



Department
for Education

School lunch take-up survey 2013 to 2014

Research report

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Executive Summary

- This survey, conducted in the 2013/14 financial year, prior to the commencement of the universal infant free school meals policy, was commissioned by the Department for Education to inform on-going policy development around school lunches. The objectives were to:
 - measure take-up of school lunches, establishing a baseline for the School Food Plan
 - understand variations in take-up by different school characteristics
 - identify key drivers of school lunch take-up
 - establish the average price of a school lunch
- Previous surveys of school lunch take-up have been carried out by the School Food Trust (SFT)¹ and the Local Authorities Catering Association (LACA). The last survey took place in 2011-12.
- A sample of 822 schools was achieved, with an overall response rate of 19 per cent, lower than the target. Within the overall sample, the response rate was 22 per cent for primary schools, 27 per cent for special schools and 14 per cent for secondary schools. Due to the low response rate and level of missing data on take-up from secondary schools, analysis is only reported for primary and special schools combined.
- There were significant differences between the method used in this survey and that used in previous SFT surveys, specifically in relation to sampling and data collection. As a result, this data is not comparable with that from SFT surveys, and this report focuses on findings from the 2013/14 school lunches take-up survey only. A more detailed explanation of the methodological differences can be found in the main report.
- In the 2013/14 financial year, the average take-up of school lunch was 42.6 per cent.
- Take-up of *free school meals* was higher than take-up of *paid lunches*. On average, 75.1 per cent of eligible pupils took free school meals, compared with a take-up rate of 35.5 per cent for paid lunches.
- Average take-up of paid school lunches was higher in local authority maintained schools than in academies and free schools (35.2 per cent and 32.9 per cent respectively).

¹ The SFT is now the Children's Food Trust and their surveys can be found at <http://www.childrensfoodtrust.org.uk/research/annual-surveys>

- Take-up also varied according to the proportion of pupils within a school who were eligible for free school meals ('FSM density'). Take-up was higher in schools with high FSM density (46.8%) compared with schools with medium and low FSM density (39.9% and 41.4% respectively). This is to be expected given that the take-up of free school lunches is higher than the take-up of paid lunches.
- Take-up of school lunch varied by region, with highest take-up in the North West (51.7%), North East (51.6%) and London (47.9%) and lowest take-up in the South West (35.2%).
- There were variations by model of provision. Schools with in-house provision had the highest take-up (48.0%) compared with schools who provided meals through a local authority contract, or directly through a contract with a private catering company (42.1% and 41.0% respectively).
- When school and catering characteristics were considered together, the average take-up of school lunch was predicted by:
 - the average price of school lunch. For every increase in average price by £1, take-up of school meals fell by 18.5 per cent.
 - free school meal density. Schools with high FSM density had a higher take-up than primary schools in medium FSM density areas.
 - school size. There was an inverse relationship between size of school and lunch take-up, with smaller schools having higher take-up.
- Across schools, 60 per cent had a contract with their local authority to provide school lunches, 28 per cent had a contract directly with a private catering company, while 12 per cent had an in-house service.
- Nearly all schools offered a hot meal in the 2013/14 financial year (97%). Only one per cent of schools offered only cold lunches, while two per cent had no lunch provision at the time.
- The majority of schools reported that lunches were prepared on-site (76%). Just over a fifth of schools prepared lunches off-site (21%) while four per cent had a combination of on- and off-site preparation.
- Only 18 per cent of schools operated a cashless payment system, which recorded transactions by individual pupils.
- The majority of schools (63%) reported that lunches could be purchased on the day, rather than having to book in advance (37%).
- In the 2013/14 financial year, the average price charged for a school lunch was £2.04 (ranging from £1 to £3)².

² This figure is the price charged to parents, which is often subsidised, rather than the cost of producing a meal.

- The price charged for a school lunch was associated with FSM density; the average price was lowest (£1.99) in schools with the highest proportion of pupils eligible for FSM, while the average price was highest (£2.09) in the schools with the lowest proportion of pupils eligible for FSM.
- Price charged for school lunch varied according to the model of provision, with prices highest in schools that had a contract with a private catering company (£2.13) and lowest when the catering was run in-house (£2.00) or through a contract with the local authority (£2.01).
- Schools were asked about the financial impact of providing school lunches; however, 59 per cent did not know whether their lunch service broke even, made a profit or operated at a deficit. Among those that did know, 46 per cent of schools broke even, 14 per cent made a surplus while 41 per cent reported operating at a deficit.
- When schools were asked whether they felt lunch take-up had changed over the last year, 32 per cent of primary schools and 19 per cent of special schools thought that take-up had increased. Only six per cent of primary and one per cent of special schools perceived a decrease in take-up.
- Among schools that perceived a positive change, the main reasons cited were the quality of food, menu changes/meal options (including more choice) and promoting school meals to parents and pupils.
- A high proportion of primary schools expected take-up to increase in the next year (86%). This is unsurprising given the introduction of the universal infant free school meal policy (UIFSM) in September 2014.

Introduction

The School Lunches Take-up Survey collected independent data on:

- school lunch take-up;
- price charged for a school lunch, including financial impact of provision;
- model of catering provision, including: whether schools serve a hot lunch; where food is prepared; whether lunch can be booked in advance; whether they have a cashless system; and
- schools' perceptions of take-up.

As explained below, there were significant differences between the method used in the 2013/14 survey and that used in previous School Food Trust (SFT) surveys. The data is therefore not comparable with similar data from previous years: this report focuses on findings for 2013/14 only.

Due to the complexity of measuring take-up of school meals in secondary schools and the low response rate achieved in this survey, this report contains findings from primary and special schools only.

Background

This research was commissioned following the publication of the School Food Plan, an independent review of school food published by the Department for Education (DfE) in July 2013³. It was commissioned to provide evidence for on-going policy development on school meals, before the commencement of the universal infant free school meals policy.

Feasibility study

A feasibility study was carried out initially to find out the type of information that schools (rather than local authorities (LAs)) hold on catering provision and school lunch take-up. This consisted of: stakeholder interviews, semi-structured interviews with 50 schools and a desk-based review of background documents.

On the basis of the findings and recommendations of the feasibility study, the full national survey began in the spring of 2014.

³ Available on the School Food Plan website at <http://www.schoolfoodplan.com/>

Methods

Differences in survey methodology between SFT surveys and 2013 survey

A series of changes to the survey methodology mean that figures from the 2013 survey cannot be directly compared to figures from previous SFT surveys.

Sample design

The SFT carried out seven annual surveys of school lunch take-up in England between 2005/06 and 2011/12. Initially they were carried out through an annual census of local authorities (2005/06 – 2009/10) where completion was mandatory. In 2010/11 the survey reverted to voluntary completion and the response rate fell. It is not clear whether the findings can be considered representative of all schools. The current survey was completed by schools and not LAs. This decision was based on the relatively low response rates achieved in the last SFT survey (38%) and the fact that LAs found it difficult to respond for schools which had contracts with private caterers or in-house provision, and that they would not be able to answer for academies and free schools.

The sample frame was all primary, special and secondary schools in England. Schools were stratified by school phase, type of school, school size and the percentage of pupils eligible for free school meals (FSM). Primary academies were over-sampled to have sufficient numbers for subgroup analysis. The sample design aimed for a similar *effective sample size* (NEFF) for primary, special and secondary schools, taking into account the larger confidence intervals around estimates from over-sampled sub-groups. To achieve this, slightly more addresses in the primary school sample were issued. Special schools were sampled separately because they have, on average, higher proportions of pupils eligible for FSM compared with other schools. They are also more likely to cater for a mix of age groups.

Data Collection Methods

The previous SFT surveys were completed by LAs on-line using an Excel spreadsheet. This survey offered schools a choice between completing the survey on-line or by telephone (using computer assisted telephone interviewing).

A letter was sent to school leaders in March 2014 telling them about the survey and outlining what would be required. A data sheet was also sent and schools were encouraged to collect relevant information before completing the survey. Schools were sent an email which provided the URL link to the survey and a unique access code. Letters were also sent to all schools, followed by a reminder letter in early June. Telephone interviewers contacted all schools to make sure that materials had reached the intended recipient, to encourage survey completion on-line and to offer the option of

completing by phone. On average the questionnaire took 20 minutes. Eighty per cent of the interviews were completed on-line and 20 per cent by telephone.

Response rate

There were 822 responses from schools, including 41 partial responses⁴. The overall response rate was 19 per cent of issued sample (Table 1). Response varied by school phase (22 per cent for primary, 27 per cent for special schools and 14 per cent for secondary).

Table 1 Response rates by school phase and type

	Issued sample	Target Number	Achieved sample	Response rate
Primary	2,134	747	478	22%
Academies	500	175	129	26%
Free schools	8	3	2	25%
LA Maintained	1,626	569	347	21%
Secondary	1,915	669	267	14%
Academies	1,030	359	148	14%
Free schools	52	25	11	21%
LA Maintained	833	285	108	13%
Special schools	286	100	77	27%
Total	4,335	1,516	822	19%

The response rate was lower than expected⁵. This task proved particularly challenging for secondary schools, in part due to the complexity of deriving take-up data in a system which includes food served at break-time as well as lunch-time. Of the responding sample, 40.6 per cent of secondary schools were unable to provide all the data required to derive school lunch take-up. Given that calculating take-up was a primary objective of the survey, a decision was taken not to include findings on secondary schools due to poor validity.

Data management

One open question and five 'other specify' questions were coded. Weights were generated to account for unequal selection probabilities and non-response bias. Derived variables were created using the same formulae used by the SFT. Full details on weights are provided in Appendix A.

⁴ Where appropriate, partial responses have been included in the analysis.

⁵ Feedback from school staff indicated this was primarily because schools found it challenging to provide the information required as it was frequently held in different places (either on different systems within the school or split between the school and the catering company). This meant that in order to complete the survey, school staff had to liaise with colleagues internally and externally to collate the information, which took time and relied on the cooperation of others.

Analysis

SPSS was used for data analysis. The first stage focused on rates of school lunch take-up. Primary and special schools were grouped together because they take a similar approach in delivering school lunch⁶.

The second stage of analysis involved sub-group analysis (where the base size was adequate) by key school characteristics (such as school type), region and proportion of pupils eligible for free school meals (FSM) (an indicator of deprivation). For the purposes of analysis, a variable was created for FSM density with 'low' denoting up to eight per cent of pupils eligible for free school meals, 'medium' for between eight and 20 per cent eligible for free school meals and 'high' for more than 20 per cent eligibility. The percentage of pupils eligible for free school meals was taken from the January 2014 Annual School Census.

Finally, the relationship between school lunch take-up and school characteristics was analysed through multiple linear regression to detect factors that might affect the take-up of school lunch. This technique allowed us to identify which characteristics remained significantly associated with school lunch take-up after controlling for other factors.

Reporting conventions

The percentages for take-up are reported to one decimal place. Elsewhere, the percentages are rounded and presented without decimals. Base sizes vary due to item non-response. Values of "0" in tables and figures indicate rounded percentages of less than one per cent. Figures have been weighted, and the unweighted base population is shown in each table, figure and chart.

The upper and lower confidence intervals are shown for the survey estimates on take-up and price. Confidence intervals demonstrate that if we were to repeat the survey 100 times, on 95 occasions, the confidence intervals contain the true mean.

All differences reported in the text are statistically significant at the 95 per cent level unless explicitly stated otherwise.

Data quality

This survey requested different types of information on school lunches, including both monetary figures and numbers, and incorporated data available on pupil numbers from the Annual School Census. In theory, information provided by schools should be consistent across different questions. So, for example, the number of free lunches served

⁶ <http://www.childrensfoodtrust.org.uk/research/annual-surveys>

should not exceed the number of pupils eligible for free school meals. Or, if a certain number of meals served was reported, and a price given, then the reported annual income from lunch time sales should be consistent. Key outcomes (such as take-up) are calculated by using information from different questions. Unfortunately, data across all the variables was not always provided (item non-response), and was not always consistent for all cases in the achieved sample. Where the data quality was 'poor' rather than 'missing', data were edited where possible, or if not, treated as missing.

For primary and special schools, 14.3 per cent of responding schools had data missing for school lunch take-up.

Take-up of school lunches

The average take-up of school lunches in the 2013/14 financial year was 42.6 per cent. The average take-up rate was 35.5 per cent for paid lunches and 75.1 per cent for free school meals (Table 2).

Table 2 Average take-up of overall, paid and free school lunches (%)

	Average	Lower CI	Upper CI	Unweighted base
Overall take-up	42.6	41.0	44.2	461
Take-up of paid lunches	35.5	33.8	37.2	467
Take-up of free lunches	75.1	73.1	77.1	437

The Department for Education (DfE) collects statistics on the take-up rate of free school meals through the Annual School Census⁷. Figures from January 2014 show that 85.1 per cent of those registered as entitled to FSM took up their eligibility in primary schools. These percentages are higher than identified in this survey by around 10 percentage points.

It is likely that the disparity is explained by the different measurement approaches. The DfE figures are calculated by recording the number of pupils taking a school meal on the day of the census in January and dividing by the total number eligible to do so. The survey recorded the number of pupils taking lunches throughout the whole of the financial year. Since we know that there is seasonal variation in school lunch take-up (take-up is lower in the summer than in the colder months), it is reasonable to assume that this explains the lower percentages given by the survey.

⁷<https://www.gov.uk/government/publications/schools-pupils-and-their-characteristics-january-2014>

Variations in the take-up of school lunches

This section explores the binary relationships between take-up and a range of school/catering characteristics, before considering all these characteristics together using regression analyses. Only significant differences are included.

Variations in take-up by school type

The average take-up of paid school lunches varied by school type. Take-up was higher in local authority maintained schools than in academies and free schools (Table 3). There were no statistically significant differences by school type for average take-up overall or for take-up of free school meals.

Table 3 Average take-up of paid-for meals by school type (%)

Paid-for meals	LA maintained schools	Academies and Free schools	Special Schools	Total
	35.2	32.9	47.4	35.0
<i>Unweighted bases</i>	313	112	42	467

Variation in take-up by free school meal density

The average rate of school lunch take-up was highest in schools with high proportions of pupils eligible for free school meals (Table 4). This is to be expected as the take-up of free school meals is higher than *paid* meals and this drives a higher overall take-up rate.

Table 4 Average take-up of school meals by FSM density (%)

	Low FSM density	Medium FSM density	High FSM density
	41.4	39.9	46.8
<i>Unweighted bases</i>	142	151	168

Take-up of *paid* meals varied according to FSM density (Table 5) with take-up of *paid* meals being lower in schools with high FSM density.

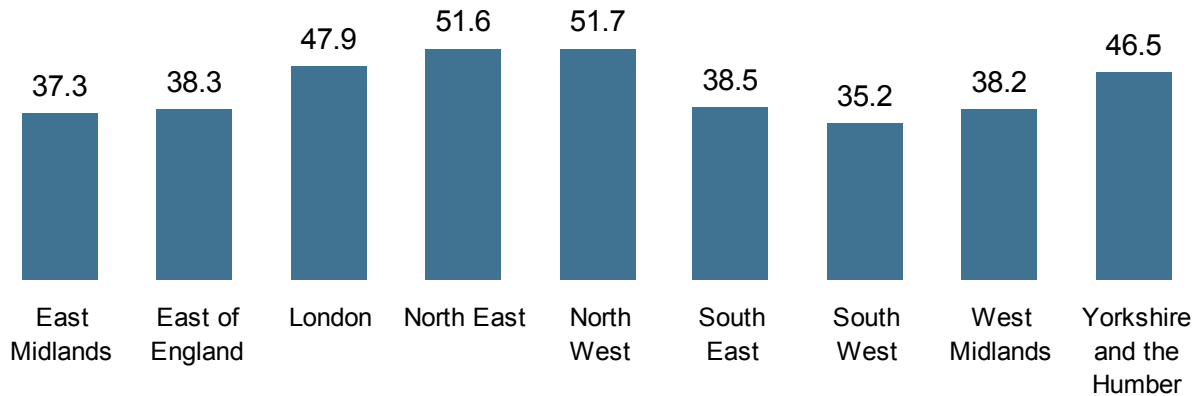
Table 5 Average take-up of paid-for meals by FSM density (%)

	Low FSM density	Medium FSM density	High FSM density
	39.6	34.4	32.8
<i>Unweighted bases</i>	143	152	172

Variation in take-up by region

The take-up of school lunch varied by region, with a range of 16.5 percentage points. Take-up was highest in the North West (51.7%), North East (51.6%) and London (47.9%) and lowest in the South West (35.2%) (Figure 1).

Figure 1 Average take-up of school lunches by region (%)

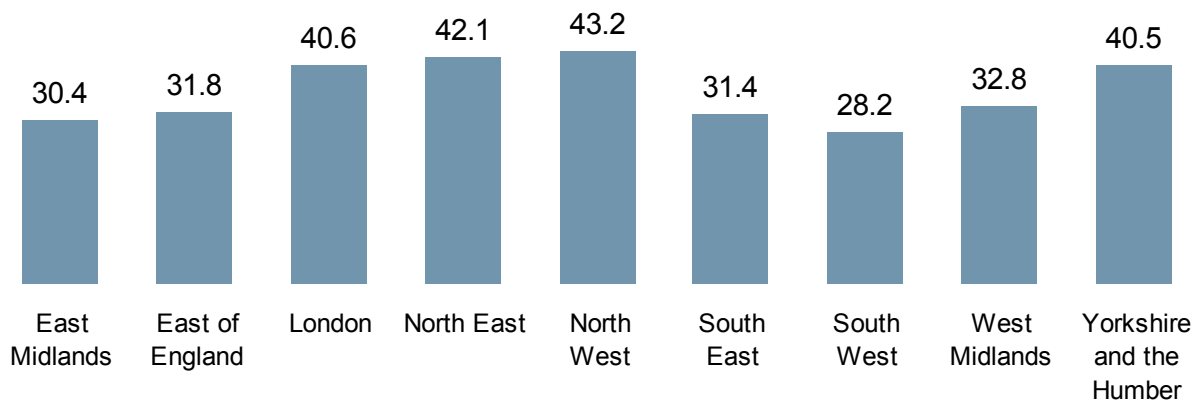


Base: All responding schools with a meal service

East Midlands: 51; East of England: 64; London: 47; North East: 25; North West: 58; South East: 76; South West: 53; West Midlands: 41; Yorkshire and the Humber: 46

The regional variation was similar for the take-up of *paid* meals (Figure 2).

Figure 2 Average take-up of paid lunches by region (%)

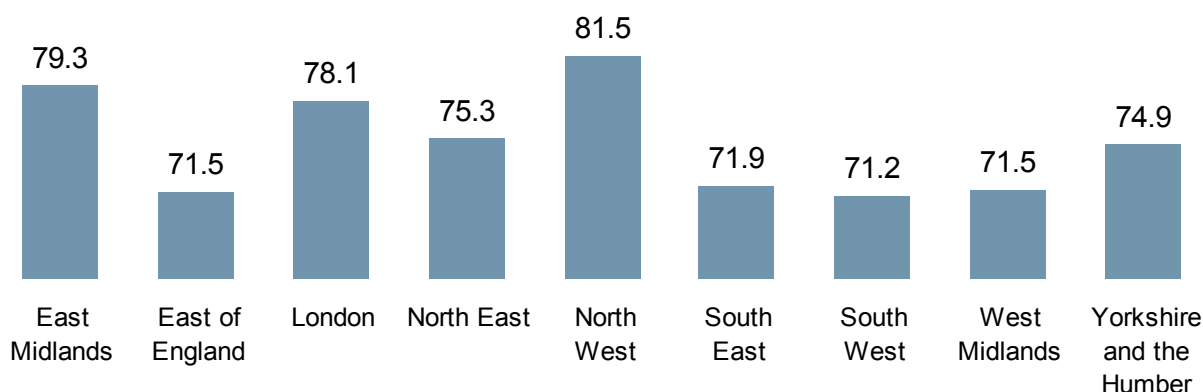


Base: All schools with a meal service

East Midlands: 53; East of England: 64; London: 48; North East: 25; North West: 58; South East: 77; South West: 54; West Midlands: 42; Yorkshire and the Humber: 46

For free school meals (Figure 3) the highest take-up rates were in the North West (81.5%), the East Midlands (79.3%), and London (78.1%). Again, the lowest take-up rates for school lunch were in the South West (71.2%).

Figure 3 Average take-up of free meals by region (%)



Base: All schools with a meal service

East Midlands: 47; East of England: 62; London: 44; North East: 22; North West: 56; South East: 71; South West: 53; West Midlands: 41; Yorkshire and the Humber: 41

Variation in take-up by model of provision

There were differences in the average take-up of school lunch according to the 'model of provision', i.e. whether the school provided meals in-house or through contracts with either the local authority or private catering companies⁸. Take-up of school lunches was highest when the provision was in-house (48.0%) compared with services provided through a contract with the local authority or directly with a private catering company (42.1% and 41.0% respectively). There was a similar pattern by model of provision for paid meals but no statistically significant differences for free school meals.

⁸ It should be noted that LAs contract out their services to private caterers so in some schools responding that they have an LA contract, ultimately this could be with a private caterer.

Table 6 Take-up of school meals, by model of provision (%)

	Contract between school and LA	Contract between school and private company	In-house organised and run
Average take-up	42.1	41.0	48.0
<i>Unweighted bases</i>	<i>254</i>	<i>134</i>	<i>68</i>
Average take-up of paid lunches	35.4	32.8	40.7
<i>Unweighted bases</i>	<i>258</i>	<i>134</i>	<i>69</i>
Average take-up of free lunches	74.9	76.4	74.2
<i>Unweighted bases</i>	<i>244</i>	<i>124</i>	<i>64</i>

Factors influencing take-up

Multiple linear regression analysis was used to look at the relationship between school lunch take-up and school characteristics. Regression shows which characteristics remain significantly associated with school lunch take-up after controlling for the other factors.

The factors included were:

- Average price of a lunchtime meal
- School type
- Provision of a hot lunch
- Free school meal density
- School size
- Urban or rural area
- Operating a cashless payment system
- On the day payment or advanced booking
- Provision model

When these factors were considered in a single analysis, significant predictors of take-up were:

- **Average price of a lunchtime meal:** the price of a lunchtime meal ranged from £1.00 to £3.00 with a mean of £2.04. For every increase in average price by £1, take-up of school meals fell by 18.5 percentage points.
- **Free school meal density:** schools with high FSM density had a higher take-up than schools in medium FSM density areas.
- **School size:** There was an inverse relationship between size of school and lunch take-up. Smaller schools had higher take-up.

These findings indicate that cost can play an important role in the level of school lunch take-up. Schools in high FSM density areas had higher levels of take-up than schools in medium FSM density, probably due to the high eligibility for, and take-up of, free school meals in these schools. Smaller schools had higher levels of school lunch take-up – particularly those with fewer than 100 pupils compared with schools with 300 or more pupils. See Appendix C for full details of the regression.

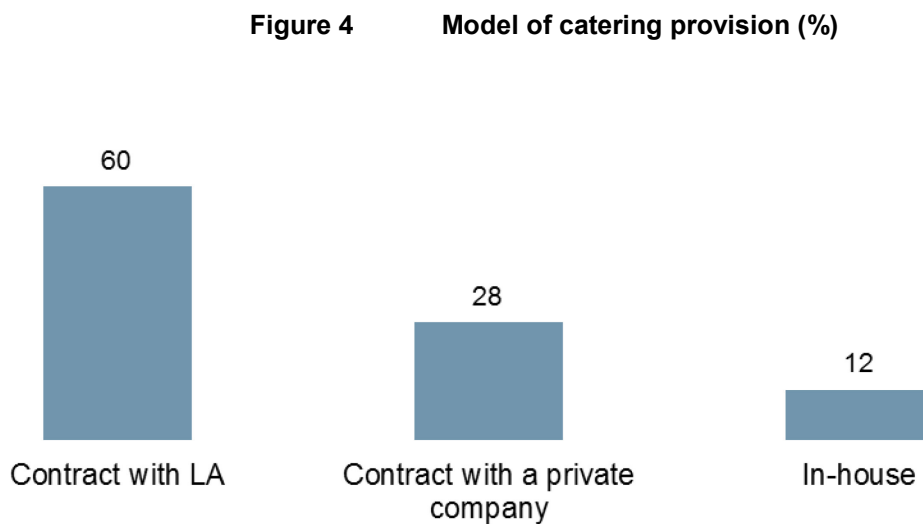
The characteristics of school lunch provision

This chapter describes aspects of school lunch provision covering:

- Model of catering provision
- Provision of hot lunches
- Where food is prepared
- Site of preparation
- Cashless systems
- Booking meals in advance
- Price charged for a school lunch
- The financial impact of providing a lunch service

Model of catering provision

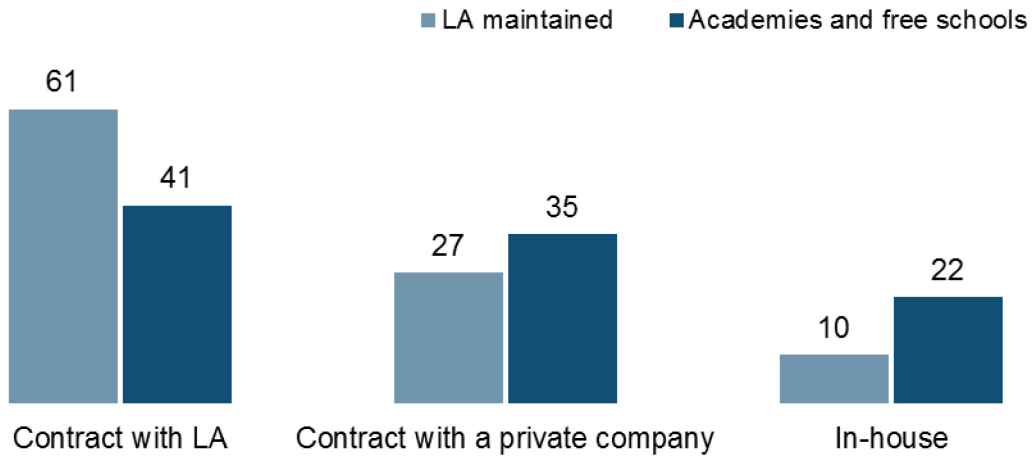
In the 2013/14 financial year, the majority of schools had contracts with either their LA or a private contractor to provide school lunches (Figure 4). Only 12 per cent of schools had an in-house provision.



Base: All responding schools with a meal service: 535

As might be expected, local authority maintained schools were more likely to have a contract with the local authority for catering (61%) and academies/free schools were more likely to have a contract with a private catering company (35%) or operate an in-house lunch service (22%) (Figure 5).

Figure 5 Model of catering provision by school type (%)

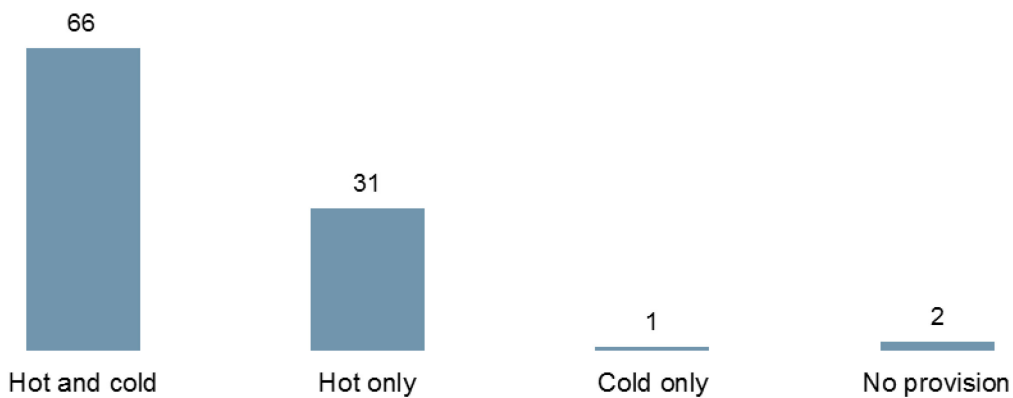


Base: All responding schools with a meal service: 466

Provision of hot lunches

Nearly all schools (97%) offered a hot lunch in the 2013/14 financial year. Sixty six per cent served both hot and cold food, 27 per cent only hot food and less than one per cent served only cold lunches (Figure 6). In the summer term of the 2013/14 financial year, two per cent of schools did not have meal provision.

Figure 6 Meals offered (%)

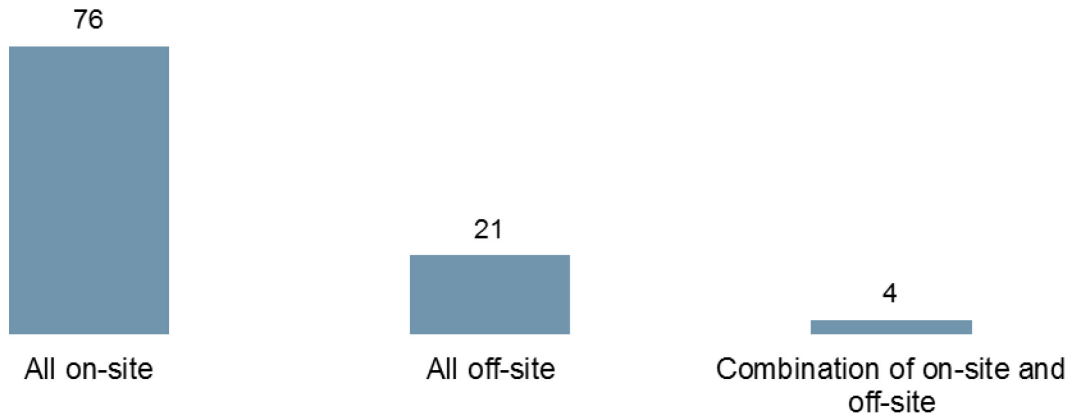


Base: All schools: 555

Where food is prepared

Just over three-quarters of schools reported that meals were prepared on-site (76%). Twenty-one per cent of schools reported that meals were prepared off-site and just four per cent had a combination of on- and off-site preparation (Figure 7).

Figure 7 Where food is prepared (%)



Base: All responding schools with a meal service: 542

Of the schools where meals were prepared off-site, more than two-thirds (69%) reported that the meals were supplied, cooked or prepared at another school. Less than one-third of schools (31%) said that they were supplied and cooked by the caterer off-site.

Cashless systems

The majority of schools did not have a cashless system in place, which records transactions by individual pupils (82%).

Booking lunches in advance or buying on the day

The majority of schools (63%) reported that lunches could be purchased on the day. Just over a third (37%) required advance booking.

The requirement to book in advance varied according to the proportion of pupils eligible for free school meals. Schools with higher proportions of pupils eligible for free school meals were less likely to require advance booking (27%) than schools with lower proportions of FSM pupils (46%).

The requirement for advance booking also varied by region, with schools in the East Midlands (60%) and North East (54%) most likely to require advance booking while schools in the Yorkshire and Humber (24%), South East (26%) and East of England (27%) were least likely.

There was also variation by the model of provision, with advance booking most likely to be required by schools that had a contract with a private catering company (52%) compared with a contract with the local authority (33%), or schools that operated an in-house service (25%).

Price charged for a school meal⁹

In the 2013/14 financial year, the average price charged for a school lunch was £2.04 (ranging from £1 to £3) (Table 7).

Table 7 Average price of school lunches

	£
Average	2.04
Lower CI	2.02
Upper CI	2.06
<i>Unweighted base</i>	539

The price charged for school lunch was associated with FSM density, with lunches cheapest in schools with the highest proportion of pupils eligible for FSM and meals most expensive in the schools with the lowest proportion of pupils eligible for FSM (Table 8).

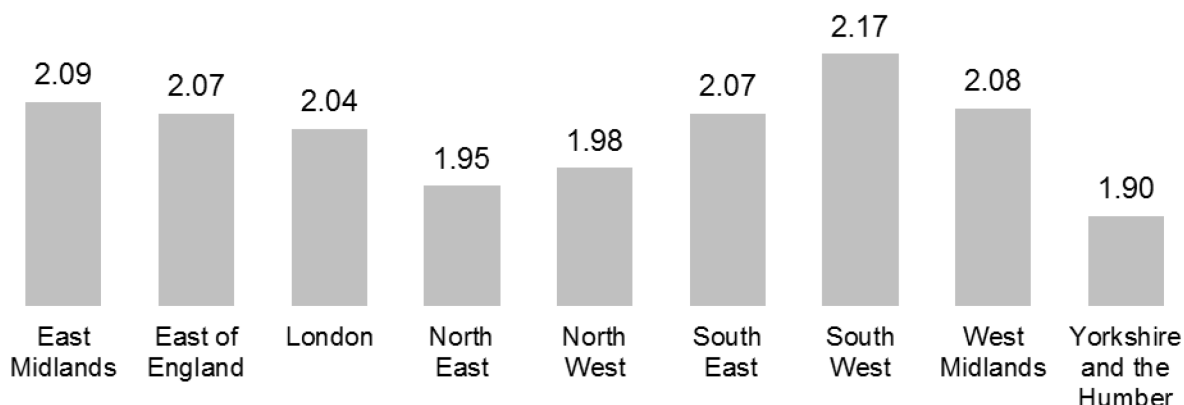
Table 8 Average price of school lunches by FSM density (%)

	Low FSM density	Medium FSM density	High FSM density
Average £	2.09	2.05	1.99
Lower CI	2.06	2.02	1.96
Upper CI	2.11	2.09	2.03
<i>Unweighted bases</i>	153	167	219

⁹ This figure is the price charged to parents, which is often subsidised, rather than the cost of producing a meal

There was a 27 pence difference between the cheapest and most expensive school lunches across regions (Figure 8). School lunches were cheapest in Yorkshire and the Humber (£1.90) and most expensive in the South West (£2.17).

Figure 8 Average price of school meals by region (£)



Base: All responding schools with a meal service (539)

East Midlands: 58; East of England: 74; London: 58; North East: 31; North West: 65; South East: 84; South West: 63; West Midlands: 51; Yorkshire and the Humber: 55

The price charged for school lunch varied according to the model of provision (Table 9). The average price was highest in schools that had a contract directly with a private catering company and lowest when the catering was run in-house or through a contract with the local authority.

Table 9 Average price of school lunches by mode of provision (£)

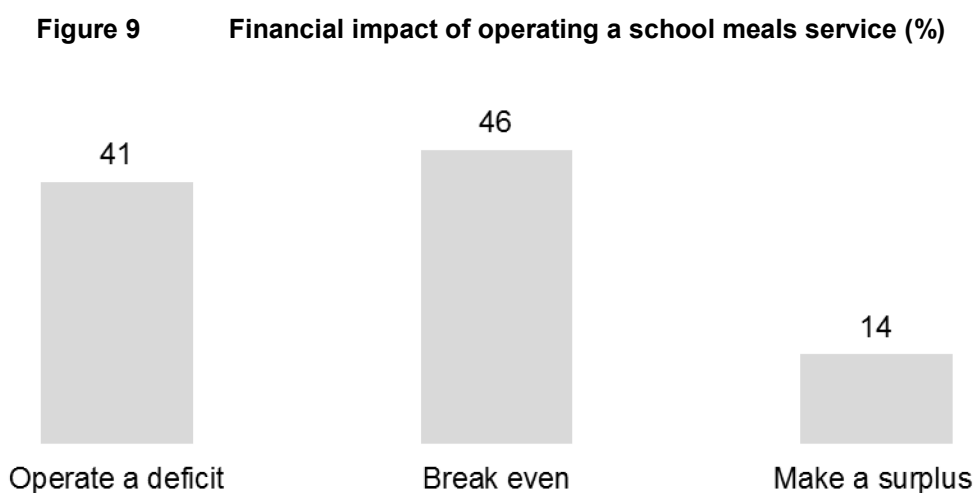
	Contract between school and LA	Contract between school and private company	In-house organised and run
Average £	2.01	2.13	2.00
Minimum £	1.00	1.73	1.50
Maximum £	2.37	3.00	2.50
<i>Unweighted base</i>	296	157	79

The financial impact of providing a lunch service

Schools were asked about the financial impact of running their school lunch service: specifically if it broke even, made a profit or operated at a deficit.

Over half, 59 per cent did not know the financial impact of providing a lunch service. Schools unable to provide this information were most often schools that had a contract (66% had a local authority contract; 27% had a contract with a private catering company). The majority of schools with in-house provision were able to provide this information (74%).

Of those schools that knew the financial impact of providing a lunch service, 46 per cent broke even, 14 per cent made a surplus, while 41 per cent reported operating at a deficit (Figure 9)¹⁰.



Base: All responding schools with meal provision that knew the financial impact; 261

Perceptions on the take-up of school lunches

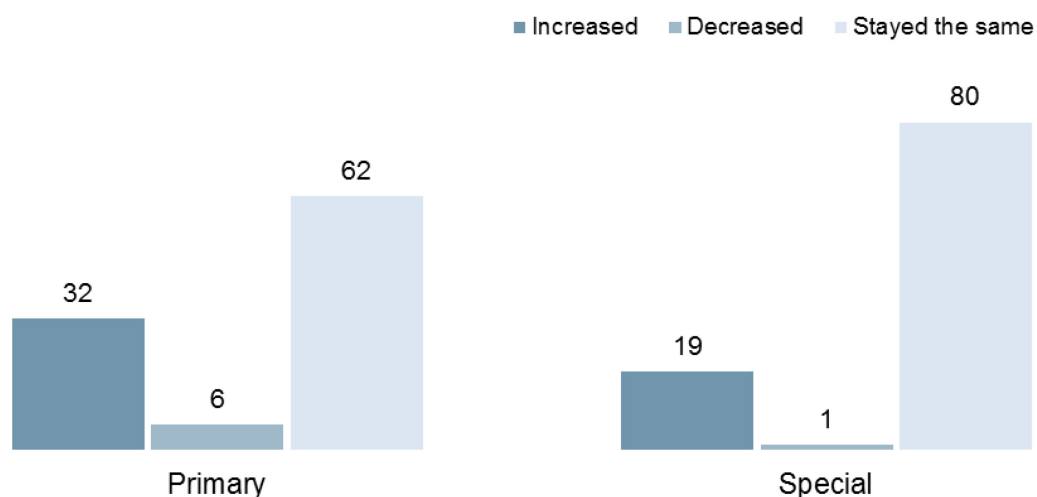
Schools were asked about their perceptions of change in take-up rates over the last 12 months and their expectations about how take-up might change over the coming year. They were also asked to select reasons for past or anticipated change in take-up.

Views on take-up in the last 12 months

Nearly a third of primary schools reported that they thought take-up had increased (32%), compared with just under a fifth of special schools (19%) (Figure 10).

¹⁰ These figures may not be representative of all schools given the high proportion of respondents unable to answer the question.

Figure 10 Views on change in take-up over past 12 months (%)



Base: All schools with a meal service: Primary: 414; Special: 68.

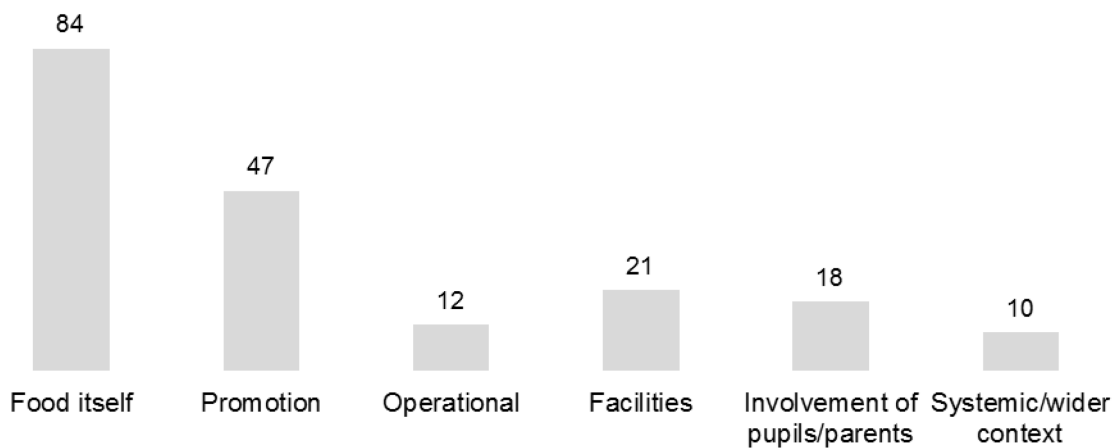
Reasons given for perceived increase in take-up

Those schools who reported that they felt take-up had increased were asked to explain the change. Reasons were grouped into themes:

- *Food*: Quality of food; menu changes or meal options; introducing hot food.
- *Promotion*: Promoting school meals to parents and pupils.
- *Facilities*: New catering contractor and/or catering staff; new kitchen facilities/equipment; improved dining facilities.
- *Operational*: Reducing lunch prices; pupils having to stay on-site at lunch time; re-organisation of lunchtime arrangements; introducing cashless system; no advance booking.
- *Involvement*: Increased pupil involvement/consultation around school meals.
- *Systemic/wider context*: Increase in number of pupils at school/number of pupils taking FSM; increase in number of working parents.

The quality of food and the choice of food available was by far the most frequently given reason for the perceived rise in take-up (84%) (Figure 11). Nearly half of schools cited promotion of school meals to parents and pupils as a reason for a perceived increase in take-up.

Figure 11 Reasons for perceived increase in take-up (%)

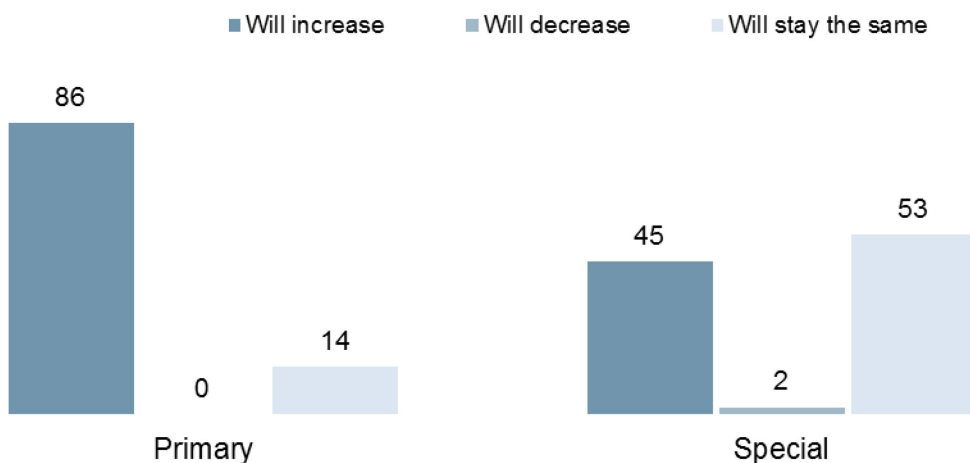


Base: All schools that reported an increase in take-up: 136.

Expectations for change in take-up over coming year

The vast majority of primary schools expected take-up of school meals to increase over the coming year (86%). The high proportion of schools predicting take-up will rise is consistent with schools' work to prepare for the introduction of universal infant free school meals in September 2014. Similar numbers of special schools thought that take-up would increase or stay the same.

Figure 12 Expectations for take-up over the next 12 months (%)



Base: All schools with a meal service: Primary: 420, Special: 64.

Reasons given for increase in future take-up

The introduction of universal infant free school meals was by far the most frequently cited reason for the anticipated increase in take-up (95%) (Table 10).

Table 10 Reasons given for expected increase in future take-up (%)

Reason mentioned	(%)
Introduction of universal infant free school meals (UIFSM)	95
Promotion of school meals to parents and pupils	17
Menu changes or meal options	11
Quality of food	11
New kitchen facilities	8
Increased pupil involvement/consultation around school meal provision	6
Increase in number of pupils in the school	6
Improved dining facilities	3
Reorganisation of lunchtime arrangements	5
New catering contractor	4
Reduction in price of meals	1
Introduction of hot food options	0
Ban on packed lunches	1
Pupils must stay onsite during lunch break	0
Promoting availability of free school meals and/or introduction of UIFSM	0
Introducing a cashless system	-
Other	0
<i>Unweighted bases</i>	385

Introduction of universal infant free school meals

Schools with infant aged children were asked about their plans for introducing universal infant free school meals (UIFSM) in September 2014.

Seventy-nine per cent of schools were actively promoting the offer to parent and carers, during the summer term.

A quarter of schools (25%) were planning to introduce a new registration system for UIFSM. Thirty-six per cent had no plans to do this and 38 per cent did not know. Schools with the highest FSM density were most likely to report that they were planning to introduce a new registration system (33%) compared with schools with the lowest FSM density (20%).

Appendix A

Weighting

A set of weights were generated for the responding schools to reduce any biases in the sample due to unequal selection probabilities and non-response. The weights make the profile of the sample match that of the population for a set of key variables. This approach rests on the assumption that a sample which is representative of the population for a set of known characteristics should also be representative for unknown characteristics, such as the proportion of pupils eligible for free school meals, or the number of pupils eating meals at school.

The first step was to generate a selection weight. This weight is the inverse of the selection probabilities and equal to the number of schools in the population / the number of schools selected for the sample, *for each sampling cell*. This weight makes the selected sample of schools representative of the population from which it was selected. The population and sample counts for each of the sampling cells and the corresponding values of the selection weight are shown in Table 11.

Table 11 Population and sample counts and the selection weight

Sampling stratum	Population count	Selected sample	Selection weight
Primary - LA+Free	14978	1634	9.166
Primary - Academies	1767	500	3.534
Special schools	919	286	3.213
Total	17,664	2,420	

An assessment of non-response bias was carried out by comparing the sample profile to population data taken from Edubase. The responding sample was weighted by the selection weight. The aim was to identify evidence of bias that remained once the unequal sampling fractions had been taken into account. This was done separately for primary and special schools. The totals are shown in Columns A and C of Tables 12 and 13.

Table 12 Population and sample profiles for primary schools

PRIMARY SCHOOLS	Population (A)	Unweighted (B)	Selection weight (C)	Calibrated (D)
	%	%	%	%
School type				
LA+Free	89.4	73.0	87.5	89.4
Academies	10.6	27.0	12.5	10.6
Number of pupils				
<185	30.8	31.0	33.7	30.8
185-290	34.4	34.9	35.9	34.5
>290	34.7	34.1	30.4	34.7
Urban/Rural				
Rural	20.0	19.0	21.1	20.0
Urban	80.0	81.0	78.9	80.0
Percent eligible for FSM				
<10%	35.3	35.4	38.4	35.3
11-21%	25.9	21.1	23.0	25.9
>21%	30.8	26.4	28.8	30.8
Info missing	8.0	17.2	9.8	8.0
Government Office Region				
A North East	5.2	5.9	6.1	5.2
B North West	14.6	11.1	12.4	14.6
D Yorkshire and Humber	10.7	9.8	9.6	10.7
E East Midlands	9.7	11.3	10.5	9.7
F West midlands	10.6	9.2	8.7	10.6
G East of England	11.9	14.2	14.7	11.9
H London	10.7	9.8	10.2	10.7
J South East	15.5	15.7	15.6	15.5
K South West	11.1	13.0	12.2	11.1

Table 13 Population and sample profiles for special schools

SPECIAL SCHOOLS	Population (A)	Unweighted (B)	Selection weight (C)	Calibrated (D)
	%	%	%	%
Urban/Rural				
Rural	7.1	11.0	11.0	7.1
Urban	92.9	89.0	89.0	92.9
Percent eligible for FSM				
<=50%	78.1	75.3	75.3	78.1
>50%	21.9	23.3	23.3	21.9
Government Office Region				
A North East	5.7	4.1	4.1	5.7
B North West	17.0	17.8	17.8	17.0
D Yorkshire and Humber	8.4	11.0	11.0	8.4
E East Midlands	7.5	5.5	5.5	7.5
F West midlands	12.1	9.6	9.6	12.1
G East of England	8.3	9.6	9.6	8.3
H London	14.0	17.8	17.8	14.0
J South East	18.5	13.7	13.7	18.5
K South West	8.6	11.0	11.0	8.6

The profiles were generally similar but there was some evidence of bias. The largest differences were for region, although these are likely to be due to small cell sizes. Most of the differences are small but a set of weights were generated to correct them.

The weights were generated using calibration weighting methods. Calibration weighting is a technique that creates weights which, when applied to survey data, give survey estimates that match the population estimates for certain key variables known as the 'calibration totals'. An iterative procedure is used to adjust an initial weight (in this case, the selection weight) until the distribution of the (weighted) sample matches that of the population for the calibration totals. The adjustment keeps the values of the final weights as close as possible to those of the initial weights, which ensures the properties of the selection weights were retained in the final calibrated weights. The population figures are taken from Edubase Summer 2014.

Weights were generated separately for primary and special schools. The weights for primary schools make the profiles of the weighted samples match the population for school type, school size (number of pupils, grouped), urban/rural indicators, eligibility for free school meals (FSM) (grouped) and region, correcting for differences in response rates across these groups. The special schools, due to small numbers, were weighted to urban/rural indicators and eligibility of FSM and region only. The primary schools used different size cut-offs, since primary schools tend to be smaller. Similarly, the special schools used a different break down of FSM eligibility, since rates of eligibility tends to be higher in special schools.

Note the local authority (LA) maintained schools and free schools were grouped together during sampling and weighting. The free schools had the same sampling fractions as the LA maintained schools, therefore they had the same selection weights. They were also grouped together for the calibration due to low numbers. This does not impact on their subsequent grouping for analysis.

The profile of the final weighted sample is given in Column D in Tables 12 and 13. It can be seen that this profile matches that of the population to which it is weighted.

Appendix B

Table 14 shows who completed the survey.

Table 14 **Respondents**

	%
Administrator	53
Business manager	24
Head teacher/ Deputy head	13
Catering manager/provider	1
Other	3
Missing	5
Unweighted base	555

Appendix C

A multiple linear regression model was run for school lunch take-up. The method used was complex samples linear regression, which takes account of survey sample design. As the survey was stratified by school type and school phase this was controlled for in the model in order to produce the correct standard errors. The independent variables were chosen through a review of the literature and variables of interest, in collaboration with the Department for Education. These independent variables were entered into the model.

Table 15 Multiple linear regression of school lunch take-up

Factor	Category	Co-efficient	95% Confidence interval Lower	95% Confidence interval Upper	Significance
Average price of lunchtime meal (£)		-18.471	-29.038	-7.904	.001
School type					.836
	Academies and free schools	-.318	-4.237	3.601	.873
	Special schools	-6.663	-29.133	15.807	.560
	LA maintained (ref.)	.000			
School meal provision model					.074
	Contract between your school and a private catering company	1.008	-2.581	4.596	.581
	In-house - organised and run within the school	6.434	0.912	11.956	.023
	Contract between your school and the local authority (ref.)	.000			
Free school meal density					.024
	Low	-3.649	-7.814	0.516	.086
	Medium	-5.043	-8.665	-1.421	.006
	High (ref.)	.000			

Factor	Category	Co-efficient	95% Confidence interval Lower	95% Confidence interval Upper	Significance
School size					.000
	Fewer than 100	14.409	7.033	21.786	.000
	100-199	3.280	-0.855	7.415	.120
	200-299	5.722	1.886	9.558	.004
	300 or more (ref.)	.000			
Urban or rural area					.901
	Rural	-.367	-6.128	5.395	.901
	Urban (ref.)	.000			
Whether operates a cashless system					.569
	Yes	1.102	-2.698	4.902	.569
	No (ref.)	.000			
Whether pupils are required to book a school meal in advance					.454
	Yes	1.232	-2.001	4.464	.454
	No (ref.)	.000			
Type of school meals service					.420
	Hot and cold	1.251	-1.797	4.299	.420
	Hot only	.000			
Intercept		75.813	56.029	98.271	.000
Unweighted base	419				



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