Supporting information about constructing student outcome and experience indicators for use in OfS regulation

Comparison of completion measures

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Purpose

1. The Office for Students (OfS) has issued a consultation about the construction of student outcome and experience measures to be used in our regulation of student outcomes and the Teaching Excellence Framework (TEF).[1] This document has been published as supporting information alongside the consultation, to aid providers and other stakeholders in comparing the outcomes calculated by each of the two proposed completion methods. We anticipate that some readers of the consultation proposals will find the information in this supporting document useful for exploring the practical effect of implementing our proposals.

2. The completion measures described and compared within this document are directly aligned to our consultation proposals and therefore remain subject to change upon conclusion of the consultation exercise.[2] We have compared the indicators produced by the two methods to illustrate the strengths and weaknesses of each, including their respective timeliness and precision.

3. We have recognised that efforts to measure completion of higher education qualifications need to balance the timeliness of the measure and its precision and make compromises on these qualities. The two alternative methods we have proposed for measuring completion outcomes are summarised as:

    a. A **cohort-tracking** measure which identifies a cohort of entrants to higher education qualifications and follows those students at an individual level to track how many continue or qualify at the same provider in subsequent years. This measure has the advantage of being a more precise measure of student completion outcomes, but its reliance on tracking students across subsequent years means that it is not a particularly timely measure.

    b. A **compound indicator** which uses the rates at which students withdraw from higher education study in a given year, from different stages of a course, to inform calculation of the proportion of students likely to complete the qualification they started. This measure has the advantage of being a timelier measure of student completion outcomes, responding to the most recent patterns of outcomes at the provider, but as a projected measure it may be less precise in reflecting the circumstances of individual students.

4. Our consultation proposals have recognised that each of the proposed methods has a series of advantages and disadvantages, and often the advantage of one method has an equivalent disadvantage in the other. The advantages and disadvantages are included in Annex A, but in broad terms relate to the following qualities:

[1] See www.officeforstudents.org.uk/publications/student-outcomes-and-teaching-excellence-consultations/student-outcomes-data-indicators/.

[2] See proposal 6 of the consultation on constructing student outcome and experience indicators for use in OfS regulation, at www.officeforstudents.org.uk/publications/student-outcomes-and-teaching-excellence-consultations/student-outcomes-data-indicators/.

a. Timeliness.

b. Responsiveness to changing structures of higher education courses, and to recent patterns of student progression through programmes of study.

c. Ease of understanding and replicability of OfS indicators.

d. Whether completion outcomes can be observed and reported at an individual or cohort level.

5. We have compared the indicators that are constructed at provider level using the two different methods. By applying the compound indicator and cohort-tracking methods to various years of student data returns, we can seek to understand the scale of difference between the results we produce and how these illustrate the opposing advantages and disadvantages described in paragraph 4.

6. Firstly, we have **compared recent data points** for the two measures. This comparison aims to identify differences between the two methods in respect of years of the indicators that are included within the illustrative and supporting data that we have released alongside the consultation. It involves comparison of indicators constructed for single years of the four-year time series that we have proposed to report for each student outcome measure, as well as a comparison of the indicator constructed as an aggregate of those four years.

7. The single year comparison compares the most recent year of the cohort-tracking indicator to the 2018-19 compound indicator:

    a. The most recent cohort-tracking measures we have included in the illustrative data refers to those who started their courses in 2015-16, for full-time entrants, and in 2013-14 for part-time entrants.

    b. While the 2019-20 compound indicator is included in the illustrative data, we have focused on the 2018-19 compound indicator for the comparison we report here. This is because construction of the measure for the single most recent year of student data makes some assumptions that can only be verified or corrected on receipt of the subsequent year of data. For example, it offers more benefit of the doubt in our definition of positive outcomes when a student has reached the end of their studies with the provider, but results and subsequent course changes are not yet known.[3] While this approach has a low impact on the indicators we construct, we consider that using the results from an earlier year of the time series allows for a more like-for-like comparison and a more straightforward interpretation. The equivalent analysis using the 2019-20 compound indicator is included in Annex B.

8. The comparison of the aggregate indicators uses the indicators included within the illustrative data for each measure. For the compound indicator, the aggregate indicator includes the 2019-

[3] These are described in proposal 6 of the consultation on constructing student outcome and experience indicators for use in OfS regulation, at www.officeforstudents.org.uk/publications/student-outcomes-and-teaching-excellence-consultations/student-outcomes-data-indicators/.

20 compound indicator. A full description of the years contributing to each measure is available in our supporting documents.[4]

9. Secondly, we have **compared how each of the two measures perform as predictors of future completion rates**. Because all the student outcome and experience measures we propose to calculate are intended to support interpretations of the underlying performance of the provider, this comparison aims to establish how well each measure reflects the actual rates of completion that we would come to observe for the provider in the years after we first calculate the measure.

10. To do this, suppose that in winter 2016 we had calculated the two indicators to provide the best information available to support an interpretation of the provider's underlying performance in respect of completion outcomes: 2015-16 student data would have been the most recent available. At that time, the 2015-16 student data would have supported calculation (for the first time) of the 2015-16 compound indicator (based on withdrawals in 2015-16), and the cohort-tracking measure for full-time entrants in 2011-12.

11. Five years later, we could use the information that had more recently become available to establish what actually happened to 2015-16 entrants in terms of their completion outcomes, and whether our interpretation of the provider's performance was broadly accurate. We have therefore compared the 2015-16 compound indicator and the 2011-12 cohort tracking indicator with the 2015-16 cohort tracking indicator (which establishes the number of those entrants observed to complete their studies in the subsequent four years, in or before 2019-20).[5]

12. Our consultation proposals recognise the importance of communicating and understanding the extent of statistical uncertainty when interpreting the performance of a provider using point estimates of student outcomes measures. The data presentation that we have proposed to facilitate this would not be appropriate for the purposes of this analysis, so we have taken a different approach. Because statistical uncertainty can be greater when dealing with small cohort sizes, the analysis presented here focuses mainly on provider-level indicators relating to denominator populations of at least 100 students. Due to the smaller population sizes, lack of historic data, and smaller numbers of providers with apprenticeship students, we have not included analysis for the apprenticeship mode of study. As we have proposed that an indicator should have a denominator of at least 23 students to be considered reportable, equivalent analysis relating to denominator populations of at least 23 students is included in Annex B. The charts presented in this analysis can be explored in the accompanying Tableau dashboard.[6]

13. Throughout the analysis presented in this paper, we assess provider level outcomes which include all OfS-registered English providers. Some of the comparisons rely on more historic data than others. This means that some providers are not included in some of the analysis, in particular those who were previously regulated by the Department for Education and required

[4] See the indicator definitions available in the 'description and methodology' supporting document at www.officeforstudents.org.uk/publications/student-outcomes-and-teaching-excellence-consultations/outcome-and-experience-data/.

[5] Due to the number of years of data required for this analysis, we have used also used a four-year census point for part-time students.

[6] See www.officeforstudents.org.uk/data-and-analysis/student-outcomes-and-experiences-data-dashboards/comparing-completion-measures-dashboard/.

to return the HESA Student Alternative record from 2014-15 onwards. When making comparisons between the two measures we have assessed:

a. The correlation between the two measures, as quantified by the R-squared values. The closer the R-squared value is to 1, the more correlated the data is, with values closer to 0 indicating weaker or no correlation. We check whether these correlations are positive or negative through inspection of our charts.

b. Any outliers where the two measures give noticeably different results.

c. Any other noticeable trends. For example, if one measure tended to have lower values than the other; on some charts, we plot the equality line to identify this.

Key findings

14. Throughout our comparisons, we find that there are generally fairly strong positive correlations between the values calculated by the two alternative methods. This means that the values we calculate for a given provider under one method can in many cases be expected to be broadly similar to those calculated under the other method. In light of this overall finding, the discussion of key findings reported here focuses on the nature and extent of differences we see in the values calculated.

15. In the comparison of recent data points, we find correlations that are stronger for some modes and levels of study than others. There are in some cases significant numbers of indicators with differences greater than 5 per cent and notable outliers in certain modes and levels of study. Correlations between the two measures are generally weaker for part-time provision than full-time provision, and there are more outliers in the part-time provision.

16. Some of the larger differences between the proposed measures can be attributed to high withdrawal rates, often among relatively small cohorts, leading to very low compound indicator values. These larger differences are also more apparent where the population sizes have significantly changed between the two measures. This becomes less of an issue as denominator sizes increase.

17. Given the opposing advantages and disadvantages of the two measures, differences between the two measures are to be expected. The cohort tracking measure reports the outcomes for full-time students who started their courses four years ago (six years ago for part-time students) whilst the performance of the compound indicator is driven by withdrawal rates in the most recent year. Underlying improvements in performance over time would be expected to result in higher indicator values for the compound completion indicator than cohort-tracking. Similarly, if underlying performance is decreasing over time this may be identified by the compound indicator but not by the cohort-tracking indicator, resulting in a lower value for the compound indicator than the cohort-tracking indicator.

18. In the comparison of the measures as predictors of future completion rates, for both full-time and part-time entrants, we generally found stronger correlations when considering the compound indicator as a predictor of future completion rates than the cohort tracking measure. This is likely due in part to using the same Year 1 withdrawals for the 2015-16 compound indicator as the cohort-tracking of 2015-16 entrants, with Year 1 being the year in which withdrawal rates tend to be highest. The compound completion indicator could therefore be

considered more successful as a predictor of the future completion of the cohorts entering in the compound completion indicator withdrawal year, than as a measure of the actual completion of those finishing in the compound completion indicator withdrawal year.

Analysis

Comparisons of recent data

Single year comparisons

19. The compound indicator based on withdrawals in the 2018-19 academic year was compared to the most recent cohort-tracking measures available in our time series (which relate to 2015-16 full-time entrants and 2013-14 part-time entrants), at provider level. In making this comparison we have included providers with a denominator size of at least 100 in all six entrant years used in the compound indicator and in the cohort-tracking measure. The equivalent analysis using the 2019-20 compound indicator and for denominator sizes of at least 23 are included in Annex B.

20. Figure 1 shows a scatterplot of the two measures for full-time first degree. The line of best fit is shown as a dashed line, and the equality line is shown as a solid line. It shows a fairly strong positive correlation between the two measures, with most providers having a difference of less than five percentage points between the two and only five having a difference of more than ten percentage points. Given the denominator sizes involved in this analysis, some level of random noise is expected so we should be cautious not to overinterpret the differences between the measures that we observe. Equivalent charts for other modes and levels of study are available in the accompanying data dashboard.[7] Table 1 summarises the single year comparisons across all modes and levels of study.

21. Beyond random variation, some differences between the measures are expected as they relate to different entrant cohorts and assess withdrawals at different points in time. We may see more extreme differences if underlying provider behaviour has changed in recent years, particularly if a provider has dramatically changed the size or shape of its provision. This is one of the opposing advantages and disadvantages of the measures. In some cases, the compound indicator may give results that are not representative of any individual entrant cohort if withdrawal patterns have changed substantially between entrant cohorts.

[7] Select 'Most recent measures (using 2018-19 compound indicator as most recent compound indicator measure)' on the dashboard at www.officeforstudents.org.uk/data-and-analysis/student-outcomes-and-experiences-data-dashboards/comparing-completion-measures-dashboard/.

Figure 1: A single-year comparison of the provider-level 2018-19 compound indicator and 2015-16 cohort-tracking measure, for full-time first degree

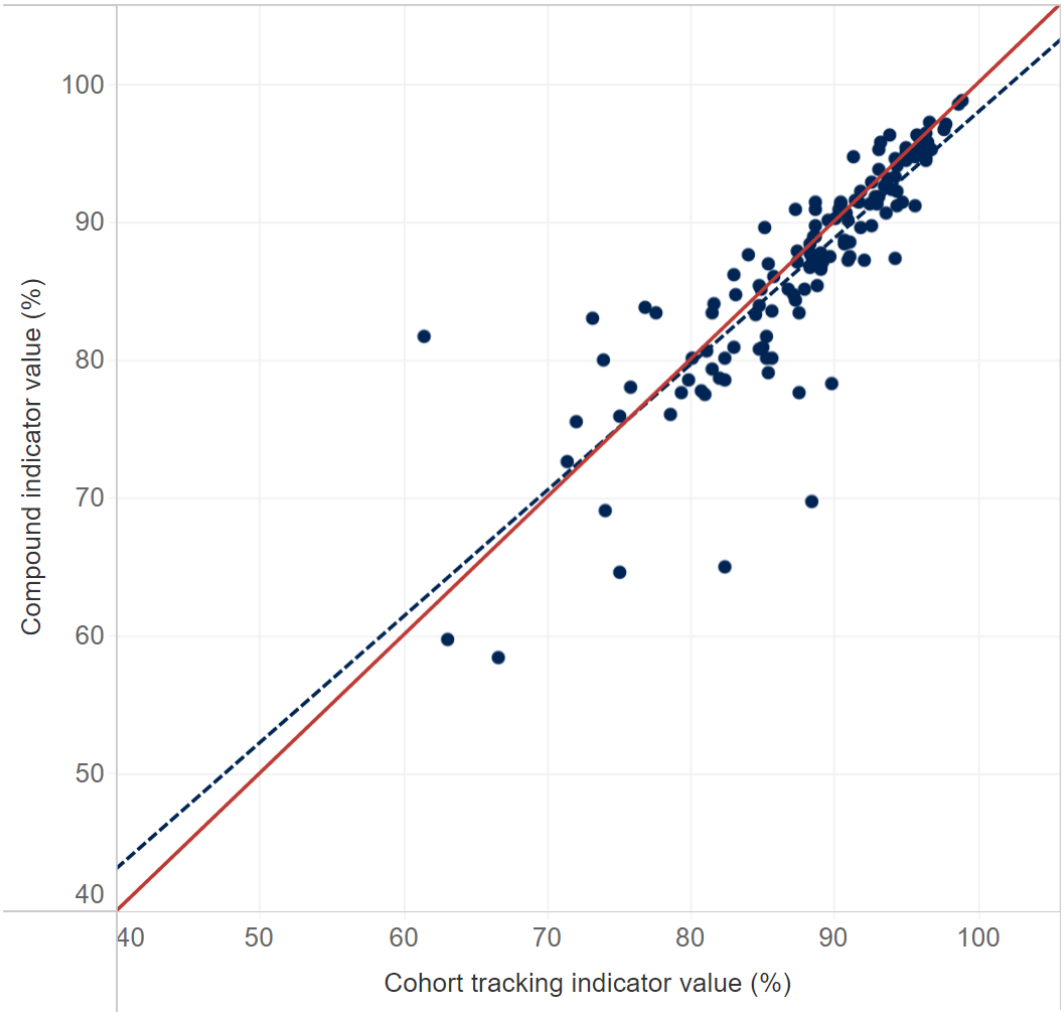


Table 1: Comparing 2018-19 compound indicators to the 2015-16 cohort-tracking indicator

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.37	85	25	14
Full-time	First degree	0.73	135	11	5
Full-time	Undergraduate with postgraduate components	0.54	43	3	1
Full-time	Other postgraduate	0.20	20	3	0
Full-time	PGCE	0.36	61	7	1
Full-time	Postgraduate taught masters	0.55	94	15	4
Full-time	Postgraduate research	0.17	39	7	4
Part-time	Other undergraduate	0.28	59	13	24
Part-time	First degree	0.11	20	5	8
Part-time	Other postgraduate	0.07	64	18	16
Part-time	Postgraduate taught masters	0.43	81	23	10
Part-time	Postgraduate research	0.73	5	1	1

Full-time

22. The two proposed completion measures produce similar results for most providers across most levels of study, with a difference within 5 per cent for most indicators. There are some notable outliers, particularly for the other undergraduate and postgraduate research levels of study.

23. All levels of study show a positive correlation between the two measures, but the R-squared values show that the correlation is much stronger for some levels than others.

Part-time

24. Correlations between the two measures tend to be weaker for part-time provision than for full-time provision, and for some levels of study (first degree, in particular) we don't have significant evidence to confirm that they are positively correlated at all. Outliers and a larger range of indicator values appear across all levels, while negative compound indicator values can be observed in some cases. Negative values can occur for this measure when significant proportions of students withdraw, typically from providers with cohort sizes which are changing over time and show substantial growth or contraction in a short space of time. While these negative values make limited sense as a completion rate, they do enable us to identify where there were significant proportions of students withdrawing at one time.

25. These larger differences and weaker correlations could be partly explained by smaller average population sizes and lower average completion rates in part-time provision, leading to

increased statistical noise in the data. This may also be due to more significant underlying changes in the delivery of part-time provision over time compared to full-time provision.

Comparisons of the four-year aggregate indicators

26. In comparing the aggregate indicators for each of the measures we were able to include providers who were omitted from the single year comparison due to smaller denominator sizes. Table 2 summarises these comparisons across all modes and levels of study. Charts for this analysis across modes and levels of study are available in the accompanying data dashboard.[8]

Table 2: Comparing four-year aggregate compound indicators to four-year aggregate cohort-tracking indicators

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.50	226	62	22
Full-time	First degree	0.84	187	30	6
Full-time	Undergraduate with postgraduate components	0.77	61	5	0
Full-time	Other postgraduate	0.38	71	10	1
Full-time	PGCE	0.32	74	2	1
Full-time	Postgraduate taught masters	0.72	116	10	2
Full-time	Postgraduate research	0.27	75	12	10
Part-time	Other undergraduate	0.41	194	50	46
Part-time	First degree	0.45	59	17	14
Part-time	Other postgraduate	0.18	96	18	31
Part-time	PGCE	< 0.01	14	3	2
Part-time	Postgraduate taught masters	0.46	109	30	12
Part-time	Postgraduate research	0.41	61	18	12

27. The results are broadly similar to those of the single-year comparisons, summarised in Table 1, but across nearly all modes and levels we observed a slightly stronger correlation between the measures. For all combinations of mode and level of study, apart from part-time other postgraduate, we find significant positive correlations but some of these correlations remain quite weak.

[8] Select 'Overall (most recent 4 year aggregate measures)' on the dashboard at www.officeforstudents.org.uk/data-and-analysis/student-outcomes-and-experiences-data-dashboards/comparing-completion-measures-dashboard/.

28. For certain modes and levels of study, we still observe outliers where the measures show large differences (for example, for the part-time other undergraduate level of study). Some of the most extreme outliers occur where entrant cohort sizes have changed dramatically over the six years used by the compound indicator.

Comparisons of the measures as predictors of future completion rates

29. Cohort-tracking measures and compound indicators from earlier in our time series were compared to the cohort-tracking measure of 2015-16 entrants to assess whether those more historic cohort-tracking and the compound indicators ultimately proved to be good predictors of future completion rates. Due to the longitudinal nature of this analysis, only one year of data was available for comparison; we have used:

    a. Baseline comparisons for each measure:

        i. Cohort-tracking indicators for 2011-12 entrants, using a four-year census point for both full-time and part-time.

        ii. Compound indicators based on withdrawals in the 2015-16 academic year.

    b. Comparing both measures to cohort-tracking indicators for 2015-16 entrants, again using a four-year census point for both full-time and part-time.

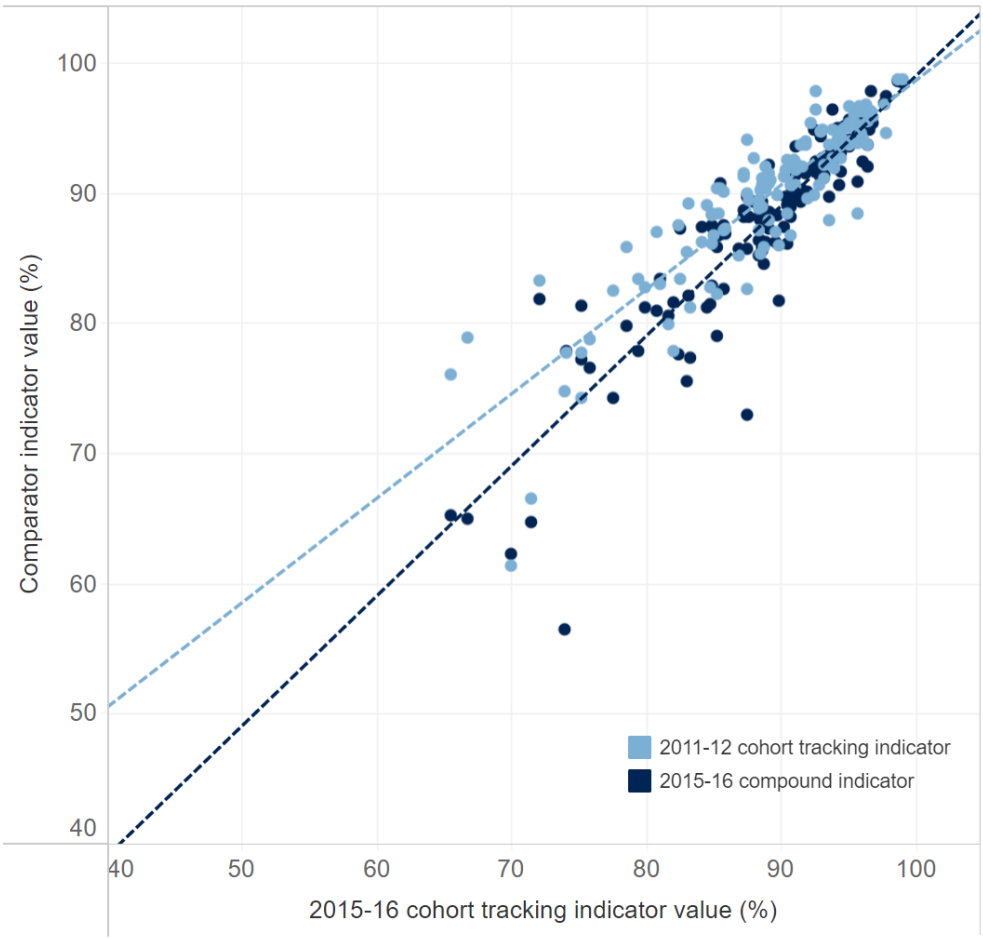
30. The cohort-tracking indicators for 2011-12 entrants and 2015-16 compound completion indicators used here would both have been available following the arrival of administrative data from the 2015-16 academic year, although the compound completion indicators would have been provisional at that stage.[9]

31. As in the previous analysis, we have restricted our analysis to providers with a denominator size of at least 100 in all six entrant years used in the compound indicator and the cohort tracking measures. Figure 2 shows a scatterplot chart for full-time first degree of the 2015-16 compound indicator compared to cohort-tracking of 2015-16 entrants, with an overlay of the comparison between the cohort-tracking of 2011-12 entrants and 2015-16 entrants. Equivalent charts for other modes and levels of study are available in the accompanying data dashboard.[10]

[9] The 2015-16 compound completion indicators used here may have changed slightly based on 2016-17 data, so may not perfectly reflect the data that would have been available before the 2016-17 data was available.

[10] Select ‘Comparisons of the measures as predictors of future completion rates’ on the dashboard at www.officeforstudents.org.uk/data-and-analysis/student-outcomes-and-experiences-data-dashboards/comparing-completion-measures-dashboard/.

Figure 2: 2011-12 cohort tracking indicator and 2015-16 compound indicator both compared to the 2015-16 cohort tracking indicator, for full-time first degree



32. Table 3 summarises the comparisons between the compound indicator based on 2015-16 withdrawals and the cohort-tracking indicator for 2015-16 entrants, allowing us to evaluate the compound indicator as a predictor of the eventual completion of the 2015-16 entrants.

33. Table 4 summarises the comparisons between the four-year cohort-tracking of 2011-12 entrants with the four-year cohort-tracking of 2015-16 entrants, allowing us to evaluate the more historic cohort-tracking measure as a predictor of the completion of the 2015-16 entrants.

Table 3: Comparing the cohort-tracking indicator for 2015-16 entrants to the 2015-16 compound indicator

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.52	95	36	12
Full-time	First degree	0.82	125	9	2
Full-time	Undergraduate with postgraduate components	0.49	44	3	0
Full-time	Other postgraduate	0.40	20	3	2
Full-time	PGCE	0.61	57	1	0
Full-time	Postgraduate taught masters	0.74	92	6	0
Full-time	Postgraduate research	0.20	37	6	5
Part-time	Other undergraduate	0.68	85	17	23
Part-time	First degree	0.36	29	8	8
Part-time	Other postgraduate	0.23	69	17	15
Part-time	PGCE	N/A	1	0	0
Part-time	Postgraduate taught masters	0.53	80	15	16
Part-time	Postgraduate research	0.81	6	0	1

Table 4: Comparing the cohort-tracking indicators for 2015-16 entrants to the cohort-tracking indicator of 2011-12 entrants

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.25	95	24	18
Full-time	First degree	0.78	125	10	3
Full-time	Undergraduate with postgraduate components	0.50	44	2	0
Full-time	Other postgraduate	0.10	20	5	1
Full-time	PGCE	0.10	57	7	1
Full-time	Postgraduate taught masters	0.53	92	5	2
Full-time	Postgraduate research	0.63	37	5	5
Part-time	Other undergraduate	0.48	85	22	31
Part-time	First degree	0.54	29	7	8
Part-time	Other postgraduate	0.07	69	18	26
Part-time	PGCE	N/A	1	1	0
Part-time	Postgraduate taught masters	0.37	80	26	18
Part-time	Postgraduate research	0.53	6	1	2

Full-time

34. Table 3 shows that the compound indicator calculated based on withdrawals in 2015-16 gives fairly similar results to the cohort-tracking indicator for 2015-16 entrants, for full-time provision. The numbers of providers with large differences suggest that outliers occur most frequently for the other undergraduate and postgraduate research levels of study.

35. The cohort-tracking indicator values based on 2015-16 entrants are more correlated with the compound indicator values based on 2015-16 withdrawals (Table 3) than with the cohort-tracking values based on 2011-12 entrants (Table 4), across all levels except postgraduate research. This suggests that the compound completion indicator generally does a better job of predicting future completion rates than historic cohort-tracking does, for most full-time levels of study. However, this analysis was restricted to providers with at least 100 entrants in all six years of the compound completion indicator. We expect that results are likely to differ where populations are smaller and/or less consistent over time.

36. For full-time entrants, the correlations (in Table 3) assessing the compound completion indicator as a predictor of future cohort-tracking are generally a bit stronger than the correlations we found when comparing the recent cohort-tracking and compound completion data (Table 1). This is likely due in part to using the same Year 1 withdrawals for the 2015-16

compound indicator as the cohort-tracking of 2015-16 entrants, with the first year being the year in which withdrawal rates tend to be highest.

Part-time

37. In both comparisons (shown in Table 3 and Table 4), outliers were more common for part-time provision than for full-time provision.

38. The range of indicator values is greater for all three measures and there are some negative indicator values for the compound completion indicator. Generally, outliers are more common where an indicator values for one of the measures is low (less than 50 per cent).

39. Comparing the correlations in Table 3 and Table 4, we see varying results across the levels of study. For most levels the compound completion indicator appears to be a better predictor of future completion rates, but the opposite could be said for part-time first degree. It should also be noted that we have used a four-year census point to calculate the part-time cohort-tracking indicators used for these comparisons, which may cause overestimation of true completion in some cases.

40. As for full-time, the correlations (in Table 3) when considering the compound completion indicator as a predictor of future cohort-tracking tend to be stronger than when comparing the recent cohort-tracking and compound completion data (Table 1).

Annex A: Advantages and disadvantages of the alternative completion methods

1. This annex describes the key advantages and disadvantages that we consider to exist for each of the alternative completion methods, as described in our consultation about the construction of student outcome and experience measures.[11]

2. We consider that the key advantages of a cohort-tracking method are as follows:

    a. Conceptually, the measure is relatively simple for stakeholders to understand and, technically, it is relatively straightforward for providers to replicate.

    b. It allows for outcomes measures which are definitive about the extent to which students have been observed to complete or continue their qualifications. In doing so, it provides clarity about the outcome achieved at the level of the individual student. We consider that this further empowers providers to understand their student outcomes at different levels of granularity.

    c. It allows for construction of indicators and split indicators across all populations of students, and does not rely on an assumption that structures and patterns of student progression through a programme of study remain stable over time.

3. We consider that the key disadvantages are:

    a. The indicators that result from this method are heavily lagged, meaning that the entrant cohorts that we report on started their higher education experience some time ago. As such, the measure may not accurately reflect more recent changes in patterns of performance or the experiences of students. For example, at the time of writing, the most recent academic year for which we have student data is 2020-21. A full-time student whose four years and 15 days census date falls within 2020-21 would have started their course in 2016-17, making this the most recent entrant cohort that we can report on. A part-time student whose six years and 15 days census date falls within 2020-21 would have started their course in 2014-15.

4. We consider that the key advantages of a compound indicator method are as follows:

    a. The timeliness of the measure, and its ability to respond to more recent changes in patterns of a provider's performance or the experience it delivers for its students.

    b. It allows for construction of indicators and split indicators across all populations of students, and can quickly respond to course structure changes or patterns of student progression through a programme of study which prove unstable over time.

5. We consider that the key disadvantages are:

[11] See proposal 6 of the consultation on constructing student outcome and experience indicators for use in OfS regulation, at www.officeforstudents.org.uk/publications/student-outcomes-and-teaching-excellence-consultations/student-outcomes-data-indicators/.

a. Conceptually, the measure is potentially less straightforward for stakeholders to understand and, technically, for providers to replicate.

b. It relies on a sum of cohort-based withdrawal proportions which means that it does not report on the observed completion outcomes of a single cohort of individual students. We acknowledge that this further complicates providers' attempts to replicate the measure at levels of granularity beyond those calculated by the OfS. It also further complicates the calculation of benchmarks and statistical uncertainty presentational tools, which have conventionally relied on methods applicable to individual-level data observations and need to draw on modified or different formulae when applied to this measure.

Annex B: Additional results from the analysis

Single year comparisons using the 2019-20 compound indicator

1. Table 5 below summarises the comparison of the 2019-20 compound indicator to the 2015-16 cohort tracking measure, with minimum denominator thresholds set at 100 and is equivalent to the analysis presented in Table 1. Scatterplot charts showing these comparisons are available in the accompanying data dashboard.[12]

Table 5: Comparing the cohort-tracking measure for 2015-16 entrants to the 2019-20 compound indicator

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.20	89	24	28
Full-time	First degree	0.58	142	32	14
Full-time	Undergraduate with postgraduate components	0.52	45	4	1
Full-time	Other postgraduate	0.02	22	5	2
Full-time	PGCE	0.13	68	12	0
Full-time	Postgraduate taught masters	0.40	98	11	6
Full-time	Postgraduate research	0.28	37	5	5
Part-time	Other undergraduate	0.41	45	12	15
Part-time	First degree	0.33	19	5	8
Part-time	Other postgraduate	0.07	63	21	16
Part-time	PGCE	N/A	0	0	0
Part-time	Postgraduate taught masters	0.27	81	22	16
Part-time	Postgraduate research	0.83	3	1	1

Results of the analysis conducted throughout the document using a minimum provider size of 23

2. In the five tables that follow, we present the analysis that has been conducted throughout this document, but with minimum provider sizes set at 23 students rather than 100. They are

[12] Select 'Most recent measures (using 2019-20 compound indicators as most recent compound indicator measure)' on the dashboard at www.officeforstudents.org.uk/data-and-analysis/student-outcomes-and-experiences-data-dashboards/comparing-completion-measures-dashboard/.

labelled in the same way but with the letter ‘A’ added to the table number. For example, Table 1A is equivalent to Table 1, but with the minimum provider size set at 23 students.

3. With this lower threshold we include more providers in the analysis but with increased random noise in the data, resulting in lower R-squared values and more providers with large differences between the measures.

Table 5A: Comparing 2018-19 compound indicators to the 2015-16 cohort-tracking indicator

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.22	194	57	48
Full-time	First degree	0.60	165	21	11
Full-time	Undergraduate with postgraduate components	0.77	59	7	1
Full-time	Other postgraduate	0.11	65	17	5
Full-time	PGCE	0.28	72	13	1
Full-time	Postgraduate taught masters	0.49	115	23	7
Full-time	Postgraduate research	0.22	76	16	10
Part-time	Other undergraduate	0.19	156	40	73
Part-time	First degree	0.20	55	13	20
Part-time	Other postgraduate	0.07	92	25	28
Part-time	PGCE	0.13	10	2	3
Part-time	Postgraduate taught masters	0.28	105	30	20
Part-time	Postgraduate research	0.33	55	11	21

Table 6A: Comparing four-year aggregate compound indicators to four-year aggregate cohort-tracking indicators

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.53	258	70	30
Full-time	First degree	0.75	232	36	18
Full-time	Undergraduate with postgraduate components	0.81	72	7	1
Full-time	Other postgraduate	0.21	102	16	3
Full-time	PGCE	0.18	92	9	4
Full-time	Postgraduate taught masters	0.78	133	13	3
Full-time	Postgraduate research	0.27	100	17	19
Part-time	Other undergraduate	0.33	220	55	60
Part-time	First degree	0.34	94	27	30
Part-time	Undergraduate with postgraduate components	N/A	2	1	1
Part-time	Other postgraduate	0.12	115	21	40
Part-time	PGCE	0.01	67	18	19
Part-time	Postgraduate taught masters	0.48	125	32	17
Part-time	Postgraduate research	0.27	96	27	25

Table 7A: Comparing the cohort-tracking indicator for 2015-16 entrants to the 2015-16 compound indicator

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.58	182	60	27
Full-time	First degree	0.73	149	14	6
Full-time	Undergraduate with postgraduate components	0.50	56	8	0
Full-time	Other postgraduate	0.18	64	18	6
Full-time	PGCE	0.57	71	1	0
Full-time	Postgraduate taught masters	0.68	112	7	1
Full-time	Postgraduate research	0.18	66	17	10
Part-time	Other undergraduate	0.59	172	39	50
Part-time	First degree	0.45	62	17	18
Part-time	Other postgraduate	0.34	91	24	21
Part-time	PGCE	0.70	12	3	0
Part-time	Postgraduate taught masters	0.53	105	17	20
Part-time	Postgraduate research	0.31	57	12	21

Table 8A: Comparing the cohort-tracking indicators for 2015-16 entrants to the cohort-tracking indicator of 2011-12 entrants

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.23	182	48	50
Full-time	First degree	0.63	149	15	8
Full-time	Undergraduate with postgraduate components	0.47	56	7	1
Full-time	Other postgraduate	0.01	64	16	7
Full-time	PGCE	0.10	71	9	2
Full-time	Postgraduate taught masters	0.33	112	9	5
Full-time	Postgraduate research	0.48	66	13	12
Part-time	Other undergraduate	0.27	172	38	78
Part-time	First degree	0.44	62	20	20
Part-time	Other postgraduate	0.14	91	21	37
Part-time	PGCE	0.09	12	6	2
Part-time	Postgraduate taught masters	0.39	105	32	25
Part-time	Postgraduate research	0.35	57	15	15

Table 5A: Comparing the cohort-tracking measure for 2015-16 entrants to the 2019-20 compound indicator

Mode of study	Level of study	R-squared	Number of providers compared	Number of providers with an absolute difference between 5% and 10%	Number of providers with an absolute difference greater than 10%
Full-time	Other undergraduate	0.14	205	55	71
Full-time	First degree	0.52	183	45	28
Full-time	Undergraduate with postgraduate components	0.50	61	11	3
Full-time	Other postgraduate	0.20	64	21	5
Full-time	PGCE	0.18	71	14	2
Full-time	Postgraduate taught masters	0.43	118	5	9
Full-time	Postgraduate research	0.16	77	20	15
Part-time	Other undergraduate	0.23	149	36	67
Part-time	First degree	0.01	52	13	22
Part-time	Other postgraduate	0.10	92	31	27
Part-time	PGCE	0.03	7	2	3
Part-time	Postgraduate taught masters	0.25	105	28	25
Part-time	Postgraduate research	0.17	54	18	21