Annex D: Provider cost survey

This annex provides an analysis of the costs of pilot participation, based on estimates submitted by participating providers. It includes a comparison of the costs of the models, estimates of the cost to the sector using scaled-up data from pilot participants, and a comparison of the costs for different types of provider.

Key points

1. This annex outlines the following key findings:

    a. Provider costs did not vary significantly between the two pilot models.

    b. Cost estimates based on these models indicate that smaller providers may have the least capacity to support this activity.

    c. Cost survey data supports recommendations to remove Model B subject groups and not to pursue teaching intensity as a Teaching Excellence and Student Outcomes Framework (TEF) metric.

    d. Cost survey data has been used to estimate costs to the wider higher education sector for Model A and Model B.

    e. Cost survey data has also been used to estimate costs to the sector of a proposed revised model as approximately £16 million for all English providers with more than 500 students and approximately £24 million for all UK providers (that had suitable provider-level metrics for TEF in Year Three).

    f. It should be noted that these are provider costs only. In the pilot, assessment costs associated with the panels were just below £1 million. Assessment costs would increase in a full exercise.

Methodology

2. Providers participating in the first pilot were asked to return data on the costs of pilot participation, to assist in evaluating the pilot. Cost data returned by pilot participants has been used to evaluate the relative costs of the two different pilot models, to estimate the costs of an alternative model, and to explore the relative costs and burden for different types of provider.

3. A cost survey was developed by staff at the Office for Students (OfS) based on the template used by Universities UK in its work on TEF Year Two, in consultation with Universities UK,[1] and was refined with input from pilot participants via a development workshop. The cost survey was issued to pilot participants at the start of November 2017 so participants could collect staff time data as the pilot progressed. The cost survey was completed by 48 of the 50 pilot participants.

[1] Universities UK, 'Review of the Teaching Excellence Framework Year 2: Process, results and next steps', August 2017, https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Pages/review-of-tef-year-2.aspx.

4. Providers collected the number of hours spent by staff on specific tasks related to subject-level TEF: time spent analysing the provider metrics, working on the provider submission, analysing subject-level metrics, working on subject submissions, completing the provider declaration of teaching intensity, and administering the teaching intensity student survey. The number of hours was used to generate an estimate of the financial cost of the activity using a standard methodology supplied by the OfS[2]. To ensure personal salary information was not shared, providers aggregated cost and time information in salary bands prior to returning it to the OfS[3].

5. Providers also recorded expenses other than staff time (typically travel costs, staff training and briefing, student briefing, cost of recruiting additional staff or backfilling positions). The survey included some additional written questions which have received qualitative analysis from OfS staff.

6. Numbers in this annex have been rounded.

Caveats

7. There are several reasons to believe that the projections derived from this exercise will underestimate actual costs to providers when rolled out:

    a. The data returned omitted overhead costs, both for simplicity and based on providers' concerns about data protection[4].

    b. A standard on-cost multiplier of 20.2 per cent was used for all pilot participants for consistency, but is known to be lower than the actual National Insurance and pension costs incurred by some providers in the sample.

    c. Some providers note their estimates are low for a variety of reasons – for instance because they chose to return the midpoint of the salary band rather than use individuals' actual salary data.

    d. A real exercise would be likely to include more formal data verification and other formal processes for which no allowance has been made.

    e. The timeframe and closed nature of the pilot meant that providers did not do all the work they might have done in a real exercise or if they had had longer, e.g. editing, or having submissions approved through formal internal governance structures. This impression is

[2] The methodology included asking each provider to apply a standard multiplier of 20.2 per cent to the employee's base salary to calculate 'on cost' salary including the employer's National Insurance and pension contributions. 20.2 per cent is the on cost uplift factor calculated by the Department for Business, Energy and Industrial Strategy using 2016 wage data and employed in its report 'Business Impact Target: Appraisal of guidance – assessments for regulator-issued guidance' published in April 2017, https://www.gov.uk/government/publications/business-impact-target-statutory-guidance.

[3] The salary bands ranged from £0-29,999 to £150,000+, in intervals of £30,000. Providers were optionally invited to give job titles or brief job descriptions of the individuals who had contributed hours, e.g. 'administrative support, 'director of planning', 'Deputy Vice-Chancellor.'

[4] Calculating overhead costs for higher education providers is complex and there is no standard multiplier in common use. Financial staff developed a methodology for calculating overheads, but it required identifying which staff members returned in the cost survey data were administrative and support workers, which would have identified their individual salaries and compromised their anonymity.

strengthened by comparison of pilot participants who also participated in TEF Year Three with those who did not. Those that participated in Year Three or used their Year Two estimates spent appreciably more on provider metrics and the provider submission: their spending on the provider metrics and submission accounted for approximately 32 per cent of their total spending on the pilot, compared with 17 per cent of the total spending for those that did not participate in Year Three or used Year Two estimates[5].

Comparing the cost of models

8. Table 1 shows the overall costs of the pilot as returned by participants in Model A, participants in Model B, and participants in both models.

Table 1: Pilot cost to providers

Cost to provider (£000)				
Participants in model	**Mean**	**Lower quartile**	**Median**	**Upper quartile**
A	43.2	20.9	29.8	55.6
B	37.0	13.1	35.4	53.2
Both	55.6	24.3	61.1	71.1

9. Costs were compared for participants who either took part in Model A only or in Model B only. Model B appears to have cost participants a little less than Model A, but this is not material. A series of hypothesis tests at the 5 per cent level[6] found no statistically significant difference between the models when examining overall costs, costs per populated subject offered by the provider, per page submitted to the pilot, or per student at the provider (using FTE headcount).

10. The 12 participants in both models were asked not only to record their total costs but also to estimate what percentage of the time was spent on Model A and what percentage on Model B. The results given in Table B suggest that providers spent a little longer on the provider metrics and submission in Model A than in Model B, but longer on subject submissions and metrics in Model B. As to total costs of each model, providers were quite evenly split: of those that were able to estimate percentage of time spent on each model, six spent more on Model B and three spent more on Model A[7].

[5] Providers that participated in Year Three (or used estimates from Year Two) spent approximately 32 per cent of their total pilot spending on the provider-level metrics and submissions, compared with 22 per cent for all participants and 17 per cent for those that did not participate in Year Three or use Year Two estimates.

[6] One series of t-tests was undertaken, assuming equal variances and one not assuming equal variances. A Mann-Whitney U test was also undertaken and again found no statistically significant difference between the models.

[7] The other three did not record percentage estimates. For calculating total costs, each provider's costs for teaching intensity and 'other' were split evenly between the two models.

Table 2: Estimated percentage of time spent on Model A and Model B (providers in both models)

Survey question	Number of providers estimating…		
	more time on Model A	more time on Model B	equal time on both
Provider metrics	2	0	10
Provider submissions	6	3	3
Subject-level metrics	1	4	7
Subject-level submissions	2	7	3

Sector estimates: Models A and B

11. Data returned by 36 pilot participants that took part in either Model A or Model B (but not both models) have been used to estimate the cost, excluding teaching intensity, of participating in each pilot model for the wider higher education sector[8]. Dividing the higher education sector into quartiles of providers offering between one and seven subjects, between eight and 13 subjects, between 14 and 22 subjects, and 23 subjects or more, proved to be the best way of reflecting differences in provider size and type. Data returned by pilot providers was used to estimate average costs to providers of each size, and results were then scaled up according to the percentage of each type of provider in the larger sector, using a methodology modelled on that adopted by Universities UK in its cost estimates for TEF Year Two[9].

12. Costs were estimated for two groups of providers: all English providers with more than 500 students in their TEF Year Three contextual data (‘sector one’) and all UK providers that had suitable provider-level metrics for TEF in Year Three (‘sector two’). Sector one comprises 229 providers and sector two comprises 426.

13. Overheads have not been included in any calculations, as the OfS does not have sufficient data to reliably estimate overhead costs per provider from staff costs. To estimate overheads at a sector level, the UK Standard Cost Model recommends estimating an overhead rate of 30 per cent on top of pay costs[10]. To give a very rough estimate, 30 per cent has been added to each of the cost estimates below and is shown separately in the tables.

14. There are some additional caveats and assumptions in these estimates to consider:

[8] The estimates we have arrived at for the sector costs of subject-level TEF participation are somewhat higher than those in DfE’s most recent impact assessment, as we have used a different methodology involving scaling up from pilot participants’ cost survey returns. See ‘Securing student success: Regulatory framework for higher education in England – impact assessment’, 20 July 2018, https://www.gov.uk/government/publications/higher-education-and-research-act-impact-assessments.

[9] In our estimates the scaling up was achieved by grouping the providers into the quartiles indicated above, calculating the proportion of providers in each quartile in both the pilot participant sample and the sector, calculating weighting for each quartile based on these proportions (as smaller providers were underrepresented in the pilot participant sample), and summing the weighted quartile estimates.

[10] Department for Business, Energy and Industrial Strategy, ‘Business Impact Target: Appraisal of guidance – assessments for regulator-issued guidance’, April 2017, https://www.gov.uk/government/publications/higher-education-and-research-act-impact-assessments.

a. Model A and Model B costs are assumed to be identically distributed, which is clearly not the case although there is no significant evidence that either model is more expensive.

b. Providers would be likely to invest more in a real exercise (as noted above).

c. The cost data is based on providers' estimates so may not be completely accurate.

15. Costs for teaching intensity have been calculated separately, using data returned by pilot participants with five teaching intensity subjects, to estimate the mean cost per subject for the sector as £1,175[11]. This figure has been multiplied by the number of subjects in each of sector one and sector two and added to the estimated pilot costs to produce an estimated sector cost including teaching intensity[12]. In each case, the cost of teaching intensity would be about half as much again as the cost of the rest of the pilot: the estimated cost of teaching intensity (£4.1 million for sector one and £6 million for sector two respectively) is 53 per cent of the estimated cost of the exercise without teaching intensity (£7.6 million and £11.4 million respectively)[13].

16. It is worth noting that only 26 per cent of Model A subjects are exceptions, for both sector one and sector two. If Model A were to be adopted and teaching intensity data required for every subject including non-exceptions, £3 million in sector one and £4.4 million in sector two (about 39 per cent of the whole-sector cost of the pilot without teaching intensity) would be spent on teaching intensity data returns for subjects that were not even assessed.

17. Estimates for both sector one and sector two are both a fraction of the cost to higher education providers of participation in the 2014 Research Excellence Framework (REF), estimated by Technopolis as £212 million, or £35 million per year over six years[14].

[11] There appear to have been some economies of scale for pilot participants, as those with more teaching intensity subjects on average spent less per subject than those with fewer. To attempt to account for this economy of scale, the £1,175 figure is the mean per subject for the 13 providers with five teaching intensity subjects. This does, however, include one provider that spent significantly more than the other 12 participants; this provider has been included in the calculation as, although its result is outlying, there is reason to believe it is accurate and the provider has not miscalculated the number of hours.

[12] There are 3,453 populated subjects in sector one and 5,102 in sector two.

[13] There are some additional caveats to consider for calculating teaching intensity costs: economies of scale have not been fully investigated or mitigated; the estimates are based on data from 13 providers, which is a very small sample size, and all of these providers were higher education institutions so not very representative of either sector one or sector two; any future teaching intensity exercise would be unlikely to be identical to the one piloted this year.

[14] Technopolis, 'REF accountability review: Costs, benefits and burden', July 2015, http://www.technopolis-group.com/report/ref-accountability-review-costs-benefits-and-burden/, page 6. For both TEF and REF estimates, the costs quoted exclude additional costs to the sector in the form of academics serving on assessment panels.

Table 3: Sector cost estimates[15]

	Sector one			Sector two		
	Lower bound	Estimate	Upper bound	Lower bound	Estimate	Upper bound
Estimated cost of participation without teaching intensity (£M)	5.9	**7.6**	9.2	9.1	**11.4**	13.8
Estimated cost without TI plus overheads estimated at 30% (£M)	7.6	**9.8**	12	11.8	**14.8**	17.9
Estimated cost of teaching intensity (£M)	1.6	**4.1**	6.5	2.4	**6.0**	9.6
Estimated cost of participation with teaching intensity (£M)	7.5	**11.6**	15.7	11.5	**17.4**	23.4
Estimated cost with teaching intensity plus overheads estimated at 30% (£M)	9.8	**15.1**	20.4	15	**22.6**	30.4

Sector estimates: revised model

18. We have attempted to estimate the cost for the full higher education sector participating in a subject-level exercise similar in structure to Model A but with all populated subjects assessed (i.e. a revised model). Estimates have been produced for both sector one and sector two (defined as before).

19. To do this, we have separated the costs of the exercise into two groups: the cost of subject-level submissions (including the cost of interrogating subject-level metrics), and all other costs (excluding teaching intensity). We believe that there are some economies of scale with the other costs, so to estimate the total other costs for the sector we have replicated the methodology described for teaching intensity (see paragraph 14), again using survey data from providers that took part in either model but not both.

20. For the cost of subject-level submissions, we have considered only those providers that took part in only Model A. As we do not have a big enough sample size to split these providers into quartiles and there does not seem to be the same economy of scale with these costs, we have simply calculated the mean cost per Model A submission based on our sample. This figure is £2,822 and constructing a 95 per cent confidence interval gave a lower bound of £1,801 and an upper bound of £3,843. Multiplying these by the number of subjects in each of our 'sectors' (3,453 for sector one and 5,102 for sector two) gives estimates of total cost of subject-level submissions of £9.7 million for sector one (with a lower bound of £6.2 million and an upper bound of £13.3 million) and £14.4 million for sector two (with a lower bound of £9.2 million and an upper bound of £19.6 million).

[15] Upper and lower bound estimates were calculated by constructing a 95 per cent confidence interval around the estimate.

21. Adding the estimated total costs of subject submissions and the estimated total other costs gives our final estimates, shown in Table 4.

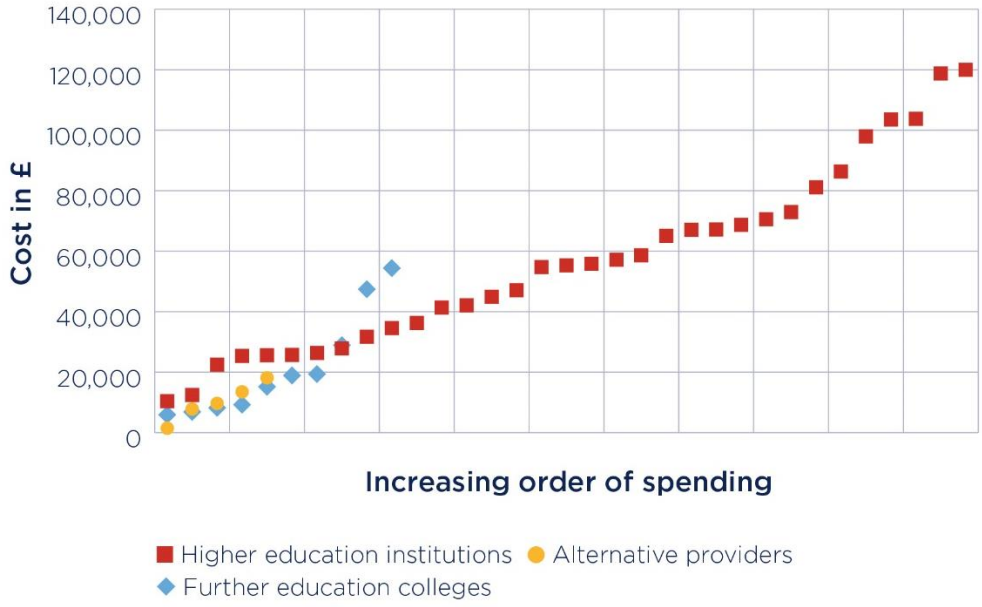
Table 4: Estimated costs for a revised model

Sector	Estimate (£m)	Lower bound (£m)	Upper bound (£m)
Sector one (all providers with 500 students in the contextual population)	12.2	8	16.4
Sector one plus overheads estimated at 30%	15.9	10.4	21.2
Sector two (all providers with suitable provider-level metrics)	18.3	12.1	24.6
Sector two plus overheads estimated at 30%	23.8	15.7	31.9

Comparing providers by type

22. Total pilot participation costs – excluding overhead costs – for all 48 participants that returned cost data are shown below split by provider type. In the graph below the providers are shown ranked in order of spending from least to most.

Figure 1: Total spending in pilot (all providers)



23. The highest level of individual spending on the subject pilot was £120,000, and the lowest was £1,500. The mean spending per provider was £44,200 and median spend was £38,800. Using total income and total expenditure data sourced from the Higher Education Statistics Agency (HESA) 2016-17 Finance Record, it can be estimated that the cost of the pilot to individual higher education institutions ranged from 0.002 per cent to 0.12 per cent of the provider's total income for 2016-17 (and the same for percentage of total expenditure). Looking only at income derived from teaching, it can be estimated that the cost of the pilot to individual higher education institutions ranged from 0.02 per cent to 0.17 per cent of income derived from teaching[16]. Note that this HESA data is unavailable for alternative providers of higher education and further education colleges.

24. Further education colleges and alternative providers in absolute terms spent less than higher education institutions on the pilot, and the differences were shown to be statistically significant at the 5 per cent level.[17] Mean costs by provider type for participants in either Model A or Model B (but not both models) are recorded in Table 5[18].

Table 5: Mean cost by provider type

	Higher education institutions	Further education colleges and alternative providers
Total mean cost of pilot (£)	51,000	16,000
Total mean cost per subject (£)	2,300	1,400
Total mean cost per page (£)	820	390
Total mean cost per FTE student (£)	7	37

25. Further education colleges and alternative providers spent more per full-time equivalent (FTE) student, with the difference significant at the 5 per cent level. The total cost of the pilot per student ranged from £2 per student to £110 per student. The mean total cost of the pilot per FTE student[19] was £39 for further education colleges, £33 for alternative providers and £7 for higher education institutions. Participants are again shown ranked in order of smallest to largest spend.

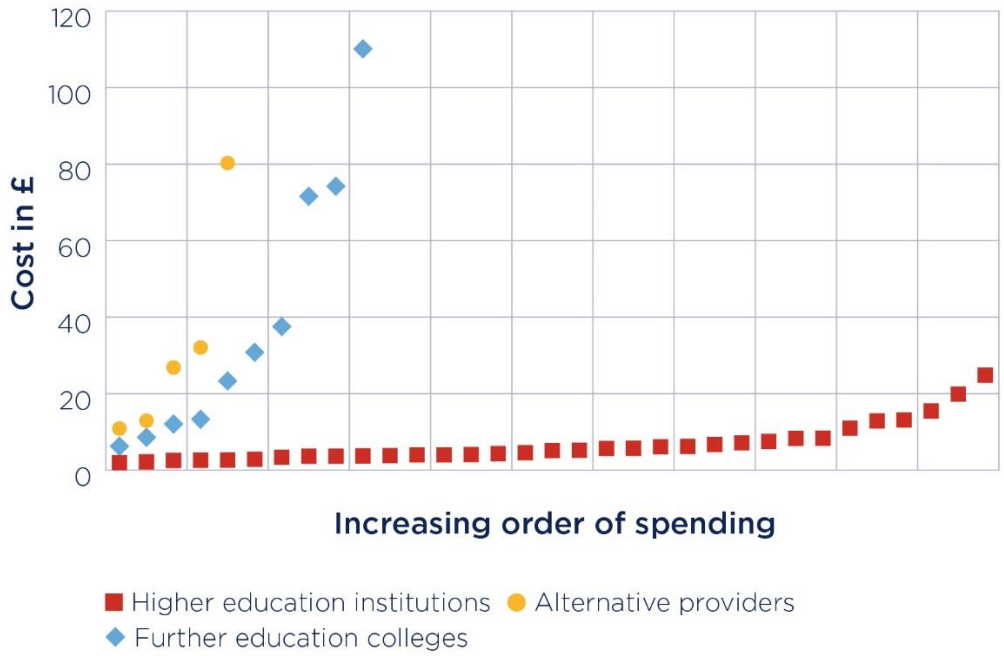
[16] Income derived from teaching has been estimated using a combination of funding body grants (HEFCE teaching grant, Education and Skills Funding Agency and National College of Teaching and Leadership funding) and tuition fees using student full time equivalents (for home, EU and non-EU students) recorded in the 2016-17 HESA data returns.

[17] Again using a series of two-sample t-tests, testing assuming equal variance and testing again assuming unequal variance, and Mann-Whitney U tests.

[18] Participants in both models have been excluded from the calculations based on the smallness of the sample size: there was just one further education college in both models, and two single-subject alternative providers that have to be excluded from by subject and by page calculations as they followed a different submission format. Figures have been rounded to two significant figures.

[19] Provider FTE student totals were taken from TEF Year Three contextual data.

Figure 2: Total spending in pilot per FTE student (all providers)



26. The pilot required a high input from individual staff members; this was particularly the case for further education colleges, where in many cases one person was responsible for all the work, whereas higher education institutions often had a team of authors and data experts working on the pilot submissions.

Survey findings – breakdown by question

27. Providers were asked to record the number of hours and total cost spent on each of the following aspects of the subject pilot: provider metrics, provider submission, subject-level metrics, subject submissions, provider declaration of teaching intensity and administering the teaching intensity student survey[20]. The costs are presented in Tables 6 and 7:

Table 6: Cost by pilot activity

Activity	Mean cost (£)			Median cost (£)		
	Model A	Model B	Both models	Model A	Model B	Both models
Analysing provider metrics	1,632	2,359	2,951	1,209	1,430	1,742
Writing provider submission	7,877	6,839	8,815	4,270	4,968	4,912
Analysing subject-level metrics	5,229	5,617	10,927	1,902	5,416	9,653

[20] Of the cost survey respondents, three were unable to return estimates at such a granular level so their data has been excluded, and the two single-subject providers have also been excluded (as they did not write subject submissions).

Writing subject submissions	18,986	20,773	33,094	16,716	17,413	32,707
Returning the provider declaration of teaching intensity in piloted subjects	3,885	3,590	2,640	2,677	2,078	2,750
Administering the teaching intensity student survey in piloted subjects	817	776	971	482	540	548

Table 7: Pilot activities with the greatest estimated cost

Activity	Number of providers estimating this was their greatest cost			
	Model A	Model B	Both models	Total
Analysing provider metrics	0	0	0	0
Writing provider submission	1	4	1	6
Analysing subject-level metrics	0	0	0	0
Writing subject submissions	14	13	9	36
Returning the provider declaration of teaching intensity	1	0	0	1
Administering the teaching intensity student survey	0	0	0	0

28. Of the six providers indicating that the greatest cost was the provider submission, four were participating in TEF Year Three (three in Model B and one in both) and one (in Model A) used cost estimates of time spent preparing the provider submission in TEF Year Two to answer this question.

29. Although writing subject submissions was the most expensive part of the process for most providers, the cost of preparing one subject submission is somewhat less than the cost of the provider submission. From data returned by participants in Model A, the mean cost of one five-page subject submission is estimated as approximately £2,800 – a little less than a third of the cost of the Model A provider submission. However, the ratio of provider submission cost to subject submissions cost varied widely for each individual provider in the sample.

30. The costs of collecting teaching intensity data varied widely between providers. The mean cost per provider (in either model or both) of making the provider declaration was £3,217 (with a median of £2,616), while the mean cost of administering the student survey was £798 (with a median of £515).

31. However, there is reason to think the teaching intensity costs recorded by pilot participants are substantially lower than these costs would be in a real exercise. Several pilot participants indicated that they were unable to return all the data required because of the short timescale of the pilot and gaps in the data they collect internally, and observed that they would need to build new software systems and collect more data if the teaching intensity metric were to become part of TEF. These providers were concerned about teaching intensity costs in the longer term even though their teaching intensity costs in this pilot had been relatively light.

32. For a small group of outlying providers, collecting teaching intensity data in this pilot was very costly and time-intensive: one large multi-faculty higher education institution spent £23,902 on completing the provider declaration thoroughly for five subjects, which included 888 hours of time put in by junior support staff (or, as the provider phrased it, 'a team of six FTE staff working on it pretty much non-stop over the space of about a month') to track down the data required from the reporting systems of various academic departments and convert it into the format required for the return. Further development of a teaching intensity metric as part of subject-level TEF seems likely to involve providers in either significant investment in new software or repeated substantial short-term expenditures of this sort. It should also be noted that teaching intensity was piloted in only five subjects, and costs would increase substantially if it were extended to cover all Common Aggregation Hierarchy level 2 (CAH2) subjects, as the cost estimates in Table 3 indicate.

Hours by salary band

33. Providers returned information about the number of hours worked by staff across the institution in different paybands: £0-29,999, £30,000-59,999, £60,000-89,999, £90,000-119,999, £120,000-149,999, £150,000 and over, and voluntary workers. The results indicate that for each activity work was most likely to be carried out by staff members with an annual salary of £30,000 to £59,999 per year. From the optional job title column it appears that most of these staff members were in senior administrative or managerial roles, although academic staff were also involved (e.g. lecturers, senior lecturers, heads of department). Volunteers in most cases were student representatives. There was no clearly discernible pattern by model; the number of hours recorded appears to reflect individual providers' approaches to the pilot and how they chose to manage staff workload and engagement.

Written questions

34. In addition to collecting hours and cost data, the survey asked a series of qualitative questions covering the topics of whether providers had hired additional staff or restructured responsibilities, how the number of submissions the provider had had to make had affected the overall cost of the exercise, how the subject-level exercise compared with the provider-level, and whether the provider expected costs for subject-level TEF would increase, decrease or stay the same in future years. The results are summarised below.

35. Some 12 providers recorded that they hired or seconded additional staff members to help with the demands of the subject pilot. Of those that did not, a common comment was that other work had had to wait while the pilot was underway.

36. Providers had not discerned a linear relationship between number of submissions and the time each took to write, or any economies of scale. Instead, the challenge of writing submissions for subjects and groups that crossed multiple academic departments led to increased costs; as this requires central coordination of contributions from several authors that have to be condensed into a single coherent narrative. Of 48 providers, 19 (40 per cent) mentioned this in their written comments; six of them in Model A, seven in Model B and six in both models. Providers in both models were clear that Model B submissions were 'less straightforward and needed more iterations of editing and rapporteuring than the Model A submissions' and 'group submissions required more than one staff member to coordinate with each other to write the submissions'. The shorter page limits of Model B subject group submissions were reported as

actually increasing workload as they increased the amount of editing and condensing required on the submission, One provider commented:

> 'Having separate subject submissions instead of a group submission would have been less time-consuming. [...] The least time-consuming subject-level TEF would be one that required a submission from each subject (e.g. five pages) and a provider-level submission (e.g. 15 pages across all criteria)'.

It was, however, noted that the issue of subjects that cross academic departments was not confined to Model B.

37. All 24 of the providers that chose to answer the written question about relative costs of provider-level and subject-level TEF agreed that subject-level was more expensive. Most providers felt unable to provide a quantitative estimate of how much more subject-level TEF might cost, but the five that did provided estimates ranging from 1.5 times as much to six times as much as provider-level. Reasons typically given for the increased costs were the greater number of submissions and pages required in subject-level assessment, but also the greater number of staff members involved in producing subject submissions, often academic staff members who are more directly involved in teaching but who may have less familiarity with TEF metrics. This also drives up the costs associated with staff training and support. Another provider observed a further reason costs increased at the subject-level: in addition to briefing staff 'we also needed to brief, and collaborate with, a much larger group of students for the subject pilot, as different student reps were involved in each subject submission'.

38. The results of the question about whether providers anticipated that costs of participating in subject-level TEF would increase, decrease or stay about the same in future exercises are presented in Table 8:

Table 8: Provider perceptions of future subject-level costs

Outcome	Number of participants who thought this
Increase	13
Decrease	9
Stay about the same	5
Increase in the first 'real' exercise, then decrease	3
Did not answer	18

39. Reasons most commonly cited for costs increasing included wanting to spend more time in future to write submissions to a higher standard, collect more evidence, involve more staff members, and include a greater level of oversight from senior management. The desire to continuously improve provision was also cited as a reason for time and cost increasing, and it was noted that subject-level TEF would eventually involve more marketing and recruitment effort. Reasons for costs decreasing included gaining greater familiarity with the process, developing new software systems that would make data collection easier, and embedding TEF structures into the provider's existing internal processes such as ongoing quality assurance

and enhancement procedures. One provider noted that costs would start to decrease as ‘templates, structures and styles become embedded into the institution.’