Graduate Outcome Survey – Data Validity Assessment

June 2024

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Introduction

The rationale of this exercise is to compare Graduate Outcomes Survey (GOS) responses to the Central Statistics Office (CSO) Educational Longitudinal Database (ELD) for consistency and reliability purposes. The ELD collects similar salary and employment related data points as the Graduate Outcomes Survey, therefore the purpose of this exercise is to compare the Graduate Outcomes Survey responses, which are self-responses, to the administrative data captured in the ELD for consistency and reliability purposes.

Background

The *Graduate Outcomes Survey* is Ireland's national survey of higher education graduates and has been in place since 2018. Graduates are surveyed approximately nine months after graduation by their Higher Education Institution (HEI). Data is submitted to the Higher Education Authority (HEA) for the Graduate Outcomes Survey database and national reporting.

The *Educational Longitudinal Database* is a statistical framework that can be used to analyse learner outcomes from post-primary level to adult education over many years. The ELD, as shown in figure 1, contains data from a wide range of data sources, including various education databases, the Department of Social Protection, and Revenue. The administrative data sources used in this exercise consist of the HEA, the Department of Social Protection, and Revenue.
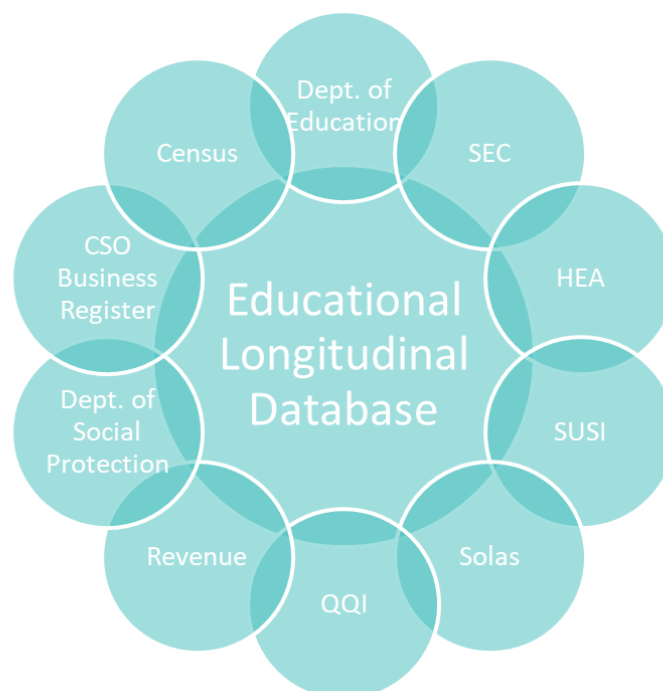

Figure 1: Educational Longitudinal Database

Cohort Definition

The Graduate Outcomes Survey is a national survey distributed to all graduates of HEA higher education institutions (HEIs), 9 months after graduation, including all graduates of levels 6-10, and includes international graduates. There is now five years' worth of data available, (classes of 2017, 2018, 2020, 2021 and 2022), with about 150,000 responses over the five years.

The ELD captures all graduates of Irish institutions. However, not all graduates have a PPSN, particularly those who may be internationally domiciled and have never needed to apply for one (e.g., to work, apply for a social welfare payment, access public services, access medical services, etc.). Analysis containing outcomes from Revenue and DSP data is restricted to those graduates who have a PPSN and are domiciled in Ireland as demonstrated through activity in administrative data in Ireland after graduation.

The GOS data can be used to split the graduate population into two categories: respondents and non-respondents.

Technical details of data linking

Dublin Business School was removed from the analysis as it is not captured in the HEA dataset in the ELD.

The HEA dataset (in the ELD) was merged to the GOS data using PPSN, Graduation Year, Institute, and ISCED. Where the PPSN was invalid or PPSNs did not match, the datasets were merged by Student ID. This dataset contains about 317,000 graduates.

Variables from Revenue or the Department of Social Protection datasets were merged by PPSN and calendar year. This dataset contains about 278,000 graduates.

Do the profiles of Graduate Outcomes Survey respondents and non-respondents differ?

Response rates were analysed as follows:

- year, institution, gender, field of study, NFQ level and age.
- destination type, salary band and NACE sector.
- recipients of maternity benefit, one-parent family payment and disability allowance.

Response Rates

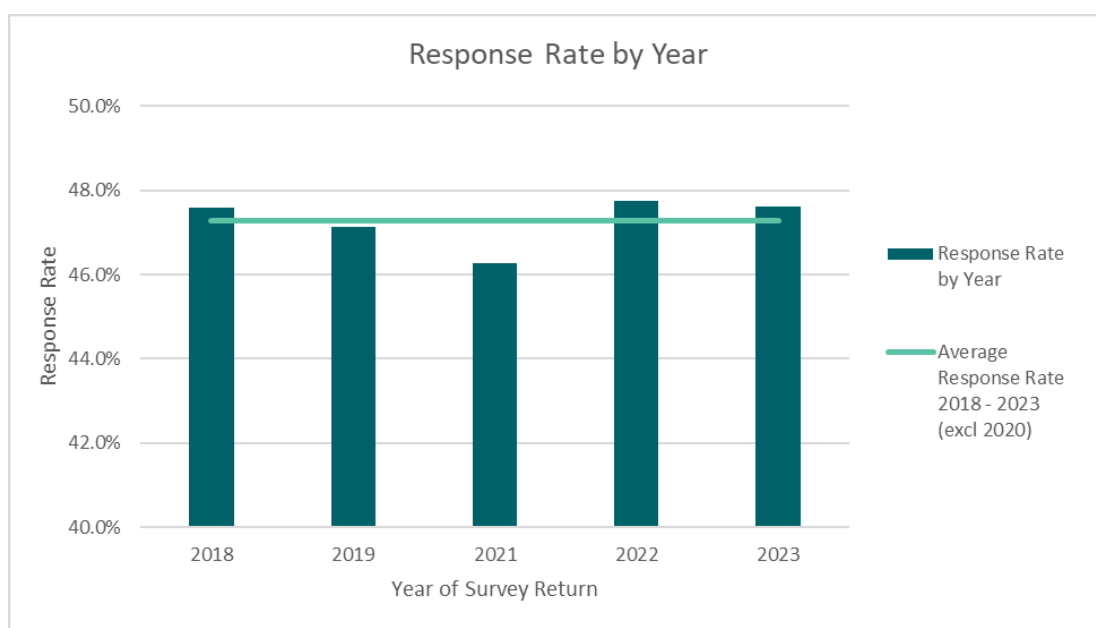### Response rate by survey year

Figure 2: Response Rate by year

The average response rate across the 5 years (2018 to 2023, excluding 2020) of graduate outcomes survey data is 47%, as shown in figure 2.

The following figures in this report are based on the total population over the 5 years (2018 to 2023, excluding 2020) of graduate outcomes survey data, unless otherwise stated.

Response rate by institution and gender

The response rates by institution and gender are shown in figure 3. There is another gender category 'Other Genders', however, there are too few observations to include this category in the analysis.
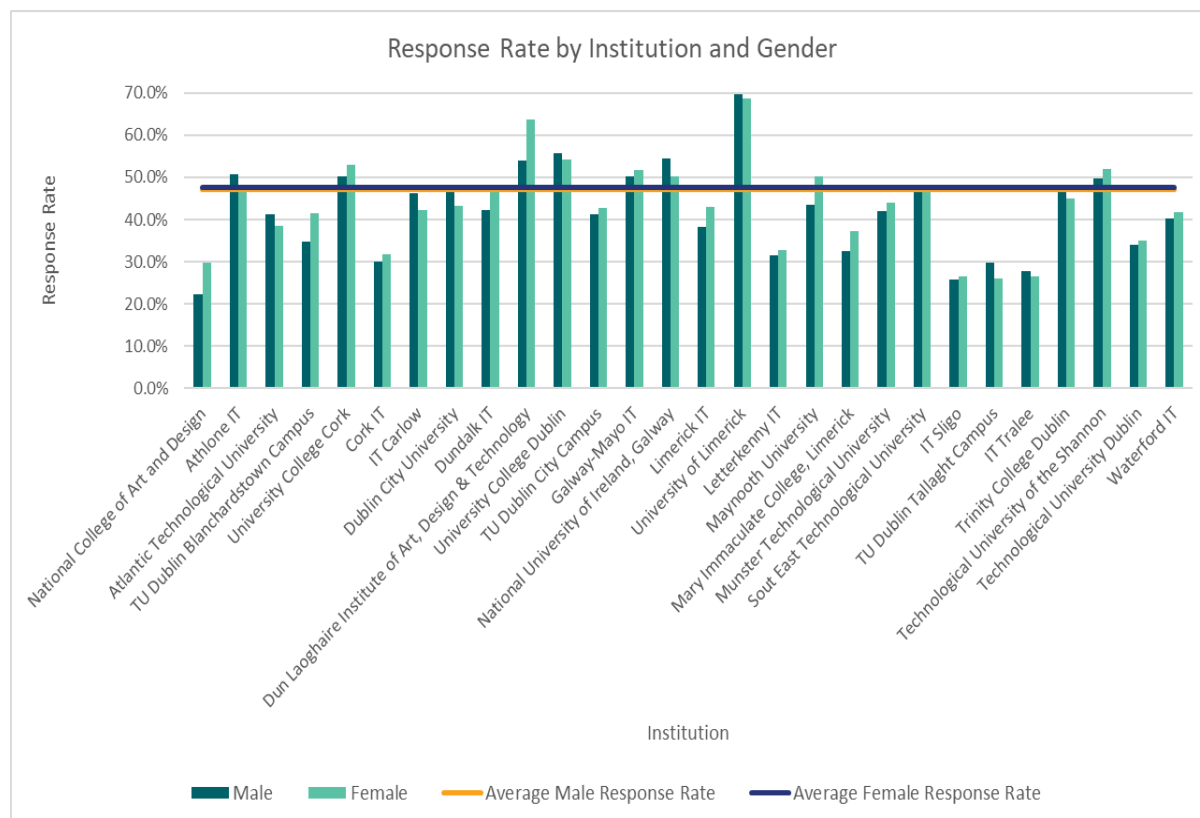

Figure 3: Response rate by institution and gender

The University of Limerick has the highest response rates. IT Sligo, IT Tralee, and TU Dublin Tallaght Campus have some of the lowest response rates, however these institutions have been merged with other institutions. Please refer to table 1 for the list of merged institutions, and the year from which these institutions merged. Figure 3 is based on the total population over the 5 years (2018 to 2023, excluding 2020) of graduate outcomes survey data.

Graduation Cohort	Merged Institution	Previous Institution
2018	Technological University Dublin	TU Dublin Blanchardstown Campus
		TU Dublin City Campus
		TU Dublin Tallaght Campus
2020	Munster Technological University	Cork IT
		IT Tralee
2021	Atlantic Technological University	Galway-Mayo IT
		Letterkenny IT
		IT Sligo
2021	South East Technological University	IT Carlow
		Waterford IT
2021	Technological University of the Shannon	Athlone IT

		Limerick IT

Table 1: Merged institutions

Response rate by field of study and gender

Further breakdown of response rates by gender are shown in figure 4 across field of study. Some of the lower response rates are in the areas of 'General Programmes' and 'Services', which also have a relatively smaller population, of 510 graduates in 'General Programmes' and about 3,000 graduates in the 'Services'.
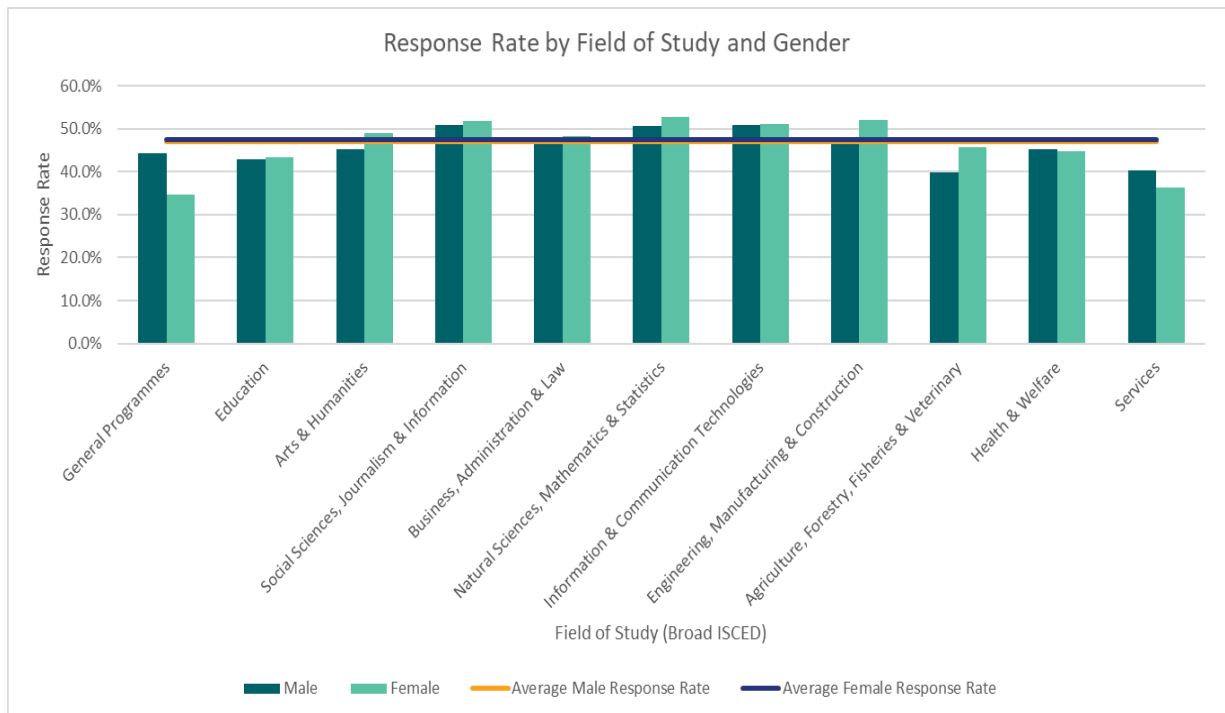

Figure 4: Response rate by field of study and gender

Response rate by NFQ level and gender

Figure 5 shows that the response rates are low for NFQ levels 6 and 7, and are slightly above average for NFQ levels 8, 9, and 10.
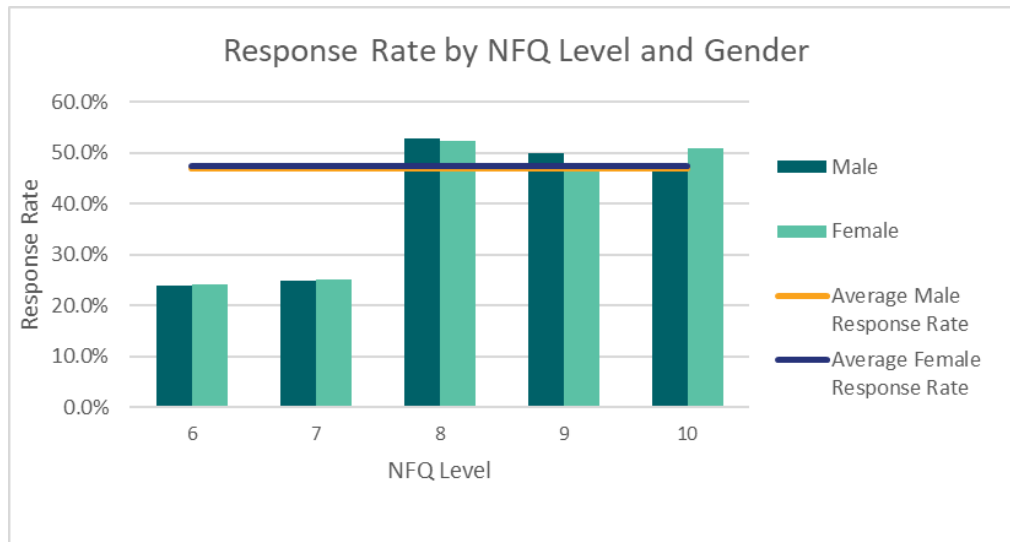

Figure 5: Response rate by NFQ level and gender

Response rate by age

For students greater than or equal to 21 years of age, figure 6 shows the response rates are between 40% and 55%, with 65% of the population in the 21 to 26 age range. 49% of the population are in the 22-24 age range with a response rate of 50%.
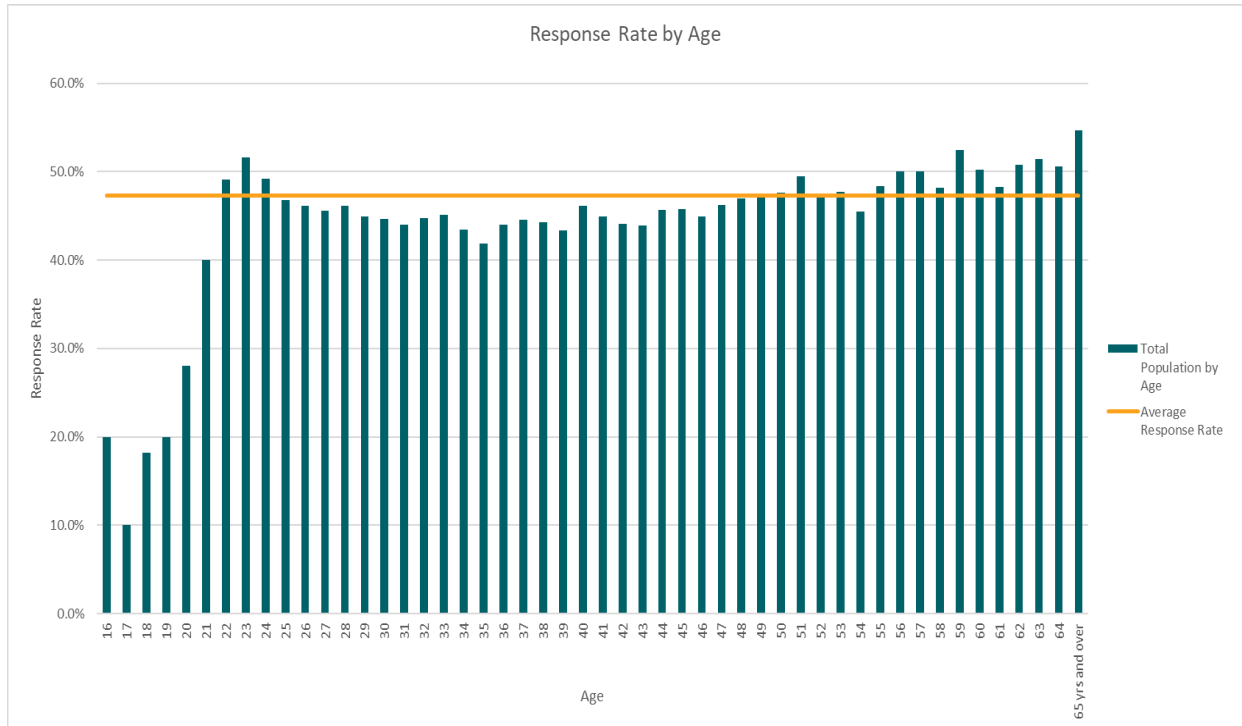

Figure 6: Response rate by age

Outcomes

In this section the response rates are broken down by destination type, salary band, and sector.

Destination Type

Using the ELD administrative data, there are five classifications that describe graduate activities within each calendar year, as shown in table 2.

Outcome	Definition
Substantial Employment Only	Min. 12 weeks employment & earning min. €100 per week
Substantial Employment and Education	As above and enrolled in higher education
Education Only	Enrolled in higher education
Neither Employment nor Education	Don't meet criteria above but captured in some data sources
Not Captured	"Presumed" to have emigrated

Table 2: Destination outcomes

- 'Substantial Employment only' refers to graduates who meet minimum criteria for employment or self-employment and are not enrolled in higher education within the same calendar year.
- 'Substantial Employment and Education' refers to graduates that meet the criteria for substantial employment or self-employment and are also enrolled in higher education at some point within the same year.
- 'Education only' refers to graduates that are enrolled in higher education but are not in substantial employment.
- 'Neither Employment nor Education' refers to graduates who do not meet the criteria for substantial employment or education but have some activity in administrative records for that year. These graduates may have some record of (non-substantial) employment or claimed some benefit in that year.
- 'Not Captured' means that they have no activity in the administrative data sources for that year. Most of this group are assumed to have emigrated, but there is no definitive indicator of emigration available in the administrative data.

Figure 7 shows the response rates by destination outcome and gender.
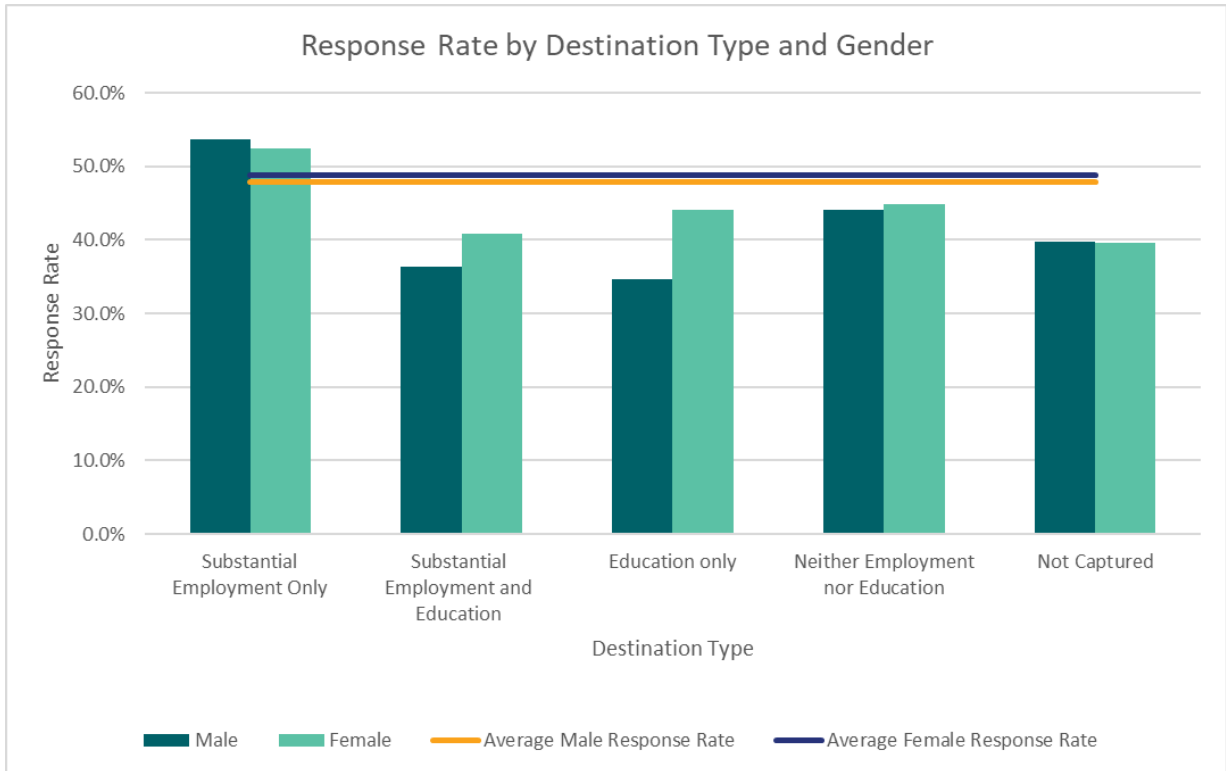
Figure 7: Response rate by destination type and gender

The response rate for those graduates in 'Substantial Employment Only' 9 months after graduating is above 50% for both males and females, with 65% of the population in this category. The response rates are lowest amongst males in 'Substantial Employment and Education' and 'Education only'.

Salary Band

From the ELD, salary is as reported to Revenue in that calendar year. Figure 8 shows the response rate by salary band for graduates in Destination Types 'Employment only' or 'Employment and Education'.
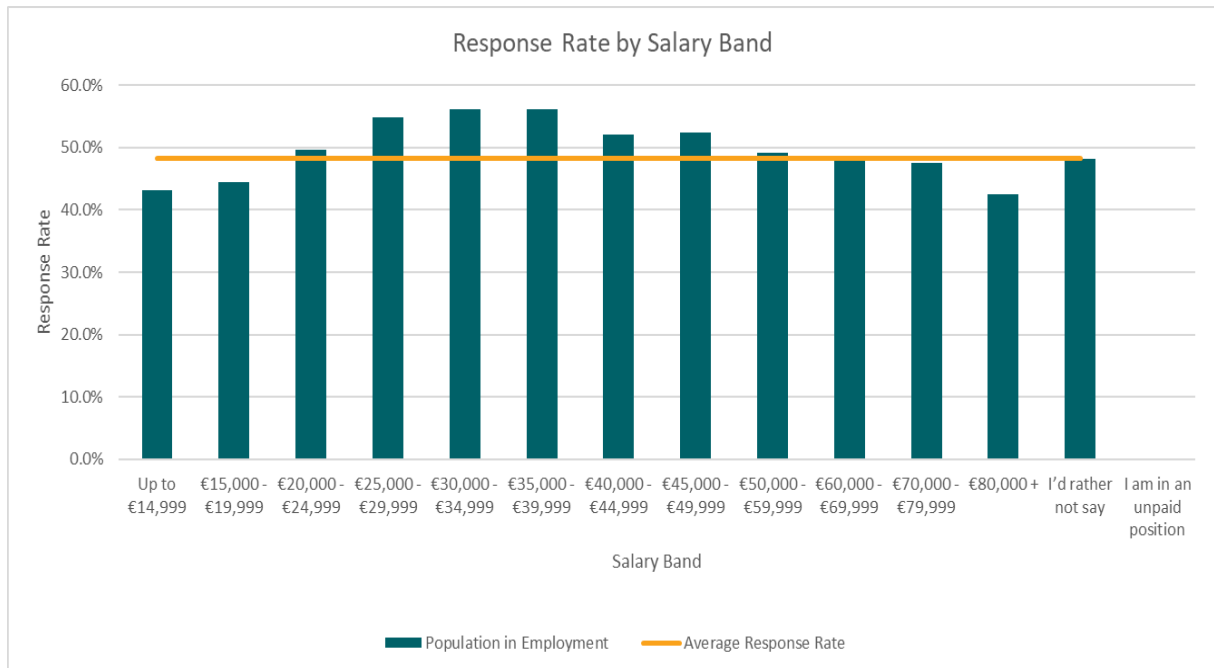

Figure 8: Response rate by salary band

The response rates are above the average response rate (across the 5 years of the survey) for salaries ranging from €20,000 to €59,999, inclusive.

'I am in an unpaid position' refers to those employed through an unpaid contract, which the CSO does not have data on.

Sector

Figure 9 shows the response rates by sector (NACE) and gender for graduates in Destination Types 'Employment only' or 'Employment and Education'.
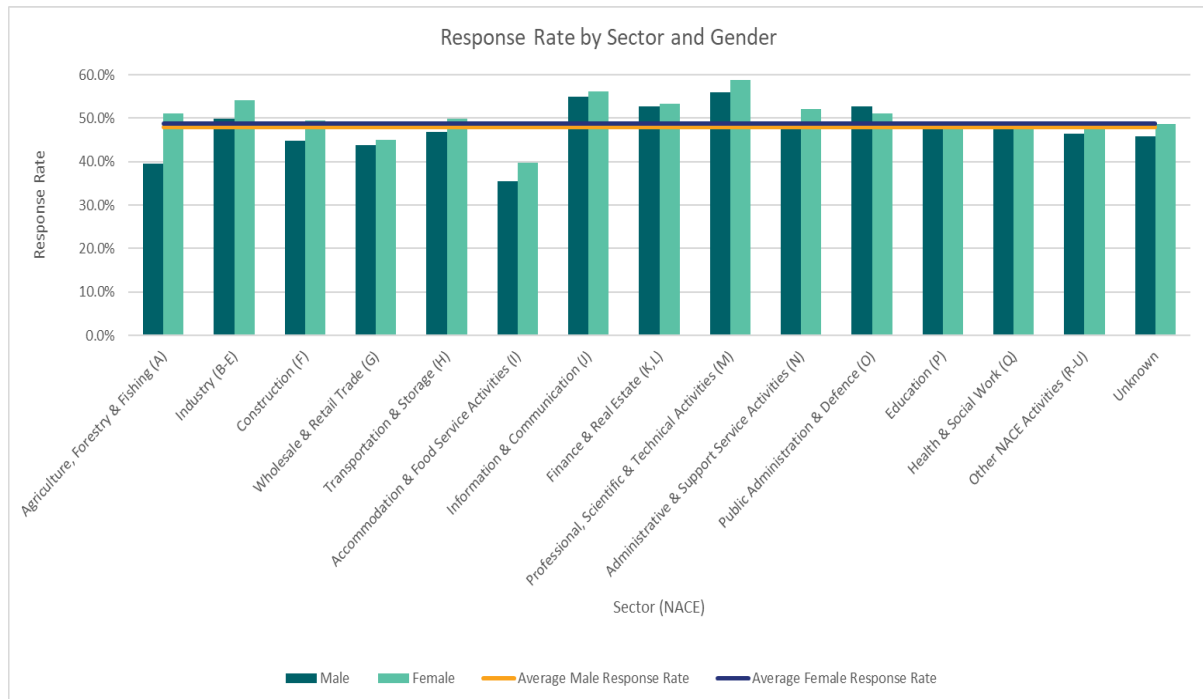

Figure 9: Response rate by sector and gender

Response rates are lowest from graduates working in Accommodation & Food Service Activities. This could potentially be because graduates are working in this sector temporarily (or are still working in their part-time job from when they were in university) whilst looking for employment in their field of study, and therefore more reluctant to respond. Another reason could be the time of day that the graduate is contacted by phone – those working in Accommodation & Food Service Activities could be working in early evening time and unable to answer.

Graduate Cohort

In this section the response rates are broken down by graduates receiving maternity benefit / adoptive benefit, paternity benefit recipients, parent's benefit recipients, one-parent family recipients, and disability allowance recipients.

To note - further analysis was explored for each of these graduate cohorts, for example by field of study, however, given the small population in each of these graduate cohorts, further breakdown led to buckets with too few observations to give statistically significant results.

Maternity Benefit / Adoptive Benefit Recipients

In this data, 'maternity benefit / adoptive benefit recipients' refers to those respondents and non-respondents in receipt of maternity benefit or adoptive benefit within the calendar year of the survey return. Maternity benefit is paid for 26 weeks. Adoptive benefit is paid for 24 weeks.
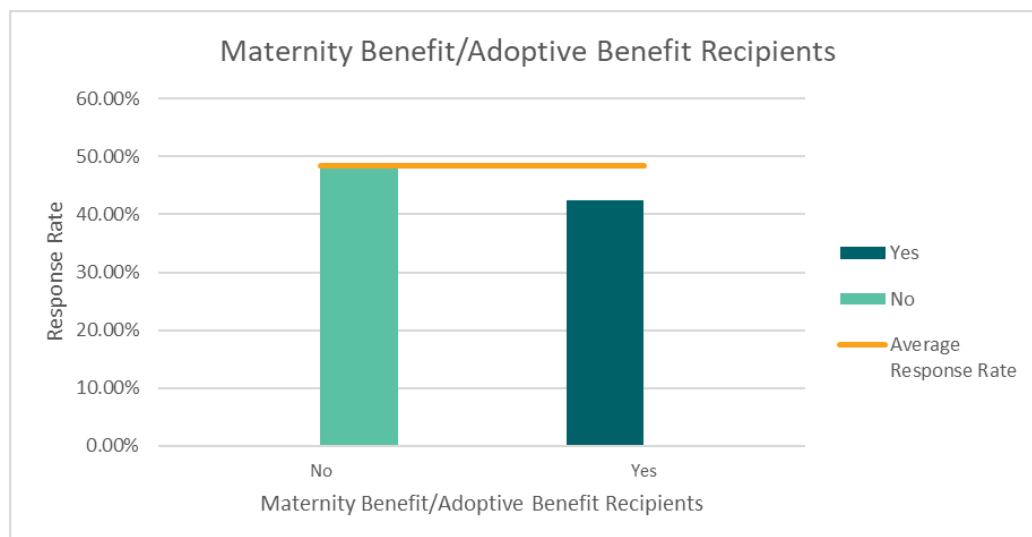

Figure 10: Maternity Benefit / Adoptive Benefit Recipients

Only 1.2% of the graduate outcomes survey population is on maternity benefit or adoptive benefit, with the response rate for this cohort below the average response rate at 42%.

Paternity Benefit Recipients

Paternity benefit can be claimed by new parents of children under 6 months of age (usually the father or the partner of the mother, or in the case of adoption, the parent who is not taking adoptive leave). Paternity benefit is paid for 2 weeks.

In this data, 'paternity benefit recipient' refers to those respondents and non-respondents in receipt of paternity benefit within the calendar year of the survey return.
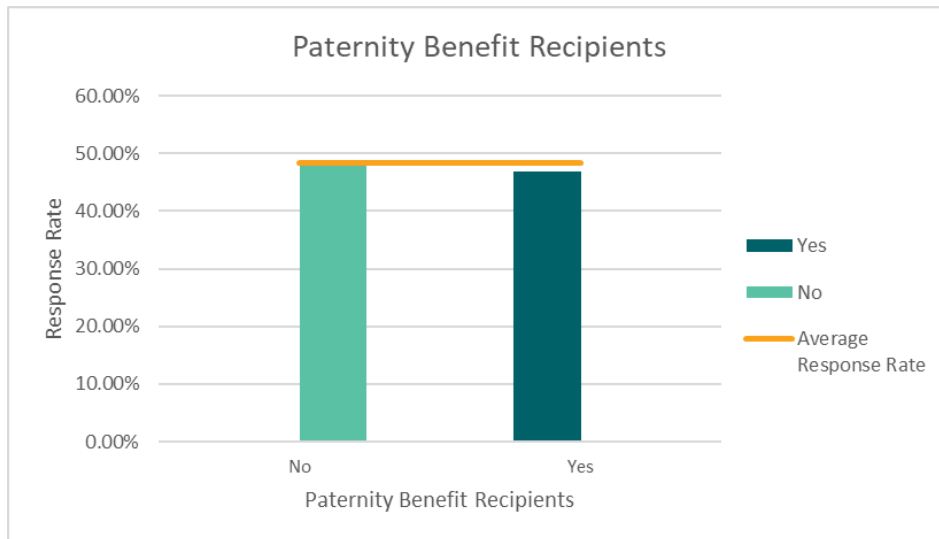

Figure 11: Paternity Benefit Recipients

Only 0.5% of the graduate outcomes survey population is on paternity benefit, with the response rate for this cohort almost in line with the average response rate.

Parent's Benefit Recipients

Parent's benefit is for parents of children under 2 years of age and is paid for 7 weeks (from July 2022).

In this data, 'parent's benefit recipient' refers to those respondents and non-respondents in receipt of parent's benefit within the calendar year of the survey return.
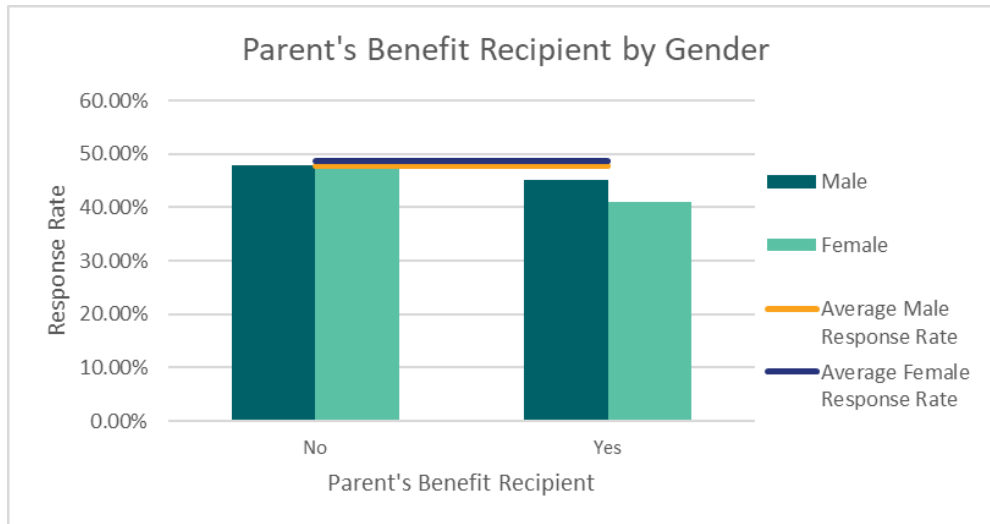

Figure 12: Parent's Benefit Recipients

Only 0.5% of the graduate outcomes survey population is on parent's benefit, with females on parent's benefit slightly less likely to respond.

One-Parent Family Payment Recipients

In this data, 'one-parent family payment (OFP) recipient' refers to those respondents and non-respondents in receipt of one-parent family payment benefit within the calendar year of the survey return.
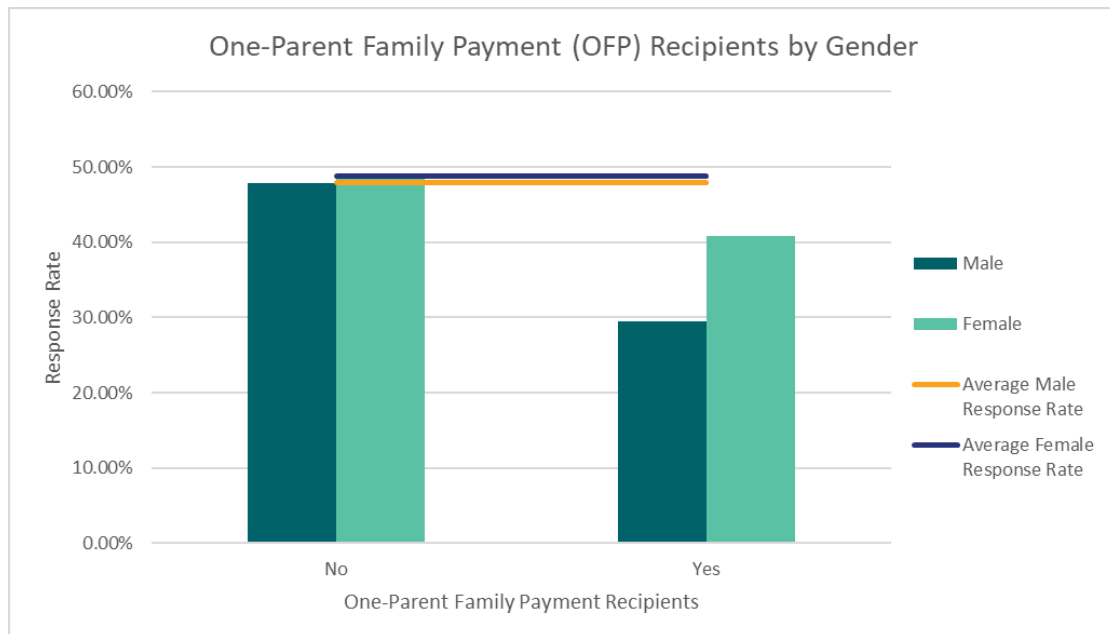

Figure 13: One-Parent Family Payment Recipients

Only 0.5% of the graduate outcomes survey population is receiving one-parent family payment benefit, with 98.7% of OFP's being female. Female OFP recipients are more likely to respond than male recipients.

Disability Allowance Recipients

In this data, 'disability allowance recipient' refers to those respondents and non-respondents in receipt of disability allowance within the calendar year of the survey return.
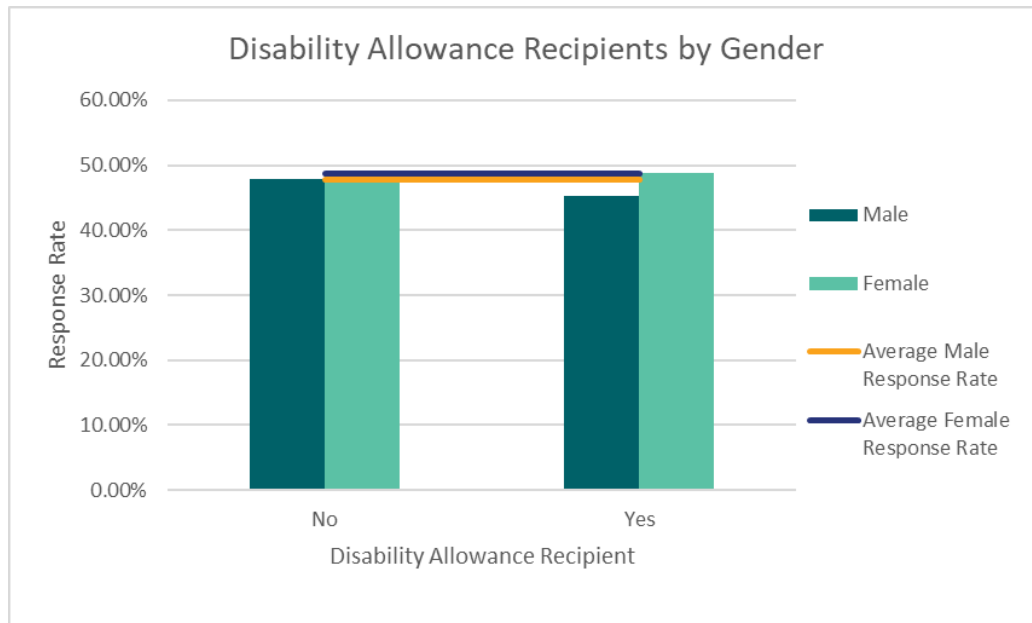

Figure 14: Disability Allowance Recipients

Only 1.5% of the graduate outcomes survey population is in receipt of disability allowance, with response rates quite consistent across cohorts.

Are the Graduate Outcomes Survey questions accurately capturing outcomes as measured in the ELD?

In this section, we take the graduate outcomes survey respondents and compare how their destination, sector, and salary are categorised in the ELD versus the survey.

Main Destination

It is important to note that the GOS (survey) data is point in time – it is when the graduate responded to the survey. Using the ELD administrative data, there are five classifications (main destinations) that describe graduate activities within each calendar year. The ELD main destinations are also not directly comparable to the GOS main destination categories given that in the ELD, 'substantial employment' refers to graduates that have at least 12 weeks of insurable work within the calendar year across all employments.

Table 3 shows the mapping of main destination in the ELD to main destination in the graduate outcomes survey.

ELD Main Destination	GOS Main Destination
Substantial Employment Only	Working full-time
	Working part-time
	Due to start a job in the next 3 months
Substantial Employment and Education	Engaged in part-time further study or training
Education only	Engaged in full-time further study or training
Neither Employment nor Education	Unemployed and looking for work
Not Captured *	Other Activity (e.g., engaged in home duties, retired from employment, unable to work due to illness or disability, travelling, volunteering etc.)

* Within the ELD data, a graduate is assigned to the category of 'Not Captured' if they do not appear in any of the administrative datasets for that calendar year. Most of these graduates categorised as 'Not Captured' are assumed to have emigrated or returned to their country of origin.

Table 3: Mapping of main destination

Figure 15 shows the comparison of main destination, as mapped above, in the graduate outcomes survey and in the ELD.
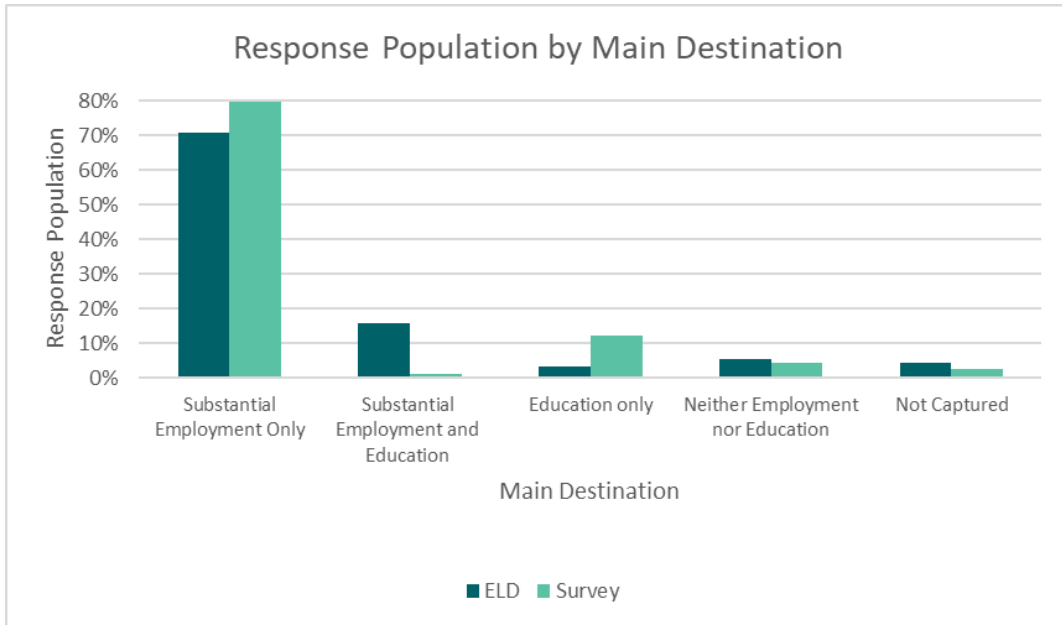
Figure 15: Response population by main destination

A higher percentage of survey respondents are in 'Substantial Employment Only', however, as described above, from the ELD 'substantial employment' refers to graduates that have at least 12 weeks of insurable work within the calendar year across all employments. This is not directly comparable to the GOS mapped version which includes 'working full-time', 'working part-time', and 'due to start a job in the next 3 months'.

Sector

From the ELD data, the NACE code refers to the sector of either the main employer or self-employment activity (longest duration) in the calendar year. GOS (survey) data is point in time, when the graduate responded to the survey, with the survey question asking - what does the company / organisation / school that you are working for mainly do?

Figure 16 shows the comparison of sector (NACE) in the graduate outcomes survey and in the ELD.
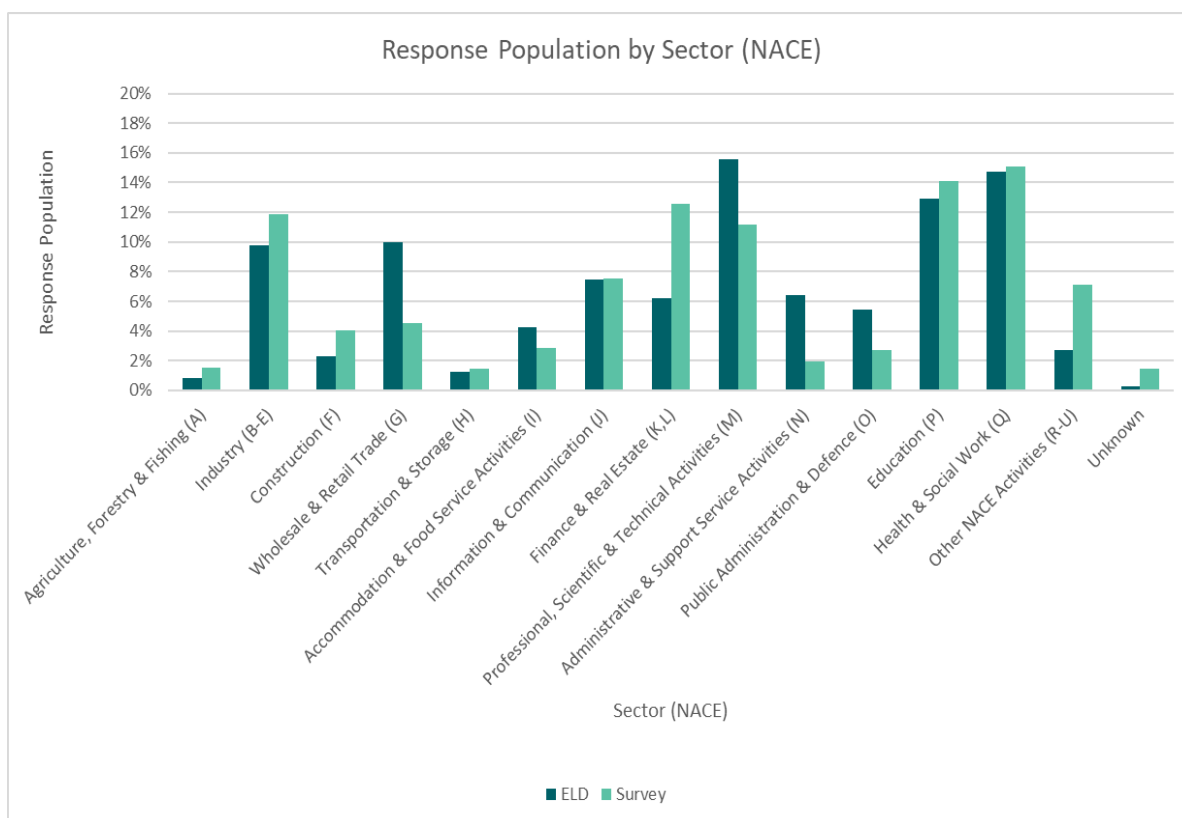

Figure 16: Response population by sector (NACE)

The ELD data shows more graduates working in 'Wholesale and Retail Trade', 'Professional, Scientific and Technical Activities', and 'Administrative & Support Service Activities' sectors. Whereas the survey data shows more graduates working in 'Finance & Real Estate' and 'Other NACE Activities'.

Salary

From the ELD, salary is as reported to Revenue in that calendar year and is the summation of all employments per graduate.

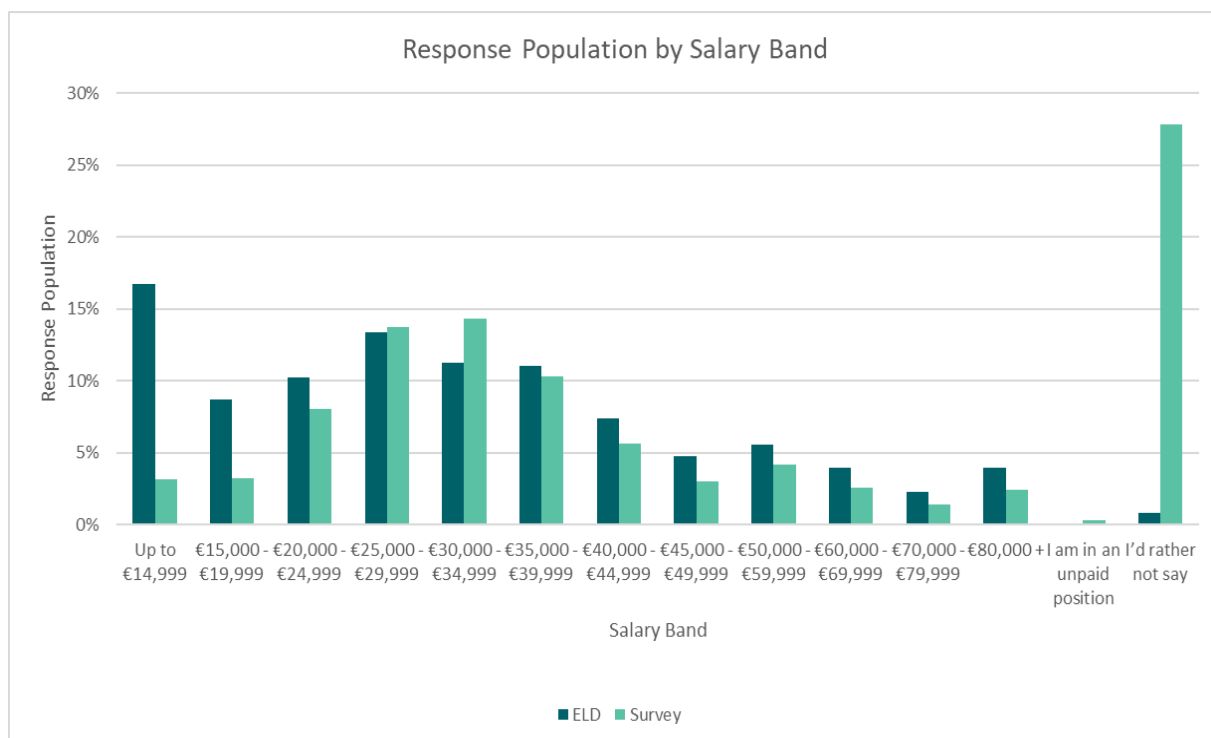Figure 17 shows the comparison of salary in the graduate outcomes survey and in the ELD.

Figure 17: Response population by salary band

'I am in an unpaid position' refers to those employed through an unpaid contract, which the CSO does not have data on.

From figure 17, one could surmise that in the Graduate Outcomes Survey potentially graduates on lower salaries responded with "I'd rather not say".

For comparison purposes, the band "I'd rather not say" has been removed in figure 18.
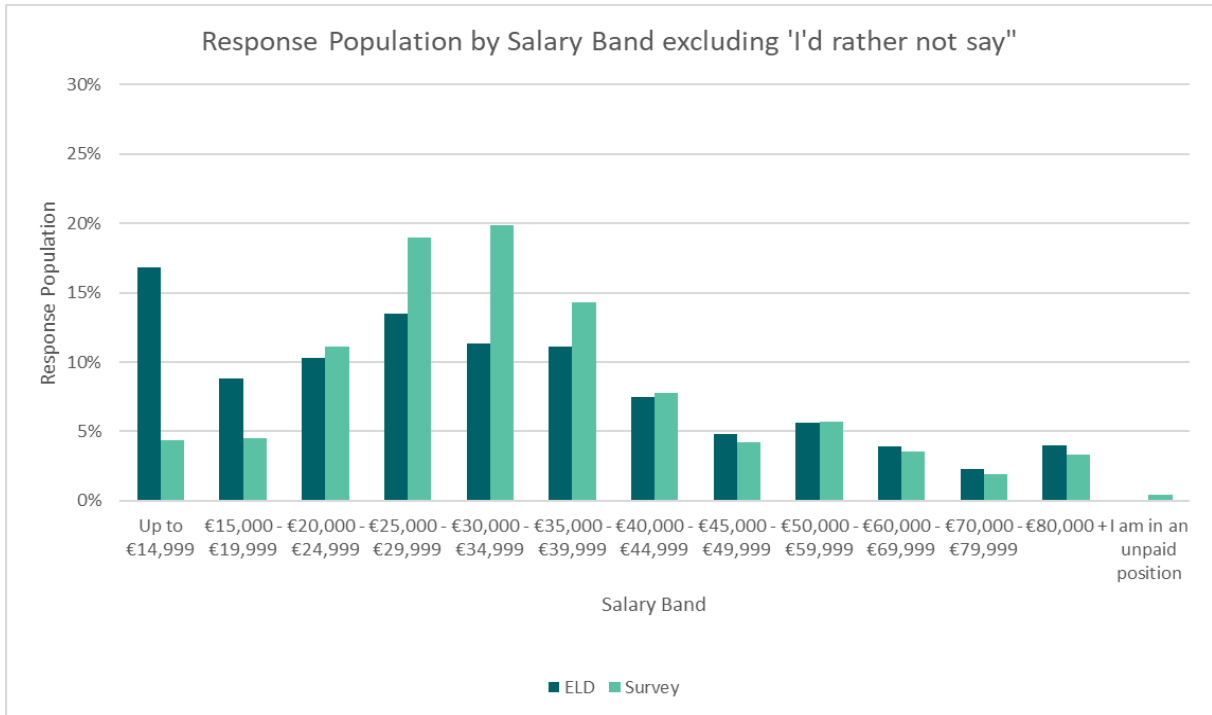
Figure 18: Response population by salary band excluding "I'd rather not say"

However, in comparing figures 17 and 18, for the survey data there is an increase in salary across all salary bands, with the highest increases in the €20,000 to €39,999 salary range.

Further Analysis

Further analysis was carried out on the response rates of institutions. Different characteristics of institutions, for example institution size, was investigated to see if it had an effect on response rates. The scatterplot in figure 19 shows the relationship between the response rates and population of an institution. It is based on data from the year of survey return 2023. The legend for the institute code is shown in table 4 below the scatterplot.
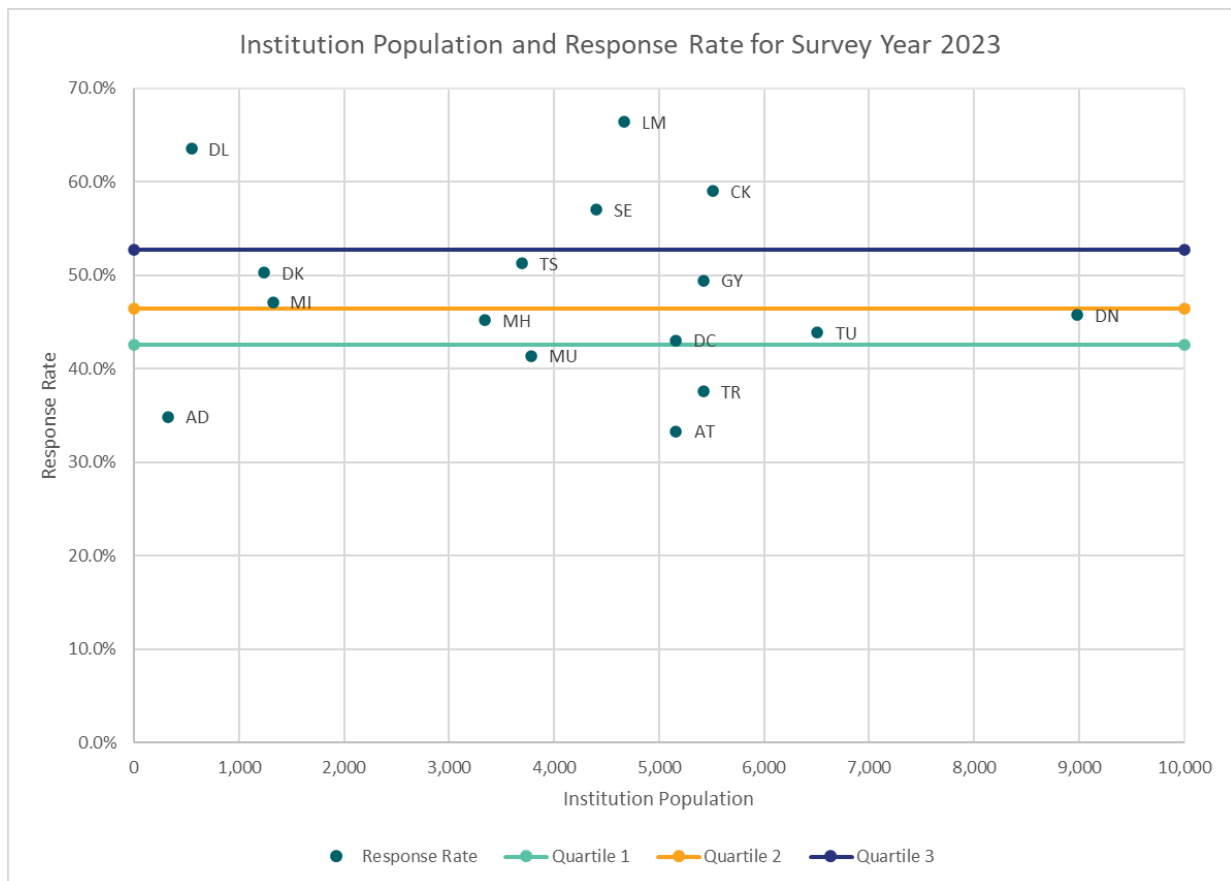

Figure 19: Institution Population and Response Rate for Survey Year 2023

Institute Code	Institute
AT	Atlantic Technological University
AD	National College of Art and Design
TR	Trinity College Dublin
MU	Munster Technological University
DC	Dublin City University
TU	Technological University Dublin
MH	Maynooth University
DN	University College Dublin

MI	**Mary Immaculate College, Limerick**
GY	**National University of Ireland, Galway**
DK	**Dundalk IT**
TS	**Technological University of the Shannon**
SE	**South East Technological University**
CK	**University College Cork**
DL	**Dun Laoghaire Institute of Art, Design and Technology**
LM	**University of Limerick**

Table 4: Institute code mapping to institute

From the scatterplot in figure 19, there is no correlation between the institution's size and response rate. An example of this is, the 2023 population for the National College of Art and Design, and for the Dun Laoghaire Institute of Art, Design and Technology are both below 600 students. However, the response rate for the former is 34.9% and the latter is 63.6%.

The two other institutions with the lowest response rates in 2023 are Atlantic Technological University (33.4%) and Trinity College Dublin (37.6%), both of which have a population of over 5,000 students. These institutions can be compared to South East Technological University and University College Cork in terms of size, both of which have response rates of greater than 55%.

To ascertain if the institutions with lower response rates are dependent on certain biases, the three institutions with the lowest response rates in 2023 were broken down further by gender, field of study, and NFQ level, to see if any biases were present. This analysis did not show any extreme differences in response rates.

Conclusion

The response rates, even when broken down by different characteristics, are high with no unusual results. Even institutions with lower response rates, relative to other institutions, can be classed as having good response rates. To gain a deeper understanding of the variance in response rates between institutions, it may be worthwhile investigating what those institutions are doing to promote the survey with their student alumni, or what resources they are putting into data collection.

CSO Contact Details

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