

March 2007



# National Evaluation of the Neighbourhood Nurseries Initiative: Impact Report

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*National Evaluation of the  
Neighbourhood Nurseries Initiative:  
Impact Report*

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*Ivana La Valle, Ruth Smith, Susan Purdon and Alice Bell  
National Centre for Social Research (NatCen)*

*Lorraine Dearden, Jonathan Shaw and Luke Sibieta  
Institute for Fiscal Studies (IFS)*



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## **ACKNOWLEDGEMENTS**

We would like to thank the many parents who gave up their time to participate in the research and the nurseries that helped us to compile the survey sample.

At DfES we would like to thank Teresa Downing, Emma Marshall, Sam Mason, Ganka Mueller, Rajkiran Sidhu, Jane Simmonds, Laura Sukhnandan and the members of the Advisory Group.

Within NatCen, several colleagues worked on the surveys including Nafiis Boodhumeah and John Hurn in computing, and Elaine James, Sandra Laver and other members of the Operations Department. Finally, we would like to extend our thanks to Chris Massett and her staff in the NatCen Telephone Unit and NatCen field interviewers who carried out the surveys.

THE NNI RESEARCH TEAM ( \* denotes principal investigator)

### **Implementation**

*Dept of Social Policy and Social Work, University of Oxford*  
Teresa Smith\*, Kate Coxon, Dr Maria Sigala

### **Childcare Quality and Children's Behaviour**

*Dept of Educational Studies, University of Oxford*  
Professor Kathy Sylva\*, Sandra Mathers

### **Neighbourhood change**

*Dept of Social Policy and Social Work, University of Oxford*  
George Smith\*, Dr Maria Sigala

### **Impact and economic analysis**

*National Centre for Social Research*  
Ivana La Valle\*, Susan Purdon, Ruth Smith, Alice Bell  
*Institute for Fiscal Studies*  
Professor Lorraine Dearden\*, Alissa Goodman, Jonathan Shaw, Luke Sibieta



## **EXECUTIVE SUMMARY**

As part of the National Childcare Strategy, in 2000 the government launched the Neighbourhood Nursery Initiative (NNI), which represented the first large-scale programme aimed at substantially expanding daycare provision in the 20% most deprived areas of the country. By August 2004, the programme had achieved its target of creating 45,000 new daycare places for children aged 0–4. This report provides an assessment of the impact of NNI on parental employment and take-up of formal childcare. The study is part of a large research programme commissioned by the Department for Education and Skills (DfES) to evaluate NNI. In addition to the impact assessment, the evaluation includes the NNI Implementation Study (Smith et al., 2007), the NNI Childcare Quality and Children's Behaviour Study (Mathers and Sylva, 2007) and the NNI Neighbourhood Tracking Study (Sigala and Smith, 2007). The evaluation was carried out by a consortium consisting of the University of Oxford, the Institute for Fiscal Studies (IFS) and the National Centre for Social Research (NatCen). The Impact Study was conducted by NatCen and IFS.

The Impact Study includes four components:

- an exploration of the views and experiences of parents who have used a Neighbourhood Nursery
- a formal quantitative assessment of the impact of NNI on parental employment, take-up of tax credits and use of formal childcare
- an investigation of parents' self-assessment of the impact of having gained a Neighbourhood Nursery place
- a cost–benefit analysis of the programme.

Data for the Impact Study were obtained from a range of sources, including:

- a face-to-face survey of 512 Neighbourhood Nursery users (which achieved an 80% response rate)
- a postal screen of parents with pre-school children in the 20% most deprived areas to identify the 'NNI market', i.e. work-ready parents (this survey achieved a response rate of 52%)
- a follow-up telephone survey of 2,647 work-ready parents selected from the postal screen (which achieved a response rate of 59%)
- administrative data from the Work and Pensions Longitudinal Study.

### **Parents' views and experiences**

A survey of users has provided data on the characteristics of families that took up a Neighbourhood Nursery place, and the different types of childcare they used, both before and alongside the Neighbourhood Nursery. The survey also explored parents' views on their Neighbourhood Nursery, and changes in employment and training since they started using the nursery. The survey shows the following:

- NNI seems to have been successful in reaching the most disadvantaged groups, including lone parents, some ethnic minority groups, low-income families and those with low qualification levels.
- Half of the parents had not used any (formal or informal) provision prior to using the Neighbourhood Nursery, while just a fifth had used formal care in the past.



- Sixty per cent of parents used some form of childcare alongside the Neighbourhood Nursery; in most cases, this care was provided by relatives and friends.
- A substantial proportion of these parents were using additional care during the early morning and evening, highlighting a potential need for childcare outside standard hours.
- A combination of mothers' part-time work and the reliance on additional informal care meant that most parents (64%) used Neighbourhood Nurseries on a part-time basis.
- Ninety-one per cent of parents paid for their Neighbourhood Nursery place; the mean amount paid per week was £72.71.
- Almost half of the parents interviewed were receiving the childcare element of the Working Tax Credit (WTC), and 39% said they had received some information on this from their Neighbourhood Nursery.
- There seems to be a high level of satisfaction among parents with the quality of childcare provided by Neighbourhood Nurseries.
- The proportion of parents in paid work or training rose by 18 percentage points between the month before starting to use the Neighbourhood Nursery and the time of the survey. However, the majority of parents (65%) were already in employment or training before taking up a Neighbourhood Nursery place.

### **The impact of NNI on employment, tax credits and childcare**

Obtaining robust estimates of impact for area-based initiatives with relatively low take-up (such as NNI) is always difficult, and we used three different approaches as a means of maximising our chance of providing definitive findings. The three approaches were:

- a comparison between Neighbourhood Nursery users and a 'comparable' sample of parents in areas with little or no NNI provision (i.e. 'NNI-poor' areas) who would be most likely to take up a Neighbourhood Nursery place if one were available – this provides an estimate of the **impact of NNI on users**
- a comparison between work-ready parents in areas with relatively high levels of NNI provision (i.e. 'NNI-rich' areas) and their equivalents in 'NNI-poor' areas – this gives an estimate of the **impact on work-ready parents** (with pre-school children) in the 20% most disadvantaged areas
- a comparison between parents in 'NNI-rich' areas and parents in 'NNI-poor' areas – this provides an estimate of the **impact on all parents** (with pre-school children) in the 20% most disadvantaged areas.

The three impact estimates suggest, overall, that NNI has had a positive impact on those taking up a Neighbourhood Nursery place. In particular, NNI has had a positive impact on:

- work – 20% of Neighbourhood Nursery users were in work but would not have been if the nursery had not been available
- take-up of the Working Tax Credit, and in particular its childcare element – 28% of Neighbourhood Nursery users were in receipt of the latter but would not have been claiming it without the NNI place

- take-up of formal childcare – 28% of Neighbourhood Nursery users would not have been using formal childcare if the NNI place had not been available.

However, the use of Neighbourhood Nursery places was fairly low, with just 10% of parents with pre-school children in NNI-rich areas having taken up a place. This means that, even though the impact on users is reasonably high, the impact on local parents is small, although still positive (being about one-tenth of the impact on users). For instance, measured across work-ready parents, the impact of the NNI is estimated to have increased employment by just 1.3%.

The three impact estimation approaches are reasonably consistent in the estimates of impact they produce. Our subgroup analysis is less robust, however, primarily (we believe) because of small sample sizes. Nevertheless, for employment outcomes, it appears that NNI has had most impact on families with older pre-school children, on lone parents and on parents with low qualification levels.

### **Self-reported impact of NNI**

The Neighbourhood Nursery users survey provided an opportunity to explore parents' perceptions of the impact of NNI. The findings constitute a subjective assessment of the effects of NNI, and whilst they provide an interesting insight into the effect of the initiative, they do not constitute a robust measure of impact. They do, however, correspond well with the formal impact estimates, and so provide both a validation of those findings and a better understanding of how these effects were brought about. These findings show the following:

- Over nine-tenths of parents felt that the Neighbourhood Nursery had played a role in enabling them to work.
- Twenty-two per cent thought that they would not have been able to work had they not been able to use the Neighbourhood Nursery; this figure is comparable to the estimate of impact on users mentioned above.
- Lone parents and those with low qualifications were particularly likely to report that they would not have been able to work had they not been able to use the Neighbourhood Nursery.
- Thirty per cent of working parents had changed jobs or their role at work since using the Neighbourhood Nursery and 70% of these thought that the nursery played a role in this change.
- Forty-six per cent of parents had changed their working hours since using the Neighbourhood Nursery and 78% of these thought that the nursery had enabled them to make this change.
- Other reported effects of using the Neighbourhood Nursery included feeling more confident or happier about working (42%) and having more options about work (33%); these effects were particularly likely to be reported by lone parents.
- Approximately half of parents felt that the Neighbourhood Nursery had had an impact on other aspects of their lives, including enabling them to carry out other tasks, socialise, relax, have fun or pursue leisure activities.

- Parents' well-being seems also to have been positively affected by the Neighbourhood Nursery, with 41% saying they felt less stressed, 36% less worried or anxious and 20% less tired.
- Parents' perceptions of the childcare they would have used had the Neighbourhood Nursery not been available differed considerably from the estimate of impact on users: 48% said they would not have used formal care, in contrast to the estimate of around 28% from the impact analysis; this discrepancy seems to suggest that parents overestimate the difficulty of finding (other) formal childcare.

### **Cost–benefit analysis**

As part of the Impact Study, we have compared the total economic costs of NNI with its total economic benefits, to assess whether, overall, the initiative was beneficial to society. As some guide to this, we have used the Family Resources Survey to estimate the costs and benefits of NNI from the perspective of government finances. This ignores some dimensions of costs and benefits (such as what the government does with any savings it makes from the initiative), these being beyond the scope of what can be done here. Under our estimates, if the government required a rate of return of 3.5%, then £98m and £347m would represent our estimates of the lower and upper bounds on the maximum cost of NNI to deem the project a financial success. The lower bound represents what we estimate the revenue gains to be if they last for only one year, and the upper bound is if they last for five years.

### **Conclusions**

While the results from the Impact Study provide an overall positive picture of the effects of NNI on users, some of the findings could raise questions about the effectiveness of some aspects of the programme, and in particular why only 10% of work-ready parents in disadvantaged areas used a Neighbourhood Nursery. There could be three possible reasons for this:

- NNI might not have created enough places to meet parents' needs in these areas. The evidence suggests that while it is possible that in some areas an insufficient number of places were created, particularly as a relatively high proportion of Neighbourhood Nurseries were located outside the most deprived areas, this can only partly explain the low level of Neighbourhood Nursery use in these areas.
- There might be a mismatch between what the nurseries provide (e.g. in terms of location, opening hours, cost) and what local parents need and can afford. There is some evidence to suggest that the kind of service provided by Neighbourhood Nurseries might not be adequate to meet the needs of all parents (e.g. those requiring flexible provision or childcare at atypical hours). However, cost was probably a bigger barrier to access, particularly among groups with low employment levels who could not afford daycare without an income from employment and the childcare subsidies available to working parents.
- There might be a limited need for formal childcare in the most disadvantaged areas. Reluctance to use formal care among parents with a strong disposition towards parental care and/or with a preference for informal care could partly explain the low level of use of Neighbourhood Nurseries. However, lack of adequate information about local childcare services and the subsidies available to parents could also have played a part.

Given that decisions about using (formal) childcare are affected by cultural and attitudinal factors, which might in turn be influenced by the availability of local childcare services, early results might not provide a very good indication of the overall impact of the initiative, and evidence from other research (e.g. Bell et al., 2005; Bryson et al., 2006; La Valle et al., 2000) seems to suggest that take-up is likely to increase with time. However, the current childcare funding policy (which relies heavily on demand-side subsidies available only to working parents) means that an increase in take-up of daycare will depend to a considerable extent on achieving synergy between employment/regeneration initiatives and childcare programmes. As the NNI Implementation Study results show, an increase in daycare provision is only sustainable if parents can find jobs and can therefore afford to pay for daycare (Smith et al., 2007).

Another issue to consider is whether better outreach and information strategies are needed to ensure that all parents are fully aware of the childcare services available in their local area. As this study shows, parents might be overestimating the difficulties of accessing formal childcare. Evidence from other studies (e.g. Bell et al., 2005; Bryson et al., 2006) also suggests that better information about childcare services could lead to an increase in use of formal provision, as it would enable parents to make more informed choices about childcare and work.

Finally, a relatively high proportion of Neighbourhood Nurseries (40%) were located outside the 20% most disadvantaged areas. This could raise the question of whether NNI would have had a greater impact if it had been more focused on its target locations. However, some of the evidence seems to indicate that there can be considerable benefits in locating nurseries in a mixture of more and less deprived areas. Like many other childcare providers, many Neighbourhood Nurseries faced considerable difficulties in becoming financially viable. Aiming for a diverse 'client group' in terms of socio-economic composition might be an effective way of ensuring their long-term viability, as has been highlighted by the NNI Implementation Study (Smith et al., 2007) and other research on local childcare markets (Harries et al., 2004). In addition, evidence on the impact of different childcare services on child outcomes has shown that attending a setting that is mixed in terms of the children's socio-economic backgrounds can have considerable additional benefits for children from disadvantaged groups (Sylva et al., 2004).

# 1 INTRODUCTION

This report presents the findings on the impact the Neighbourhood Nursery Initiative (NNI) has had on families. The study is part of a large research programme commissioned by the Department for Education and Skills (DfES) to evaluate NNI. In addition to the impact assessment, the evaluation includes the NNI Implementation Study (Smith et al., 2007), the NNI Childcare Quality and Children's Behaviour Study (Mathers and Sylva, 2007) and the NNI Neighbourhood Tracking Study (Sigala and Smith, 2007). The evaluation was carried out by a consortium consisting of the University of Oxford, the Institute for Fiscal Studies (IFS) and the National Centre for Social Research (NatCen). The Impact Study was conducted by NatCen and IFS.

## 1.1 Aims of the study

NNI was launched in 2000 as part of the National Childcare Strategy. It was the first large-scale government programme that aimed to substantially expand daycare provision in the 20% most deprived areas of the country. By August 2004, the programme had achieved its target of creating 45,000 new daycare places for children aged 0–4. The programme has now come to an end, with approximately half of all Neighbourhood Nurseries aiming to become Children's Centres (Smith et al., 2007).

The provision of good-quality and affordable daycare is seen by the government as playing an important role in tackling child poverty, as there is considerable evidence (e.g. Bell et al., 2005; Bryson et al., 2006; Harries et al., 2004; La Valle et al., 2000) showing that suitable childcare can help to increase parental employment among the most disadvantaged groups. Therefore key areas investigated by the Impact Study included:

- an assessment of the extent to which NNI has succeeded in making daycare more accessible, particularly among the most disadvantaged families, such as lone parents, low-income families, workless households and ethnic minority groups
- a detailed exploration of families that use Neighbourhood Nurseries to gain a better understanding of why these parents use daycare (e.g. to work or increase their employability), how much NNI and other provision they use and when, issues around cost and affordability of childcare, and their views and experiences of using a Neighbourhood Nursery
- an assessment of the impact of NNI on use of formal childcare, parental employment and take-up of benefits and tax credits among families in different circumstances.

## 1.2 Methodology

### 1.2.1 *Choosing an appropriate impact assessment design*

A key challenge for the study was how to assess the impact of a programme that was area based and available to all families with pre-school children in the locations where it was introduced, but where no robust and comprehensive information was available on Neighbourhood Nurseries' 'catchment' areas. Furthermore, the little information available at the time the design for the Impact Study was being developed strongly suggested that some nurseries were covering wide geographical areas, and the families benefiting from NNI provision appeared to be more thinly spread than initially envisaged. A very large and prohibitively expensive sample size would have been required to try to cover what could potentially have been large geographical areas. Furthermore, the lack of reliable data on

Neighbourhood Nurseries' catchment areas meant that even a very large survey might have failed to include all the areas where families using Neighbourhood Nurseries were living.

In order to deal with the above problems, it was decided to focus the Impact Study on 'the market' for NNI – that is, families that were most likely to benefit from an increase in (affordable) daycare provision and were 'work ready'. To identify the potential 'NNI market', we used evidence from previous studies on the key predictors of childcare use and parental employment (e.g. Bryson et al., 1999; Kasparova et al., 2003; La Valle et al., 2000; Woodland et al., 2002), and, through a large-scale postal screen (described in section 1.2.3) that gathered information on these predictors, we identified our research population. The variables used to identify families that were more likely to benefit from NNI were:

- parents' education and employment history
- family circumstances
- use of formal and informal childcare
- work orientation and attitudes towards non-parental care.

This evidence enabled us to identify parents who, in terms of attitudes and beliefs, were ready to use daycare and enter work, but without NNI were likely to face numerous barriers to childcare use (e.g. because of lack of adequate provision, cost). The parents excluded from the Impact Study surveys were those who were unlikely to want to use childcare because of a low orientation towards work and/or a high disposition towards parental care. We believe this 'focused' approach is justified because the key aim of NNI was to remove potential barriers to daycare use among parents who wanted to use (more) childcare, while the programme did not really aim to radically change parents' attitudes towards non-parental care and affect what might be legitimate life choices (e.g. to be a full-time parent while children are very young).

Having identified the 'NNI market', surveys of parents in NNI and comparison areas were carried out. These enabled us to carry out two types of impact assessment:

- The first is an ***impact on the 'treated'*** analysis and compares outcomes for families that have used a Neighbourhood Nursery with outcomes for families with similar characteristics (i.e. a matched group) in comparison areas.
- The second is based on an ***intention-to-treat design*** and compares outcomes between families in locations with high levels of NNI provision and comparison areas where a considerably lower level of NNI daycare was available.

The above survey analyses were complemented with analysis of administrative data from the Work and Pensions Longitudinal Study (WPLS), which includes all benefit records from the Department for Work and Pensions (DWP) and all employment (income tax) records from HM Revenue and Customs for all individuals who have claimed at least one benefit. This analysis was also based on an intention-to-treat design, but allowed us to compare (some) outcomes for *all* parents (rather than just those with a relatively high work orientation and disposition towards non-parental care) in the NNI and comparison areas. As this analysis was based on a much larger sample of families than the surveys, it has also allowed us to detect even very small effects (e.g. the effect of living in an NNI-rich area on the likelihood of being in employment – and earning enough to pay income tax – for each of the 12 months leading up to June 2005 for those who have received at least one state benefit).

Further details about the different impact assessment models, the selection of respondents for these models and the analysis of the administrative data are provided in Chapter 3.

As mentioned above, surveys of parents in NNI and comparison areas were required to assess the impact of the programme. These comprised:

- an initial postal screen which included 18,203 parents and was used to identify the potential 'NNI market'
- a follow-up telephone survey of a subsample of 2,647 parents from the postal screen who had a relatively high work orientation and disposition towards non-parental care
- a face-to-face survey of a sample of 512 parents who were using a Neighbourhood Nursery.

The three surveys are discussed in turn in Sections 1.2.3–1.2.5 (and an overview of them is included in Figure 1-1), while in the next section we first explain how 'treatment' and comparison areas were identified.

### **1.2.2 Selection of 'treatment' and comparison areas**

In order to assess the impact of NNI, we had to identify 'treatment' (i.e. NNI) and comparison areas. The former were identified as locations where the level of NNI was high and was therefore expected to have a detectable effect on families' behaviour in terms of employment and childcare decisions. The comparison areas were similar, in terms of key socio-economic indicators, to locations where NNI had been introduced, but had a considerably lower level of daycare provision and therefore could enable us to assess families' employment and childcare outcomes in the absence of NNI. The first set of areas we have labelled '**NNI-rich areas**', the second (comparison areas) '**NNI-poor areas**'.

We selected our research population from census output areas (OAs) that fell into the poorest 20% of super output areas (SOAs) based on the 'Income Deprivation Affecting Children' (IDAC) domain from the indices of deprivation of 2004. There were 33,184 most deprived OAs in England and these were split into three groups:

- '**NNI-rich areas**' fell into the 33% top areas in terms of number of NNI places per child aged 0–4 (i.e. 0.10–0.69 NNI places per child) *and* also fell into the 60% best areas in terms of distance to the nearest Neighbourhood Nursery (i.e. 0.01–1km away). These constituted our '**treatment areas**'.
- '**NNI-poor areas**' fell into the 67% bottom areas in terms of number of NNI places per child aged 0–4 (i.e. 0–0.09 NNI places per child) *and* also fell into the 40% worst areas in terms of distance to the nearest Neighbourhood Nursery (i.e. 1.052–42.146km away). These constituted our **comparison areas**.
- All other locations were classified as 'middle NNI areas' and families living in these output areas were excluded from the research population.

More detailed information about the selection of NNI-rich and NNI-poor areas is included in Appendix A.

### **1.2.3 Postal screen**

The sample for the postal screen was selected from Child Benefit (CB) records. In total, 35,000 families with children aged 6–35 months were selected. These were equally split between NNI-rich and NNI-poor areas. In the NNI-rich areas, a random stratified sample was selected, which was then matched to a sample from the NNI-poor areas. Matching variables included families' characteristics (e.g. number, age and sex of children, parents' ages), as

well as characteristics of the areas where these families lived (e.g. child poverty index, employment deprivation score, socio-economic profile of the population, level of childcare provision). A full list of the matching variables and a more detailed explanation of the sample selection procedure are included in Appendix A.

As mentioned earlier, the aim of this initial screen was to identify the potential 'NNI market' – that is, parents with a reasonably high orientation towards work and disposition towards non-parental care. The postal screen therefore collected information on:

- use of formal and informal childcare in January 2002, before NNI was introduced in these areas, and at the time of the screen (i.e. Winter 2004), and the likelihood of making regular use of different types of childcare in the following 6–12 months
- parents' employment status before NNI was introduced and at the time of the screen
- parents' attitudes towards work and non-parental care
- key socio-economic characteristics known to influence parental employment, including family structure, number and age of children, ethnicity, employment history before childbirth and educational background.

Previous surveys that had covered the topics above informed the early questionnaire development stages. The initial questions were tested in a cognitive pilot. This consisted of 21 in-depth interviews with parents, who, after completing the questionnaire, were asked very detailed questions about the clarity and meaning of the questions and answer codes. A 'standard' pilot including completed questionnaires from 289 parents was then carried out; the main aim of this was to assess the response rate and identify ways of maximising it. For example, the pilot established that including the (then) Inland Revenue's logo on the initial letter, as well as the DfES's and NatCen's, had a (small) positive impact on the response. Following the pilot, we also changed the format of the reminder letters: while in the pilot these were very similar to the initial letter, in the main screen each reminder letter looked very different and was considerably shorter than the previous one. (The postal screen questionnaire and initial and reminder letters can be found in the NNI Technical Report (Smith, forthcoming).)

In line with the procedure normally used for samples selected from CB records, parents were first sent a letter that gave them the opportunity to opt out of the study (i.e. not to receive the questionnaire and the reminders). The opt-out level was very low (198 parents, 1% of the issued sample). The postal screen remained in the field from October 2004 until January 2005, and two reminders were sent in addition to the initial questionnaire. Overall, the postal screen achieved a response of 52% (54% if parents who had moved or for whom we did not have a valid address for other reasons are excluded from the eligible sample), giving an achieved sample of 18,203 parents (the overwhelming majority of these were mothers, rather than fathers, reflecting the composition of CB recipients).

#### **1.2.4 Follow-up telephone survey**

From the 11,817 postal screen respondents who agreed to take part in further research and provided a telephone number, a subsample was selected for the follow-up telephone survey. This sample comprised parents (again mainly mothers) with a relatively high work orientation and disposition towards using non-parental care, i.e. **work-ready parents**. Again this sample was equally split between NNI-rich and NNI-poor areas. The samples from these two areas were matched according to a number of key factors known to influence parents' behaviour in relation to employment and childcare use. A more detailed explanation of this matching exercise is included in Chapter 3.



The following topics were covered in the telephone survey:

- regular use of different types of formal and informal childcare in June 2005,<sup>1</sup> including details on how much childcare families used and when, how much families paid for this provision and take-up of the childcare element of the Working Tax Credit (WTC)
- barriers to the use of childcare services (among families that had not used formal childcare), including insufficient provision in their area, cost, lack of high-quality provision and unavailability of provision when required
- a series of questions that expanded the information already obtained from the postal screen on work orientation and barriers to work among parents who were not in work before NNI was introduced
- parents' qualifications and employment status before the introduction of NNI and in June 2005
- other key socio-demographic indicators, including family structure, number and age of children, income and take-up of benefits and tax credits.

The full questionnaire can be found in the NNI Technical Report (Smith, forthcoming).

As most of the questions included in this survey had already been developed for the Neighbourhood Nursery users survey (described below), a cognitive pilot was not required to develop the telephone survey questionnaire. A 'standard' pilot of 45 parents was carried out, primarily to assess how questions that were developed for a face-to-face survey worked when administered over the telephone, but also to test the program used for the interviews (as this was a computer-assisted telephone interview (CATI) survey).

The telephone interviews (lasting an average of 25 minutes) were carried out between August and October 2005. The survey achieved a response rate of 59% (76% if the substantial number of parents for whom correct telephone numbers were not available are excluded), providing an achieved sample of 2,647 parents (1,289 in NNI-rich areas and 1,358 in NNI-poor areas).

### **1.2.5 Face-to-face survey of Neighbourhood Nursery users**

The impact-on-the-users analysis model required a sample of parents who used a Neighbourhood Nursery. While no reliable data were available on the proportion of families expected to access Neighbourhood Nurseries, it was anticipated that the proportion might be small (e.g. around 10–15%) and it seemed very unlikely that the telephone survey could produce a sufficiently large number of Neighbourhood Nursery users for this analysis (as in fact turned out to be the case). Thus a face-to-face survey of Neighbourhood Nursery users was conducted. Data from this survey have also provided detailed information on the views and experiences of Neighbourhood Nursery users.

The sample for this survey was selected from 102 Neighbourhood Nurseries included in the NNI Implementation Study (Smith et al., 2007). Eighty nurseries were initially selected to be included in the Impact Study. These nurseries were asked to give out letters to all parents asking them to indicate their willingness to take part in the study, either through an opt-out or opt-in procedure. Of these nurseries, 11 refused to take part, an additional nine missed the deadline for returning the sample information and one was no longer in operation, so in total

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<sup>1</sup> June 2005 was chosen as the 'reference period' to collect information on families' 'typical' childcare arrangements. We decided to collect retrospective information using this reference period, rather than ask about arrangements at the time of the survey, because the fieldwork was carried out between August and October 2005, and childcare arrangements might have varied considerably during this time, e.g. because of summer holidays and the start of the new school year, with some children in the sample going to school for the first time.

59 nurseries participated and returned the contact details for parents using the nursery. Participating nurseries provided the contact details of 2,176 parents; in total, 62% of parents using these nurseries agreed to participate. From the 59 nurseries and 2,176 parents, 34 nurseries and 638 parents were selected using equal probability sampling.

The following topics were covered in the users survey:

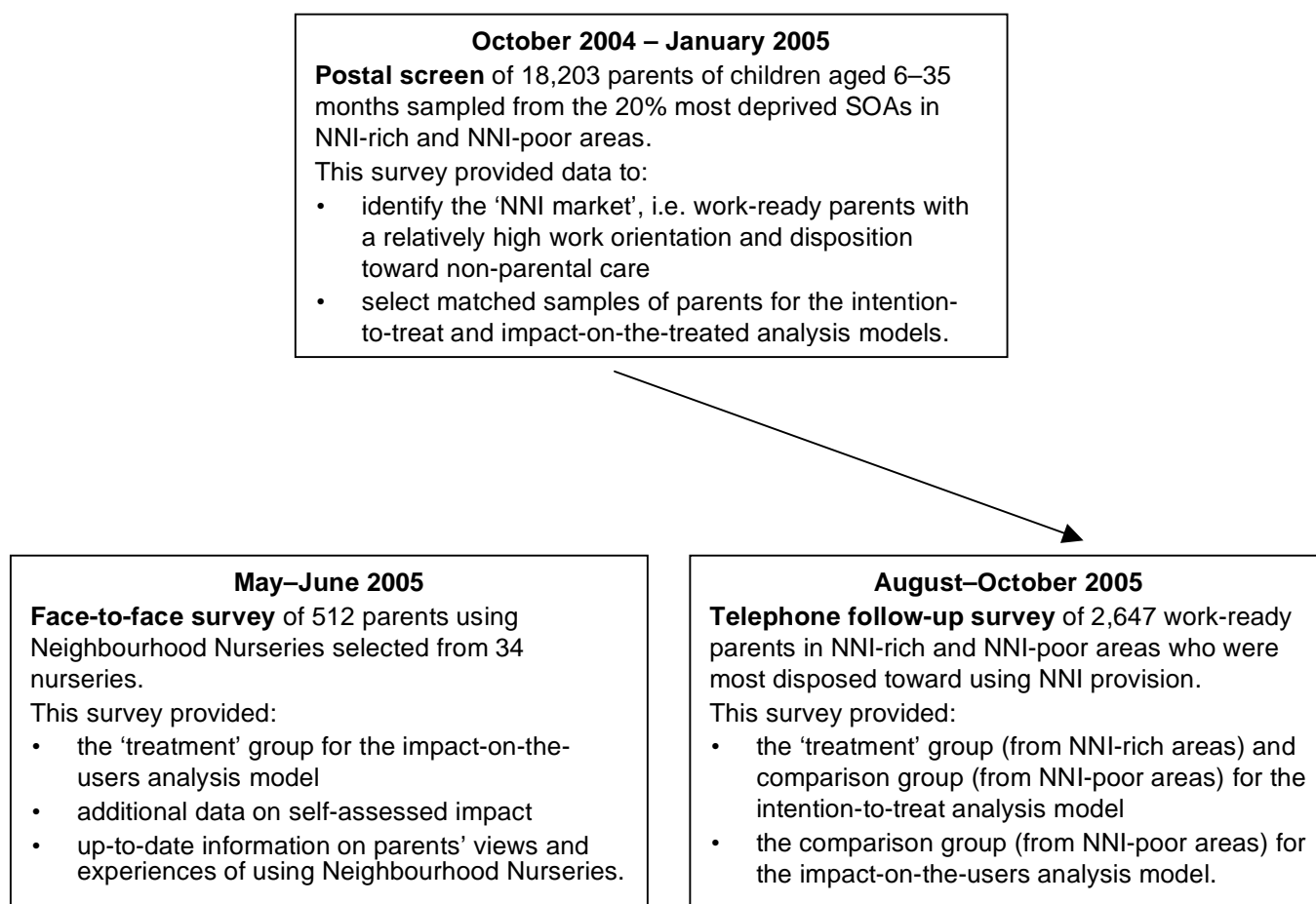
- regular use of different types of formal and informal childcare before the Neighbourhood Nursery and alongside the Neighbourhood Nursery
- how much Neighbourhood Nursery and other provision families used and when
- childcare costs, take-up of the childcare element of the WTC and other subsidies (e.g. from the employer, local authority), and concessions available from the Neighbourhood Nursery
- awareness and use of family support services available from the Neighbourhood Nursery or signposted by the nursery
- parents' experiences of using the nursery, including how long they had to wait for a place, how far they travelled to get to the nursery and their views on different aspects of the quality of the provision
- parents' perceptions of the impact the Neighbourhood Nursery had on their employment circumstances, employability and other aspects of their lives (e.g. social networks, well-being)
- a series of questions to explore work orientation and barriers to work before NNI
- parents' paid employment, training and voluntary work before and after they started using the Neighbourhood Nursery
- other key socio-demographic indicators, including family structure, number and age of children, income and take-up of benefits and tax credits.

The full questionnaire can be found in the NNI Technical Report (Smith, forthcoming).

Previous surveys that had covered the topics above informed the early questionnaire development stages. Some of the initial questions that were considered to be more 'problematic' were tested in a cognitive pilot. This consisted of 20 in-depth interviews with parents, to explore in considerable depth the clarity and meaning of the questions and answer codes. A 'standard' pilot including 30 parents was then carried out to test further the questions and the program used for the interviews (as this was a computer-assisted personal interview (CAPI) survey).

The face-to-face interviews (lasting an average of 50 minutes) were carried out in May and June 2005. The survey achieved a response rate of 80% (85% if parents who had moved or for whom we did not have a valid address for other reasons are excluded), providing a sample of 512 Neighbourhood Nursery users.

**Figure 1-1 Measuring the impact of the NNI**



### 1.3 Report outline

**Chapter 2** explores the profile, views and experiences of parents using a Neighbourhood Nursery. We consider to what extent NNI has succeeded in reaching the most disadvantaged groups and how many parents using a Neighbourhood Nursery had never used (formal) childcare before. The hours and times of Neighbourhood Nursery use are also discussed, as well as any other childcare parents used alongside the nursery. As one of the aims of the programme was to provide affordable daycare, the chapter explores in detail how much parents in different circumstances were paying for their Neighbourhood Nursery place, any difficulties they had in meeting these costs and any financial assistance they received to help them pay for childcare. Parents’ views on the accessibility of the nursery in terms of location and their assessment of the quality of provision are also discussed, as well as the availability at the Neighbourhood Nursery of a range of family support services. Finally, the chapter explores changes in employment and training since parents started using the Neighbourhood Nursery.

In **Chapter 3**, we provide an estimate of the impact of NNI in terms of use of formal childcare, parental work and the take-up of benefits and tax credits. As well as providing an aggregate measure of the impact on families with pre-school children, the chapter explores differential impacts according to family structure, child’s age and parental education level. As discussed

earlier, three different approaches to measuring impact were used: (1) a comparison between NNI users and a matched group of parents from NNI-poor areas, which provides an estimate of what would have happened to NNI users in the absence of the programme; (2) a comparison between work-ready parents in NNI-rich and NNI-poor areas, which provides an estimate of what would have happened to 'work-ready' parents in areas with NNI provision in the absence of the programme; and (3) a comparison of all parents (i.e. regardless of their work orientation or disposition towards non-parental care) in NNI-rich and NNI-poor areas, which provides an estimate of what would have happened overall to parents in areas with NNI provision in the absence of NNI. The chapter also includes a cost–benefit analysis of the initiative.

**Chapter 4** focuses on parents' perceptions of the impact that NNI had on their employment and employability, but also on other aspects of their lives. The chapter explores how parents thought their employment circumstances and childcare arrangements might have been different if the Neighbourhood Nursery had not been available. This is followed by a discussion of parents' views of any effects the nursery had on the nature of their job and their orientation to work. The effects of the Neighbourhood Nursery on parents' well-being and social life are also explored here.

In **Chapter 5**, we draw together the results from the previous chapters to provide an overall picture of the extent to which NNI has achieved its key objectives.

## 2 PARENTS' VIEWS AND EXPERIENCES

We begin this chapter in Section 2.1 by painting a brief picture of the characteristics of families that used a Neighbourhood Nursery. We then go on, in Section 2.2, to talk about their use of various forms of childcare, both before and alongside the Neighbourhood Nursery, and the hours and times of childcare use. In Section 2.3, we look at whether and how much parents were paying for childcare, any difficulties they had in meeting these costs and any financial assistance they received with their childcare costs. In Section 2.4, we explore parents' views and experiences of using a Neighbourhood Nursery and their assessments of the quality of care provided there. In the final section of the chapter, we look at changes in employment and training since parents started using the Neighbourhood Nursery.

In the course of the chapter, we will draw out any salient comparisons between the findings of the more recent survey, which was carried out in 2005, and the results of a previous survey of Neighbourhood Nursery users, conducted in 2003, during the early stages of the initiative (Bell and La Valle, 2005). This enables us to consider to what extent parents' characteristics, views and experiences have changed as the NNI has developed. It is important to note that the questionnaires used for the two surveys were not identical. In some cases, this has made comparison of the findings unfeasible; in others, it is possible to compare findings, but caution should be exercised in interpreting them – we have highlighted where such caveats apply. It should also be noted that, while the latest survey was conducted face-to-face, the previous one was administered over the telephone. This too may have contributed to differences in the data.

### Key findings

- NNI appears to have been successful in reaching the most disadvantaged groups, including lone parents, some ethnic minority groups, low-income families and those with low qualification levels.
- Half of the parents interviewed had not used any (formal or informal) provision prior to using the Neighbourhood Nursery, while just a fifth had used formal care in the past.
- Sixty per cent of parents used some form of childcare alongside the Neighbourhood Nursery; in most cases, this care was provided by relatives and friends.
- A substantial proportion of these parents were using additional care during the early morning and evening, highlighting a potential need for childcare outside standard hours.
- A combination of mothers' part-time work and the reliance on additional informal care meant that most parents (64%) used Neighbourhood Nurseries on a part-time basis.
- Ninety-one per cent of parents had paid for their Neighbourhood Nursery place; the mean amount paid per week was £72.71.
- Almost half of the parents interviewed were receiving the childcare element of the Working Tax Credit, and 39% said they had received some information on this from their Neighbourhood Nursery.
- There seems to be a high level of satisfaction among parents with the quality of childcare provided by Neighbourhood Nurseries.
- The proportion of parents in paid work or training rose by 18 percentage points between the month before starting to use the Neighbourhood Nursery and the time of interview. However, the majority of parents (65%) were already in employment or training before taking up a Neighbourhood Nursery place.

## 2.1 Is NNI reaching the most deprived families?

In this section, we paint a brief picture of the characteristics of families that use a Neighbourhood Nursery, and highlight any differences between the respondents to the latest survey and the parents interviewed in 2003 for the earlier user survey.

### 2.1.1 Family characteristics

Seventy per cent of the parents interviewed were part of a couple, while the remaining 30% were lone parents.<sup>2</sup> Almost half of the families included in the sample had only one child (48%), while over a third had two (35%) and less than a fifth had three or more children (18%).

Looking at the age distribution of children attending a Neighbourhood Nursery<sup>3</sup> (Table 2-1), we can see that the sample is almost equally split between 'under-3s' (49%) and 'over-3s' (51%), suggesting that fears that the 'early exodus' of 3-year-olds into school might threaten the sustainability of Neighbourhood Nurseries (Smith et al., 2007) might be unfounded.

**Table 2-1 Age of children attending a Neighbourhood Nursery**

	%
Under 1 year old	2.1
1 year old	19.5
2 years old	27.0
3 years old	31.8
4 years old	18.0
5 years old or over	1.6
Base	512

Base: All respondents.

The proportion of children under 1 is significantly smaller than in the previous survey (2% and 7% respectively), while the proportion of children aged 4 or over is significantly greater (20% compared with 12% in the 2003 survey). This is worth bearing in mind throughout the chapter, as the different age profile could influence parents' use of the nursery (e.g. the number of hours used), as well as their views about it.

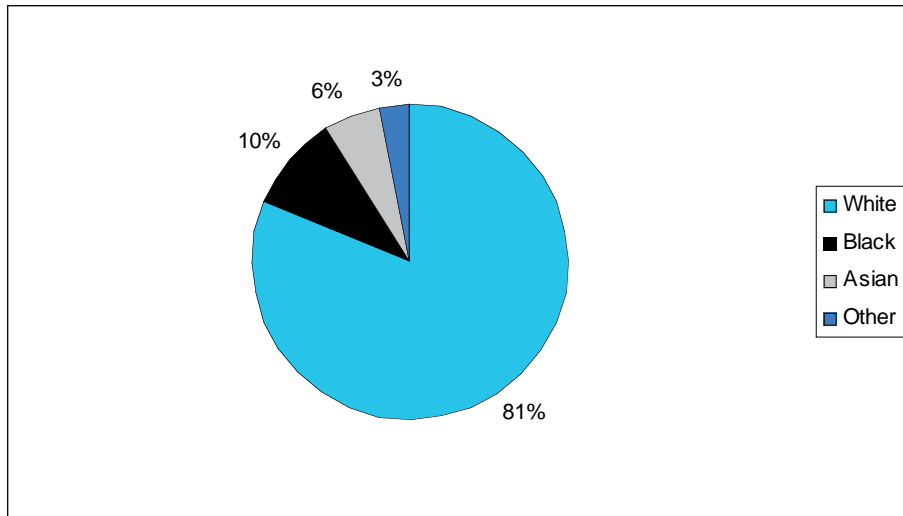
Nine per cent of parents interviewed said that their child had special educational or medical needs; this was very similar to the 8% figure found in 2003.

The proportion of white Neighbourhood Nursery users is unchanged from the 2003 survey, while the proportion of black parents is slightly smaller (10% compared with 14%) and the proportion of Asian parents slightly greater (6% compared with 2%) – see Figure 2-1.

<sup>2</sup> As indicated in Chapter 1, 96% of respondents were mothers.

<sup>3</sup> Where more than one child in the family attended the Neighbourhood Nursery, the interview focused on the youngest of these children. Where no children were currently attending the nursery, but more than one had attended since September 2004 (the cut-off date for eligibility for the interview), the interview focused on the child who had stopped attending most recently.

**Figure 2-1 Responding parent’s ethnic group**



Base: All respondents.

**2.1.2 Income and housing**

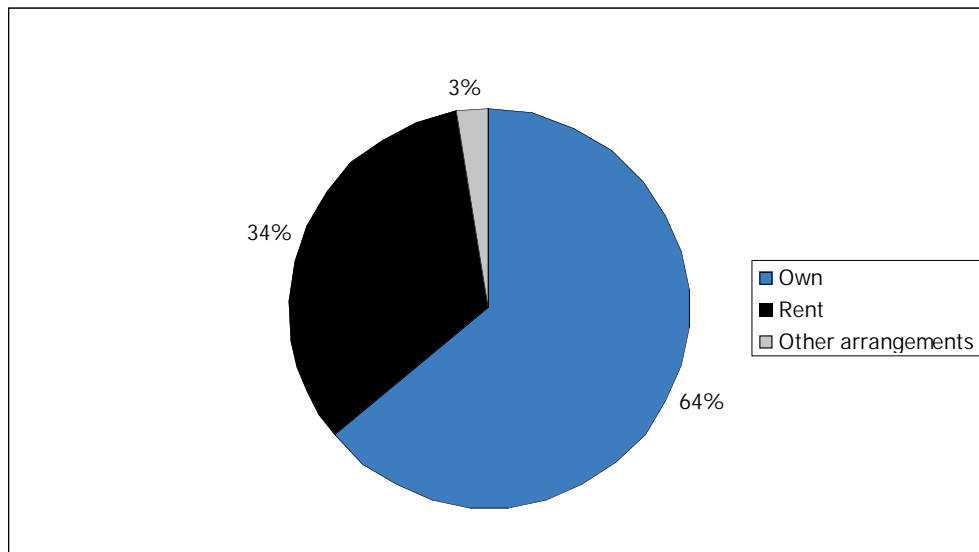
Table 2-2 shows that half the parents interviewed reported household incomes of £25,000 per annum or less, indicating that NNI has had some success in reaching the most disadvantaged families – a finding that is also supported by the fact that less than two-thirds of respondents were homeowners (Figure 2-2).

**Table 2-2 Household income**

	%
Up to £15,000	27.0
£15,001 to £25,000	23.0
£25,001 to £40,000	28.8
£40,001 or over	21.2
Base	500

Base: All respondents who gave income information.

**Figure 2-2 Housing tenure**



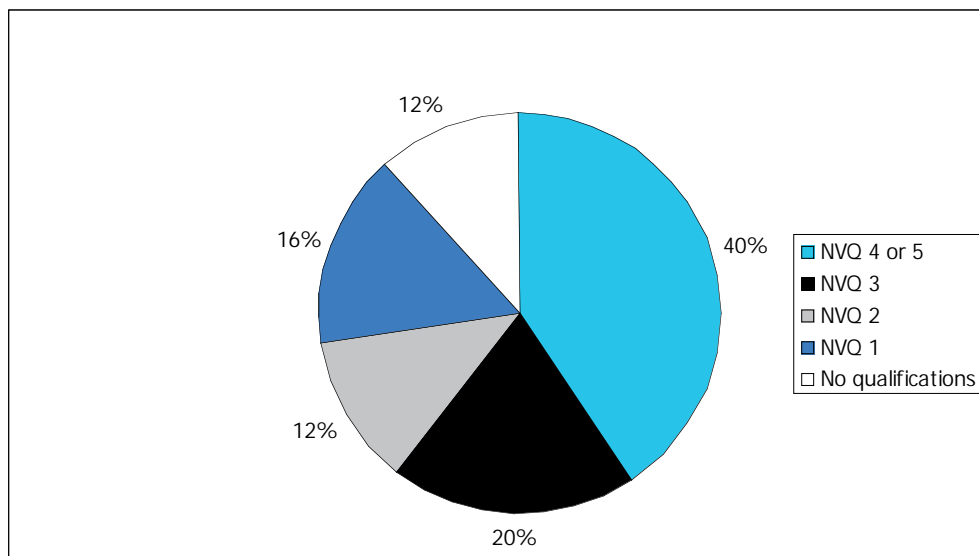
Base: All respondents.

It should be borne in mind that incomes may have been affected by the use of the Neighbourhood Nursery, e.g. if using the nursery enabled parents to enter paid employment.

### **2.1.3 Education and employment**

Figure 2-3 shows the highest qualification level of the parents interviewed as equivalent NVQ levels. A substantial proportion of parents (40%) were highly qualified (i.e. NVQ 4 or 5), while 28% had no or a very low qualification (i.e. NVQ 1).

**Figure 2-3 Responding parent's highest qualification**



Base: All respondents.

Almost three-quarters of parents said they were doing some paid work at the time of the survey (74%, including being on paid maternity or paternity leave). This finding confirms the results from the previous survey that Neighbourhood Nursery users are significantly more likely to be in work than parents of young children in general: just 44% of mothers living in the 20% most deprived areas of England, with at least one child attending formal childcare, are in



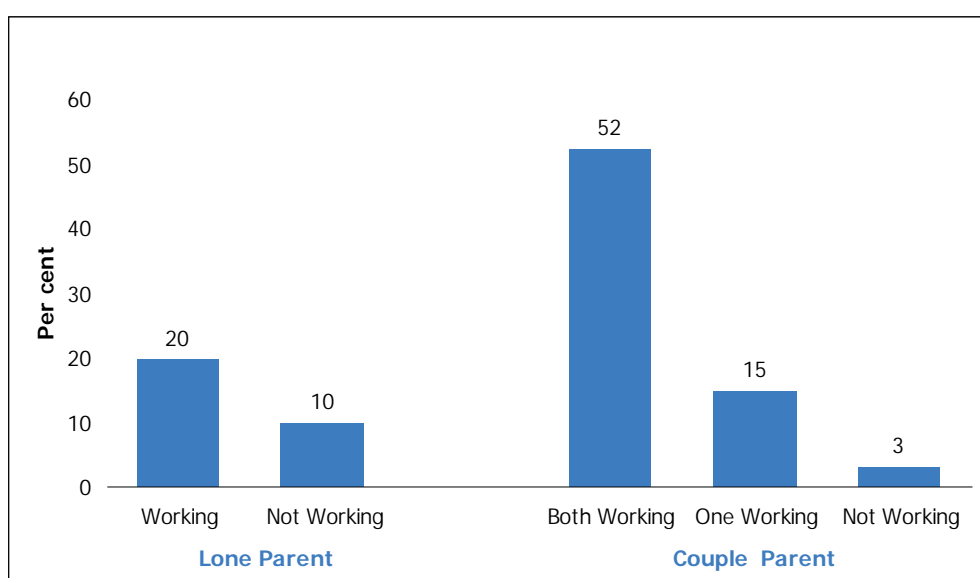
paid work (including paid maternity leave), according to the DfES Childcare and Early Years Services Survey (Bryson et al., 2006).<sup>4</sup>

Of those parents who were in employment, 56% were working full-time (30 hours or more per week) and 44% part-time.

Among parents who were not currently working, 13% said they were looking for paid work. Of those who were not currently working or looking for work, 45% thought it was very or fairly likely that they would look for paid work in the next 6–12 months.<sup>5</sup>

Figure 2-4 shows that more than half of the Neighbourhood Nursery users were partnered parents in dual-worker households (52%), while a fifth of respondents were working lone parents (20%).

**Figure 2-4 Family structure and work profile**



Base: All respondents.

Of all the lone parents interviewed, 66% worked, compared with 78% of coupled respondents. These figures are considerably higher than those for other parents with young children: according to the Childcare and Early Years Services Survey (Bryson et al., 2006), just 34% of lone mothers and 50% of coupled mothers in the 20% most deprived areas of England, with at least one child attending formal childcare, are in paid employment.<sup>6</sup>

## 2.2 Patterns of childcare use

Parents were asked about the kinds of childcare they used during the month before they started using the Neighbourhood Nursery, as well as any childcare used alongside the

<sup>4</sup> This particular finding was generated by additional analysis conducted by colleagues at NatCen and does not appear in the survey report. Note that the definition of ‘mothers’ in the Childcare and Early Years Services Survey included a very small percentage of grandmothers and female legal guardians.

<sup>5</sup> Note, however, that the base for this percentage was small (89 respondents).

<sup>6</sup> ‘Work’ included paid maternity or paternity leave in both surveys. This particular finding was generated by additional analysis conducted by colleagues at NatCen and does not appear in the survey report. Note that the definition of ‘mothers’ in the Childcare and Early Years Services Survey included a very small percentage of grandmothers and female legal guardians.

Neighbourhood Nursery during the past month.<sup>7</sup> These questions focused on childcare used ‘regularly’, i.e. at least once a week on average during the past month.

Childcare providers were categorised for analysis purposes under the headings of ‘formal’ and ‘informal’:

**Formal**

- Nursery class or nursery school
- Day nursery
- Playgroup or pre-school
- Breakfast or after-school club
- Childminder

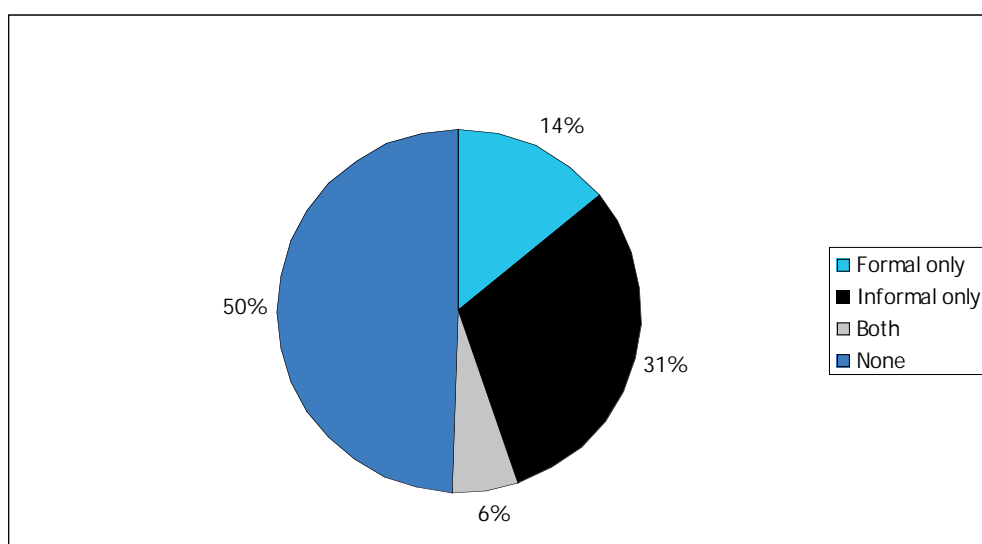
**Informal**

- Relatives or friends
- Ex-partners (at the time of use)

**2.2.1 Childcare used prior to the Neighbourhood Nursery**

Figure 2-5 shows that the Neighbourhood Nursery represented a first experience – either of childcare in general or of formal care – for a substantial proportion of the children. Only half of the parents interviewed were using (formal or informal) childcare for the selected child prior to him or her starting at the Neighbourhood Nursery (50%), while just a fifth were using some formal care (20%). It is important to bear in mind that some changes in childcare use may have resulted wholly or partly from the child growing older.

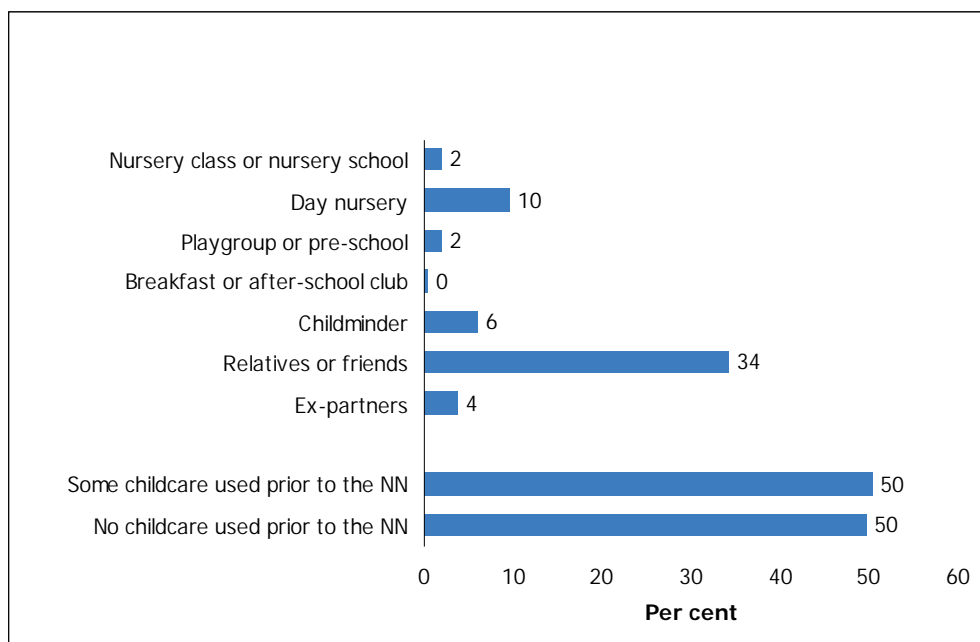
**Figure 2-5 Childcare used for selected child prior to starting at the Neighbourhood Nursery**



Base: All respondents.

<sup>7</sup> In 11% of cases, the selected child had already left the nursery (since September 2004). In these cases, respondents were asked to refer to the last month of attendance.

**Figure 2-6 Childcare used for selected child prior to starting at the Neighbourhood Nursery (detailed breakdown)**



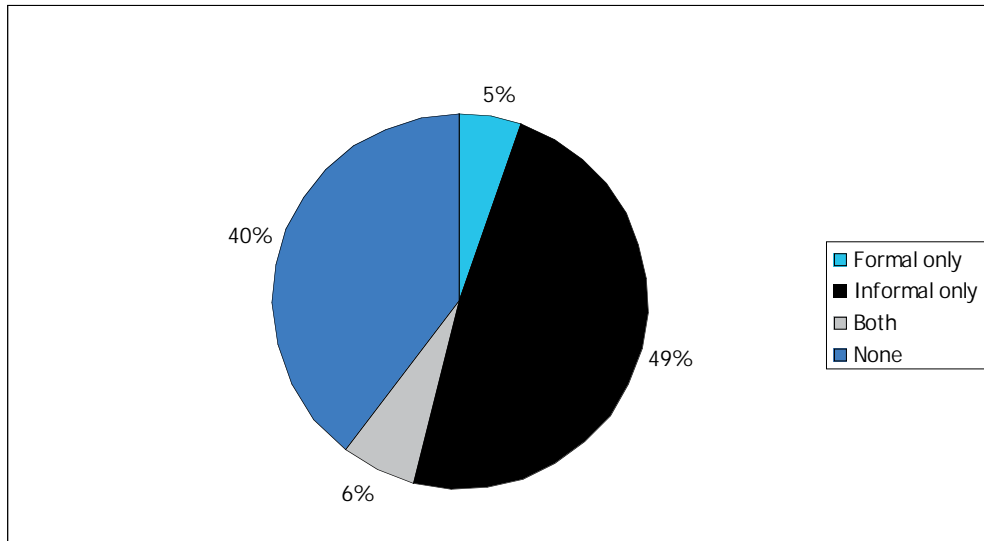
Base: All respondents.

The proportion of ‘new’ (formal or informal) childcare users (50%) was higher than in the 2003 survey of Neighbourhood Nursery users, which found that 40% of parents had not used any type of childcare prior to starting at the Neighbourhood Nursery. This change reflects mainly an increase in families that started using formal provision for the first time, either on its own or in combination with informal care: in the more recent survey, only 20% of families had used formal childcare before the Neighbourhood Nursery, compared with 34% of parents interviewed in 2003.

### **2.2.2 Childcare used alongside the Neighbourhood Nursery**

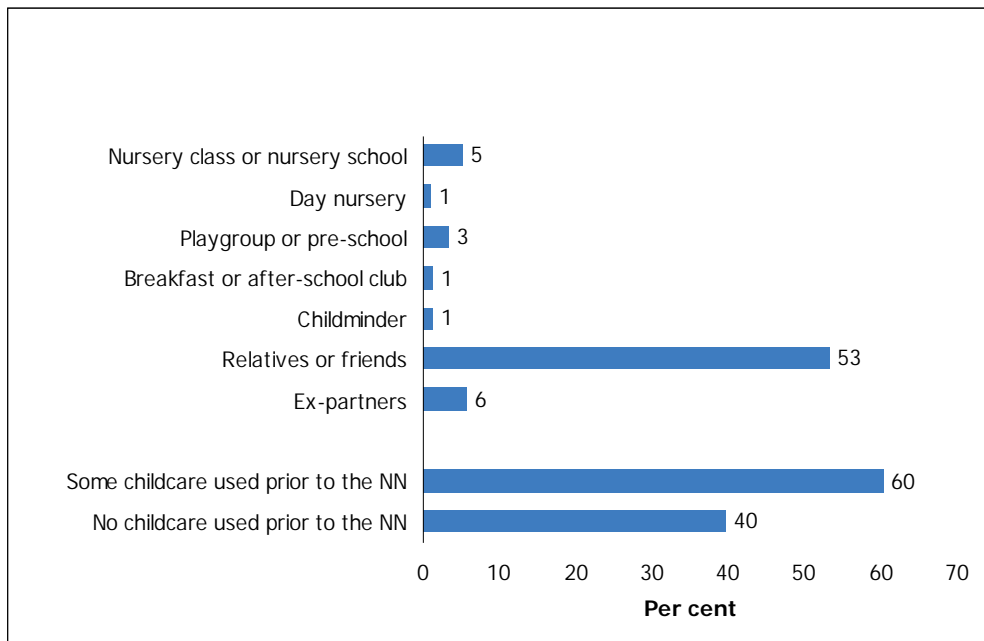
Sixty per cent of respondents reported using some form of additional (formal or informal) childcare alongside the Neighbourhood Nursery (Figure 2-7). This marks an increase of 6 percentage points compared with the previous survey, when 54% of families used some childcare in addition to the Neighbourhood Nursery. This change is almost entirely attributable to a rise in the proportion of parents using only *informal* care alongside their nursery: 49% of families included in the recent survey fell into this category, compared with 42% of 2003 respondents.

**Figure 2-7** Childcare used for selected child alongside the Neighbourhood Nursery (excluding the nursery itself)



Base: All respondents.

**Figure 2-8** Childcare used for selected child alongside the Neighbourhood Nursery (excluding the nursery itself) (detailed breakdown)



Base: All respondents.

### 2.2.3 Hours of childcare used

Table 2-3 shows that 64% of children attended their Neighbourhood Nursery on a part-time basis (i.e. 25 or fewer hours per week), while 25% attended for 12.5 or fewer hours per week. The mean number of hours was 22 per week, reflecting the finding of the NNI Implementation Study that the mean hours of weekly attendance reported by nurseries were 23 (Smith et al., 2007).

**Table 2-3 Usual weekly hours of Neighbourhood Nursery and total childcare use during the last month**

	<i>Neighbourhood Nursery</i> %	<i>All childcare (including the NN)</i> %
12.5 or fewer	24.6	9.9
13 to 25	39.7	31.9
25.5 to 37.5	21.4	29.8
38 or more	14.3	28.4
Mean number of hours used	22.4	29.6
Median number of hours used	20.0	28.0
Base	509	504

Base (Neighbourhood Nursery): All respondents who gave valid NN hours information.

Base (All childcare): All respondents who gave valid NN and other childcare hours information.<sup>8</sup>

Even when looking at the total number of hours of childcare used by families (i.e. including any other formal and informal care used alongside the Neighbourhood Nursery), it is notable that 42% of parents still use 'part-time' childcare. This is likely to reflect parents' (and particularly mothers') part-time working patterns.

Predictably, Table 2-4 shows that working parents were using both their Neighbourhood Nursery and other (formal and informal) childcare for a greater number of hours per week than their non-working counterparts.

**Table 2-4 Usual weekly hours of Neighbourhood Nursery and total childcare use during the last month, by whether parent working**

	<i>Neighbourhood Nursery</i>		<i>All childcare (including the NN)</i>	
	<i>Working</i> %	<i>Non-working</i> %	<i>Working</i> %	<i>Non-working</i> %
12.5 or fewer	16.4	47.7	4.0	27.6
13 to 25	40.8	36.4	28.4	42.5
25.5 to 37.5	24.4	12.9	33.7	18.1
38 or more	18.3	3.0	34.0	11.8
Mean number of hours used	24.9	15.1	32.1	22.2
Base	377	132	377	127

Base (Neighbourhood Nursery): All respondents who gave valid NN hours information.

Base (All childcare): All respondents who gave valid NN and other childcare hours information.<sup>9</sup>

Eighty-two per cent of parents felt that the amount of time their child spent in childcare was 'about right'. This marked an increase of 10 percentage points on the previous survey, which may reflect the older age profile of the children included in the more recent survey. Parents who were using some additional childcare alongside the Neighbourhood Nursery were also asked how they felt about the amount of time their child spent at the Neighbourhood Nursery specifically, and 78% said they thought this was 'about right'. This seems to suggest that, in most cases, use of additional childcare does not necessarily indicate unmet demand for Neighbourhood Nursery care.

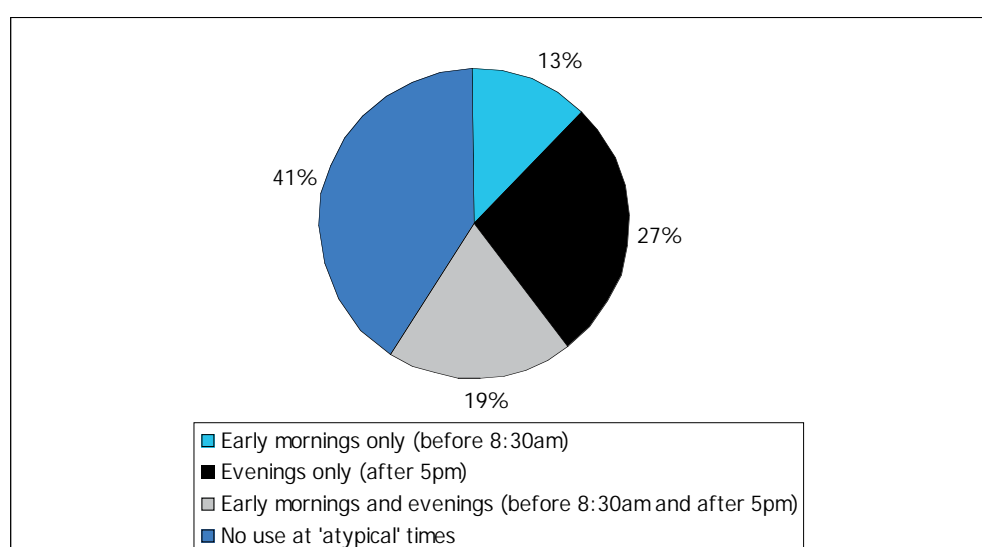
<sup>8</sup> A small number of respondents did not give information on their hours of Neighbourhood Nursery or other childcare use, or gave information that was considered to be outside a valid range; these respondents are therefore excluded from this analysis.

<sup>9</sup> A small number of respondents did not give information on their hours of Neighbourhood Nursery or other childcare use, or gave information that was considered to be outside a valid range; these respondents are therefore excluded from this analysis.

## 2.2.4 Times at which childcare is used

As research has shown that many parents work at 'atypical times' and that families with these working hours are more likely than other (working) parents to use formal childcare (Bryson et al., 2006), the survey explored the use of Neighbourhood Nurseries at atypical times. Figure 2-9 shows that 59% of the parents interviewed had regularly used their Neighbourhood Nursery at atypical times during the last month. The proportion of parents using a Neighbourhood Nursery in the evenings (i.e. after 5pm) reflects almost exactly the monitoring data collected from nurseries as part of the NNI Implementation Study (Smith et al., 2007). At 56%, the figure for early-morning use provided by Neighbourhood Nurseries is somewhat higher than that provided by parents (31%), but this is likely largely to reflect the fact that 'early-morning use' was defined as before 9am in the NNI Implementation Study, while in the parents survey it was defined as before 8:30am.

**Figure 2-9 Regular use of Neighbourhood Nurseries at 'atypical times' on weekdays during the last month**



Base: All respondents.

Since the 2003 survey, there has been a significant increase in the proportion of parents using the Neighbourhood Nursery both in the early morning and in the evening (from 13% to 19%) and a non-significant increase in evening-only use (from 22% to 27%). There was a significant decrease in the proportion using the Neighbourhood Nursery during early mornings only (from 20% to 13%).

As in the previous survey, only a very small proportion of parents reported regularly using their Neighbourhood Nursery at weekends during the last month (just 1%). This again echoed the findings of the NNI Implementation Study, which has shown that provision at atypical hours is rare (Smith et al., 2007).

Parents who reported using additional childcare alongside the Neighbourhood Nursery in the last month were asked whether they had used this before and/or after the Neighbourhood Nursery. Table 2-5 shows that just under a quarter of parents said that their child had regularly received some childcare before starting at the Neighbourhood Nursery (24%), compared with more than a third (35%) who received some additional provision after finishing there. Relatives and friends were clearly the primary source of 'wraparound' care, while ex-partners were significantly more likely to be providing care after the Neighbourhood Nursery: 5% of respondents reported this, compared with 2% who said an ex-partner cared for the child before the nursery day began.

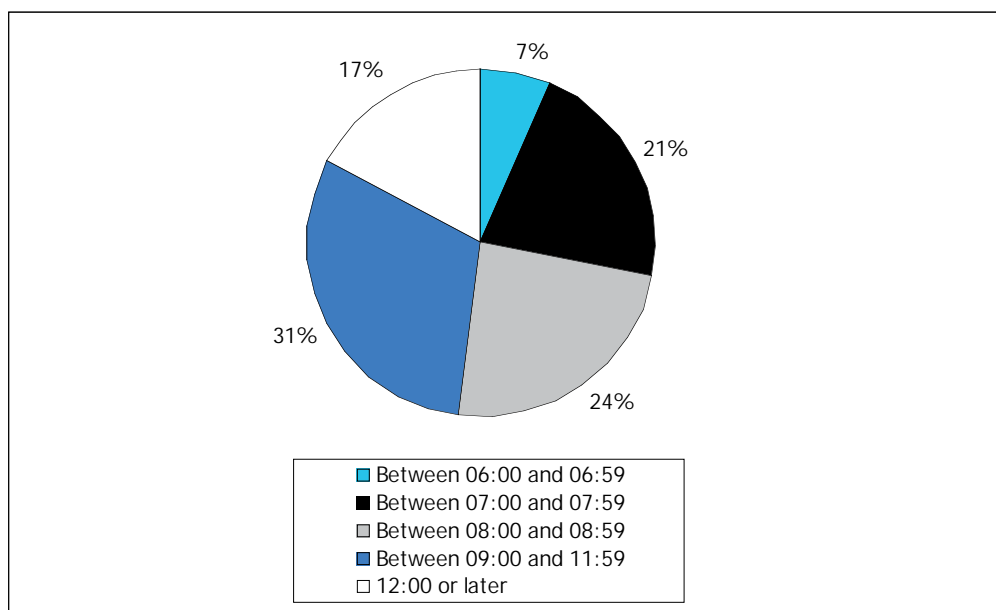
**Table 2-5 Types of childcare used regularly before and after the Neighbourhood Nursery**

	<i>Before</i> %	<i>Afterwards</i> %
Nursery class or nursery school	3.9	2.9
Day nursery	0.6	0.6
Playgroup or pre-school	0.6	-
Breakfast or after-school club	0.6	1.9
Childminder	1.0	0.3
Relatives or friends	18.1	28.2
Ex-partners	1.9	4.9
Some childcare used	24.3	35.0
No childcare used	75.7	65.0
Base	309	309

Base: All respondents who used some additional childcare alongside the Neighbourhood Nursery.

Detailed information was collected on the actual times parents used additional childcare.<sup>10</sup> Figure 2-10 shows that 28% of parents who used additional childcare before the Neighbourhood Nursery were doing so before 8am, while just under a quarter (23%) of those who used other provision once their child had finished at the nursery were doing so after 7pm (Figure 2-11). These findings indicate that a substantial proportion of families that use Neighbourhood Nurseries use childcare provision at times when most formal childcare services (including Neighbourhood Nurseries) are not available.

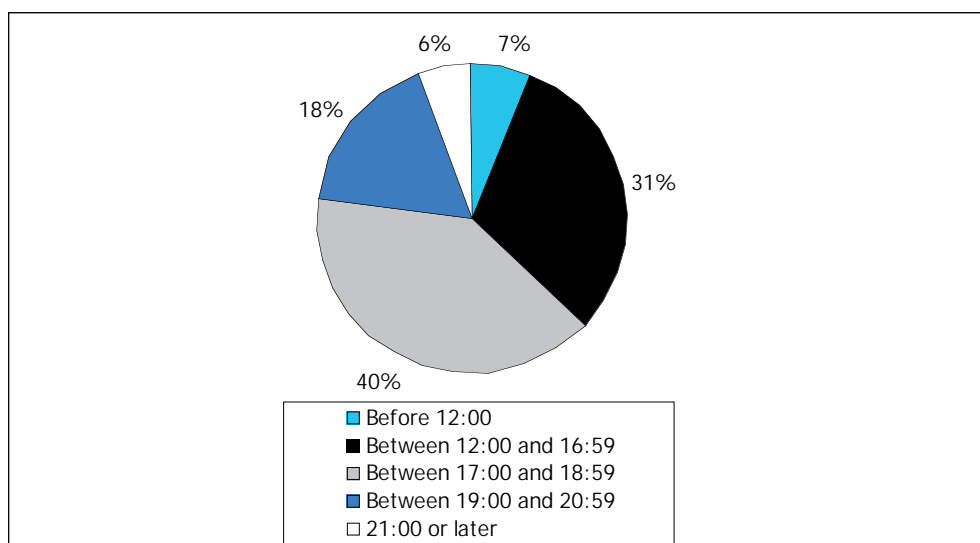
**Figure 2-10 Start times of childcare used regularly before the Neighbourhood Nursery**



Base: All respondents who used some additional childcare before the Neighbourhood Nursery.

<sup>10</sup> If start or end times varied on different days of the week, respondents were asked to give the earliest and latest times respectively. Data on the times at which additional childcare was used are not comparable with the previous telephone survey.

**Figure 2-11 End times of childcare used regularly after the Neighbourhood Nursery**



Base: All respondents who used some additional childcare after the Neighbourhood Nursery.

Forty per cent of families that used some additional childcare alongside the Neighbourhood Nursery did so at weekends; 81% of these used relatives or friends. This could again indicate potential need for formal childcare outside standard hours, although it is not possible to tell from these data what proportion of weekend informal care was used out of choice (e.g. children visiting grandparents).

### 2.3 Childcare costs and funding

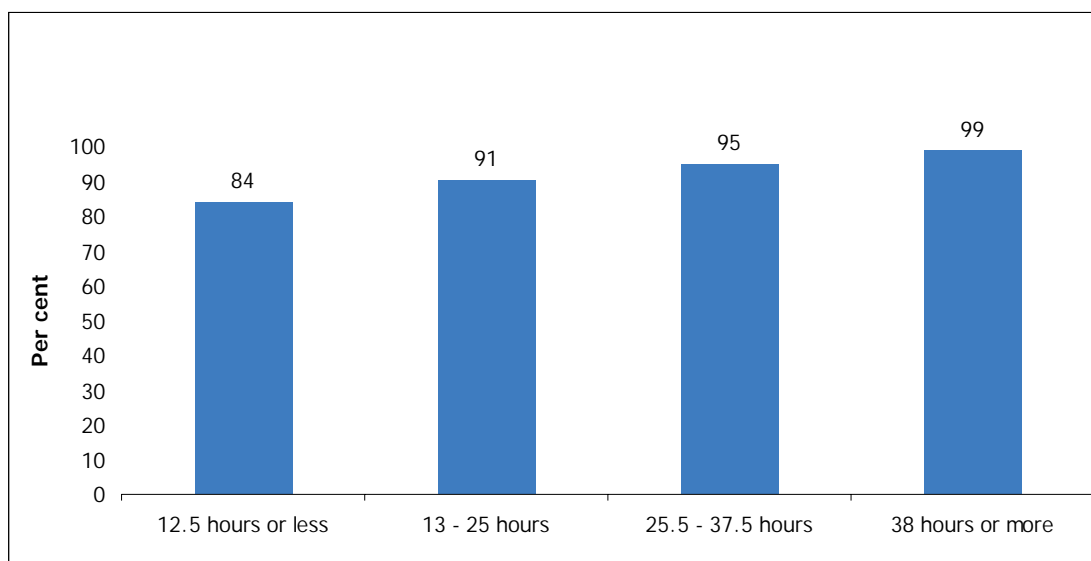
Ninety-one per cent of parents paid for their Neighbourhood Nursery place, to cover fees and/or other costs such as meals, refreshments, transport and use of equipment. This marked an increase of 7 percentage points on the previous survey, which could reflect the growing pressure on Neighbourhood Nurseries to become financially viable, as their three-year start-up grant comes to an end (Smith et al., 2007). Parents who were in paid work were significantly more likely than others to have paid for their Neighbourhood Nursery place (96% and 74% respectively). Families with a household income of £15,000 a year or less were less likely than more affluent families to have paid (81%, compared with between 92% and 96% in the higher income groups).

More than half of the parents interviewed (52%) said that, during the last month, they had been required to pay for a full session of Neighbourhood Nursery care when they had only used part of it. This could, again, reflect a tension between flexibility and financial sustainability, which had led some of the nurseries researched for the NNI Implementation Study to consider abandoning or limiting the provision of part-time places (Smith et al., 2007).

Figure 2-12 shows a clear relationship between number of hours of Neighbourhood Nursery use and whether or not the parent paid for this provision. It is clear that families using a greater number of hours were more likely to pay for it.



**Figure 2-12 Whether parent paid for Neighbourhood Nursery provision, by hours of Neighbourhood Nursery used in the last week**

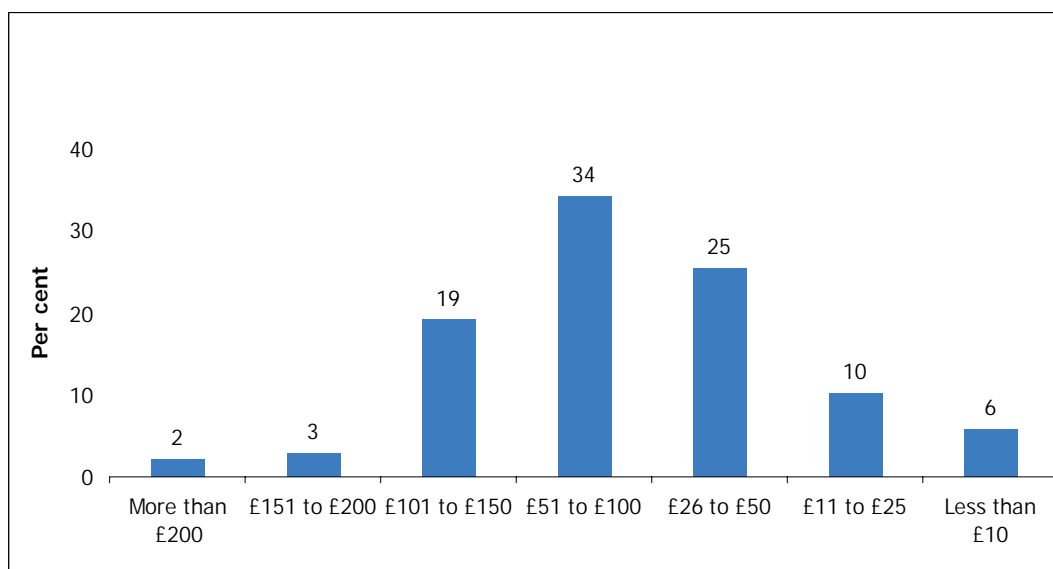


Base: All respondents who did not use additional childcare, or who used some additional childcare and said they had paid for at least one childcare provider in the last month, and who gave valid Neighbourhood Nursery hours information.

### 2.3.1 Weekly amounts paid

The mean amount paid for a Neighbourhood Nursery place in 2005 was £72.71, which is not significantly different from the 2003 survey figure of £70.89, although there was a decrease in the proportion of parents paying £25 or less per week, from 22% to 16% (Figure 2-13).

**Figure 2-13 Amount paid per week on average to Neighbourhood Nursery**



Base: All respondents who paid for their Neighbourhood Nursery place and gave information on the amount paid per week.

Lone parents were likely to pay more than partnered parents for their Neighbourhood Nursery place (with respective means of £78.27 and £69.66), in spite of the fact that there was no

significant difference between the number of hours of Neighbourhood Nursery care used by the two groups (with the respective mean hours being 24 and 21).

Table 2-6 shows that parents in paid work were paying more for their Neighbourhood Nursery provision than non-working parents, which partly reflects the earlier finding that working parents were using more hours of Neighbourhood Nursery provision than their non-working counterparts. However, the findings on amounts paid should be interpreted with a degree of caution owing to the small sample of parents not in work.

**Table 2-6 Amount paid per week on average to Neighbourhood Nursery, by whether parent in paid work**

	<i>In paid work (including paid maternity/paternity leave)</i>	<i>Not in paid work</i>
	%	%
Less than £10	2.3	[22.4]
£11 to £25	7.2	[23.7]
£26 to £50	22.9	[36.8]
£51 to £100	40.6	[5.3]
£101 to £150	21.7	[7.9]
£151 to £200	3.5	-
More than £200	1.7	[3.9]
Mean	£79.06	[£43.91]
Median	£75.00	[£30.00]
Base	345	76

Base: All respondents who paid for their Neighbourhood Nursery place and gave information on the amount paid per week.

Note: Square brackets are used where the base is less than 100.

Overall, Table 2-7 indicates a positive correlation between household income and the amount paid for Neighbourhood Nursery care. This again is likely to reflect the fact that working parents use more hours of Neighbourhood Nursery care.

**Table 2-7 Amount paid per week on average to Neighbourhood Nursery, by household income**

	<i>£15,000 or less</i>	<i>£15,001–£25,000</i>	<i>£25,001–£40,000</i>	<i>£40,001 or more</i>
	%	%	%	%
Less than £10	[16.9]	[4.4]	3.0	[1.0]
£11 to £25	[11.2]	[10.0]	10.4	[7.2]
£26 to £50	[23.6]	[25.6]	31.9	[19.6]
£51 to £100	[29.2]	[32.2]	34.1	[42.3]
£101 to £150	[15.7]	[21.1]	16.3	[23.7]
£151 to £200	[2.2]	[4.4]	2.2	[3.1]
More than £200	[1.1]	[2.2]	2.2	[3.1]
Mean	[£60.52]	[£76.62]	£70.47	[£84.97]
Median	[£50.00]	[£76.00]	£60.00	[£72.00]
Base	89	90	135	97

Base: All respondents who paid for their Neighbourhood Nursery place and gave information on the amount paid per week and on their household income.

Note: Square brackets are used where the base is less than 100.

### 2.3.2 Help with the costs of childcare

Just over a third (34%) of parents who used paid childcare said that they found it difficult to pay for it. This marked a decrease of 10 percentage points on the 2003 survey (44%). While the previous survey found that lone parents were considerably more likely than partnered mothers to have such difficulties (54% compared with 40%), there were no significant differences this time round, with 35% of lone parents and 33% of two-parent families reporting difficulties in meeting their childcare costs. Similarly, while the previous survey showed a clear link between difficulties paying and low household incomes, the more recent survey did not. Neither survey showed a correlation with parents' working status.

Table 2-8 shows the proportion of parents who reported various kinds of financial help as available from their Neighbourhood Nursery. The most commonly available form of help was allowing families to pay in arrears (38%), while between a fifth and a quarter of parents reported free or reduced fees for low-income/non-working families, permanently or for a trial period, or a reduced fee for more than one child. Free places or reduced fees for parents during a period of change, such as a family break-up or moving into a new area, were the least likely concession to be reported (5%). It is interesting to note that a high proportion of parents (between 30% and 61%) did not know whether different types of financial help were available at their Neighbourhood Nursery.

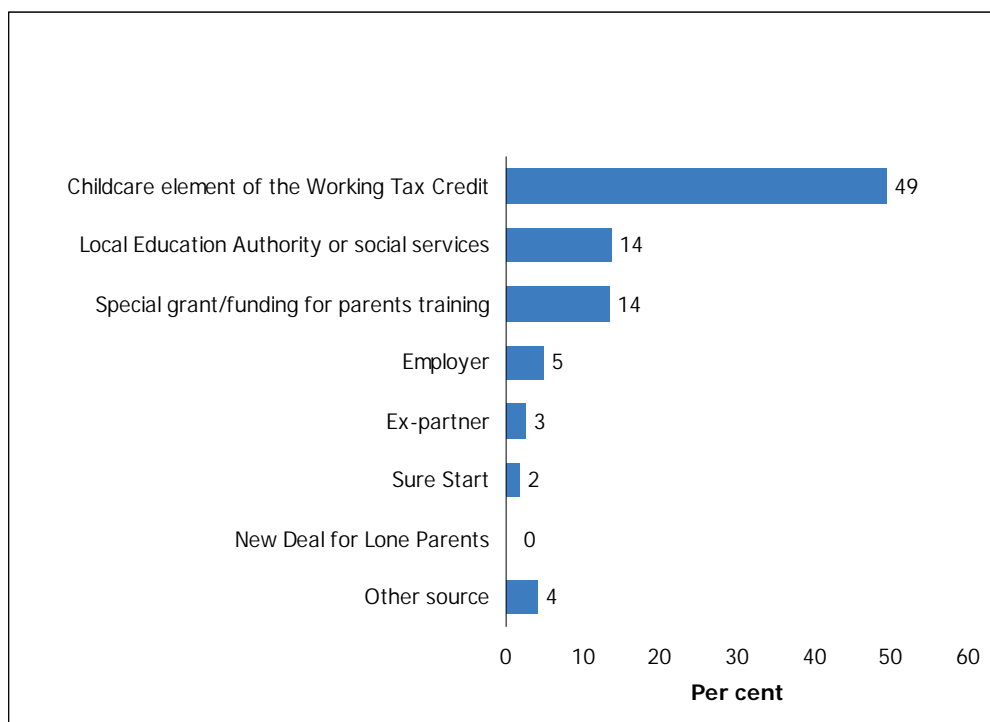
**Table 2-8 Financial help offered by Neighbourhood Nurseries**

	<i>Free/reduced places for low-income/non-working families</i>	<i>Free/reduced places for 'trial' or 'taster' period</i>	<i>Reduced fee for more than one child</i>	<i>Free/reduced places during period of change</i>	<i>Parents allowed to pay in arrears</i>
	%	%	%	%	%
Available and received	8.8	19.7	7.4	2.0	27.7
Available but not received	14.5	3.1	17.6	3.3	10.2
Not available	26.0	46.9	22.7	33.8	29.9
Don't know	50.8	30.3	52.3	60.9	32.2
Base	512	512	512	512	512

Base: All respondents.

As well as financial assistance from the Neighbourhood Nursery, the survey explored access to other sources of help. As shown in Figure 2-14, by far the most common source of financial help was the childcare element of the Working Tax Credit received by almost half of the parents (49%). This figure was not significantly different from that in the 2003 survey. Moreover, it is worth noting that the proportion of lone parents receiving the childcare element of WTC did not change significantly between the two surveys, suggesting that the earlier finding that lone parents are no longer more likely to report difficulties paying for childcare cannot be explained by increased take-up of this form of support.

**Figure 2-14 Financial help from other sources**



Base: All respondents who paid for childcare.

All parents were asked whether they had ever received any information about the childcare element of the Working Tax Credit from their Neighbourhood Nursery, and 39% said they had, an increase of 6 percentage points compared with the 2003 survey.<sup>11</sup>

## **2.4 Views and experiences of Neighbourhood Nurseries**

The survey explored a number of aspects of parents' views and experiences of Neighbourhood Nurseries, including: whether and how long families had to wait for their Neighbourhood Nursery place; how far parents had to travel to get to their nursery; whether the nursery offered other family services; and parents' assessment of the quality of their nursery provision.

### **2.4.1 Waiting for a place**

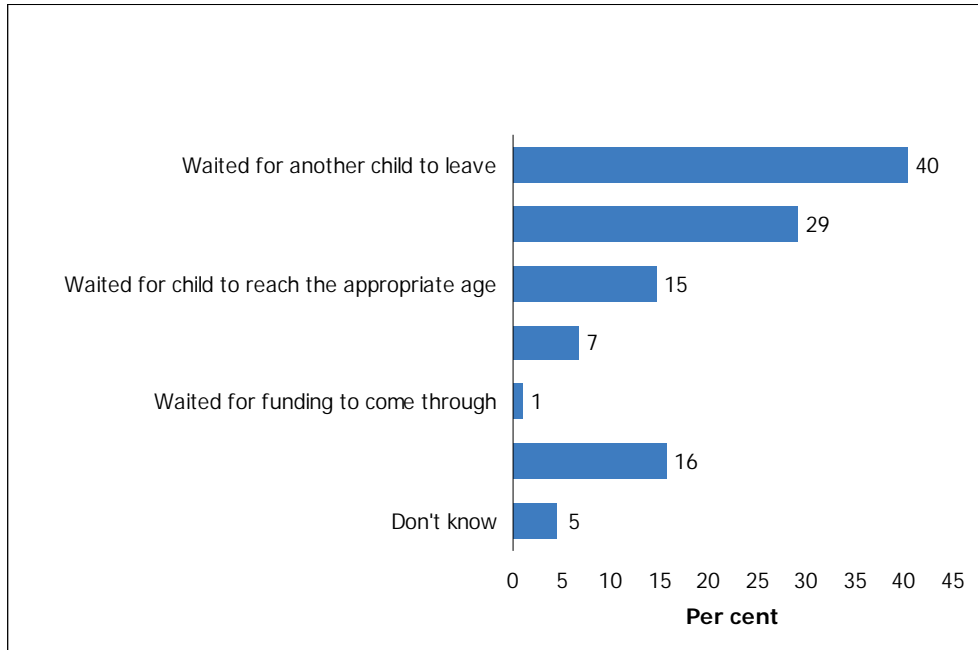
Seventeen per cent of parents said they had waited for a Neighbourhood Nursery place to become available. This marked a 5-percentage-point decrease since the 2003 survey (22%). Of those parents who had been required to wait, more than half had waited up to five weeks (51%), again a marked improvement on the previous survey (39%).<sup>12</sup> Ten per cent had waited longer than 20 weeks, compared with 21% in the previous survey. These findings are likely to reflect the increased provision of Neighbourhood Nursery places, as the

<sup>11</sup> There was a slight difference in the way the relevant question was asked between the two surveys. In the 2003 survey, the respondent was first asked whether or not they had received this information from the Neighbourhood Nursery, and if they said 'yes', they were asked about a range of possible ways in which they may have received it (in a letter, on a noticeboard, etc.) In the 2005 survey, which was carried out face-to-face, they were given a card showing this list of methods of communication before the initial question was asked. This may have had a minor effect on response to the initial question.

<sup>12</sup> Findings regarding parents who had waited for a Neighbourhood Nursery place should be interpreted with some caution due to the small number of respondents who had done so (89).

government's target of 45,000 new places had been achieved over a year before the time of the 2005 survey.

**Figure 2-15 Reasons why some parents had to wait for a Neighbourhood Nursery place**

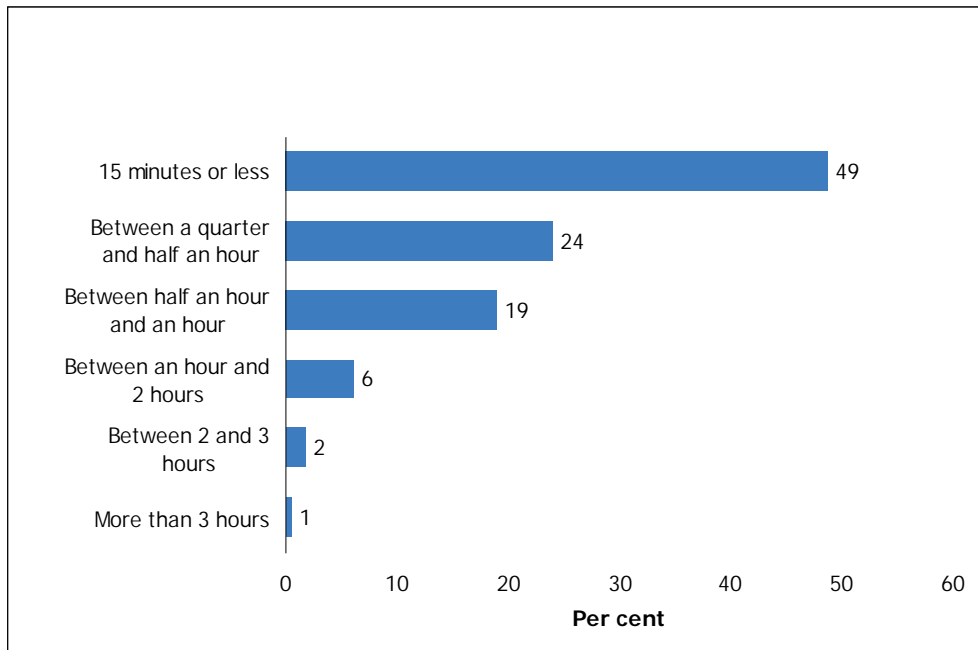


Base: All respondents who had had to wait for a Neighbourhood Nursery place.

#### **2.4.2 Travelling to the Neighbourhood Nursery**

Figure 2-16 shows that almost half of parents estimated that it took 15 minutes or less to walk to their Neighbourhood Nursery (49%), while almost three-quarters said it would take no longer than half an hour (73%).

**Figure 2-16 Estimate of time it would take to walk to the Neighbourhood Nursery**



Base: All respondents who estimated the time it would take to walk to their Neighbourhood Nursery.

Table 2-9 clearly shows that, as we would expect, parents who lived closer to their Neighbourhood Nurseries were less likely to report difficulties with travelling there.

**Table 2-9 Ease of travelling to the Neighbourhood Nursery, by estimated time it would take to walk there**

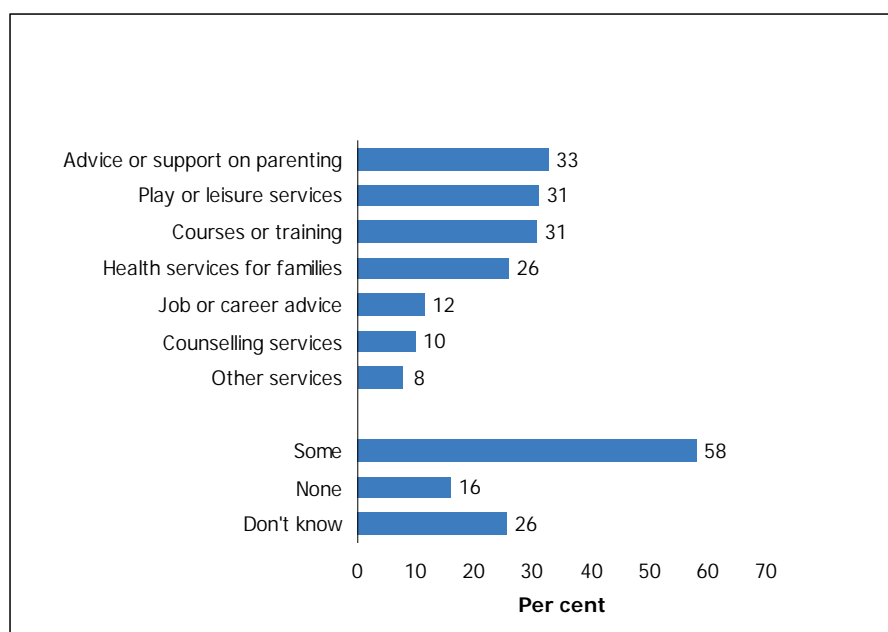
	<i>15 minutes or less</i>	<i>Between a quarter and half an hour</i>	<i>More than half an hour</i>
	%	%	%
Easy	98.8	92.5	83.9
Difficult	1.2	7.5	13.9
Neither	-	-	2.2
Base	244	120	137

Base: All respondents who estimated the time it would take to walk to their Neighbourhood Nursery.

### 2.4.3 Family services

Fifty-eight per cent of parents said that at least one type of the family services listed in Figure 2-17 was available at their Neighbourhood Nursery, or in the same building or centre. For each of parenting advice or support, play or leisure services, and courses or training, just under a third mentioned them, while over a quarter reported the availability of health services. However, more than a quarter of parents (26%) did not know whether any of these additional services for families were offered at the Neighbourhood Nursery.

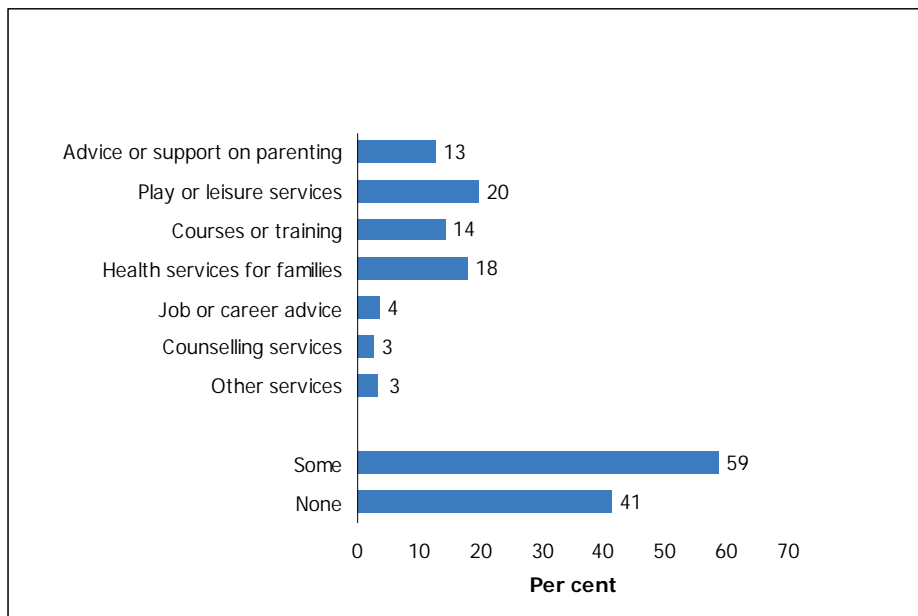
**Figure 2-17 Family services available at the Neighbourhood Nursery, or in the same building or centre**



Base: All respondents.

Of those parents who knew about the availability of additional services, 59% had used at least one of these services (Figure 2-18). Parents were most likely to have used play or leisure services (20%), health services (18%), courses or training (14%) and parenting support (13%). These results largely reflect the findings from the NNI Implementation Study, which found that these (with the exception of play or leisure services) were among the additional services most likely to be offered by Neighbourhood Nurseries (Smith et al., 2007).

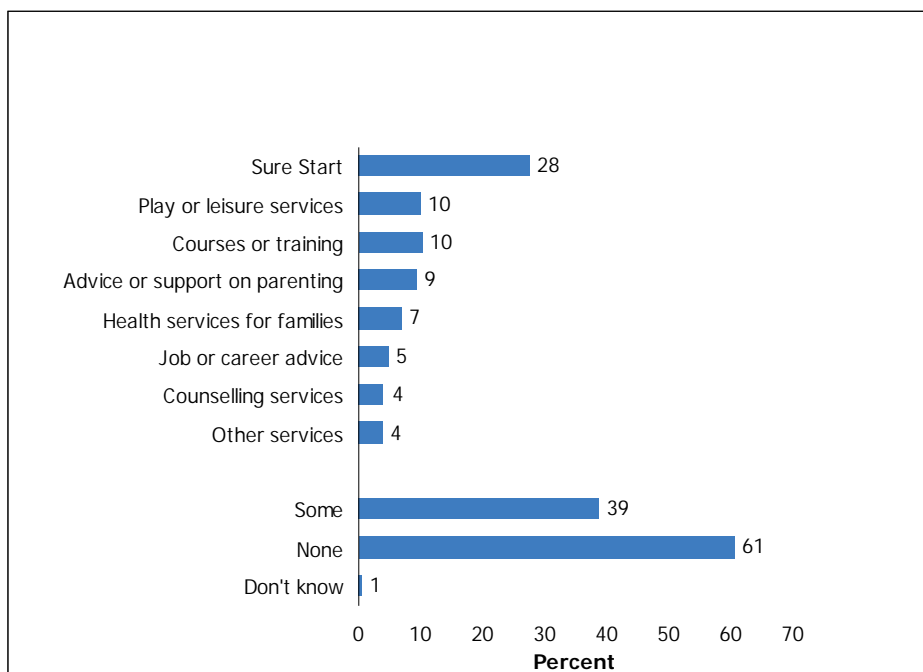
**Figure 2-18 Use of family services available at the Neighbourhood Nursery, or in the same building or centre**



Base: All respondents who knew of at least one additional service available at the Neighbourhood Nursery, or in the same building or centre.

Thirty-nine per cent of parents said that their Neighbourhood Nursery had given them some information about family services available elsewhere (Figure 2-19). By far the greatest proportion said that the nursery had told them about Sure Start (28%), while for play or leisure services, courses or training, and parenting advice or support, around 10% said they had been given information on them in each case.

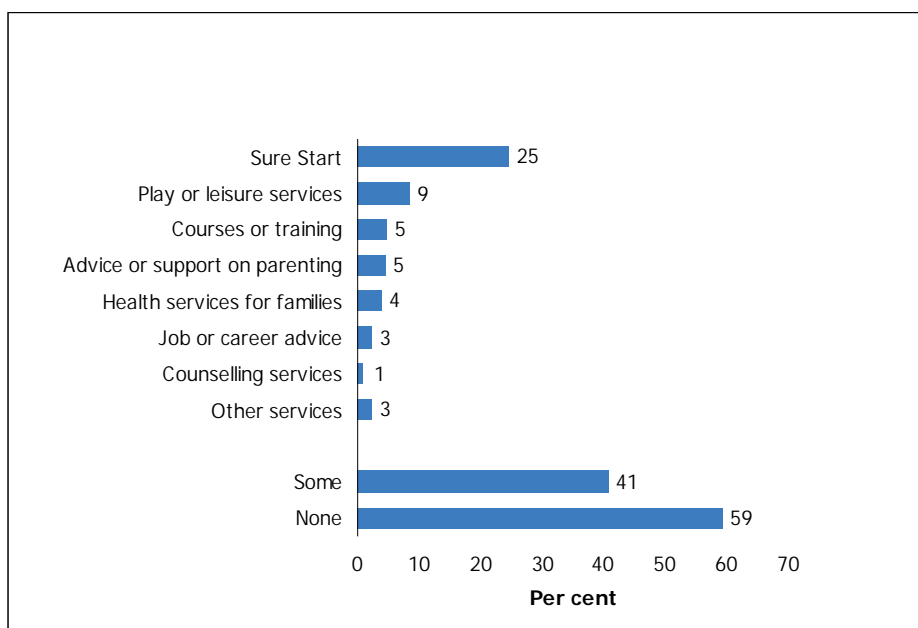
**Figure 2-19 Information provided by the Neighbourhood Nursery about family services available elsewhere**



Base: All respondents.

Forty-one per cent of parents who had been given information by the Neighbourhood Nursery about family services available elsewhere had used at least one such service (Figure 2-20). Again, Sure Start came out top, with 25% of parents accessing these services somewhere other than the nursery itself. It is not surprising to find that both in terms of signposting and in terms of use of services, Sure Start comes out top, given that the NNI Implementation Study has shown that around half of Neighbourhood Nurseries were linked to a Sure Start programme (Smith et al., 2007).

**Figure 2-20 Use of family services signposted by the Neighbourhood Nursery and available elsewhere**



Base: All respondents who said that the Neighbourhood Nursery gave them information about additional services available elsewhere.

#### **2.4.4 The quality of Neighbourhood Nursery provision**

Table 2-10 shows that most parents tended to rate highly the various aspects of the care provided by their Neighbourhood Nursery, with between 57% and 69% classifying each aspect as 'very good', and a further 21% to 27% opting for 'fairly good'. The area in which parents identified the most difficulty concerned the way the nursery communicated with them, but still only 7% rated this as 'fairly poor' or 'very poor'. It was notable that 5% of parents said they did not know about the way the day was organised at their child's nursery.



**Table 2-10 Parents' assessment of the quality of care available at their Neighbourhood Nursery**

	<i>Space &amp; furniture</i>	<i>Everyday routines</i>	<i>Activities</i>	<i>Staff supervision</i>	<i>The way the day is organised</i>	<i>Dealing with parents</i>
	%	%	%	%		%
Very good	60.9	67.8	68.6	64.1	64.1	57.4
Fairly good	26.8	20.5	21.3	23.6	20.5	23.0
About average	9.8	8.2	6.8	7.0	9.2	12.3
Fairly poor	1.8	2.5	1.6	3.7	0.6	5.3
Very poor	0.8	0.4	0.6	0.6	0.6	2.0
Don't know	-	0.6	1.2	1.0	5.1	-
Base	512	512	512	512	512	512

Base: All respondents.

The questions on parental assessment of Neighbourhood Nursery quality were designed to reflect the scales used by researchers rating nursery quality through observation for the NNI Childcare Quality and Children's Behaviour Study (Mathers and Sylva, 2007). The scale used in this study consisted of 39 items categorised into seven subscales. The six quality assessment questions asked in the parents survey therefore inevitably failed to reflect some elements of each subscale. In addition, one subscale ('listening and talking') lacked a counterpart question in the parents survey, as it was not considered feasible to ask parents to assess this aspect of the nursery's quality in relation to the children.

Due to the relatively small proportions of parents rating their nursery 'average' or 'poor' in each respect, it was not possible to conduct detailed cross-analysis of parents' perceptions of the various dimensions of the quality with the findings from the NNI Childcare Quality and Children's Behaviour Study. Overall, however, it was notable that, even where the NNI Childcare Quality and Children's Behaviour Study scores were low, parental assessments still tended to be high. This seems to support the view that parents are typically reluctant to criticise the childcare they use, and suggests that more work may be needed to design questions and research instruments to obtain quantitative evidence of their views on quality of care.

Comparisons between parental assessments of quality and the NNI Childcare Quality and Children's Behaviour Study scores are presented for reference in Table 2-11.

**Table 2-11 Mean NNI Childcare Quality and Children’s Behaviour Study scores for the Neighbourhood Nursery, by parental assessments of quality**

<b>Space and furniture</b>			
	<i>Very good</i> %	<i>Fairly good</i> %	<i>Average or poor</i> %
1 – inadequate	-	-	[-]
2	8.3	6.2	[5.1]
3 – minimal	19.3	32.3	[49.2]
4	37.6	30.8	[30.5]
5 – good	21.7	15.4	[11.9]
6	13.1	15.4	[3.4]
7 – excellent	-	-	[-]
Base	290	130	59
<b>Everyday routines</b>			
	<i>Very good</i> %	<i>Fairly good</i> %	<i>Average or poor</i> %
1 – inadequate	6.5	8.9	[17.3]
2	33.7	29.7	[25.0]
3 – minimal	33.4	39.6	[26.9]
4	22.0	16.8	[26.9]
5 – good	4.3	5.0	[3.8]
6	-	-	[-]
7 – excellent	-	-	[-]
Base	323	101	52
<b>Activities</b>			
	<i>Very good</i> %	<i>Fairly good</i> %	<i>Average or poor</i> %
1 – inadequate	-	-	[-]
2	25.6	35.2	[31.8]
3 – minimal	27.5	26.7	[45.5]
4	29.9	21.9	[13.6]
5 – good	15.1	13.3	[6.8]
6	1.9	2.9	[2.3]
7 – excellent	-	-	[-]
Base	324	105	44
<b>Staff supervision</b>			
	<i>Very good</i> %	<i>Fairly good</i> %	<i>Average or poor</i> %
1 – inadequate	-	-	[-]
2	12.1	9.6	[12.7]
3 – minimal	11.5	16.7	[10.9]
4	11.5	7.0	[1.8]
5 – good	23.0	21.1	[23.6]
6	33.1	34.2	[30.9]
7 – excellent	8.9	11.4	[20.0]
Base	305	114	55

**The way the day is organised**

	<i>Very good</i> %	<i>Fairly good</i> %	<i>Average or poor</i> %
1 – inadequate	9.9	8.9	[15.4]
2	12.9	19.8	[19.2]
3 – minimal	21.9	23.8	[7.7]
4	9.9	5.9	[-]
5 – good	8.9	9.9	[23.1]
6	13.2	8.9	[23.1]
7 – excellent	23.2	22.8	[11.5]
Base	302	101	50

**Dealing with parents**

	<i>Very good</i> %	<i>Fairly good</i> %	<i>Average or poor</i> %
1 – inadequate	-	-	[-]
2	-	0.9	[-]
3 – minimal	1.5	0.9	[4.3]
4	41.0	49.1	[53.2]
5 – good	54.6	47.3	[39.4]
6	2.9	1.8	[3.2]
7 – excellent	-	-	[-]
Base	273	112	94

Base: All respondents who provided an assessment of quality, and who used a Neighbourhood Nursery for which a mean score from the Childcare Quality and Children's Behaviour Study was available.

Note: Square brackets are used where the base is less than 100.

## 2.5 Changes in employment, training and volunteering since the NNI

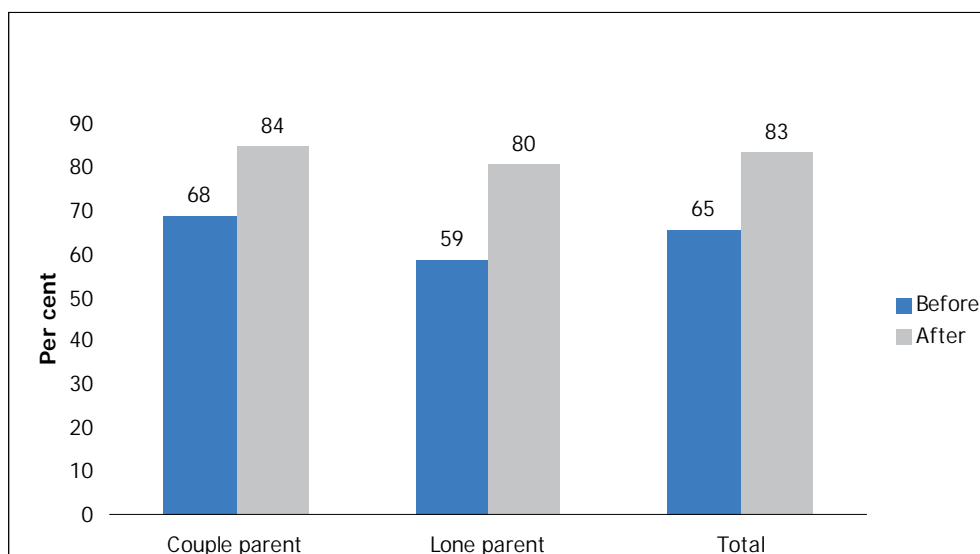
This section looks at any changes to parents' working circumstances between the month before they started using the Neighbourhood Nursery and the time of interview. As mentioned earlier, it is important to bear in mind that as children get older, a proportion of parents would naturally have entered paid employment, whether or not the NNI had been introduced. Therefore, since the analysis in this chapter has no control group, it is not possible to conclude from these findings whether or not the initiative has had an impact on employment; this will be explored more comprehensively in the following chapters.

### 2.5.1 Employment and training

As shown in Figure 2-21, in the month before starting to use the Neighbourhood Nursery, 65% of parents were in paid work or training, and this rose to 83% by the time of interview – an increase of 18 percentage points. This rise in participation in paid work or training was apparent for both lone parents and partnered parents: the employment/training level increased by 22 percentage points<sup>13</sup> for lone parents and 16 percentage points for partnered parents.

<sup>13</sup> The percentage-point changes presented in this report are based upon precise estimates and may not be the same as changes calculated from rounded figures. For instance, in this example, 58.6% of lone parents were working or in training prior to using the Neighbourhood Nursery compared with 80.3% of lone parents who were working/training at the time of interview. The difference between these more precise figures is 21.7 percentage points; when presented, this is rounded up to 22 percentage points. However, the difference between the rounded figures of 59% and 80% is only 21 percentage points. (This point does not apply to the percentage-point changes compared with the previous survey.)

**Figure 2-21 Proportion of parents in paid work or training before and after starting to use a Neighbourhood Nursery, by household status**



Base: All respondents.

The information presented in Figure 2-21 can be broken down further to show the nature of the changes to parents' employment and training status, as shown in Table 2-12. This table shows that the 65% of parents who were in paid work or training before using the nursery are comprised of 62% of parents who remained in paid work or training and 4% who exited paid work or training. Likewise, the 83% of parents who have participated in paid work or training since using the Nursery are comprised of the 62% of parents who remained in paid work or training and the 22% of parents who entered work during this time.

**Table 2-12 Changes in employment and training status since starting to use a Neighbourhood Nursery**

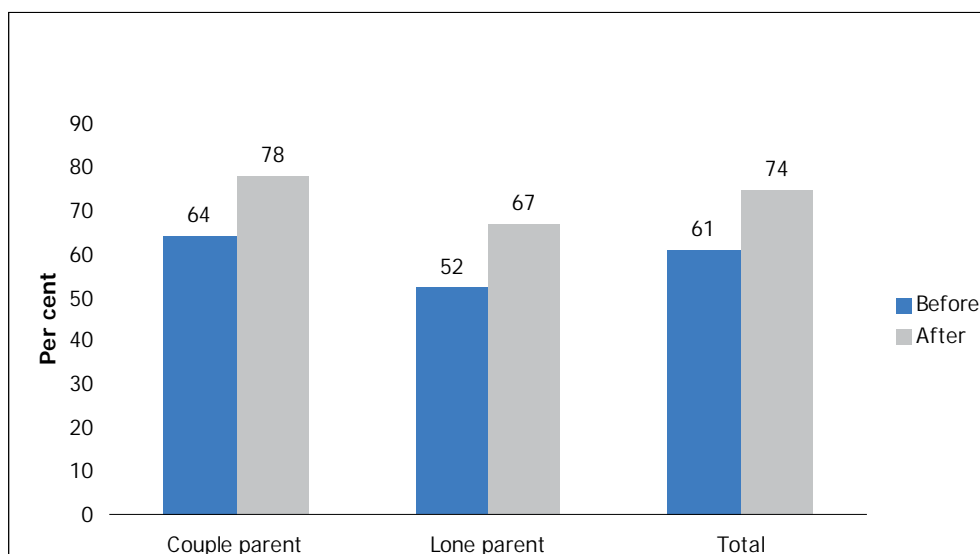
	<i>Couple parent</i> %	<i>Lone parent</i> %	<i>Total</i> %
Remained in work/training	64.7	54.6	61.7
Exited work/training	3.6	3.9	3.7
Entered work/training	19.7	25.7	21.5
Remained out of work/training	11.9	15.8	13.1
In work/training before using nursery	68.3	58.6	65.4
In work/training after using nursery	84.4	80.3	83.2
Net difference in work/training	16.1	21.7	17.8
Base	360	152	512

Base: All respondents.

The survey results show that qualification level and household income did not seem to be associated with the likelihood of entering work or training.

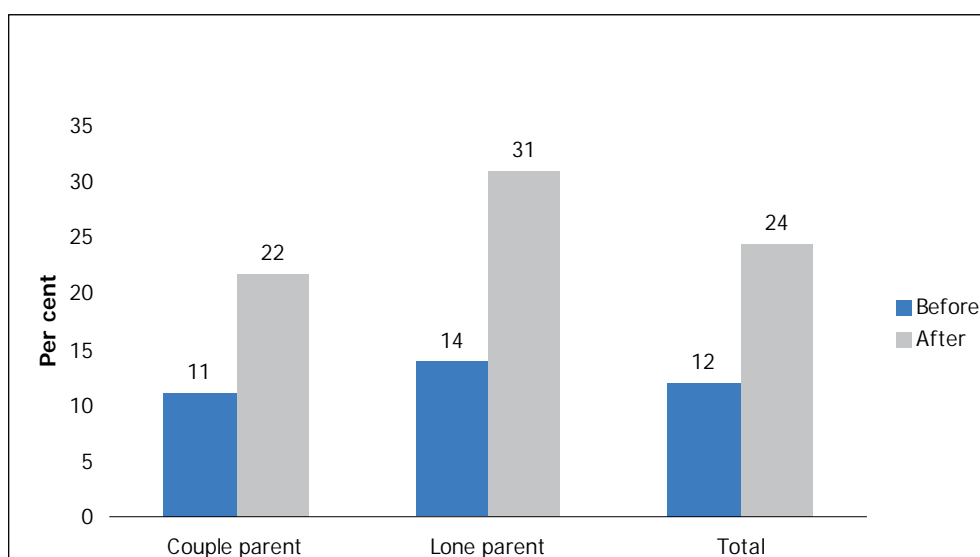
Figures 2-22 and 2-23 show that the increases in the number of parents participating in work and training reflect increases in work *and* training individually. The figures for paid work (Figure 2-22) show a 14-percentage-point increase between the month before starting at the Neighbourhood Nursery and the time of interview (61% compared with 74%). Similarly, the proportion of parents involved in training (Figure 2-23) increased by 13 percentage points (rising from 12% to 24%).

**Figure 2-22 Proportion of parents in paid work before and after starting to use a Neighbourhood Nursery, by household status**



Base: All respondents.

**Figure 2-23 Proportion of parents in training before and after starting to use a Neighbourhood Nursery, by household status**



Base: All respondents.

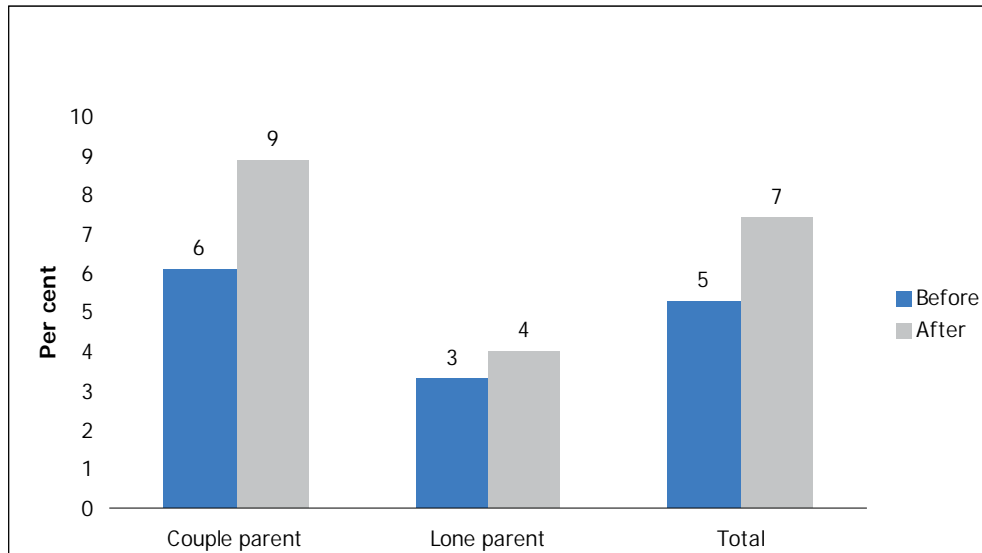
There was no discernible difference between the likelihood of a lone parent starting work and that of a coupled parent doing so. However, lone parents were more likely than partnered parents to have started training (increase of 17 percentage points compared with 11 percentage points).

### 2.5.2 Volunteering

As can be seen in Figure 2-24, only a small proportion of parents were undertaking voluntary work. However, for partnered parents, there was a small but significant rise, of 3 percentage points, since starting to use the Neighbourhood Nursery. This was not the case for lone parents, which should perhaps be expected for a number of reasons. First, lone parents often

have sole responsibility for childcare and are therefore less likely to have sufficient time to be able to undertake voluntary work. Second, usually being the sole earner in a household means that lone parents are often under greater financial pressure than couple parents and therefore may have more need to prioritise paid work over voluntary work.

**Figure 2-24 Proportion of parents doing voluntary work before and after starting to use a Neighbourhood Nursery, by household status**



Base: All respondents.

### 3 THE IMPACTS OF NNI ON EMPLOYMENT, BENEFITS AND CHILDCARE

In this chapter, estimates of the impact of the Neighbourhood Nursery Initiative on employment, benefits and childcare are presented, followed by a cost–benefit analysis of the initiative in Section 3.6.

#### Key findings

- NNI has had a positive impact on employment, with 20% of users being in work who otherwise wouldn't be. The impact was greatest on full-time and 'high' part-time work (16–29 hours). Around 9% of NNI users are estimated to be in full-time work who otherwise wouldn't be, and 14% in 'high' part-time work.
- The impact on employment was greatest for some key target groups: lone parents and those with relatively low educational qualifications.
- Correspondingly, NNI has had a positive impact on the take-up of the Working Tax Credit, and in particular the childcare element of WTC, with 28% of users in receipt of the latter who otherwise wouldn't be.
- NNI has had a positive outcome on take-up of formal childcare: 28% of users would not have been using formal childcare if the NNI place had not been available.
- All these figures suggest that NNI has had a positive, and reasonably large, impact *on users*. However, the number of users of NNI is fairly low, with just 10% of the population of potential users (work-ready parents) having taken up a place. So, when the impacts are measured across this broader population, they are considerably smaller, although still positive (being about one-tenth of the impact on users).
- Overall, NNI has brought about positive impacts for individuals but had relatively little impact on areas, simply because only a small percentage of families were affected by the initiative.
- In terms of the potential revenue gains from NNI, if the government required a rate of return of 3.5%, then £98m and £347m would represent our estimates of the lower and upper bounds on the maximum cost of NNI to deem the project a financial success. The lower bound represents what we estimate the revenue gains to be if they last for only one year, and the upper bound is if they last for five years.

#### 3.1 Introduction

Estimating the impact of NNI is not a simple task and there are a number of quasi-experimental design approaches that could potentially have been used (all of which have their strengths and weaknesses). We chose to use three approaches:

- First, we compared outcomes for NNI users with a matched comparison sample of non-users. This gives estimates of the impact of the initiative on those who take up a place. The data for this approach were collected by survey.
- Second, we identified a subgroup of the population of parents who might potentially take up an NNI place, on the grounds that they had similar characteristics to actual users and they lived in an area with a high level of NNI provision (an 'NNI-rich' area). We have termed these the work-ready population. These work-ready parents were then matched to

similar work-ready parents who lived in areas of low provision ('NNI-poor' areas). Comparing outcomes across the two groups gives an estimate of the impact of NNI measured across the population of both actual and potential users. The data for this approach were also collected by survey.

- Third, the impact across the whole population of parents in 'NNI-rich' areas with children below school age was measured by comparing outcomes for parents living in areas with high levels of NNI provision and outcomes for parents in areas of low provision. Administrative data were used for this comparison.

It is relatively unusual for an evaluation to adopt several approaches to measuring impact. The reason we adopted the three here was that none of the three approaches in isolation was likely to prove problem-free. The first approach (which measures the impact of NNI on users) relies on our being able to identify a comparison group in NNI-poor areas who were, in all respects relating to outcomes, identical to NNI users. This means addressing self-selection bias head on. However, this approach has a key advantage in that it measures impact *just* on the population (i.e. users) who can expect to experience an impact. This means (in contrast to the other two methods we adopted) that the observed impact is not diluted across a broader population group than users and is, consequently, larger than the impacts observed with the other methods. This, in turn, means that observing an impact that is significantly different from zero (as measured by statistical tests) is far more likely.

The second method (impact on the work-ready) is potentially more robust than the first, because it compares groups of parents who are not self-selecting (the criteria being that they are *potential* users of NNI rather than simply actual users<sup>14</sup>), so there is less risk of self-selection bias. The disadvantage, however, is that the observed impact is diluted by the inclusion in the comparison of parents in NNI-rich areas who never use an NNI (and hence do not experience any impact of NNI). The 'dilution' increases as the proportion of the sample who become users falls. In practice, just 10% of the 'potential user' sample took up an NNI place, which means that impacts for this approach would be expected to be around 10% of the impacts for the first method. These much smaller impacts need very large survey samples to give statistically significant effects (and rather larger samples than were feasible for this evaluation).

Our third method, which measures impacts using administrative data, allows for analysis using much larger samples, but what is gained in sample size is offset by losses in other areas. In particular, the range of outcome measures is limited by what is in the administrative data-set (which, in this case, is employment and benefits); the analysis has to be restricted to parents who feature in the administrative data (which, for employment outcomes, is those with a benefit history); and there is no means of reducing the data-set to 'potential users of NNI' (the data being too 'thin' to support this). So, this approach allows for impact to be measured across all parents in NNI-rich areas and on a limited number of outcome variables. We anticipated that the dilution effect would be greater for this 'population' than for the 'potential user' population (on the grounds that a smaller percentage of this population were expected to take up an NNI place). In practice, the take-up rate for the broader population was estimated to be very close to that for the 'potential user' population, so again impacts for this approach should be around 10% of the impacts on users. The main difference, in this case, is that even small impacts should be significantly different from zero.

In what follows, we refer to the three methods as:

- impact on users

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<sup>14</sup> Although some of the potential users will become actual users.



- impact on the work-ready
- impact on all families.

In this chapter, we focus on impacts as measured across all relevant parents. Analyses for some key subgroups are presented in Appendices D, E and F, although the main results of these analyses are summarised in this chapter.

## 3.2 Data used and analysis methods

### 3.2.1 Data used

The impact assessments presented in this chapter are based on data from three sources: a survey of Neighbourhood Nursery users, a survey of work-ready parents and administrative data on parents.

- *Approach 1 (impact on users)* compares individuals from the **survey of NNI users** with individuals living in NNI-poor areas from the **survey of work-ready parents**.
- *Approach 2 (impact on the work-ready)* uses only the **survey of work-ready parents**, comparing individuals living in NNI-rich areas with individuals living in comparable NNI-poor areas.
- *Approach 3 (impact on all families)* uses only **administrative data** on all parents, comparing individuals in NNI-rich areas with individuals living in NNI-poor areas.

The details of the designs of the surveys are given in Section 1.2 of this report. In this section, we restrict attention to the elements of the designs that are key to understanding the approaches used to measure impact.

#### **Survey of Neighbourhood Nursery users**

The users survey was based on an equal probability sample of parents who used the Neighbourhood Nurseries that had been involved in the NNI Implementation Study (Smith et al., 2007). Details of the design are given in Section 1.2.5.

The users survey was based on a sample of 638 Neighbourhood Nursery users, of whom 512 agreed to take part in the survey and completed an interview. For most of the reporting on this sample in this report (namely, Chapters 2 and 4), these 512 have been assumed to be representative of NNI users, even though we are aware that a (unknown) proportion of them will not have been in an NNI-funded place.<sup>15</sup>

The inclusion of users in non-funded places in the impact estimation could potentially have led to bias in the impact estimates (since we would then be measuring the impact of childcare for all users of the nurseries, not just those funded by NNI). To reduce this potential problem, the sample of 512 was narrowed down to those ‘users’ who were most likely to be in genuine NNI places. This was achieved (rather crudely, because there is no definitive way we could do this) by restricting the sample of users to those who lived within the 20% most deprived areas. This reduced the sample of users from 512 to 216, and these 216 were the cases used in the impact estimation.

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<sup>15</sup> The sample of users did not have a flag showing whether or not a user was in an NNI place. This is because, as indicated by the NNI Implementation Study (Smith et al., forthcoming), practices varied considerably in terms of how the NNI funding was used (e.g. to subsidise particular places, to reduce fees across the board) and it therefore proved impossible to find a consistent definition of and way of identifying NNI places.

### **Survey of work-ready parents**

The second survey used in the impact estimation was a survey of work-ready parents from both NNI-rich and NNI-poor areas (the sample sizes being 1,289 and 1,358 respectively). The sample for this survey was selected in two stages:

- First, a large sample (35,000) of Child Benefit recipients with children aged between 6 and 35 months were sent a postal questionnaire in October 2004, of whom 11,817 responded and gave permission to be re-contacted.
- From these 11,817, 4,517 were selected who were considered to be work-ready, in the sense that they had characteristics similar to those of NNI users and were believed to be those most likely to take up a place (and hence employment).

Of the 1,289 respondents to the survey in NNI-rich areas, the telephone survey identified 10% of them as having taken up a childcare place in a Neighbourhood Nursery.

### **Administrative data**

Since practically all parents of children under 16 receive Child Benefit, administrative records for Child Benefit can be used to identify all parents living in NNI-rich or NNI-poor areas with appropriately aged children. For the purposes of the evaluation, we were provided with individual-level data for all individuals receiving Child Benefit at 31 December 2004<sup>16</sup> who:

- lived in either an NNI-rich or an NNI-poor area on this date
- had at least one child born between 1 September 2000 and 31 August 2004.

Information about benefit claims for these individuals was derived from the National Benefits Database, while employment spells came from the Work and Pensions Longitudinal Study. It is important to note, however, that we were not given access to employment information for individuals without at least one benefit claim on the National Benefits Database (around 30% of individuals in the Child Benefit data-set). This means that estimates presented in Section 3.3 for the employment impact of NNI on all families actually relate only to those who have claimed at least one benefit (excluding Child Benefit) since 1999. (Clearly, the 70% for which data are available are unlikely to be a representative sample of all parents, and this affects how impact estimates derived for this group are interpreted.)

We were unable to identify which individuals in the administrative data were using Neighbourhood Nurseries. This means we do not know the level of take-up across all parents. It is possible, however, to *estimate* take-up by weighting the survey of work-ready individuals back to the population.<sup>17</sup> This gives a take-up figure of just under 10%, which is very similar (perhaps surprisingly so) to the take-up figure for those identified as work-ready.

For more information about the administrative data, see Appendix B.

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<sup>16</sup> Ideally, we would have liked to be able to identify individuals living in NNI-rich or NNI-poor areas in January 2002 (before NNI got started), rather than December 2004, but this was not possible. If some parents moved house in response to the introduction of NNI, then a small number of individuals may be included who shouldn't be and vice versa. However, it seems unlikely that NNI would have caused many parents to move, so we can be reasonably confident about the individuals identified.

<sup>17</sup> The survey of work-ready parents is essentially a disproportionate stratified sample of all parents. Applying weights equal to the inverse of the sampling fraction, estimates for all parents can be derived. This is the approach we used to estimate take-up of NNI places for 'all parents'.

### **3.2.2 Analysis methods**

All three approaches to measuring the impact of NNI involve comparing outcomes for a group of parents in NNI-rich areas with a group of parents in NNI-poor areas. In each case, some means is needed of controlling for confounders – that is, imbalance in the samples (other than NNI availability) on variables that are related to outcomes. For instance, if the two samples being compared are different in terms of child-age profile, then the two samples have to be balanced somehow so as to make the comparison valid.

Although there are a range of statistical methods for dealing with confounders, the one we have used for all the impact estimates presented here is propensity score matching. This involves two stages:

- first, modelling the differences between the two samples being compared (NNI-rich and NNI-poor) (essentially by modelling the ‘propensity’ or probability of being in one sample rather than the other)
- second, weighting the NNI-poor sample so that it has the same propensity-score profile as the NNI-rich sample.

After the weighting, the two samples should be broadly balanced on all variables used in the propensity score model.

Although all three approaches to measuring impact rely on propensity score matching, the way in which it was implemented differs slightly across the approaches. The remainder of this section describes the methods used.

#### **Approach 1 (impact on users)**

To measure the impact of NNI on users, a sample of parents from NNI-poor areas who are very similar to the users has to be identified. This means, in practice, being able to identify the potential market for Neighbourhood Nurseries in NNI-poor areas – that is, parents in our sample of the work-ready who live in NNI-poor areas and who were most likely to have taken up Neighbourhood Nursery childcare places had they been available. To try to ensure this was achieved, we reduced the sample from the NNI-poor areas to those parents who were actively interested in taking up formal childcare. These were individuals in the survey of work-ready parents who:

- were not using formal childcare<sup>18</sup> at the time of the earlier postal survey
- wanted to do so, saying that they would or might use formal childcare on a regular basis<sup>19</sup> within the next 6 to 12 months
- had started to use formal childcare by the date of the telephone interview or still wanted to do so but had experienced a barrier to using formal childcare such as availability or affordability.

Having identified parents in NNI-poor areas who were potentially in the market for NNI, the comparison with users was then tightened by (propensity score) matching the users to these NNI-poor individuals on characteristics such as age of youngest child, household type and qualification level (see Appendix C for more details).

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<sup>18</sup> The definition of formal childcare used here excludes reception class.

<sup>19</sup> The definition of regular was ‘at least once a week on average’.

Parents whose youngest child was born before 1 September 2001 were excluded from both the user and comparison samples simply because there were so few parents falling into this category in the user sample that comparison would have been impossible.

### ***Approaches 2 and 3 (impact on the work-ready and impact on all families)***

For both the impact on the work-ready and the impact on all families, the samples in NNI-rich areas were matched to the corresponding sample in NNI-poor areas using a similar process. That is:

- First, the differences between NNI-rich and NNI-poor areas were modelled (using a regression model), the predictors in the model being the characteristics of parents prior to the introduction of NNI. This produced a propensity score per person.
- Then, the NNI-poor sample was weighted to match the NNI-rich sample on the propensity score.

The details are given in Appendix C.

## **3.3 Impact on employment**

In this section, we present estimates for the impact of NNI on employment outcomes. For analyses based on the survey data, respondents and their partners were coded as being in employment if they undertook *any* paid work in June 2005, irrespective of the hours that they spent working or whether this was their main activity. For analyses based on the administrative data, June 2005 is also used as the reference month, but impacts for earlier months are also presented.

As well as impact on 'any employment', we also present impacts on full-time and part-time work (where individuals are defined in terms of 'usual hours'). The number of hours excludes meal breaks but includes paid and unpaid overtime.

The impacts from the three approaches are presented in turn in Sections 3.3.1 (users), 3.3.2 (work-ready individuals) and 3.3.3 (all parents with eligible children). The summary section (Section 3.3.4) brings the three together. Subgroup analyses are presented in Appendix D, although a short summary of the findings from these analyses is given below.

### **3.3.1 Impact on users**

Table 3-1 gives the estimated impact of NNI on employment amongst users. Whereas 71% of users are in work, just 51% of matched parents in NNI-poor areas are in work. The difference between the two gives an estimated impact of 20 percentage points – that is, an estimated 20% of users are in work who, in the absence of NNI, would not be.

**Table 3-1 Respondent's working status (impact on users)**

	<i>User %</i>	<i>Matched non-user %</i>	<i>Difference</i>	<i>p-value for difference</i>
In work	70.8	50.8	20.1	0.000
<i>Of which:</i>				
Full-time (30+ hrs)	29.2	20.4	8.7	0.000
High part-time (16–29 hrs)	38.0	23.9	14.0	
Low part-time (0–15 hrs)	3.7	6.4	–2.7	
Unweighted base	216	200		
Weighted base	216	200		

Base: All respondents selected for individual matching impact assessment.

Dividing work into categories based on hours worked, it appears that NNI has had most impact on full-time and 'high' part-time working (16–29 hours). Around 9% of NNI users are estimated to be in full-time work who otherwise wouldn't be, and 14% are in high part-time work.

Table 3-2 suggests there has been no corresponding impact of NNI on partners' work, with the difference between the user and matched samples showing, if anything, a small negative impact. The difference is not significant, however. Given that users are predominately mothers (and partners are fathers), this lack of impact is in line with expectations, take-up of childcare being more likely to impact on employment prospects for mothers than for fathers.

**Table 3-2 Partner's working status (impact on users)**

	<i>User %</i>	<i>Matched non-user %</i>	<i>Difference</i>	<i>p-value</i>
In work	56.5	61.6	–5.2	0.592
<i>Of which:</i>				
Full-time (30+ hrs)	52.6	55.2	–2.7	0.776
High part-time (16–29 hrs)	3.3	5.5	–2.2	
Low part-time (0–15 hrs)	0.5	0.7	–0.3	
Unweighted base	216	199		
Weighted base	216	199		

Base: All respondents selected for individual matching impact assessment.

### ***Impact on users, by subgroup***

Appendix D gives details of the estimated impact of NNI on employment for users by subgroups of users. The subgroups are defined in terms of the age of the user's youngest child (divided into three age cohorts), family type (couples and lone parents) and level of education. The sample sizes by subgroup are very small (typically less than 100), so the impact estimates are inevitably imprecise and the 'patterns of impact' summarised here should not be over-interpreted.

However, in brief summary:

- *Age of youngest child:* By age of youngest child, the impact-on-users analysis suggests the impact of NNI has been greatest amongst parents with a child from the middle age cohort (that is, born between September 2002 and August 2003, or aged between 1 year 10 months and 2 years 9 months at the time that outcomes were recorded). For this group, an estimated 31% of users are in work who otherwise wouldn't be. The impact is smaller, although still appreciable at 21%, for those whose youngest child is older, but

with the smallest impact being observed on those users with the youngest children (at just 7%). Given that the employment rate amongst users with the youngest children is lower than that for other users, the lower impact on employment for this group suggests parents in this group are taking up nursery places for non-work-related reasons.

- *Family type:* By family type (divided into just couples and lone parents), the impact of NNI was found to be greater for lone parents: 30% of lone-parent users are in work who otherwise wouldn't be. The impact on couple families is around half this size, at 16%.
- *Level of education:* By education, the impact of NNI on users is estimated to be greatest (at 22%) for those with an NVQ level 2 qualification or lower. There is a smaller, and not statistically significant, impact of 14% on those with higher qualifications.

### 3.3.2 Impact on the work-ready

In this section, the impacts on users are re-estimated, but this time across the whole of the work-ready population. Given that around 10% of this group in the NNI-rich areas were found, at the time of the outcome survey, to have taken a Neighbourhood Nursery place, we would expect impacts measured across this broader population to be about one-tenth of the impacts estimated for users.

Table 3-3 shows the estimated impact on employment. The first column shows the employment rate for the work-ready in NNI-rich areas. The second column shows the rate for NNI-poor areas (after matching the samples). The third column shows the estimated impact of NNI on employment (that is, the difference between the two previous figures).

**Table 3-3 Respondent's working status (impact on work-ready)**

	NNI-rich %	Matched NNI-poor %	Difference	p-value
In work	58.2	56.9	1.3	0.556
Of which: <sup>a</sup>				
Full-time (30+hrs)	44.7	40.7	4.0	0.181
High part-time (16–29 hrs)	41.7	46.2	–4.5	0.128
Low part-time (0–15 hrs)	12.5	11.8	0.7	0.713
Weighted base (All)	1,260	1,260		

Base: All respondents in NNI-rich and NNI-poor areas.

<sup>a</sup>These numbers sum to the proportion of those in work who were not working unusual hours (e.g. 98.9% of all those working in NNI-rich areas).

NNI is estimated to have increased the proportion of work-ready individuals in work by about 1.3 percentage points. This impact is not significantly different from zero, but given the 10% take-up of NNI places, it equates to a 13-percentage-point impact on users. This is *reasonably* close to the 20-percentage-point impact estimated in Section 3.3.1 for users.

Dividing those in work into full-time, high part-time and low part-time, the impact estimates for the work-ready population are not entirely consistent with the impact estimates for users. The largest positive impact of NNI on the work-ready population was on the likelihood of working full-time, with the estimated impact being 4 percentage points. The estimated impact of NNI on high part-time hours (16–29 hours) was, however, negative, at –4.5 percentage points, which is not consistent with the positive impact-on-users estimate. Our interpretation of this is that the negative estimate is probably attributable to sampling error. Pooling the two estimates of impact (users and work-ready), our best overall estimate is that the impact is likely to be small but not negative.

Table 3-4 shows impacts on employment for partners. NNI is estimated to have little, if any, impact on the partners of the work-ready population (the difference between the populations in NNI-rich and NNI-poor areas is just 0.1 percentage points). This 'no impact' finding is consistent with the user analysis in Section 3.3.1.

**Table 3-4 Partner's working status (impact on work-ready)**

	<i>NNI-rich</i> %	<i>Matched</i> <i>NNI-poor</i> %	<i>Difference</i>	<i>p-value</i>
In work	86.9	86.8	0.1	0.961
<i>Of which:<sup>a</sup></i>				
Full-time (30+hrs)	90.2	88.7	1.5	0.398
High part-time (16–29 hrs)	4.4	5.2	–0.8	0.516
Low part-time (0–15 hrs)	1.8	0.5	1.3	0.033
Weighted base (Has a partner)	880	880		

Base: All respondents in NNI-rich and NNI-poor areas with a partner.

<sup>a</sup>These numbers sum to the proportion of those in work who were not working unusual hours (e.g. 96.4% of all partners working in NNI-rich areas).

### ***Impact on the work-ready, by subgroup***

Tables on the impact of the NNI on employment for subgroups of the work-ready population are given in Appendix D. To summarise the findings:

- *Age of youngest child:* Consistent with the impact-on-users analysis, the largest impacts are observed for parents of children in the oldest two cohorts (effects of 3–4 percentage points), with an impact of close to zero for those with children in the youngest cohort.
- *Family type:* The impact of NNI on work is estimated to be greater for work-ready lone parents than for those with a partner (effect of 5 percentage points compared with a near-zero impact). Although neither is statistically significant, the higher impact for lone parents is consistent with the impact-on-users analysis.
- *Level of education:* The analysis by education suggests a positive impact for the work-ready population with lower levels of education (2.9 percentage points), but a negative impact for those with higher levels of education (–2.7 percentage points). Although the impact-on-users analysis did not find a similar negative impact, the ordering of the effects was the same, the greater impact being on the less qualified.

### **3.3.3 Impact on all families**

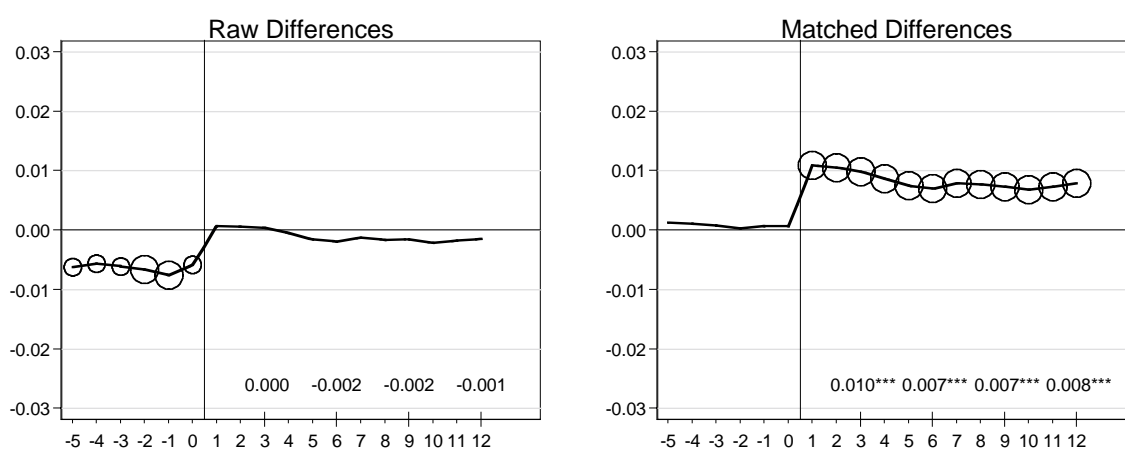
Sections 3.3.1 and 3.3.2 gave estimates of the impact of NNI on employment based on analyses of sample surveys of users and work-ready individuals. Both give imprecise estimates of impact because they are based on fairly small samples, with the problem being particularly acute for the work-ready analysis because the impacts observed are inevitably small (with the result that very few estimated impacts are significantly different from zero). In this section, we present impact estimates based on analysis of administrative data from the WPLS, which contains a very much greater number of individuals for analysis. The main disadvantage of the administrative data-set is the lack of background characteristics it contains.

The WPLS only includes people with a benefit history, so the analysis has to be restricted to these (which is about 70% of all the parents we would have ideally included). Moreover, the

definition of being in employment used for the WPLS is slightly different from that used for the surveys, as employers are only obligated to report employment spells for individuals if they earn above the PAYE limit.

Because the administrative data contain information about employment and benefit *spells*, we can look at outcomes over a period of time (rather than just concentrating on impact in June 2005 as we did when estimating the impacts on users and on work-ready individuals). We have chosen to present impacts month by month over a 12-month period, starting from July 2004 and ending with June 2005.<sup>20</sup> These months are labelled 1 to 12 on the horizontal axis in Figure 3-1. The months labelled -5 to 0 are the six months leading up to and including January 2002. The months February 2002 to June 2004 (represented by the single vertical line halfway between 0 and 1) are not shown, this being the period over which NNI was rolled out.

**Figure 3-1 Work impact on all families**



Notes: The horizontal axes show the six months up to January 2002 ( $x = -5$  to 0) and the 12 months up to June 2005 ( $x = 1$  to 12). The vertical axes show the difference in the proportions in employment between NNI-rich and NNI-poor areas. The numbers just above the horizontal axes give the difference between NNI-rich and NNI-poor areas three, six, nine and 12 months after June 2004 – \*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level. The large and medium circles indicate that differences in that particular month are significant at the 1% and 5% level respectively.

The left-hand chart of Figure 3-1 shows the raw (unmatched) differences in the proportion of individuals in employment between NNI-rich and NNI-poor areas. The right-hand chart shows the same differences after matching, i.e. the differences in employment rates over the same time frame once we have reweighted the NNI-poor group to match the NNI-rich sample. Months -5 to 0 are included on the graphs to demonstrate how balanced the two groups are after matching: if they are well balanced, the differences in months -5 to 0 should be zero.

Based on this analysis, NNI is estimated to have increased employment amongst families with young children by 0.8 percentage points in June 2005, a difference that is significant at the 1% level. This impact is, in fact, observed consistently across the whole of the 12 months considered (July 2004 to June 2005).

<sup>20</sup> Note that 'months' are in fact 30-day periods. Month 12 is 1–30 June 2005. Earlier months are defined relative to this.



The 0.8-percentage-point impact is not as large as the employment impacts estimated for users or the work-ready population (0.8 being consistent with just an 8-percentage-point impact on users). There are, however, a number of possible explanations for the lower impact based on the WPLS analysis. First, there are the differences in the make-up of the samples. The WPLS-based estimate is the estimated effect on those with a benefit history, whilst the estimates for users and work-ready individuals include people irrespective of previous benefit receipt. Second, the WPLS does not include employment spells where individuals paid no income tax or National Insurance contributions, whilst the survey asked about all paid employment spells. For the various estimates of impact to be consistent, it would simply be enough that impact was higher than average for those without a benefit history, or that some of the NNI impact was on work below the tax / National Insurance thresholds.

### ***Impact on all families, by subgroup***

Tables on the impact of the NNI on employment for subgroups of the WPLS population are given in Appendix D. The findings are summarised here:

- *Age of youngest child:* The analyses of impacts on users and impacts on the work-ready population both found greater employment impacts for families with older children (that is, families whose youngest child was over 1 year 9 months in June 2005) than for families with very young children. The WPLS analysis is not entirely consistent with this, showing an impact of just 0.6 percentage points for families with the oldest children and an impact of 1 percentage point for the two younger cohorts. The reason for this apparent discrepancy is unclear.
- *Family type:* The WPLS does not allow for lone parents and couple families to be distinguished, so analysis on impacts by family type can only be done by comparing areas with higher- and lower-than-average proportions of lone parents. Perhaps not surprisingly, given that this is a fairly crude indicator, no differences in employment impact were detected.
- *Level of education:* Similarly, analysis by the educational level of individuals cannot be done on the WPLS. However, when comparing individuals living in areas with lower-than-average proportions of people with an NVQ level 3 (or higher) compared with those living in areas with higher-than-average proportions, we see a slightly higher impact for those living in 'low-education' areas (though the difference is not significant).

### **3.3.4 Summary**

In summary, our three different approaches to impact estimation have shown there to be:

- a 20-percentage-point impact on employment for users
- a 1.3-percentage-point impact on employment for the work-ready population
- a 0.8-percentage-point impact on employment measured across all families with young children (amongst those with a benefit history).

With a take-up rate for NNI of about 10%, these three estimates are *broadly* consistent, in the sense that they all at least point in the same direction. Based on the three estimates, a plausible range for the employment impact on users is about 10–20 percentage points.

By subgroup, the three approaches show somewhat less consistency, but it appears that NNI has had most impact on employment for parents with slightly older children (those aged 1

year 10 months or over in June 2005), lone parents and parents with lower qualifications (an NVQ level 2 qualification or lower).

### **3.4 Impact on benefits**

#### **3.4.1 Outcome measures used**

In this section, we consider the impact of NNI on benefits. For users and work-ready individuals, the benefit outcomes considered were receipt of:

- Working Tax Credit (WTC) in June 2005
- the childcare element of the WTC in June 2005
- Council Tax Benefit (CTB) in June 2005
- Housing Benefit (HB) in June 2005
- Incapacity Benefit (IB) in June 2005
- Income Support (IS) in June 2005
- Jobseeker's Allowance (JSA) in June 2005
- any other state benefit in June 2005 (excluding Child Benefit since this is universal)
- any state benefit in June 2005 (excluding Child Benefit)
- any of IB, IS or JSA in June 2005.

The WPLS administrative data do not allow analysis on such disaggregated benefit outcomes. For the WPLS-based impact, therefore, we have used a single benefit outcome – receipt of any of IS, IB, JSA or the equivalent of JSA.

Section 3.4.2 gives estimates of the impact of NNI on users, Section 3.4.3 gives estimates of the impact on the work-ready population, and Section 3.4.4 gives estimates for all eligible families based on the analysis of the WPLS data.

A priori, what we expect to find for benefit impacts is a positive impact of NNI on the take-up of benefits contingent on working or looking for work, particularly WTC and, perhaps, JSA. Also, given that NNI is designed to increase the number of subsidised nursery places, we would expect it to have a positive impact on the take-up of the childcare element of WTC. For other benefits, in particular IS, a corresponding negative impact would be expected. For benefits such as CTB, HB and IB, because of their largely income- or disability-contingent elements, NNI would not be expected to have a significant impact.

#### **3.4.2 Impact on users**

The estimated impacts of NNI on benefit receipt amongst users are given in Table 3-5. The conclusions are fairly clear-cut: there is a large estimated impact on users for WTC (with 18% of users in receipt of the credit who otherwise wouldn't be) and an even larger impact on the childcare element of WTC (with 28% of users in receipt who otherwise wouldn't be). For other benefits, no significant impacts are observed, although the impact on IS is negative (in line with expectations).

**Table 3-5 Respondent's benefit receipt (impact on users)**

	<i>User %</i>	<i>Matched non-user %</i>	<i>Difference</i>	<i>p-value</i>
Working Tax Credit	50.5	32.4	18.0	0.001
Childcare element of WTC	37.5	9.9	27.6	0.000
Housing Benefit	24.1	28.0	-4.0	0.384
Council Tax Benefit	24.1	26.9	-2.8	0.535
Income Support	16.2	21.6	-5.4	0.179
Other state benefit	6.5	3.6	2.9	0.166
Incapacity Benefit	3.7	1.9	1.8	0.196
Jobseeker's Allowance	1.4	3.3	-1.9	0.204
Any benefits	88.0	89.0	-1.1	0.742
No benefits	12.0	11.0	1.1	
Unweighted base	216	200		
Weighted base	216	200		

Base: All respondents selected for individual matching impact assessment.

### ***Impact on users, by subgroup***

The benefit impacts on users by subgroup are given in Appendix E. As with the analysis for employment outcomes, the impact estimates are inevitably imprecise because they are based on small samples, and patterns across groups can be hard to pick out. Given the close relationship between employment and benefits, the pattern of impacts by subgroup for benefits would be expected to, and in fact does, mirror the pattern of impacts for employment. A short summary is given here.

- *Age of youngest child:* Dividing users by the age of their youngest child, the impact of NNI on WTC take-up appears to be largest for users with a youngest child in our middle cohort (that is, children aged between 1 year 10 months and 2 years 9 months in June 2005). For this group of users, 36% are in receipt of the childcare element of WTC who otherwise wouldn't be. The impact on users with slightly older children is smaller, but still considerable, at 30 percentage points. The impact on those with younger children is much smaller, at just 16 percentage points.
- *Family type:* Dividing users into two family types – couple and lone-parent – there is estimated to be a markedly larger impact on benefits for lone-parent NNI users than on couple-family users: 44% of lone parents were estimated to be in receipt of the childcare element of WTC as a result of being a user, compared with 19% of couples.
- *Level of education:* For users with an NVQ level 2 equivalent or lower, an estimated 34% of users were in receipt of the childcare element of WTC who otherwise wouldn't be. The impact on users with higher qualifications was smaller, at 20 percentage points.

### ***3.4.3 Impact on the work-ready***

Table 3-6 replicates the impact estimates of Table 3-5 but for the work-ready population. As with employment outcomes, the pattern of impacts should be the same as for users but at about one-tenth of the size. This is broadly found to be true (with positive impacts being observed for WTC and the childcare element of WTC, at 1.4 and 1.2 percentage points respectively). The main area of inconsistency is that the impacts on WTC for the work-ready population seem to be counterbalanced by similarly sized, but negative, impacts on benefits such as Housing Benefit. (Although negative impacts were also found for users, they were of

a much smaller magnitude than those implied by the estimated impact on the work-ready.) We should point out, however, that none of the impacts for the work-ready population is significantly different from zero, so the most likely reason for the inconsistency is sampling error.

**Table 3-6 Respondent's benefit receipt (impact on work-ready)**

	<i>NNI-rich</i> %	<i>Matched</i> <i>NNI-poor</i> %	<i>Difference</i>	<i>p-value</i>
Working Tax Credit	36.4	35.0	1.4	0.507
Childcare element of WTC	18.3	17.1	1.2	0.472
Council Tax Benefit	23.7	25.3	-1.6	0.382
Housing Benefit	22.5	25.1	-2.6	0.159
Incapacity Benefit	2.9	3.7	-0.7	0.337
Income Support	18.7	20.4	-1.8	0.298
Jobseeker's Allowance	2.1	1.8	0.4	0.557
Other state benefit	4.2	5.2	-1.0	0.288
Any state benefit	84.4	83.0	1.5	0.372
In receipt of any of IB, IS or JSA	22.1	23.8	-1.7	0.349
Weighted base (All)	1,260	1,260		

Base: All respondents in NNI-rich and NNI-poor areas.

Table 3-6 suggests there is a negative 1.7-percentage-point impact on the receipt of any of IB, IS or JSA – that is, NNI appears to reduce the numbers on these benefits. This estimate will become more relevant when we compare it with the estimate derived from the WPLS administrative data in Section 3.4.4.

#### ***Impact on the work-ready, by subgroup***

Tables of the impact on benefits, by subgroups of parents, are given in Appendix E. Again, the results ought to, and do, correspond closely with the employment impacts by subgroup.

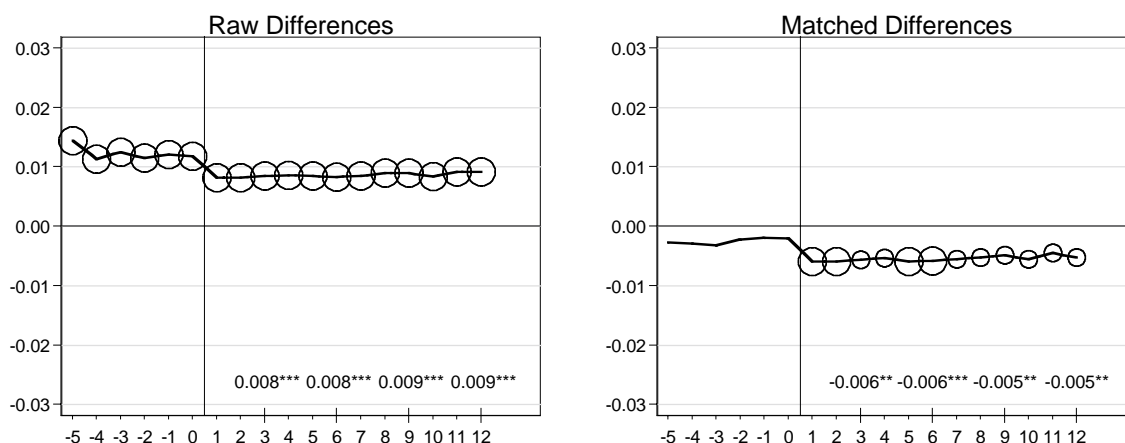
- *Age of youngest child:* The patterns of impact by age of child are difficult to summarise, much of the variation probably being due to sampling error. But, overall, there is a positive impact of NNI on take-up of WTC for all the age-groups.
- *Family type:* There is a larger impact of NNI on the take-up of WTC, and its childcare element, for lone parents than for couples.
- *Level of education:* There is a larger impact of NNI on the take-up of WTC, and its childcare element, for individuals with lower levels of education (NVQ level 2 or lower).

#### **3.4.4 Impact on all families**

In this final section on benefits, impacts on benefits for all families are estimated using the WPLS administrative data. For this analysis, only a single benefit outcome is used – namely, receipt of IS, IB, JSA or the equivalent of JSA. Given the positive impact of NNI on employment, the impacts on this outcome measure should be negative.

The two charts of Figure 3-2 give the raw and matched differences between NNI-rich and NNI-poor areas in the rates of benefit receipt in the six months up to and including January 2002 (pre-NNI) and the 12 months ending with June 2005.

**Figure 3-2 Benefits receipt impact on all families**



Notes: The horizontal axes show the six months up to January 2002 ( $x = -5$  to  $0$ ) and the 12 months up to June 2005 ( $x = 1$  to  $12$ ). The vertical axes show the difference in the proportions receiving IS, IB, JSA or the equivalent of JSA between NNI-rich and NNI-poor areas. The numbers just above the horizontal axes give the difference between NNI-rich and NNI-poor areas three, six, nine and 12 months after June 2004 – \*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level. The large and medium circles indicate that differences in that particular month are significant at the 1% and 5% level respectively.

Based on this analysis, benefit receipt amongst parents in the NNI-rich areas is estimated to be 0.5 percentage points lower in June 2005 than for matched parents in NNI-poor areas. However, this post-NNI difference is similar in value to the pre-NNI difference. So, our best estimate, based on this analysis, is that NNI has had a very small (less than 0.5 percentage point) impact on IB, IS or JSA receipt. This is at least broadly consistent with the negative, insignificant estimate for the effect on receipt of any of IB, IS or JSA for the work-ready population discussed in Section 3.4.3 and the very low impacts on users shown in Section 3.4.2.

#### **Impact on all families, by subgroup**

Appendix E gives details of the impact on IB, IS and JSA receipt for subgroups. There appears to be a significant impact of NNI on take-up of these benefits in areas with low levels of education (lower-than-average proportion of individuals with NVQ level 3 or more), and no significant impact in areas with higher levels of education (higher-than-average proportion of individuals with NVQ level 3 or more).

#### **3.4.5 Summary**

In terms of benefits, our analysis suggests that NNI has had a marked impact on levels of receipt of WTC and, in particular, the childcare element of WTC, with around 28% of Neighbourhood Nursery users being in receipt of the latter who otherwise wouldn't be. The impact on the work-ready population is estimated to be lower, at about 1.2 percentage points (consistent with an approximate 12-percentage-point rather than 28-percentage-point impact on users). The two together give a broad plausible range for the impact, but suggest it is at least 12 percentage points. For WTC, the impact on users is estimated to be 18 percentage points and the impact on the work-ready population 1.4 percentage points.

Perhaps surprisingly, given the impacts of NNI on employment, none of our impact estimation approaches shows a significant impact on other benefits, such as IS or JSA, although both

the impact on users and the impact on the work-ready analyses suggest that IS receipt may have decreased as a result of NNI.

### 3.5 Impact on childcare usage

#### 3.5.1 Outcome measures used

This section gives estimates of the impact of NNI on childcare usage. The outcomes considered are:

- whether parents used formal childcare in June 2005 (on its own or in combination with informal childcare)
- whether parents just used informal childcare in June 2005
- whether parents used no childcare in June 2005.

Formal childcare covers: nursery classes or nursery schools; day nurseries; playgroups or pre-schools; breakfast or after-school clubs; and childminders. Informal childcare comprises care given by relatives or friends or by ex-partners.

Section 3.5.2 gives estimates of the impact of NNI on users and Section 3.5.3 gives estimates of the impact on the work-ready population. No administrative data analysis is possible for childcare outcomes.

#### 3.5.2 Impact on users

Looking first at the impact on users, we estimate that 28% of NNI users would not be using formal childcare if they did not have their NNI place. Around 15% would be using informal childcare and 13% would have no childcare (Table 3-7).

**Table 3-7 Respondent's childcare use (impact on users)**

	<i>User %</i>	<i>Matched non-user %</i>	<i>Difference</i>	<i>p-value</i>
Formal care	100	72.5	27.5	0.000
Informal care <i>only</i>		14.7		
No care		12.8		
Unweighted base	216	200		
Weighted base	216	200		

Base: All respondents selected for individual matching impact assessment.

Survey respondents in the comparison sample who had not taken up formal childcare were asked to give their reasons why (Table 3-8). Of these, 82% gave cost as a reason. A second reason, given much less often but still by a substantial proportion, was lack of places in the local area (24%).

**Table 3-8 Reasons for not using formal childcare**

	%	<i>Unweighted base</i>	<i>Weighted base</i>
Cost	[81.7]	47	52
Place availability	[23.9]	47	52
Quality	[6.6]	47	52
Hour availability	[5.7]	20	26
Location	[5.2]	51	55
Day availability	[4.2]	20	26

Base: All respondents selected for individual matching impact assessment not using formal childcare.

Note: Square brackets are used where the base is less than 100.

### ***Impact on users, by subgroup***

As for the other outcome variables, a full subgroup analysis is given as an appendix (Appendix F). Again, small samples mean the subgroup impact estimates are imprecise, but to summarise what the estimates suggest:

- *Age of youngest child:* By the age of the youngest child, users with children from the youngest age cohort (aged 1 year 9 months and under) were least likely to have used formal childcare (63%) in the absence of the NNI. Users with children in the oldest cohort (aged 2 years 10 months to 3 years 9 months) were the most likely to have done so (83%). The figure for the middle cohort was between these two, at 73%.
- *Family type:* Dividing users by family type, we estimate that 74% of couple-family users would have found alternative formal childcare in the absence of NNI, whereas the percentage for lone parents is estimated to be somewhat lower, at 69%.
- *Level of education:* Finally, dividing users by qualification level, we estimate that 76% of users with NVQ level 2 or lower qualifications would have found alternative formal childcare in the absence of NNI, compared with just 68% of those with higher qualifications. This is counterintuitive, bearing in mind that the impact of NNI on employment was estimated to be greatest for those with the lowest qualifications. It suggests that almost all the additional take-up of childcare for those with lower qualifications is employment related, whereas take-up of childcare for others must be for other reasons.

### **3.5.3 Impact on the work-ready**

Turning to the work-ready population, work-ready individuals living in NNI-rich areas are more likely to use formal childcare than their counterparts in NNI-poor areas, the difference being just under 2 percentage points (Table 3-9). There appears to be little impact of NNI on the proportion who just use informal childcare (we would expect, if anything, the impact to be negative, with use of informal childcare decreasing because of the introduction of NNI, but the small positive impact estimate of 0.8 percentage points is not significantly different from zero). By subtraction, individuals living in NNI-rich areas are less likely to use no childcare in June 2005, by 2.6 percentage points.

**Table 3-9 Respondent's childcare use (impact on work-ready)**

	<i>NNI-rich</i> %	<i>Matched</i> <i>NNI-poor</i> %	<i>Difference</i>	<i>p-value</i>
Formal care	67.9	66.1	1.8	0.376
Informal care <i>only</i>	15.9	15.1	0.8	0.613
No care	16.2	18.8	-2.6	0.116
Weighted base (All)	1,260	1,260		

Base: All respondents in NNI-rich and NNI-poor areas.

### ***Impact on the work-ready, by subgroup***

Appendix F gives the estimates of the impact on childcare use for the work-ready population by subgroup.

- *Age of youngest child:* The largest positive impact of NNI on formal childcare use is estimated for individuals with a child in the oldest age-group (those aged 2 years 10 months to 3 years 9 months), with use of formal childcare being 6.2 percentage points higher in NNI-rich areas than in NNI-poor areas. The figure is slightly lower for the second age cohort (those aged between 1 year 10 months and 2 years 9 months), at 4.1%, and is (implausibly) negative for those with very young children. The implausible negative finding is most likely to be sampling error. The pattern of findings by age is not consistent with the analysis by age for users; the reasons for this are not clear.
- *Family type:* The impact of NNI on formal childcare use is estimated to be greater for lone parents than for those with a partner (an 8-percentage-point impact for lone parents). In this instance, the findings *are* consistent, at least in terms of ordering, with the user analysis.
- *Level of education:* Impact on formal childcare use is estimated to be greater for parents with higher levels of education (NVQ level 3 and above) than for parents with lower qualifications. This is again consistent with the user analysis.

### **3.5.4 Summary**

For childcare, the impact-on-users analysis suggests that 28% of NNI users would not be using formal childcare if the NNI place were not available. The work-ready impact estimation gives an impact of 1.8 percentage points, which is consistent with an 18-percentage-point impact on users. Based on these two estimates, it is reasonable to assume that an impact of around 20 percentage points is approximately correct.

The findings by subgroup show rather less consistency – which may cast some doubt on the overall estimate – but are most plausibly attributable to sampling error because the samples are small.

## **3.6 Cost–benefit analysis**

Cost–benefit analysis is a technique that involves comparing the total economic costs of a particular initiative with its total economic benefits, allowing us to calculate whether, overall, the initiative was beneficial to society. Here, we focus on the costs and benefits of NNI from the perspective of government finances. This ignores some dimensions of costs and benefits



(such as what the government does with any savings it makes from the initiative), these being beyond the scope of what can be done here.

### **3.6.1 Methodology**

The DfES was unable to provide estimates of the total cost of NNI, so what we present here is just the benefit side of the calculation, allowing us to say how much NNI would have had to cost for the project to be counted as financially beneficial to the government. It is also important to note that, because the evaluation concentrated on parental outcomes, any gains resulting from changed child outcomes are ignored.

A major aim of NNI is to move some parents into paid employment. Moving into work is likely to coincide with changes in the amount of tax paid and benefit income received. The financial gain from NNI is therefore the increase in the amount of tax collected plus the reduction in the amount of benefits paid across all parents in work as a result of NNI. To work out this gain, we need to know: (1) who is working as a result of NNI who wouldn't have been working otherwise; (2) for this group, the amount of taxes paid and benefits received now; and (3) what they would have paid in tax and received in benefits had they not moved into work. We do not know any of these values for certain, so we have estimated them using data from the NNI survey data and the Family Resources Survey (FRS).

To start with, we used the NNI survey data to estimate who might have moved into work as a result of NNI;<sup>21</sup> we term these the 'switchers'. The 'controls' are then the individuals in NNI-poor areas whom the switchers are matched with. Having identified the switchers and the controls, we then calculated the proportions of switchers and controls that fell into each of six family types:<sup>22</sup>

#### *controls*

- lone parents not working, with one child
- lone parents not working, with two or more children
- couples not working, with one child
- couples not working, with two or more children
- couples with one worker and one child
- couples with one worker and two or more children

#### *switchers*

- lone parents working, with one child
- lone parents working, with two or more children
- couples with one worker and one child
- couples with one worker and two or more children
- couples with two workers and one child
- couples with two workers and two or more children.

We then used the FRS from 2004/05 to calculate the likely revenue gains the switchers might provide to the government compared with the controls.<sup>23</sup> Ideally, we would compare NNI-rich areas with NNI-poor areas in the FRS directly. However, this was not possible since the most

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<sup>21</sup> We did this by performing one-to-one propensity score matching controlling for a series of pre-programme characteristics. This allowed us to identify a set of individuals who were working in NNI-rich areas but whose matches in NNI-poor areas were not.

<sup>22</sup> We ignored the possibility that individuals might cease working as a result of NNI; if this is not a valid assumption, our estimates of the likely financial gains may be upward biased.

<sup>23</sup> To do this, we first deleted all individuals living in local authorities that did not contain anyone from the CATI. We also deleted the top quartile of the income distribution, under the assumption that those moving into employment as a result of NNI would not move into this part of the income distribution. This left us with a set of individuals in the FRS that is hopefully representative of both those living in NNI-rich and those living in NNI-poor areas.

detailed geographical level available in the FRS is the local-authority level.<sup>24</sup> Instead, we compared all individuals living in a local authority containing at least one person in an NNI-rich area according to the NNI survey and all individuals living in a local authority containing at least one person from the NNI survey living in an NNI-poor area.<sup>25</sup>

Using these data, we calculated the average amount of income tax and National Insurance paid by the above family types in the FRS, and the average amount they received in benefits. We then used the family-type proportions calculated from the CATI to obtain estimates as to the weighted average amounts of income tax and National Insurance paid and benefits received for switchers and for their controls. We do not here take into account the fact that NNI may change the number of hours worked. However, it is not clear a priori in what direction this would bias the results.

### 3.6.2 Analysis

For switchers, the weighted average amount of tax and National Insurance paid is estimated as £90 per week (pw); the estimated amount of benefits received is £78 pw. For the controls, the weighted average amount of tax and National Insurance paid is estimated as £31 pw; the estimated amount of benefits received is £191 pw. This amounts to an estimated revenue gain of about £172 pw per new worker employed as a result of NNI. Given an estimate of 20% of users working who wouldn't have done so in the absence of NNI (see Section 3.3.1), this amounts to a revenue gain of £34 per user pw on average. However, the 20% impact was estimated on the basis of those most likely to be in genuine NNI-funded places – that is, users in the 20% most deprived wards. Since richer users who would have worked with or without NNI may be being excluded, our estimates of the impact and resultant financial gains from NNI may be biased upwards.

Assuming that the revenue gains from switchers last for one year only and that users use NNI for 52 weeks in total, the cost per user per year needs to be less than £1,792 if the initiative is to break even. This is shown as the first scenario of Table 3-10.

**Table 3-10 Financial implications of NNI**

	<i>Scenario</i>							
	1	2	3	4	5	6	7	8
Years of benefits	1	1	5	5	5	5	5	5
Discount rate	n/a	n/a	0%	3.5%	5%	0%	3.5%	5%
Benefits per user pw	£34	£34	£103	£99	£97	£103	£99	£97
Benefits per user pa	£1,792	£1,792	£5,377	£5,141	£5,048	£5,377	£5,141	£5,048
Users per place	1.25	1.5	1.5	1.5	1.5	1.25	1.25	1.25
Total benefits	£101m	£121m	£363m	£347m	£341m	£302m	£289m	£284m
<i>Maximum cost to make:</i>								
3.5% profit	£98m	£117m	£347m	£347m	£347m	£289m	£289m	£289m
5% profit	£96m	£115m	£341m	£341m	£341m	£284m	£284m	£284m

Alternatively, we could assume that the revenue gains last for five years, with the gains one year on being 80% of those in year zero and those in year two being 60% of those in year zero etc. In this case, each new worker produces a revenue gain of about £27,000 spread over five years. This amounts to a maximum annual cost per user of about £5,377 (£103 pw

<sup>24</sup> Note that this also prevented us from distinguishing users living in disadvantaged areas targeted by the NNI from those living outside these areas.

<sup>25</sup> Naturally, this is not perfect since local authorities are quite large, and as a result the two comparison groups will not be mutually exclusive. This will upwardly bias our estimates of the likely financial gain from NNI if those living in NNI-rich areas are poorer (conditional on working), which seems likely to be the case.

per user, again assuming that users use NNI for 52 weeks), concentrated in the first year, to break even over the five years, as is shown in the third scenario of Table 3-10.

To look at this from a total cost perspective, we need to know the number of users. We do not know this for certain, and thus we can only do calculations based on sensible illustrations. There were about 45,000 NNI places during the programme, so assuming that there are a small number of users per place (a ratio of say 1.25:1), this amounts to about 56,000 users. In the worst-case scenario, revenue gains only last for a year, in which case the total cost must be no more than £101m in order to at least break even (see scenario 1). If the ratio of users per place were higher, at 1.5:1, the total cost would need to be no more than £121m to at least break even (see scenario 2). In a more generous scenario, where gains last for five years, the total cost has to be no more than about £363m to at least break even if the ratio of users per place is 1.5:1 (see scenario 3). This is lower, at £302m in order to break even, if we assume the users-per-place ratio is 1.25:1 (see scenario 6).

However, it might be reasonable to expect that the government would want to make a financial profit on its investment in the NNI project. In this vein, we can say that if the benefits only last for one year and the government required a rate of return of 3.5%,<sup>26</sup> the cost of the entire NNI project would need to be no more than about £117m (assuming a users-per-place ratio of 1.5:1), in order for the project to be deemed financially successful. This is lower, at £98m, if we assume a users-per-place ratio of 1.25:1. These figures are £115m and £96m, respectively, if the government required a higher rate of return of 5%.

In the scenarios where the benefits of NNI last for five years (scenarios 3–8) and assuming a users-per-place ratio of 1.5:1, the cost would have to be no more than £347m to make a financial return of at least 3.5% (see scenario 4). The maximum cost is lower, at £341m, if the required rate of return is 5% (see scenario 5). Alternatively, assuming a lower users-per-place ratio of 1.25:1, the cost would have to be no more than £289m to make a financial return of at least 3.5% (see scenario 7). This cost is lower, at £284m, if the required rate of return is at the higher level of 5% (see scenario 8).

In conclusion, if the government required a rate of return of 3.5%, then £98m and £347m would represent our estimates of the lower and upper bounds on the maximum cost of NNI to deem the project a financial success.

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<sup>26</sup> This is the government's official discount rate as detailed in *The Green Book*.

## 4 SELF-REPORTED IMPACT

This chapter presents the results on the self-reported impact of NNI, based on data from the Neighbourhood Nursery users survey. The findings constitute a subjective assessment of the effects of NNI, and whilst they provide an interesting insight into the effect of the initiative, they do not constitute a robust measure of impact. They do, however, correspond well with the formal impact estimates, and so work both as a validation of those findings and to provide a better understanding of how these effects were brought about.

Section 4.1 explores parents' perceptions of how their employment circumstances might have been different if the Neighbourhood Nursery had not been available.<sup>27</sup> It also discusses parents' views of any effects the nursery had on the nature of their job and their orientation to work. Sections 4.2 and 4.3 look respectively at alternative childcare parents might have used in the absence of NNI and at whether using a Neighbourhood Nursery affected other aspects of parents' lives. Where possible, variations in parents' views between respondents with different qualification levels and family circumstances are explored.

### Key findings

- Over nine-tenths of parents felt that the Neighbourhood Nursery had played a role in enabling them to work.
- Twenty-two per cent of parents thought that they would not have been able to work had they not been able to use the Neighbourhood Nursery; this figure is comparable to the estimate of impact on users in the previous chapter.
- Lone parents and parents with low qualifications were particularly likely to report that they would not have been able to work had they not been able to use the Neighbourhood Nursery.
- Thirty per cent of working parents had changed jobs or their role at work since using the Neighbourhood Nursery; 70% of these thought that the nursery played a role in this change.
- Forty-six per cent of parents had changed their working hours since using the Neighbourhood Nursery; 78% of these thought that the nursery had enabled them to make this change.
- Other reported effects of using the Neighbourhood Nursery included feeling more confident or happier about working (42%) and having more options about work (33%). These effects were particularly likely to be reported by lone parents.
- Parents' perceptions of the childcare they would have used had the Neighbourhood Nursery not been available differed considerably from the estimate of impact on users: 48% said they would not have used formal care, in contrast to the estimate of 28% from the impact analysis. This discrepancy seems to suggest that parents overestimate the difficulty of finding (other) formal childcare.
- Approximately half of parents felt that the Neighbourhood Nursery had had an impact on other aspects of their lives, including enabling them to carry out other tasks, socialise, relax, have fun or pursue leisure activities.
- Parents' well-being seems also to have been positively affected by the Neighbourhood Nursery, with 41% saying they felt less stressed, 36% less worried or anxious and 20% less tired.

<sup>27</sup> As mentioned in Chapter 2, starting to use the Neighbourhood Nursery always refers to using the nursery for the 'selected child'.

## 4.1 Parents' perceptions of the effect of NNI on employment

### 4.1.1 How the Neighbourhood Nursery enabled paid work

Since using the Neighbourhood Nursery, 74% of parents had participated in paid work, and these parents were asked to identify whether or not the nursery had been a factor that had enabled them to work in a number of different ways.

As can be seen in Table 4-1, over nine-tenths of parents felt that the nursery had been a factor that enabled them to work. Three-quarters of respondents identified providing trustworthy, safe childcare and/or giving parents time to work as factors that had enabled them to work. Other important ways in which the Neighbourhood Nursery had facilitated the entry into work were through providing childcare that was available at the right times (61%) and that was affordable (47%).

**Table 4-1 Parents' views on how the Neighbourhood Nursery helped them to undertake paid work, by household status**

	<i>Couple parent</i> %	<i>Lone parent</i> %	<i>Total</i> %
Gave me time to work	72.5	82.7	75.3
Provided childcare that was trustworthy/safe	74.9	71.8	74.1
Provided childcare that was available at the right times	59.1	65.5	60.8
Provided childcare that I could afford	47.4	47.3	47.4
Made me think (harder) about working	7.6	9.1	8.0
I got a job at the nursery itself	0.7	1.8	1.0
Nursery gave me information on work	-	1.8	0.5
Any of these	91.1	92.7	91.5
None of these	8.9	7.3	8.5
Base	291	110	401

Base: All respondents who had worked since using the Neighbourhood Nursery.

Lone parents were particularly likely to say that through giving them time to work, the Neighbourhood Nursery had enabled them to enter employment (83%, compared with 73% of partnered parents). There were no clear relationships between the ways in which the nursery had helped parents to work and their highest qualification level.

### 4.1.2 Predicted employment circumstances without the Neighbourhood Nursery

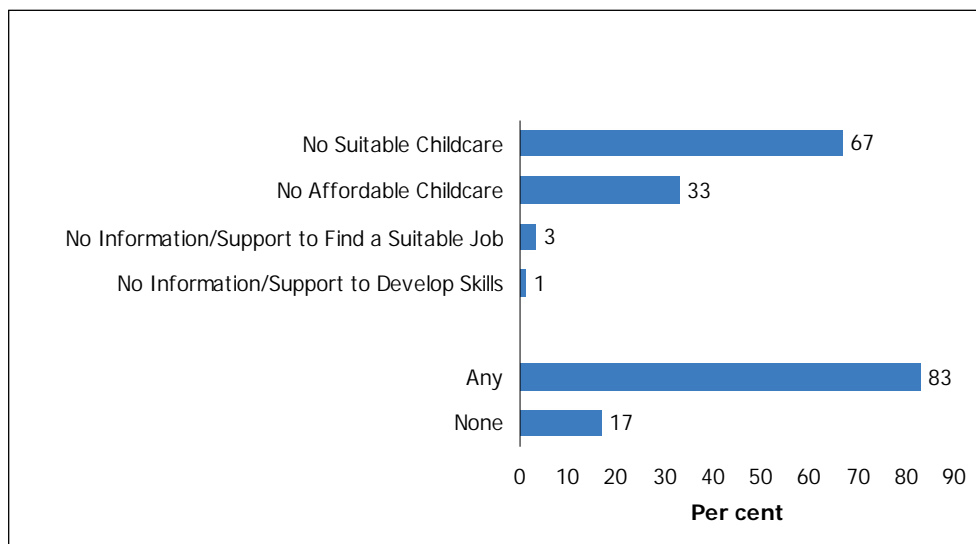
Overall, 22% of parents thought that they would not have been able to work had they not been able to use the nursery. This was particularly the case for lone parents, 29% of whom thought that they would not have been able to work without the Neighbourhood Nursery, in contrast to only 19% of partnered parents. Likewise, parents with lower qualifications (no qualifications or NVQ level 1 or 2) were more likely to say that they would not have been able to work without the Neighbourhood Nursery than parents with higher qualifications (NVQ level 3, 4 or 5) (31% compared with 17%).

These self-reported estimates closely reflect the estimates for the impact on users presented in Chapter 3, where the impact on employment was estimated to be 20%. Similarly, a greater impact was found on lone parents and parents with low qualifications through both the self-reported impact shown above and the robust estimates of the impact on the treated.

As can be seen in Figure 4-1, of those parents who thought that they would not have been able to work without the Neighbourhood Nursery, the most common reason given was that

there was no other suitable childcare available: this was selected by over two-thirds of parents. One-third of parents mentioned the lack of affordable childcare as a reason why they would have not have been able to work. Very few parents said that a reason for them not being able to work was that they would not have had information on or support for finding a suitable job or developing skills for a job; this is consistent with the finding in Chapter 2 that only a small number of nurseries provide this facility.

**Figure 4-1 Reasons why parents would not have worked if unable to use the Neighbourhood Nursery**



Base: All respondents who would not have worked if the Neighbourhood Nursery had not been available.

#### **4.1.3 Effect of the Neighbourhood Nursery on the nature of parents' work**

Since starting to use the Neighbourhood Nursery, 30% of working parents had changed their role at work or joined a different organisation and, of those, 70% thought that the nursery had played a role in this change.

Table 4-2 shows the nature of the effects parents felt the Neighbourhood Nursery had had on their role at work. As a result of parents' changes in role or organisation, over half of parents had a higher-level job and/or a job that was more interesting, whilst just under half earned more money. However, for a substantial minority of parents, the change to their job involved a change that *might* be seen as less positive. For instance, 9% of parents said that they had changed to a lower-level job and 7% of parents said that their new job was less interesting. Furthermore, almost a quarter of parents said that they earned less money in their new job.

**Table 4-2 Nature of the change to parents' role at work**

	%
<i>Job level</i>	
Higher level	[55.3]
Lower level	[9.4]
No change	[35.3]
<i>Interest level</i>	
More interesting	[50.6]
Less interesting	[7.2]
No change	[42.2]
<i>Money</i>	
More money	[48.8]
Less money	[23.8]
No change	[27.4]
<i>Distance</i>	
Nearer	[30.6]
Further	[16.5]
No change	[52.9]
Base	85

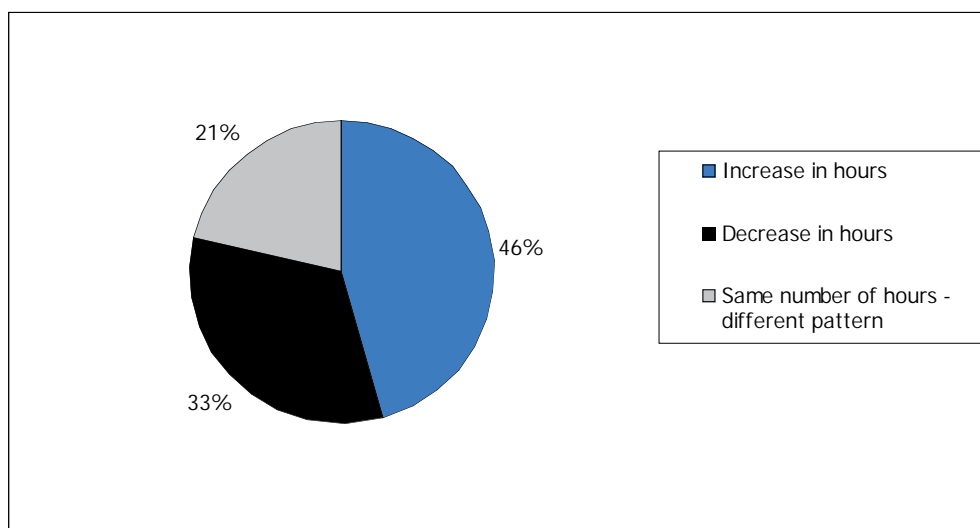
Base: All respondents who had changed their role at work since using the Neighbourhood Nursery and thought that using the nursery had enabled them to make this change.

Note: Square brackets are used where the base is less than 100.

Looking at changes to working hours reveals that 46% of working parents had changed their hours since starting to use the Neighbourhood Nursery; 78% of those parents stated that the nursery had played a role in this change.

As can be seen in Figure 4-2, of the parents who felt that the nursery had enabled them to change their hours, 46% said their hours had increased, 33% said their hours had decreased and 21% said the nursery had enabled them to start working a different schedule. The relatively high proportion of parents who had decreased their hours is consistent with the findings that showed a substantial proportion of parents earning less money as a result of their change in role or organisation.

**Figure 4-2 Changes to parents' hours**



Base: All respondents who had changed their hours since using the Neighbourhood Nursery and thought that using the nursery had enabled them to make this change.

#### 4.1.4 Effect of the Neighbourhood Nursery on parents' orientation to work

A substantial number of parents also felt that using the Neighbourhood Nursery had affected their orientation to work. As can be seen in Table 4-3, the most common effect attributed to using the Neighbourhood Nursery was increased confidence or happiness about working, reported by 42% of parents. A similarly widespread effect of the Neighbourhood Nursery was an increase in the number of options parents felt they had about work, which was reported by almost one-third of parents. Lastly, 9% of parents felt that since using the nursery, work had become more important to them.

**Table 4-3 Change to parents' orientation to work, by household status**

	<i>Couple parent</i> %	<i>Lone parent</i> %	<i>Total</i> %
<i>Confidence/Happiness about work</i>			
More confident/happy	37.4	53.0	42.0
Less confident/happy	7.5	2.0	5.9
No change	55.0	45.0	52.1
<i>No. of work options</i>			
More options	29.8	40.4	32.9
Fewer options	10.3	2.6	8.0
No change	59.9	57.0	59.0
<i>Importance of work</i>			
More important	5.9	18.0	9.4
Less important	15.9	8.0	13.6
No change	78.2	74.0	77.0
Base	358	151	512

Base: All respondents.

Differences between lone parents and partnered parents in the perceived effect of the Neighbourhood Nursery can be observed in all three measures of work orientation. Lone parents were more likely than partnered parents to feel more confident and happier about work (53% compared with 37%), were more likely to believe their work options had increased (40% compared with 30%) and were more likely to feel that work was now more important to them (18% compared with 6%).

It might be expected that the corresponding change for partnered parents would be an increase in the proportion of parents reporting that the nursery had no effect on their work orientation. However, it is notable that in actuality, partnered parents are more likely to report negative effects of the nursery on their work orientation than lone parents as well as being more likely to report no effect. This outcome is surprising and there does not appear to be a clear explanation for this result.

Throughout this section, it should be borne in mind that while in many instances it is relatively clear whether job changes are more likely to have been positive or negative, in other instances it is less clear. For instance, working fewer hours may be positive or negative: it could be negative if the reduction in hours was necessary due to the nursery being unable to provide as many hours as required; alternatively, it may have been a positive choice in order to achieve a better work–life balance. Where this is the case, it is not possible to determine, from the data available, what proportion of instances signify a positive as opposed to a negative change.



## 4.2 Parents' perceptions of the effect of NNI on childcare

In order to explore the importance parents placed on being able to use the Neighbourhood Nursery, they were asked how difficult they felt it would have been to find satisfactory alternative childcare had the Neighbourhood Nursery not been available. Just over two-thirds of parents stated that it would have been difficult to find alternative childcare, and this was particularly likely to be the case for lone parents (75% of lone parents compared with 65% of partnered parents).

We also asked parents what childcare they thought they would have used regularly<sup>28</sup> if the Neighbourhood Nursery had not been available. Just over half of parents thought that they would still have used formal childcare, while 27% would have switched to using informal care only and one-fifth would not have used any childcare at all. Table 4-4 shows that lone parents would have been particularly unlikely to use other formal care if the Neighbourhood Nursery had not been available (40% compared with 57% for partnered parents) and would have been more likely to rely on informal childcare only (38% compared with 23%).

**Table 4-4 Parents' alternative childcare arrangements if unable to use the Neighbourhood Nursery, by household status**

	<i>Couple parent</i> %	<i>Lone parent</i> %	<i>Total</i> %
Formal	56.7	39.5	51.6
Informal <i>only</i>	22.5	37.5	27.0
None	20.8	23.0	21.5
Base	360	152	512

Base: All respondents.

The self-reported estimate that a substantial number of parents would not have used formal childcare had they not been able to use the Neighbourhood Nursery is consistent with the estimate of the impact on users presented in Chapter 3. However, the magnitude of the self-reported estimate is substantially greater than the estimate from the impact on users (48% compared with 28%), and it is likely that users have overestimated the difficulty of finding alternative formal childcare. Nevertheless, the greater impact on lone parents than on partnered parents was found both here through self-report and in the earlier impact chapter.

Unsurprisingly, parents' predictions of their childcare arrangements had they not been able to use the Neighbourhood Nursery also depended on their employment status. Table 4-5 shows that working parents were more likely than non-working parents to say that they would have used formal childcare (57% compared with 37%). Similarly, working parents were substantially less likely than non-working parents to say that they would not have used any childcare had they not been able to use the Neighbourhood Nursery (17% compared with 36%). This pattern is to be expected since while non-working parents can care for their children at home, this option is not open to most parents who rely on childcare in order to work. In addition, working parents are more likely to be able to afford what is likely to be the high cost of alternative formal childcare, whereas this may be unaffordable for many non-working parents. As shown by the NNI Implementation Study, a place in a typical Neighbourhood Nursery costs less than a place in an average nursery in England (Smith et al., 2007).

<sup>28</sup> Regularly was defined as once a week or more often.

**Table 4-5 Parents' alternative childcare arrangements if unable to use the Neighbourhood Nursery, by household working status**

	<i>Working</i> %	<i>Not working</i> %	<i>Total</i> %
Formal	56.6	37.1	51.6
Informal <i>only</i>	26.8	27.3	27.0
None	16.6	35.6	21.5
Base	380	132	512

Base: All respondents.

Given the close correlation between qualification levels and work, it is not surprising to find that parents with high qualifications were more likely than others to say that they would have used another type of formal care if the Neighbourhood Nursery had not been available (Table 4-6). For instance, whilst 59% of parents with higher qualifications (NVQ level 3, 4 or 5) would have used formal childcare in the absence of the Neighbourhood Nursery, only 41% of parents with no qualifications or NVQ level 1 or 2 reported this.

**Table 4-6 Parents' alternative childcare arrangements if unable to use the Neighbourhood Nursery, by qualification level**

	<i>No qualifications</i> <i>/ NVQ 1 / NVQ 2</i> %	<i>NVQ 3 / NVQ 4 /</i> <i>NVQ 5</i> %	<i>Total</i> %
Formal	40.7	58.8	51.6
Informal <i>only</i>	30.4	24.7	27.0
None	28.9	16.6	21.5
Base	204	308	512

Base: All respondents.

### 4.3 Parents' perceptions of the effect of NNI on other aspects of life

Table 4-7 shows that approximately half of all parents felt that using the Neighbourhood Nursery had enabled them to relax, have fun and pursue leisure activities, carry out other tasks or make friends and meet new people.

**Table 4-7 Parents' assessment of the effect of the Neighbourhood Nursery on other aspects of life, by household working status**

	<i>Working</i> %	<i>Not working</i> %	<i>Total</i> %
Make friends / Meet new people	54.7	64.4	57.2
Carry out other tasks	42.4	81.1	52.3
Relax, have fun & leisure	36.6	70.5	45.3
Base	380	132	512

Base: All respondents.

Although marginally more non-working parents than working parents thought that using the nursery had helped them make friends and meet new people (64% compared with 55%), this difference was not statistically significant. However, there were some striking differences between the opinions of working and non-working parents, with the latter being substantially more likely to report an impact of using the Neighbourhood Nursery. For instance, whilst 71% of non-working parents felt that using the nursery had helped them to relax, have fun and pursue leisure activities, this was the case for only 37% of working parents. Similarly, whilst 81% of non-working parents reported that using the nursery had helped them to carry out

other tasks, this was the case for only 42% of working parents. These differences are likely to reflect the differing ways in which parents use the time when children are at the nursery. Whilst working parents are most likely to use this time to go to work, non-working parents have a greater opportunity to use the time to carry out other tasks or pursue leisure activities.

We see similar variations between parents with different qualification levels (Table 4-8), a likely reflection of the fact that those with lower qualifications are less likely to be in work. In particular, parents with no qualifications or NVQ level 1 or 2 were more likely to say that using the Neighbourhood Nursery helped them to relax, have fun and pursue leisure activities (52%, compared with 41% for those with higher qualifications).

**Table 4-8 Parents' assessment of the effect of the Neighbourhood Nursery on other aspects of life, by qualification level**

	<i>No qualifications / NVQ 1 / NVQ 2</i> %	<i>NVQ 3 / NVQ 4 / NVQ 5</i> %	<i>Total</i> %
Make friends / Meet new people	59.3	55.8	57.2
Carry out other tasks	54.9	50.6	52.3
Relax, have fun & leisure	51.5	41.2	45.3
Base	204	308	512

Base: All respondents.

There were no significant differences between lone parents and partnered parents as to the effect that they thought the Neighbourhood Nursery had had on these areas of their lives.

Table 4-9 shows parents' perceptions of the (positive or negative) effects the Neighbourhood Nursery had on their general well-being. Forty-one per cent of parents thought that using the nursery made them less stressed, compared with only 6% who thought that they were more stressed. Thirty-six per cent of parents thought that using the Neighbourhood Nursery made them less worried or anxious, compared with 7% who thought that it made them more worried or anxious. Similarly, one-fifth of parents felt that using the nursery made them less tired, while only 6% thought that it had made them more tired.

**Table 4-9 Change to parents' feelings, by household working status**

	<i>Working</i> %	<i>Not working</i> %	<i>Total</i> %
<i>Stressed</i>			
Less stressed	38.4	49.2	41.2
More stressed	5.8	4.5	5.5
No change	55.8	46.2	53.3
<i>Worried / Anxious</i>			
Less worried/anxious	36.3	33.3	35.5
More worried/anxious	6.8	6.8	6.8
No change	56.8	59.8	57.6
<i>Tired</i>			
Less tired	16.6	28.2	19.6
More tired	6.6	4.6	6.1
No change	76.8	67.2	74.4
Base	380	132	512

Base: All respondents.

As was found earlier in this section, there were some clear differences between the feelings of working and non-working parents. A greater proportion of non-working parents thought that using the nursery made them feel less stressed and less tired than working parents (49% compared with 38% and 28% compared with 17% respectively). The greater likelihood of

non-working parents feeling less stressed and less tired reflects the findings above that non-working parents were more likely to report that using the nursery helped them to carry out other tasks and to relax, have fun and pursue leisure activities. For whilst freeing parents of childcare responsibilities for some periods of the day reduces the time pressure on parents, for those who undertake work during these periods any associated reduction in tiredness and stress is likely to be partly offset by pressures of paid employment.

There were no significant differences in the way lone and partnered parents felt as a result of using the Neighbourhood Nursery.

Likewise, no differences were apparent between parents with different qualification levels.

## 5 CONCLUSIONS

In this chapter, we first draw together the findings from previous chapters to consider whether and to what extent the Neighbourhood Nursery Initiative succeeded in making childcare more accessible and in increasing parental employment in the most disadvantaged areas of the country. We then examine the factors that might have limited the success of some aspects of the programme. Finally, we consider the policy implications of the evaluation findings.

### 5.1 Has NNI worked?

While the results from the previous chapters present an overall positive picture of the effects of NNI on users, some of the findings could raise questions about the effectiveness of some aspects of the programme. These mixed results partly reflect the complex methodological issues involved in evaluating a programme that is likely to have had a very diffused effect and that was implemented very flexibly and with a considerable degree of variability. In addition to these methodological challenges, the mixed results are also likely to reflect the difficulties of finding effective ways of influencing the complex interplay of factors that shape parents' employment and childcare decisions, and the dynamics of different and probably very diverse local childcare markets.

As we have seen in Chapter 2, there is evidence that NNI has successfully reached disadvantaged groups, such as lone parents, minority ethnic families, those on low incomes and those with low educational qualifications. NNI seems also to have had considerable positive effects on parental employment and employability: just over a fifth of parents reported having entered work or training after they started to use the Neighbourhood Nursery; this finding is consistent with the formal impact assessment reported in Chapter 3 and suggests that most of these new entries to work are additional (that is, they would not have happened if a Neighbourhood Nursery place had not been available). In addition, NNI has had a positive impact on the take-up of the Working Tax Credit, and in particular its childcare element, with at least 12% of users in receipt of the latter who otherwise wouldn't be. NNI has also led to an increase in the use of daycare: about 28% of users would not have been using formal childcare if an NNI place had not been available. There is also some evidence that the impact of NNI has been greatest among disadvantaged groups, including lone parents and those with low qualifications. Parents' perceptions of the effects of NNI are consistent with the formal impact assessment findings, with just over a fifth of parents saying that they would not have been able to work without the Neighbourhood Nursery. The self-reported work impact was particularly high for lone parents, again a finding consistent with the impact assessment estimates. Over and above the impacts on work and childcare, many parents reported being more confident and happy about work as a result of using the nursery, and many also reported a range of other positive effects, such as increased leisure time, opportunities to socialise and lower stress levels.

While NNI seems to have had a considerable positive impact on a substantial minority of families, other results suggest that the programme might not have been very effective in some respects. First, a majority of parents (almost two-thirds) were already in paid work or training before taking up a Neighbourhood Nursery place. Second, the level of Neighbourhood Nursery use was fairly low, with just 10% of potential users (i.e. work-ready parents) taking up a Neighbourhood Nursery place. This means that, even though the impact on users is reasonably high, the impact on local populations is small, although still positive, being about one-tenth of the impact on users. For instance, measured across the work-ready parent population, NNI is estimated to have increased employment by just 1.3%.

## 5.2 Could NNI have been more effective?

The above results raise the question of why only 10% of work-ready parents in disadvantaged areas used a Neighbourhood Nursery. There could be three possible reasons:

- Neighbourhood Nurseries might not have created enough places to meet parents' needs in these areas
- there might be a mismatch between what the nurseries provide (e.g. in terms of location, opening hours, cost) and what local parents need and can afford
- there might be a limited need for formal childcare in these areas.

These issues are considered in turn below.

The results of the NNI Implementation Study (Smith *et al.*, 2007) on any spare capacity that nurseries might or might not have had are not conclusive: while nearly two-thirds of nurseries had a waiting list, fluctuations in demand were reported by many nurseries and typically not all (NNI) places were filled. The Neighbourhood Nursery users survey also shows that only a small number of parents (less than a fifth) had to wait for a place (Section 2.4). These results suggest that while lack of places might have been an issue in some areas, overall this does not seem to be the main reason for the relatively low level of Neighbourhood Nursery use. Another issue to consider here is that 40% of Neighbourhood Nurseries were located outside the 20% most deprived areas (Smith *et al.*, 2007), and an even higher proportion of users (58%) were living outside these areas (Section 3.2). So while, overall, nurseries might have had some spare capacity, it does not necessarily mean that all or most of this capacity was in the 20% most deprived areas, where the impact assessment was carried out.

There is some evidence from the NNI Implementation Study that a mismatch between what providers offer and what local parents need might partly explain the low level of use. As we have seen, Neighbourhood Nurseries are used mainly by working parents, and nurseries could find it difficult to fill their places in areas where employment opportunities are limited. The overwhelming majority of parents had to pay for their Neighbourhood Nursery place (Section 2.3), and without the income from a job and the subsidy from the childcare element of the WTC, many parents in these areas might not be able to afford to take up a place. For example, some nursery managers interviewed for the NNI Implementation Study believed that cost was one of the reasons why they were struggling to attract groups among whom employment levels are very low, such as asylum-seeking families, teenage parents, some ethnic minority groups and lone mothers. Similarly, some nurseries found it difficult to retain parents who might have received subsidised childcare while they were undertaking some training, but could not afford to continue to use the nursery once the training (and the childcare funding) was over and they started looking for a job (Smith *et al.*, 2007). In addition to affordability, there is the question of whether the type of service offered by Neighbourhood Nurseries meets parents' needs – for example, in terms of opening hours, or flexible provision that can be used on a part-time basis or that allows parents to change hours or sessions in response to what might be variable needs (e.g. if their working hours vary). Evidence from the NNI Implementation Study and other research on local childcare markets (Harries *et al.*, 2004) shows that usually it is not financially viable for nurseries to provide the kind of flexibility some parents need. Some of the results from the Neighbourhood Nursery users survey also seem to indicate that nurseries cannot always meet parents' needs – for example, for childcare at atypical hours. These findings also show that nurseries might have rather inflexible booking systems, given that just over half of parents had to pay for childcare they did not need (Section 2.3). It would therefore appear that the type of service provided by Neighbourhood Nurseries might not suit all parents' needs and this could partly explain the low level of use.

As other studies have found (Bell et al., 2005; Harries et al., 2004), parents' views on and attitudes towards formal childcare and knowledge about local services could have also played a part in keeping the level of NNI use relatively low. Some parents might not want to leave their children in the care of 'strangers'; others might have a very limited knowledge of local services and the availability of childcare subsidies and therefore might not consider formal childcare as a feasible option for them. Parents' attitudes towards formal childcare and views about the accessibility of formal provision are typically closely linked to the availability of informal help from relatives and friends: in close-knit communities where informal care is widely available and has traditionally provided the main form of parental support, some parents might be reluctant to switch to formal childcare. Nursery managers who took part in the NNI Implementation Study believed that some of these cultural issues were indeed a barrier to take-up of NNI places. However, they also believed that with better information and better outreach strategies, some parents' attitudes towards formal childcare might change, a conclusion that has been reached by other studies (Bell et al., 2005; Harries et al., 2004). If true, this might indicate that the level of daycare use is likely to increase as nurseries become established and the use of formal childcare is 'normalised' in areas where it has been largely absent in the past.

### **5.3 What are the implications for childcare policy?**

As summarised above, most of the results on the impact of NNI point in the right direction (e.g. in terms of increases in employment and employability, take-up of formal childcare, the groups that are most likely to benefit), but despite the considerable impact NNI has had on users, the area-level impact has been small. Given that decisions about using (formal) childcare are affected by cultural and attitudinal factors, which might in turn be influenced by the availability of local childcare services, early results might not provide a very good indication of the overall impact of the initiative, and evidence from other research seems to suggest that take-up could increase with time (e.g. Bryson et al., 2006; La Valle et al., 2000). However, the current childcare funding policy (which relies heavily on demand-side subsidies available only to working parents) means that an increase in take-up of daycare will depend to a considerable extent on achieving synergy between employment/regeneration initiatives and childcare programmes. As the NNI Implementation Study results show, an increase in daycare provision is only sustainable if parents can find jobs and can therefore afford to pay for daycare.

Another issue to consider is whether better outreach and information strategies are needed to ensure that all parents are fully aware of the childcare services available in their local area. As this study has shown (Section 4.2), parents might be overestimating the difficulties of accessing formal childcare. Evidence from other studies (e.g. Bell et al., 2005; Bryson et al., 2006) also suggests that better information about childcare services could lead to an increase in use of formal provision, as it would enable parents to make more informed choices about childcare and work.

Finally, a relatively high proportion of Neighbourhood Nurseries and parents using these nurseries were located outside the 20% most disadvantaged areas. This could raise the question of whether NNI would have had a greater impact if it had been more focused on its target locations. However, some of the evidence seems to indicate that there can be considerable benefits in locating nurseries in a mixture of more and less deprived areas. Like many other childcare providers, many Neighbourhood Nurseries faced considerable difficulties in becoming financially viable. Aiming for a diverse 'client group' in terms of socio-economic composition might be an effective way of ensuring their long-term viability, as has been highlighted by the NNI Implementation Study and other research on local childcare markets (Harries et al., 2004). In addition, evidence on the impact of different types of childcare services on child outcomes has shown that attending a setting that is mixed in

terms of the children's socio-economic backgrounds can have considerable additional benefits for children from disadvantaged groups, as shown by the Childcare Quality and Children's Behaviour Study, as well as other research (Mathers and Sylva, 2007; Sylva et al., 2004).



## APPENDIX A POSTAL SCREEN SAMPLE SELECTION

In this appendix, we provide a detailed explanation of:

- the procedures for identifying deprived areas from which the research population was then selected
- how we gathered the information to classify areas according to the level of NNI and other daycare provision
- the definition of our 'treatment' and comparison areas
- the procedures used to identify matched samples of parents in the 'treatment' and comparison areas.

We describe the sample selection procedures for both the pilot and the main postal screen.

### A.1 Selecting deprived areas and groups of pre-school-age children

- Census Output Areas (OAs) that fell into the poorest 20% of Super Output Areas (SOAs) were identified based on the 'Income Deprivation Affecting Children' (IDAC) domain from the indices of deprivation 2004. In total, there were 33,184 most deprived OAs on the child poverty index. A table with these OAs was sent to DWP who matched them with its Child Benefit records via postcodes and selected records that were traced within these deprived OAs. The Oxford Team worked with individual Child Benefit records in these deprived OAs.<sup>29</sup>
- The age range for target children in these most deprived OAs was specified. For the pilot-stage sample, children aged 6 months to 3½ years were selected. For the main-stage sample, DWP was asked to produce an extract of the records of those children who on 31 August 2004 were 6–35 months old. The target was not the household in which these children lived but the carers/guardians/parents of these children.
- DWP was then asked to produce for each of these carers the number of their children aged 6–35 months, 0–4 years and under 16 years old. The age of the parent and the gender and age of their youngest child between 6 and 35 months old were also flagged (this child was to be the child whom the survey was to ask the carer/parent about).

### A.2 Gathering data on childcare provision

- Quarterly data from DfES for NNI provision were used. For the pilot study, the data were for May 2004, whilst the main study used NNI places including planned ones as at June 2004. For the pilot study, we calculated the number of NNI places with status registered as 'open' and summed those at the OA level. For the main study, however, we also calculated the number of NNI places that were planned to open by March 2005; again, a sum of these places was calculated at OA level.
- Ofsted provided a ward-level data-set (based on Census Area Statistics (CAS) wards 2003) containing the number of providers and places by registered childminders, full-time

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<sup>29</sup> Two members from the Oxford Team worked at the DWP headquarters in Newcastle with staff from the Information and Analysis Directorate to extract appropriate individual-level samples from the Child Benefit records. In particular, the authors would like to thank Katie Dodd and John Bilverstone of DWP for their help in selecting the sample.

daycare nurseries, sessional daycare nurseries and crèches as at March 2003. A total number of places was produced by summing the places in full-time daycare nurseries, sessional nurseries and childminders and subtracting from this total the number of NNI places open at the time that the Ofsted data were extracted. Places in crèches were not taken into account as these places were not designed for the needs of working parents.

- The number of part-time early educational places was not taken into consideration in the pilot study. For the main study, however, administrative educational data (PLASC2002) were used to extract the number of children under 4 years old who were attending a primary school, nursery class or nursery school on a part-time basis. Those in special schools were excluded from the analysis. The individual-level file was then aggregated at the OA level, producing a total for the number of children under 4 years old who had a part-time place in a primary or nursery school.

### **A.3 Mapping childcare facilities**

- For each of the most deprived OAs, a buffer zone was drawn around its population-weighted centre point. The radius used to draw this OA-centred buffer zone was based on the analysis of administrative educational data (PLASC) that contain the postcodes of schools and those of their students' residences; this analysis generated an average distance travelled by students of primary schools aged 5 to 7 years for each district / local authority. For the pilot study, the radius was calculated as the sum of the average distance per district plus one standard deviation; the final figure was rounded to the nearest 0.25km. For the main study, however, this radius was deemed to be too large: since the number of NNI places had increased rapidly in the period between the pilot and the main study, a large radius could result in a disproportionately large number of NNI-rich areas being generated. Therefore, for the main study, the radius was reduced by taking the average distance – as before – plus half (rather than the whole) of the standard deviation; the final figure was also rounded to the nearest 0.25km.
- This radius representing a 'reasonable travelling distance to childcare facility' was sent to the Geographical Information Systems (GIS) consultant, who used it to draw the OA-centred buffer zones. Using this along with an OA-level data-set containing the number of NNI places, the GIS expert calculated the number of NNI places within the OA-centred buffer zone.
- The GIS expert also measured the distance to the nearest NNI place from each OA population-weighted centroid using the 'crow flies' method for calculating distances. This was reported in km.
- A third measure produced, based on the calculations of the GIS consultant, was the proportion of the OA-centred buffer zone in each CAS ward. This was used as a weight (see next section).

### **A.4 Measuring access to childcare provision**

- The mapping process generated a direct measure of NNI provision (number of NNI places and distance to nearest NNI place) as well as a weight to be used for calculating other types of provision within the OA-centred buffer zones.
- Regarding the latter, the number of non-NNI childcare places (Ofsted) data were initially provided at ward CAS level. To translate these figures to the level of OA buffer zones, they were multiplied by the weight generated by the GIS consultant.

- As for the early educational places, scores were aggregated at the ward level and then multiplied by the weight.
- Population estimates at ward level were used to standardise all childcare figures (NNI, Ofsted, PLASC). For the pilot study, only Ofsted data were standardised using 2001 Census population estimates for children aged 0–4 years. For the main study, all childcare data were standardised using 2001 Census population estimates; these ward-level estimates were also weighted to convert them to the level of OA-centred buffer zones. NNI and Ofsted data were standardised using weighted population estimates for all children aged 0–4 years. PLASC data for early educational places were standardised using weighted population estimates for children aged 3–4 years.
- A weighted score is based on the assumption of an equally distributed population.

## **A.5 Identifying NNI-rich and NNI-poor areas**

### ***The pilot stage***

- NNI-rich areas were defined as OAs that fall into the top 30% on access to NNI (ranging from 46 to 362 places in the buffer area) and also in the top 30% in terms of distance (less than 1km as the crow flies).
- NNI-poor areas were defined as those with no NNI places in the buffer and also in the bottom 30% in terms of distance (more than 2.25km to the nearest NNI nursery).

### ***The main survey***

- An NNI-poor area was defined as one that falls into the 67% worst areas in terms of number of NNI places per child aged 0–4 years (i.e. it has 0–0.09 NNI places per child) and also falls into the 40% worst areas in terms of distance to the nearest nursery providing NNI places (i.e. 1.052–42.146km away).
- An NNI-rich area was defined as one that falls into the 33% top areas in terms of number of NNI places per child aged 0–4 years (i.e. it has 0.10–0.69 NNI places per child) and also falls into the 60% best areas in terms of distance to the nearest NNI nursery (i.e. 0.01–1km away).
- All other areas were classified as middle NNI areas. Families that lived in these OAs were excluded from further analysis.

### ***The final survey***

- The same procedure was used as for the main survey sample, but with updated information from DfES on actual NNI provision to define NNI-rich and NNI-poor.
- Between 3% and 5% of cases switched between the categories – because an NNI did not open or because an NNI moved sufficiently to be outside the catchment of one set of areas and into the catchment of another or because there was a new NNI.
- In our final analysis, we defined an NNI-rich area as one that was NNI-rich under both the earlier and later definitions and an NNI-poor area as one that was NNI-poor under both definitions.

## A.6 Undertaking the ‘propensity score matching’ procedure

### *The pilot stage*

- We started with an extract from the Child Benefit records which contained children of the target age-group who lived in the 20% most deprived OAs in England. DWP ensured that all ‘sensitive’ cases were excluded and that in the case of parents having more than one child in the target age-group, only one of these children was randomly selected.
- Only CB records in NNI-poor (control) and NNI-rich (treatment) areas were selected, thus excluding the ones in the middle range of NNI provision.
- Seven hundred cases in the NNI-rich areas were randomly selected (note that our target was 400 cases but we over-sampled in order to increase the possibilities for a matched sample in the control areas). A file that contained *all* cases in control areas was also created. These two files (i.e. the random sample in the treatment areas and the full sample in the control areas) were added together.
- A logistic regression was run using the ‘variables for propensity score matching’ in Box A-1 as independent variables and the NNI flag (control=1 vs treatment=0) as the dependent variable. The predicted probability, which stands for the propensity score, was saved.

### **Box A-1 Variables used for propensity score matching – pilot stage**

Age of child
Gender of child
Ratio of 0–4 population to places in childminders in the area
Ratio of 0–4 population to places in full-time daycare nurseries in the area
Ratio of 0–4 population to places in sessional daycare nurseries in the area
Ratio of 0–4 population to total number of places (childminders and nurseries) in the area
Income Deprivation Affecting Children (IDAC) score at SOA level
Income Deprivation Affecting Children (IDAC) score at LA (district) level
Adult education index score at SOA level
Child education index score at SOA level
Index of Multiple Deprivation (IMD) 2004 score at SOA level
Employment deprivation index score at SOA level
Health deprivation index score at SOA level

- A separate file for cases in treatment areas and another one for cases in control areas were created.
- In each file, the propensity score was rounded to a selected number of digits (during the pilot stage, we tried a few roundings but decided on a four-digit one; the advantage of taking a score rounded to more digits is that a more perfect match can be found, but the disadvantage is that it narrows the possibilities of finding a pair).
- Both files were sorted by the rounded propensity score. In addition, the file with cases in control areas was also sorted by a random number.
- The two files were then matched by rounded probability score.

- A check was made to ensure that the right number of pairs had been generated and tests were run to ensure that differences between the two samples on the matching variables were not statistically significant (t-tests and cross-tabulations).

### ***The main survey***

- For those in NNI-rich areas, a cross-tabulation was produced showing the ratios of their distribution in the nine strata (Type of area [three types: London, rural, other] × Level of deprivation [three levels, after classifying most deprived OAs into 3-tiles]).
- Using these ratios, a random and stratified sample of 25,000 cases in NNI-rich areas was selected. The proportions of the sample treatment population for each stratum were identical to those for the whole treatment population.
- This sample was then divided into three subsamples: those living in the government region of London, those in rural areas (as in the ONS classification) and those in all other areas.
- Each treatment subsample was merged with the total sample of control cases living in each of the three areas. Three files were produced, each containing the randomly selected treatment sample and all control cases in the respective area.

### **Box A-2            Variables used for propensity score matching – main survey**

<p>Age of parent/claimant  Age of youngest child in the 6- to 35-month-old group  Gender of that child  Number of children aged 0–4 years  Number of dependent children (0–15 years old)  Ratio of 0–4 population to other childcare places at OA level (childminder and nursery places as in Ofsted data minus NNI places during that period) in 2003  Ratio of 0–4 population to early educational places in mainstream primary schools in 2002  IMD2004 score at SOA level  Child poverty index score at SOA level  Child poverty index score at LA (district) level  Child education index score at SOA level  Employment deprivation index score at SOA level  Proportion of population with level 4/5 educational qualifications (OA level, Census 2001)  Proportion of population with no formal educational qualifications (OA level, Census 2001)  Proportion of population at a/b social class (higher and intermediate managerial / administrative / professional) (OA level, Census 2001)  Proportion of population at e social class (on state benefit, unemployed, lowest grade workers) (OA level, Census 2001)</p>
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- A logistic regression was run for each file with the 16 independent variables / matching characteristics in Box A-2 and the dichotomous variable of NNI (rich vs poor) as the dependent variable. A propensity score was generated and saved. At this stage, all regression models were highly significant.
- The propensity score matching followed.
- To reduce the matched treatment cases into the 17,500 ones that constitute the final target sample, the process of random stratification was applied again so that the same proportion of cases in higher, medium and lower deprived areas in London, rural and other areas was randomly selected.
- The same logistic regressions were run again and, this time, models for all areas were insignificant, as were most of the covariates.

## APPENDIX B ADMINISTRATIVE DATA

This appendix describes in detail the administrative data and how they were set up.

### B.1 Administrative data sources

The Department for Work and Pensions provided three data-sets:

- **Child Benefit data:** A data-set of Child Benefit (CB) recipients who, as at 31 December 2004, were:
  - living in an NNI-rich or NNI-poor area
  - had at least one child born between 1 September 2000 and 31 August 2004.

This data-set contained about 350,000 individuals. Ideally, we would have liked to have had information about CB recipients living in an NNI-rich or NNI-poor area in January 2002 (before NNI got going), not December 2004. However, this was not possible.

- **Benefits data:** A spell-level data-set of all benefit claims recorded in the National Benefits Database (NBD) for individuals in our Child Benefit data. Around 70% of CB recipients in our sample had at least one benefit spell on the NBD.
- **Employment data:** A spell-level data-set of all periods of employment recorded in the Work and Pensions Longitudinal Study (WPLS) for all individuals in our Child Benefit data who also had at least one benefit spell on the NBD. We received employment spells for around 48% of individuals in our Child Benefit data. DWP was unable to release to us employment information for individuals without any benefit spells on the NBD. Before sending us the WPLS data, DWP dropped all spells marked as old, spells flagged as being time on benefit, and spells ending on or before the day they started.

The range of background information contained in these data-sets is limited (we know age and sex of claimant and number and age of children, but not much else). Consequently, we used the 2001 Census to proxy for missing characteristics. The variables we used were (all measured at the Output Area – around 150 households):

- proportion of individuals aged 0–4 (OA level)
- proportion of families that are lone-parent families (OA level)
- highest qualification (OA level).

To proxy for local labour market conditions, deprivation and childcare provision, we also used:

- unemployment rate (by travel-to-work area) from the 2001 Census
- Ofsted childcare data (OA level)
- Index of Multiple Deprivation (IMD) score (SOA level)
- IDACI – the child poverty element of the IMD (SOA level).

### B.2 Merging data sources together

Employment and benefits data were matched to individuals using the *ccorcid* identifier present in both data-sets. Child benefit data were merged in using encrypted National

Insurance number (*NINo*). Any cases with more than one *NINo* for a given *ccorcid* or more than one *ccorcid* for a given *NINo* were dropped (this was done to avoid benefit and employment spells being matched to the wrong individual; very few individuals were dropped).

Background characteristics from the Census, IMD and Ofsted were all merged in using postcode.

### **B.3 Cleaning the employment and benefits data**

Before the employment and benefits information could be used, it had to be tidied up considerably.

#### ***Employment data***

- There are a large number of employment spells that finish the day after they start. DWP documentation suggests that most of these are spells where HMRC is informed of an end date for a job that it did not know existed. It made little sense to keep these spells since they were not recorded accurately and would have had almost no impact on the outcome and history variables we created – see below. But we wanted to record the fact that individuals with a one-day spell had probably been employed. So, before dropping these spells, we created a variable flagging all individuals with a one-day spell some time during the two years prior to January 2002.
- The WPLS contains many duplicated employment spells. Some of these are exact duplicates (start and end dates match exactly), while for others, only the start dates coincide. Far too many employment spells start on the same day (up to nine for any given individual) for them to relate to different jobs. Consequently, we removed duplicates according to a detailed set of rules, similar to rules used by other DWP projects using these data (contact the authors for more details). In essence, the rules try to drop spells that seem to have been superseded. For example, wherever a spell with certain start and end dates exists, any spell for the same individual with an identical start date but an open or uncertain end date is dropped. Roughly 200,000 spells were dropped by these rules.
- DWP had already dropped from the WPLS data ‘employment’ spells that were flagged by the *benflag* variable as being time on benefit. However, the criteria used to define this variable are fairly restrictive, leaving open the possibility that some of the remaining employment spells are also spells on benefit. By comparing employment and benefit start and end dates, we removed about 10,000 additional employment spells that seemed likely to be benefit spells (again, contact the authors for details).
- Around a fifth of employment start dates are recorded as 6 April and around a fifth of end dates as 5 April. This reflects the fact that when HMRC does not know a date with certainty, but is sure of the tax year it falls in, it sets start dates as early as possible (6 April of that tax year) and end dates as late as possible (5 April). Clearly, this means that the length of many employment spells will be overstated. However, given that we are interested in the difference in employment between NNI-rich and NNI-poor areas (rather than absolute levels), this matters only if the introduction of uncertain dates affects employment durations more for one group than for the other. We have no a priori reason for believing this to be the case, and even were it true, it is not clear what could be done to improve the situation. Therefore, apart from cases described in the following bullet, we left all employment dates as they were.



- Even after duplicate employment spells have been dropped, there are still many 5 or 6 April dates. Since employment is unlikely to overlap with certain benefits (and should never ever overlap with others), we can reduce the amount of uncertainty in employment spells by using benefit start and end dates to inform about employment start and end dates. Employment dates were corrected whenever a JSA, IS, IB or SDA (Severe Disablement Allowance) spell crossed an uncertain (5 or 6 April) date. Uncertain start dates were moved to the day after the end of the benefit spell; uncertain end dates were moved to the day before the end of the benefit spell.

### **Benefits data**

- We dropped any benefit spells that finished before they started, or started when the individual was aged less than 10.
- The end dates for some benefits (most notably, IS and IB) are only known to within a given window (two weeks for IS, six weeks for IB). The start and end of this window are given by the variables *extract* and *maxclm* in the NBD. The end date actually recorded for the spell is a randomly chosen date between these two variables. In order to be consistent with employment spells (where we left uncertain dates as 5 and 6 April), we set benefit end dates to *maxclm* whenever the benefit end date was uncertain.

## **B.4 Summarising employment and benefit spells**

For modelling purposes, we needed to summarise benefit and employment spells in a parsimonious way. This was achieved by creating monthly benefit and employment indicators. An individual was counted as being on benefit if he or she was in receipt of JSA, IS or IB for 15 or more days within the relevant 30-day period. Likewise, the individual was counted as being employed if he or she had a job for 15 or more days within the 30-day period. We also created the following summary variables:

- number of days on active benefits in two years prior to January 2002 (JSA)
- number of days on inactive benefits in two years prior to January 2002 (IS and IB).

Survey outcomes all relate to June 2005, so this is the month we are most interested in studying using the administrative data. However, since we have information about benefit and employment *spells*, we can calculate outcomes for other months too. We consider 12 30-day periods, the last of which is June 2005. When estimating the impact of NNI, we need to control for previous employment and benefit history. We do this for the two years running up to and including January 2002. This means there is about a two-and-a-half-year gap between the last employment and benefit history and the first employment and benefit outcome (February 2002 to June 2004).

## APPENDIX C DATA AND MATCHING METHODS

### C.1 Impact on users

To derive an estimate of the impact of NNI on users, the sample of users was matched to a subsample of the telephone survey sample in NNI-poor areas who were considered to be the most likely market for NNI. The aim was to assess what would happen to the NNI 'market' in the absence of NNI. Comparing outcomes for users with this 'market' would then give an estimate of the impact of NNI on users.

The first stage of the assessment of the impact on users was to define the two analysis groups. The user sample itself was narrowed down to those 'users' who were most likely to be in genuine NNI places rather than simply at nurseries that offered NNI places. This was achieved (rather crudely, because there is no definitive way we could do this<sup>30</sup>) by restricting the sample of users to those who lived within the 20% most deprived areas. This reduced the sample of users to 216. The potential 'market' in NNI-poor areas – those actively seeking childcare – was identified as telephone survey respondents:

- who were not using formal childcare<sup>31</sup> at the time of the postal survey
- who wanted to do so, saying that they would or might use formal childcare on a regular basis<sup>32</sup> within the next 6 to 12 months
- who had started to use formal childcare by the date of the telephone interview or still wanted to do so but had experienced a barrier to using formal childcare such as availability or affordability.

Parents whose youngest child was born before 1 September 2001 were excluded from both samples simply because there were so few parents falling into this category in the user sample that comparison would have been impossible.

Having identified users and parents in NNI-poor areas who were potentially the 'market' for NNI, the comparison was further tightened by matching the users to the 'market pool' on characteristics including:

- age of youngest child: the academic cohort of the youngest child in the household
- the number of children in the household
- household type: lone parent; couple
- childcare use in January 2002
- household tenure
- the age that the respondent left full-time education
- whether the respondent had any recognised qualifications
- other detailed demographic information.

This was achieved by using propensity score matching, with a propensity of being a user estimated for both groups and then the sample from NNI-poor areas being weighted so that the two propensity score distributions matched.

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<sup>30</sup> The sample of users did not have a flag showing whether or not a user was in an NNI place. This is because, as indicated by the NNI Implementation Study (Smith et al., forthcoming), practices varied considerably in terms of how the NNI funding was used (e.g. to subsidise particular places, to reduce fees across the board) and it therefore proved impossible to find a consistent definition of and way of identifying NNI places.

<sup>31</sup> The definition of formal childcare used here excludes reception class.

<sup>32</sup> The definition of regular was at least once a week on average.

## C.2 Impact on the work-ready

Propensity score matching was also used to estimate the impact on the work-ready population. In this instance, the samples of 'work-ready respondents' in NNI-rich and NNI-poor areas (see Appendix G), which were already well matched because of the way they were selected, were again matched at the analysis stage. This, in large part, acts as a non-response adjustment (differential non-response in the two samples leading to some imbalance).

For the analysis presented in this report, we have chosen kernel-based matching methods rather than nearest-neighbour matching, as this makes best use of the total sample. Given that the two samples were matched at the selection stage, there are no support problems.

The variables we matched on included:

- the academic cohort of the youngest child in the household
- the number of children in the household
- household type: lone parent; couple
- childcare use in January 2002
- household tenure
- the age that the respondent left full-time education
- whether the respondent had any recognised qualifications
- work patterns in January 2002
- Ofsted childcare data (OA level)
- other detailed demographic information.

## C.3 Administrative analysis

The methods discussed above enable us to estimate the impact of Neighbourhood Nurseries on users, and on a sample of work-ready individuals thought more likely to benefit from NNI. They do not, however, allow us to estimate an impact for all individuals in NNI-rich areas with a child of the relevant age (regardless of whether they actually made use of a Neighbourhood Nursery). For this estimation, we have used administrative data.

The downside to the administrative data-sets is the lack of background characteristics they contain. For example, there is no information about education or marital status – both likely to be important in determining whether an individual is employed and/or receiving benefit. In order to strip out the effect of these characteristics, we are reliant on benefit and employment histories, and on information we can merge in from the Census (and other sources). The way in which this was done is discussed in more detail below.

In order to assess the effectiveness of the matching, we would have liked to have been able to use the administrative data to estimate the impact of NNI on the work-ready sample of individuals contained in the CATI. Had the results been very different, it might have led us to doubt whether the limited background characteristics in the administrative data were sufficient to produce reliable results. Unfortunately, we were unable to do this because it would have required the linking of administrative and survey data – thereby breaching confidentiality.

For the purpose of this evaluation, we were given access to three administrative data-sets:

- **Child Benefit data-set:** all CB recipients at 31 December 2004 who (1) lived in either an NNI-rich or an NNI-poor area on this date and (2) had at least one child born between 1 September 2000 and 31 August 2004

- **benefits data:** for these individuals, all claims of DWP benefits<sup>33</sup> that ended no earlier than July 1999 (or are still ongoing); 70% of individuals in our Child Benefit data-set had at least one benefit spell
- **employment data:** for all individuals with at least one benefit claim (i.e. 70% of individuals in our Child Benefit data-set), all employment spells reported to HMRC for tax purposes that ended no earlier than April 1998 (or are still ongoing); 48% of individuals in the Child Benefit data had at least one employment spell.

It is worth reiterating that we were not given access to employment spells for individuals who did not have at least one benefit claim (30% of individuals in the Child Benefit data-set). We might expect this group to be more likely to be employed than those who did have at least one benefit claim. Employment that is not well enough paid to incur income tax and National Insurance need not be reported to HMRC. This means that many low-paid jobs may also not appear in the employment data (though, in practice, many large employers report all employment to HMRC, regardless of whether it is liable for income tax).

The data (in particular, the employment data) are very messy. Appendix B describes how they were cleaned and assembled.

We concentrated on binary (one–zero) employment and benefit outcomes in the administrative data. For consistency with the survey-based estimates, our primary month of interest was June 2005. However, since the data were spell-based (rather than referring to a particular point in time), we could determine employment and benefit outcomes month by month (or more precisely, 30-day periods). Administrative results presented in Sections 3.3.3 and 3.4.4 and Appendices D and E are given for 12 30-day periods, the last of which is 1–30 June 2005 (the first starts during July 2004).

An individual was defined as being employed in a given month if he or she was employed for at least 15 days in the relevant 30-day period. The same 15-day requirement applied for benefit outcomes, but the only benefits included in this definition were IS, IB and JSA.<sup>34</sup>

As described above, the administrative data contain few background characteristics. We tried to overcome this in two ways:

- constructing detailed employment and benefit histories covering the two years up to January 2002
- merging in information from the 2001 Census, the Index of Multiple Deprivation (IMD) and Ofsted childcare data.

Employment and benefit histories were mainly month-by-month binary variables defined in the same way as the employment and benefit outcomes. However, we also included a few summary variables, such as indicators of the number of days on inactive benefits (IS and IB) and the number of days on active benefits (JSA). Employment and benefit histories finished in January 2002 to avoid biasing our results: Neighbourhood Nurseries started rolling out widely after January 2002, so including employment and benefit indicators for this period would risk underestimating an impact. The consequence of this is that there is roughly a two-and-a-half-year gap between the last employment or benefit history variable and the first employment or benefit outcome.

<sup>33</sup> The full list of benefits is: Incapacity Benefit, Carer's Allowance, Income Support, Jobseeker's Allowance, Attendance Allowance, Retirement Pension, Disability Living Allowance, Severe Disablement Allowance, Widow's Benefit and Pension Credit.

<sup>34</sup> We would like to have included benefits or programmes that make individuals ineligible for JSA (primarily New Deal programmes), but this information was not available to us.

The 2001 Census contains information at the Output Area level (roughly 150 households) that allows us to proxy for unobserved individual characteristics. The variables we use relate to the prevalence of children and lone parents, and qualification levels. We can proxy local conditions using Census data (unemployment rates), the Index of Multiple Deprivation (including the child poverty sub-component) and Ofsted childcare data (intensity of different types of childcare provision in March 2003). Appendix B provides more details about the information used.

## APPENDIX D EMPLOYMENT EFFECTS BY SUBGROUP

This appendix replicates the analysis of Section 3.3 but for subgroups. A discussion of the findings is included in Section 3.3.

### D.1 Effects by age of youngest child

For analysis by age of child, the samples have been divided into three (academic) cohorts based on the age of the youngest child in the family:

- those born between September 2001 and August 2002 (2 years 10 months to 3 years 9 months old in June 2005)
- those born between September 2002 and August 2003 (1 year 10 months to 2 years 9 months old in June 2005)
- those born in or after September 2003 (1 year 9 months or younger in June 2005).

The first group (the oldest cohort) corresponds to a group who, in June 2005, were able to take advantage of the government's free nursery care for 3- and 4-year-olds. The other two groups represent those who did not have access to this free nursery care.

#### Users

By age of youngest child, the impact-on-users analysis (Table D-1) suggests the impact of NNI is largest amongst parents with a child born between September 2002 and August 2003, with an estimated 31% of users being in work who otherwise wouldn't be. The impact is smaller, although still appreciable at 21%, for those whose youngest child is slightly older, with the smallest impact being observed on those users with the youngest children (at just 7%).

**Table D-1 Respondent's working status, by age of youngest child (impact on users)**

	<i>User</i> %	<i>Matched non-user</i> %	<i>Difference</i>	<i>p-value</i>
<i>Born between 01/09/2001 &amp; 31/08/2002</i>				
In work	[73.1]	[51.7]	21.4	0.012
<i>Born between 01/09/2002 &amp; 31/08/2003</i>				
In work	[76.4]	[45.9]	30.5	0.001
<i>Born after 31/08/2003</i>				
In work	[62.1]	[54.8]	7.3	0.458
<i>Unweighted bases</i>				
Born between 01/09/2001 & 31/08/2002	78	66		
Born between 01/09/2002 & 31/08/2003	72	73		
Born after 31/08/2003	66	61		
<i>Weighted bases</i>				
Born between 01/09/2001 & 31/08/2002	78	61		
Born between 01/09/2002 & 31/08/2003	72	70		
Born after 31/08/2003	66	69		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.

### **Work-ready individuals**

Table D-2 shows the estimated impact of NNI on the likelihood of working by each of the above academic cohorts for work-ready individuals. The effect of NNI is estimated to be relatively small and negative amongst those whose youngest child was in the youngest cohort. There is a large estimated impact on the older two groups (3.2 percentage points for the middle cohort and 4.3 for the oldest cohort). However, none of these effects is significantly different from zero.

**Table D-2 Respondent's working status, by age of youngest child (impact on work-ready)**

	<i>NNI-rich</i> %	<i>Matched NNI-poor</i> %	<i>Difference</i>	<i>p-value</i>
<i>Born between 01/09/2001 &amp; 31/08/2002</i>				
In work	60.6	56.3	4.3	0.313
<i>Born between 01/09/2002 &amp; 31/08/2003</i>				
In work	59.3	56.1	3.2	0.399
<i>Born after 31/08/2003</i>				
In work	54.9	55.9	-1.0	0.839
<i>Weighted bases</i>				
Born between 01/09/2001 & 31/08/2002	406	406		
Born between 01/09/2002 & 31/08/2003	489	489		
Born after 31/08/2003	335	335		

Base: All respondents in NNI-rich and NNI-poor areas.

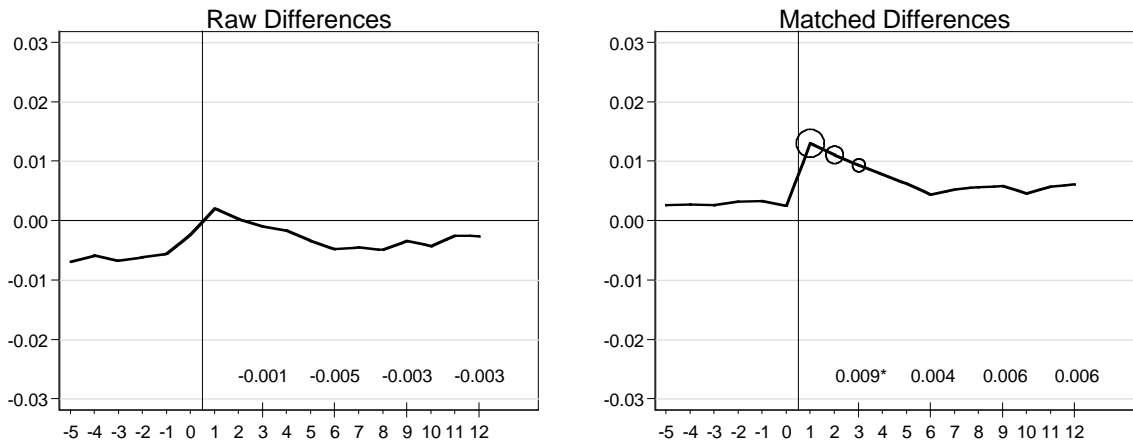
### **All individuals in the WPLS**

The analysis above has shown that the effects of NNI on employment were largest for individuals whose youngest child belonged to the older two cohorts. This subsection looks at the same issues but based on analysis of the WPLS data.

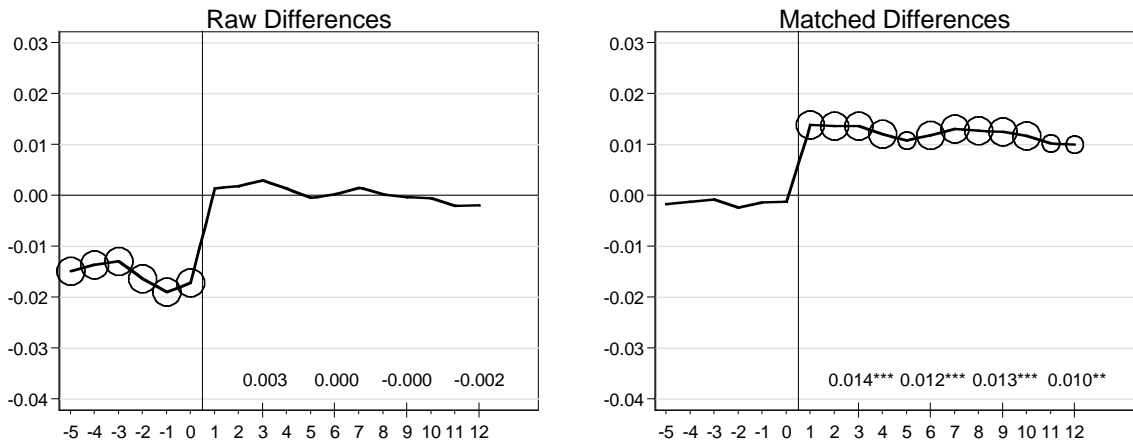
Figure D-1 presents the results by the academic cohort of the youngest child in the family, panel (a) corresponding to individuals whose youngest child was born between September 2001 and August 2002, panel (b) to individuals whose youngest child was born between September 2002 and August 2003 and panel (c) to individuals whose youngest child was born in or after September 2003.

**Figure D-1 Work impact on all families, by age of youngest child**

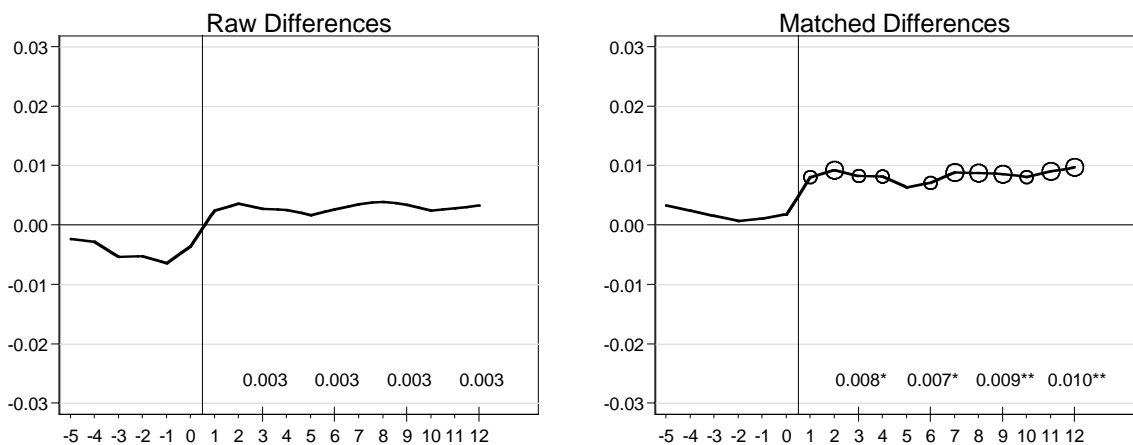
(a) Youngest child born between September 2001 and August 2002



(b) Youngest child born between September 2002 and August 2003



(c) Youngest child born in or after September 2003



Notes: The horizontal axes show the six months up to January 2002 (x = -5 to 0) and the 12 months up to June 2005 (x = 1 to 12). The vertical axes show the difference in the proportions in employment between NNI-rich and NNI-poor areas. The numbers just above the horizontal axes give the difference between NNI-rich and NNI-poor areas three, six, nine and 12 months after June 2004 – \*\*\* significant



at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level. The large, medium and small circles indicate that differences in that particular month are significant at the 1%, 5% and 10% level respectively.

The graphs suggest that NNI has only a small and non-significant effect on the employment rates of individuals whose youngest child was born before September 2002 and so are eligible for free nursery care. In contrast, NNI is estimated to have a 1.0–1.5-percentage-point effect on individuals whose youngest child was born between September 2002 and August 2003, all significant at least at the 5% level. The estimated effects on the employment rates of individuals with children in the youngest cohort are slightly smaller, but still significant at the 5% level.

## D.2 Effects by family type

In this section, we look at employment impacts by family type, divided into couples and lone parents.

### *Users*

By family type, the impact of NNI on lone parents' work is estimated to be 30 percentage points, i.e. 30% of lone-parent users are in work who otherwise wouldn't be. The impact on couple families is around half this size, but still significant, at 16 percentage points (Table D-3).

**Table D-3 Respondent's working status, by family type (impact on users)**

	<i>User</i> %	<i>Matched non-user</i> %	<i>Difference</i>	<i>p-value</i>
<i>Couple families</i>				
In work	75.0	58.8	16.2	0.009
<i>Lone-parent families</i>				
In work	[63.2]	[33.2]	29.9	0.001
<i>Unweighted bases</i>				
Couple families	140	137		
Lone-parent families	76	63		
<i>Weighted bases</i>				
Couple families	140	137		
Lone-parent families	76	63		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.

### *Work-ready individuals*

Table D-4 presents the estimated impact of NNI on the likelihood of being in paid employment for couples and lone parents among the work-ready population. It shows a small negative effect of NNI on the likelihood that respondents with a partner were working. As we expected, there seems to be a much larger impact of NNI on the likelihood that lone parents were in work, with an estimated effect of about 5 percentage points. However, neither of these effects is significantly different from zero.

**Table D-4 Respondent's working status, by family type (impact on work-ready)**

	NNI-rich %	Matched NNI-poor %	Difference	p-value
<i>Lone-parent families</i>				
In work	47.7	42.8	5.0	0.242
<i>Couple families</i>				
In work	63.1	64.1	-1.1	0.688
<i>Weighted bases</i>				
Lone-parent families	375	375		
Couple families	880	880		

Base: All respondents in NNI-rich and NNI-poor areas.

When one takes into account take-up of NNI places, the pattern of these estimates is consistent with that of the estimates for users.

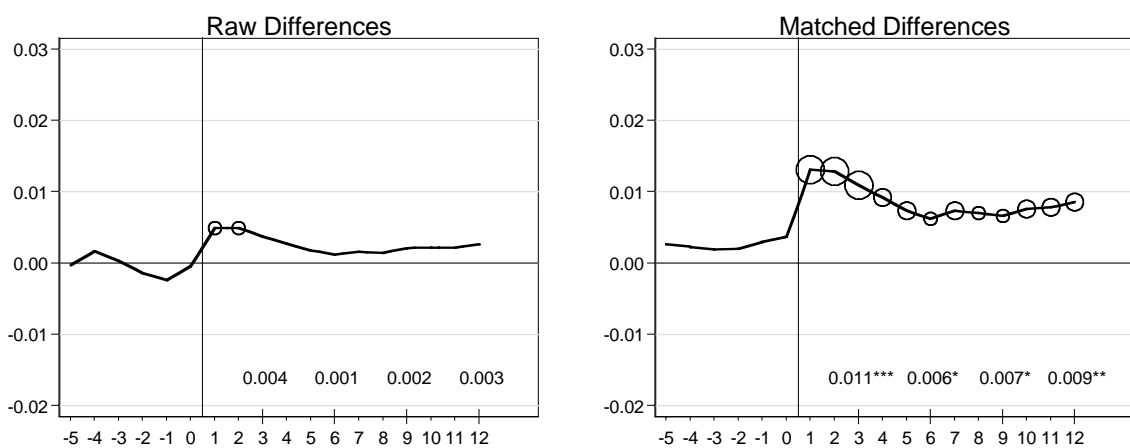
**All individuals in the WPLS**

We cannot compare lone parents and those with a partner directly using the WPLS as we do not know whether or not individuals have a partner. Therefore, we have used an indirect method, splitting the sample into areas with higher- and lower-than-average proportions of lone parents.

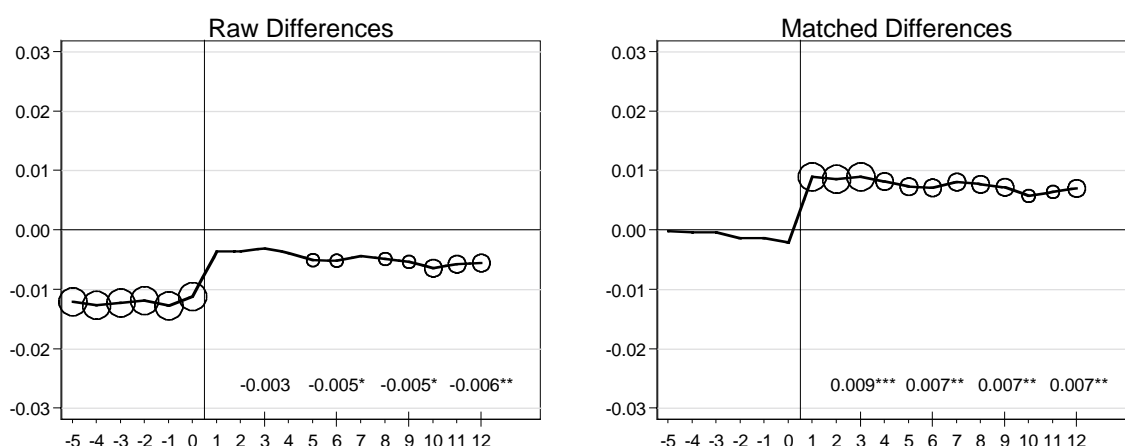
Figure D-2 shows that the estimated impacts of NNI on employment in areas with high and low proportions of lone parents seem to be very much the same. This does not necessarily mean that the WPLS and survey-based estimates are contradictory. First, the estimates are based on different samples (a sample of all work-ready individuals compared with one of all individuals with a benefit history). Second, as we only use an indirect comparison of couples and lone parents, it is entirely possible that this is unable to act properly as a proxy comparison of couples and lone parents.

**Figure D-2 Work impact on all families, by proportion of lone parents in area**

(a) Areas with higher-than-average proportions of lone parents



(b) Areas with lower-than-average proportions of lone parents



Notes: The horizontal axes show the six months up to January 2002 ( $x = -5$  to 0) and the 12 months up to June 2005 ( $x = 1$  to 12). The vertical axes show the difference in the proportions in employment between NNI-rich and NNI-poor areas. The numbers just above the horizontal axes give the difference between NNI-rich and NNI-poor areas three, six, nine and 12 months after June 2004 – \*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level. The large, medium and small circles indicate that differences in that particular month are significant at the 1%, 5% and 10% level respectively.

### D.3 Effects by level of education

Finally, in this section, we compare the effects of NNI by the education level of respondents.

#### Users

Table D-5 gives the estimated impact of NNI on work by the qualification level of the user. The impact is greater (at 22 percentage points) for those with an NVQ level 2 qualification or lower. There is a smaller, and not statistically significant, impact of 14 percentage points on those with higher qualifications.

**Table D-5 Respondent's working status, by education level (impact on users)**

	User %	Matched non-user %	Difference	p-value
<i>No qualifications / NVQ 1 or 2</i>				
In work	61.9	40.4	21.5	0.003
<i>NVQ 3 or more</i>				
In work	79.3	[65.0]	14.3	0.055
<i>Unweighted bases</i>				
No qualifications / NVQ 1 or 2	105	127		
NVQ 3 or more	111	73		
<i>Weighted bases</i>				
No qualifications / NVQ 1 or 2	105	116		
NVQ 3 or more	111	84		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.

### Work-ready individuals

Table D-6 shows that the effect of NNI on the likelihood of working appears to be greater for those with lower levels of education than for those with higher levels of education – though not statistically significant. This result is consistent with the user impact estimates.

**Table D-6 Respondent’s working status, by education level (impact on work-ready)**

	<i>NNI-rich</i> %	<i>Matched NNI-poor</i> %	<i>Difference</i>	<i>p-value</i>
<i>No qualifications / NVQ 1 or 2</i>				
In work	57.3	54.4	2.9	0.277
<i>NVQ 3 or more</i>				
In work	59.9	62.6	-2.7	0.550
<i>Weighted bases</i>				
No qualifications / NVQ 1 or 2	924	924		
NVQ 3 or more	347	347		

Base: All respondents in NNI-rich and NNI-poor areas.

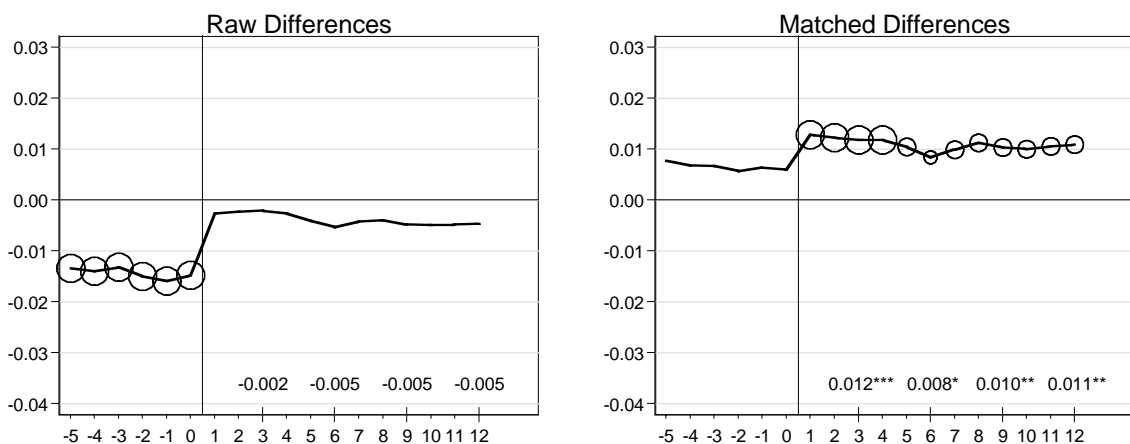
### All individuals in the WPLS

The WPLS does not include data on qualifications, so no direct subgroup analysis using this data is possible. As a partial proxy, we have compared the effects of NNI on employment in areas with higher-than-average proportions of individuals with an NVQ level 3 or more and areas with lower-than-average proportions.

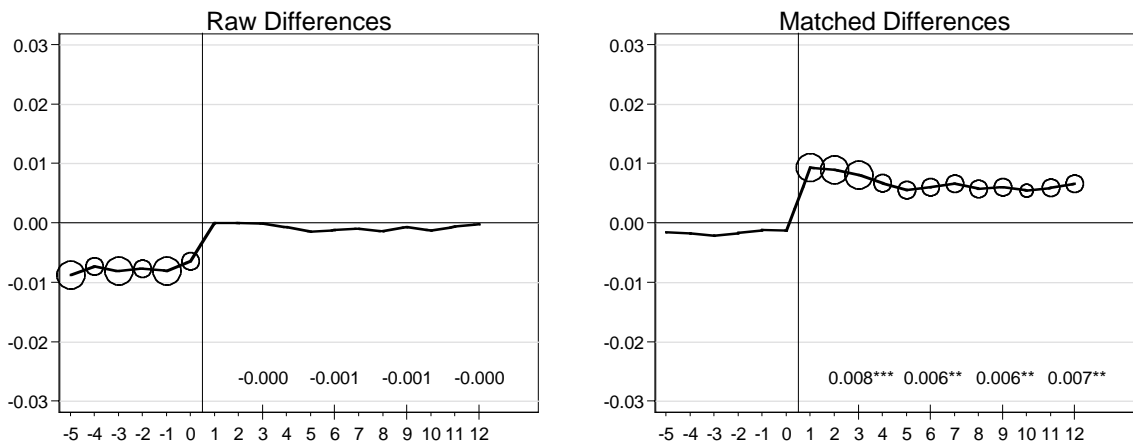
Panel (a) of Figure D-3 shows that the effects of NNI on employment in ‘low-education’ areas (0.8–1.2 percentage points) are somewhat higher than the effects shown in panel (b) for ‘high-education’ areas (0.6–0.8 percentage points).

**Figure D-3 Work impact on all families, by proportion with higher education levels in area**

(a) Areas with lower-than-average proportions of individuals with NVQ level 3 or more



(b) Areas with higher-than-average proportions of individuals with NVQ level 3 or more



Notes: The horizontal axes show the six months up to January 2002 ( $x = -5$  to  $0$ ) and the 12 months up to June 2005 ( $x = 1$  to  $12$ ). The vertical axes show the difference in the proportions in employment between NNI-rich and NNI-poor areas. The numbers just above the horizontal axes give the difference between NNI-rich and NNI-poor areas three, six, nine and 12 months after June 2004 – \*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level. The large, medium and small circles indicate that differences in that particular month are significant at the 1%, 5% and 10% level respectively.

## APPENDIX E BENEFIT EFFECTS BY SUBGROUP

This appendix replicates the analysis of Section 3.4 but for subgroups. A discussion of the findings is included in Section 3.4.

### E.1 Effects by age of youngest child

#### Users

Splitting users by the age of their youngest child (Table E-1), the impact of NNI on WTC take-up appears to be largest for users with a youngest child born between September 2002 and August 2003. Of this group of users, 36% are in receipt of the childcare element of WTC who otherwise wouldn't be. The impact on users with slightly older children is smaller, but still considerable, at 30 percentage points. The impact on those with younger children is much smaller (at just 16 percentage points).

**Table E-1 Respondent's benefit receipt, by age of youngest child (impact on users)**

	<i>User</i> %	<i>Matched non-user</i> %	<i>Difference</i>	<i>p-value</i>
<i>Born between 01/09/2001 &amp; 31/08/2002</i>				
Working Tax Credit	[56.4]	[35.4]	21.0	0.017
Childcare element of WTC	[39.7]	[9.7]	30.0	0.001
Housing Benefit	[24.4]	[35.6]	-11.2	0.161
Council Tax Benefit	[28.2]	[34.9]	-6.7	0.411
Income Support	[15.4]	[28.2]	-12.8	0.075
Other state benefit	[7.7]	[5.8]	1.9	0.666
Incapacity Benefit	[3.8]	[3.7]	0.1	0.961
Jobseeker's Allowance	[0]	[3.4]	-3.4	0.082
<i>Born between 01/09/2002 &amp; 31/08/2003</i>				
Working Tax Credit	[54.2]	[24.6]	29.6	0.001
Childcare element of WTC	[40.3]	[4.4]	35.9	0.000
Housing Benefit	[16.7]	[27.5]	-10.9	0.133
Council Tax Benefit	[13.9]	[25.6]	-11.7	0.091
Income Support	[12.5]	[20.4]	-7.9	0.212
Other state benefit	[5.6]	[2.2]	3.4	0.210
Incapacity Benefit	[1.4]	[1.5]	-0.2	0.930
Jobseeker's Allowance	[2.8]	[0.6]	2.1	0.190
<i>Born after 31/08/2003</i>				
Working Tax Credit	[39.4]	[37.8]	1.6	0.865
Childcare element of WTC	[31.8]	[15.5]	16.3	0.029
Housing Benefit	[31.8]	[21.9]	9.9	0.240
Council Tax Benefit	[30.3]	[21.1]	9.2	0.268
Income Support	[21.2]	[17.0]	4.2	0.571
Other state benefit	[6.1]	[3.0]	3.1	0.375
Incapacity Benefit	[6.1]	[0.6]	5.4	0.015
Jobseeker's Allowance	[1.5]	[6.0]	-4.5	0.198
<i>Unweighted bases</i>				
Born between 01/09/2001 & 31/08/2002	78	66		
Born between 01/09/2002 & 31/08/2003	72	73		
Born after 31/08/2003	66	61		
<i>Weighted bases</i>				
Born between 01/09/2001 & 31/08/2002	78	61		
Born between 01/09/2002 & 31/08/2003	72	70		
Born after 31/08/2003	66	69		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.

These patterns of impact mirror very closely the impacts for users on employment, as set out in Appendix D.

### **Work-ready individuals**

Table E-2 shows the estimated impact of NNI for the work-ready population on the likelihood that individuals were on WTC, the childcare element of WTC or any state benefit by age of youngest child. There appears to be a small gradient in the impact of NNI on take-up of WTC across these subgroups, with those whose youngest child was in the most recent cohort seeing the largest impacts. Conversely, the effects of NNI on take-up of the childcare element of WTC appear relatively larger for the oldest age-group (over 4 percentage points), with a smaller impact for those in the youngest age-group (2 percentage points). However, none of these effects is statistically significant.

**Table E-2 Respondent's benefit receipt, by age of youngest child (impact on work-ready)**

	<i>NNI-rich</i> %	<i>Matched NNI-poor</i> %	<i>Difference</i>	<i>p-value</i>
<i>Born between 01/09/2001 &amp; 31/08/2002</i>				
Any state benefit	86.5	79.3	7.1	0.034
Working Tax Credit	37.4	35.0	2.5	0.558
Childcare element of WTC	23.6	19.2	4.4	0.206
<i>Born between 01/09/2002 &amp; 31/08/2003</i>				
Any state benefit	81.6	81.4	0.2	0.955
Working Tax Credit	36.2	32.5	3.7	0.298
Childcare element of WTC	16.2	17.1	-0.9	0.742
<i>Born after 31/08/2003</i>				
Any state benefit	86.3	83.5	2.7	0.409
Working Tax Credit	35.5	31.0	4.6	0.308
Childcare element of WTC	15.5	13.5	2.0	0.543
<i>Weighted bases</i>				
Born between 01/09/2001 & 31/08/2002	406	406		
Born between 01/09/2002 & 31/08/2003	489	489		
Born after 31/08/2003	335	335		

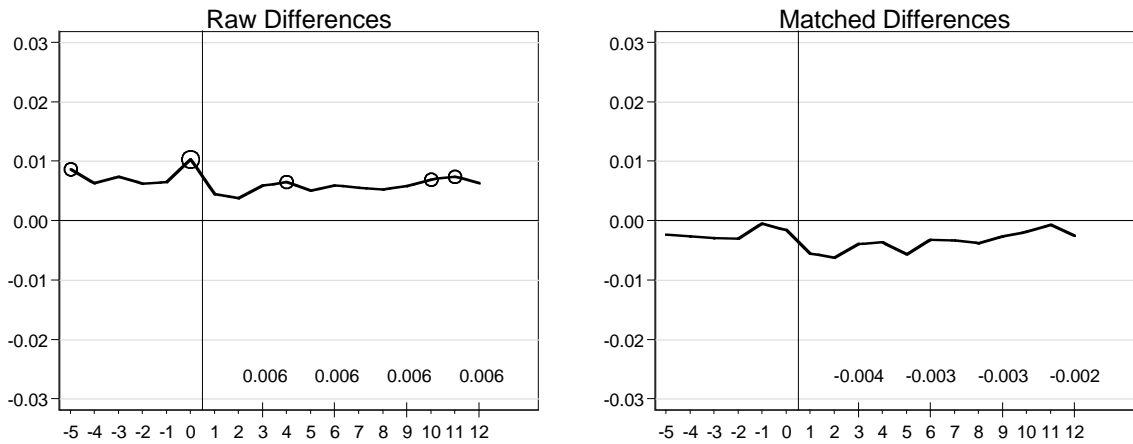
Base: All respondents in NNI-rich and NNI-poor areas.

### **All individuals in the WPLS**

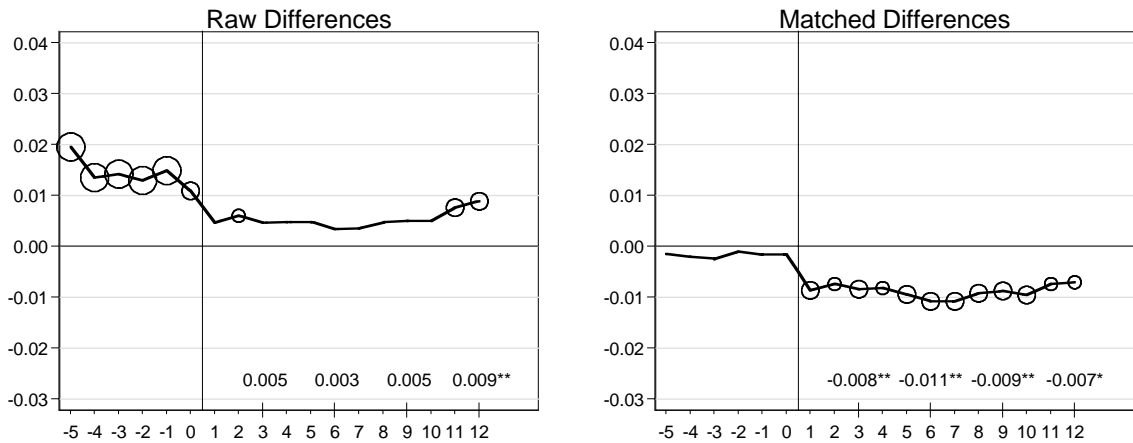
Figure E-1 shows the estimated impact of NNI on the likelihood of receiving a state benefit using the WPLS. It shows small, and mostly insignificant, effects for individuals with children in each age-group.

**Figure E-1 Benefit receipt impact on all families, by age of youngest child**

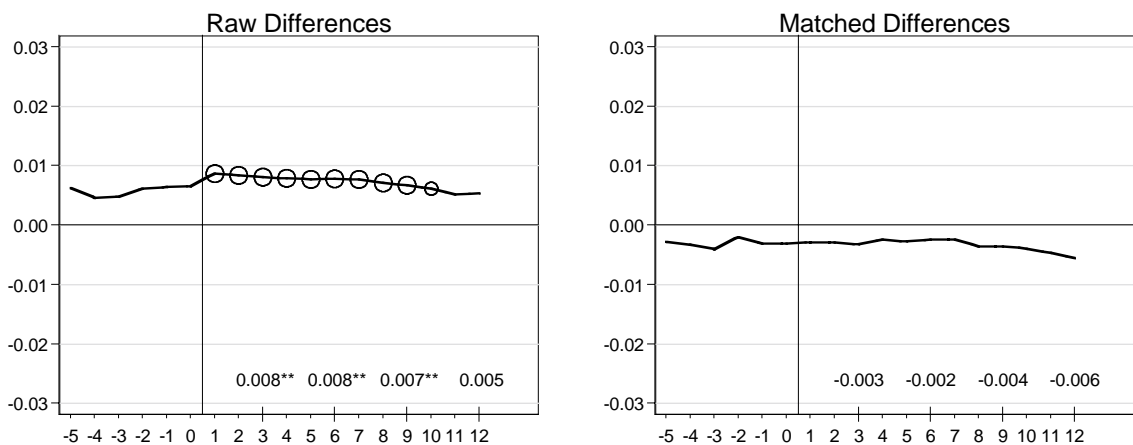
(a) Youngest child born between September 2001 and August 2002



(b) Youngest child born between September 2002 and August 2003



(c) Youngest child born in or after September 2003



Notes: The horizontal axes show the six months up to January 2002 ( $x = -5$  to  $0$ ) and the 12 months up to June 2005 ( $x = 1$  to  $12$ ). The vertical axes show the difference in the proportions receiving IS, IB, JSA or the equivalent of JSA between NNI-rich and NNI-poor areas. The numbers just above the horizontal axes give the difference between NNI-rich and NNI-poor areas three, six, nine and 12



months after June 2004 – \*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level. The large, medium and small circles indicate that differences in that particular month are significant at the 1%, 5% and 10% level respectively.

## E.2 Effects by family type

### Users

Dividing users into two family types – couples and lone parents – Table E-3 shows there to be a markedly larger impact on benefits for lone-parent NNI users than for couple-family users: 44% of lone parents are estimated to be in receipt of the childcare element of WTC as a result of being a user, compared with 19% of couples.

**Table E-3 Respondent's benefit receipt, by family type (impact on users)**

	<i>User</i> %	<i>Matched non-user</i> %	<i>Difference</i>	<i>p-value</i>
<i>Couple families</i>				
Working Tax Credit	43.6	33.4	10.2	0.113
Childcare element of WTC	27.1	8.6	18.5	0.001
Housing Benefit	12.9	10.6	2.3	0.559
Council Tax Benefit	12.1	9.1	3.1	0.409
Income Support	6.4	5.0	1.4	0.611
Other state benefit	5.7	2.6	3.1	0.158
Incapacity Benefit	2.9	2.0	0.9	0.586
Jobseeker's Allowance	2.1	4.9	-2.7	0.235
<i>Lone-parent families</i>				
Working Tax Credit	[63.2]	[30.4]	32.7	0.001
Childcare element of WTC	[56.6]	[12.6]	44.0	0.000
Housing Benefit	[44.7]	[66.1]	-21.3	0.028
Council Tax Benefit	[46.1]	[65.7]	-19.6	0.043
Income Support	[34.2]	[57.8]	-23.6	0.013
Other state benefit	[7.9]	[5.6]	2.3	0.608
Incapacity Benefit	[5.3]	[1.7]	3.5	0.179
Jobseeker's Allowance	[0]	[0]	0	
<i>Unweighted bases</i>				
Couple families	140	137		
Lone-parent families	76	63		
<i>Weighted bases</i>				
Couple families	140	137		
Lone-parent families	76	63		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.

For lone parents, there has been a corresponding drop in the percentage in receipt of Income Support: IS receipt amongst lone-parent users is 24 percentage points lower than in their matched comparison sample.

### Work-ready individuals

Table E-4 shows the estimated impact of NNI on receipt of WTC, the childcare element of WTC or any state benefit for work-ready lone parents and couples. It shows a larger impact of NNI on take-up of WTC and its childcare element for lone parents than for couples. Although none of these impacts is statistically significant, they are consistent with what was found for users.

**Table E-4 Respondent's benefit receipt, by family type (impact on work-ready)**

	NNI-rich %	Matched NNI-poor %	Difference	p-value
<i>Lone-parent families</i>				
Any state benefit	98.1	97.6	0.5	0.673
Working Tax Credit	40.0	36.3	3.7	0.373
Childcare element of WTC	28.3	25.7	2.6	0.482
<i>Couple families</i>				
Any state benefit	78.4	77.4	1.0	0.664
Working Tax Credit	35.0	34.7	0.3	0.922
Childcare element of WTC	14.0	13.9	0.0	0.987
<i>Weighted bases</i>				
Lone-parent families	375	375		
Couple families	880	880		

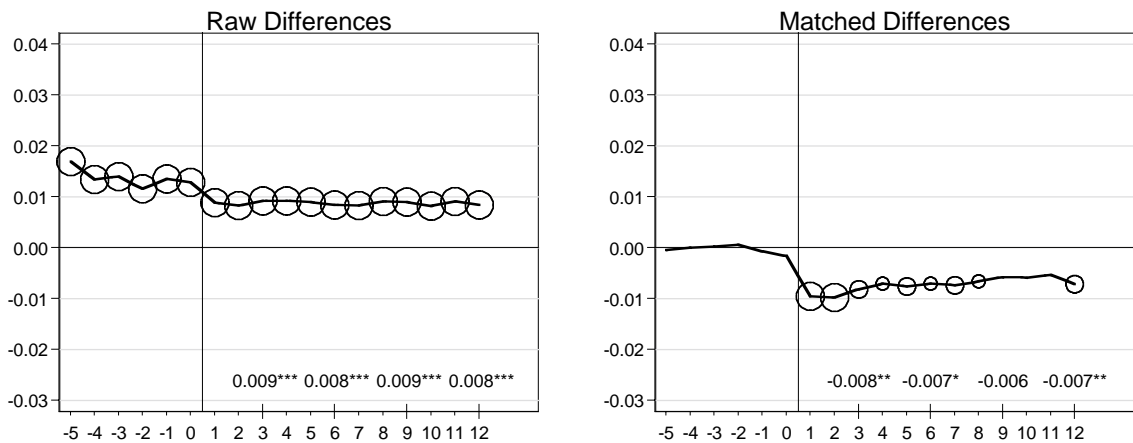
Base: All respondents in NNI-rich and NNI-poor areas.

**All individuals in the WPLS**

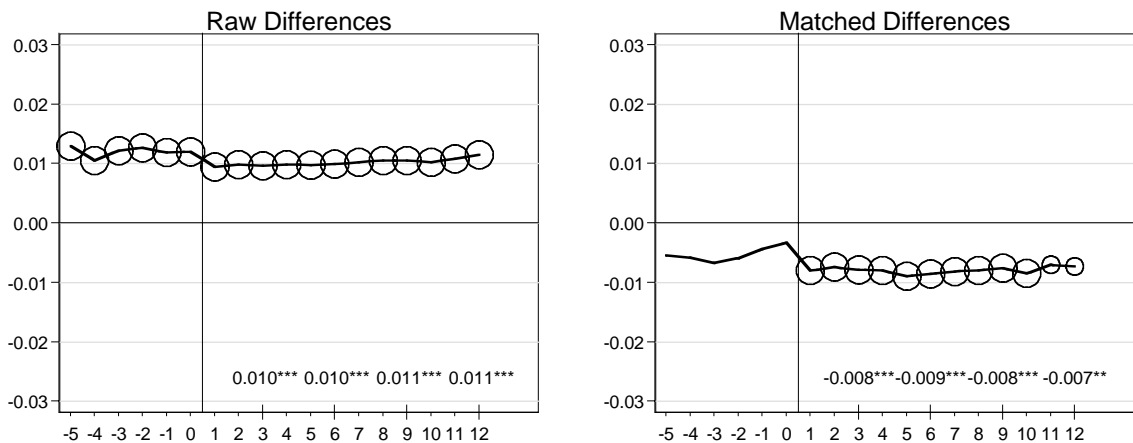
Figure E-2 shows results from the analysis of the WPLS on the estimated impact of NNI on the receipt of a state benefit for areas with higher- and lower-than-average proportions of lone parents. It shows an estimated impact of slightly less than 1 percentage point for areas with high proportions of lone parents. The estimated impact is apparently larger for those in areas with lower-than-average proportions of lone parents. *However*, the estimated effect of NNI is estimated to be the same pre-NNI and post-NNI for this group, suggesting we have been unable to balance the sample properly.

**Figure E-2 Benefit receipt impact on all families, by proportion of lone parents in area**

(a) Areas with higher-than-average proportions of lone parents



(b) Areas with lower-than-average proportions of lone parents



Notes: The horizontal axes show the six months up to January 2002 ( $x = -5$  to 0) and the 12 months up to June 2005 ( $x = 1$  to 12). The vertical axes show the difference in the proportions receiving IS, IB, JSA or the equivalent of JSA between NNI-rich and NNI-poor areas. The numbers just above the horizontal axes give the difference between NNI-rich and NNI-poor areas three, six, nine and 12 months after June 2004 – \*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level. The large, medium and small circles indicate that differences in that particular month are significant at the 1%, 5% and 10% level respectively.

### E.3 Effects by level of education

#### Users

For those with an NVQ level 2 equivalent or lower, an estimated 34% of users are in receipt of the childcare element of WTC who otherwise wouldn't be. The impact on users with higher qualifications is smaller, but still significant, at 20 percentage points (Table E-5).

**Table E-5 Respondent's benefit receipt, by education level (impact on users)**

	<i>User</i>	<i>Matched non-user</i>	<i>Difference</i>	<i>p-value</i>
	<i>%</i>	<i>%</i>		
<i>No qualifications / NVQ 1 or 2</i>				
Working Tax Credit	52.4	29.1	23.3	0.001
Childcare element of WTC	38.1	4.3	33.7	0.000
Housing Benefit	31.4	36.3	-4.8	0.466
Council Tax Benefit	30.5	36.5	-6.1	0.361
Income Support	22.9	31.7	-8.9	0.155
Other state benefit	8.6	5.8	2.8	0.415
Incapacity Benefit	5.7	2.3	3.4	0.138
Jobseeker's Allowance	1.9	4.7	-2.8	0.260
<i>NVQ 3 or more</i>				
Working Tax Credit	48.6	[37.1]	11.6	0.162
Childcare element of WTC	36.9	[17.4]	19.5	0.025
Housing Benefit	17.1	[16.8]	0.4	0.951
Council Tax Benefit	18.0	[13.6]	4.4	0.451
Income Support	9.9	[7.7]	2.2	0.640
Other state benefit	4.5	[0.5]	4.0	0.019
Incapacity Benefit	1.8	[1.3]	0.5	0.735
Jobseeker's Allowance	0.9	[1.4]	-0.5	0.753
<i>Unweighted bases</i>				
No qualifications / NVQ 1 or 2	105	127		
NVQ 3 or more	111	73		
<i>Weighted bases</i>				
No qualifications / NVQ 1 or 2	105	116		
NVQ 3 or more	111	84		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.

### **Work-ready individuals**

Table E-6 shows the estimated effects of NNI on the benefit outcomes of the work-ready population by education level. NNI appears to have a positive impact on the take-up of WTC and its childcare element for those with low levels of education. This compares with negative, but not significant, estimated impacts for those with higher levels of education.

**Table E-6 Respondent's benefit receipt, by education level (impact on work-ready)**

	<i>NNI-rich</i>	<i>Matched NNI-poor</i>	<i>Difference</i>	<i>p-value</i>
	<i>%</i>	<i>%</i>		
<i>No qualifications / NVQ 1 or 2</i>				
Any state benefit	82.0	80.1	1.9	0.377
Working Tax Credit	35.6	30.8	4.8	0.054
Childcare element of WTC	17.4	14.6	2.8	0.143
<i>NVQ 3 or more</i>				
Any state benefit	91.1	91.2	-0.2	0.952
Working Tax Credit	38.6	44.5	-5.9	0.199
Childcare element of WTC	20.5	23.4	-3.0	0.432
<i>Weighted bases</i>				
No qualifications / NVQ 1 or 2	924	924		
NVQ 3 or more	347	347		

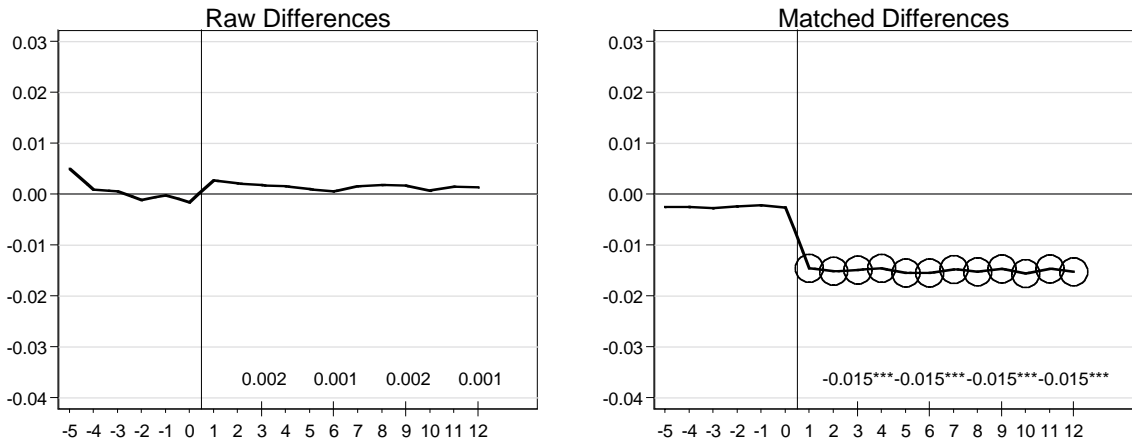
Base: All respondents in NNI-rich and NNI-poor areas.

**All individuals in the WPLS**

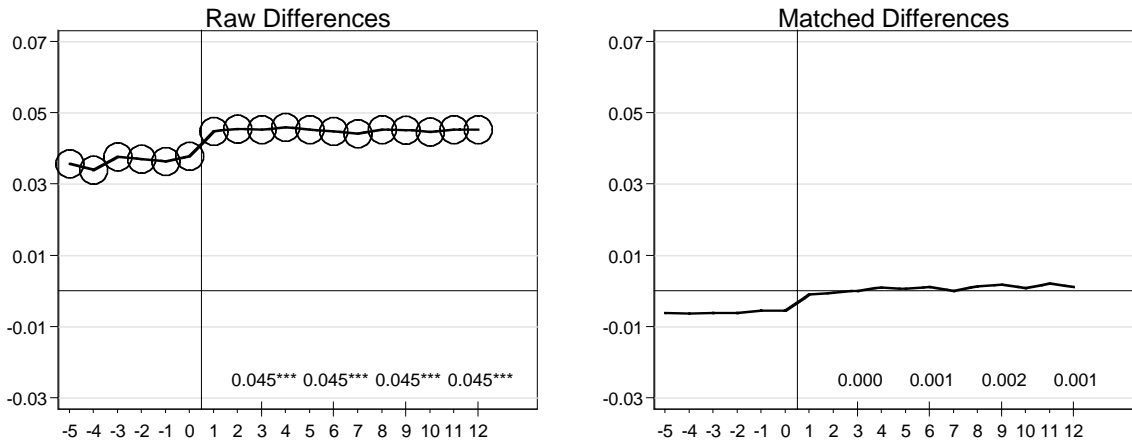
Figure E-3 shows the WPLS-based estimates of impact on receipt of a state benefit, comparing areas with higher- and lower-than-average proportions of individuals with NVQ level 3 or more. The estimated impact is larger and significant for 'low' education areas, and smaller and non-significant for 'high' education areas.

**Figure E-3 Benefit receipt impact on all families, by proportion with higher education levels in area**

(a) Areas with lower-than-average proportions of individuals with NVQ level 3 or more



(b) Areas with higher-than-average proportions of individuals with NVQ level 3 or more



Notes: The horizontal axes show the six months up to January 2002 ( $x = -5$  to  $0$ ) and the 12 months up to June 2005 ( $x = 1$  to  $12$ ). The vertical axes show the difference in the proportions receiving IS, IB, JSA or the equivalent of JSA between NNI-rich and NNI-poor areas. The numbers just above the horizontal axes give the difference between NNI-rich and NNI-poor areas three, six, nine and 12 months after July 2004 – \*\*\* significant at the 1% level, \*\* significant at the 5% level, \* significant at the 10% level. The large circles indicate that differences in that particular month are significant at the 1% level.

## APPENDIX F CHILDCARE EFFECTS BY SUBGROUP

This appendix replicates the analysis of Section 3.5 but for subgroups. A discussion of the findings is included in Section 3.5.

### F.1 Effects by age of youngest child

#### Users

Table F-1 gives the estimated numbers of users who would have taken up an alternative formal childcare place in the absence of NNI, by the age of the youngest child. There appears to be a gradient with age, with users with children from the oldest age cohort (born between September 2001 and August 2002) being most likely to have found other formal care (83%) and users with children born after August 2003 being least likely (63%).

**Table F-1 Respondent's childcare use, by age of youngest child (impact on users)**

	<i>User</i> %	<i>Matched non-user</i> %	<i>Difference</i>	<i>p-value</i>
<i>Born between 01/09/2001 &amp; 31/08/2002</i>				
Formal care	100.0	[82.6]	17.4	0.001
Informal care only		[3.0]		
No care		[14.4]		
<i>Born between 01/09/2002 &amp; 31/08/2003</i>				
Formal care	100.0	[73.0]	27.0	0.000
Informal care only		[17.3]		
No care		[9.6]		
<i>Born after 31/08/2003</i>				
Formal care	100.0	[63.1]	36.9	0.001
Informal care only		[22.4]		
No care		[14.4]		
<i>Unweighted bases</i>				
Born between 01/09/2001 & 31/08/2002	78	66		
Born between 01/09/2002 & 31/08/2003	72	73		
Born after 31/08/2003	66	61		
<i>Weighted bases</i>				
Born between 01/09/2001 & 31/08/2002	78	61		
Born between 01/09/2002 & 31/08/2003	72	70		
Born after 31/08/2003	66	69		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.

#### Work-ready individuals

Table F-2 gives the estimated impact of NNI on formal childcare usage for the work-ready population by the age of the youngest child. The impacts are largest for the first two cohorts (i.e. those born between September 2001 and August 2003).

**Table F-2 Respondent's childcare use, by age of youngest child (impact on work-ready)**

	<i>NNI-rich</i>	<i>Matched NNI-poor</i>	<i>Difference</i>	<i>p-value</i>
	<i>%</i>	<i>%</i>		
<i>Born between 01/09/2001 &amp; 31/08/2002</i>				
Formal care	84.2	78.0	6.2	0.060
Informal care only	6.9	5.7	1.2	0.585
No care	8.9	16.2	-7.4	0.007
<i>Born between 01/09/2002 &amp; 31/08/2003</i>				
Formal care	61.6	57.4	4.1	0.271
Informal care only	19.2	20.6	-1.3	0.649
No care	19.2	22.0	-2.8	0.376
<i>Born after 31/08/2003</i>				
Formal care	59.4	64.5	-5.1	0.270
Informal care only	21.2	17.7	3.5	0.358
No care	19.4	17.8	1.6	0.663
<i>Weighted bases</i>				
Born between 01/09/2001 & 31/08/2002	406	406		
Born between 01/09/2002 & 31/08/2003	489	489		
Born after 31/08/2003	335	335		

Base: All respondents in NNI-rich and NNI-poor areas.

## F.2 Effects by family type

### *Users*

Dividing users by family type, we estimate that three-quarters of couple-family users would have found alternative formal childcare in the absence of NNI, as would 69% of lone parents (Table F-3).

**Table F-3 Respondent's childcare use, by family type (impact on users)**

	<i>User</i>	<i>Matched non-user</i>	<i>Difference</i>	<i>p-value</i>
	<i>%</i>	<i>%</i>		
<i>Couple families</i>				
Formal care	100.0	74.1	25.9	0.000
Informal care only		14.3		
No care		11.6		
<i>Lone-parent families</i>				
Formal care	100.0	[69.1]	30.9	0.000
Informal care only		[15.8]		
No care		[15.2]		
<i>Unweighted bases</i>				
Couple families	140	137		
Lone-parent families	76	63		
<i>Weighted bases</i>				
Couple families	140	137		
Lone-parent families	76	63		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.

### Work-ready individuals

Table F-4 shows the estimated impact of NNI for the work-ready population on childcare usage for couples and lone parents. The impact on formal childcare use is estimated to be greater for lone parents, at about 8 percentage points (significant at the 10% level) compared with a negative impact of 1.6 percentage points for those with partners. Interestingly, in the NNI-rich areas, lone parents were more likely to use formal childcare than couple families, whereas in NNI-poor areas the opposite is true. In other words, the introduction of NNI means that lone parents overtook couples in their rate of use of formal childcare.

**Table F-4 Respondent's childcare use, by family type (impact on work-ready)**

	NNI-rich %	Matched NNI-poor %	Difference	p-value
<i>Lone-parent families</i>				
Formal care	69.3	61.4	8.0	0.050
Informal care only	17.1	20.0	-3.0	0.365
No care	13.6	18.6	-5.0	0.114
<i>Couple families</i>				
Formal care	67.6	69.2	-1.6	0.522
Informal care only	15.3	12.6	2.8	0.145
No care	17.0	18.2	-1.1	0.587
<i>Weighted bases</i>				
Lone-parent families	375	375		
Couple families	880	880		

Base: All respondents in NNI-rich and NNI-poor areas.

### F.3 Effects by level of education

#### Users

Finally, dividing users by qualification level, we estimate that three-quarters of users with NVQ level 2 or lower qualifications would have found alternative formal childcare in the absence of NNI, compared with just 68% of those with higher qualifications (Table F-5).

**Table F-5 Respondent's childcare use, by education level (impact on users)**

	User %	Matched non-user %	Difference	p-value
<i>No qualifications / NVQ 1 or 2</i>				
Formal care	100.0	76.0	24.0	0.000
Informal care only		9.9		
No care		14.1		
<i>NVQ 3 or more</i>				
Formal care	100.0	[67.8]	32.2	0.000
Informal care only		[21.4]		
No care		[10.9]		
<i>Unweighted bases</i>				
No qualifications / NVQ 1 or 2	105	127		
NVQ 3 or more	111	73		
<i>Weighted bases</i>				
No qualifications / NVQ 1 or 2	105	116		
NVQ 3 or more	111	84		

Base: All respondents selected for individual matching impact assessment.

Note: Square brackets are used where the base is less than 100.



**Work-ready individuals**

Table F-6 shows the estimated effects of NNI on the work-ready population by education level. The estimates suggest that the greatest impact of NNI on formal childcare usage is among those with higher levels of education. Nevertheless, none of the impacts is significantly different from zero.

**Table F-6 Respondent's childcare use, by education level (impact on work-ready)**

	<i>NNI-rich</i> %	<i>Matched NNI-poor</i> %	<i>Difference</i>	<i>p-value</i>
<i>No qualifications / NVQ 1 or 2</i>				
Formal care	67.1	66.9	0.2	0.930
Informal care only	16.1	13.6	2.5	0.181
No care	16.8	19.5	-2.8	0.180
<i>NVQ 3 or more</i>				
Formal care	70.3	66.8	3.5	0.426
Informal care only	15.3	17.7	-2.4	0.490
No care	14.4	15.5	-1.1	0.752
<i>Weighted bases</i>				
No qualifications / NVQ 1 or 2	924	924		
NVQ 3 or more	347	347		

Base: All respondents in NNI-rich and NNI-poor areas.

## APPENDIX G SELECTING THE WORK-READY SAMPLES

Of the 35,000 Child Benefit recipients sent a postal questionnaire, 11,817 individuals responded and gave consent to be re-contacted. From these 11,817, we selected 4,517 work-ready individuals for the follow-up survey of parents conducted by telephone. This appendix gives details of how the 4,517 work-ready individuals were chosen.

First, we used the postal responses from all people in NNI-rich areas who consented to be re-contacted and compared the characteristics of this group with those of our NNI user sample. This involved running a simple regression model that allowed us to predict the probability of being an NNI user for each person in our NNI-rich area who agreed to be re-contacted (based on common characteristics observed in our NNI user group and NNI-rich group). The variables we used for this included:

- age of respondent
- number of children in the household
- household tenure
- the age that the respondent left full-time education
- attitudes to work
- work pattern in January 2002
- Ofsted childcare data (OA level)
- other detailed demographic information.

The NNI-rich sample was then divided into five equally sized strata, with those in strata 5 having the highest predicted probability of being an NNI user and those in strata 1 having the lowest predicted probability of being an NNI user. In order to make sure that our final sample reflected the entire age range of children, we did this exercise separately for each of our three age cohorts of children.

We then chose around 2,250 individuals from NNI-rich areas. This was done at random in each stratum, but we allowed the probability of being selected to increase by 55% between adjacent strata. This meant that those in strata 5 were 5.77 times more likely to be selected than those in strata 1<sup>35</sup> – hence the ‘work-ready’ tag.

This group of work-ready NNI-rich individuals was then matched to individuals in NNI-poor areas using nearest-neighbour matching without replacement. The result was a group of 4,517 work-ready individuals, half in NNI-rich areas and half in NNI-poor areas.

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<sup>35</sup> The probability of being selected increased by 55% per stratum, implying a ratio of selection from stratum 1 to stratum 5 of 1:1.55:2.40:3.72:5.77, i.e. an individual from stratum 5 was 5.77 times more likely to be chosen (very work-ready) than an individual from stratum 1 (least work-ready).

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