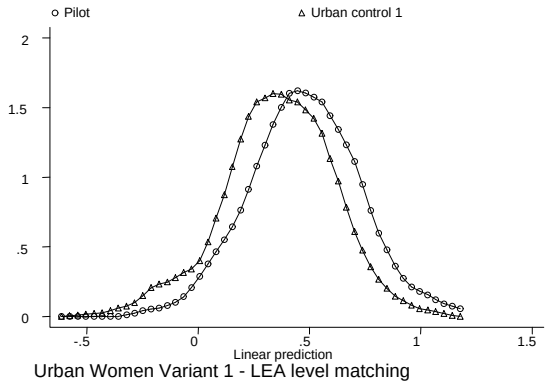
Figure A4.2 Propensity Score Distributions (Propensity to be in a Pilot Area) in Pilots and Controls, Before and After Individual Matching. Urban Variant 1, Males and Females. Eligible Individuals Only.



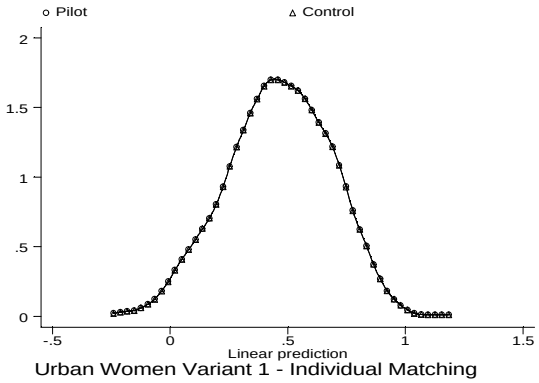
Urban Men Variant 1 - LEA level matching



Urban Men Variant 1 - Individual Matching

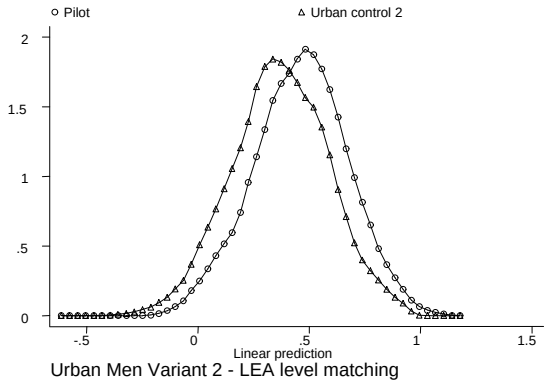


Urban Women Variant 1 - LEA level matching

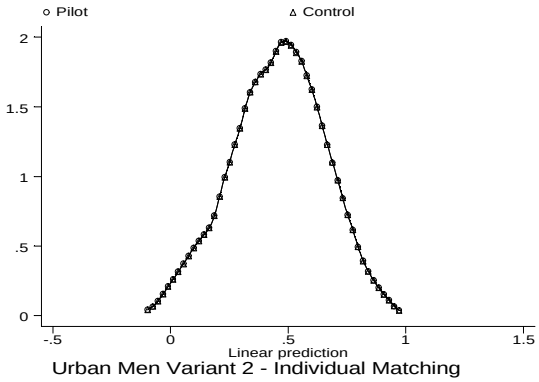


Urban Women Variant 1 - Individual Matching

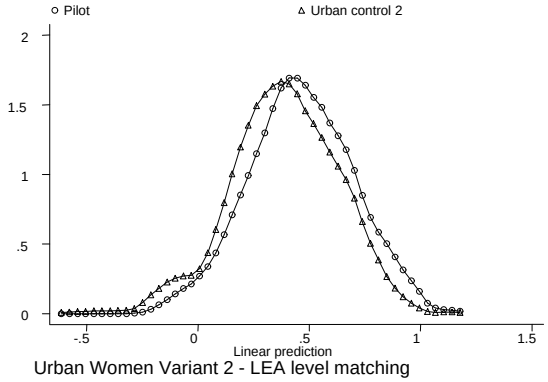
Figure A4.3 Propensity Score Distributions (Propensity to be in a Pilot Area) in Pilots and Controls, Before and After Individual Matching. Variant 2, Males and Females. Eligible Individuals Only.



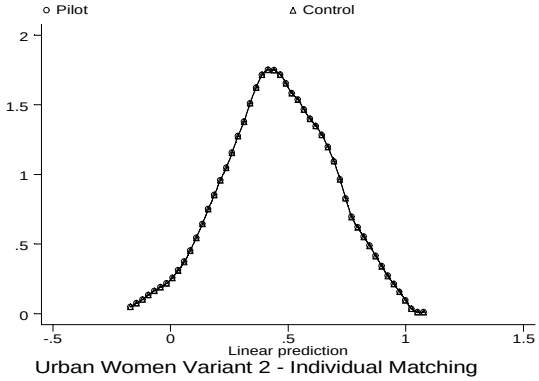
Urban Men Variant 2 - LEA level matching



Urban Men Variant 2 - Individual Matching

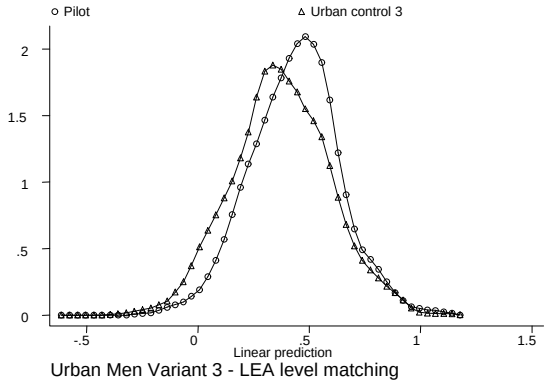


Urban Women Variant 2 - LEA level matching

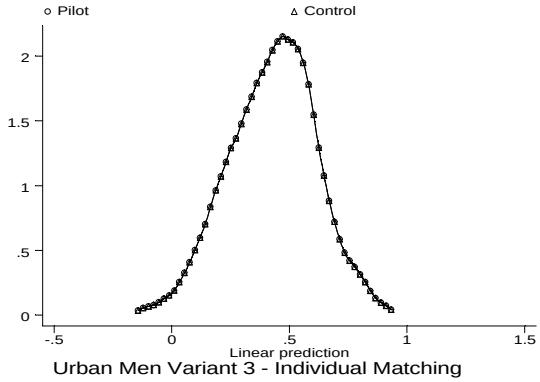


Urban Women Variant 2 - Individual Matching

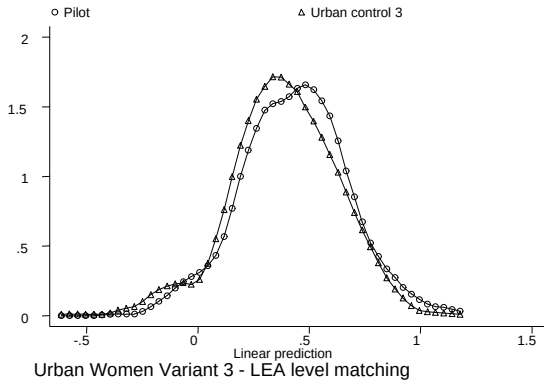
Figure A4.4 Propensity Score Distributions (Propensity to be in a Pilot Area) in Pilots and Controls, Before and After Individual Matching. Variant 3, Males and Females. Eligible Individuals Only.



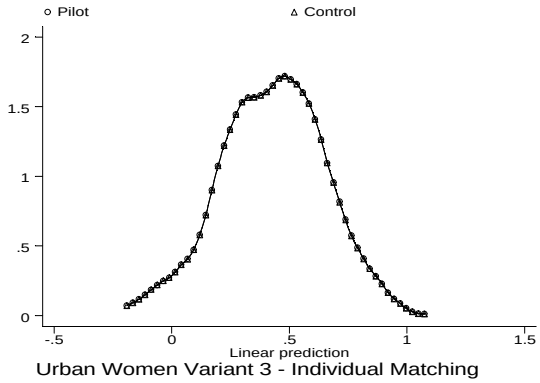
Urban Men Variant 3 - LEA level matching



Urban Men Variant 3 - Individual Matching

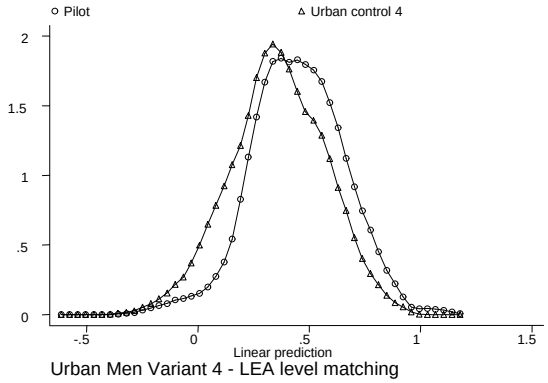


Urban Women Variant 3 - LEA level matching

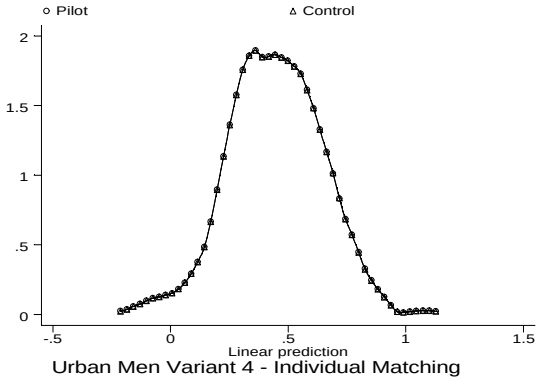


Urban Women Variant 3 - Individual Matching

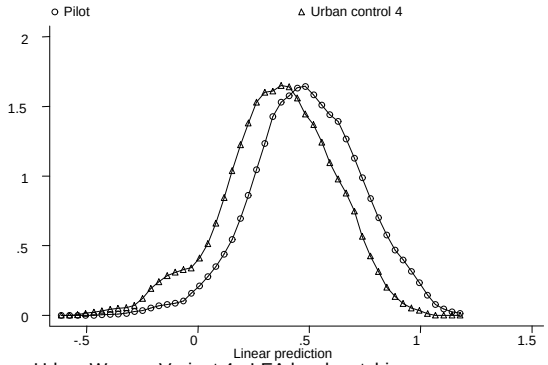
Figure A4.5 Propensity Score Distributions (Propensity to be in a Pilot Area) in Pilots and Controls, Before and After Individual Matching. Variant 4, Males and Females. Eligible Individuals Only.



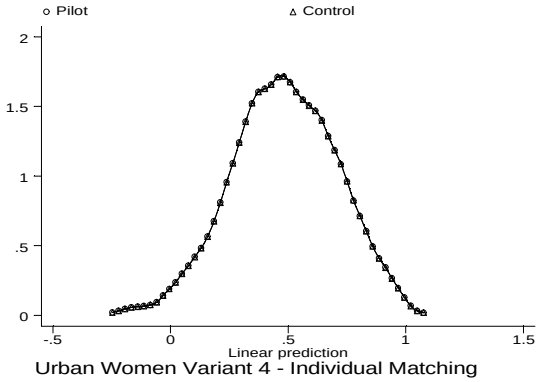
Urban Men Variant 4 - LEA level matching



Urban Men Variant 4 - Individual Matching

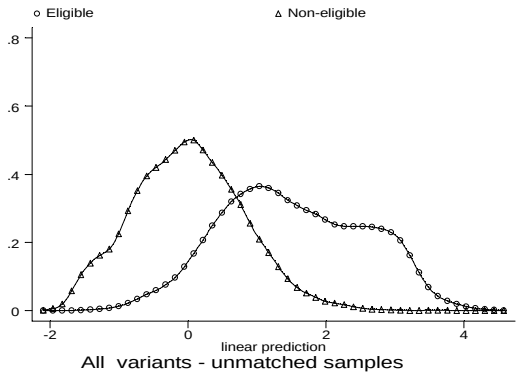


Urban Women Variant 4 - LEA level matching

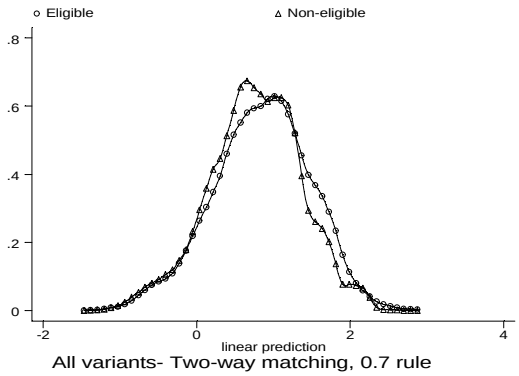


Urban Women Variant 4 - Individual Matching

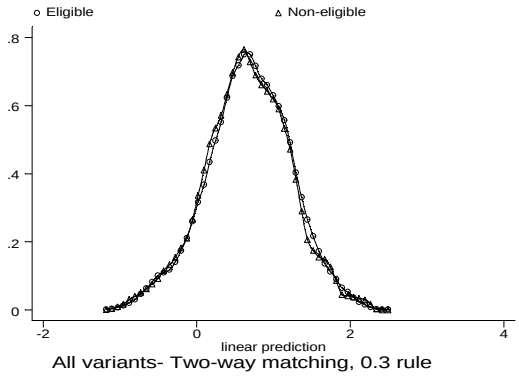
Figure A4.6 Propensity Score Distributions (Propensity to be Eligible for EMA) for Eligibles and Ineligibles, Before and After Individual Matching



All variants - unmatched samples



All variants- Two-way matching, 0.7 rule



All variants- Two-way matching, 0.3 rule

Figure A4.7 Propensity Score Distributions (Propensity to be an Older Sibling) for Young People and Older Siblings, Before and After Individual Matching to any Sibling. Urban Areas, Eligible Individuals Only.

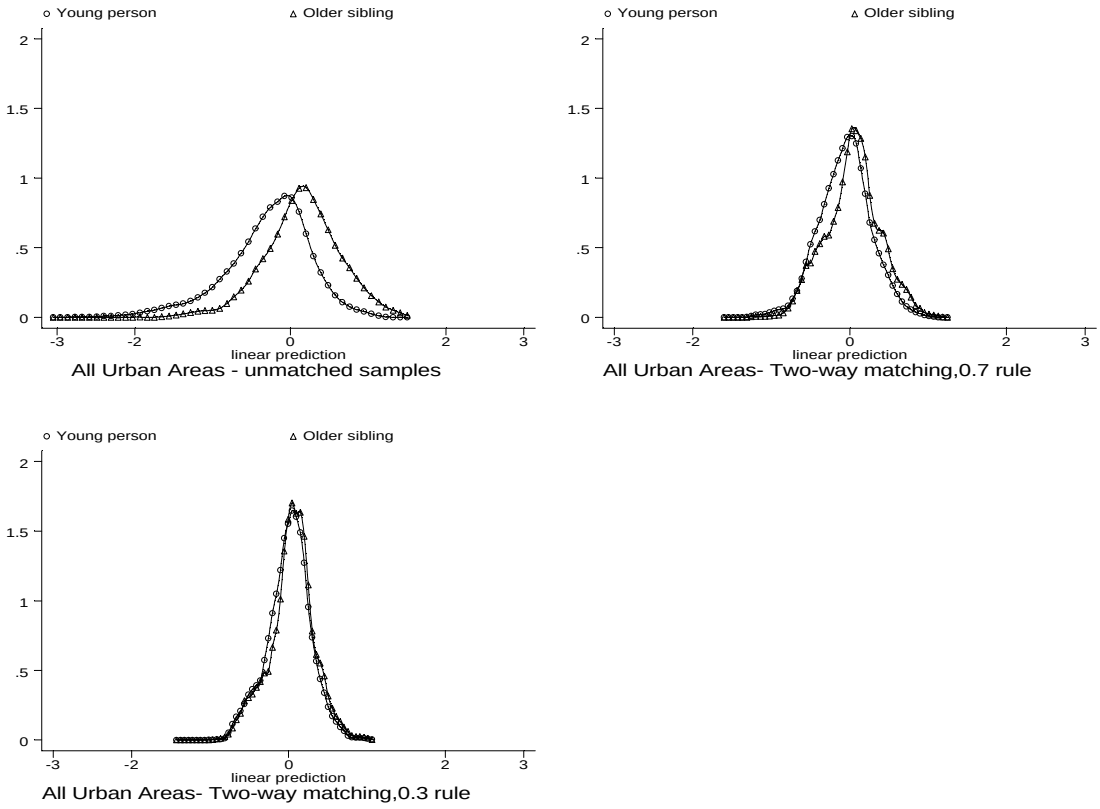
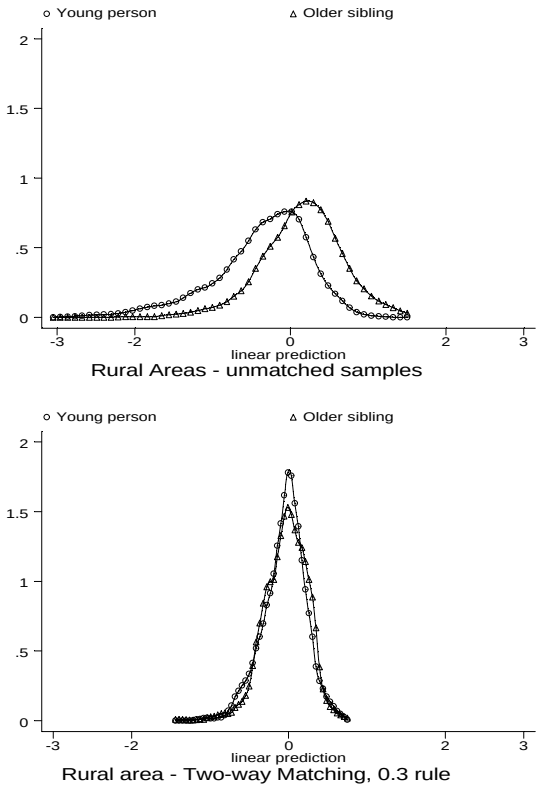


Figure A4.8 Propensity Score Distributions (Propensity to be an Older Sibling) for Young People and Older Siblings, Before and After Individual Matching to any Sibling. Rural Areas, Eligible Individuals Only.



APPENDIX A5

MATCHING STATISTICS

A5.1 One-way Matching Summary Statistics

Table A5.1 Sample Sizes and Mean Characteristics: Before and After One-way Matching, Eligible Individuals Only

	Urban Males		Urban Females		Rural Males		Rural Females	
	Unmatched	Matched	Unmatched	Matched	Unmatched	Matched	Unmatched	Matched
Sample sizes								
Pilot	1795	1752	1832	1773	550	514	539	473
Control	924	1752	925	1773	474	514	520	473
Family and personal characteristics								
Family income								
Pilot	15476	15475	15325	15385	15431	15548	15481	15340
Control	15051	15238	15149	15271	16669	16423	16125	15717
Difference (%)	2.82	1.56	1.16	0.75	-7.43	-5.33	-3.99	-2.40
Proportion whose ethnic origin is white								
Pilot	0.866	0.867	0.888	0.895	0.982	0.986	0.993	0.994
Control	0.871	0.871	0.897	0.896	0.987	0.996	0.981	0.998
Difference	-0.005	-0.004	-0.009	-0.001	-0.005	-0.01	0.012	-0.004
Proportion attaining maths GCSE grades A-C								
Pilot	0.353	0.352	0.366	0.37	0.496	0.498	0.486	0.49
Control	0.345	0.352	0.37	0.367	0.498	0.504	0.452	0.45
Difference	0.008	0	-0.004	0.003	-0.002	-0.006	0.034	0.04
Proportion in council or Housing Association accommodation								
Pilot	0.33	0.327	0.352	0.341	0.191	0.202	0.182	0.173
Control	0.307	0.315	0.278	0.334	0.179	0.185	0.198	0.201
Difference	0.023	0.012	0.074*	0.007	0.012	0.017	-0.016	-0.028
Proportion whose mother educated to A level or above								
Pilot	0.15	0.151	0.162	0.164	0.236	0.239	0.265	0.273
Control	0.161	0.156	0.189	0.162	0.257	0.247	0.256	0.245
Difference	-0.011	-0.005	-0.027	0.002	-0.021	-0.008	0.009	0.028
Proportion whose father educated to A level or above								
Pilot	0.126	0.127	0.121	0.123	0.244	0.233	0.208	0.192
Control	0.132	0.113	0.125	0.122	0.209	0.296	0.187	0.178
Difference	-0.006	0.014	-0.004	0.001	0.035	-0.063	0.021	0.014
Proportion whose father's occupation is managerial or professional								
Pilot	0.091	0.09	0.082	0.085	0.196	0.191	0.184	0.178
Control	0.078	0.1	0.092	0.084	0.184	0.204	0.158	0.133
Difference	0.013	-0.01	-0.01	0.001	0.012	-0.013	0.026	0.045
Proportion whose mother is in full-time work								
Pilot	0.248	0.252	0.263	0.267	0.262	0.265	0.282	0.275
Control	0.267	0.238	0.274	0.298	0.289	0.233	0.281	0.268
Difference	-0.019	0.014	-0.011	-0.031	-0.027	0.032	0.001	0.007
Proportion whose father is in full-time work								
Pilot	0.413	0.417	0.385	0.39	0.493	0.512	0.436	0.459
Control	0.395	0.449	0.378	0.394	0.538	0.496	0.506	0.408
Difference	0.018	-0.032	0.007	-0.004	-0.045	0.016	-0.07*	0.051

Note: Differences which are significant at the 5 per cent level have been marked by *.

A5.2 One-way Matching Estimates: Matched and Unmatched Samples

Table A5.2 Impact of EMA by Gender and Location: Matched and Unmatched Estimates

	Urban Males		Urban Females		Rural Males		Rural Females	
	Unmatched	**Matched**	**Unmatched**	**Matched**	**Unmatched**	**Matched**	**Unmatched**	**Matched**
Observations in pilot	1795	1752	1832	1773	550	514	539	473
Observations in control	924	1752	925	1773	474	514	520	473
Percentage remaining in full-time education after 16:								
Pilot	66.1	66.0	71.2	71.3	78.5	78.0	85.2	85.6
Control	60.8	61.4	68.1	68.4	68.1	67.1	79.2	78.2
EMA effect	**5.3**	**4.6**	**3.1**	**2.9**	**10.4**	**10.9**	**6.0**	**7.4**
(SE)	(1.9)	(1.6)	(1.8)	(1.5)	(2.7)	(2.7)	(2.3)	(2.2)

A5.3 Two-way Matching Summary Statistics: Eligibles and Non-eligibles

Table A5.3 Sample Sizes and Mean Characteristics of the Eligible and Non-eligible Unmatched and Matched Samples

Sample sizes	Unmatched	Matched (0.7 rule)	Matched (0.3 rule)
Eligible pilot	4716	2373	1457
Non-eligible pilot	1304	2373	1457
Eligible control	2843	2373	1457
Non-eligible control	940	2373	1457
Family and personal characteristics			
Family income			
Eligible pilot	15413	18417	19467
Non-eligible pilot	45711	38897	39999
Eligible control	15549	18461	19706
Non-eligible control	46517	39791	39727
Proportion whose ethnic origin is white			
Eligible pilot	0.902	0.955	0.958
Non-eligible pilot	0.956	0.940	0.953
Eligible control	0.919	0.948	0.959
Non-eligible control	0.976	0.978	0.987
Proportion with Maths GCSE grades A-C			
Eligible pilot	0.390	0.528	0.571
Non-eligible pilot	0.676	0.490	0.504
Eligible control	0.398	0.505	0.537
Non-eligible control	0.717	0.573	0.603
Proportion in council or housing association accommodation			
Eligible pilot	0.305	0.072	0.041
Non-eligible pilot	0.023	0.048	0.027
Eligible control	0.256	0.063	0.029
Non-eligible control	0.016	0.032	0.023
Proportion with mother educated to A level or above			
Eligible pilot	0.178	0.269	0.286
Non-eligible pilot	0.531	0.296	0.326
Eligible control	0.204	0.287	0.317
Non-eligible control	0.539	0.259	0.288
Proportion with father educated to A level or above			
Eligible pilot	0.147	0.234	0.269
Non-eligible pilot	0.561	0.228	0.258
Eligible control	0.153	0.228	0.272
Non-eligible control	0.527	0.236	0.242
Proportion whose father's occupation is managerial or professional			
Eligible pilot	0.110	0.175	0.193
Non-eligible pilot	0.441	0.172	0.173
Eligible control	0.115	0.141	0.154
Non-eligible control	0.459	0.194	0.207
Proportion whose mother is in full time work			
Eligible pilot	0.260	0.400	0.449
Non-eligible pilot	0.561	0.402	0.437
Eligible control	0.275	0.404	0.445
Non-eligible control	0.566	0.381	0.413
Proportion whose father is in full time work			
Eligible pilot	0.414	0.638	0.701
Non-eligible pilot	0.847	0.675	0.703
Eligible control	0.434	0.606	0.675
Non-eligible control	0.843	0.672	0.693
Proportion who have an older sibling educated to 18 or above			
Eligible pilot	0.167	0.198	0.213
Non-eligible pilot	0.283	0.172	0.185
Eligible control	0.173	0.193	0.209
Non-eligible control	0.286	0.206	0.225

A5.4 The Characteristics of Young People with Older Siblings

The data reveal that, of the cohort 1 wave 1 final sample, 57 per cent of young people had one or more older siblings and the total number of older siblings contained within the dataset was 9,305. However, for a significant proportion of these older siblings insufficient information was available about their age or the age at which they left school. Retaining only those siblings with sufficient information about their age and educational history, 51 per cent of the sample had one or more useable older siblings, yielding a dataset of 8,124 older siblings. From now on all references to older siblings refer to useable older siblings only.

The sample of young people with at least one older sibling was not fully representative of the population at large. Multivariate analysis revealed that there were significant differences between those 16 year olds with and those without older siblings in many of the characteristics which are known to determine educational choices. A simple probit of whether or not the young person had older siblings was undertaken against a range of personal and family background characteristics. This indicated that, although certain important characteristics such as sex, family income, and whether or not the young person was in a pilot or a control area[5] did not appear to be different between the two groups, many other characteristics important to educational choices at 16 did differ significantly. Such characteristics included: ethnicity (children from Indian, Pakistani, Bangladeshi families were much more likely to have older siblings than others); age of the mother (the older the mother, the more likely were there to be older siblings); the number of younger siblings in the household (those with fewer younger siblings had a higher likelihood of having an older sibling); mother's qualifications and economic activity; and GCSE results. The presence of older siblings in itself also tended to be associated with higher participation in post-16 education, conditional on all these other factors.

Taking all characteristics together, those with older siblings had characteristics that gave them a significantly lower probability of staying on at school than those without. This can be

[5] However when the pilots and controls were broken down into their individual Variants (and by whether rural or urban), it can be seen that those in the urban Variant 1 pilot were more likely to have older siblings than those in the urban Variant 1 controls, whereas those in Variant 3 pilot were significantly less likely to have an older sibling than those in the control areas selected for this Variant.

seen by a comparison of the predicted probabilities obtained by running probits in the EMA control areas on only whether an individual remained in full time education after 16, conditional on all relevant personal and family characteristics.[6] A predicted probability was then calculated for each individual in both the pilot and control areas, according to their characteristics. Comparing predicted probabilities in this way allowed the different characteristics of those with and without older siblings to be weighted according to their relative importance in the participation decision. The mean predicted probability of remaining in full-time education after 16 for those with older siblings was 0.68 compared to 0.73 for those without. Breaking the population down into deciles, according to their predicted probability of remaining in full time education after 16, showed that as many as 63 per cent of 16 year olds in the bottom decile had at least one older sibling, compared to just between 45-47 per cent in the top three deciles.

A.5.4.1 Older siblings

There were 8,124 older siblings available to be used for the analysis and some of their average characteristics are set out in Table A5.4.1. Note that of the 8,124 older siblings, 45 per cent were still in the household at the time of interview, whilst 55 per cent had left the household. Of those still at home, somewhat more of them were young men than young women. Information about gender was not available for those outside of the household.

Average participation rates appear to have been relatively low amongst these older siblings, particularly amongst those who had already left home (Table A5.4.1). Only 34.8 per cent of those not in the household stayed in full time education past the age of 16. This proportion was just 26 per cent for the Variant 4 and 28 per cent for Variant 2. As would be expected, participation rates were much higher amongst the siblings who were still at home, who were a considerably younger group on average. This accords well with known trends in education participation over time, and with the fact that those who stay at school tend to live at home longer.

[6] These probits were run separately for young men and young women, and for rural and urban areas. A fuller explanation of the method used has been described in Chapter 4.

Table A5.4.1 Average Characteristics of the Sample of Older Siblings

Variant	All		Males only (still at home)		Females only (still at home)		Sex missing (sibling outside the household)	
	Per cent remaining in FTE after 16	Mean age	Per cent remaining in FTE after 16	Mean age	Per cent remaining in FTE after 16	Mean age	Per cent remaining in FTE after 16	Mean age
Total	48.3	22.4	61.2	19.9	71.0	19.6	34.8	24.6
Sd	*50.0*	*4.8*	*48.7*	*2.5*	*45.4*	*2.4*	*47.6*	*5.1*
N	*8204*	*8204*	*2084*	*2084*	*1504*	*1504*	*4563*	*4563*
1 (rural)	58.1	22.9	71.5	19.6	77.7	19.3	47.9	25.2
Sd	*49.3*	*5.2*	*45.2*	*2.3*	*41.7*	*2.1*	*50.0*	*5.4*
n	*2250*	*2250*	*520*	*520*	*363*	*363*	*1367*	*1367*
1 (urban)	44.9	22.4	58.1	20.0	70.8	19.7	29.1	24.5
Sd	*49.8*	*4.8*	*49.3*	*2.9*	*45.5*	*2.6*	*45.4*	*5.1*
n	*2023*	*2023*	*521*	*521*	*407*	*407*	*1095*	*1095*
2 (urban)	44.8	22.1	61.7	19.8	68.2	19.7	28.4	24.1
Sd	*49.7*	*4.3*	*48.7*	*2.3*	*46.6*	*2.4*	*45.1*	*4.6*
n	*2048*	*2048*	*548*	*548*	*384*	*384*	*1116*	*1116*
3 (urban)	47.9	22.3	58.5	20.0	73.7	19.5	33.9	24.3
Sd	*50.0*	*4.5*	*49.3*	*2.4*	*44.1*	*2.3*	*47.4*	*4.8*
n	*1942*	*1942*	*511*	*511*	*369*	*369*	*1062*	*1062*
4 (urban)	41.4	22.4	56.6	20.0	66.0	19.6	26.2	24.5
Sd	*49.3*	*4.8*	*49.6*	*2.4*	*47.4*	*2.1*	*44.0*	*5.2*
n	*1999*	*1999*	*532*	*532*	*359*	*359*	*1108*	*1108*

Table A5.4.2 shows the results from regression analysis that sets out the characteristics which determine the probability of having one or more older sibling (using a probit model). The probit was calculated for eligible individuals only, since the siblings of ineligible individuals have not been used for this part of the evaluation. (Note that only those who had provided sufficient information about the educational choices of their older siblings were included as having an older sibling for these purposes). The results report the marginal effect, which shows the percentage point increase or decrease in the likelihood of being dropped from the sample attributable to a one unit increase in the explanatory variable. Variables that are statistically significant at the 5 per cent level have been shaded in Table A5.4.2. Those whose ethnic background is white were less likely than other ethnic groups to have older siblings; those with older mothers were more likely to have an older sibling, (except for a very small age range amongst the youngest mothers, hence the negative sign on the mother's age variable and the strongly positive sign on mother's age squared). Those with higher maths and English GCSE results, and those whose mother had been educated to GCE 'O' level or above were also less likely to have an older sibling.

Table A5.4.2 Characteristics of Individuals with one or more Older Siblings- Probit Regression Results

	Young person has one or more older sibling who can be used for matching	
	Marginal effect	**z-statistic**
Young person is male	-0.006	-0.49
Young person is in pilot area	-0.005	-0.36
Young person is in rural area	-0.013	-0.89
Family income/10000	-0.045	-1.50
Family income/10000 – squared	0.005	0.43
Family income/10000 – cubed	0.000	-0.05
Receiving means tested benefits	-0.023	-1.22
Both mother and father in household	-0.071	-1.67
Father figure in household	0.035	1.60
Young person is white	-0.110	-4.72
GCSE English A*-C	-0.080	-5.23
GCSE Maths A*-C	-0.070	-4.51
Owner occupier	-0.066	-2.73
Council or H.A. tenant	0.011	0.45
Has a statemented disability	0.018	0.88
Mother's age (if present)	-0.024	-10.30
Mother's age squared (if present)	0.001	16.11
Father's age (if present)	0.003	0.98
Father's age squared (if present)	0.000	1.10
Mother with A level or above	-0.105	-5.61
Mother has O level or equivalent	-0.054	-3.45
Father with A level or above	-0.038	-1.73
Father has O level or equivalent	-0.033	-1.68
Father a manager/professional	-0.045	-1.86
Father clerical or equivalent	-0.034	-1.87
Mother a manager/professional	-0.034	-1.45
Mother clerical or equivalent	-0.040	-2.55
Father details missing	0.078	1.77
Parents in work during childhood	0.056	3.07
Attended 2 primary schools	-0.020	-1.45
Attended >2 primary schools	-0.059	-2.65
Received form of childcare	-0.064	-2.71
1 grandparent around at birth	0.004	0.25
2 grandparents around at birth	0.021	1.18
Grandparents helped look after	-0.085	-6.06
Ill between ages of 0 and 1	-0.004	-0.14
Illness persisted between 1 and 5	0.056	1.64
Illness persisted beyond 5	-0.008	-0.27
Father works full time	0.004	0.18
Father works part time	-0.027	-0.66
Mother works full time	0.027	1.41
Mother works part time	-0.034	-2.02
Number of observations	7559	

Note: Significant estimates are shaded.

A5.5 Two-way Matching Summary Statistics: Eligibles and Siblings

Table A5.5 Sample Sizes and Mean Characteristics of Young Persons and Older Siblings Eligible for EMA before and after Two-way Matching, All Areas

	Unmatched	Matched (own)	Matched (any 0.7)	Matched (any 0.3)
Sample sizes				
YP pilot	4716	2427	2605	1148
Sibling pilot	4200	2427	2605	1148
YP control	2843	2427	2605	1148
Sibling control	2518	2427	2605	1148
Family background characteristics				
Family income				
YP pilot	15413	14804	14761	14203
Sibling pilot	14239	14804	14641	14328
YP control	15549	14760	15379	15080
Sibling control	14120	14760	15179	15669
Proportion whose ethnic origin is white				
YP pilot	0.902	0.884	0.892	0.895
Sibling pilot	0.852	0.884	0.883	0.875
YP control	0.919	0.883	0.905	0.899
Sibling control	0.865	0.883	0.952	0.965
Proportion where YP has attained Maths GCSE grades A-C				
YP pilot	0.39	0.346	0.352	0.341
Sibling pilot	0.314	0.346	0.349	0.349
YP control	0.398	0.345	0.343	0.321
Sibling control	0.339	0.345	0.245	0.21
Proportion in council or housing association accommodation				
YP pilot	0.305	0.316	0.324	0.345
Sibling pilot	0.342	0.316	0.327	0.337
YP control	0.256	0.334	0.322	0.329
Sibling control	0.297	0.334	0.461	0.462
Proportion whose mother is educated to A level or above				
YP pilot	0.178	0.152	0.165	0.141
Sibling pilot	0.139	0.152	0.153	0.124
YP control	0.204	0.133	0.161	0.143
Sibling control	0.158	0.133	0.159	0.156
Proportion whose father is educated to A level or above				
YP pilot	0.147	0.14	0.138	0.14
Sibling pilot	0.129	0.14	0.143	0.137
YP control	0.153	0.135	0.135	0.124
Sibling control	0.142	0.135	0.125	0.106
Proportion whose father's occupation is managerial or professional				
YP pilot	0.11	0.109	0.098	0.099
Sibling pilot	0.104	0.109	0.088	0.086
YP control	0.115	0.095	0.102	0.098
Sibling control	0.115	0.095	0.064	0.064
Proportion whose mother works full time				
YP pilot	0.26	0.25	0.253	0.248
Sibling pilot	0.218	0.25	0.231	0.219
YP control	0.275	0.235	0.243	0.25
Sibling control	0.244	0.235	0.241	0.259
Proportion whose father works full time				
YP pilot	0.414	0.413	0.403	0.382
Sibling pilot	0.37	0.413	0.405	0.403
YP control	0.434	0.41	0.423	0.417
Sibling control	0.396	0.41	0.428	0.449

Table A5.6 Sample Sizes and Mean Characteristics of Young Persons and Older Siblings Eligible for EMA before and after Two-way Matching, Urban and Rural Areas Separately.

	Urban only			Rural only		
	UNMATCHED	Matched (any 0.7)	MATCHED (any 0.3)	UNMATCHED	Matched (any 0.7)	MATCHED (any 0.3)
Sample sizes						
YP pilot	3627	2030	916	1089	575	232
Sibling pilot	3238	2030	916	962	575	232
YP control	1849	2030	916	994	575	232
Sibling control	1709	2030	916	809	575	232
Family background characteristics						
Family income						
YP pilot	15400	14519	13913	15456	15614	15348
Sibling pilot	14274	14357	13893	14124	15644	16043
YP control	15100	15343	15000	16385	15505	15399
Sibling control	13508	15423	16081	15413	14319	14042
Proportion whose ethnic origin is white						
YP pilot	0.877	0.865	0.87	0.987	0.988	0.991
Sibling pilot	0.810	0.855	0.844	0.994	0.983	0.996
YP control	0.884	0.880	0.877	0.984	0.995	0.987
Sibling control	0.807	0.947	0.964	0.989	0.970	0.97
Proportion where YP has attained Maths GCSE grades A-C						
YP pilot	0.360	0.319	0.307	0.491	0.470	0.474
Sibling pilot	0.281	0.297	0.294	0.426	0.530	0.569
YP control	0.357	0.311	0.296	0.474	0.457	0.422
Sibling control	0.307	0.200	0.159	0.407	0.405	0.409
Proportion in council or housing association accommodation						
YP pilot	0.341	0.360	0.38	0.186	0.197	0.207
Sibling pilot	0.376	0.371	0.376	0.226	0.172	0.185
YP control	0.293	0.354	0.358	0.189	0.210	0.216
Sibling control	0.324	0.520	0.516	0.241	0.252	0.246
Proportion whose mother is educated to A level or above						
YP pilot	0.156	0.137	0.116	0.251	0.261	0.241
Sibling pilot	0.114	0.141	0.106	0.221	0.195	0.194
YP control	0.175	0.142	0.121	0.257	0.230	0.228
Sibling control	0.128	0.134	0.141	0.224	0.243	0.216
Proportion whose father is educated to A level or above						
YP pilot	0.124	0.117	0.122	0.226	0.214	0.211
Sibling pilot	0.106	0.120	0.11	0.205	0.226	0.241
YP control	0.129	0.120	0.107	0.197	0.188	0.19
Sibling control	0.116	0.102	0.099	0.197	0.207	0.134
Proportion whose father's occupation is managerial or professional						
YP pilot	0.086	0.075	0.073	0.190	0.181	0.203
Sibling pilot	0.080	0.067	0.06	0.185	0.162	0.19
YP control	0.085	0.073	0.078	0.170	0.202	0.181
Sibling control	0.090	0.054	0.05	0.169	0.099	0.121
Proportion whose mother works full time						
YP pilot	0.256	0.240	0.235	0.272	0.296	0.302
Sibling pilot	0.213	0.215	0.201	0.233	0.289	0.289
YP control	0.270	0.236	0.243	0.285	0.266	0.276
Sibling control	0.233	0.219	0.247	0.266	0.322	0.306
Proportion whose father works full time						
YP pilot	0.399	0.372	0.354	0.465	0.511	0.491
Sibling pilot	0.365	0.374	0.366	0.386	0.515	0.552
YP control	0.387	0.408	0.397	0.521	0.475	0.496
Sibling control	0.342	0.411	0.437	0.511	0.490	0.496

APPENDIX A6

ESTIMATED EFFECTS OF THE EMA: REGRESSION MODEL

Table A6.1 Estimated Effects of the EMA: Regression Model

	Whole Sample			Matched Sample				
				No bonus		With retention bonus		
Group	***Effect***	***(SE)***	***Number of observations***	***Effect***	***(SE)***	***Effect***	***(SE)***	***Number of observations***
Rural Males								
Full Amount	**12.0**	3.2	310	**11.5**	5.1	**11.4**	4.5	288
Taper	**6.3**	1.7	240	**5.9**	2.7	**6.3**	2.7	226
All	**9.5**	2.6	550	**9.1**	3.9	**9.2**	3.6	514
Rural Females								
Full Amount	3.6	2.6	308	4.0	4.3	4.2	4.4	270
Taper	1.6	1.2	231	2.0	1.9	2.1	2.1	203
All	2.7	2.0	539	3.1	3.2	3.3	3.4	473
All Rural								
Full Amount	**7.8**	2.1	618	**7.9**	3.4	**7.9**	3.2	558
Taper	**4.0**	1.1	471	**4.0**	1.7	**4.3**	1.8	429
All	**6.2**	1.6	1089	**6.2**	2.6	**6.4**	2.6	987
Urban Males								
Full Amount	**7.6**	1.9	1083	**6.3**	2.5	**6.0**	2.8	1052
Taper	**4.1**	1.0	712	**3.4**	1.4	**3.3**	1.7	700
All	**6.2**	1.5	1795	**5.1**	2.0	**4.9**	2.3	1752
Urban Females								
Full Amount	**5.4**	2.0	1117	**5.3**	2.7	**5.3**	2.7	1077
Taper	**2.5**	1.0	715	**2.5**	1.3	**2.5**	1.3	696
All	**4.3**	1.6	1832	**4.2**	2.1	**4.2**	2.2	1773
All Urban								
Full Amount	**6.5**	1.4	2200	**5.8**	1.8	**5.7**	2.0	2129
Taper	**3.3**	0.7	1427	**2.9**	0.9	**2.9**	1.1	1396
All	**5.2**	1.1	3627	**4.6**	1.5	**4.6**	1.6	3525
All Males								
Full Amount	**8.5**	1.7	1393	**7.4**	2.3	**7.2**	2.5	1340
Taper	**4.7**	0.9	952	**4.0**	1.2	**4.1**	1.4	926
All	**7.0**	1.3	2345	**6.0**	1.8	**5.9**	2.0	2266
All Females								
Full Amount	**5.0**	1.7	1425	**5.0**	2.3	**5.1**	2.4	1347
Taper	**2.3**	0.8	946	**2.4**	1.1	**2.4**	1.2	899
All	**3.9**	1.3	2371	**4.0**	1.8	**4.0**	1.9	2246
All								
Full Amount	**6.8**	1.2	2818	**6.2**	1.7	**6.1**	1.7	2687
Taper	**3.5**	0.6	1898	**3.2**	0.8	**3.3**	0.9	1825
All	**5.4**	0.9	4716	**5.0**	1.3	**5.0**	1.4	4512

Note: All bootstrapped standard errors are based on 300 replications. Coefficients in bold are significant at conventional levels.

TABLE OF FIGURES