

An Analysis of Completion in Irish Higher Education: 2007/08 Entrants

FEBRUARY 2019

An Analysis of Completion in Irish Higher Education: 2007/08 Entrants

February 2019

A report by the Higher Education Authority

Victor Pigott and Denise Frawley,
Statistics Unit

Acknowledgements

The Authority wishes to thank higher education institution staff involved in returning student record data to the Higher Education Authority.

For further information, please contact: Mr Victor Pigott (Senior Statistics Manager) and Dr Denise Frawley (Data and Policy Analyst) at statistics@hea.ie.

ISBN 1-905135-65-3

Table of Contents

List of Tables	4
List of Figures	5
Foreword	9
Glossary	11
Executive Summary	13
1. Introduction and Context	17
1.1 Introduction	17
1.2 The National Context	18
1.2.1 <i>Student Numbers</i>	18
1.2.2 <i>Progression Rates</i>	20
1.2.3 <i>Employment and Labour Force Participation</i>	22
1.3 Data Sources and Methodology	24
1.4 Limitations	25
1.5 Report Structure	26
2. Literature Review	29
2.1 Introduction	29
2.2 Understanding Completion	29
2.3 Completion in Context	30
2.3.1 <i>Internationally</i>	30
2.3.2 <i>In Ireland</i>	36
2.3.3 <i>Summary of Completion Rates</i>	39
2.4 Factors influencing Completion	41
2.4.1 <i>Individual Level Factors</i>	41
2.4.2 <i>Institutional Level Factors</i>	44
2.4.3 <i>Labour Market Factors</i>	45
2.4.4 <i>Summary of Factors</i>	46
2.5 Summary	47

3.	Analysis: Institute Type, Institute and NFQ Level	49
3.1	Introduction	49
3.2	Headline Completion Rates by Institute Type, Institute and NFQ Level	49
3.3	Graduations from Different Courses or NFQ Levels	54
3.4	Key Points	56
4.	Analysis: ISCED Field of Study and Subject Areas	59
4.1	Introduction	59
4.2	ISCED Field of Study	59
4.3	High Non-Completion Fields	65
4.4	Key Points	70
5.	Analysis: Gender & Other Demographic Characteristics	73
5.1	Introduction	73
5.2	Gender	73
5.2.1	<i>Gender Overview</i>	73
5.2.2	<i>Peer Outlier Analysis 1: Gender</i>	75
5.3	Age	79
5.4	Domicile	83
5.5	Key Points	84
6.	Analysis: Prior Academic Attainment & Final Grade	87
6.1	Introduction	87
6.2	Leaving Certificate Points	87
6.3	Leaving Certificate Mathematics and English Grades	93
6.4	Final Higher Education Grades	96
6.5	Key Points	105
7.	Analysis: Socioeconomic and Spatial Analysis	107
7.1	Introduction	107
7.2	Socioeconomic Analysis	107
7.2.1	<i>Socioeconomic Group</i>	107
7.2.2	<i>Grant Status</i>	110
7.2.3	<i>Second Level School Type</i>	111
7.2.4	<i>Deprivation Index Scores</i>	113
7.2.5	<i>Peer Outlier Analysis 2: Disadvantaged Students on Select High Entry Points Courses</i>	115

7.3	Spatial Analysis	120
7.3.1	<i>Distance to Higher Education Institution</i>	120
7.3.2	<i>Non-Completion by Dublin Postcode</i>	124
7.4	Key Points	125
8.	Analysis: Temporal Analysis and Other Graduations/Enrolments	127
8.1	Introduction	127
8.2	Time to Degree	127
8.3	Point of Non-Continuance	132
8.4	Other Graduation & Enrolment Data for Initial Non-Completions	138
8.5	Key Points	141
9.	Analysis: Modelling Non-Completion and Final Grade	143
9.1	Introduction	143
9.2	Non-Completion Models	144
9.3	Final Grade Models	151
9.4	Key Points	159
10.	Conclusion	161
	References	166
	Appendices	172
	Appendix A: Sector, Institute and NFQ Level Student Numbers	172
	Appendix B: ISCED Field of Study Analysis Detail, by Institute	174
	Appendix C: Gender Analysis Detail	191
	Appendix D: Leaving Certificate Points and Final HE Grade Analysis Detail	195
	Appendix E: Irish County and Dublin Postcode Analysis Detail	197
	Appendix F: Select High Entry Points (SHEP) Courses	201
	Appendix G: Predicted Probabilities of Non-Completion	204

List of Tables

Table 1.1: Total Enrolments in Higher Education, 2007/08 – 2016/17	18
Table 1.2: New Entrants to Higher Education, 2007/08 – 2016/17	19
Table 1.3: Undergraduate Graduates of Higher Education, 2008-2016	19
Table 1.4: Postgraduate Graduates of Higher Education, 2008-2016	20
Table 1.5: Non-Progression Trends by Sector and NFQ Level, 2007/08 – 2014/15	21
Table 1.6: Population by Principal Economic Status (%) Aged 15+, 2007-2018	23
Table 2.1: International Completion Rates of Full-Time Students (OECD)	33
Table 2.2: Summary of Completion Rates in Selected Studies/Countries	39
Table 3.1: Non-Completion Rates by Sector, Institute and NFQ Level	51
Table 3.2: Start NFQ Level v Finish NFQ Level	56
Table 5.1: Summary of Gender Cohort Model Results	79
Table 6.1: Leaving Certificate Points by Institute Type and Institute	89
Table 6.2: Leaving Certificate Points by ISCED Broad Field of Study and NFQ Level	90
Table 6.3: Leaving Certificate Mathematics and English Grades by ISCED Field of Study	96
Table 6.4: Final HE Grade by Leaving Certificate Points Band	97
Table 7.1: Non-Completion Rates by Sector, Socioeconomic Group and NFQ Level	109
Table 7.2: Non-Completion Rates by Socioeconomic Group and Leaving Cert. Points	110
Table 8.1: Time to Degree, by Institute	130
Table 8.2: Time to Degree, by NFQ Level	131
Table 8.3: Time to Degree, by ISCED Broad Field of Study	132
Table 8.4: Point of Non-Continuance, by Institute Type and Institute	133
Table 8.5: Point of Non-Continuance, Institutes of Technology NFQ Level 6	134
Table 8.6: Point of Non-Continuance, Institutes of Technology NFQ Level 7	135
Table 8.7: Point of Non-Continuance, Institutes of Technology NFQ Level 8	135
Table 8.8: Point of Non-Continuance, by Institute Type, NFQ Level and ISCED Field	136
Table 8.9: Point of Non-Continuance, by ISCED – NFQ Level 8 and All NFQ Levels	138
Table 8.10: Other Graduation/Enrolment Records of Non-Completions, by Institute	139
Table 8.11: Other Graduation/Enrolment Records of Non-Completions, by NFQ Level	140
Table 8.12: Other Graduation/Enrolment Records of Non-Completions, by ISCED	141
Table 9.1: Non-Completion Rates by Institute Type and Institute, without Controls	144
Table 9.2: Non-Completion Logistic Regression Model, by Institute	145
Table 9.3: Non-Completion Logistic Regression Model, by Institute Type	149
Table 9.4: 1 st /Upper 2 nd or Equivalent Proportions by Institute Type and Institute	151
Table 9.5: 1 st /Upper 2 nd /Equivalent Logistic Regression Model, by Institute	153

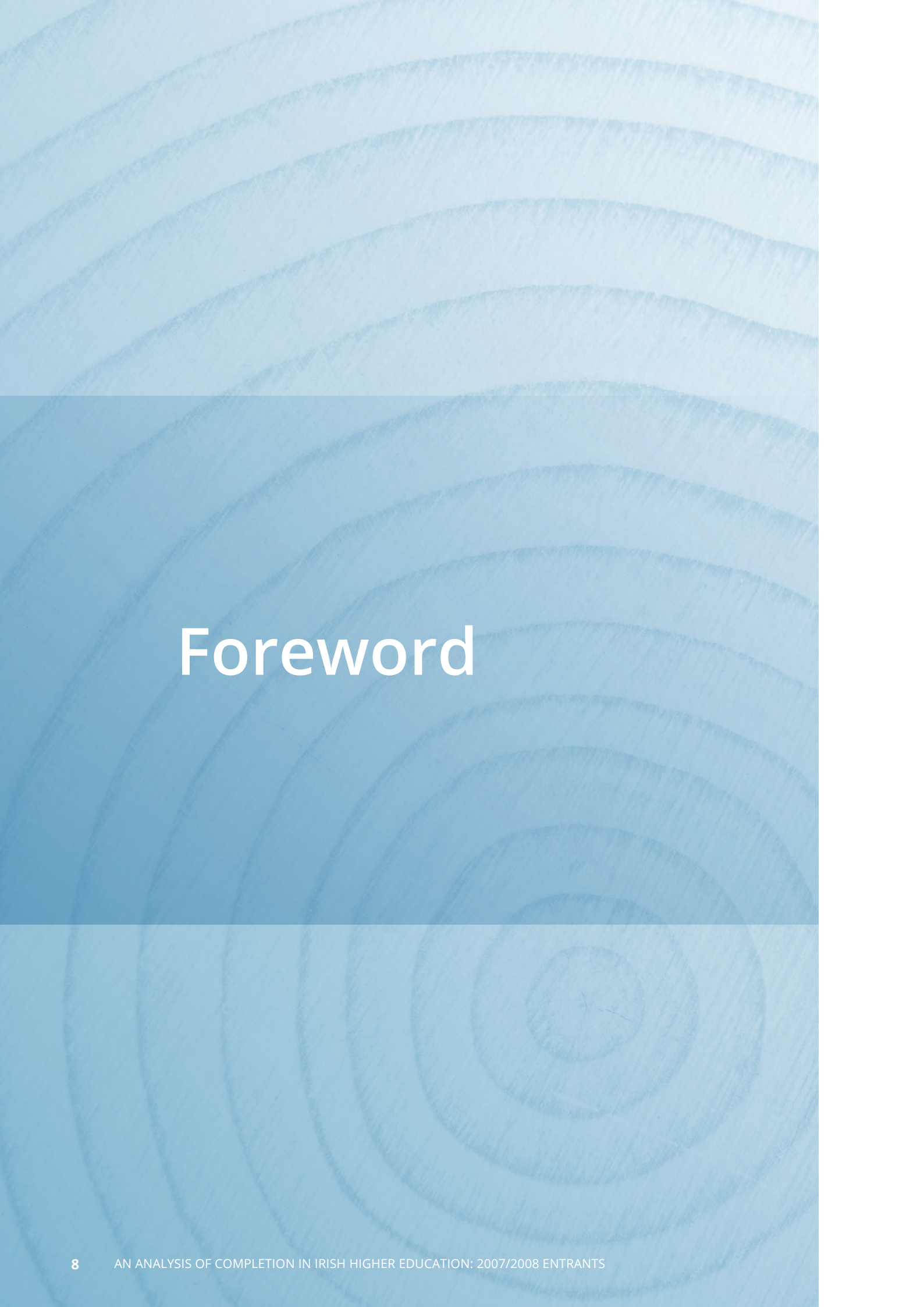
Table 9.6: 1 st /Upper 2 nd /Equivalent Logistic Regression Model, by Institute Type	157
Table A1: Full Institute List by Sector, Student Numbers and Completion Status	172
Table A2: Full Institute List by Sector, Student Numbers and Start NFQ Level	173
Table B1: Completion Rates by Sector, NFQ Level and ISCED Field of Study	174
Table B2 (1-26): Completion Rates by Institute, ISCED Field and NFQ Level	176
Table C1: Gender Composition of Students by Sector, NFQ Level and ISCED Field	191
Table C2: Male and Female Dominated ISCED Areas (>70% One Gender)	193
Table C3: Completion Rates by Gender and Leaving Cert. Points Upon Entry	194
Table D1: Leaving Certificate Points Band by Final HE Grade	195
Table D2: Final HE Grade Group by Leaving Certificate Points Band	195
Table E1: Institute Student Body Composition by Home County, for Irish Students	197
Table E2: Institute Destination of Irish Students by Home County	198
Table E3: Institute Destination of Dublin Students by Postal Code	199
Table F1: Full List of SHEP Courses	201
Table G1: Predicted Probabilities of Non-Completion	204

List of Figures

Figure 1.1: Labour Force Participation Rates (%) by Gender, 2007-2018	22
Figure 1.2: Unemployment Rate of Population Aged 15-74 (%), 2007-2018	24
Figure 2.1: Summary of Factors Influencing Non-Completion of Higher Education	46
Figure 3.1: Completion Rates by Institute Type and NFQ Level	50
Figure 3.2: Non-Completion Rates by Institute, NFQ Levels 6/7 Combined	52
Figure 3.3: Non-Completion Rates by Institute, NFQ Level 8	53
Figure 3.4: Non-Completion Rates by NUTS 3 Region, based on Institute Location	54
Figure 3.5: Completion Rates by Institute Type, NFQ Level and Initial Course	55
Figure 4.1: Completion Rates by ISCED Broad Field of Study	59
Figure 4.2: Non-Completion Rates by ISCED Broad Field of Study and NFQ Level	60
Figure 4.3: ISCED Broad Field – Gender Composition and Non-Completion Rates	61
Figure 4.4: ISCED Broad Field – NFQ Composition and Non-Completion Rates	62
Figure 4.5: Non-Completion Rates by Field of Study and Institute, Rates > 47.5%	63
Figure 4.6: Non-Completion Rates by Field of Study and Institute, Rates < 10%	64
Figure 4.7: Non-Completion Rates by Detailed Field of Study, Rates > 30%	65
Figure 4.8: ISCED Broad Field of Study by Leaving Certificate Points Upon Entry	66
Figure 4.9: Computing Students by NFQ Level, Entry Points and Completion Status	66
Figure 4.10: Engineering Students by NFQ Level, Entry Points & Completion Status	67

Figure 4.11: Computing Students by NFQ Level, Mathematics Grade and Completion Status	68
Figure 4.12: Engineering Students by NFQ Level, Mathematics Grade & Completion Status	68
Figure 4.13: Computing Students by NFQ Level, Gender and Completion Status	69
Figure 4.14: Engineering Students by NFQ Level, Gender and Completion Status	70
Figure 5.1: Completion Rates by Gender	73
Figure 5.2: Completion Rates by Gender, NFQ Level and Institute Type	74
Figure 5.3: 2007/08 New Entrant Cohort by Gender & Gender Course Area	75
Figure 5.4: Completion Rates by Gender/Gender Course Area Cohorts	76
Figure 5.5: Gender/Gender Course Area Cohorts by Entry Leaving Certificate Points	76
Figure 5.6: Non-Completion Rates, Modelled v Actual, by Gender Cohort	77
Figure 5.7: 1 st /Upper 2 nd /Equivalent Rates, Modelled v Actual, by Gender Cohort	78
Figure 5.8: Completion Rates by Age Group	79
Figure 5.9: Age Group by Gender Proportion	80
Figure 5.10: Age Group by Institute Type Proportion	80
Figure 5.11: Age Group by NFQ Level Proportion	81
Figure 5.12: Completion Rates by Age Group and Institute Type	82
Figure 5.13: Completion Rates by Age Group and NFQ Level	82
Figure 5.14: Completion Rates by Domicile Group	83
Figure 5.15: Non-Completion Rates by Country of Domicile	84
Figure 6.1: Completion Rates by Leaving Certificate Points Band	88
Figure 6.2: Leaving Certificate Points Upon Entry by Gender	92
Figure 6.3: Leaving Certificate Points Upon Entry by Gender, NFQ & Institute Type	93
Figure 6.4: Completion Rates by Leaving Certificate Mathematics Grade Achieved	94
Figure 6.5: Completion Rates by Leaving Certificate English Grade Achieved	95
Figure 6.6: Leaving Certificate Points Band by Final HE Grade Group	97
Figure 6.7: 1 st /Upper 2 nd or Equivalent Proportions by Institute	98
Figure 6.8: 1 st /Upper 2 nd or Equivalent Proportions by Institute Type	99
Figure 6.9: 1 st /Upper 2 nd or Equivalent Proportions by ISCED Field of Study	99
Figure 6.10: 1 st /Upper 2 nd or Equivalent Proportions by Gender	100
Figure 6.11: 1 st /Upper 2 nd or Equivalent Proportions by Socioeconomic Group	100
Figure 6.12: 1 st /Upper 2 nd or Equivalent Proportions by Grant Status	101
Figure 6.13: 1 st /Upper 2 nd or Equivalent Proportions by 2 nd Level School Type	101
Figure 6.14: 1 st /Upper 2 nd /Equivalent Proportions by Deprivation Index Score Group	102

Figure 6.15: 1 st /Upper 2 nd /Equivalent Proportions by Leaving Cert. Mathematics Grade	102
Figure 6.16: 1 st /Upper 2 nd /Equivalent Proportions by Leaving Cert. English Grade	103
Figure 6.17: 1 st /Upper 2 nd /Equivalent Proportions by Year of Graduation	103
Figure 6.18: 1 st /Upper 2 nd /Equivalent Proportions by Years to Completion	104
Figure 6.19: 1 st /Upper 2 nd Proportions by Year of Graduation v All Graduations	105
Figure 7.1: Non-Completion Rates by Socioeconomic Group	108
Figure 7.2: Completion Rates by Grant Recipient Status	111
Figure 7.3: Completion Rates by Second Level School Type	112
Figure 7.4: Second Level School Type by Leaving Certificate Points	112
Figure 7.5: New Entrants by Deprivation Group and Non-Completion Rate	113
Figure 7.6: Non-Completion Rates by Deprivation Index Score Decile	114
Figure 7.7: Deprivation Index Score Groups by Leaving Certificate Points	115
Figure 7.8: Select High Entry Points Course Students by Institute	116
Figure 7.9: Maps of Student Proportions by County for All Courses & SHEP Courses	116
Figure 7.10: Completion Rates for Students on SHEP Courses v Other Courses	117
Figure 7.11: Non-Completion Rates, SHEP v Other Courses, by Socioeconomic Group	118
Figure 7.12: Non-Completion Rates, SHEP v Other Courses, by 2 nd Level School Type	119
Figure 7.13: Non-Completion Rates, SHEP v Other Courses, by Deprivation Group	120
Figure 7.14: Maps of Distance Travelled and Non-Completion Rates, by Home County	121
Figure 7.15: Leaving Certificate Points and Non-Completion Rates, by Home County	122
Figure 7.16: Distance from Home County to HEI and Non-Completion Rates, by HEI	123
Figure 7.17: Road Distance from 2 nd Level School to HEI and Completion Rates	124
Figure 7.18: Dublin Students Completion Rates by Dublin Postcode	124
Figure 8.1: Anticipated Length of Course for New Entrants 2007/08	128
Figure 8.2: Actual Time to Completion v Anticipated Length	129
Figure 8.3: Actual Years of Graduation by NFQ Level	129
Figure 9.1: Non-Completion Average Predicted Probabilities, by Institute	147
Figure 9.2: Non-Completion Average Predictions, by Leaving Cert Points	150
Figure 9.3: 1 st /Upper 2 nd /Equivalent Average Predicted Probabilities, by Institute	155
Figure 9.4: 1 st /Upper 2 nd /Equivalent Average Predictions, by Leaving Cert Points	158
Figure D1: Map of 1 st /Upper 2 nd or Equivalent Proportions by Home County	196
Figure G1: Probability of Non-Completion by LC Points (Adjusted Predictions)	214
Figure G2: Probability of Non-Completion by LC Points/Gender (Interacted)	214
Figure G3: Probability of Non-Completion by LC Points/Deprivation (Interacted)	215
Figure G4: Probability of Non-Completion by LC Points/School Type (Interacted)	215



Foreword

Foreword

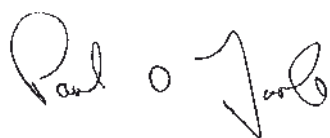
Building on Ireland's impressive achievements in the expansion of higher education opportunities, this report has – for the first time in an Irish context – examined completion rates across all HEA-funded institutions. The data reflect whether a student who entered higher education in 2007/08 graduated from his or her particular higher education institution. Given the increasing importance of retention and progression in higher education policy and practice, the publication of this report is especially timely as it enriches our evidence-base for related policy development.

The findings show that, on average, 82% of Level 8 entrants completed their studies, more specifically 94% for college, 83% for university and 74% for institute of technology entrants. Across all levels and sectors, 76% of 2007/08 full-time new entrants completed their higher education programme within the institution they started in.

Completion rates are somewhat lower among Level 6/7 entrants in the institutes of technology, at 62%, which reflects the different and broader profile of students entering higher education at these levels. The most striking finding of the report is the very positive correlation between Leaving Certificate performance and successful completion. In the institute of technology sector 12% of students enter with more than 400 Leaving Certificate points compared to 73% of university and 91% of college students.

Ireland performs well in terms of completion rates by international standards. That said, there remains an issue among certain cohorts, particularly for those studying computing and engineering related courses. Given the array of factors influencing completion rates, facilitating pathways to course completion for students necessitates a whole-system approach.

This type of research and analysis illustrates the huge evidence value of the HEA's Student Record System (SRS). It is only by improving our data-driven understanding of the factors that influence retention that we will be better placed to provide evidence-based policy formulation in this area. By enriching our understanding of the challenges that we face, this report will inform our strategic dialogue with institutions and will ultimately help to improve the quality of the student experience in Irish higher education.



Paul O'Toole,
CEO

Higher Education Authority



Glossary

Glossary

AME	Average Marginal Effect
CIT	Cork Institute of Technology
CSO	Central Statistics Office
DCU	Dublin City University
DEIS	Delivering Equality of Opportunity in Schools
DIT	Dublin Institute of Technology
ERC	Educational Research Centre
HE	Higher Education
HEA	Higher Education Authority
HEFCE	Higher Education Funding Council for England
HEI	Higher Education Institution
HESA	Higher Education Statistics Agency (UK)
IoT	Institute of Technology
ISCED	International Standard Classification of Education
IT	Institute of Technology
LC	Leaving Certificate
NCAD	National College of Art and Design
NFQ	National Framework of Qualifications
NUI	National University of Ireland
OECD	Organisation for Economic Cooperation and Development
SEG	Socioeconomic Group
SHEP	Select High Entry Points
SRS	Student Record System
TCD	Trinity College Dublin
UCC	University College Cork
UCD	University College Dublin
UL	University of Limerick



Executive Summary

Executive Summary

This is the first analysis of completion rates in Irish higher education since 2006 and the first completion analysis covering all HEA funded higher education institutions. Overall, 76% of 2007/08 new entrants (full-time undergraduates) are found to have completed within the institute they started in. Rates are largely in line with previous ERC analyses of completion in 2000 and 2001 (57% in institutes of technology and 83% in universities respectively). The corresponding rates in this analysis are 66% (over a longer time period) and 83%. Completion rates in Ireland compare favourably internationally. However, given the substantially varying methodologies employed in measuring completion across countries, analysis within Ireland over time is a more suitable gauge. Despite the positive results overall, there remains an issue of high non-completion rates among certain cohorts, particularly in computing and engineering courses in institutes of technology. Leaving Certificate points at entry is found to be the strongest predictor of completion. Key findings of this analysis are presented below by chapter.

CHAPTER 3: Institute Type, Institute and NFQ Level

- ▶ 76% of 2007/08 new entrants to higher education institutions completed their studies and graduated, across all levels and sectors.
- ▶ Completion rates range from 94% in colleges (NFQ level 8) to 61% in institutes of technology at NFQ level 7.
- ▶ The overall completion rate at level 8 in institutes of technology is 74%, compared with 83% in universities and 94% in colleges.
- ▶ Of those that graduate, the vast majority graduate at the NFQ level they started at, or higher, and from the course they started in.

CHAPTER 4: ISCED Field of Study and Subject Areas

- ▶ Across the fields of study, the highest completion rate is in the education field at 91%, followed by health and welfare at 84%; the lowest completion rate is in the computing field at 55%.
- ▶ Based on student numbers, education and health and welfare are the two most female-dominated areas (75% and 83% female respectively). Computing and engineering have the lowest proportion of females (18% and 15% respectively).
- ▶ In terms of detailed field of study areas, hotel, restaurant and catering has the lowest completion rate of 53%. The two detailed fields that comprise the computing field overall are in the top six detailed fields with the lowest completion rates (computer science 54% and computer use 61%).

- ▶ 55% of computing students that completed at level 8 entered with over 400 Leaving Certificate points compared with 25% of those that did not complete.
- ▶ 24% of computing students that completed at level 8 entered with at least a HC3 in Mathematics compared with 14% of those that did not complete.

CHAPTER 5: Gender and Other Demographic Characteristics

- ▶ The overall completion rate for males is 71% compared with 81% for females.
- ▶ Lower completion rates for males are particularly prevalent at NFQ level 6 and NFQ level 7 in institutes of technology (59% and 58% respectively).
- ▶ Males in male majority course areas have the lowest completion rate at 64% – Leaving Certificate points upon entry is a key factor in this.
- ▶ Students who enter between the age of 20 and 24 have the lowest completion rate at 67%, compared with 78% for those that enter aged less than 20 and 76% for those that enter aged 25 or over.
- ▶ The overall completion rate for Irish domiciled students is 76% compared with 77% for non-Irish domiciled students.

CHAPTER 6: Prior Academic Attainment and Final Grade

- ▶ The completion rate for students that enter with between 505 and 550 Leaving Certificate points is 95% compared with 43% for those that enter with between 205 and 250 points.
- ▶ The completion rate for students that enter with an A in higher level Mathematics is between 95-96% compared with 62-63% for students that enter with a D in ordinary Mathematics.
- ▶ The completion rate for students that enter with an A in higher level English is between 90-91% compared with 65-71% for students that enter with a D in ordinary English.
- ▶ 84% of students that entered with between 505 and 550 Leaving Certificate points were awarded a 1st/upper 2nd or equivalent compared with 23% of those that entered with between 205 and 250 points.
- ▶ 65% of students that entered higher education from a fee-paying second level school were awarded a 1st/upper 2nd or equivalent compared with 48% of students that entered from a DEIS second level school.

CHAPTER 7: Socioeconomic and Spatial Analysis

- ▶ Students from higher professional and farming backgrounds have the lowest non-completion rates at 16%, students from a semi-skilled socioeconomic background have the highest non-completion rate at 29%.
- ▶ In terms of second level school type, students coming from DEIS schools have a lower completion rate of 65%, compared with 72% for those from standard schools and 76% for those from fee-paying second level schools.

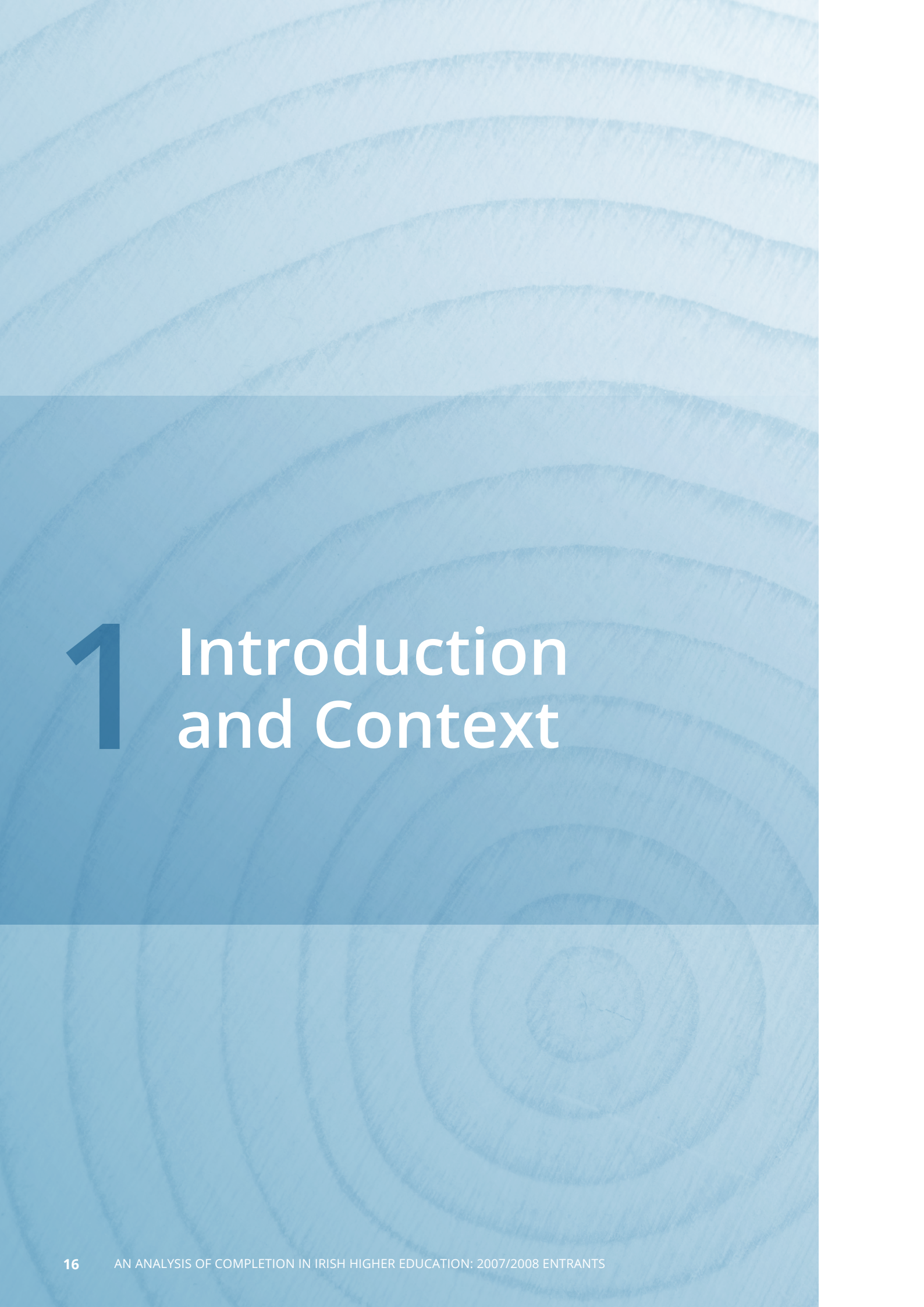
- ▶ Based on the area second level schools are in, students from affluent areas have a non-completion rate of 25% compared with 30% for students from disadvantaged areas.
- ▶ Students from disadvantaged backgrounds perform just as well as those from affluent backgrounds in select high points courses (9% non-completion rate for those from disadvantaged areas compared with 10% for those from affluent areas).
- ▶ For Dublin students, based on postal code, students from Dublin 4 and Dublin 6 have the highest completion rates at 87% and 85% respectively; those from Dublin 24 and Dublin 10 have the lowest completion rates at 67% and 65% respectively.

CHAPTER 8: Temporal Analysis and Other Graduations/Enrolments

- ▶ 58% of entrants graduated on time, 71% graduated on time or up to one year late and 76% graduated in total.
- ▶ Of the total new entrant cohort in 2007/08, 24% did not complete – 15% of the total did not progress into 2nd year. Therefore, 63% of non-completion is accounted for by 1st year non-progression.
- ▶ A higher proportion of non-completion is accounted for by 1st year non-progression in institutes of technology compared with universities (65% v 53%).
- ▶ Based on available data, 17% of those that did not complete within institute went on to graduate elsewhere. A further 10% enrolled but did not graduate elsewhere.
- ▶ Those who did not complete at level 8 were more likely to go on to graduate elsewhere (22%) compared to level 6 (10%) and level 7 (13%).

CHAPTER 9: Modelling Non-Completion and Final Grade

- ▶ After controlling for the set of student, course and institute characteristics in multivariate models, the probability of non-completion for students in institutes of technology is only slightly more than for students in universities (23.9% v 23.5%).
- ▶ Multivariate modelling shows that after controlling for the set of characteristics, particularly Leaving Certificate points, males are 2.8 percentage points more likely to not complete compared with females.
- ▶ Models show that the probability of non-completion varies across field of study from 18% and 19.1% in health and education respectively to 33.4% in computing.
- ▶ Based on multivariate model results, the probability of not completing for students that enter with between 505 and 550 Leaving Certificate points is 6.2% compared with 50.9% for those that enter with between 205 and 250 Leaving Certificate points.
- ▶ The predicted probability of non-completion for males entering with between 205 and 250 Leaving Certificate points, studying computing at NFQ level 6/7 or NFQ level 8, is over 70% compared with 2% for females entering with between 505 and 550 Leaving Certificate points, studying education at level 8.



1 Introduction and Context

1 Introduction and Context

1.1 Introduction

Ireland has been remarkably successful in pursuing its ambitious goals 'to widen participation and increase student and graduate numbers' in higher education in order to position itself within the front rank of OECD countries (Government of Ireland, 2006, p. 202). Participation in higher education in Ireland has risen steadily over recent decades and this is clearly reflected in the proportion of its young people and adults who are qualified to higher education level. In 2017, 54% of 25-34 year-olds in Ireland had attained a tertiary education compared to 45% across OECD countries (OECD, 2018). However, it is widely acknowledged, both nationally and internationally, that it is not sufficient to merely increase access to, and participation in, higher education, students must also be encouraged and supported to successfully complete their studies (Hovdhaugen et al., 2015).

The concepts of student success and drop-out have been flourishing in the literature for many years, especially in the US. According to Tinto (2006), a whole industry of institutional research has been developing around student success due to the fact that completion rates play an important role in signalling the quality of teaching and learning for potential students in choosing their higher education institution. Internationally comparable measures of student progression and completion in higher education are difficult to develop due to the variety of systems of entry and access to higher education that exists across countries. These difficulties are compounded by methodological and definitional issues. As argued by Van Stolk et al. (2007, p. xii), 'it is challenging to make comparisons between retention rates of countries given the differences in how retention and completion rates are defined and calculated'. Despite these difficulties, understanding successful progression and completion in higher education has become increasingly important against the background of expanding educational opportunities and commitments to promote greater equality in access to higher education, in particular for underrepresented groups. Minimising non-completion rates is an important part of ensuring that the resources available to the sector are utilised with maximum efficiency.

Given the increasing importance of retention and progression in higher education policy and practice, the publication of this report on completion is especially timely as it addresses a gap in our evidence-base. A number of studies on non-completion already exist, most notably studies conducted by the Educational Research Centre (1997 & 2000), Morgan et al. (2001) and the Council of Directors of the Institutes of Technology (2006). This report, for the first time in an Irish context, independently examines successful participation and completion in all HEA-funded higher education institutions. The data in this report reflects whether or not a student who entered higher education in the 2007/08 academic year graduated from his or her particular higher education institute by 2016. The report aims to provide benchmark data, fill in important gaps in knowledge and offer a comprehensive overview of completion in higher education in Ireland.

1.2 The National Context

In order to provide a national context for the study of completion in Ireland, this section will briefly outline trends in higher education student numbers (enrolments, new entrants and graduates) from 2007/08 up until 2016/17. Furthermore, it will provide a summary of progression rates in higher education between the March census data in first year and the March census data in second year over the same time period. Lastly, this section will discuss employment and labour force participation trends in Ireland over the last 11 years since, and as the literature shows, employment and third level education can be substitutes.

1.2.1 Student Numbers

As shown in table 1.1 below, overall enrolments to the higher education system continue to rise, with 225,628 full-time, part-time and remote students enrolled in HEA funded institutions in 2016/17¹. This represents an increase of 30% since 2007/08. Furthermore, the number of full-time new entrants to undergraduate higher education courses exceeded 43,000 in 2016/17, a figure which is 20% higher than the 2007/08 figure².

Table 1.1: Total Enrolments in Higher Education, 2007/08 – 2016/17

ACADEMIC YEAR	COLLEGES	INSTITUTES OF TECHNOLOGY	UNIVERSITIES	TOTAL	% CHANGE
2007/2008	10,374	67,436	95,796	173,606	
2008/2009	10,931	70,508	99,813	181,252	4%
2009/2010	11,377	78,044	104,010	193,431	7%
2010/2011	11,861	81,367	105,879	199,107	3%
2011/2012	11,868	81,721	108,573	202,162	2%
2012/2013	11,895	83,497	109,636	205,028	1%
2013/2014	12,057	86,454	112,258	210,769	3%
2014/2015	12,804	88,187	113,598	214,589	2%
2015/2016	12,670	90,150	119,798	222,618	4%
2016/2017	10,642	89,705	125,281	225,628	1%

1 Colleges refer to 5 institutions in this analysis, 4 teacher training colleges and the NCAD.

2 Please note that the figures outlined in the student numbers tables may not match previously published HEA figures (e.g. website tables and Key Facts and Figures reports) due to institutional updates and definitional changes to programme types over time.

Table 1.2: New Entrants to Higher Education, 2007/08 – 2016/17

ACADEMIC YEAR	COLLEGES	INSTITUTES OF TECHNOLOGY	UNIVERSITIES	TOTAL	% CHANGE
2007/2008	1,826	16,026	18,585	36,437	
2008/2009	1,946	17,516	19,934	39,396	8%
2009/2010	2,044	19,475	20,191	41,710	6%
2010/2011	2,019	19,177	20,202	41,398	-1%
2011/2012	2,160	19,495	19,882	41,537	0%
2012/2013	2,138	19,311	20,512	41,961	1%
2013/2014	2,206	19,117	20,206	41,529	-1%
2014/2015	2,251	19,221	20,921	42,393	2%
2015/2016	1,470	19,529	22,461	43,460	3%
2016/2017	1,613	18,930	23,026	43,569	0%

In terms of graduation numbers, as shown in table 1.3 below, there has been an increase of 25% in the number of undergraduates graduating between the 2008 and 2016. A much larger increase of 45% is noted for postgraduate graduates over the same time frame (see table 1.4).

Table 1.3: Undergraduate Graduates of Higher Education, 2008-2016

GRADUATION YEAR	COLLEGES	INSTITUTES OF TECHNOLOGY	UNIVERSITIES	TOTAL	% CHANGE
2008	1,738	18,356	19,001	39,095	
2009	2,117	18,270	18,073	38,460	-2%
2010	2,167	19,074	18,860	40,101	4%
2011	2,442	20,299	19,639	42,380	6%
2012	2,275	20,780	20,533	43,588	3%
2013	2,374	22,212	21,329	45,915	5%
2014	2,345	22,619	21,775	46,739	2%
2015	1,585	22,710	20,911	45,206	-3%
2016	3,021	24,015	21,733	48,769	8%

Table 1.4: Postgraduate Graduates of Higher Education, 2008-2016

GRADUATION YEAR	COLLEGES	INSTITUTES OF TECHNOLOGY	UNIVERSITIES	TOTAL	% CHANGE
2008	780	1,759	11,807	14,346	
2009	1,432	2,012	12,528	15,972	11%
2010	1,619	2,297	14,205	18,121	13%
2011	1,404	2,318	13,920	17,642	-3%
2012	1,449	2,262	13,347	17,058	-3%
2013	1,508	2,312	14,990	18,810	10%
2014	1,456	2,754	15,580	19,790	5%
2015	1,583	2,819	14,675	19,077	-4%
2016	1,946	2,928	15,990	20,864	9%

1.2.2 Progression Rates

To date, the HEA has carried out six studies on the progression of undergraduate new entrants between their first and second year of study (between the two March census dates each year). The analysis draws on data extracts from the Student Record System (SRS) and presents non-progression rates across a range of fields for full-time new entrants studying at levels 6, 7 and 8. Non-progression is recorded when a full-time new entrant's student ID from an individual institution is not linked across the second academic year of study in that institution. Re-enrolling, repeat, exam only and internal transfer students are all categorised as progressing, whereas external students and students whose IDs are no longer on record are included in the non-progression figures.

Table 1.5 shows the headline rates from these analyses. It is clear that the overall non-progression rate has remained relatively stable over the years, ranging from 15% (in 2007/08 – 2008/09), 16% (from 2010/11 – 2011/12, 2011/12 – 2012/13 and 2012/13 – 2013/14), 15% (from 2013/14 – 2014/15) and 14% in the most recent analysis (2014/15 – 2015/16). Of note, the rate of non-progression at level 8 in the colleges sector has witnessed a rise from 4% in 2007/08 – 2008/09 to 8% in 2014/15 – 2015/16. The cohort analysed in this paper with regard to completion is the 2007/08 entrants (15% non-progression overall).

Table 1.5: Non-Progression Trends by Sector and NFQ Level, 2007/08 – 2014/15

SECTOR	LEVEL	2007/08 – 2008/09	2010/11 – 2011/12	2011/12 – 2012/13	2012/13 – 2013/14	2013/14 – 2014/15	2014/15 – 2015/16
Institutes of Technology	<i>Level 6</i>	25%	30%	30%	26%	26%	27%
	<i>Level 7</i>	26%	28%	29%	28%	27%	25%
	<i>Level 8</i>	16%	17%	17%	17%	16%	15%
	<i>All New Entrants</i>	22%	24%	24%	23%	21%	21%
Universities	<i>Level 8</i>	9%	9%	10%	11%	11%	10%
Colleges	<i>Level 8</i>	4%	4%	4%	6%	6%	8%
All Institutions	<i>Level 8</i>	11%	11%	11%	12%	12%	11%
All Institutions	<i>All New Entrants</i>	15%	16%	16%	16%	15%	14%

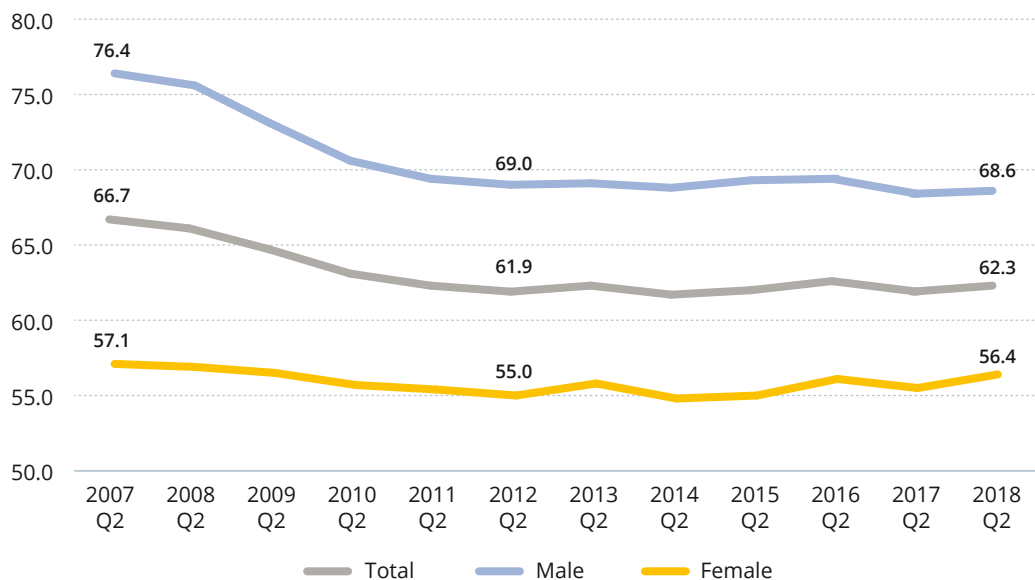
The most recent HEA (2018) findings on non-progression corroborate previous evidence (e.g. HEA, 2010) that certain groups of students are more at risk, than their peers, of not progressing beyond first year in their studies. In particular, the findings of multivariate logistic regression models show that prior academic achievement (i.e. Leaving Certificate points) is the strongest predictor of non-progression among new entrants, all else being equal. In addition, the research has shown that gender and NFQ level are also strongly influencing non-progression rates between first and second year. Females are more likely to progress than males as too are those studying NFQ level 8 (when compared to levels 6 and 7), even after controlling for individual and institutional based characteristics. While the initial descriptive statistics show stark contrasts between the universities and institutes of technology in terms of non-progression (for example, 15% of level 8 new entrants in the institutes of technology did not progress to second year in 2014/15, compared to 10% of such students in the universities), the more in-depth regression analysis shows that after controlling for a set of student and course/institute level characteristics, the odds of not progressing are higher in certain universities than in some of the institutes of technology (HEA, 2018). This research points to the importance of interpreting headline differences in non-progression rates between sectors and institutions with caution. Statistical techniques, such as regression, are required to tease out the underlying processes at play given the complexity of non-progression as a policy issue.

1.2.3 Employment and Labour Force Participation

As will be discussed in greater detail in the literature review, a common economic theory in relation to completion of higher education is concerned with the human capital approach (Becker, 1964). This approach assumes that a student will stay in higher education so long as the social and economic benefits outweigh any costs and benefits associated with alternative activities, such as working full-time. This section provides a brief overview of participation, employment and unemployment trends in Ireland from 2007 to 2018. Unless otherwise stated, the data in this section is taken from the Central Statistics Office's Labour Force Survey³.

The labour force participation rate was 62.3% in Q2 2018 (see figure 1.1 below). This indicator measures those in employment and those seeking employment as a proportion of the working age population. The 2018 participation rate is more than four percentage points below the pre-crisis peak in 2007. The gender gap has reduced somewhat over time, with a notable reduction from 19.3 percentage points in 2007 to 12.2 percentage points in 2018. The overall reduction in labour force participation is partly due to an increase in third level participation. As employment opportunities became fewer during the recession years, third level participation increased. This change should have been a driver of higher completion rates at third level as opportunities in the labour market were not as available for those leaving third level education early. Conversely, the increase in third level participation, for instance for cohorts that were previously employed in the construction industry, may have led to entrants unsuited to the academic challenges of third level in areas such as computer science and engineering.

Figure 1.1: Labour Force Participation Rates (%) by Gender, 2007-2018



Source: CSO (2018) Labour Force Survey, ILO definition – Table QLF28. Note: Age 15 and over.

3 See CSO Labour Force Survey Quarterly Series at www.CSO.ie for more details.

Table 1.6 below shows the changing composition of the population aged 15 years and over in terms of their principal economic status, from 2007 up until 2018. The most significant shift is the move away from 'home duties', with 15% of those aged 15 and over engaged in such activities in 2007 compared to 9% in 2018. Furthermore, the proportion of those engaged in work has reduced over time. While 60% of those aged 15 and over were 'in work' in 2007, it reduced to 50% in 2012 and slowly increased to 56% in both 2017 and 2018. Those classified as 'student' status increased from 9% in 2007 to 11% in 2018.

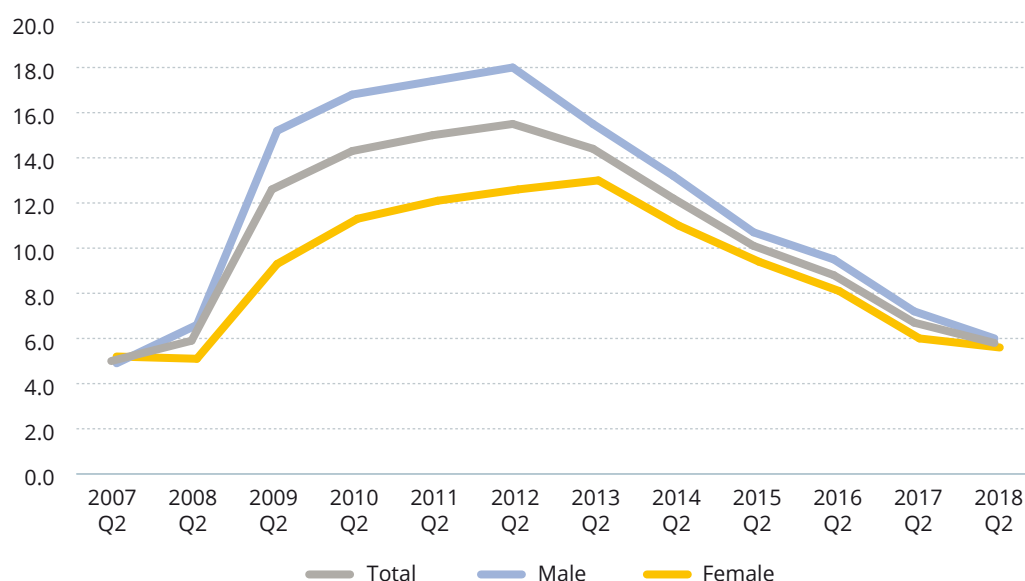
Table 1.6: Population by Principal Economic Status (%) Aged 15+, 2007-2018

PRINCIPAL ECONOMIC STATUS	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% POINT CHANGE 2007-2018
At work	60%	59%	54%	52%	51%	50%	51%	52%	54%	54%	56%	56%	-5%
Unemployed	4%	4%	9%	10%	10%	11%	9%	8%	7%	6%	5%	5%	1%
Student	9%	9%	10%	10%	10%	11%	11%	11%	11%	11%	11%	11%	2%
Engaged on home duties	15%	15%	15%	15%	14%	14%	13%	13%	13%	12%	11%	9%	-6%
Retired from employment	9%	9%	9%	9%	10%	11%	11%	12%	12%	12%	13%	15%	6%
Other	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	5%	6%	2%

Source: CSO (2018) Labour Force Survey – Table QLF19. Note: Data refer to Q2 of a given year.

As shown in figure 1.2, the total unemployment rate of 5.8% in Q2 of 2018 is significantly lower than the rates in the latter stages of the recession, whereby the rate surged into double digits by 2009 (12.6%) and had reached 15.5% by 2012. The divergence between male and female rates after 2007 was largely due to the implosion of the predominantly male construction industry while the gender gap in unemployment appears to have been closing steadily since 2012.

Figure 1.2: Unemployment Rate of Population Aged 15-74 (%), 2007-2018



Source: CSO (2018) Labour Force Survey – Table QLF02. Data are seasonally adjusted.

In summary, Irish society has witnessed many changes over the last eleven years with regard to participation and progression in higher education as well as employment and labour force participation. While it is not clear as to the extent to which the economic climate has impacted on the completion and non-completion of higher education, such factors have arguably contributed to the decision-making process of students, and their families, over this time frame. The above analysis is also worth considering when non-completion rates of males in computer science and engineering in institutes of technology are analysed.

1.3 Data Sources and Methodology

The student data used in this analysis was extracted from the HEA's in-house database of information relating to students in all HEA funded institutions – the Student Record System (SRS), which contains an individual record for each student in each academic year. The SRS was established in the university sector in 2004 and in the institute of technology sector in 2007. The data on which this analysis is based was extracted from the SRS by tracking student IDs within institutions and across academic years. Completion rates are based on graduations within institute up to the class of 2016 graduations. PPSN was also used to determine if those that did not complete within institute subsequently enrolled in or graduated from another institute.

The census dates used for this analysis – 1st March 2008 up until 1st March 2017 – span the academic years 2007/08 up to 2016/17. For the purposes of this report, only student data relating to full-time undergraduate new entrants (NFQ levels 6-8) are analysed. Only level 8 is analysed in the university and college sectors as level 6/7 numbers in those institutions are very low. Foundation, access and occasional students are excluded from the analysis. Therefore, the student cohort analysed are comprised of level 6 undergraduate certificate students, level 7 ordinary degree students and level 8 honours bachelor degree students. These groups account for the vast majority of new entrants in 2007/08. 26 institutions are included in the analysis. The Royal College of Surgeons is not included as it is not a core-funded institute. In addition to the administrative SRS data, socioeconomic data was collected by surveying the student body during the registration process (the Equal Access Survey). The non-mandatory nature of the survey resulted in wide variations in response rates across institutions.

1.4 Limitations

The reader should be aware of some limitations that the dataset poses for this analysis. The absence of full-coverage national identifier data (i.e. PPSN) covering all students and graduates and the incompleteness of some socioeconomic data returned to the SRS are factors that have hindered the presentation of a fully comprehensive analysis. Variables lacking full coverage include Leaving Certificate points, Leaving Certificate Mathematics and English grades, grant status, second level school type, socioeconomic group, deprivation index scores (since these are based on second level school data) and road distances to HEI (also based on second level school data). The coverage of grant status and Leaving Certificate Mathematics and English grade data is particularly sparse, so caution should be exercised when drawing conclusions from those analyses.

In addition, there are many limitations associated with secondary data analysis of non-completion in higher education more generally. For example, as highlighted by Moore (2014), it is important to note the following:

- ▶ Student non-completion is not a universally negative phenomenon.
- ▶ It is inappropriate to specify an 'ideal' retention rate for any higher education course because the competencies and profile of student groups will differ according to changing entry requirements and learner characteristics.
- ▶ Retention must be understood as a complex and multidimensional issue (Yorke, 1999) and institutional commitment, the establishment of supportive student relationships, student involvement and learner support within university settings are extremely important factors to consider (Tinto, 2002).

Furthermore, as highlighted by Mathews and Mulkeen (2002), studies of completion must be retrospective in allowing time for completion of the longest courses and for students who transfer from one course to another or take one or more years out to graduate. However, while retrospective studies have the strength of comprehensiveness, the data lacks the impact of immediacy in a rapidly changing social and economic climate (Mathews and Mulkeen, 2002).

It is important to acknowledge that this study provides a purely statistical analysis. Completion is defined as a student who has graduated from the higher education institution where his or her course commenced, either from the particular course he/she originally enrolled in or another course within the same institution. Students can only be fully tracked within institutions, and not across institutions, since PPSN coverage was not sufficient to allow for full cross-institute matching. PPSN cross institute analysis was conducted on non-completions to determine subsequent enrolment and graduation, but this is an extra piece of analysis at the end of the main analysis rather than being a part of the central methodology. Moreover, this analysis does not account for qualitative factors around motivation, study patterns, student views on teaching and learning as well as the work practices of students.

1.5 Report Structure

This report is quantitative in nature and draws from data returned by HEA funded institutions to the Student Record System (SRS) and examines completion across a range of fields of study, NFQ levels (6-8) and institutions. Significant attention is given to the extent to which individual student characteristics, such as gender, age, prior academic attainment (i.e. Leaving Certificate points) and socioeconomic background influence completion. This report also examines differences between the student cohorts entering the institutes of technology, university and college sectors. Furthermore, chapter 9 presents findings of multivariate logistic regression models which examine the influence of a range of individual and institution levels factors on the probability of non-completion of higher education and on the probability of achieving a first or upper second class award, for those that do complete.



2 Literature Review

2 Literature Review

2.1 Introduction

This chapter will examine the literature in the area of student completion. It will briefly allude to the definitional issues around completion and retention and will highlight the move towards student 'success' terminology. International and national-based approaches to the topic will also be covered before examining the factors that have been shown to influence non-completion of higher education.

2.2 Understanding Completion

Study completion has a number of different meanings ranging from the completion of a study programme/qualification to the successful placement of graduates in appropriate 'graduate jobs' (European Commission, 2015, p. 31). The concept of non-completion includes many interrelated aspects, such as persistence, drop-out, completion, time-to-degree and transfer to the labour market. While in some countries the mere completion of a study programme is considered a 'success', the term often expands to include additional aspects in other countries. As emphasised in the Higher Education Academy's (2016) framework for student progression in the UK, student success must be measured across four interrelated components: 1.) access (across the student lifecycle), 2.) retention (completing a programme of study within a specific timeframe), 3.) attainment (the level of degree-class award) and 4.) progression in (and beyond) higher education. As a result, student completion needs to be understood as a multidimensional concept which has different meanings and interpretations in different countries. According to a European Commission (2015) review on non-completion, European definitions of completion includes the following:

- ▶ Continuation from one year of study to another;
- ▶ Completion of the whole higher education programme of study;
- ▶ Duration to completion within a specific time frame;
- ▶ Attainment of intended qualification at the end of the programme of study or period in higher education;
- ▶ Achieving a good grade or higher education qualification;
- ▶ Progression into employment or training;
- ▶ Progression into graduate employment or training;
- ▶ Progression into postgraduate study.

The most widespread theory applied to the study of non-completion in higher education is Tinto's interactionalist theory (Tinto, 1975; 1982; 1993). Tinto assumes a strong relationship between the higher education system and a student's decision to leave higher education. Therefore, socialisation during higher education as well as the person-environmental fit are fundamental components of his work on non-completion. According to Tinto (2006), an industry of institutional research has been developing around student success due to the fact that completion rates play a vital role in signalling the quality of teaching for potential students when choosing their higher education institution. Although some countries have similar student success goals, different strategies have been implemented at the national level. For example, Norway, Italy and Finland have all implemented reforms aimed at improving completion rates, and these reforms can be seen as different forms of country adaptation to the Bologna process (Ahola, 2012; Di Pietro and Cutillo, 2008; Hovdhaugen, 2009). Furthermore, drop-out and completion rates are measured in very different ways (Hagedorn, 2004). Although this involves describing a rather simple matter – students who successfully complete or unfortunately leave their study programme – the indicators of 'success' are difficult to operationalise and calculate. Identifying students who have finally left higher education is a major issue. For instance, a student may leave higher education but subsequently return after a break from study. Also, changes to study programmes and/or in the higher education institutions are a challenge for these indicators. Furthermore, there are issues and complexities when deciding when non-completion becomes problematic. Tinto (1993) argues that institutions themselves must decide which forms of departure are to be defined as 'drop-out' or non-completion.

2.3 Completion in Context

Student non-completion of higher education has emerged as a significant topic of concern both nationally and internationally. Since the 1970s, a significant body of work has emerged on the issue of student retention (for example, Chen and Desjardins, 2008; Georg, 2009; Glogowska et al., 2007; Rootman, 1972; Spady, 1971). As argued by the National Forum for the Enhancement of Teaching and Learning in Higher Education (2015), the emphasis has moved from identifying student commitment as the most crucial factor in student retention (Tinto, 1975) to a more nuanced understanding of the multiplicity of factors that underpin it (Green and Baird, 2009). This section will briefly outline the main international approaches to non-completion before providing an Irish-based context to the topic.

2.3.1 Internationally

International research on retention has shown that attrition is the highest in a student's first year of study (e.g. Blaney and Mulkeen, 2008; Mannan, 2007; Yorke and Longden, 2008) and this is particularly the case for those on certain programmes, such as the Health Sciences. Promoting student success in higher education has become an important policy issue in Europe over the last 15 years, and the EU 2020 Strategy has a direct objective to ensure that at least 40 per cent of 30-34-year-olds complete higher education (European Commission, 2015). Achieving this goal is regarded as crucial for creating the high-level skills that Europe's knowledge-intensive economic sectors need. However, as discussed earlier, international comparisons need to be treated with caution due to differences in the nature and duration of degrees across countries as well as the different methodologies used in measuring completion rates.

According to a European Commission (2015b) comparative study on higher education drop-out and completion in Europe, there is huge variety in the funding, information and organisational measures facilitating student success in Europe. Across Europe, over 170 national and institutional policy instruments have been identified across 35 countries in total and these fall under three main policy headings:

- ▶ *Funding and financial incentives*: financial rewards are offered to change the behaviour of students and or institutions to increase student success;
- ▶ *Information and support for students*: examples include counselling, career guidance and tutoring;
- ▶ *Organisation of higher education*: structures put in place by an institution that aids student success, such as types of degree offered, quality assurance and accreditation.

The study also found that there is a lack of systematic knowledge, data and indicators on student success (European Commission, 2015b). In particular, research on study success policies with an international comparative perspective is rare. The report also highlights how completion overviews, similar to the ones presented in the OECD 'Education at a Glance' publication, should be interpreted with caution due to difficulties and differences in underlying definitions. The report shows that only 12 out of 35 European countries regularly report a national indicator of completion, while fewer still report on retention and drop-out rates and time-to-degree (European Commission, 2015b).

The most commonly used international data on graduation and completion rates in higher education are published in the OECD's 'Education at a Glance' reports. However, it is important to note that completion rates are not published every year because the data is gathered through specially devised surveys on completion. Over the last decade, completion rates were included in three OECD reports (OECD, 2016; 2013; 2010). Completion rates describe 'the percentage of students who enter a tertiary programme for the first time and who graduate from it a given number of years after they entered' (OECD, 2016, p. 167). This calculation takes into account the number of years usually allocated for completing the programme (the theoretical duration), and an additional three years. This measure of tertiary completion should not be confused with the indicator on tertiary graduation rates. Graduation rates represent the estimated percentage of people from a certain age cohort that are expected to graduate at some point during their lifetime (OECD, 2016).

Table 2.1 provides an OECD (2016) overview of completion rates of full time students who entered a bachelor or equivalent programme. Data on completion rates refer to the academic year 2013/14 and were collected through a special survey undertaken by the OECD in 2015. It is important to note that completion rates are calculated differently using two methods, depending on data availability. Countries could submit data using either true-cohort or cross-cohort methodology. The first method, true cohort, follows individual students from entry into a tertiary programme until a specified number of years later. Completion is then calculated as the share of entrants who have graduated in that time frame. The second method, cross cohort, is used when individual data are not available. It calculates completion by dividing the number of graduates in a year by the number of new entrants to that programme a certain number of years before, when the number of years corresponds to the theoretical duration of the programme. Because of the difference in methodologies, caution must be exercised when comparing true-cohort and cross-cohort completion rates.

As shown in table 2.1, on average, across countries with true data (or data on individual students), 41% of students who enter a bachelor's or equivalent programme graduate within a theoretical duration of the programme, although sometimes from a different educational level (OECD, 2016). Within three years after the theoretical duration of the programme, the average completion rate increased to 69%. For countries with cross-cohort data (aggregate data on student cohorts), the average completion rate is 75%.

There is also much variation noted between countries. Eight countries with true data experience below average completion rates, with Austria ranking in last place at 23%. Within three years after the theoretical duration of the programme, six countries (Estonia, Sweden, Austria, Czech Republic, Netherlands and Finland) experience below average completion rates. Lastly, for countries with cross-cohort data, Portugal, Brazil and Slovenia have below average completion rates at 65%, 48% and 47% respectively. Both Ireland and Turkey have the highest levels of completion at 94%. In nearly all countries, females have higher completion rates than males at the bachelor's (or equivalent) degree levels.

Table 2.1: International Completion Rates of Full-Time Students (OECD)

2013/14 Data (OECD, 2016)			
<i>ENTERED BACHELOR OR EQUIVALENT PROGRAMME (% COMPLETION)</i>			
	MALES	FEMALES	TOTAL
True cohort completed by theoretical duration (N)			
Australia	28	33	31
Austria	21	25	23
Belgium	32	44	38
Czech Republic	27	45	37
Denmark	46	52	50
Estonia	22	42	34
Finland	30	53	43
France	37	47	43
Israel	46	47	47
Netherlands	24	38	32
Norway	47	52	50
New Zealand	28	41	36
Sweden	27	43	36
United Kingdom	68	74	71
United States	43	53	49
Average	35	46	41
True cohort completed by theoretical duration plus 3 years (N+3)			
Australia	65	74	70
Austria	53	62	58
Belgium	67	78	73
Czech Republic	49	68	60
Denmark	77	83	81
Estonia	39	59	51
Finland	58	76	68
France	66	73	70
Israel	71	69	70
Netherlands	58	73	66
Norway	72	79	76
New Zealand	77	84	81
Sweden	43	60	53
United Kingdom	81	86	84
United States	74	80	78
Average	63	74	69

2013/14 Data (OECD, 2016)			
ENTERED BACHELOR OR EQUIVALENT PROGRAMME (% COMPLETION)			
	MALES	FEMALES	TOTAL
Cross Cohort			
Brazil	43	52	48
Ireland	91	98	94
Japan	90	95	92
Korea	81	90	85
Portugal	58	71	65
Slovenia	45	48	47
Turkey	94	93	94
Average	72	78	75

The next section will focus briefly on three case-study countries and their approach to completion: New Zealand, Australia and the United Kingdom.

New Zealand

As highlighted by Scott (2009), New Zealand has one of the lowest reported higher education completion rates in the OECD. The first comprehensive study of retention, completion and progression in tertiary education in New Zealand was undertaken between November 2002 and March 2004. The study involved conceptual and definitional components, as well as a significant statistical and technical data-matching component (Scott, 2005). The findings of this study showed that 40% of domestic students who started a qualification in 1998 had completed it by 2002, while 9% were still studying, and 51% had left without completing their qualification. Of those students successfully completing a qualification in 2001, 15% went on to higher study in 2002, 24% continued studying the same or lower level, while 62% left tertiary study altogether. Rates of completion increased as the level of study increased. For instance, approximately one third of students starting a qualification below degree level had successfully completed it five years later, compared to 46% who had undertaken a degree level programme. Furthermore, between 55% and 60% of students had completed their postgraduate qualification. A further study that focused specifically on the university sector in New Zealand found that 8 years after starting a bachelor's degree (or higher qualification), only 16% of full-time domestic university students had not completed their studies. The authors argue that this compares well internationally, with comparator countries ranging from 18% – 40% (Universities New Zealand, 2016).

Australia

The Department of Education and Training in Australia regularly carries out cohort analyses of completion rates in their higher education institutions. The most recent report (Department of Education and Training, 2017) focusses on a cohort analysis of domestic bachelor completion rates in higher education students between 2005 and 2015. Commencing student cohorts are tracked using student ID (within institution) and Commonwealth Higher Education Student Support Number (across institutions) which provides an overview of student outcomes four, six and nine years after students commenced a course. In summary, the report analyses how many students completed

their studies, how many were still studying, and how many were neither studying nor had completed an award.

The findings show that nine-year completion outcomes for the 2007 cohort of domestic bachelor students was 73.6%. Lower completion rates were seen for those students who were indigenous, older, studying part-time and externally and for those from lower socioeconomic backgrounds. They were also lower for those who were admitted to higher education on a basis other than secondary education and for those who had a lower Australian Tertiary Admission Rank (ATAR) scores (Department of Education and Training, 2017).

United Kingdom

In the United Kingdom, the Higher Education Statistics Agency (HESA) measure non-completion in several ways. They define completion as a student who has obtained a qualification (although this does not necessarily have to be the one which they were originally aiming for) or remain active at the same higher education provider (but they may be studying a different course to the one they were initially registered on)⁴. HESA publish data on the following:

- ▶ Non-continuation rates of full-time entrants after first year at higher education;
- ▶ Non-continuation rates of part-time entrants after first year at higher education;
- ▶ Return after a year out: this involves examining the percentage of students who return to higher education after a year out and provides a split to show the proportions who return to their initial provider, transfer to another provider and those who do not return to study;
- ▶ Projected outcomes: this gives the outcomes that would be expected from starters at higher education providers should these progression patterns continue in subsequent years.

In terms of projected outcomes, HESA projects what proportion of the full-time first degree starters are likely to be in each of the 'end states' after a period of fifteen years (that is, having gained a qualification, transferred to another HE provider, or been absent from higher education for two consecutive years). The fifteen-year period has been chosen as an over-estimate of the amount of time that the majority of full-time first-degree students should have reached one of these end states. The projection is based on the current pattern of students at the higher education provider. Firstly, they define a 'transition population' which consists of students who were active on a full-time first degree course in a particular academic year plus students who were active on a full-time first degree course in the previous year, excluding those who have obtained a degree. For each student in the transition population, they examine their 'state' (mode of study, level of study, higher education provider, year of programme and if applicable, qualification obtained) in the academic year in question and in the following academic year. Assuming that this pattern of students is typical for the higher education provider, this is used to anticipate the state of the

4 See <https://www.hesa.ac.uk/news/08-03-2018/non-continuation-summary> for further information.

full-time first degree starters up to fifteen years on. HESA's (2018) performance indicators for 2016/17 project that 80.1% of UK domiciled full-time students starting their first degree course in 2015/16 will complete their degree. Of those who do not complete their studies, 10.5% will exit with neither an award or transfer, 5.3% will transfer to another institution, 3.9% will exit with another award and the remaining 0.2% have unknown outcomes (HESA, 2018, Table T5).

2.3.2 In Ireland

As already mentioned in the introduction, while Ireland has conducted several analyses of non-progression rates between first and second year of higher education, there has been less research conducted on completion rates⁵. To date, there have been three main reports published on completion in higher education in Ireland (one independent study focusing on the universities and two studies commissioned by the institutes of technology focusing on the IoT sector):

1. A study of Non-Completion in Undergraduate University Courses (Morgan et al., 2001);
2. A Study of Non-Completion in Institute of Technology Courses: Part One Quantitative Aspects (ERC, 2000);
3. Completion rates for students taking full-time programmes of study in Institutes of Technology: A study carried out for the council of directors of Institutes of Technology and The Dublin Institute of Technology (Council of Directors of Institutes of Technology, 2006).

Morgan et al. (2001) analysed the academic progress of full-time undergraduate entrants in the academic year 1992/93 within the seven universities. The study tracked the students who entered higher education in 1992/93 and documents the outcomes by gender and course, the number who graduated on time, the number who graduated late and the number who did not complete the course they had entered. The findings show that of the total population of full-time undergraduate first time entrants to the seven universities in 1992, 67.9% graduated on time, 15.3% graduated late and 16.8% did not complete the course on which they had initially embarked. Therefore, in total, 83.2% graduated. This completion figure does not include those students who changed courses and completed their course of subsequent choice. These findings are very much in line with this current study on completion.

The ERC's (2000) study focused on the completion rates of students entering 11 institutes of technology in 1995 who were first-time new entrants to higher education. The ERC (2000) study focused on students enrolled in National Certificate, National Diploma and Degree programmes. Of the 11,175 students who began their courses in 1995, 52% graduated on time, 43% did not complete their course and 5% graduated late or were still in attendance in 1998/99. Differences in completion between fields of study were considerable. The highest rate of completion was in the Humanities field (66% graduated on time; 33% did not finish). Completion rates were low in both the fields of Engineering and Computing – with

5 Healy et al. (1999) also conducted a study of first-year student progression in three institutes of technology (IT Carlow, Dundalk IT and IT Tralee) in 1996/97 and found that the non-progression rate was 37% (ERC, 2000).

only 40% graduating in time. Furthermore, the completion rates for students taking degree courses were somewhat higher than for students taking the National Certificate or Diploma courses. This study also examined the non-progression of students from first to second year in the academic year 1995/96. The decision to limit the collection of information to first year was based on the findings of an earlier study by the ERC (1997) which found that non-progression is most likely to occur at the end of first year. The findings showed that 34.8% of the total new entrants did not progress into second year. The report concludes that non-completion is a major problem in particular institutes of technology, and this is especially pertinent within certain areas of study (ERC, 1997).

In 2006, The Council of Directors of the IoTs and the President of DIT commissioned an analysis of completion rates in the IoT sector (CODIT, 2006). In this analysis, completion is defined as a student successfully completing his/her course on time, or plus one year. Over the years of graduation included (1999-2004), the national average for completion of certificate and diploma courses is approximately 70%, while it is 87% for degree courses. According to the authors, 'these are considerably higher than figures reported elsewhere, which were based on significantly older data' (Council of Directors of Institutes of Technology, 2006, p. 34). It is important to note that this analysis was based on retrospective surveys that were sent to the institutes of technology directly. Furthermore, the report identifies gaps in knowledge. For example, data were not available for DIT students who completed their studies one year late and, according to the authors, many institutes had difficulty in completing the questionnaire. Given the considerably high completion rates that are not in line with the ERC's (2000) study on the topic and the methodological issues highlighted in the report, a cautious approach should be taken when interpreting these findings.

Additional smaller scale studies on retention in Ireland have been conducted on single institutions (e.g. Callaghan, 2009; Mathews and Mulkeen, 2002). For instance, in Trinity College Dublin (TCD), a taskforce was established to consider the financial implications of non-completion over a five-year period (Callaghan, 2009). The findings of the report showed that, overall, approximately 15.4% of new entrant students did not complete their undergraduate studies at TCD. Mathews and Mulkeen (2002) examined the non-progression of new entrants in University College Dublin (UCD) in 1999, 2000 and 2001. The findings showed non-completion rates of between 13% (for the 2001 cohort) and 17% (for the 1999/2000 cohorts), between first and second year of higher education. Students who did not progress into their second year of studies received a questionnaire in relation to why they did not pursue their course, with the majority of students indicating that they chose the wrong course.

While Irish research on non-progression, retention and non-completion has been primarily quantitative in nature, there has also been a number of qualitative studies conducted. As a follow-up to their quantitative research in the Institutes of Technology (ERC, 2000), Eivers et al. (2002) identified the possible causes of non-completion in this sector, focusing specifically on students' first year experiences. The study highlighted important factors predicating drop-out, including lack of student preparedness for college, transitional issues from second to third level and part-time working practices (Eivers et al., 2002). Furthermore, the National Forum for the Enhancement of Teaching and Learning in Higher

Education have undertaken numerous focused research projects (e.g. National Forum for the Enhancement of Teaching and Learning in Higher Education, 2016; 2015) on this topic. One such study undertook a systematic survey of existing qualitative data on student non-completion gathered by Irish higher education institutions (National Forum for the Enhancement of Teaching and Learning in Higher Education, 2015). It drew on reports and data from 16 higher education institutions including universities, institutes of technology and HECA colleges.

The findings of the qualitative study identified five core themes which are significant in terms of student non-completion, including course, personal, financial, medical/health and family factors. Of these five, course was the strongest factor influencing student non-completion. Importantly, the study also calls for a more holistic and positive interpretation of non-completion as part of the wider context of students' career and programme plans, involving greater learner mobility across the higher education sector. While this work draws on current qualitative datasets from institutions, it emphasises the importance of moving towards gathering systematic and standardised qualitative information for all students leaving higher education. Such a move would allow relevant data to be utilised effectively in generating more comprehensive understandings of student non-completion and the most appropriate institutional and policy responses required.

While Ireland has been shown to have relatively high retention rates when compared with many other countries, such as the USA and Australia (e.g. OECD, 2016), over the past ten years there has been increasing policy emphasis on mapping and understanding patterns and processes of non-completion. In terms of higher education policy in Ireland, successful participation in and completion of higher education is a priority goal in the HEA's 'National Plan of Access to Higher Education, 2015-2019' (HEA, 2015). The first goal of the Access Plan concerns mainstreaming equity of access and specifically mentions the importance of addressing the problem of non-completion of students who are under-represented in higher education. More recently, the Department of Education and Skills (DES) created an implementation group that is overseeing a working group on the issue of student success. This group are responsible for progressing initiatives that will support higher education institutions in improving completion rates for all students in general and underrepresented groups in particular. In addition, the HEA is commissioning an audit of the procedures and processes in place within higher education institutions to verify the accuracy of student numbers returned at the annual census date for the Student Record System. Furthermore, improvements are being sought to increase the coverage and validity of PPSN data to allow for the tracking of students across institutes.

2.3.3 Summary of Completion Rates

Table 2.2 provides a summary of quantitative completion rates in selected countries/studies. As previously noted, it is crucial to interpret the different rates with caution due to the different methodological approaches applied between countries.

Table 2.2: Summary of Completion Rates in Selected Studies/Countries

COUNTRY	STUDY OR SOURCE	METHODOLOGY/ COHORT	TIME FRAME	COMPLETION RATE	NOTES
Ireland	OCED (2016)	Based on aggregate survey data of Bachelor or equivalent programmes	Survey conducted in 2015 using 2013/14 data	94%	Different methodologies are used by the OECD depending on data gathered (e.g. individual and aggregate levels reported)
	Morgan et al. (2001)	Full-time undergraduate new entrants in universities	Entered HE in 1992/93	83.2% - 67.9% (<i>on time</i>) - 15.3% (<i>late</i>)	
	ERC (2000)	New entrants to 11 IoTs studying certificates, diplomas and degree programmes	1995-1998/99	57% - 52% (<i>on time</i>) - 5% (<i>late</i>)	
	CODIT (2006)	New entrants to the IoTs studying certificate, diploma and degree programmes who completed on time or one year late	1994-2004	87% (degree courses) 70% (certificate and diploma courses)	Retrospective survey data used. Data missing for DIT. Authors acknowledge that some IoTs experienced difficulties in completing the questionnaire
UK	OCED (2016)	Based on individual level survey data of Bachelor or equivalent programmes	Survey conducted in 2015 using 2013/14 data	71% (within the expected time) 84% (within the expected time + 3 years)	Different methodologies are used by the OECD depending on data gathered (e.g. individual and aggregate levels reported)
	HESA (2018)	Based on projected outcomes of UK domiciled full-time students (up to 15 years on)	Projected Performance Indicators for 2016/17	80.1% (within 15 years)	

COUNTRY	STUDY OR SOURCE	METHODOLOGY/ COHORT	TIME FRAME	COMPLETION RATE	NOTES
New Zealand	OCED (2016)	Based on individual level survey data of Bachelor or equivalent programmes	Survey conducted in 2015 using 2013/14 data	36% (within the expected time) 81% (within the expected time + 3 years)	Different methodologies are used by the OECD depending on data gathered (e.g. individual and aggregate levels reported)
	Scott (2005)	Based on domestic entrants to both undergraduate and postgraduate courses	Study undertaken between 2002 and March 2004 using 1998-2002 data	40% of domestic students completed on time	
	Universities New Zealand (2016)	Based on Bachelor Degree or higher programmes	Focused on 8 years of university data	84% (within 8 years)	
Australia	OCED (2016)	Based on individual level survey data of Bachelor or equivalent programmes	Survey conducted in 2015 using 2013/14 data	31% (within the expected time) 70% (within the expected time + 3 years)	Different methodologies are used by the OECD depending on data gathered (e.g. individual and aggregate levels reported)
	Department of Education and Training (2017)	9-year completion outcomes of domestic bachelor students	2007 Cohort	73.6%	

2.4 Factors influencing Completion

Within the academic literature, the topic of student retention has moved from a unique focus on the student (e.g. Tinto, 1975) and their familial background to a more nuanced understanding of the multiplicity of factors that influence student non-completion (Green and Baird, 2009). As succinctly argued by Adamson and McLeavy (2000, p. 535), non-completion 'is not driven by pre-deterministic factors, but, rather, appears to result of a complex decision-making process with an array of factors impacting on student success'. This section will briefly discuss the mixture of individual, institutional and labour market factors which have been shown to influence non-completion of higher education.

2.4.1 Individual Level Factors

Identifying student characteristics and their impact on student success and retention is a central element of understanding why students drop-out of their higher education course. Factors such as socioeconomic (family) background, gender, age, ethnicity, student preparedness/motivation and geographic location are important indicators in determining educational pathways.

Social Class

Within the literature, students' socioeconomic and family background are viewed as among the most important factors influencing student success. Hussey and Smith (2010) argue that the background of a student can affect their preparedness and commitment to higher education as well as their career aspirations, with non-completion rates shown to be higher among students from lower socioeconomic groups than their more socially privileged peers (e.g. Quinn et al., 2005). Related to this, students from lower socioeconomic backgrounds are more likely to cite financial reasons for withdrawal, whereas those from professional backgrounds cite class size, stress and workload as reasons for withdrawal (Yorke and Longden, 2008). Furthermore, research undertaken by the HEFCE (2000) in the UK noted that non-completion rates are higher in universities that have proportionately more students from disadvantaged backgrounds. The National Forum for the Enhancement of Teaching and Learning in Higher Education (2015) argue that such findings offer an important parallel consideration for the institute of technology sector in Ireland given the socioeconomic diversity in student intake between sectors.

Christie et al. (2004) argue that because individuals are often heavily influenced by their family and peers, students from more disadvantaged backgrounds have less access to networks of familiarity with higher education and its workings than students whose parents, siblings or wider social network have attended university. They observe 'higher rates of withdrawal amongst students from lower social class backgrounds, and in less prestigious institutions, [that] exacerbate the already steep class gradient evident in the profile of students who access higher education in the first instance' (Christie et al., 2004, p. 619). Similarly, Crawford et al. (2014), in examining the socioeconomic differences in the university outcomes in the UK, argues that the human capital with which students from different social backgrounds enter university plays a significant role in explaining the socioeconomic differences. Of note, this research found that those students in the highest socioeconomic quintile group are 13.3 percentage points more likely to complete their degree than those in the lowest socioeconomic quintile group (compared to an average

completion rate of 78%). Furthermore, this research – while acknowledging its use of relatively crude measures – finds that when comparing individuals on the same course, it is still those from the highest socioeconomic group who are, on average, 3.4 percentage points less likely to drop-out, 5.3 percentage points more likely to complete their degree and 3.7 percentage points more likely to graduate with a first or 2:1 when compared to those from the lowest socioeconomic group (Crawford, 2014).

In terms of financial constraints, several studies show that students from lower socioeconomic backgrounds are more likely to interrupt or stop their studies due to a lack of sufficient means to continue (European Commission, 2015). In recent years, Ireland has witnessed an increased emphasis on the importance of supporting disadvantaged students on entry to higher education (e.g. HEA, 2015). In order to allocate adequate funding for disadvantaged students, the HEA are working towards gathering more detailed and thorough socioeconomic data by identifying the Census small area in which student's parents reside and the associated relative level of deprivation (Haase and Pratschke, 2017). Direct financial aid has also been shown to have a bearing on student success as per the recent findings of Murphy and Wyness (2016). In using student-level administrative data collected from 9 universities in the UK to examine the effects of aid receipt on college completion rates, Murphy and Wyness (2016) suggest that each £1,000 of financial aid awarded increases the chances of gaining a good degree by approximately 3.7 percentage points. The positive effect is manifested in both improvements in test scores and in terms of degree completion.

Gender

In many countries, female students both outnumber and outperform male students, and there are significant gender differences noted in terms of field of study (European Commission, 2015). Evidence has shown that females are more likely than males to complete their course, except in cases where they are a minority in their field of study (e.g. Engineering) (McGivney, 1996). Studies have also examined the reasons males and females give for non-completion. Females are more likely to cite family commitments, while males are more likely to cite stress, course and employment related issues (Nora et al., 1996). However, despite apparent differences, Reason (2009) argues that gender differences arise from other underlying and interacting variables, such as social class and ethnicity. Furthermore, it is important to consider the institutional context. In contexts where there is a gender disparity on a study programme (e.g. females in male-dominated fields of study or males in female-dominated fields of study), drop-out or course switching is more frequent among the minority students (Severiens and Dam, 2012).

Age and Ethnicity

While the relationship between age and non-completion has been investigated in a number of studies, the evidence is inconclusive (Eivers et al., 2002). Some studies (e.g. Clarke et al., 1994) indicate that the older a student is, the more likely he or she is to drop-out. However, the effects of age appear to be mediated by other factors. Older students, having spent some years out of education, may be subject to external demands which can influence their integration into, and engagement with, higher education (Garrison, 1985; Naretto, 1991). For example, older students are more likely than their younger peers to have family responsibilities, live off campus and be in employment (Ozga & Sukhnandan, 1998; Yorke, 1999). Furthermore, ethnic origin has been shown to be a determinant of student success in that it strongly interacts with other individual student characteristics such as socioeconomic background and gender (Reason, 2009; Reisel and Brekke, 2010). For example, Tilkidijev et al. (2010) found that while Roma students are less likely to succeed in higher education in Bulgaria, it is associated as much with their social class origins as their ethnic minority origin. Furthermore, studies conducted in the Netherlands and Germany show that frequent drop-out among students from ethnic minorities is related to a lack of cultural and financial resources as well as a less well-informed study choice when comparisons are made with majority groups (Meeuwisse et al., 2009; Heublein, 2010).

Student Preparedness and Motivation

Student preparedness for higher education is a major topic in retention and completion literature (European Commission, 2015). The competencies of a student are major determinants of student success. In general, the majority of studies on this topic demonstrate that students who were low achievers in school are more likely to drop-out of their higher education study programme (European Commission, 2015). While there has been a furor of research investigating the relationship between socioeconomic background and non-completion, a study by Smith (2015) suggests that once students have overcome barriers to higher education admission; it is entry grades rather than social characteristics that may most strongly influence eventual academic success. Moreover, besides cognitive readiness, aspects related to student motivation and associated aspects of self-motivation, self-esteem and self-efficacy also impact on the probability of course completion, with students who score low on one of these aspects being at particularly high risk for drop-out (European Commission, 2015).

Geographic Location

Geographic location and convenience are important considerations for students when choosing their further or higher education institution (McTaggart, 2014). A study by Gormley and Murphy (2006) analysed third level college applications in Ireland and found that applicants form groups according to both the discipline and geographic location of their course choices. In terms of geographic effect, the location of the institution to which an applicant applies appears to be almost as important as vocational interest in the choice process. Munster-based and Cork-based courses are characterised by applicants who predominantly live within these areas. Furthermore, geography is seen to have a larger effect on male applicants than females (Gormley and Murphy, 2006).

Similarly, Cullinan et al. (2013) examined the effects of distance on the decision to participate in higher education in Ireland and found that distance effects are most pronounced for those from lower socioeconomic backgrounds and those of perceived lower academic ability. Travel distance effects were not found to be statistically significant for any group bar the lowest socioeconomic group, thus supporting the possible theory that travel distance is a greater deterrent in entering higher education for those most disadvantaged (Cullinan et al., 2013). In terms of non-completion, a qualitative study conducted by National Forum for the Enhancement of Teaching and Learning in Higher Education (2015) found that students who withdrew from their studies commonly cited finding their institution's geographic and urban setting difficult, which in turn, influenced their decision to leave. As this evidence shows, the interplay between personal characteristics and geographic location are important to consider in the analysis of non-completion.

2.4.2 Institutional Level Factors

While the majority of studies on non-completion have focused on individual rather than institutional factors, there is evidence to suggest that institutional characteristics (e.g. higher education sector, size and institutional habitus) can play an important role in determining student success (Eivers et al., 2002). Furthermore, much of the research on improving student completion and success, especially in the US, highlights the important role that the higher education institution can play in making improvements. According to a European Commission (2015) review of the European literature, the following factors contribute to student success at the institutional level:

- ▶ Institutional commitment and strategy;
- ▶ Social integration and student support services;
- ▶ Matching of students and programmes;
- ▶ Clear expectations about study programme;
- ▶ Clear expectations about learning, teaching and assessment;
- ▶ Monitoring and tracking students.

Sector and Size

Institutional characteristics related to sector and size play an important part in fulfilling a student's expectations of higher education, and as a result it is likely to affect retention (Pascarella and Terenzini, 1991). Linked to this, it is important to understand – and take account of – the composition of the student body studying in different institutional sectors in terms of retention (HEA, 2010; 2018). The size of an institution and its related class sizes have been highlighted as important contributing factors in drop-out. While early research by Astin (1975) found that issues can arise if an institution is small, such as a lack of diversity and too much closeness; other studies have found that in larger institutions, some students may feel overwhelmed by its size (Eivers et al., 2002). A recent study on non-completion in Ireland highlighted that students who withdrew from their studies experienced isolation 'due to large class sizes' which lead to 'a lack of friendships' and general feelings of 'loneliness' (The National Forum for the Enhancement of Teaching and Learning in Higher Education, 2015, p. 48).

Institutional 'Habitus'

Tinto (1975) in his student integration model of non-completion argued that student retention may be influenced by the ethos, culture and traditions of the higher education institution, leading students to feel a form of cultural dislocation and dissatisfaction. The values, norms and practices at play within an institution are known as the institutional 'habitus' of a higher education institution. According to Leone and Tian (2009, p. 130), for institutions to seriously tackle non-retention they 'need to recognize that the roots of attrition lie not only in their students and the situations they face, but also in the very character of the educational settings, now assumed to be natural to higher education, in which they ask students to learn'. Therefore, students need to feel valued and a part of a supportive learning community (Maher and McAllister, 2013) and experience high quality interactions with academic staff (Noble and Henderson, 2011) if they are to succeed in the completion of their studies.

2.4.3 Labour Market Factors

A common economic theory in relation to non-completion of higher education is concerned with the human capital approach (Becker, 1964). This approach assumes that a student will stay in higher education so long as the social and economic benefits outweigh any costs and benefits associated with alternative activities, such as working full-time. The labour market serves as a target for higher education and functions as a competitor to higher education (European Commission, 2015). Countries (e.g. Italy and Spain) with tight labour markets that do not provide sufficient entry positions for school leavers experience what Becker (2001) refers to as 'parking lot' education. This is when a student views higher education as a short-term option until an entry position arises in the labour market. According to this theory, non-completion may be reduced in countries where the labour market offers jobs to students with only a second level education qualification, as they are less likely to enter university for motives other than obtaining a qualification (European Commission, 2015).

Engaging in paid work, especially during term-time, is another potential threat to completion of higher education because reliance on paid work can have a negative effect on engagement with coursework and examinations (Vossensteyn et al., 2013). Eivers et al. (2002) found that in terms of non-completion in the institutes of technology, the academic staff highlighted that students' part-time work – which was perceived to be excessive in many instances – had a negative effect on both attendance at classes and study. The risk of non-completion may be related to hours worked whilst studying. Studies in Ireland, Estonia and Norway have found that over 60 per cent of students work, with most of them working moderate hours (Darmody and Smyth, 2008; Beerkens et al., 2011; Hovdhaugen, 2013). In both Estonia and Norway, analyses of the relationship between working hours and the risk of non-completion of higher education indicate that it is only students who are working more than 20-25 hours a week during term-time who have a higher risk of drop-out (Beerkens et al., 2011; Hovdhaugen, 2013).

2.4.4 Summary of Factors

While the literature highlights a multitude of reasons for student non-completion, it is important to understand that students withdraw from their studies based on a 'bundle of influences' (National Forum for the Enhancement of Teaching and Learning in higher education, 2015, p. 23). Figure 2.1 below provides a summary of the factors that have been shown to influence non-completion. Given the quantitative nature of this study, the variables (including derived variables) of sufficient quality available for analysis through the Student Record System (SRS) or Equal Access Survey (EAS) are highlighted in red.

Figure 2.1: Summary of Factors Influencing Non-Completion of Higher Education



2.5 Summary

As this chapter has highlighted, many students may be taking a rational approach to non-completion, in weighing up the costs and benefits of staying in their degree programme. While feelings of guilt and failure may be prevalent for some, for others, withdrawing is regarded more positively (Martinez, 1995) and as the more recent literature suggests, can often be seen as part of a bigger career plan (O'Keefe et al., 2011). In such cases, a negative term such as 'drop-out' is inappropriate as students' choices, aspirations and circumstances change and for some individuals, benefits may be gained only by leaving. Despite this, however, it should also be recognised that failure to complete a course can have negative personal consequences for students and their families. From an institutional perspective, non-completion is not only costly in terms of lost revenue, it can also be damaging to an institution's reputation, and is often associated with low staff morale. From a national perspective, non-completion represents an inefficient use of limited educational resources and a loss of future skill, and as a consequence, it cannot be regarded as inconsequential.

The background of the page features a series of concentric, hand-drawn style blue circles that create a ripple effect. A solid, medium-blue horizontal band spans the width of the page, positioned in the middle. The section header is placed within this band.

3 Analysis: Institute Type, Institute and NFQ Level

3 Analysis: Institute Type, Institute and NFQ Level

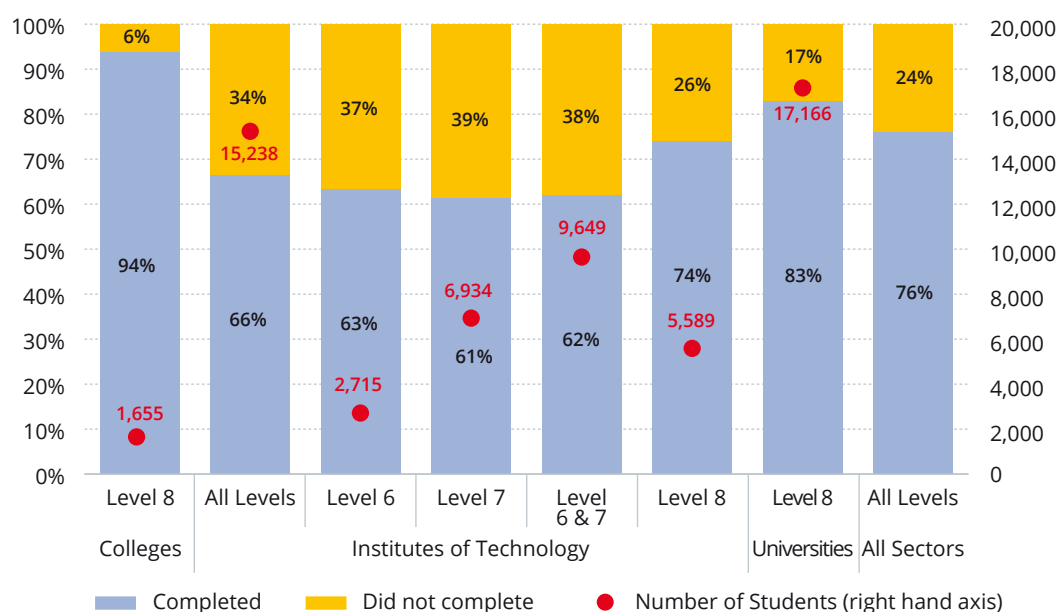
3.1 Introduction

This chapter looks at overall completion rates by sector, institute and NFQ level. Rates by NUTS 3 region are also detailed. The rates presented here are based on the all-encompassing definition of completion – completed at any time. Time to degree analysis is presented in a later chapter. An analysis of completion from initial course enrolled on or another course (within the same institute) is also presented here as is an analysis of start NFQ level v finish NFQ level for those that did complete. This report does not focus on progression from one NFQ level to the next level up. That is not the purpose of this analysis. Graduations are in some instances picked up at a higher NFQ level in this analysis as some students opted to not officially graduate or were not recorded graduating at the lower initial NFQ level. An analysis of those who did not complete within institute to determine if they subsequently enrolled or graduated from another institute is also dealt with in a later chapter.

3.2 Headline Completion Rates by Institute Type, Institute and NFQ Level

2007/08 new entrants (full-time undergraduates) at NFQ levels 6, 7 and 8 in HEA funded institutes are analysed in this report. The full list of institutes by sector can be found in Appendix A. Foundation, access and occasional students are excluded. Only level 8 students in universities and colleges are included (numbers at level 6/7 in universities are very low). Figure 3.1 below shows overall completion rates by institute type and NFQ level. The red dots show the number of students within each cohort (total number of students is 34,059).

Figure 3.1: Completion Rates by Institute Type and NFQ Level



The lowest rate of non-completion is in colleges, all level 8, at 6%. The non-completion rate in universities, all level 8, is 17%. Non-completion rates vary in the institute of technology sector from 26% at level 8 to 37% at level 6 and 39% at level 7. The overall rate of non-completion nationally is 24%. Table 3.1 below shows non-completion rates by institute.

Table 3.1: Non-Completion Rates by Sector, Institute and NFQ Level

SECTOR/INSTITUTE	LEVEL 6 NON- COMPLETION RATE	LEVEL 7 NON- COMPLETION RATE	LEVEL 8 NON- COMPLETION RATE	ALL LEVELS NON- COMPLETION RATE	TOTAL STUDENT NUMBERS
Colleges			6%	6%	1,655
Mary Immaculate College, Limerick			7%	7%	681
Mater Dei Institute			8%	8%	83
National College of Art and Design			8%	8%	155
St. Angela's College of Home Economics			14%	14%	130
St. Patrick's College Drumcondra			3%	3%	606
Institutes of Technology	37%	39%	26%	34%	15,238
Athlone IT	28%	37%	23%	28%	838
Cork IT	38%	33%	27%	33%	1,824
Dublin Institute of Technology	34%	40%	25%	30%	2,571
Dun Laoghaire Institute of Art, Design and Technology	30%	41%	23%	27%	509
Dundalk IT	53%	47%	22%	38%	1,253
Galway-Mayo IT	37%	37%	31%	35%	1,389
IT Blanchardstown	41%	45%	36%	41%	333
IT Carlow	40%	44%	30%	39%	948
IT Sligo	47%	34%	20%	33%	1,018
IT Tallaght	43%	47%	39%	44%	605
IT Tralee	31%	33%	18%	27%	519
Letterkenny IT	42%	42%	13%	39%	776
Limerick IT	37%	38%	25%	32%	944
Waterford IT	42%	38%	29%	34%	1,711
Universities			17%	17%	17,166
Dublin City University			20%	20%	1,672
Maynooth University			19%	19%	1,553
National University of Ireland, Galway			17%	17%	2,679
Trinity College Dublin			15%	15%	2,474
University College Cork			16%	16%	3,240
University College Dublin			18%	18%	3,647
University of Limerick			15%	15%	1,901
All Students	37%	39%	18%	24%	34,059

Figures highlighted in red indicate total student numbers (completed + did not complete) in that cohort < 100. The highest rate of non-completion at level 6 is in Dundalk IT at 53% (albeit very low numbers), the highest rate at level 7 is in IT Tallaght at 47% and the highest rate at level 8 is also in IT Tallaght at 39%. The lowest rate of non-completion at level 6 is in Athlone IT at 28%, the lowest rate at level 7 is in Cork IT at 33% and the lowest rate at level 8 is in St Patrick's College at 3%. Overall, the lowest rate is in St Patrick's College at 3% and the highest rate is in IT Tallaght at 44%.

In terms of student numbers in this dataset (and associated contribution to overall rates), colleges account for 5% of the total student cohort, institutes of technology account for 45% and universities account for 50%. UCD is the single largest institute in this analysis based on student numbers (11% of the total), followed by UCC (10%), NUI Galway (8%) and DIT (8%).

Figures 3.2 & 3.3 below show the rates by institute in ascending order for level 6/7 (institutes of technology only) and for all institutes at level 8.

Figure 3.2: Non-Completion Rates by Institute, NFQ Levels 6/7 Combined

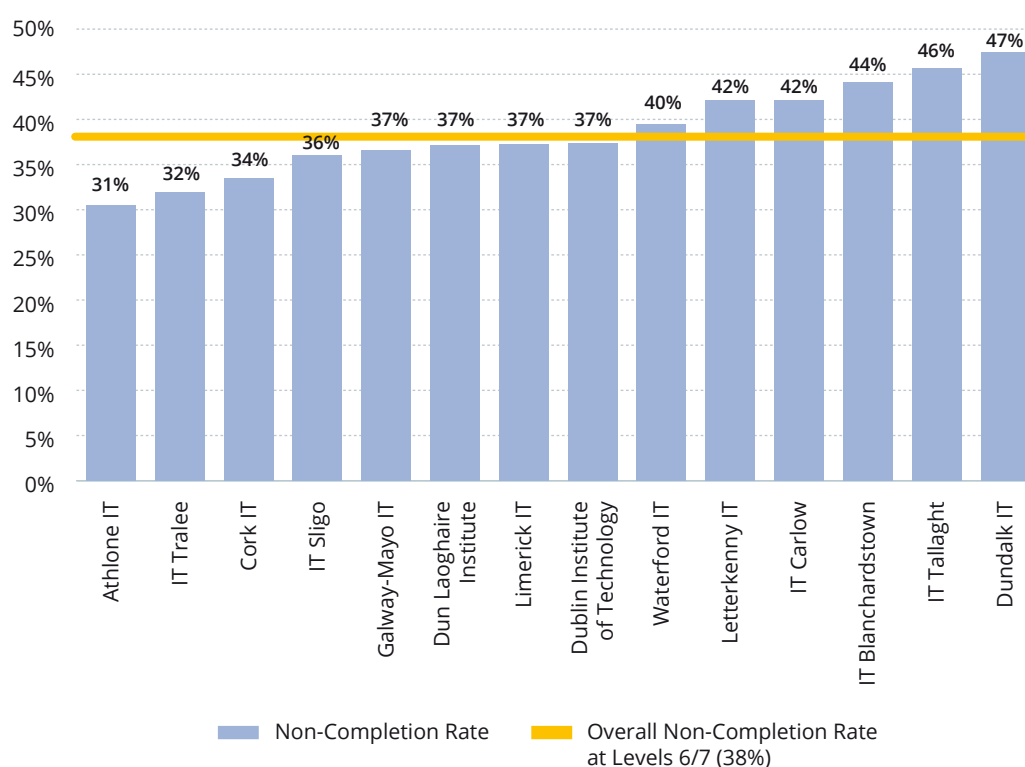
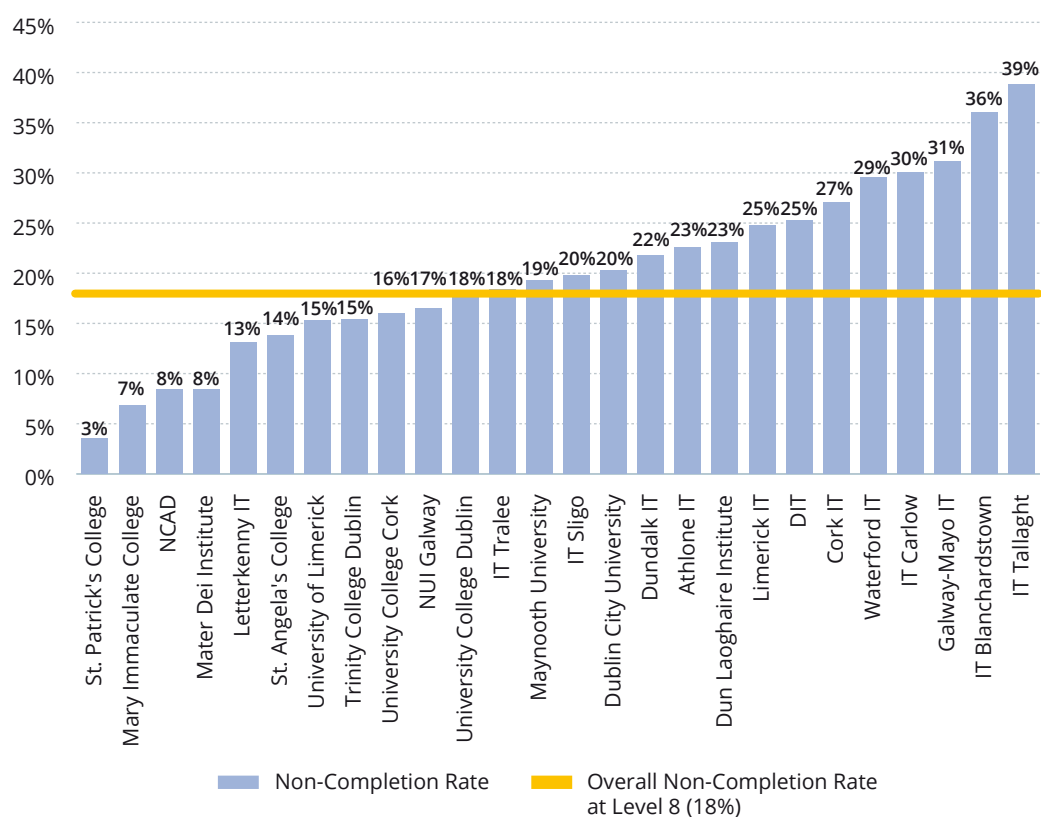


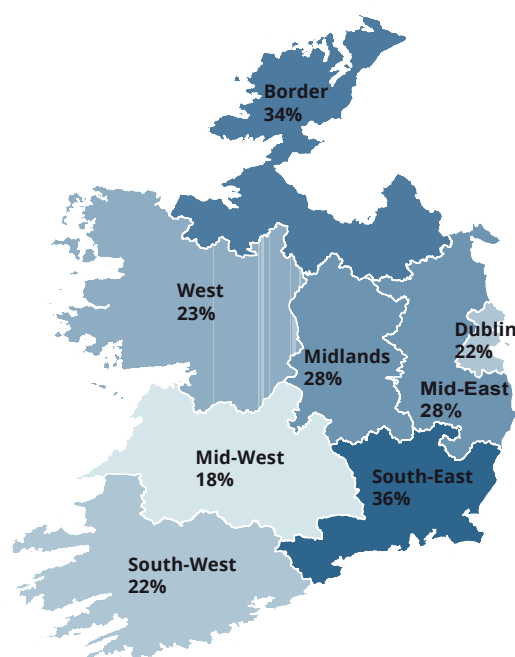
Figure 3.3: Non-Completion Rates by Institute, NFQ Level 8



Six institutes of technology are above the overall national non-completion rate at level 6/7. Of the 26 institutes, 14 are above the overall national non-completion rate at level 8, 2 universities and 12 institutes of technology.

Figure 3.4 below shows non-completion rates by NUTS 3 region, an EU regional classification which divides Ireland into 8 regions. This is based on regional locations of the 26 institutes.

Figure 3.4: Non-Completion Rates by NUTS 3 Region, based on Institute Location



Border: IT Sligo, Letterkenny IT and St. Angela's College

West: GMIT and NUI Galway

Mid-West: Limerick IT, Mary Immaculate College and UL

South-West: Cork IT, IT Tralee, UCC

South-East: IT Carlow, Waterford IT

Midlands: Athlone IT

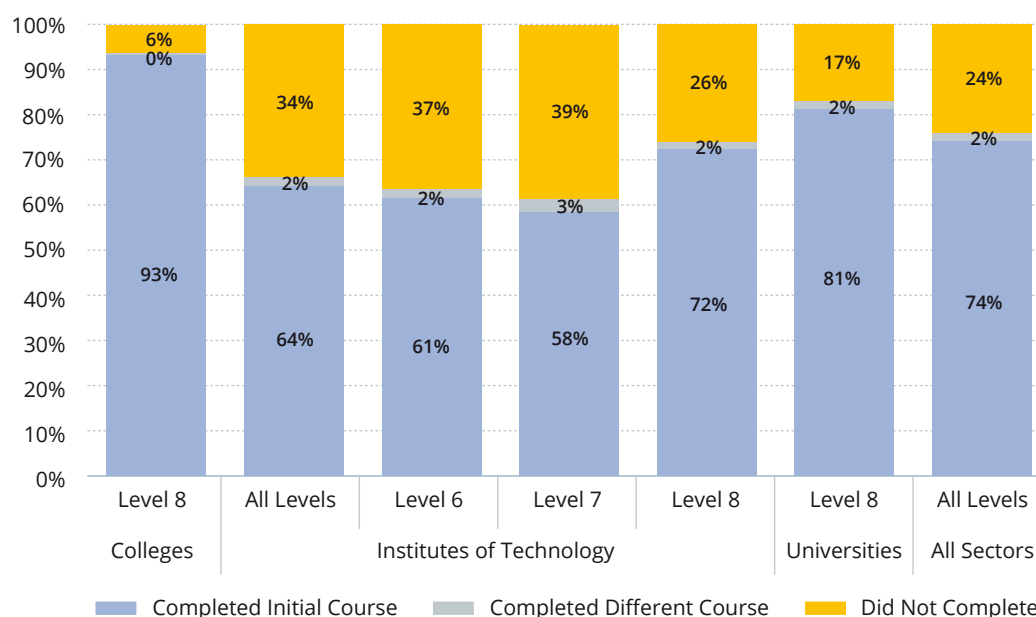
Mid-East: Dundalk IT, Maynooth University

Dublin: DCU, DIT, Dun Laoghaire Institute, IT Blanchardstown, IT Tallaght, Mater Dei Institute, NCAD, St. Patrick's College, TCD and UCD

3.3 Graduations from Different Courses or NFQ Levels

Figure 3.5 below shows completion rates by overall completion/non-completion and also by completion from course initially enrolled on or from another course, within institute. Of the total, only 2% are classified as having completed a different course than the one they initially enrolled on within the institute they initially enrolled at. Courses are only considered 'different' in this analysis if it is quite obvious that the course graduated from is different to the course initially enrolled on in 2007. Students that enrolled on a BSc in Science or BA in Arts that graduated with a BSc in Science or BA in Arts, even though they may have changed path (official course within institute) during their enrolment period, are not considered to have changed course. A student that enrolled on a BSc in Science initially but graduated with a BA in Arts is considered to have changed course. The very small proportion of those that completed a different course is indicative of the fact that those that do actually complete, complete the course they start initially or a very similar course in the same faculty. This analysis does not cover those that go on to enrol and/or graduate in a different institution. That is looked at in a later chapter.

Figure 3.5: Completion Rates by Institute Type, NFQ Level and Initial Course



Some students at levels 6 or 7 may choose to not officially graduate at that level as they progress onto a higher level and choose to graduate at that level. This is accounted for in this analysis as a student is considered to have completed if they have a graduation record within institute at any level over the period. Table 3.2 below shows the relationship between the start NFQ level and the finish (graduation) NFQ level for the 25,887 students in this dataset that completed. It is evident that the vast majority of those that completed did so at the NFQ level they started at. Again, this analysis does not examine students progressing to higher NFQ levels, such as from 6 or 7 to 8 or from 8 to 9 or 10 at postgraduate level. Those in table 3.2 below that graduated at a higher level than the one they started at is as a result of their first recorded graduation appearing at that level. This only applies to 5% of those that initially enrolled at level 6, 4% of those that initially enrolled at level 7 and 1% of those that initially enrolled at level 8. In addition, 2% of those that initially enrolled at level 7, graduated at level 6 and 1% of those that initially enrolled at level 8, graduated at level 6 or 7 – these students do not have a graduation recorded at the higher level having left with the lower level qualification. These students are still considered to have completed as per the overall definition of completion in this report.

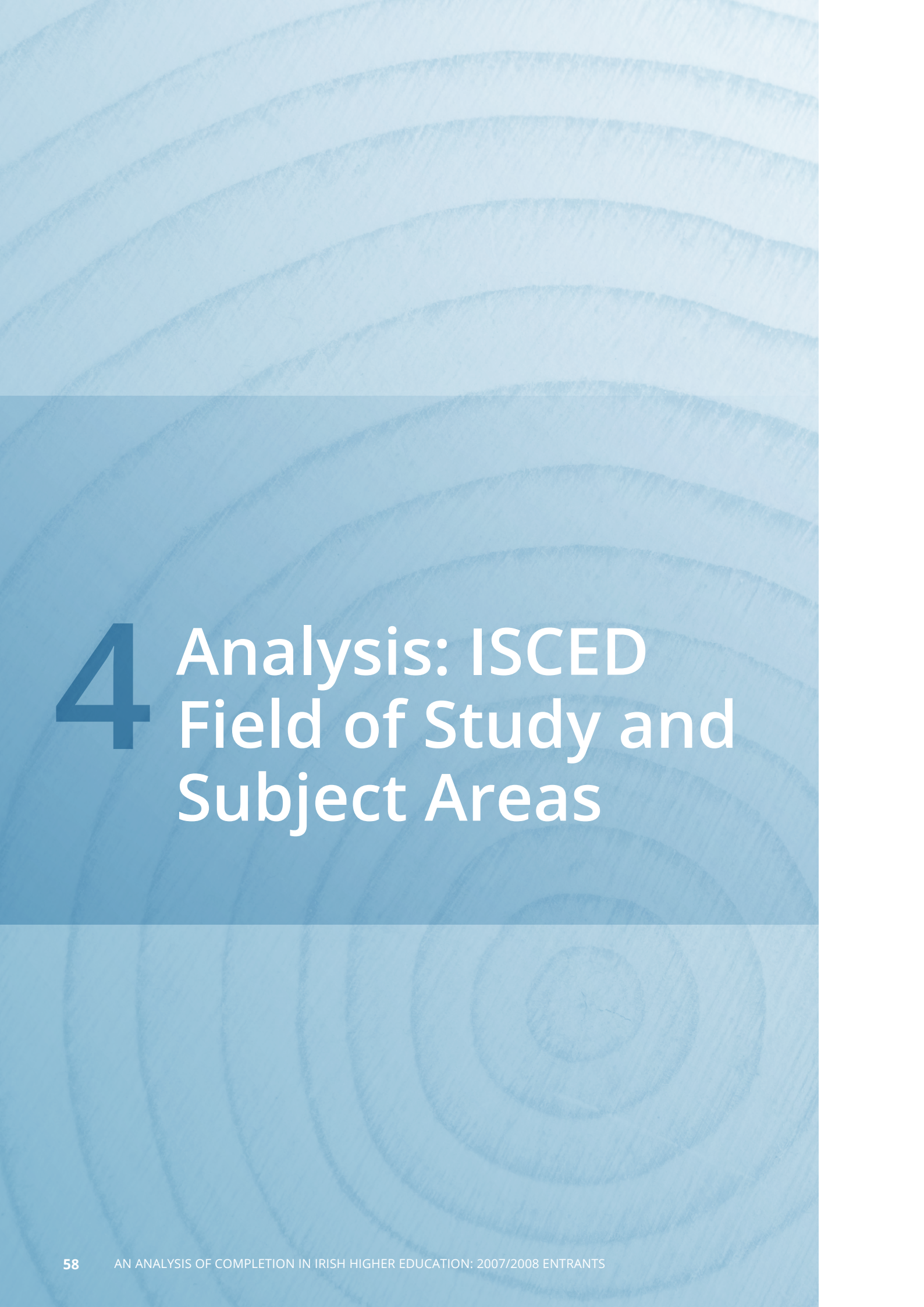
Table 3.2: Start NFQ Level v Finish NFQ Level

NFQ LEVEL	FINISH LEVEL 6	FINISH LEVEL 7	FINISH LEVEL 8	FINISH LEVEL 9	FINISH LEVEL 10	TOTAL START
Start Level 6	1,633	67	20			1,720
Start Level 7	84	4,011	149	4		4,248
Start Level 8	39	189	19,523	145	23	19,919
Total Finish	1,756	4,267	19,692	149	23	25,887

NFQ LEVEL	FINISH LEVEL 6	FINISH LEVEL 7	FINISH LEVEL 8	FINISH LEVEL 9	FINISH LEVEL 10	TOTAL START
Start Level 6	95%	4%	1%			8%
Start Level 7	2%	94%	4%	0%		20%
Start Level 8	0%	1%	98%	1%	0%	72%
Total Finish	7%	16%	76%	1%	0%	100%

3.4 Key Points

- ▶ 76% of 2007/08 new entrants to higher education institutions completed their studies and graduated, across all levels and sectors.
- ▶ Completion rates range from 94% in colleges (NFQ level 8) to 61% in institutes of technology at NFQ level 7.
- ▶ St. Patrick's College has the highest completion rate at 97%, IT Tallaght has the lowest completion rate at 56% (61% in IT Tallaght at NFQ level 8).
- ▶ The overall completion rate at level 8 in institutes of technology is 74%, compared with 83% in universities and 94% in colleges.
- ▶ Of those that graduate, the vast majority graduate at the NFQ level they started at, or higher, and from the course they started in.

The background of the page features a series of concentric, hand-drawn style blue circles that create a ripple effect. A solid, medium-blue horizontal band spans the width of the page, positioned behind the main title text.

4 Analysis: ISCED Field of Study and Subject Areas

4 Analysis: ISCED Field of Study and Subject Areas

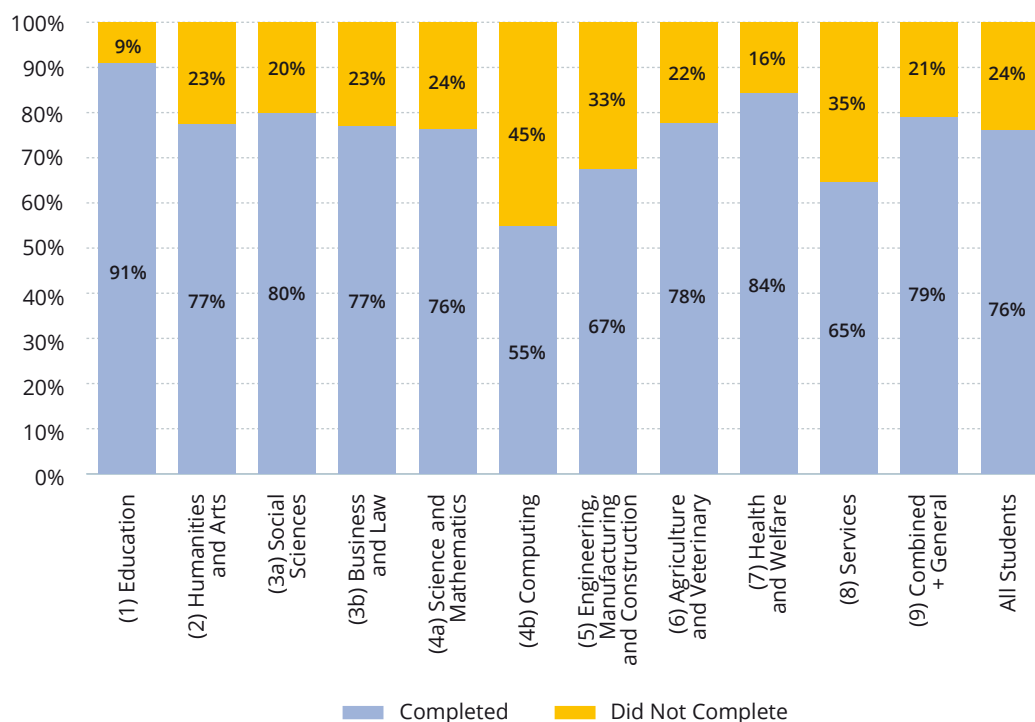
4.1 Introduction

The following analysis looks at completion/non-completion rates by ISCED field of study, with analysis of broad field of study and detailed field of study, and a focus on some specific fields. Previous work has shown that progression rates vary considerably by field of study, with higher rates of non-progression in the computer science and engineering fields in particular. Non-progression rates tend to be substantially lower in the education and healthcare fields. These rates also differ substantially by NFQ level, so analysis by field of study and NFQ level combined is also included. The socioeconomic and spatial analysis chapter contains further analysis of completion rates in 'select high entry points' course areas for students from disadvantaged backgrounds.

4.2 ISCED Field of Study

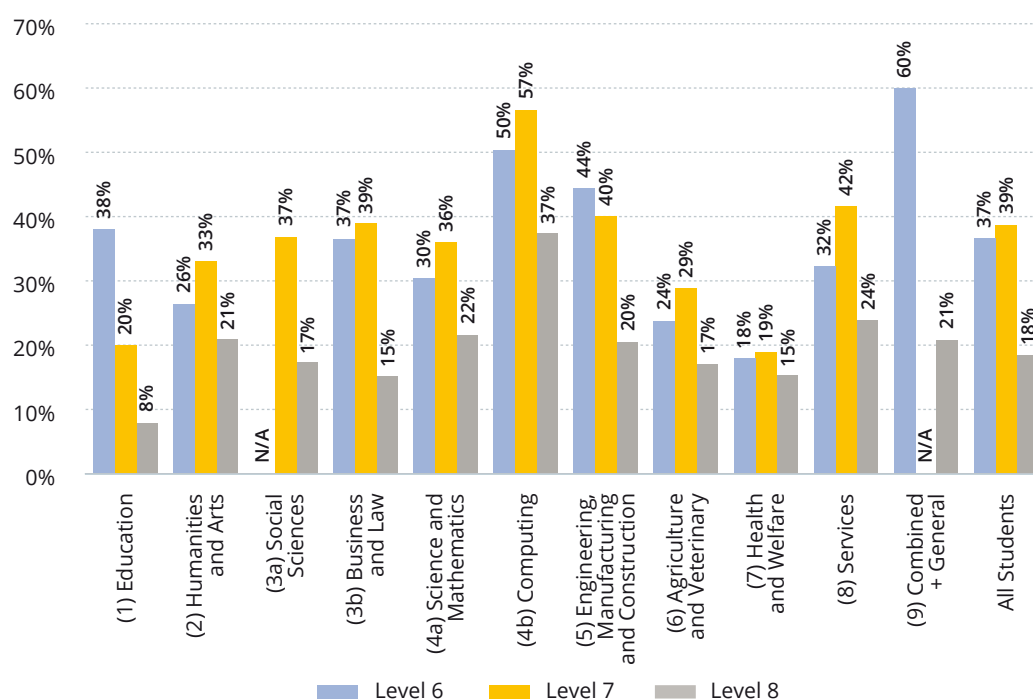
Figure 4.1 below shows overall completion rates by ISCED broad field of study.

Figure 4.1: Completion Rates by ISCED Broad Field of Study



As can be seen above, the lowest rate of completion is evident in the computing field of study at 55%, followed by the services (65%) and engineering, manufacturing and construction (67%) fields. The education (91%) and health and welfare (84%) fields have the highest rates of completion. The headline rates by field of study vary considerably by NFQ level as per figure 4.2 below⁶.

Figure 4.2: Non-Completion Rates by ISCED Broad Field of Study and NFQ Level

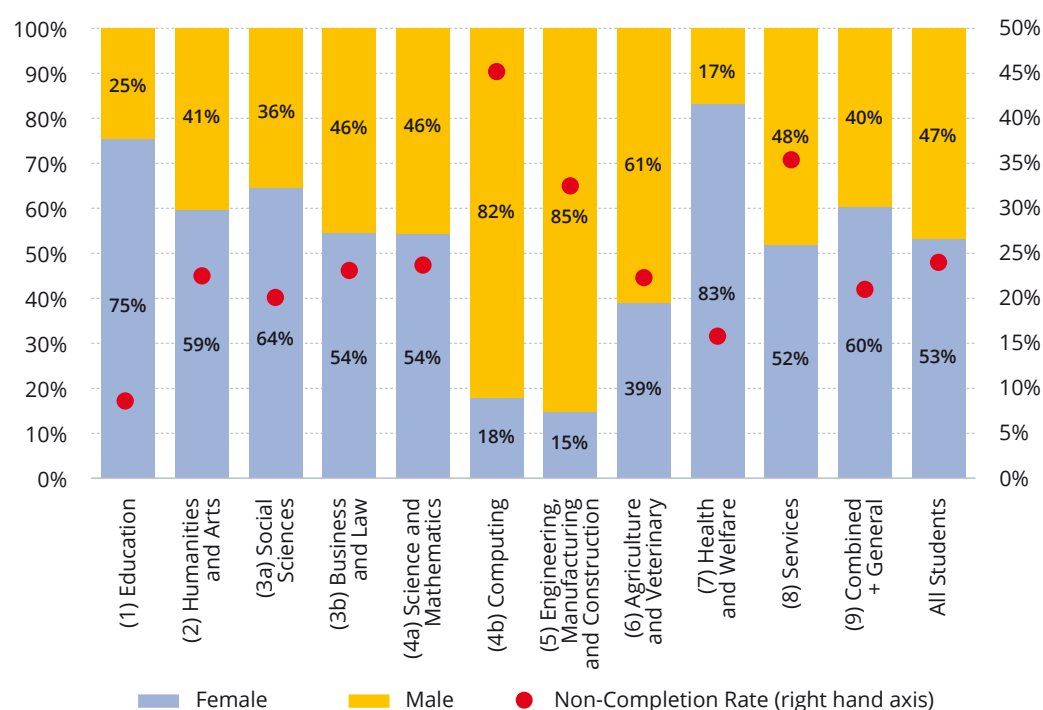


Non-completion rates are highest (excluding the combined group) for computing students at level 7 (57%) followed by computing students at level 6 (50%). The least fluctuation in non-completion rates within field of study across NFQ levels is in the health and welfare field, where non-completion rates are 18%, 19% and 15% at levels 6, 7 and 8 respectively. However, with very low numbers in education at level 6, rates are also relatively low across the board in that field of study.

⁶ Please note that counts are relatively low for certain cohorts including education at levels 6 and 7, agriculture at level 6 and combined at level 6. There were no social science students at level 6 or combined students at level 7.

The gender and Leaving Certificate points characteristics of the field of study cohorts above largely account for the varying completion rates. Figure 4.3 below shows the gender composition of each field of study cohort and associated non-completion rates. The four most gender imbalanced fields have telling non-completion rates. The two male dominated fields, computing and engineering, have the highest and third highest non-completion rates (the services field has the second highest non-completion rate). The two female dominated fields, education and health, have the two lowest non-completion rates. Further analysis in the gender, Leaving Certificate points and modelling chapters, show that the relationship between gender and non-completion is largely, although not entirely, down to females entering with higher Leaving Certificate points on average compared with males.

Figure 4.3: ISCED Broad Field – Gender Composition and Non-Completion Rates



Education and healthcare courses are concentrated at level 8. Therefore, entrants to these courses have higher Leaving Certificate points upon entry on average. Computing and engineering courses are also numerous at levels 6 and 7. Therefore, courses in these areas, particularly at level 6 and 7, have entrants with relatively low Leaving Certificate points. Figure 4.4 below shows, by student numbers, the proportion of each ISCED cohort by NFQ level. As expected, and in line with overall rates presented in this report, fields with higher proportions of students at level 6/7 exhibit higher non-completion rates. The correlation between the proportion of students at level 6/7 and the non-completion rate, by broad field of study, is 0.74. The Leaving Certificate points chapter deals with ISCED by entry LC points.

Figure 4.4: ISCED Broad Field – NFQ Composition and Non-Completion Rates

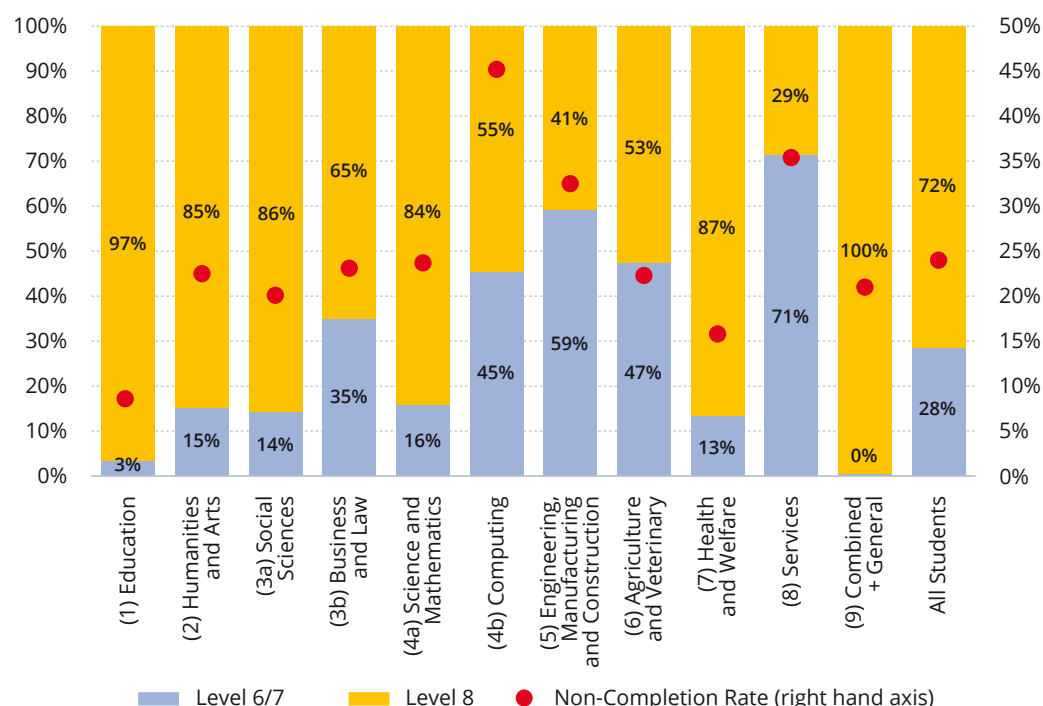
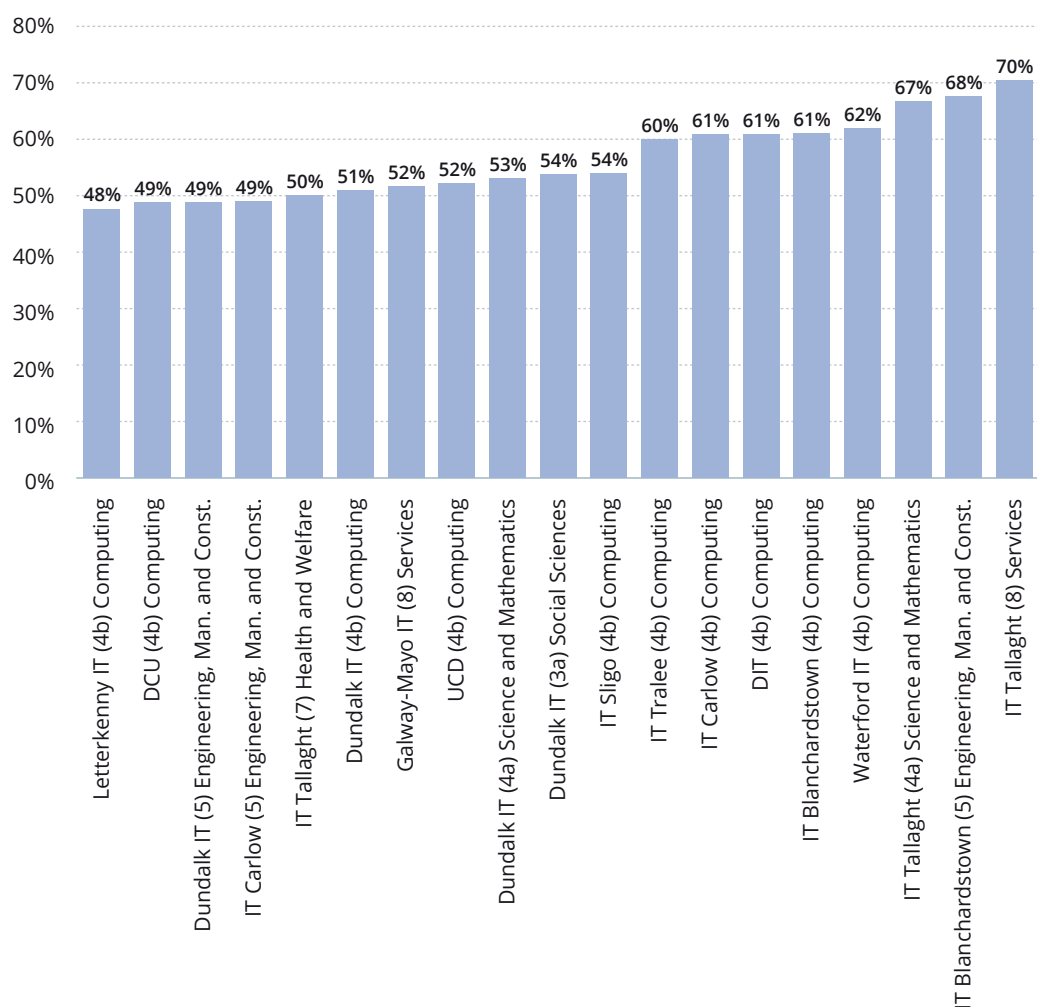


Figure 4.5 below shows ISCED broad fields of study, by institute, where non-completion rates are over 47.5%. There are 19 combinations of institute/ISCED broad field of study where the non-completion rate is above 47.5%. Of these, 10 are the computing field in 10 of the institutes. 3 are engineering, manufacturing and construction, 2 are services, 2 are science and mathematics, 1 is health and welfare and 1 is social sciences⁷. The combined field of study is excluded from this analysis.

⁷ Please note that numbers in Tallaght for both Health/Welfare and Science/Mathematics are very low.

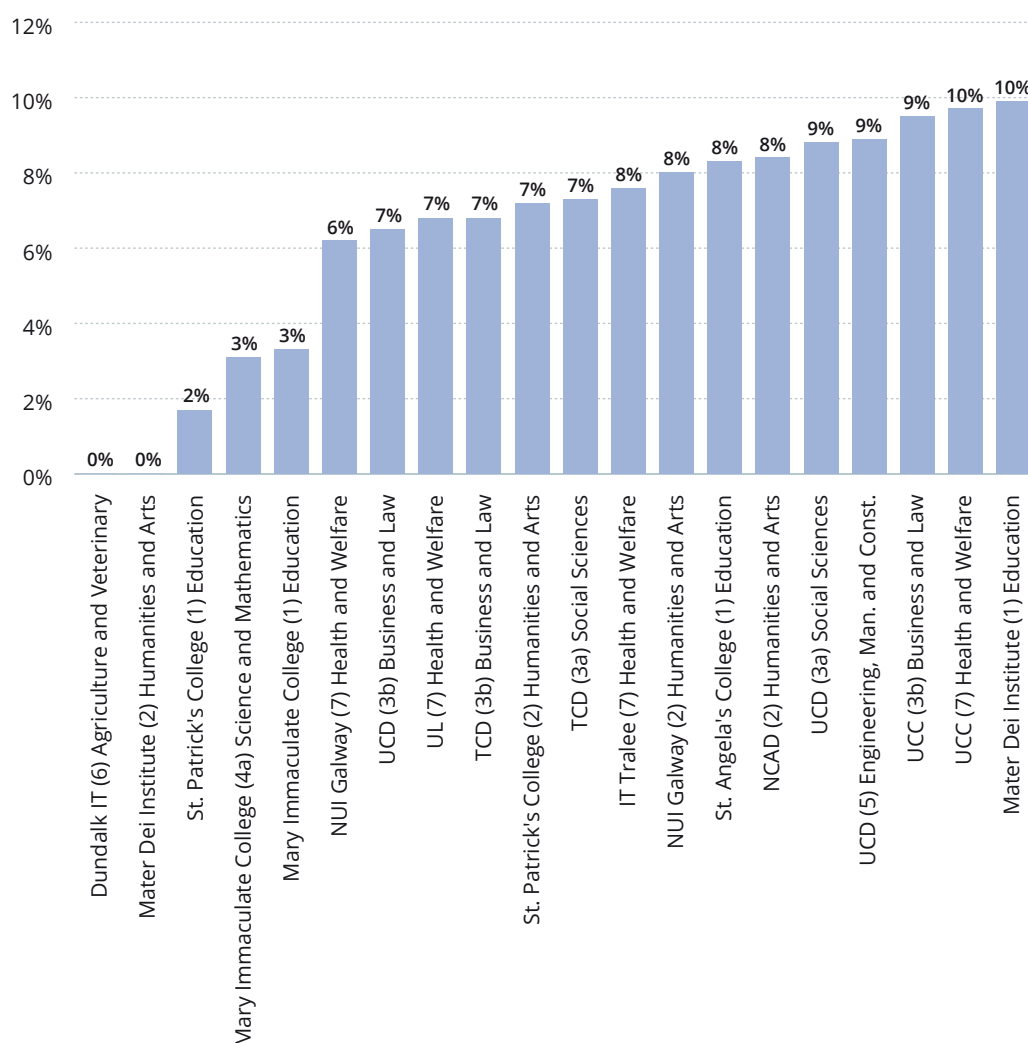
Figure 4.5: Non-Completion Rates by Field of Study and Institute, Rates > 47.5%



At the other end of the non-completion spectrum are the 20 combinations of institute/ISCED broad field of study in figure 4.6 below. These combinations all exhibit non-completion rates less than 10% (the highest two are rounded up to 10%)⁸. As expected, this list is dominated by universities and colleges, with only Health and Welfare in IT Tralee breaking that monopoly.

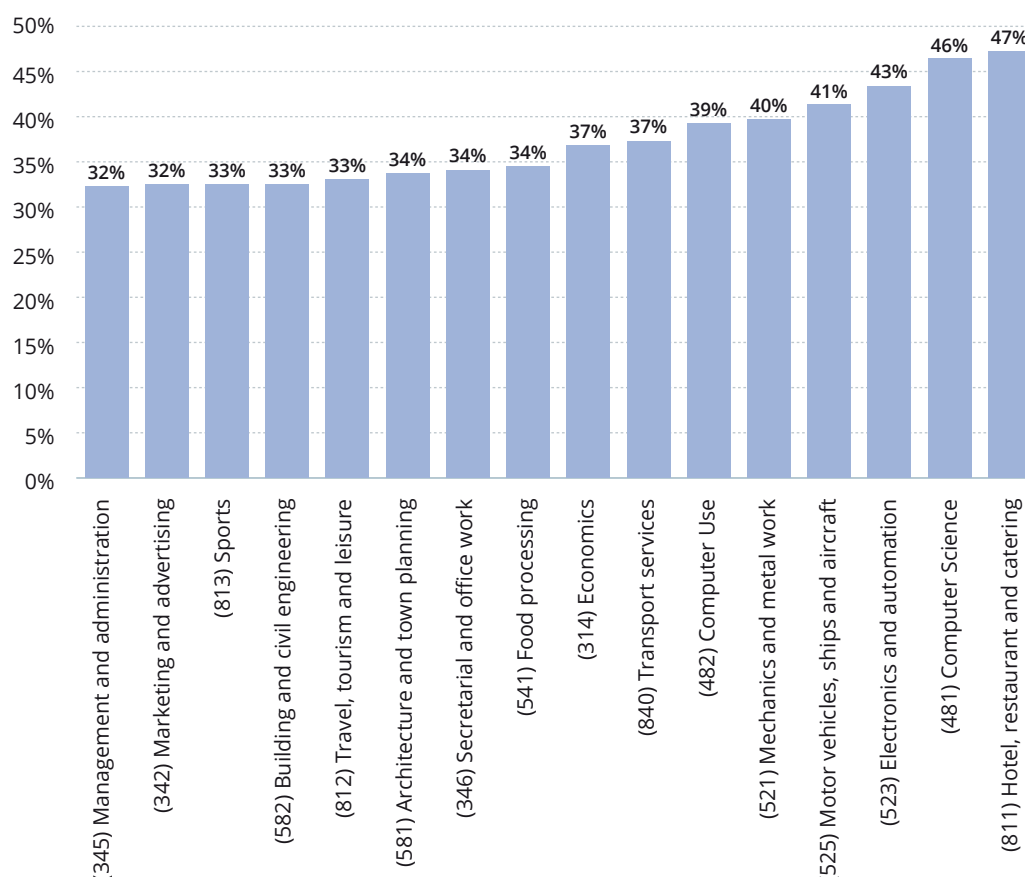
⁸ Numbers in Dundalk (Agriculture), Mater Dei (Humanities), Mary Immaculate College (Science) and NUI Galway (Humanities) are relatively small. NUI Galway humanities and arts numbers are very low for the 2007/08 new entrant cohort as NUI Galway classified most of their students in this area in the combined field of study. The same applies to UCC. Therefore, data in this report on the combined field of study at NFQ level 8 are largely based on NUI Galway and UCC students that are classified as arts and humanities students in more recent times.

Figure 4.6: Non-Completion Rates by Field of Study and Institute, Rates < 10%



A brief analysis of non-completion rates by detailed field of study is below. Only detailed ISCED fields of study with more than 100 students in total are included in the analysis. Data are not broken down by institute or NFQ level to keep the data sufficiently aggregated. Figure 4.7 below shows the 16 detailed field of study areas with non-completion rates greater than 30% (there are 89 detailed fields in total in this dataset). The two detailed fields that comprise the overall computing field (computer science and computer use) both appear in the top 6 fields of highest non-completion rates, 46% and 39% respectively. These figures are across all NFQ levels. The field with the highest non-completion rate overall is hotel, restaurant and catering at 47%. The top 7 fields with the highest non-completion rates are all in the services, computing and engineering broad fields. Perhaps surprisingly, 8th on the list is the economics field. However, this is due to actual economics courses being classified by institutions in other categories, particularly combined fields, where economics is part of a multidisciplinary course.

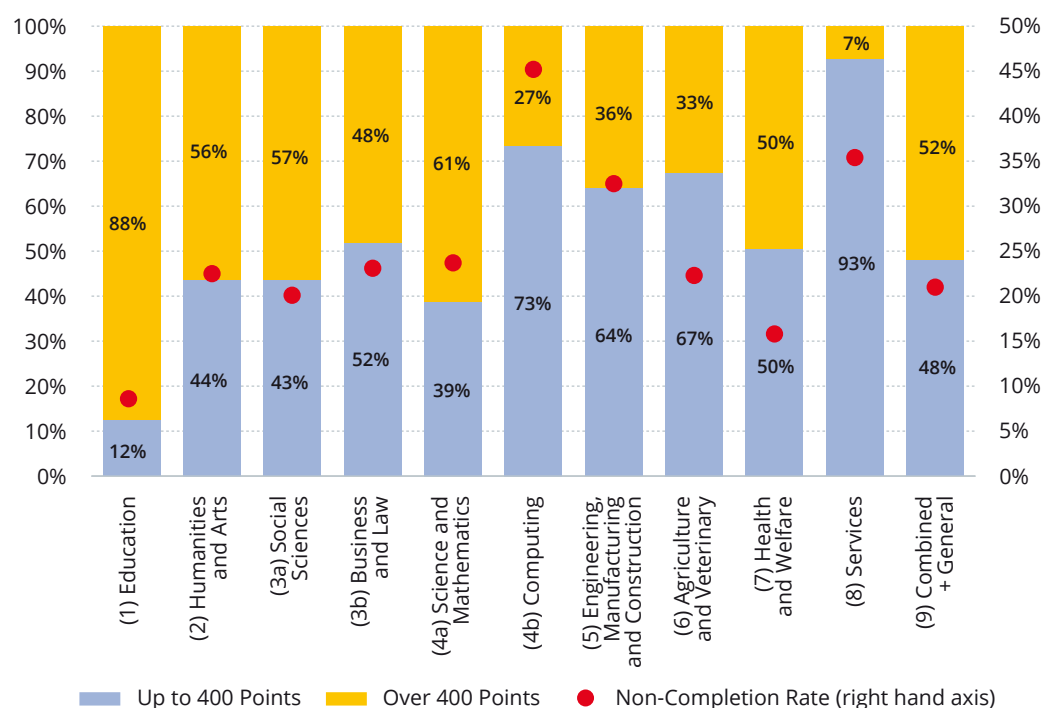
Figure 4.7: Non-Completion Rates by Detailed Field of Study, Rates > 30%



4.3 High Non-Completion Fields

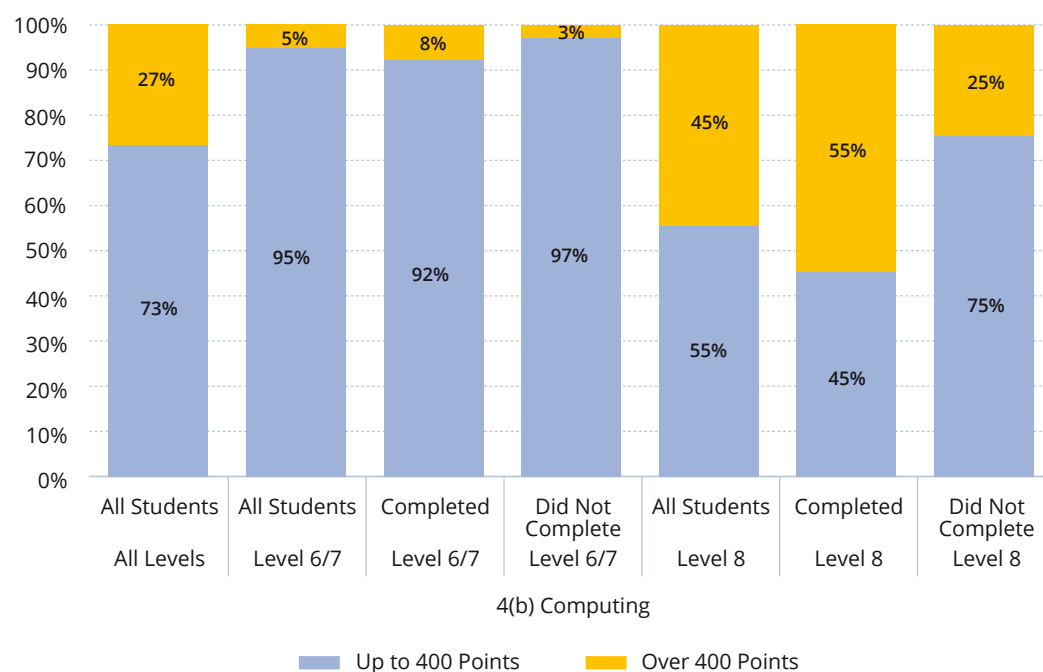
The field of study analysis above highlights the relatively high rates of non-completion in the computing and engineering, manufacturing and construction fields of study, particularly at levels 6 and 7. The below analysis looks at the students in these fields that did not complete to determine common characteristics and potentially contributing factors. Analysis by Leaving Certificate points and grades is conducted on those where these data are available and proportions of totals are of the totals where these data are available. This means the Leaving Certificate points analysis excludes 4 institutes entirely – Maynooth University, DIT, NCAD and St. Angela’s College. The Leaving Certificate Mathematics grade analysis is only conducted on 8 institutes, with only 1 institute of technology included. Therefore, the Mathematics grade analysis in particular should be treated with caution. A detailed analysis of the Leaving Certificate Mathematics grades for the level 6/7 students in the computing and engineering fields would be of great benefit but unfortunately these data are not available in this dataset. Figure 4.8 below shows the proportion in each broad field of study that entered with up to 400 Leaving Certificate points and the proportion that entered with over 400 Leaving Certificate points, where points are known. The associated non-completion rates are also shown. As expected, there is a strong positive correlation between the proportion that enter with up to 400 Leaving Certificate points and the non-completion rate (0.8), indicating that lower points are associated with higher non-completion rates.

Figure 4.8: ISCED Broad Field of Study by Leaving Certificate Points Upon Entry



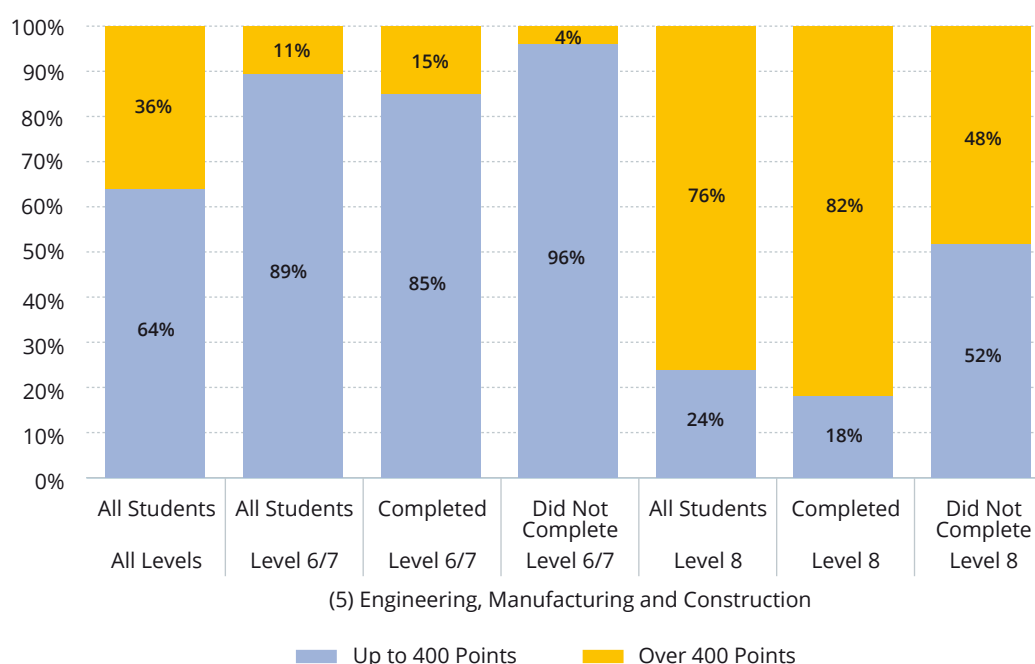
Looking specifically at the computing field, figure 4.9 below shows the proportion of each group, by NFQ level and completion status, that entered with up to and over 400 points.

Figure 4.9: Computing Students by NFQ Level, Entry Points and Completion Status



The relationship is evident – at levels 6/7, 8% of those that completed entered with over 400 points, 3% of those that did not complete entered with over 400 points. At level 8, 55% of those that completed entered with over 400 points compared with 25% of those that did not complete. The relationship between points upon entry and non-completion is mirrored in an analysis of engineering, manufacturing and construction students in figure 4.10 below.

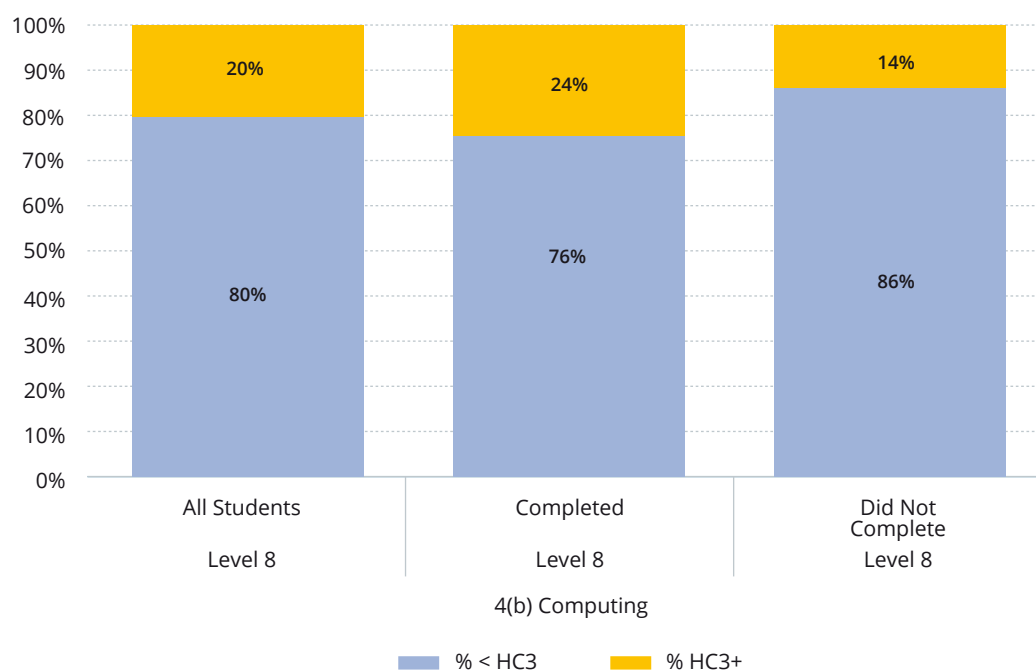
Figure 4.10: Engineering Students by NFQ Level, Entry Points & Completion Status



At levels 6/7, 15% of those that completed entered with over 400 points, 4% of those that did not complete entered with over 400 points. At level 8, 82% of those that completed entered with over 400 points compared with 48% of those that did not complete.

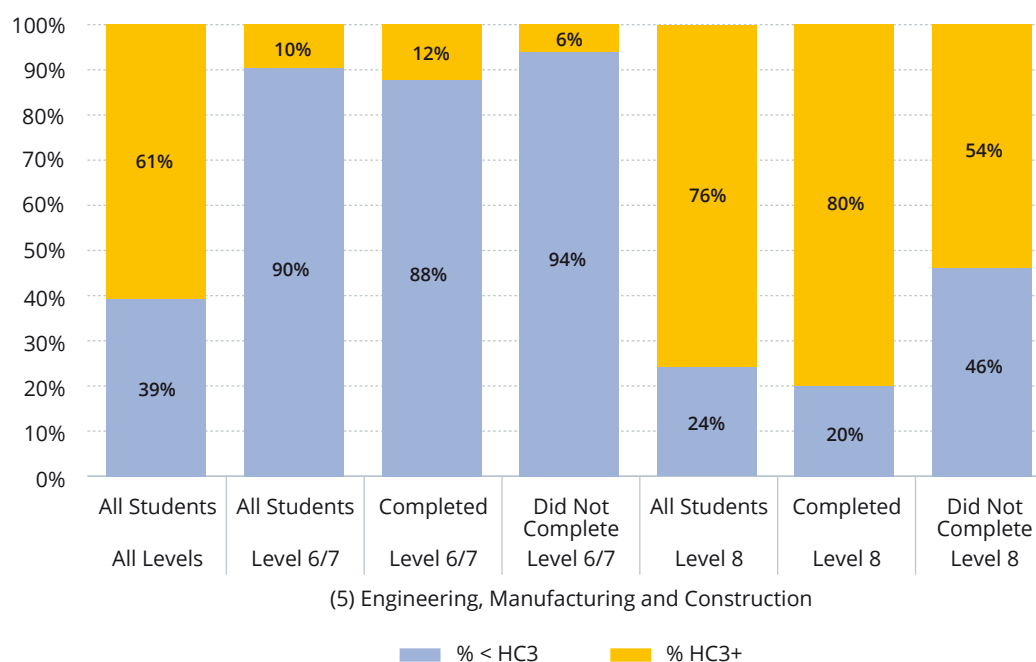
The analysis below, based on data available for 8 institutes (only 1 IoT), looks at the proportion that achieved at least a higher C3 grade in Mathematics by NFQ and completion status. Figure 4.11 below details this for computing students. Only level 8 data are available.

Figure 4.11: Computing Students by NFQ Level, Mathematics Grade and Completion Status



24% of the computing students in this analysis that completed at level 8 entered with at least a higher C3 grade in Mathematics. 14% of those that did not complete entered with at least a higher C3 grade in Mathematics. This relationship is similar for engineering students, illustrated in figure 4.12 below.

Figure 4.12: Engineering Students by NFQ Level, Mathematics Grade & Completion Status



12% of engineering students in this analysis that completed at levels 6/7 entered with at least a higher C3 grade in Mathematics. 6% of those that did not complete at levels 6/7 entered with at least a higher C3 grade in Mathematics. At level 8, 80% of those that completed entered with at least a higher C3 grade in Mathematics, compared with 54% of those that did not complete.

The most outstanding characteristic of these two fields of study is the extent to which they are male dominated. In fact, these two fields are the two most male dominated fields. The Leaving Certificate points and grade analysis above partly captures this effect since females enter with higher points on average but, as models later in this report show, gender itself is a determinant of non-completion. In light of this, the analysis below looks at the gender composition of those that completed and did not complete in these fields, by NFQ level. Figure 4.13 below shows the gender composition of the computing students. The completed group for both levels 6/7 and level 8 both comprised a higher proportion of females. 24% of those that completed at level 6/7 were female compared with 16% of those that did not complete. At level 8, 18% of those that completed were female, compared with 13% of those that did not complete. Therefore, even though females comprise a minority of computing students, they still perform better than males within the discipline, based on completion rates. For engineering students, this relationship is not as evident. At both levels 6/7 and level 8, the proportions of females in the completed and did not complete groups are almost equal, bar a 1 percentage point difference at level 8 (less females in the did not complete group).

Figure 4.13: Computing Students by NFQ Level, Gender and Completion Status

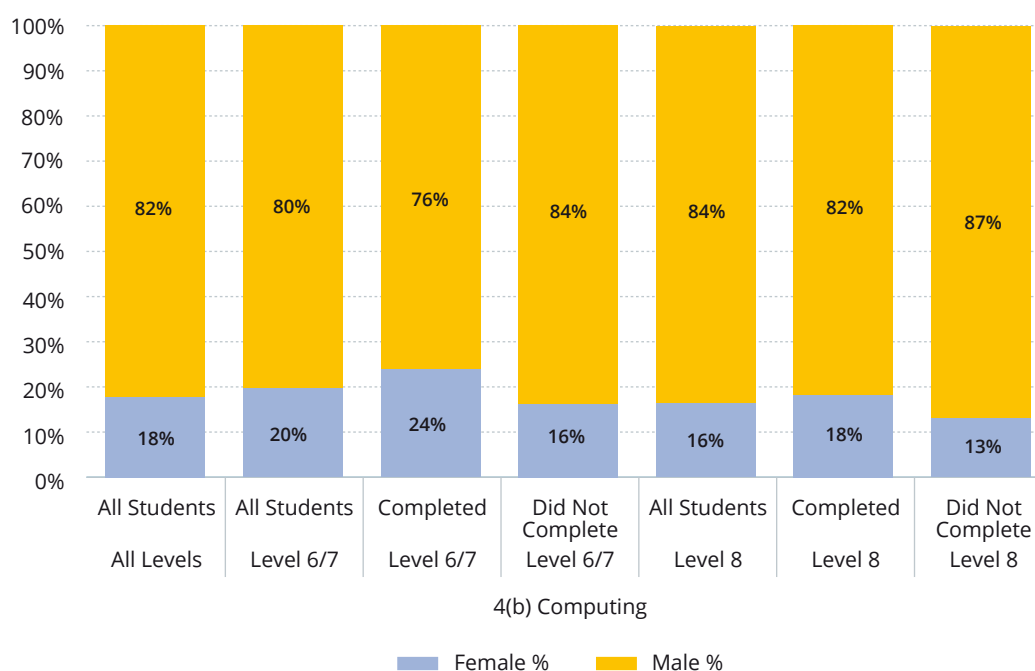
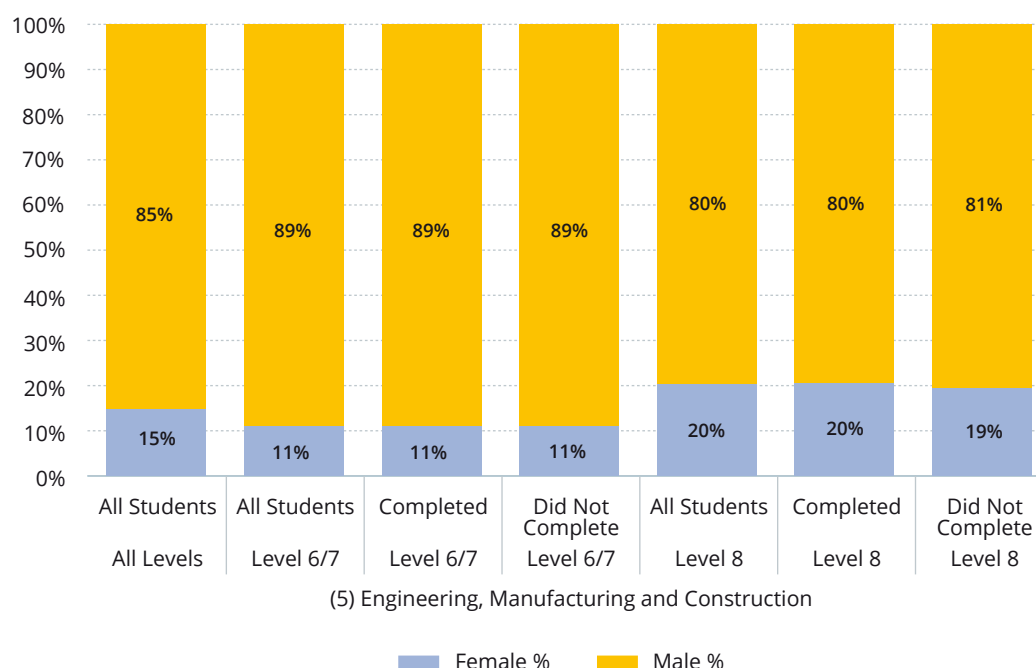


Figure 4.14: Engineering Students by NFQ Level, Gender and Completion Status



4.4 Key Points

- ▶ Across the fields of study, the highest completion rate is in the education field at 91%, followed by health and welfare at 84%; the lowest completion rate is in the computing field at 55%.
- ▶ Based on student numbers, education and health and welfare are the two most female dominated areas (75% and 83% female respectively). Computing and engineering have the lowest proportion of females (18% and 15% respectively).
- ▶ In terms of detailed field of study areas, hotel, restaurant and catering has the lowest completion rate of 53%. The two detailed fields that comprise the computing field overall are in the top 6 detailed fields with the lowest completion rates (computer science 54% and computer use 61%).
- ▶ 55% of computing students that completed at level 8 entered with over 400 Leaving Certificate points compared with 25% of those that did not complete.
- ▶ 24% of computing students that completed at level 8 entered with at least a HC3 in Mathematics compared with 14% of those that did not complete.

The background of the page features a series of concentric, hand-drawn style blue circles that create a ripple effect. A solid, medium-blue horizontal band spans the width of the page, positioned in the upper-middle section. The large number '5' is placed on the left side of this band, while the rest of the title is to its right.

5 Analysis: Gender & Other Demographic Characteristics

5 Analysis: Gender & Other Demographic Characteristics

5.1 Introduction

Completion rates vary considerably by demographic characteristics, particularly gender and age (Eivers et al., 2002). This chapter looks at this variation by gender and age and also briefly by domicile of origin. Previous progression analyses have shown that gender is a key determinant of progression. The literature on completion indicates that rates may vary by gender based on the gender mix of courses students are on. Therefore, this chapter includes a section examining completion rates and final higher education grades, by gender, in male dominated areas and in female dominated areas.

5.2 Gender

5.2.1 Gender Overview

Figure 5.1 below shows the overall rates of completion and non-completion by gender. The rates differ substantially by gender, 81% of females completed their studies compared with 71% of males.

Figure 5.1: Completion Rates by Gender

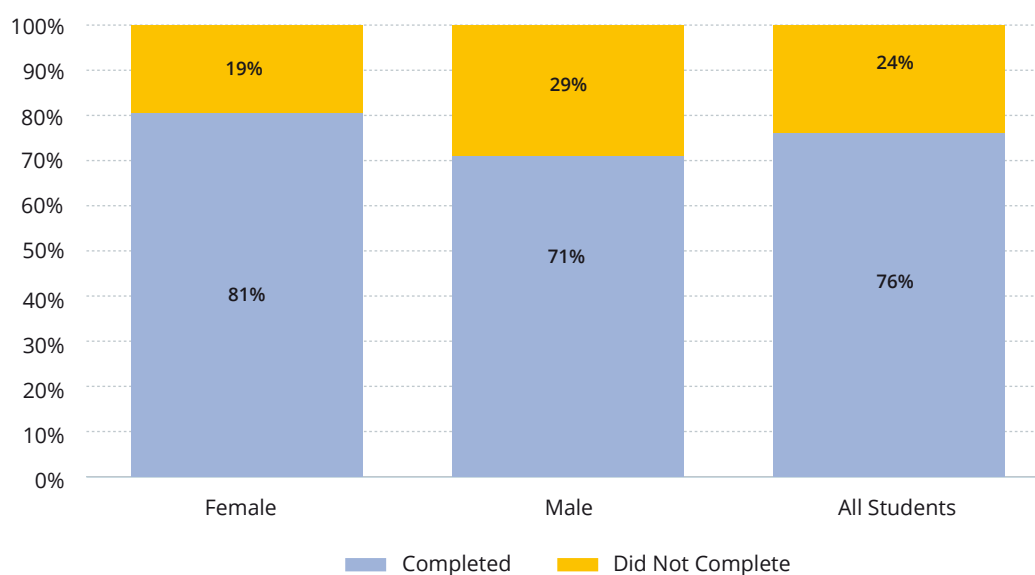
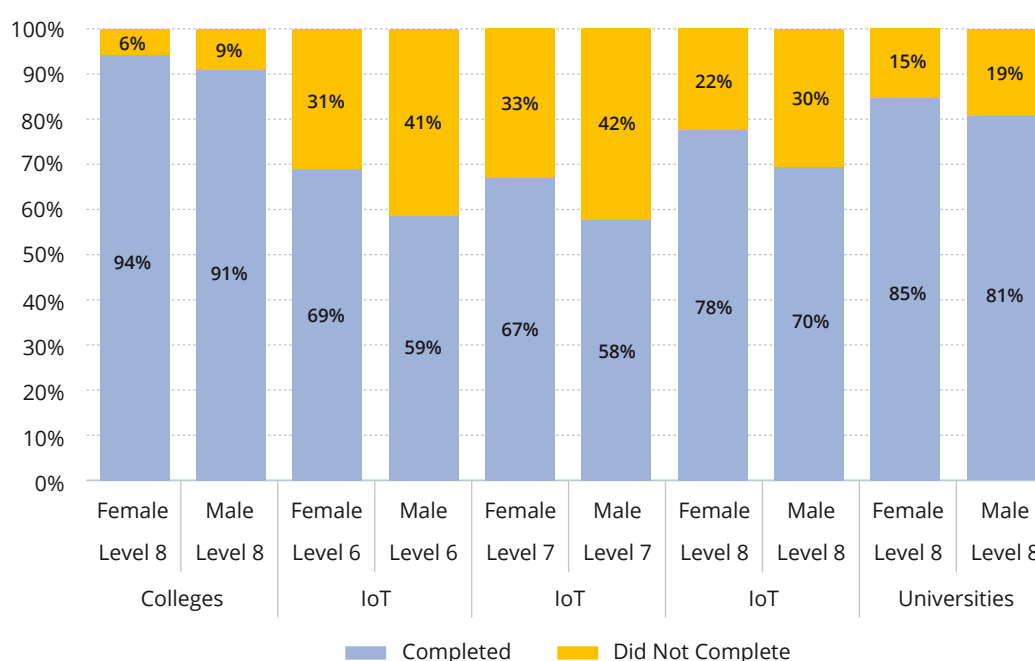


Figure 5.2 below shows how the rates by gender vary across institute type and NFQ level. Females at level 8 in colleges exhibit the highest completion rate at 94%. Males at level 7 in institutes of technology exhibit the lowest completion rate at 58%. The pattern of completion by gender/NFQ mix is evident. Rates are highest at level 8 across the board, albeit lower at level 8 in institutes of technology than in colleges and universities, and rates are higher for females than for males at all NFQ levels in all sectors. The only rate in the institute of technology sector that is higher than the overall national figure of 76% is for females at level 8 (78%).

Figure 5.2: Completion Rates by Gender, NFQ Level and Institute Type



The rates across individual institutes broadly mirror the rates in figure 5.2 above with the non-completion rates for males significantly higher in most instances. There are a couple of notable exceptions. IT Blanchardstown has an overall non-completion rate of 41%, however the rate for males in IT Blanchardstown is 52% – the highest rate for any gender cohort across all 26 institutes. The corresponding rate for females in IT Blanchardstown is 29%. The gender gap in IT Blanchardstown is the widest across all institutes. Conversely, in UCD males actually have a non-completion rate equal to females – both at 18%. This suggests that socioeconomic factors may be more influential in determining male rates of non-completion, given that these two institutes have substantially different socioeconomic student profiles.

One of the main factors contributing to the variance in non-completion rates by gender is the difference in Leaving Certificate points upon entry. On average, females enter with significantly higher points than males. This applies across most sectors, NFQ levels and fields of study. Females also outperform males academically in higher education with a higher proportion of females achieving a 1st/upper 2nd or equivalent in their final exams. These issues are examined in chapter 6 on Leaving Certificate points and final higher education grades. The underlying dynamics are also explored further in chapter 9 on modelling non-completion and final grades.

5.2.2 Peer Outlier Analysis 1: Gender

Male and female enrolments in higher education tend to follow a similar pattern across years with males enrolling in greater numbers in engineering and computer science courses and females enrolling in greater numbers in education and healthcare courses. The gender mix is more balanced in the social science, business and science fields of study. Rates of non-completion by field of study are detailed in the previous chapter, the analysis below looks at the non-completion rates by gender in male and female dominated areas. For the purposes of this analysis, male dominated areas are defined as four-digit level ISCED fields of study where males comprise 70% or more of the students and female dominated areas are where females comprise 70% or more of the students. Full lists of these ISCED areas are available in Appendix C. Figure 5.3 below shows the breakdown of the 34,059 2007/08 new entrants in this dataset by gender/gender course area⁹.

Figure 5.3: 2007/08 New Entrant Cohort by Gender & Gender Course Area

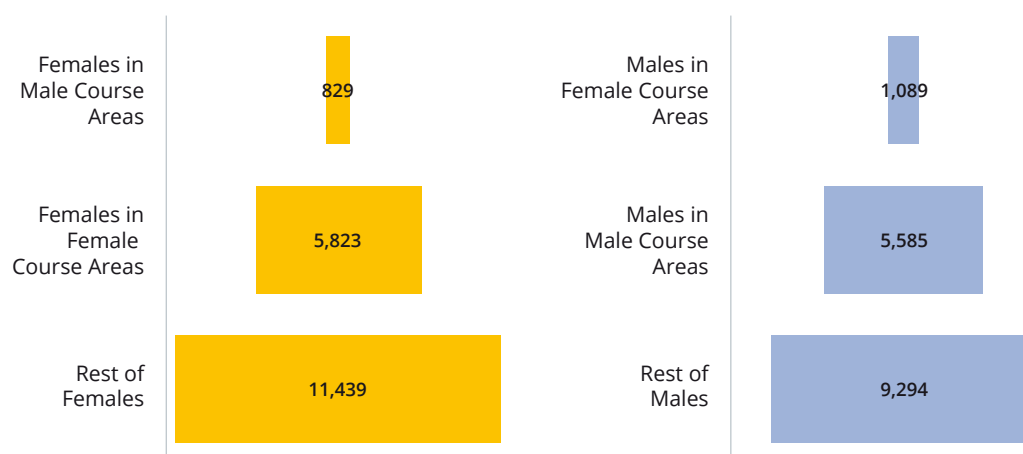
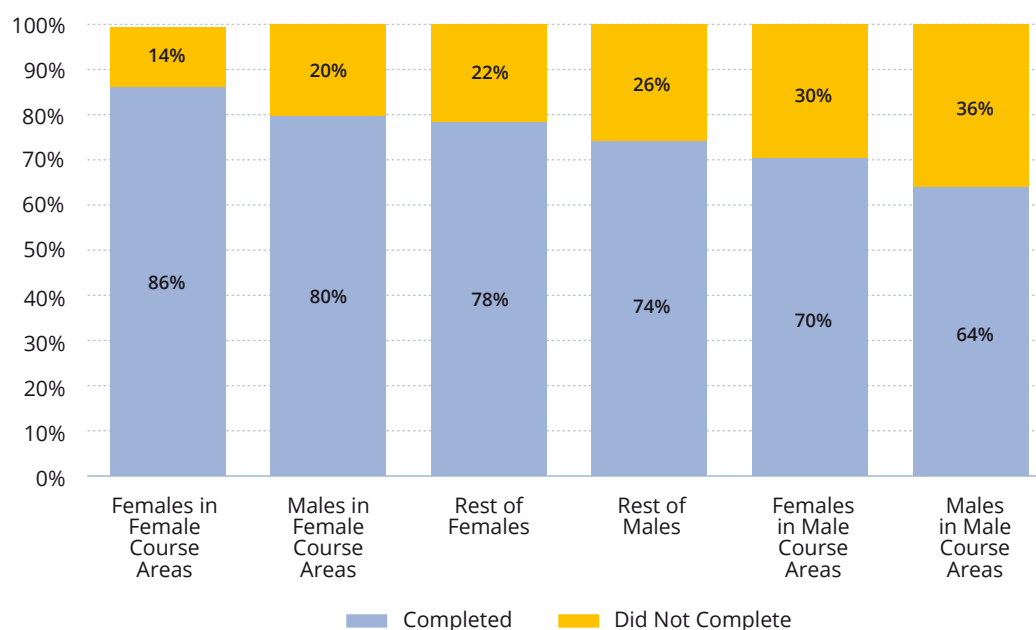


Figure 5.4 below shows the non-completion rates for each of these cohorts.

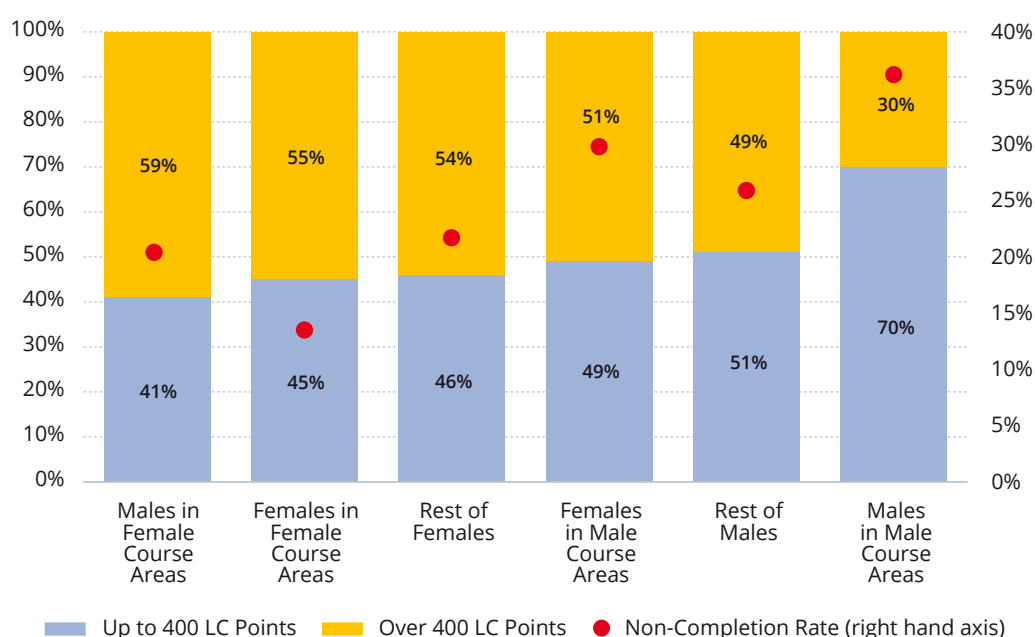
⁹ For brevity, male/female dominated course areas are described in parts as male/female course areas. These classifications are based on actual numbers enrolled in this cohort and others and are not attempting in any way to imply that certain course areas are inherently more 'male' or 'female'.

Figure 5.4: Completion Rates by Gender/Gender Course Area Cohorts



The rates above somewhat alter the non-completion by gender picture overall since the headline rates are substantially higher for females in male course areas (30%) compared with males in female course areas (20%). Initially, this suggests that males fare better in female course areas than males not in female course areas. However, there are other key elements to consider here, particularly Leaving Certificate points upon entry. Figure 5.5 below shows these gender cohorts by Leaving Certificate points upon entry.

Figure 5.5: Gender/Gender Course Area Cohorts by Entry Leaving Certificate Points



The points distributions above in large part explain the lower non-completion rates for males in female course areas compared with all other cohorts bar females in female course areas. 59% of males in female course areas enter with over 400 Leaving Certificate points, a higher proportion than any of the other cohorts in this analysis. Males in male course areas, the cohort that consistently fare worst in this analysis, enter with lower points on average than all other cohorts – only 30% enter with over 400 Leaving Certificate points. In addition, only 19% of the males in female course areas cohort are level 6/7 students, since these course areas are largely education and healthcare courses in colleges and universities. In comparison, 43% of the females in male course areas cohort are level 6/7 students and 58% of the males in male course areas are level 6/7 students, since male course areas are largely engineering and computer science courses in institutes of technology. In fact, although overall institutes of technology account for 45% of students in this whole dataset, 75% of males in male course areas are in institutes of technology.

To understand this further, multivariate models were employed in the below analysis to isolate the effect of being in one of these cohorts on non-completion and also on the proportion of each cohort to achieve a 1st/upper 2nd or equivalent in their final exams, for those that did complete. These models control for the institute type, age, domicile, ISCED field of study, NFQ level and Leaving Certificate points. Average predicted probabilities of completing and of achieving a 1st/upper 2nd or equivalent are presented for each cohort. These can be directly compared to the headline rates of non-completion above. Since all other main contributing factors are controlled for, these give a true estimate of how well males fare in female course areas and how well females fare in male course areas compared to all other cohorts. Only summary results of the models are presented here, full details of the non-completion models are presented in the chapter on modelling.

Figure 5.6: Non-Completion Rates, Modelled v Actual, by Gender Cohort

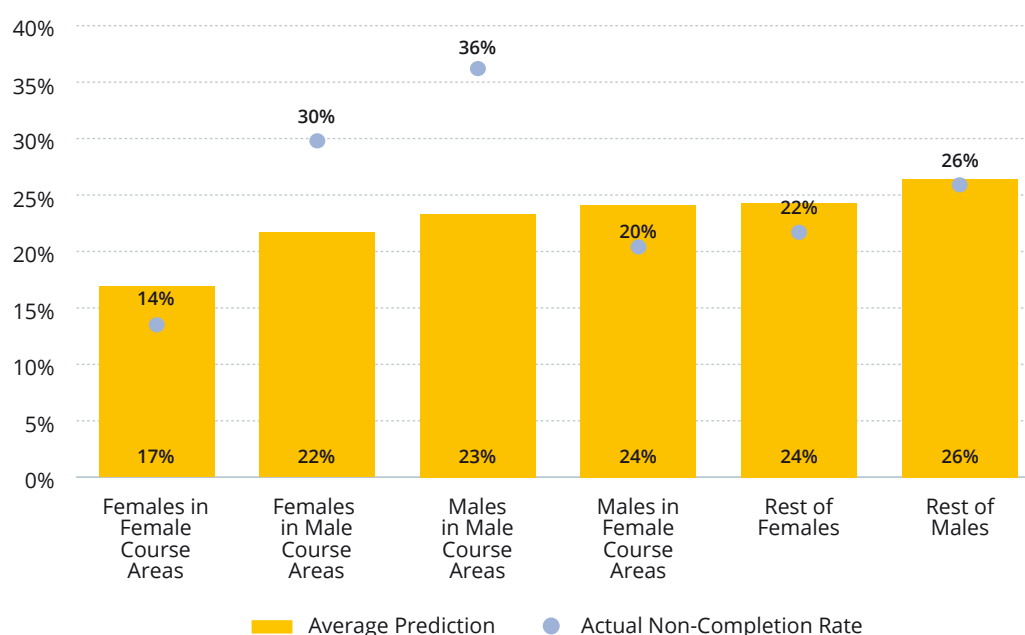
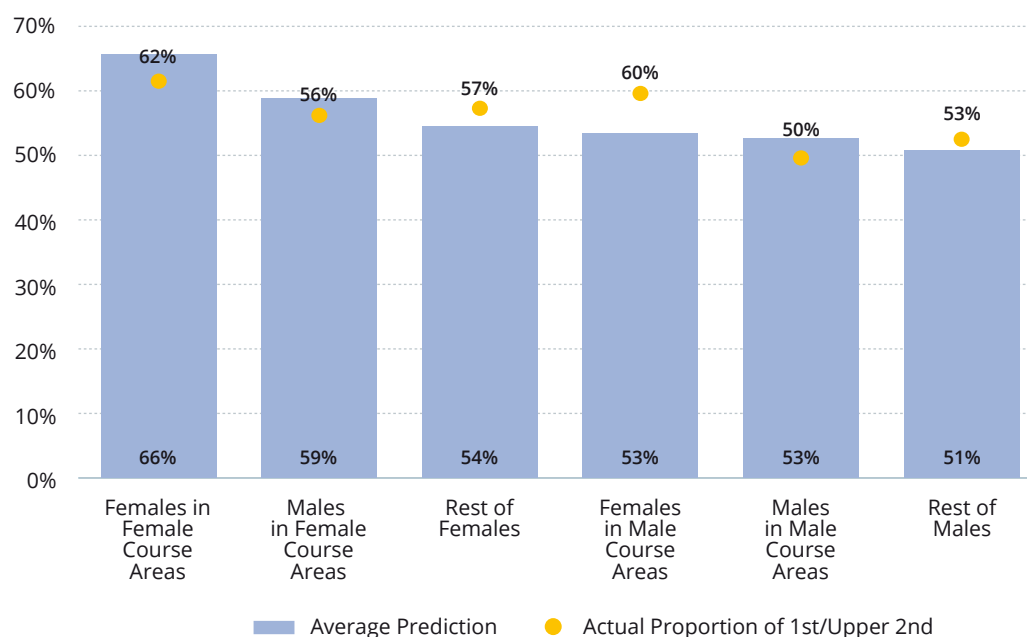


Figure 5.7: 1st/Upper 2nd/Equivalent Rates, Modelled v Actual, by Gender Cohort



The most striking result from the above analysis is the change in the predicted non-completion rate for both males and females in male course areas. After controlling for the set of characteristics, particularly Leaving Certificate points upon entry, the predicted non-completion rates for those in male course areas are substantially lower than the actual rates of non-completion for these cohorts. This indicates that it is the lower entry points on average for those in male course areas that drive the lower non-completion rates in these areas. Holding all else equal, non-completion rates for both males and females in male course areas compare favourably with other cohorts. There is mixed evidence on how well males fare in general in male course areas compared with males in female course areas. The former fare slightly better in the modelled non-completion rates but the latter fare better in terms of the modelled proportion achieving a 1st or upper 2nd. However, the results are clearer for females – females tend to fare better, both in terms of modelled lower non-completion rates and higher proportions achieving a 1st or upper 2nd, in female course areas than in male course areas. Table 5.1 below summarises the results of both modelled measures, showing how well each cohort fares in comparison to other cohorts. Lower non-completion rates are favoured where scores are equal.

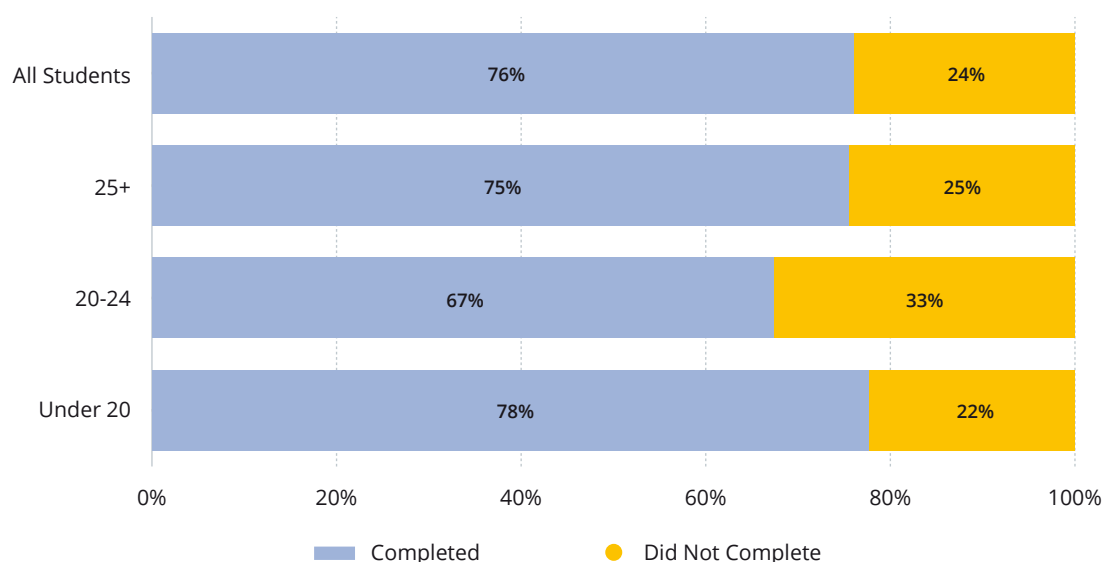
Table 5.1: Summary of Gender Cohort Model Results

GENDER COHORT	NON-COMPLETION RANK	1ST/UPPER 2ND RANK	INDEX SCORE	OVERALL RANK
Females in Female Course Areas	1	1	2	1
Females in Male Course Areas	2	4	6	2
Males in Female Course Areas	4	2	6	3
Males in Male Course Areas	3	5	8	4
Rest of Females	5	3	8	5
Rest of Males	6	6	12	6

5.3 Age

In addition to gender, age is another demographic characteristic of key interest. The analysis below looks at non-completion rates by different age groups, across sectors, NFQ levels and fields of study. Age in this analysis refers to the age in the new entrant year in 2008. Figure 5.8 below shows overall rates by 3 specific groups. These groups have been chosen for the analysis in this report as the distribution of non-completion by age is best captured by these bands.

Figure 5.8: Completion Rates by Age Group



The rates for both the under 20 age group (22%) and the 25+ age group (25%) are not far from the overall figure of 24%. However, the rate for the 20-24 age group is significantly higher at 33%. The composition of these age groups largely explains the divergent rates. Figures 5.9, 5.10 & 5.11 below show the three age groups composition by gender, institute type and NFQ level. Unlike the other age groups, males are the majority in the 20-24 age group. The 20-24 age group also has a higher proportion of institute of technology students and students at NFQ levels 6 and 7. These characteristics account for the higher non-

completion rate evident for the 20-24 age group. Leaving Certificate points by age group are not shown as LC points for older students in the 25+ age group are largely not available, many of these students are admitted through other routes. The entry points of the 20-24 age group are much lower on average than the entry points of the under 20 age group, consistent with the student profiles outlined.

Figure 5.9: Age Group by Gender Proportion

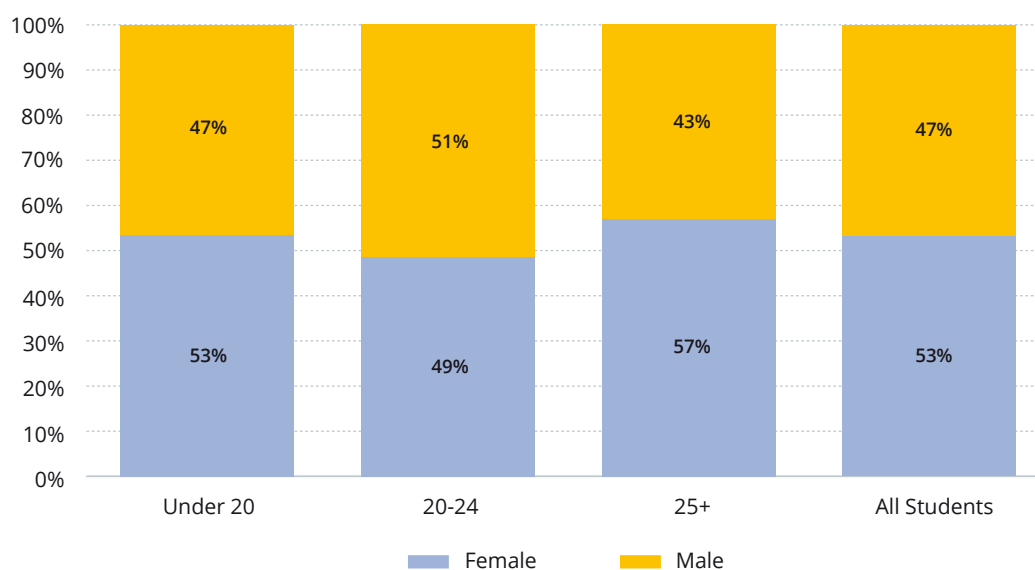


Figure 5.10: Age Group by Institute Type Proportion

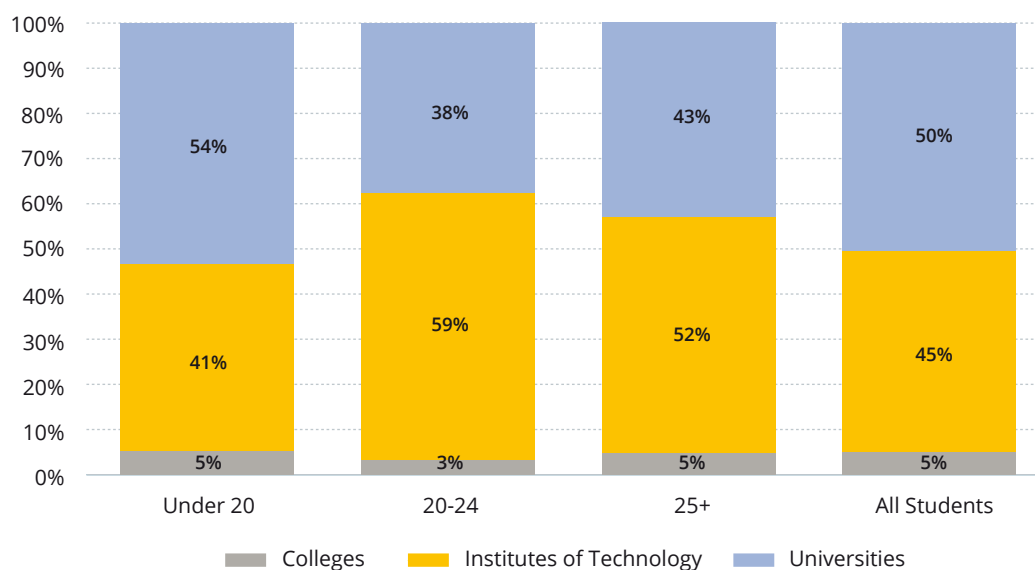
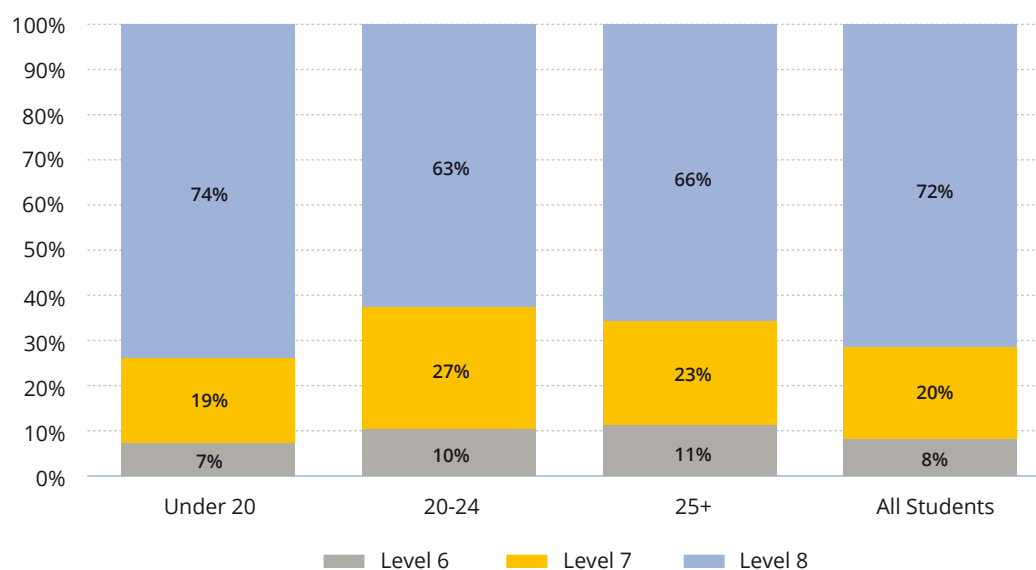


Figure 5.11: Age Group by NFQ Level Proportion



Taking the above student profiles of each of the age groups into account, figures 5.12 & 5.13 below show the non-completion rates of each age group by institute type and NFQ level. The rates are in line with other analyses in this report. Non-completion rates are higher in institutes of technology compared with colleges and universities, for all age cohorts. However, as the NFQ level figure shows (5.13), older students tend to fare better at level 6 and 7 than younger students, albeit actual numbers in these groups are relatively small compared with other groups. Whereas over 40% of level 7 students aged under 25 do not complete, this figure is only 28% for those aged over 25. Conversely, younger students have lower non-completion rates at level 8 than older students. The non-completion rate at level 8 for students aged under 20 is 17% compared with 28% for those aged 20-24 and 23% for those aged over 25.

Figure 5.12: Completion Rates by Age Group and Institute Type

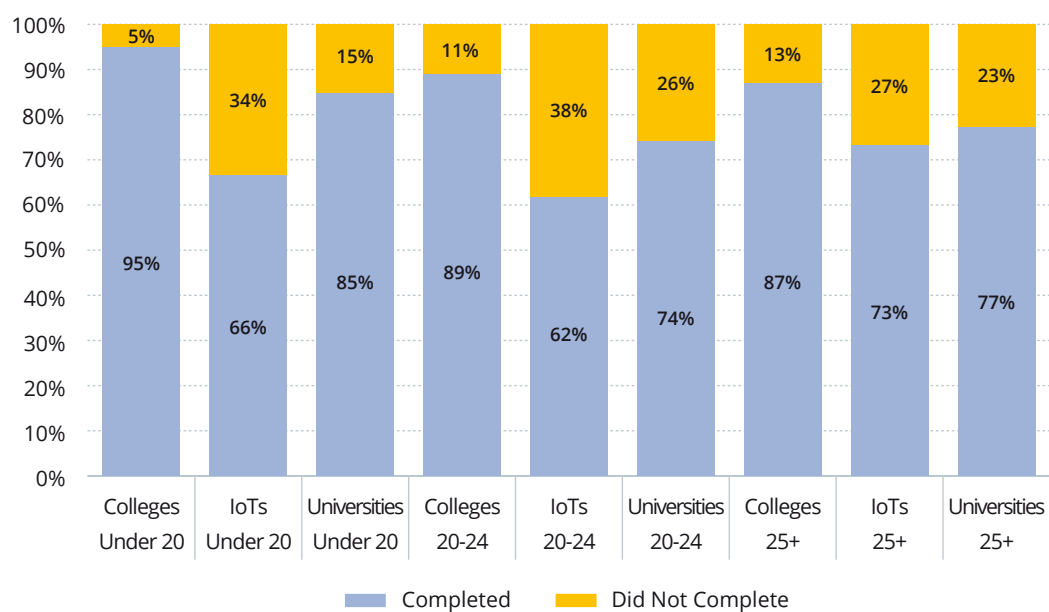
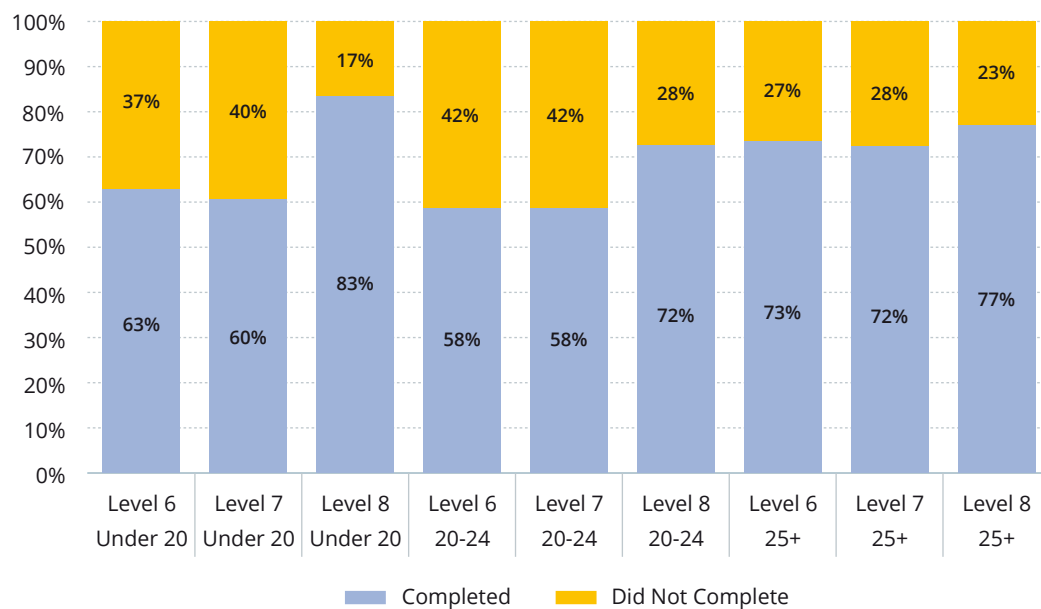


Figure 5.13: Completion Rates by Age Group and NFQ Level



5.4 Domicile

The final demographic characteristic for analysis is domicile of origin. Please note that this is not nationality but rather the domicile of origin for each student, based on domicile for at least 3 of the 5 years prior to entry to higher education in Ireland. Northern Ireland students are not included in the figures for Ireland, they are classified as United Kingdom students. Irish and non-Irish used elsewhere in the report also refer to domicile not nationality. Irish students account for 96% of all students in this dataset, other EU students and non-EU students account for 2% each. Universities have the highest proportion of non-Irish students (7%). Figure 5.14 below shows overall non-completion rates by domicile group. Other EU students have the lowest rate at 17%, Non-EU students have the highest rate at 29%.

Figure 5.14: Completion Rates by Domicile Group

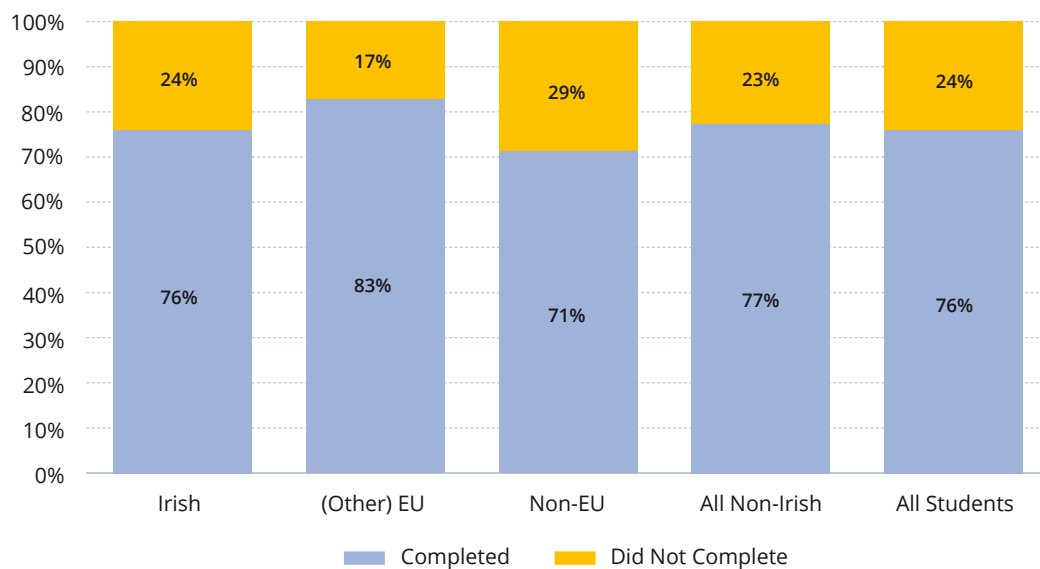
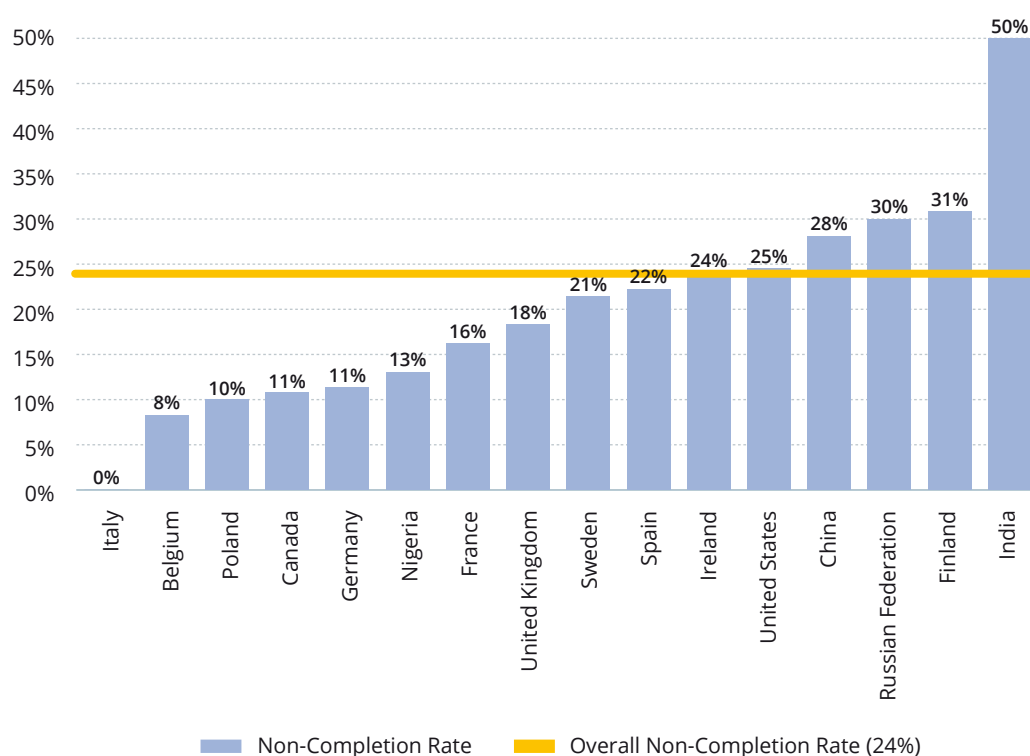


Figure 5.15 below shows non-completion rates by actual country of domicile, where student counts are a minimum of 10. The non-completion rate for Indian students is the highest at 50%, and considerably above the overall rate of 24%. However, this is based on a small number of students.

Figure 5.15: Non-Completion Rates by Country of Domicile



5.5 Key Points

- ▶ The overall completion rate for males is 71% compared with 81% for females.
- ▶ Lower completion rates for males are particularly prevalent at NFQ level 6 and NFQ level 7 in institutes of technology (59% and 58% respectively).
- ▶ Males in male majority course areas have the lowest completion rate at 64% – Leaving Certificate points upon entry is a key factor in this.
- ▶ Students who enter between the age of 20 and 24 have the lowest completion rate at 67%, compared with 78% for those that enter aged less than 20 and 76% for those that enter aged 25 or over.
- ▶ The overall completion rate for Irish domiciled students is 76% compared with 77% for non-Irish domiciled students.

The background of the page features a series of concentric, hand-drawn style blue circles that create a ripple effect. A solid, medium-blue horizontal band spans the width of the page, positioned roughly in the middle. The section header is overlaid on this band.

6 Analysis: Prior Academic Attainment & Final Grade

6 Analysis: Prior Academic Attainment & Final Grade

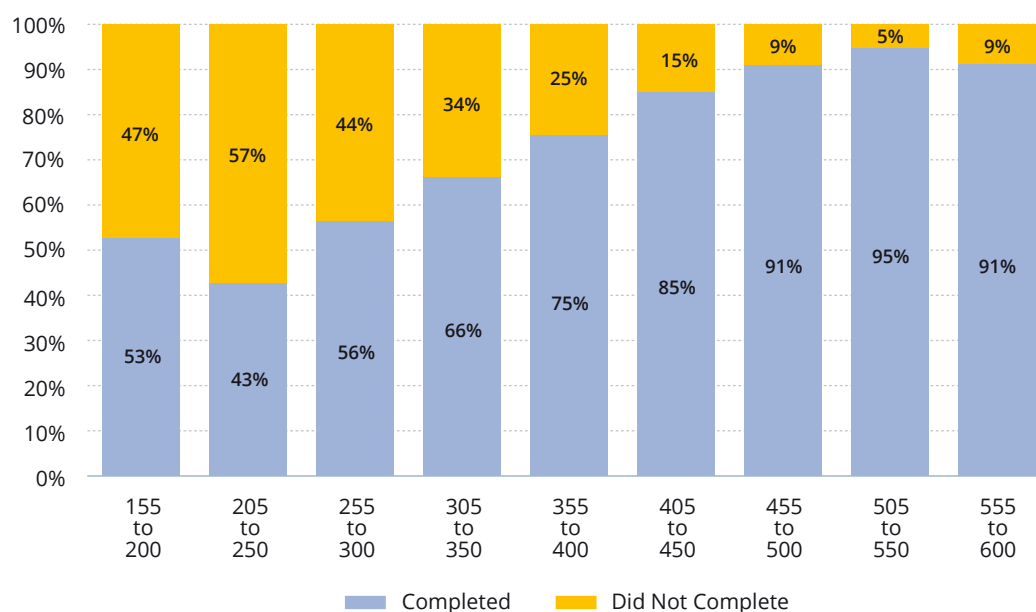
6.1 Introduction

Previous research into progression from first to second year conducted by the HEA has consistently shown that prior academic attainment, i.e. Leaving Certificate points, is the strongest predictor of progression (HEA, 2018). Therefore, it is considered central to this full completion analysis. This chapter looks at Leaving Certificate points by various characteristics and the relationship with non-completion, followed by a focus on Leaving Certificate Mathematics and English grades and their relationship with non-completion. Finally, an analysis of final higher education qualification grades is conducted to assess the relationship between prior academic attainment and course outcomes in higher education.

6.2 Leaving Certificate Points

Leaving Certificate points data are not available for four HEIs in this analysis – DIT, Maynooth University, NCAD and St. Angela's College – all other institutes are included in this analysis. Points are grouped into nine bands from 155 to 200 points up to 555 to 600 points. The 'other' group presented in parts of this report includes those that have not accessed higher education through the standard CAO points system, those that are recorded with points that include portfolio/audition points and the very low number that are recorded in higher education with less than 155 points. Non-Irish students with recorded points are included in the analysis. Figure 6.1 below shows overall completion rates by each band.

Figure 6.1: Completion Rates by Leaving Certificate Points Band



A strong relationship is evident, higher points are associated with higher completion rates. This relationship is the strongest one identified in the entire analysis. Therefore, it is worth analysing other characteristics by Leaving Certificate points to determine the likely role played by points in the relationship between those characteristics and non-completion rates. Table 6.1 below shows the proportion of students in each institute type/institute that entered in each Leaving Certificate points band, where points are known.

Table 6.1: Leaving Certificate Points by Institute Type and Institute

INSTITUTE TYPE/INSTITUTE	155 TO 200	205 TO 250	255 TO 300	305 TO 350	355 TO 400	405 TO 450	455 TO 500	505 TO 550	555 TO 600	UP TO 400	OVER 400	NON- COMPLETION RATE
Colleges	0%	0%	0%	1%	8%	25%	41%	22%	3%	9%	91%	6%
Mary Immaculate College	0%	0%	0%	0%	12%	20%	39%	25%	4%	12%	88%	7%
Mater Dei Institute	0%	0%	0%	11%	36%	47%	4%	1%	0%	47%	53%	8%
St. Patrick's College	0%	0%	0%	0%	0%	28%	48%	21%	3%	0%	100%	3%
Institutes of Technology	6%	12%	22%	28%	21%	8%	3%	1%	0%	88%	12%	34%
Athlone IT	10%	12%	26%	25%	18%	6%	2%	0%	0%	92%	8%	28%
Cork IT	2%	8%	17%	29%	23%	14%	6%	2%	0%	78%	22%	33%
Dun Laoghaire Institute	3%	10%	20%	29%	26%	9%	1%	0%	1%	88%	12%	27%
Dundalk IT	7%	16%	23%	28%	17%	6%	2%	0%	1%	91%	9%	38%
Galway-Mayo IT	5%	11%	19%	25%	24%	11%	3%	0%	0%	85%	15%	35%
IT Blanchardstown	5%	20%	28%	21%	22%	3%	0%	0%	0%	96%	4%	41%
IT Carlow	7%	15%	20%	28%	16%	9%	5%	0%	0%	86%	14%	39%
IT Sligo	7%	13%	22%	29%	21%	6%	2%	0%	0%	92%	8%	33%
IT Tallaght	9%	25%	26%	22%	13%	3%	1%	0%	0%	96%	4%	44%
IT Tralee	8%	12%	18%	25%	25%	9%	2%	1%	0%	88%	12%	27%
Letterkenny IT	14%	18%	27%	24%	13%	3%	1%	0%	0%	95%	5%	39%
Limerick IT	2%	13%	21%	33%	23%	5%	1%	1%	0%	93%	7%	32%
Waterford IT	2%	6%	21%	33%	24%	10%	4%	0%	0%	85%	15%	34%
Universities	1%	0%	0%	7%	19%	24%	23%	16%	9%	27%	73%	17%
Dublin City University	3%	0%	1%	11%	18%	28%	26%	11%	2%	32%	68%	20%
NUI Galway	1%	0%	1%	7%	27%	28%	19%	10%	6%	36%	64%	17%
Trinity College Dublin	0%	0%	0%	1%	6%	13%	33%	26%	21%	7%	93%	15%
University College Cork	1%	0%	0%	8%	19%	25%	21%	16%	10%	28%	72%	16%
University College Dublin	0%	0%	0%	8%	23%	22%	21%	17%	10%	31%	69%	18%
University of Limerick	1%	0%	0%	5%	19%	34%	24%	12%	4%	26%	74%	15%

Overall, 12% of institute of technology students entered with over 400 points. 73% of university students and 91% of students in the colleges entered with over 400 points. This largely explains the difference in the headline rates of completion across institutes. This is explored in more depth in chapter 9. The institute with the lowest non-completion rate overall, St. Patrick's College, had no entrants with less than 400 points in this analysis. 96% of entrants to IT Tallaght, the institute with the highest non-completion rate overall, entered with less than (or equal to) 400 points. The correlation between the proportion with up 400 points and the non-completion rate, by institute, is very high at 0.91. Of course entry points are simply a function of demand and supply for courses within each institute but this is once again strong evidence (and further explored in the multivariate models) that prior academic attainment, in the form of Leaving Certificate points, is the strongest predictor of academic success in higher education.

Non-completion rates also differ considerably by ISCED field of study. Table 6.2 below shows the breakdown of entrants into each field by Leaving Certificate points and NFQ level.

Table 6.2: Leaving Certificate Points by ISCED Broad Field of Study and NFQ Level

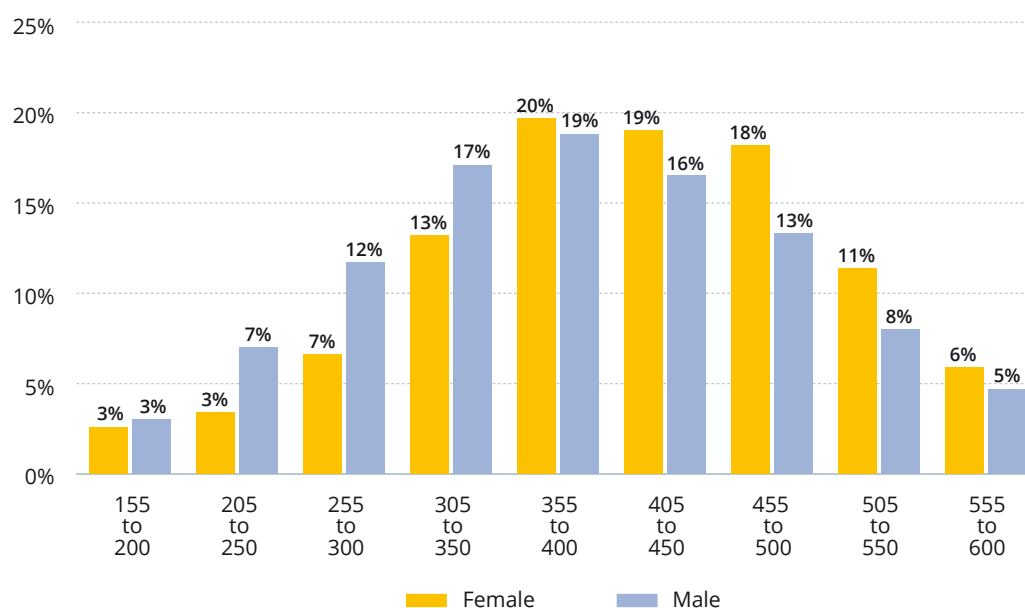
ISCED BROAD FIELD OF STUDY/NFQ LEVEL	155 TO 200	205 TO 250	255 TO 300	305 TO 350	355 TO 400	405 TO 450	455 TO 500	505 TO 550	555 TO 600	UP TO 400	OVER 400	NON-COMPLETION RATE
(1) Education	0%	1%	1%	3%	8%	13%	50%	21%	3%	12%	88%	9%
Level 6	11%	26%	32%	21%	5%	0%	5%	0%	0%	95%	5%	38%
Level 7	5%	30%	35%	20%	10%	0%	0%	0%	0%	100%	0%	20%
Level 8	0%	0%	0%	2%	8%	14%	52%	22%	3%	10%	90%	8%
(2) Humanities and Arts	1%	2%	4%	11%	27%	31%	14%	7%	4%	44%	56%	23%
Level 6	12%	12%	36%	27%	11%	2%	0%	0%	0%	98%	2%	26%
Level 7	10%	13%	22%	24%	18%	6%	3%	2%	3%	86%	14%	33%
Level 8	0%	0%	1%	9%	28%	34%	16%	8%	5%	37%	63%	21%
(3a) Social Sciences	0%	4%	7%	12%	20%	15%	20%	17%	5%	43%	57%	20%
Level 7	0%	23%	31%	24%	19%	1%	0%	0%	0%	98%	2%	37%
Level 8	0%	0%	2%	9%	20%	18%	24%	21%	6%	32%	68%	17%
(3b) Business and Law	3%	7%	12%	16%	14%	15%	18%	11%	4%	52%	48%	23%
Level 6	13%	24%	33%	18%	10%	2%	0%	0%	0%	97%	3%	37%
Level 7	7%	16%	30%	27%	14%	5%	2%	0%	0%	93%	7%	39%
Level 8	0%	0%	3%	12%	14%	21%	27%	17%	6%	29%	71%	15%
(4a) Science and Mathematics	0%	2%	5%	13%	18%	21%	20%	14%	6%	39%	61%	24%
Level 6	5%	11%	25%	35%	15%	7%	2%	0%	0%	90%	10%	30%
Level 7	2%	13%	26%	24%	16%	11%	6%	2%	1%	81%	19%	36%
Level 8	0%	0%	1%	10%	19%	23%	23%	17%	7%	30%	70%	22%
(4b) Computing	4%	14%	17%	20%	17%	16%	6%	3%	1%	73%	27%	45%
Level 6	6%	31%	33%	15%	7%	5%	1%	1%	0%	93%	7%	50%
Level 7	11%	29%	31%	17%	7%	3%	1%	0%	0%	96%	4%	57%
Level 8	0%	1%	6%	23%	25%	28%	11%	5%	1%	55%	45%	37%
(5) Engineering, Manufacturing and Construction	4%	10%	16%	19%	16%	12%	11%	9%	3%	64%	36%	33%
Level 6	12%	25%	29%	23%	8%	3%	0%	0%	0%	97%	3%	44%
Level 7	4%	13%	24%	25%	21%	10%	3%	0%	0%	88%	12%	40%
Level 8	0%	0%	2%	9%	13%	18%	26%	23%	8%	24%	76%	20%

ISCED BROAD FIELD OF STUDY/NFQ LEVEL	155 TO 200	205 TO 250	255 TO 300	305 TO 350	355 TO 400	405 TO 450	455 TO 500	505 TO 550	555 TO 600	UP TO 400	OVER 400	NON-COMPLETION RATE
(6) Agriculture and Veterinary	4%	6%	10%	26%	21%	13%	7%	3%	10%	67%	33%	22%
Level 6	8%	11%	32%	27%	11%	11%	0%	0%	0%	89%	11%	24%
Level 7	11%	16%	19%	20%	23%	7%	2%	1%	0%	90%	10%	29%
Level 8	0%	0%	2%	28%	21%	17%	10%	4%	17%	51%	49%	17%
(7) Health and Welfare	6%	1%	4%	19%	21%	16%	9%	9%	15%	50%	50%	16%
Level 6	0%	1%	24%	29%	8%	24%	13%	0%	0%	63%	37%	18%
Level 7	2%	3%	16%	47%	26%	5%	2%	0%	0%	93%	7%	19%
Level 8	6%	0%	2%	15%	21%	17%	9%	10%	18%	45%	55%	15%
(8) Services	7%	18%	22%	28%	18%	6%	1%	0%	0%	93%	7%	35%
Level 6	6%	23%	17%	23%	19%	13%	0%	0%	0%	87%	13%	32%
Level 7	9%	20%	23%	26%	16%	4%	1%	0%	0%	95%	5%	42%
Level 8	0%	0%	17%	44%	27%	11%	2%	0%	0%	88%	12%	24%
(9) Combined + General	0%	0%	0%	7%	42%	31%	15%	4%	2%	48%	52%	21%
Level 8	0%	0%	0%	7%	42%	31%	15%	4%	2%	48%	52%	21%

The education field of study has the highest proportion of entrants with over 400 points (88%). The vast majority of course offerings and students in this group are in high points courses in teacher training colleges and universities at level 8. The education field has the lowest non-completion rate at 9%. The computer science field has the highest non-completion rate at 45%. Only 27% of entrants in this field entered with over 400 points, the second lowest of all fields of study after the services field. The analysis above further strengthens the evidence of the relationship between Leaving Certificate points and non-completion. Higher points upon entry are associated with lower non-completion rates across most fields and levels. In some instances, level 6 entrants perform better than level 7 entrants, despite entering with lower points on average (albeit level 6 student numbers are relatively low overall).

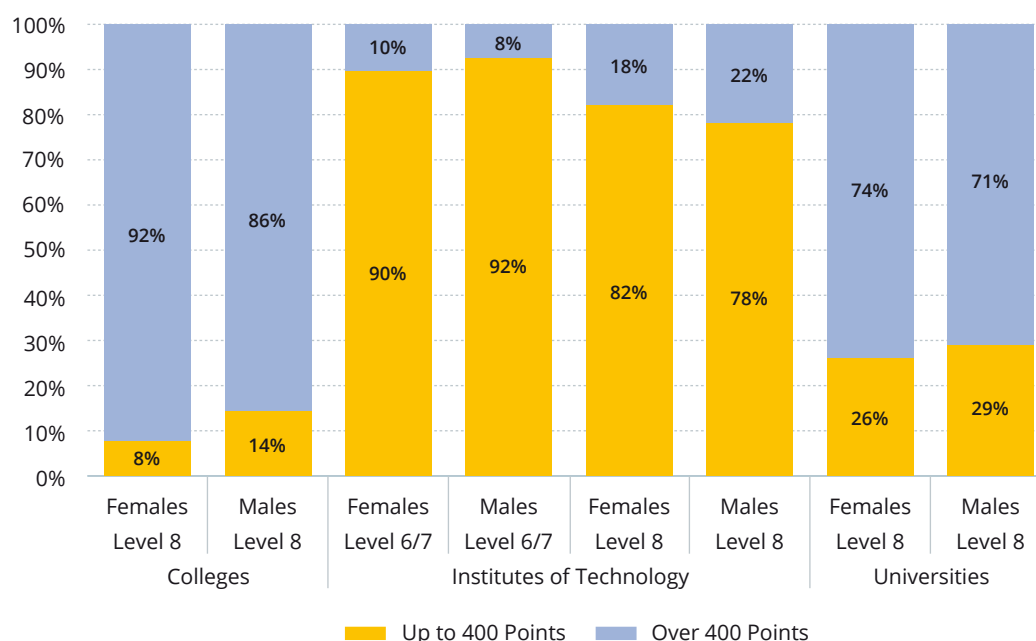
Females tend to outperform males academically at second level and third level (European Commission, 2015). The overall non-completion rate for females is 19% compared with 29% for males. Figure 6.2 below shows the points upon entry by gender.

Figure 6.2: Leaving Certificate Points Upon Entry by Gender



46% of females enter with up to 400 points and 54% enter with over 400 points compared with 58% of males that enter with up to 400 points and 42% that enter with over 400 points. The most common band of entry points for both females and males is the 355 to 400 points band. Given the strength of the relationship between Leaving Certificate entry points and non-completion rates, this gender difference in entry points, at least partly, explains the difference in non-completion rates by gender. Although the higher Leaving Certificate points achieved by females and the higher final HE qualification grades achieved by females indicate that females simply outperform males academically at all levels, on average. Figure 6.3 below shows points upon entry by gender and NFQ level for each institute type.

Figure 6.3: Leaving Certificate Points Upon Entry by Gender, NFQ & Institute Type



The difference in entry points above and below 400 is not so large when broken down by institute type attended but the higher proportion of males attending institutes of technology and the higher proportions of females attending universities and colleges drives the larger difference overall, since points upon entry are so much higher on average in the university and college sectors.

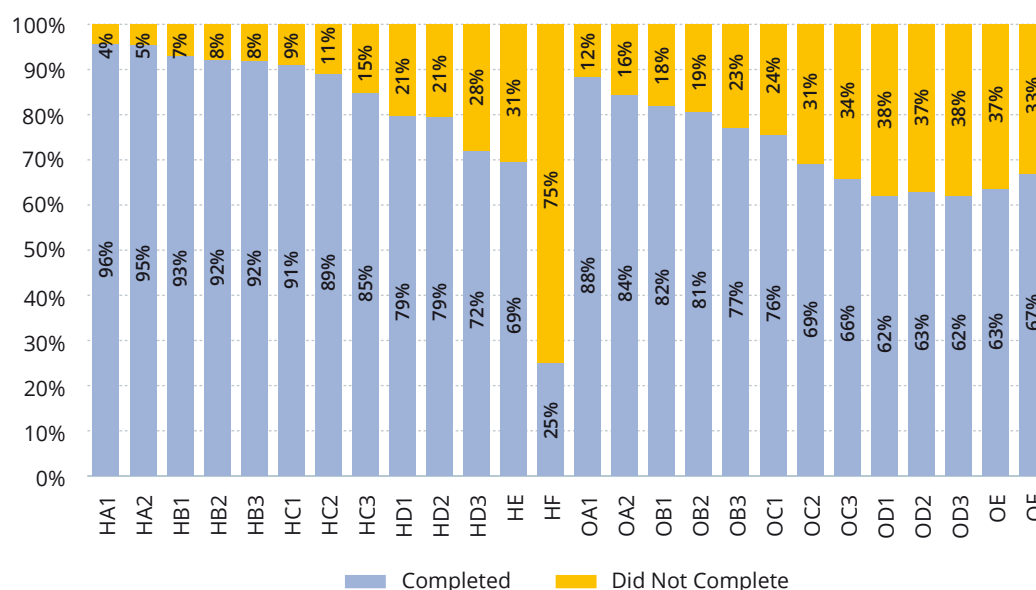
6.3 Leaving Certificate Mathematics and English Grades

Leaving Certificate Mathematics and English grades are available for 8 of the 26 HEIs in this dataset, therefore the below analysis is based on a sub-set of the population (data are available for circa 14,000 of the circa 34,000). The 8 institutes included in this analysis are DCU, DIT, Mater Dei, Maynooth University, NUI Galway, St. Patrick's College, UCC and UCD. Only 1 institute of technology (DIT) is included – Leaving Certificate points and grades are much lower on average for institute of technology entrants compared with university and college entrants. As a result of missing data, this analysis focusses on the relationship between grades and non-completion where data are available rather than on distributions of grades across institutes and student characteristics, which are skewed and non-complete in this instance.

Figure 6.4 below shows the completion/non-completion proportions by Leaving Certificate Mathematics grade achieved¹⁰.

¹⁰ The numbers in the E and F groups for both Mathematics and English at higher and ordinary levels are low.

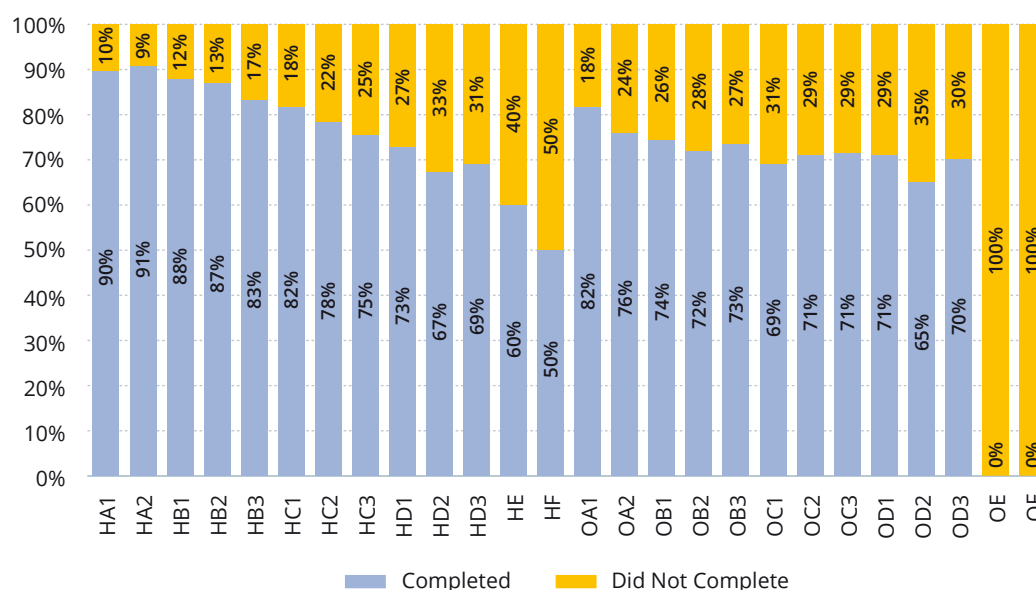
Figure 6.4: Completion Rates by Leaving Certificate Mathematics Grade Achieved



The relationship is clear – higher grades achieved in Leaving Certificate Mathematics are associated with higher completion rates. Only 4% of those who enter with an A1 in higher level Mathematics do not complete their higher education course compared with 38% of those who enter with a D1 or D3 in ordinary level Mathematics. Of course the above analysis is simply confirmation of the relationship between higher Leaving Certificate points and lower non-completion rates since those who achieved the highest Mathematics grades in general are those who achieved points at the upper end of the scale. For instance, where both points and grades are known, 76% of those who entered with an A1 in higher level Mathematics, entered with between 555 and 600 points compared with 0% of those who entered with a D in ordinary level Mathematics. The majority of those that enter with over 500 points, enter with at least a B2 in higher level Mathematics.

The analysis of Leaving Certificate Mathematics grades above is broadly similar to the analysis of Leaving Certificate English grades below. Figure 6.5 shows the completion/non-completion proportions by Leaving Certificate English grade achieved.

Figure 6.5: Completion Rates by Leaving Certificate English Grade Achieved



However, English grade is not quite as strong a predictor of completion compared with Mathematics. 10% of those that enter with an A1 in higher level English do not complete their course (this is 4% for Mathematics). Those that enter with the lower Mathematics grades are also more likely to not complete compared with those that enter with the lower English grades. Despite this, the pattern is still quite similar – higher Leaving Certificate English grades are associated with lower non-completion rates. Higher level Mathematics grades also have a stronger association with the highest overall Leaving Certificate points than higher level English grades. Where both points and grades are known, 39% of those who entered with an A1 in higher level English, entered with between 555 and 600 points (this is 76% for Mathematics) compared with 0% of those who entered with a D in ordinary level English. Similarly to Mathematics, the majority of those that enter with over 500 points, enter with at least a B1 grade in higher level English.

Mathematics and English grades achieved for entrants differ substantially by ISCED field of study. Table 6.3 below shows the proportion of entrants to the eight HEIs covered in this analysis (5 universities, 2 colleges and 1 institute of technology) that achieved an A in higher level Mathematics or English or an A or B in higher level Mathematics or English. Given this dataset is university dominated, grades are much higher on average than the wider population.

Table 6.3: Leaving Certificate Mathematics and English Grades by ISCED Field of Study

ISCED BROAD FIELD OF STUDY	A HIGHER MATHEMATICS	A/B HIGHER MATHEMATICS	A HIGHER ENGLISH	A/B HIGHER ENGLISH
(1) Education	2%	12%	20%	67%
(2) Humanities and Arts	0%	4%	13%	52%
(3a) Social Sciences	1%	10%	18%	54%
(3b) Business and Law	5%	21%	16%	56%
(4a) Science and Mathematics	8%	23%	13%	46%
(4b) Computing	1%	10%	4%	29%
(5) Engineering, Manufacturing and Construction	15%	41%	12%	44%
(6) Agriculture and Veterinary	10%	21%	15%	40%
(7) Health and Welfare	14%	27%	19%	53%
(8) Services	0%	1%	2%	19%
(9) Combined + General	1%	5%	11%	44%

Engineering, agriculture and health entrants tend to have high Mathematics grades (41% of engineering entrants had at least a B in higher level Mathematics). Arts and services entrants tend to enter with lower grades in Mathematics with very few entering with a higher level A or B grade. Only 1% of computing entrants entered with an A in higher level Mathematics. Higher grades in English are more common. Education entrants had particularly high English grades – 67% enter with at least a higher level B grade. Computing and services entrants tend to have lower grades in English.

6.4 Final Higher Education Grades

There is, as expected, a very strong relationship between Leaving Certificate points upon entry and final grade achieved in higher education. The analysis below is based on the numbers that actually graduated in this dataset (25,887 of the 34,059).

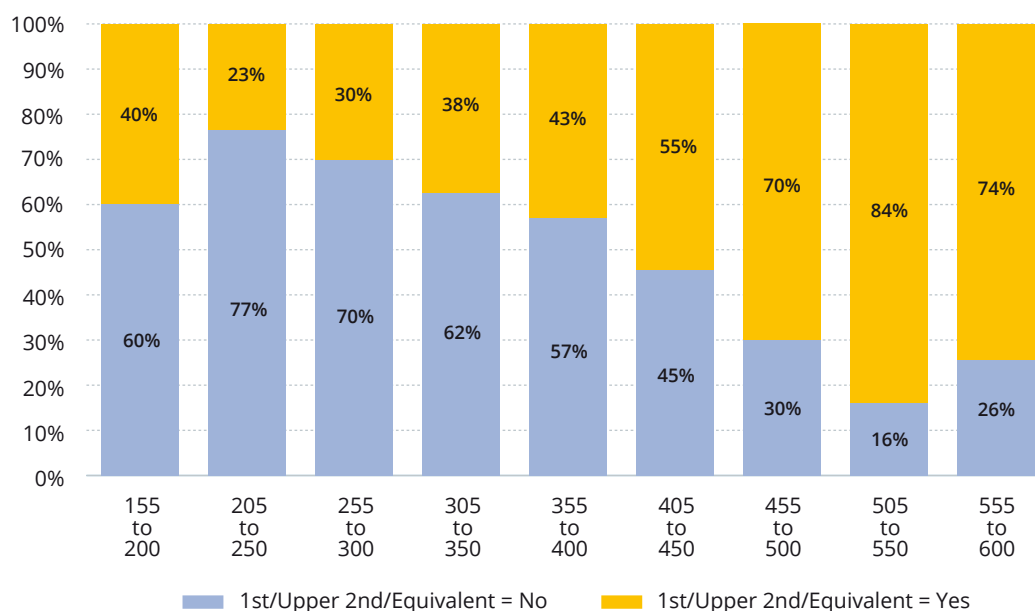
Table 6.4 below shows the relationship between Leaving Certificate points upon entry and final grade in higher education, where Leaving Certificate points are known. The table looks at each final HE grade and gives the proportion that entered with each Leaving Certificate points band. A very strong relationship is clearly evident. 51% of those that are awarded a 1st class honours enter with over 500 Leaving Certificate points (73% entered with over 450 points). This applies mainly to universities and colleges. For those in institutes of technology – 65% that were awarded a distinction entered with over 350 points, the upper end for institute of technology entrants in general. Those who were awarded a pass HE grade, rather than an honours grade, tend to come from the cohort entering with less than 400 points.

Table 6.4: Final HE Grade by Leaving Certificate Points Band

FINAL GRADE (READ ACROSS ROWS)	155 TO 200	205 TO 250	255 TO 300	305 TO 350	355 TO 400	405 TO 450	455 TO 500	505 TO 550	555 TO 600	TOTAL
First Class Honours	2%	0%	1%	3%	8%	13%	22%	29%	22%	100%
Distinction	2%	5%	10%	18%	27%	25%	9%	3%	1%	100%
Second Class Honours Grade 1	1%	0%	1%	6%	14%	22%	29%	20%	7%	100%
Merit 1	3%	8%	21%	29%	25%	11%	3%	1%	0%	100%
Second Class Honours Grade 2	1%	0%	2%	13%	28%	28%	20%	6%	2%	100%
Merit 2	5%	12%	26%	31%	19%	6%	1%	0%	0%	100%
Second Class Honours	4%	0%	0%	1%	8%	26%	7%	14%	40%	100%
Third Class Honours	0%	0%	0%	11%	34%	30%	19%	4%	1%	100%
Other Honours	0%	0%	0%	0%	0%	0%	0%	2%	98%	100%
Pass	4%	13%	23%	26%	18%	7%	3%	2%	4%	100%
Not Specified	0%	9%	0%	0%	12%	27%	21%	27%	3%	100%

Figure 6.6 below shows the proportions that were awarded a 1st, upper 2nd or equivalent (distinction or merit 1) by entry Leaving Certificate points band.

Figure 6.6: Leaving Certificate Points Band by Final HE Grade Group



84% of those that entered with between 505 and 550 points were awarded a 1st/upper 2nd or equivalent compared with 23% of those that entered with between 205 and 250 points.

Figure 6.7 below shows the proportion that were awarded a 1st/upper 2nd or equivalent by institute. 70% of the 2007/08 new entrants that graduated from St. Patrick's College and Trinity College achieved a 1st or upper 2nd. 21% of IT Blanchardstown and 27% of IT Tallaght 2007/08 new entrants that graduated achieved a 1st/upper 2nd or equivalent. The overall National figure is 56%.

Figure 6.7: 1st/Upper 2nd or Equivalent Proportions by Institute

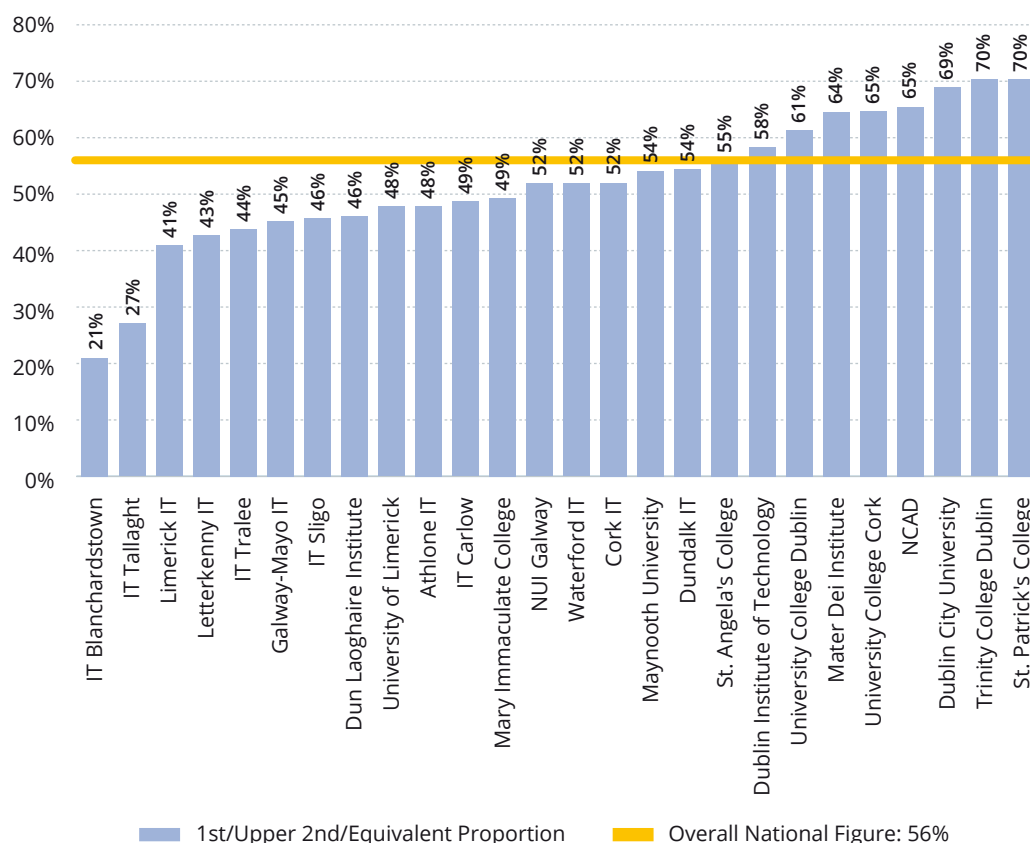


Figure 6.8 below shows the proportion that were awarded a 1st/upper 2nd or equivalent by institute type. 49% of 2007/08 new entrants in institutes of technology that went on to graduate achieved a 1st/upper 2nd or equivalent, compared with 60% in both universities and colleges. The rates in the institutes of technology sector vary by NFQ level – 57% for level 8 new entrants, compared with 44% for level 6 and 42% for level 7 new entrants.

Figure 6.8: 1st/Upper 2nd or Equivalent Proportions by Institute Type

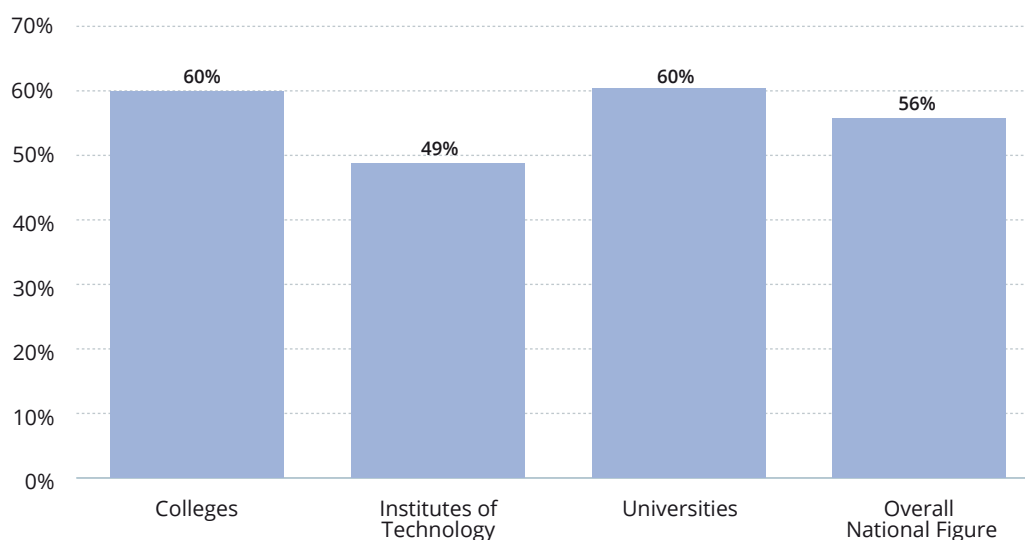


Figure 6.9 below shows the proportion of students that were awarded a 1st/upper 2nd or equivalent by ISCED broad field of study. The highest rates are evident in the education and social science fields (both 64%) with the lowest rate in services (43%).

Figure 6.9: 1st/Upper 2nd or Equivalent Proportions by ISCED Field of Study

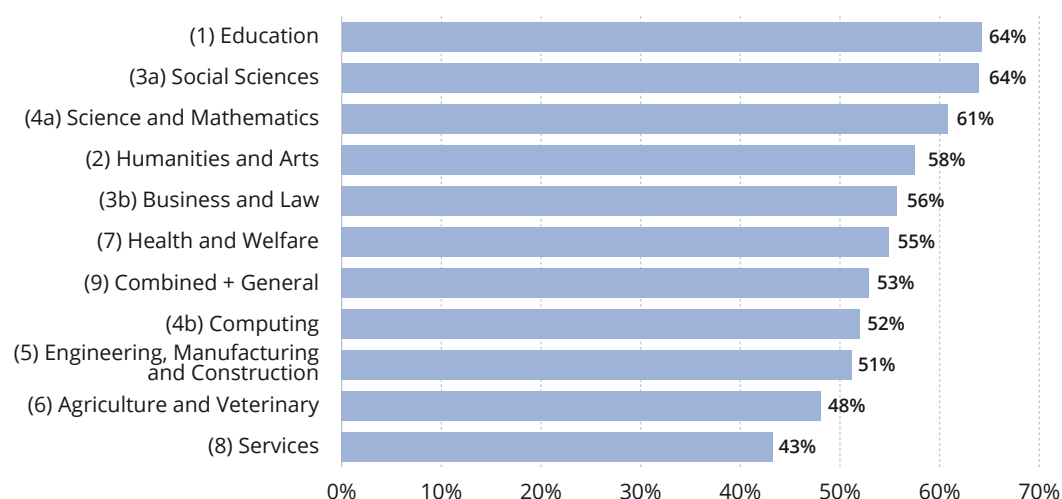


Figure 6.10 below shows the proportion of students that were awarded a 1st/upper 2nd or equivalent by gender. Leaving Certificate points are key to this difference with females entering with higher points on average across most levels, fields and institutes.

Figure 6.10: 1st/Upper 2nd or Equivalent Proportions by Gender

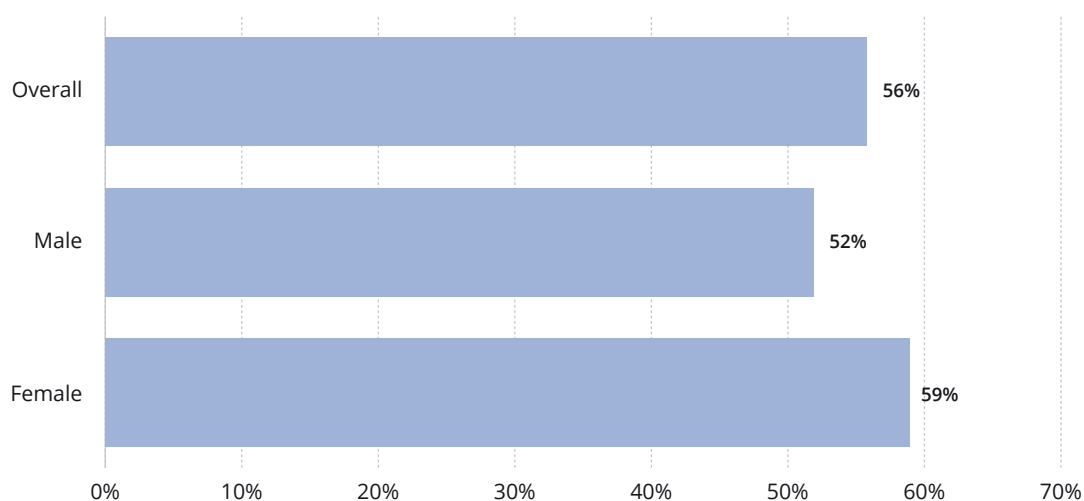


Figure 6.11 below shows the proportion of students that were awarded a 1st/upper 2nd or equivalent by socioeconomic group. Entrants coming from the professional and managerial socioeconomic groups achieve a 1st or upper 2nd more commonly than those in the more disadvantaged socioeconomic groups.

Figure 6.11: 1st/Upper 2nd or Equivalent Proportions by Socioeconomic Group

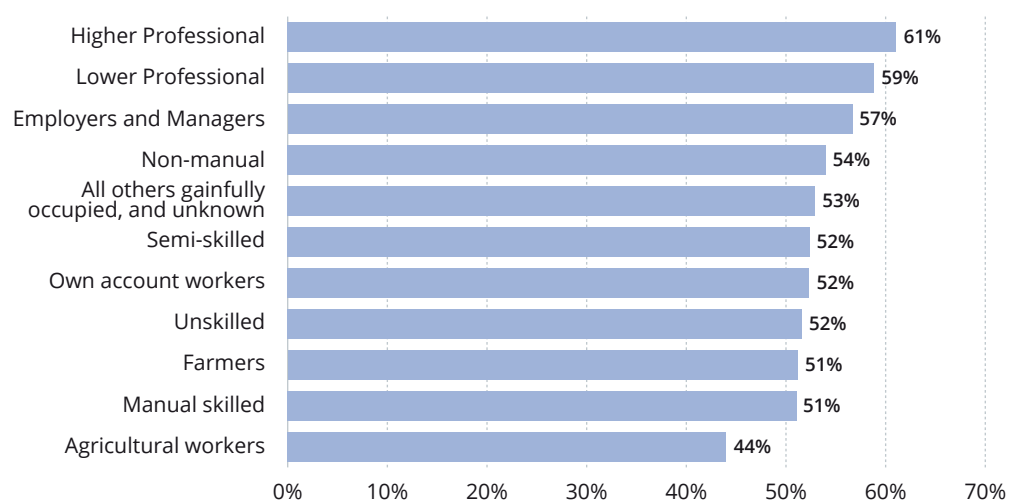


Figure 6.12 below shows the proportion of students that were awarded a 1st/upper 2nd or equivalent by grant status. 53% of those in receipt of a grant achieved a 1st or upper 2nd compared with 57% of those not in receipt of a grant.

Figure 6.12: 1st/Upper 2nd or Equivalent Proportions by Grant Status

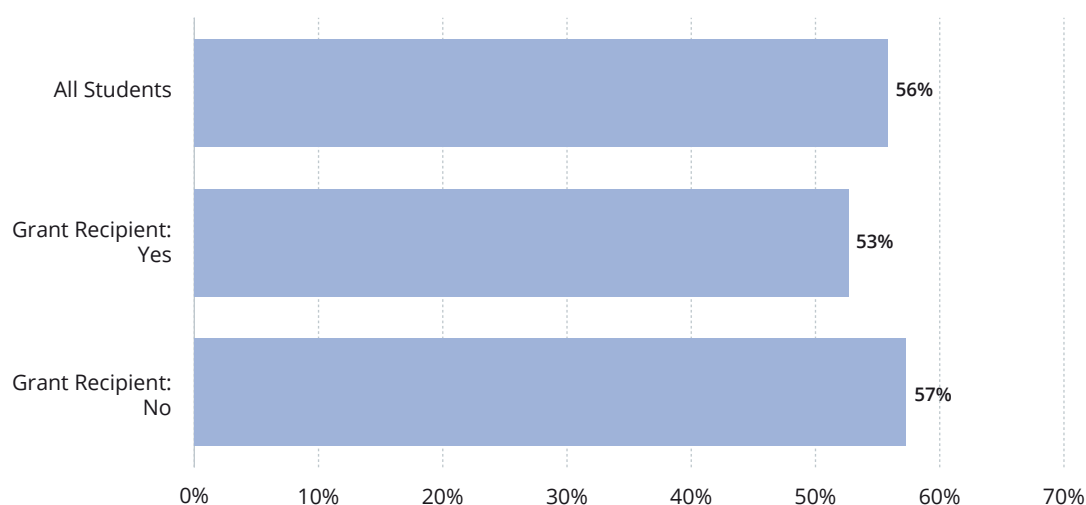


Figure 6.13 below shows the proportion of students that were awarded a 1st/upper 2nd or equivalent by 2nd level school type, where school type is known. 65% of those coming from a fee-paying 2nd level school end up with a 1st or upper 2nd compared with 48% of those coming from a DEIS 2nd level school. As detailed in chapter 7, 88% of students entering from a DEIS 2nd level school enter with up to 400 points, compared with 34% of students from fee-paying 2nd level schools and 67% of students from standard 2nd level schools.

Figure 6.13: 1st/Upper 2nd or Equivalent Proportions by 2nd Level School Type

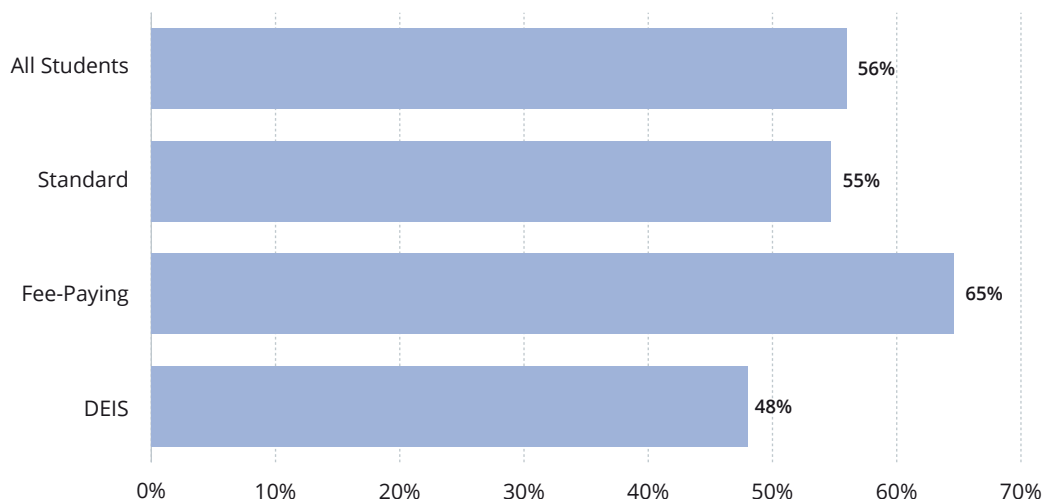
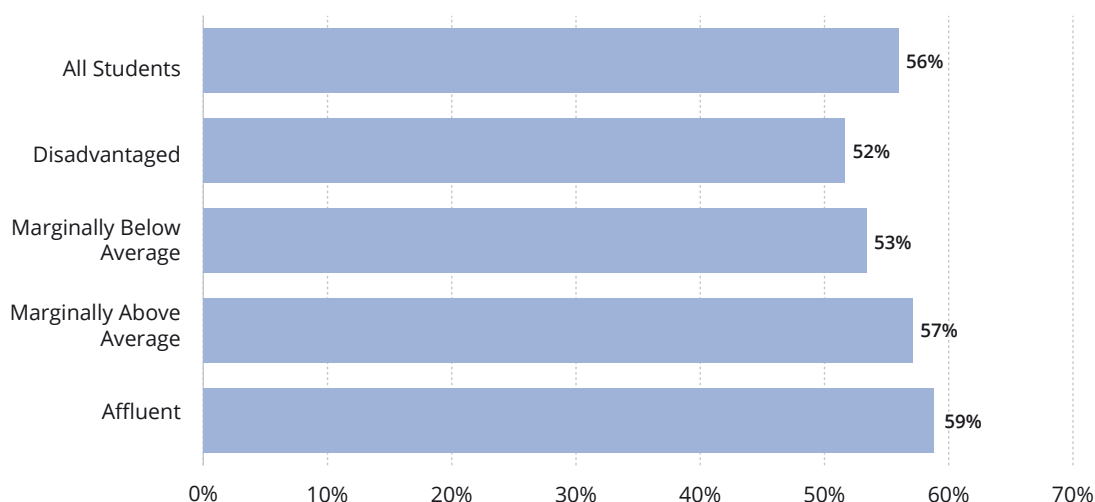


Figure 6.14 below shows the proportion of students that were awarded a 1st/upper 2nd or equivalent by deprivation index score group, where known. 59% of students from affluent areas achieved a 1st or upper 2nd compared with 52% of students from disadvantaged areas. There is a clear relationship between the proportion achieving a 1st or upper 2nd and the deprivation index group. The higher the level of relative affluence, the higher the proportion that achieved a 1st or upper 2nd.

Figure 6.14: 1st/Upper 2nd/Equivalent Proportions by Deprivation Index Score Group



Figures 6.15 & 6.16 below show the proportions that were awarded a 1st/upper 2nd or equivalent by Leaving Certificate Mathematics/English grades, where grades are known. As expected, in general the higher the Leaving Certificate grade, the higher the proportion achieving a 1st or upper 2nd in higher education. Note that the numbers in the HF groups for both Mathematics and English are very small.

Figure 6.15: 1st/Upper 2nd/Equivalent Proportions by Leaving Cert. Mathematics Grade

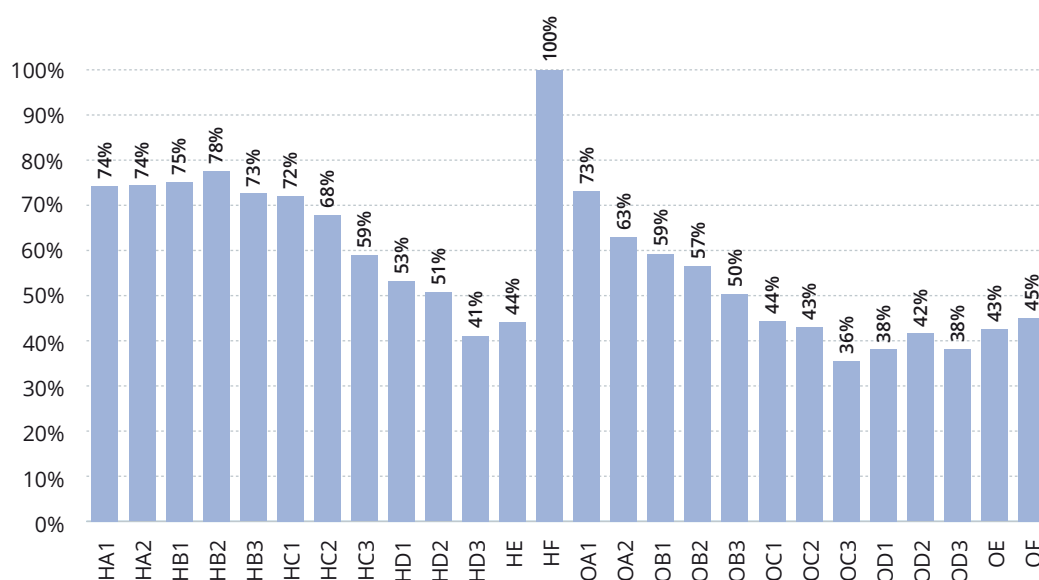
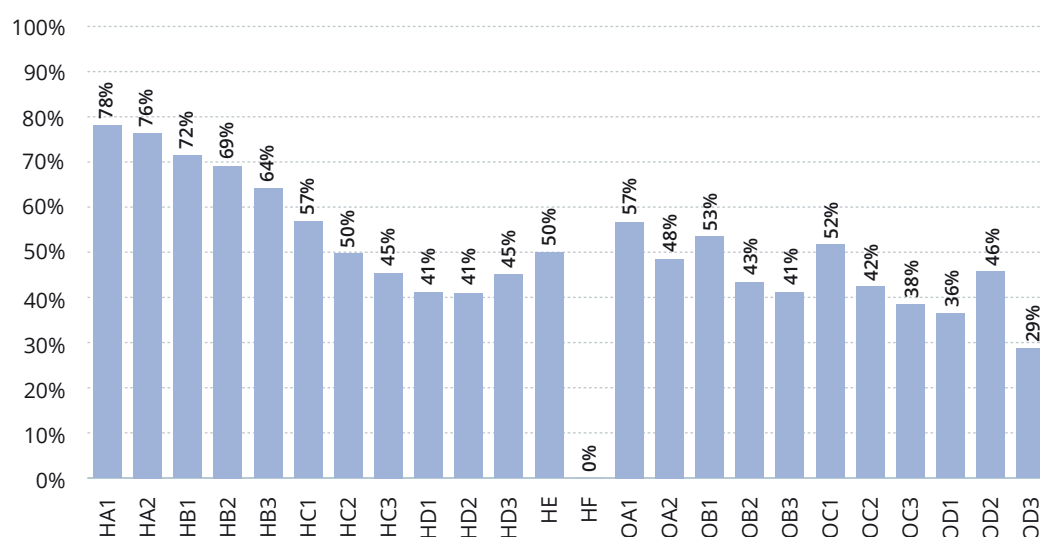
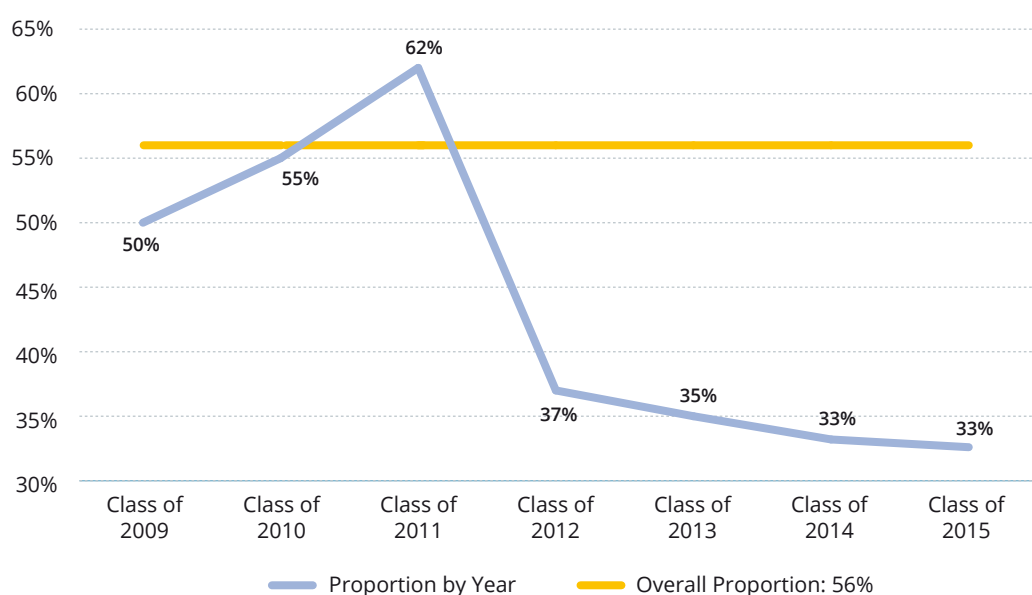


Figure 6.16: 1st/Upper 2nd/Equivalent Proportions by Leaving Cert. English Grade



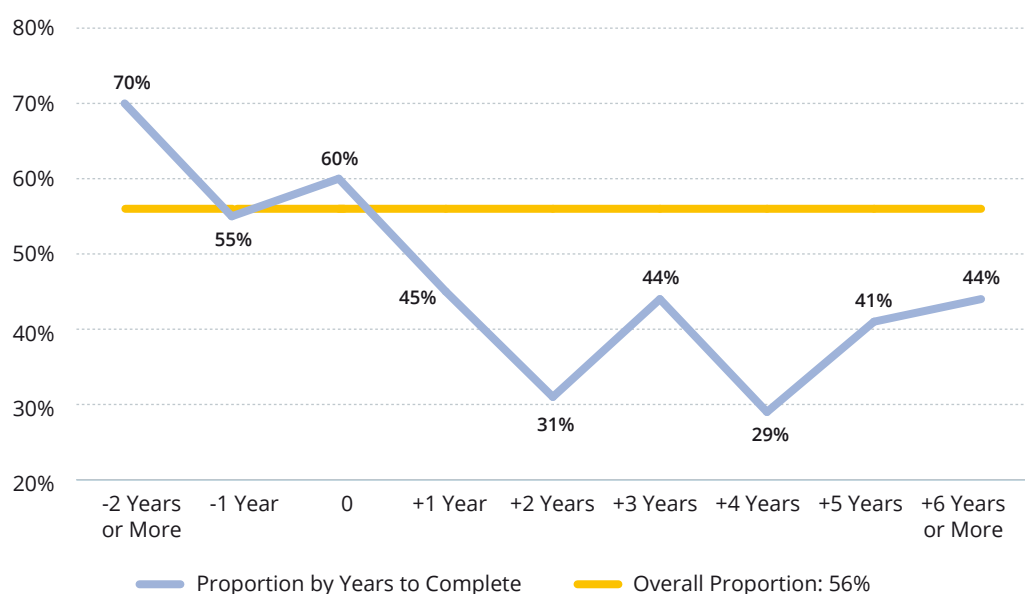
The following analysis looks at the proportion that achieved a 1st or upper 2nd by year of graduation for the 2007/08 entrant cohort with a comparison to the overall distribution for graduates that year. Class of 2011 refers to those that completed their courses in academic year 2010/11 and graduated in 2011, e.g. 2007/08 entrants that took 4 years to complete their course. Figure 6.17 below shows the proportion that achieved a 1st or upper 2nd by year of graduation.

Figure 6.17: 1st/Upper 2nd/Equivalent Proportions by Year of Graduation



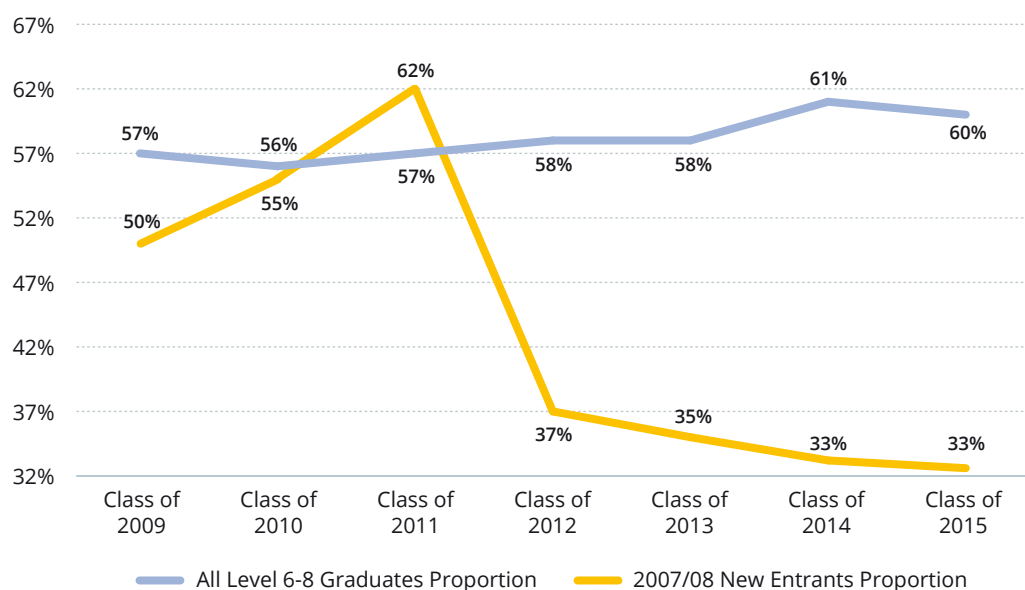
49% of all graduations for this cohort occurred in 2011 and another 31% occurred in 2010, thus driving the overall rate of 56%. This figure indicates that the proportion of those graduating late that achieved a 1st or upper 2nd is significantly smaller than those who graduate on time, with rates for those who took longer than four years to complete down in the 30s. This is confirmed in figure 6.18 below which shows the proportions by years to complete.

Figure 6.18: 1st/Upper 2nd/Equivalent Proportions by Years to Completion



The proportions by year of graduation above are despite the rates overall in each of those years of graduation (which include students from other years of entry). Figure 6.19 below shows the proportion that achieved a 1st or upper 2nd by year of graduation for all level 6-8 graduates. Given the apparent grade inflation over the time period in this analysis, it is clear that the years to complete is a more important factor in the probability of achieving a 1st or upper 2nd than simply the year that one actually graduates in.

Figure 6.19: 1st/Upper 2nd Proportions by Year of Graduation v All Graduations



6.5 Key Points

- ▶ The completion rate for students that enter with between 505 and 550 Leaving Certificate points is 95% compared with 43% for those that enter with between 205 and 250 points.
- ▶ The completion rate for students that enter with an A in higher level Mathematics is between 95-96% compared with 62-63% for students that enter with a D in ordinary Mathematics.
- ▶ The completion rate for students that enter with an A in higher level English is between 90-91% compared with 65-71% for students that enter with a D in ordinary English.
- ▶ 84% of students that entered with between 505 and 550 Leaving Certificate points were awarded a 1st/upper 2nd or equivalent compared with 23% of those that entered with between 205 and 250 points.
- ▶ 65% of students that entered higher education from a fee-paying second level school were awarded a 1st/upper 2nd or equivalent compared with 48% of students that entered from a DEIS second level school.

The background of the page features a series of concentric, hand-drawn style blue circles that expand from the bottom right towards the top left. A solid, medium-blue horizontal band spans the width of the page, positioned approximately in the middle. The title text is overlaid on this band.

7 Analysis: Socioeconomic and Spatial Analysis

7 Analysis: Socioeconomic and Spatial Analysis

7.1 Introduction

As stated in chapter 5, non-completion rates only vary slightly depending on domicile of origin – 24% for Irish students, 23% for non-Irish students. In terms of the most common countries of origin in the 2007/08 new entrant cohort, the only one with a rate not comparable to others is India. However, the overall number of Indian students in this analysis is small. This chapter looks more closely at the geographic breakdown of Irish students, including distance from college which has been identified as a factor influencing student choices at third level (Cullinan et al., 2013). Since geography is intrinsically linked to socioeconomic position, this chapter contains detailed socioeconomic analysis.

7.2 Socioeconomic Analysis

Socioeconomic analysis is broken into five sections:

1. Socioeconomic group, based on data collected as part of the Equal Access Survey.
2. Grant status – those in receipt of financial aid compared with those not receiving such aid.
3. Second level school type – DEIS (designated disadvantaged), fee-paying, standard.
4. Deprivation index score analysis based on second level school area.
5. Peer outlier analysis looking at disadvantaged students on 'select high entry points' courses.

7.2.1 Socioeconomic Group

The analysis below is based on data collected as part of the Equal Access Survey. Therefore, data are only available where responses were received. A student's socioeconomic group is based on their father's occupation stated on the survey form. Although, in terms of general Equal Access Survey response rates, response rates for this cohort are reasonably high for most institutes, data coverage does vary. There are no data available for Cork IT or St. Angela's College. Overall, socioeconomic data are available for circa 19,000 of the circa 34,000 students in the population analysed here, i.e. 55% response rate in total. Results below are presented for the circa 19,000, with CIT and St. Angela's excluded, i.e. a 59% response rate when these two institutes are excluded (average response rate across the remaining 22 institutes is 67%).

Figure 7.1 below shows the overall non-completion rate by socioeconomic group for all institutes. As expected, given previous HEA non-progression research (e.g. HEA, 2018), those from farming backgrounds and those in the higher professional SEG, have lower non-completion rates than those in the more disadvantaged SEGs. Perhaps the most surprising result is the relatively high non-completion rate for those in the employers and managers SEG, at 24%. As table 7.1 below shows, this is driven by relatively high rates of non-completion for those in the employers and managers SEG in institutes of technology at NFQ levels 6/7.

Figure 7.1: Non-Completion Rates by Socioeconomic Group

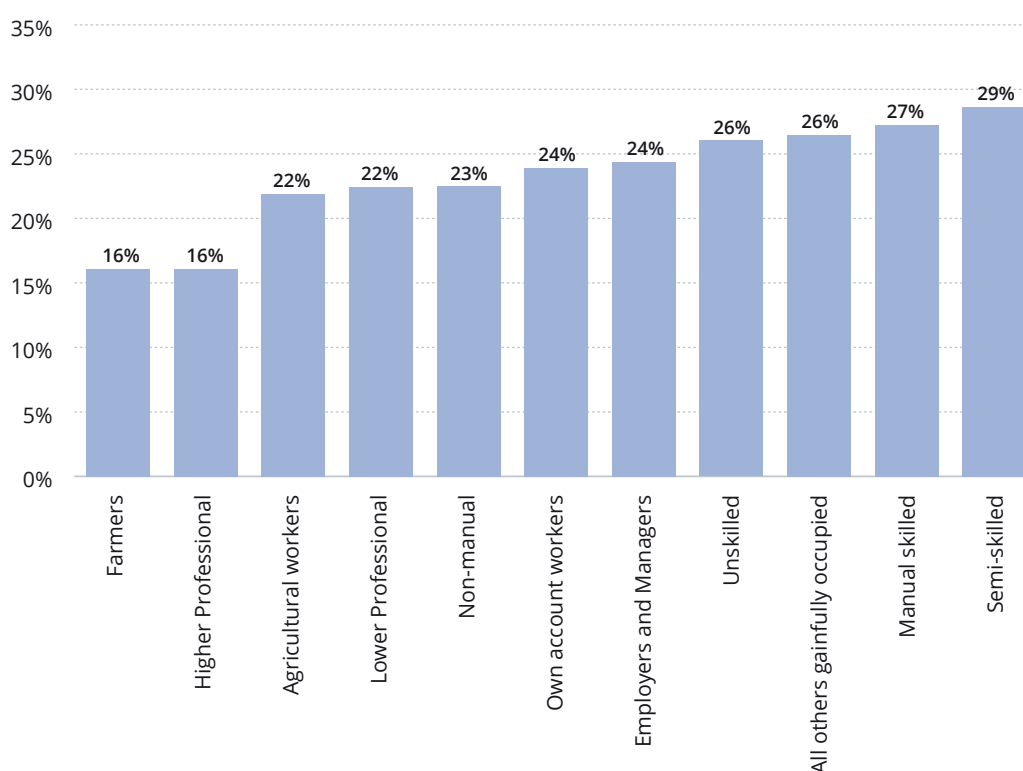


Table 7.1: Non-Completion Rates by Sector, Socioeconomic Group and NFQ Level

INSTITUTE TYPE/SEG: NON-COMPLETION RATE	NFQ LEVEL 6/7	NFQ LEVEL 8	ALL LEVELS
Colleges		5%	5%
Agricultural workers		13%	13%
All others gainfully occupied, and unknown		7%	7%
Employers and Managers		6%	6%
Farmers		4%	4%
Higher Professional		5%	5%
Lower Professional		5%	5%
Manual skilled		6%	6%
Non-manual		7%	7%
Own account workers		4%	4%
Semi-skilled		4%	4%
Unskilled		2%	2%
Institutes of Technology	39%	24%	33%
Agricultural workers	32%	29%	31%
All others gainfully occupied, and unknown	39%	28%	36%
Employers and Managers	43%	27%	37%
Farmers	28%	14%	23%
Higher Professional	35%	23%	29%
Lower Professional	42%	26%	34%
Manual skilled	40%	27%	35%
Non-manual	38%	21%	32%
Own account workers	37%	21%	32%
Semi-skilled	41%	25%	36%
Unskilled	39%	19%	33%
Universities		16%	16%
Agricultural workers		9%	9%
All others gainfully occupied, and unknown		20%	20%
Employers and Managers		17%	17%
Farmers		12%	12%
Higher Professional		12%	12%
Lower Professional		17%	17%
Manual skilled		19%	19%
Non-manual		15%	15%
Own account workers		17%	17%
Semi-skilled		23%	23%
Unskilled		17%	17%
Overall Rate (for SEG respondents)	39%	17%	23%

As is the case for many of the characteristics analysed in this report, the Leaving Certificate points sitting behind the data are the real driving force. Table 7.2 below shows non-completion rates by socioeconomic group, and also the proportions in each SEG that achieved up to 400 points in their Leaving Certificate and those that achieved over 400 points. The relationship is clear – there is a strong positive correlation (0.77) between the proportion of each SEG achieving up to 400 Leaving Certificate points and the non-completion rate of each SEG, i.e. in general, higher proportions of those achieving up to 400 points are associated with higher non-completion rates.

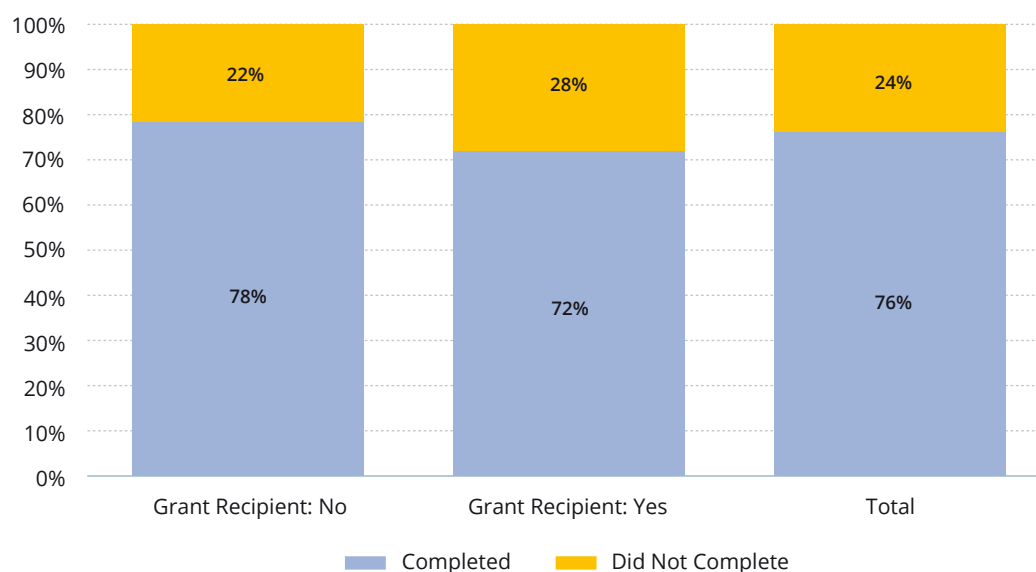
Table 7.2: Non-Completion Rates by Socioeconomic Group and Leaving Cert. Points

SOCIOECONOMIC GROUP	UP TO 400 LC POINTS	OVER 400 LC POINTS	OVERALL NON-COMPLETION RATE
Farmers	49%	51%	16%
Higher Professional	31%	69%	16%
Agricultural workers	60%	40%	22%
Lower Professional	43%	57%	22%
Non-manual	58%	42%	23%
Own account workers	56%	44%	24%
Employers and Managers	49%	51%	24%
Unskilled	73%	27%	26%
All others gainfully occupied, and unknown	61%	39%	26%
Manual skilled	66%	34%	27%
Semi-skilled	65%	35%	29%

7.2.2 Grant Status

Grant recipient data in 2007/08 was far from complete so the below analysis is kept at a high level, only looking at broad non-completion rates for those where grant recipient status is equal to yes compared with others. Figure 7.2 below shows that rates of non-completion are higher for those in receipt of financial aid – 28% for grant recipients compared with 22% for non-recipients. However, it must be borne in mind that institutes of technology, where non-completion rates are higher and crucially average Leaving Certificate points upon entry are lower, have proportionately more grant recipients than universities or colleges.

Figure 7.2: Completion Rates by Grant Recipient Status



7.2.3 Second Level School Type

This analysis looks at completion rates based on the second level school type attended (DEIS, fee-paying, standard – Department of Education and Skills classifications). Once again, missing data are not missing at random. Data are not available for DCU, UCD, UL, NUI Galway, Maynooth University, St. Patrick's College Drumcondra, St. Angela's College, Mary Immaculate College and Mater Dei Institute. Since data are missing for 5 of the 7 Universities, the non-completion rate of the unknown group is relatively low.

Nevertheless, figure 7.3 below indicates that non-completion rates are higher for students from designated disadvantaged schools and lower for students from fee-paying schools. Trinity College, DIT and UCC account for the majority (75%) of second level fee-paying students in this analysis. As expected, given the concentration of fee-paying schools in Dublin, 56% of the fee-paying cohort in this analysis are Dublin students (only 20% of the DEIS cohort are from Dublin).

Figure 7.3: Completion Rates by Second Level School Type

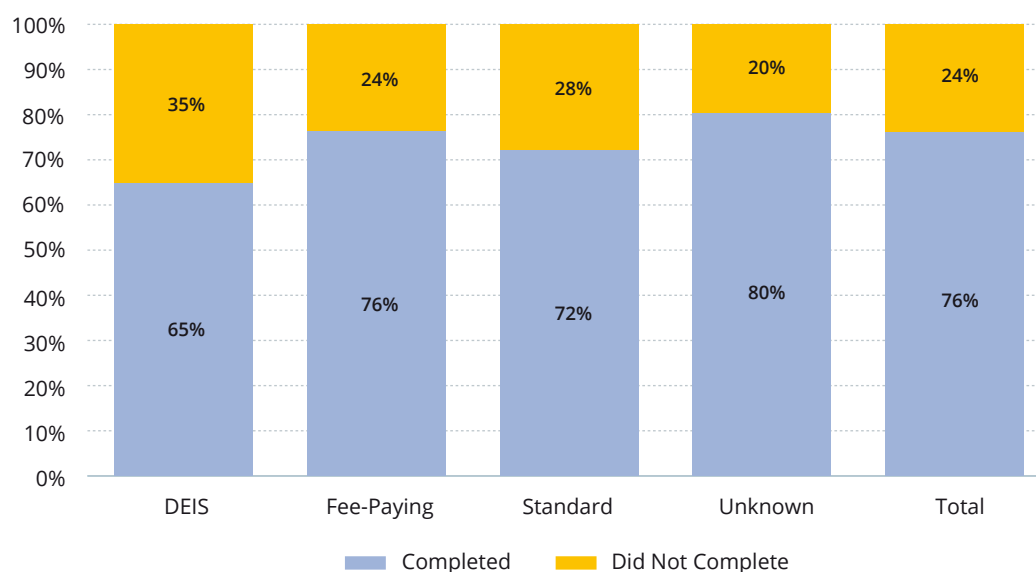
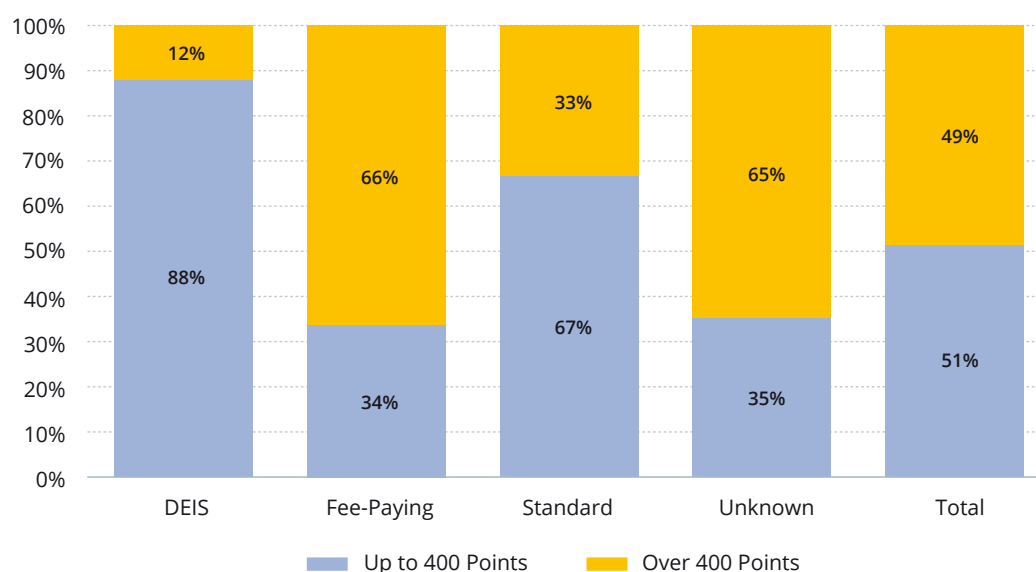


Figure 7.4 below shows the Leaving Certificate points distributions of each second level school type cohort, where points data are available. The overall proportion of those achieving over 400 points (where points data are available) is 49%. However, this proportion ranges from 12% for those coming from a second level DEIS school to 66% for those coming from a second level fee-paying school. The unknown proportion is so high since 5 of the 7 universities are in the second level school type missing data group. Therefore, it is likely that non-completion rates by second level school type are largely a function of Leaving Certificate points upon entry to third level.

Figure 7.4: Second Level School Type by Leaving Certificate Points



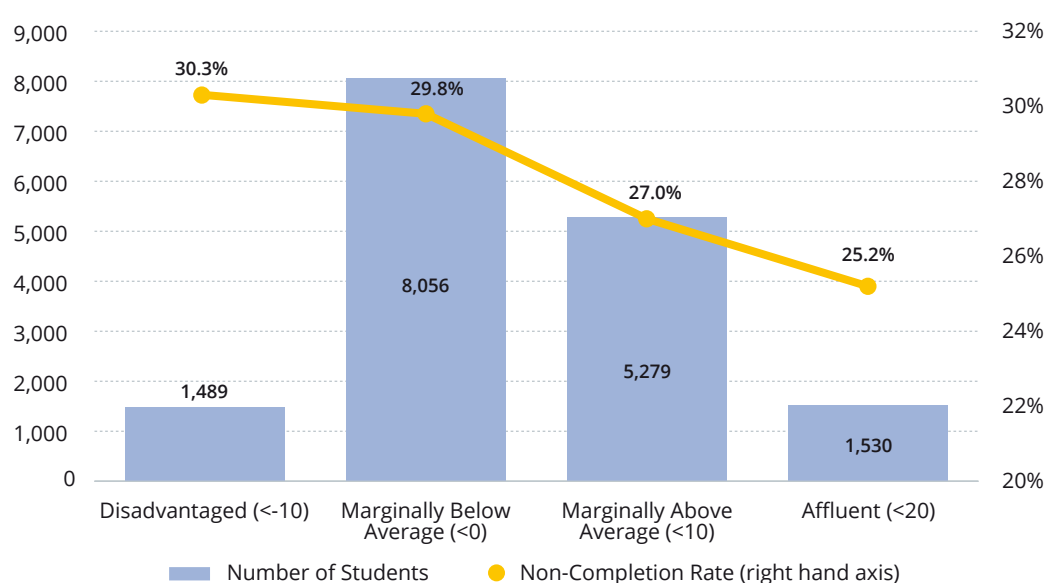
7.2.4 Deprivation Index Scores

The following analysis looks at deprivation index scores based on the Electoral Division the second level school attended is in. Deprivation index scores are a relative measure of deprivation/affluence by Census spatial area, in this instance Electoral Divisions. A composite index score is calculated using ten Census variables for each area including unemployment, education levels, lone parent numbers and socioeconomic class data. The score generally ranges from -40 to +40. Lower numbers indicate higher relative deprivation, higher numbers indicate higher relative affluence. Given the normal distribution of the data, there are very few instances of area scores at the lower or upper ends. 2006 scores are used for this analysis as this is closest to the 2007/2008 period available. Given the data analysed below are based on second level school attended, the same missing data issues as with second level school type apply.

Deprivation index scores are available for over 16,000 students in this cohort. The minimum score in this dataset is -26.2 and the maximum score is 16.7. The mean score is -1 and the median score is -1.7 (would likely be higher if more university data were available). Scores have been grouped together below into disadvantaged (ranging from -26.2 to -10.1), marginally below average (ranging from -10 to -0.1), marginally above average (ranging from 0 to 9.9) and affluent (ranging from 10 to 16.7). The overall Census population mean deprivation index score is 0. However, as noted above, this analysis is based on the area the students second level schools are within, not and more accurately, the students home address. Home address data are not available for 2007/08 new entrants. Therefore, this analysis is for indicative purposes only and is not conclusive deprivation index score analysis.

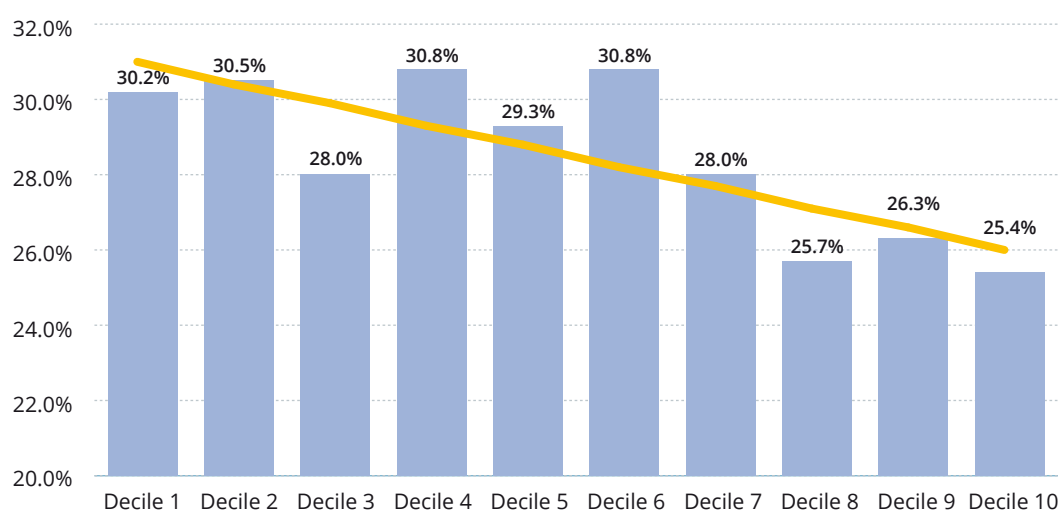
Figure 7.5 below shows the distribution of 2007/08 new entrants by the four levels of deprivation/affluence, where data are available, and the non-completion rates for each group.

Figure 7.5: New Entrants by Deprivation Group and Non-Completion Rate



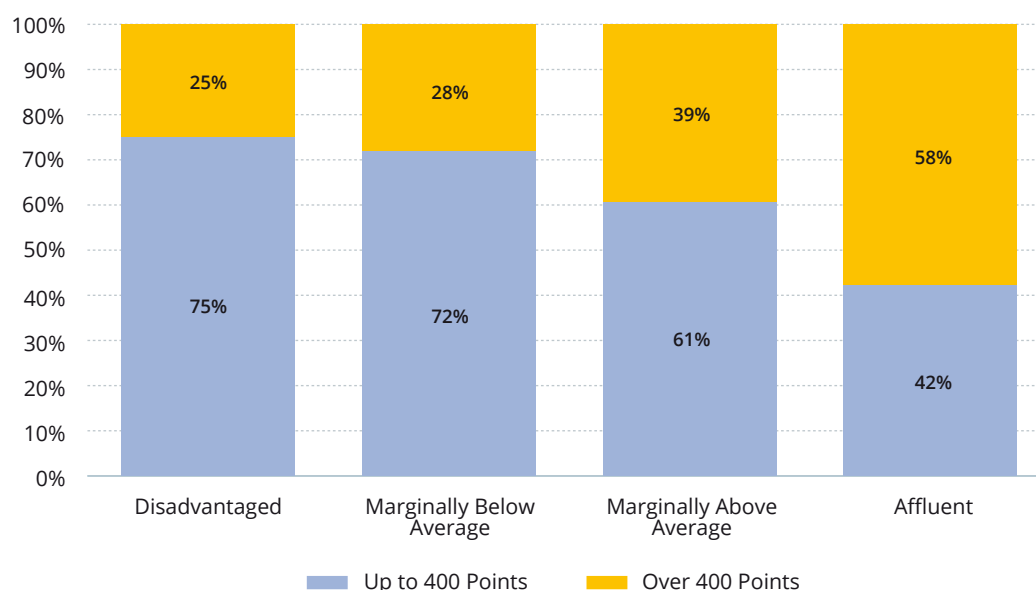
There is a clear relationship between non-completion rates and deprivation index score group – the higher the relative level of affluence, the lower the non-completion rate. However, the relationship is not quite as clear when the data are disaggregated to decile level, based on scores (decile 1 for highest deprivation, decile 10 for highest affluence). Figure 7.6 below details this. Although those that attended schools in affluent areas still have the lowest non-completion rates.

Figure 7.6: Non-Completion Rates by Deprivation Index Score Decile



As per the previous analysis by socioeconomic group and second level school type, deprivation index score groups are shown in figure 7.7 below by Leaving Certificate points group. This is again indicative that Leaving Certificate points is the real underlying factor behind lower non-completion rates for those who attended schools in more affluent areas.

Figure 7.7: Deprivation Index Score Groups by Leaving Certificate Points

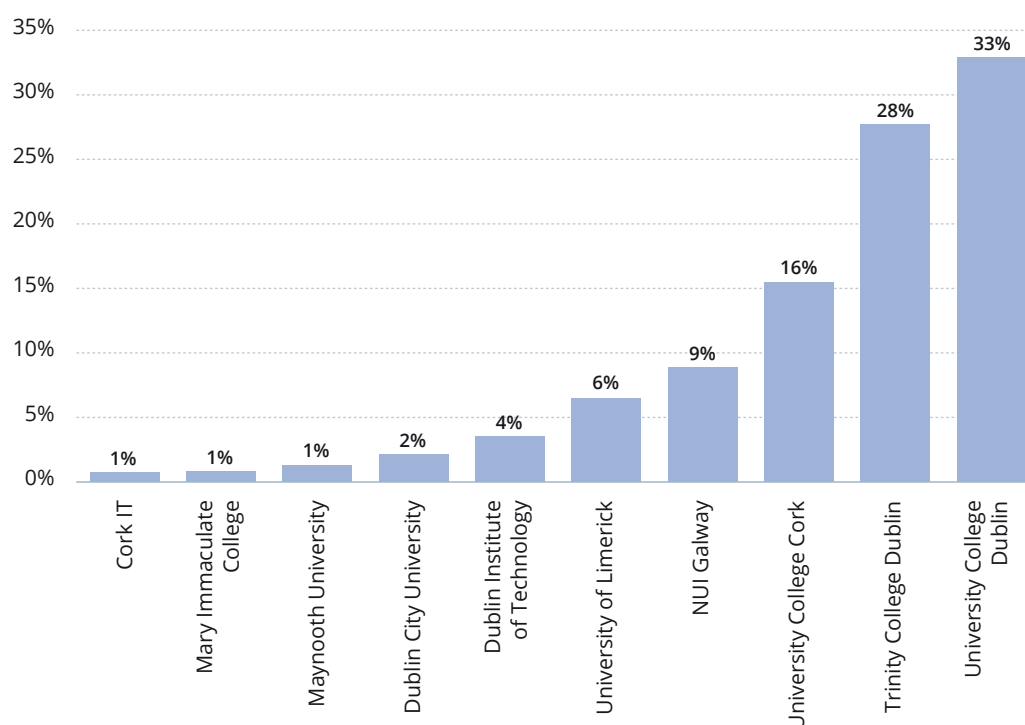


7.2.5 Peer Outlier Analysis 2: Disadvantaged Students on Select High Entry Points Courses

There are 920 individual courses in total in the analysis presented in this report. For the purpose of this outlier analysis, 83 courses have been designated as 'select high entry points' courses (SHEP). A brief overview of these courses, including participant demographics, is below as well as an analysis of non-completion in these courses by socioeconomic background to determine how disadvantaged students fare in these areas. A full list of the 83 courses is in the appendices. The main areas these courses fall within are medicine, veterinary medicine, dentistry, pharmacy, physiotherapy, radiography, occupational therapy, biomedical science, psychology, physics, mathematics, law, politics, economics, finance, actuarial studies, engineering, architecture and business. In most cases, the highest entry points courses (500+) are in this group. These courses are all at NFQ level 8 bar one – biomedical science in CIT, which is at level 7. 3,970 students of the total 34,059 in this dataset are on these courses (12% of all students). The 83 courses are within 10 different institutes, the 7 universities, CIT, DIT and Mary Immaculate College.

A breakdown of the proportion of these students by institute is in figure 7.8 below.

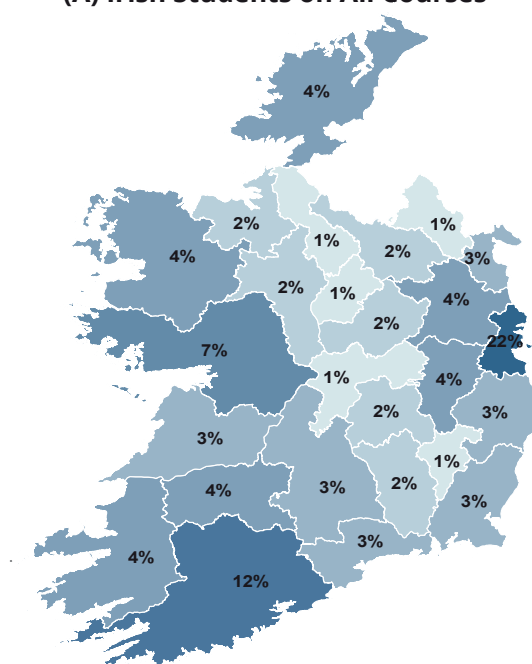
Figure 7.8: Select High Entry Points Course Students by Institute



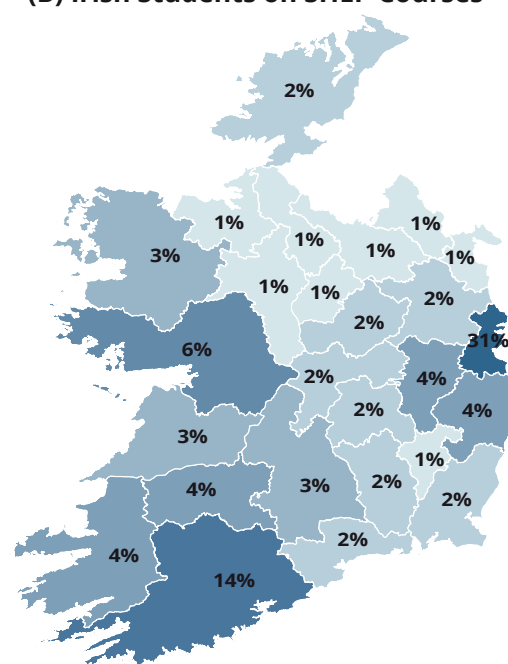
Of the 3,970 students on these courses, 3,416 (86%) are Irish. The maps below show the proportion of all Irish students by County across all courses and for only the SHEP courses.

Figure 7.9: Maps of Student Proportions by County for All Courses & SHEP Courses

(A) Irish Students on All Courses



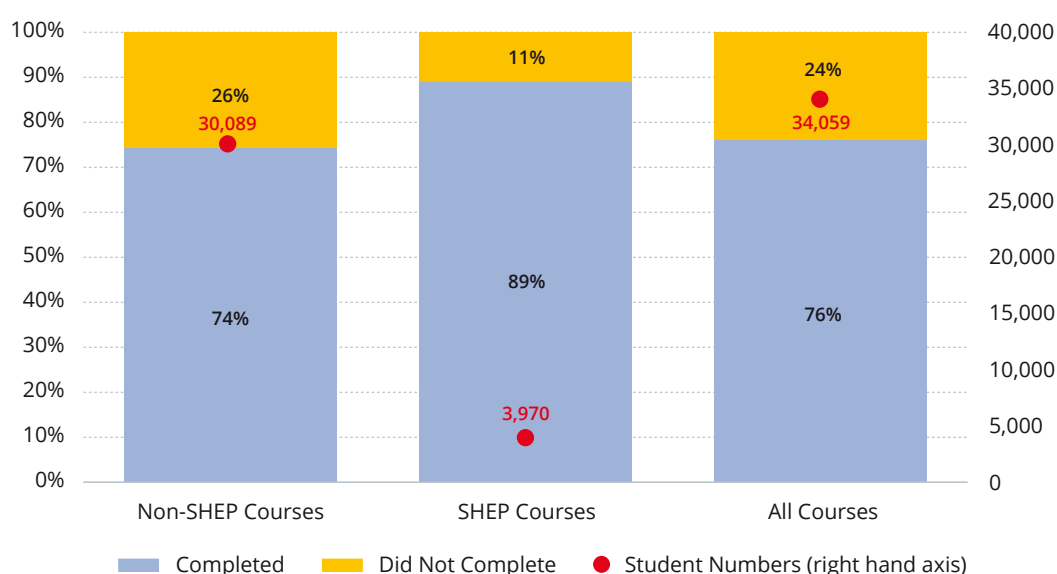
(B) Irish Students on SHEP Courses



The most notable difference is the substantially higher proportion of Dublin students on SHEP courses. 31% of Irish students on SHEP courses are from Dublin compared with 22% of Irish students on all courses. However, it must be borne in mind that the SHEP courses are concentrated in Dublin. 51 of the 83 SHEP courses are in Dublin institutes. In fact, although 52% of Irish students in Dublin institutes overall are from Dublin, only 47% of Irish students on SHEP courses in Dublin institutes are from County Dublin. Therefore, Dublin students are proportionately less represented on SHEP courses in Dublin compared with all courses in Dublin. In terms of the areas within Dublin that Dublin students come from – students from County Dublin (rather than a postal district), Dublin 3, Dublin 4, Dublin 6, Dublin 6W, Dublin 14, Dublin 16 and Dublin 18 are represented proportionately more on SHEP courses than on all courses overall (generally more affluent areas). Dublin Students from Dublin 7, Dublin 9, Dublin 11, Dublin 13, Dublin 15, Dublin 22 and Dublin 24 are represented proportionately less on SHEP courses compared with courses overall.

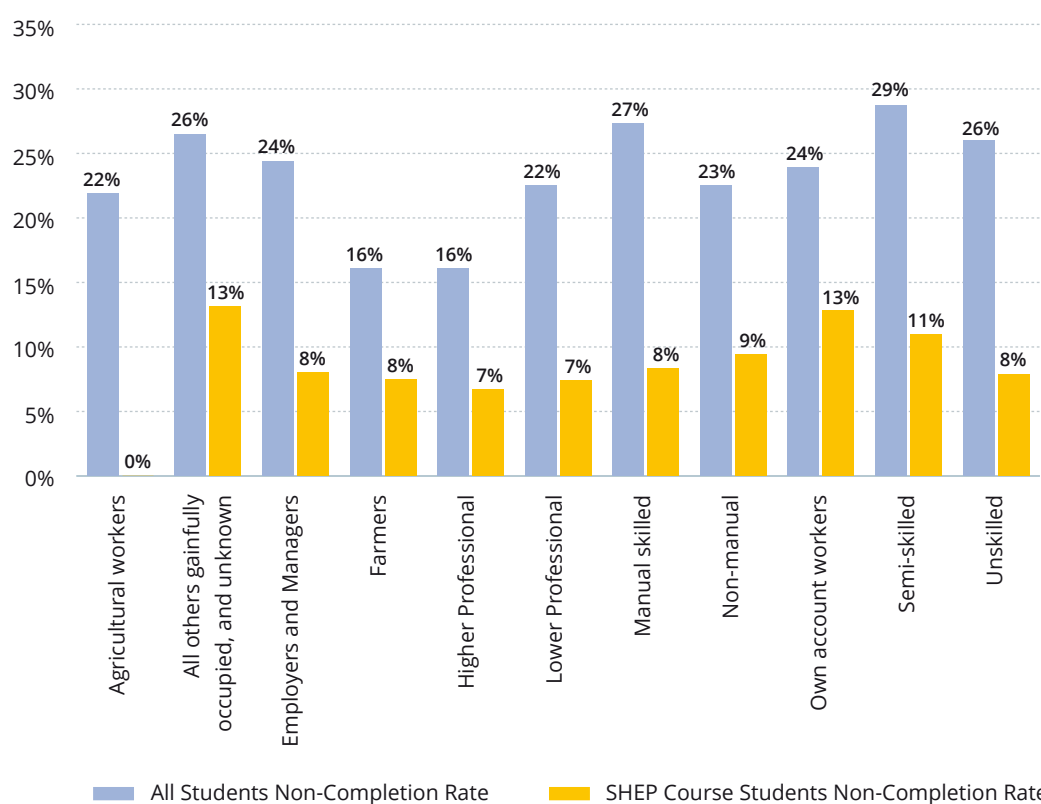
Overall non-completion rates on SHEP courses v all other courses are contained in figure 7.10 below.

Figure 7.10: Completion Rates for Students on SHEP Courses v Other Courses



As expected, non-completion rates are substantially lower on SHEP courses at 11% compared with 26% on other courses and 24% overall. Leaving Certificate points upon entry are much higher on average for students on SHEP courses. Although Leaving Certificate points upon entry is usually a key element of non-completion analysis, in this instance since the vast majority of the students on SHEP courses entered with very high points, it does not distinguish between students on these courses. Rather this analysis aims to show how students from disadvantaged backgrounds fare on these courses compared with other students. Therefore, the below analysis focusses on differences by socioeconomic group, second level school type and deprivation index group. Figure 7.11 below shows non-completion rates for SHEP course students and all students by socioeconomic group.

Figure 7.11: Non-Completion Rates, SHEP v Other Courses, by Socioeconomic Group



The four target socioeconomic groups considered to be disadvantaged are the non-manual group, the semi-skilled group, the unskilled group and agricultural workers. In the case of agricultural workers, the numbers on SHEP courses are very low. For the other three groups, the non-completion rates for students on SHEP courses compare relatively favourably. The semi-skilled group has the highest rate on all courses but are at the average rate on SHEP courses. The unskilled and non-manual groups on SHEP courses are below the average rate of non-completion on SHEP courses. So although students from higher socioeconomic backgrounds do have lower non-completion rates on SHEP courses compared to students from disadvantaged backgrounds, the gap is much narrower than for the overall population. Higher Leaving Certificate points is obviously a key driver of lower non-completion rates on SHEP courses, including for students from disadvantaged backgrounds, but the above indicates that the latter perform strongly on SHEP courses.

Figure 7.12 below shows non-completion rates for SHEP course students and all students by second level school type attended. Although non-completion rates are still higher for students from DEIS schools on SHEP courses, the rate is much closer to the rate for students from fee-paying schools than is the case for the wider population. 16% of DEIS students on SHEP courses did not complete compared with 12% of students from fee-paying schools on SHEP courses. Students from standard schools actually have the lowest rate of non-completion on SHEP courses (9%).

Figure 7.12: Non-Completion Rates, SHEP v Other Courses, by 2nd Level School Type

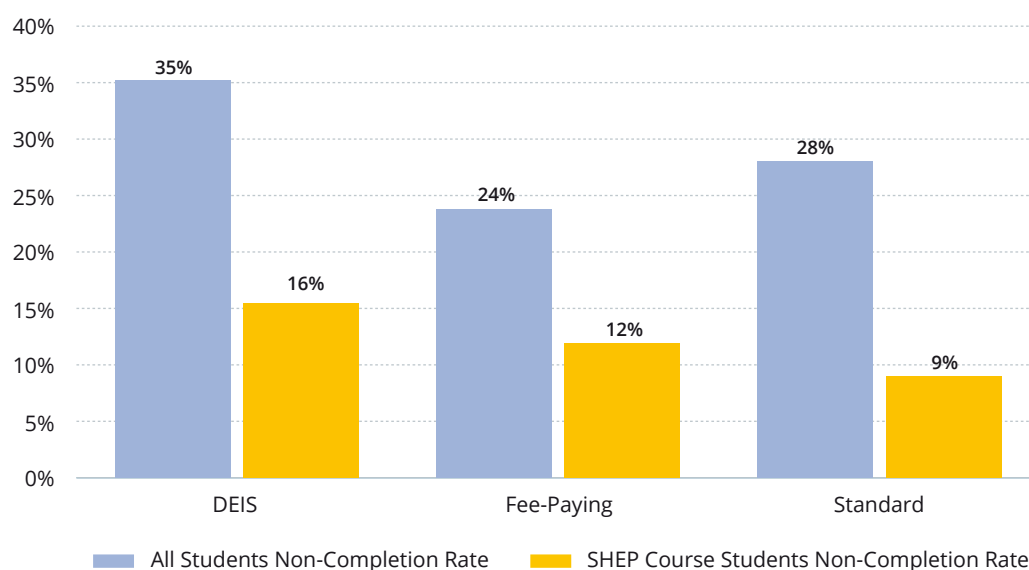
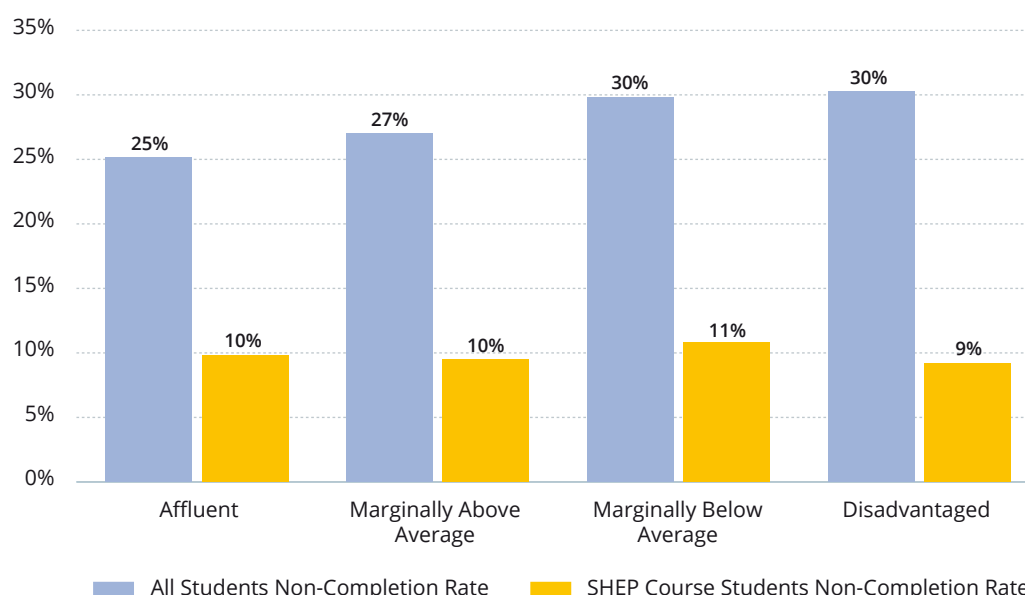


Figure 7.13 below shows non-completion rates for SHEP course students and all students by deprivation score index group, based on second level school attended. Although students from disadvantaged backgrounds have the highest rate of non-completion across all courses (30%), students from disadvantaged backgrounds on SHEP courses have the lowest rate of non-completion (9%)¹¹. This is further evidence indicating that students from disadvantaged backgrounds perform strongly in comparison to other cohorts in SHEP course areas.

¹¹ However, the differences in non-completion rates by deprivation index group for students on SHEP courses are not statistically significant. Although this in itself is an indication that disadvantaged students at least do around as well as others on SHEP courses (differences on all courses are statistically significant).

Figure 7.13: Non-Completion Rates, SHEP v Other Courses, by Deprivation Group



7.3 Spatial Analysis

The spatial analysis below is divided into two main areas:

1. Distance travelled to attend higher education institution, both by home County and second level school attended with associated non-completion rates. These are not daily travel distances but rather distances from home to attend college initially.
2. Non-completion rates by Dublin postcode.

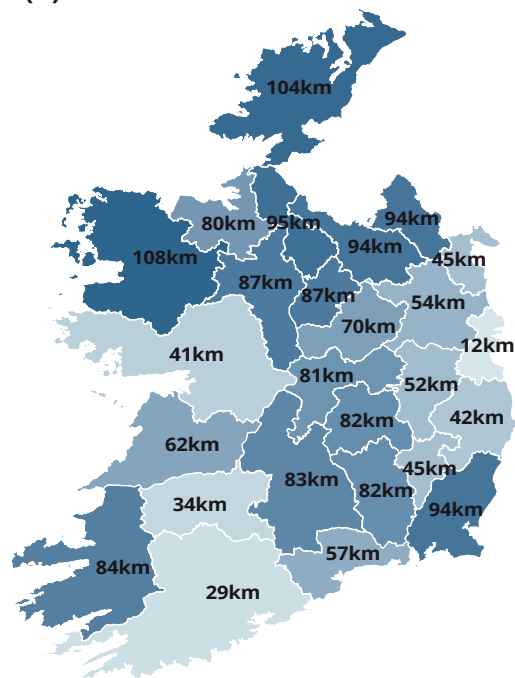
7.3.1 Distance to Higher Education Institution

This analysis looks at the distance travelled to the higher education institution attended by two measures: (i) From home County to HEI attended, in straight line distance (ii) From second level school attended to HEI attended, in road distance. County to HEI distance analysis allows for a more complete dataset analysis since second level school attended is available for less students in the analysis. School to HEI distance may be more accurate but in fact there is, as expected, a high correlation (0.87) between the two.

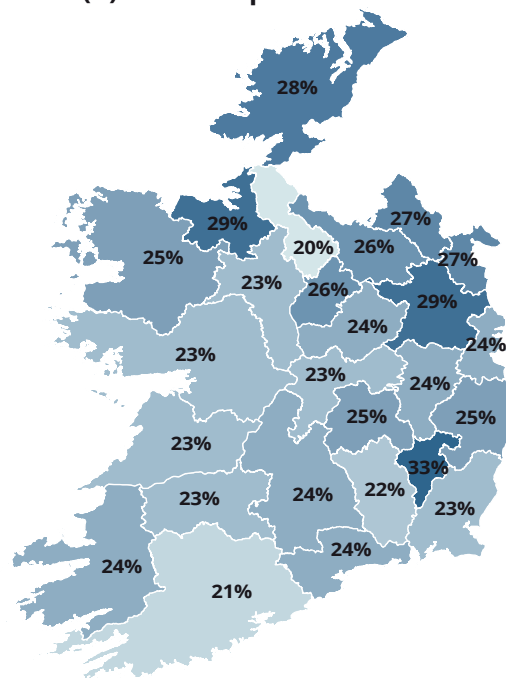
The maps below show the County to HEI attended mean distance, by County, for all Irish students in the analysis and the non-completion rate by home County.

Figure 7.14: Maps of Distance Travelled and Non-Completion Rates, by Home County

(A) Mean Distance Travelled to HEI

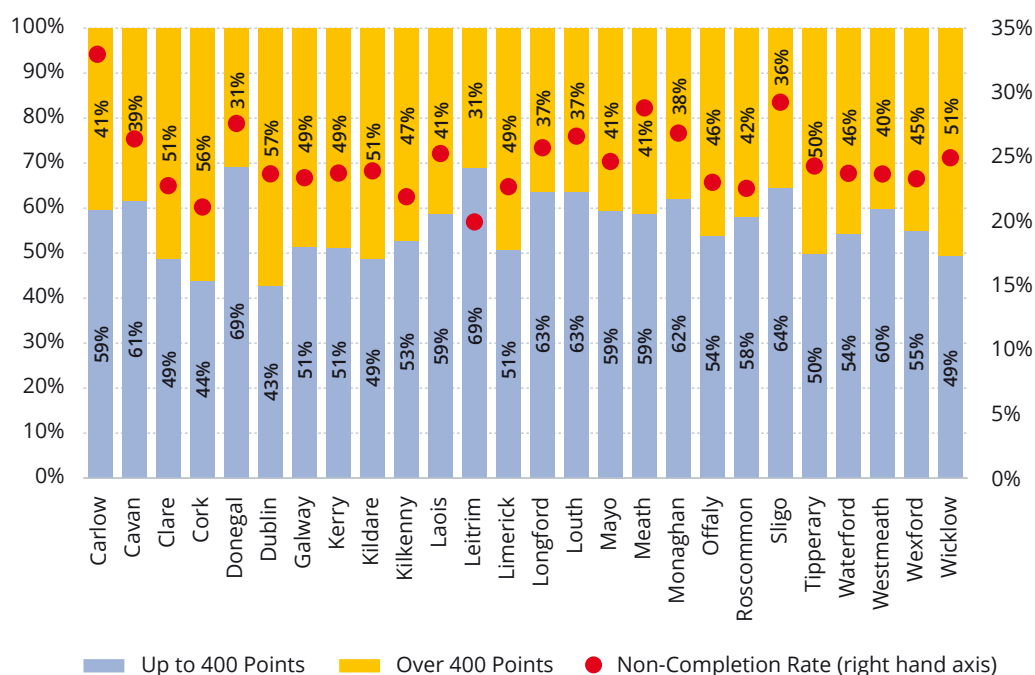


(B) Non-Completion Rates



Although visually the maps indicate that there may be a relationship between the mean distance travelled and the non-completion rate (border Counties), the relationship is actually non-existent (correlation .01). Students from Dublin and Cork travel the least distance to go to college. Students from Mayo and Donegal travel the furthest. Non-Completion rates are highest for students from Counties Carlow (33%), Sligo (29%) Meath (29%) and Donegal (28%). The relationship between Leaving Certificate points group (up to 400/over 400) and the non-completion rate by home County is much stronger (correlation of 0.42 with the proportion of those achieving up to 400). Figure 7.15 below shows this relationship.

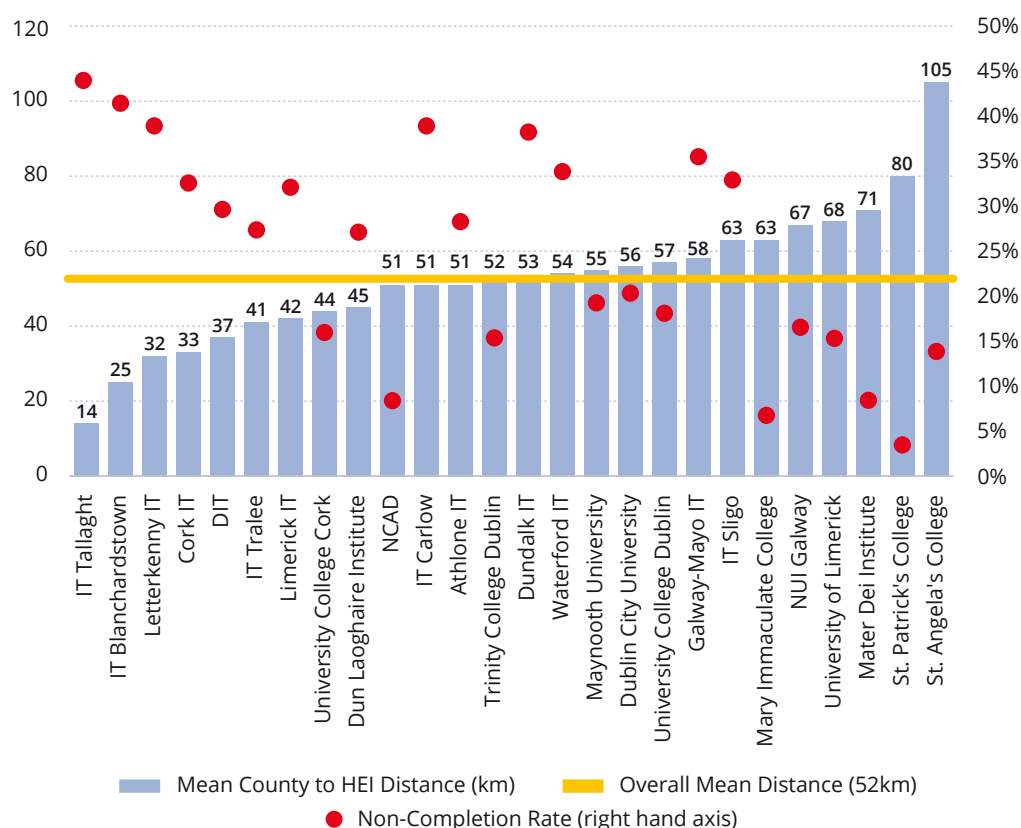
Figure 7.15: Leaving Certificate Points and Non-Completion Rates, by Home County



Dublin students achieve over 400 points more commonly than students from other Counties. 57% of Dublin students in this analysis achieved over 400 points, compared with, for instance, 31% of Donegal students.

Figure 7.16 below shows the mean distance travelled from home County to HEI attended, by HEI. There is actually a relatively strong negative correlation between the distance from County to HEI and non-completion rates by HEI (-0.66). This can be seen clearly below – students in IT Tallaght and IT Blanchardstown travel the least distance to attend college. These two HEIs have the highest overall non-completion rates.

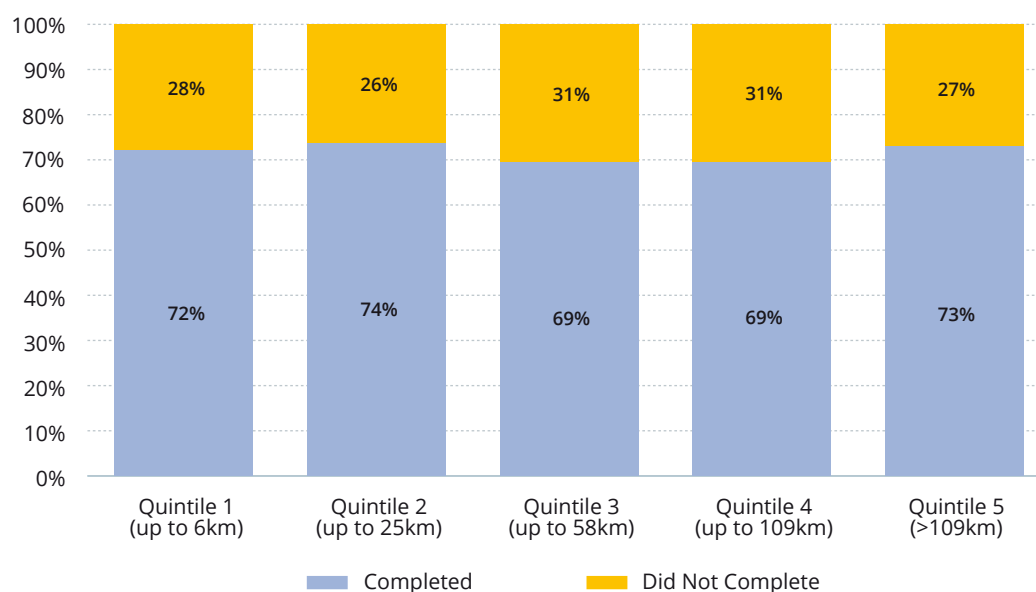
Figure 7.16: Distance from Home County to HEI and Non-Completion Rates, by HEI



It is worth noting that, as is found in the literature, males tend to travel less on average to college than females (Gormley and Murphy, 2006). Based on distance from home County to HEI, for 18 of the 26 Counties, males from those Counties travel less on average to attend college in the first place compared with females. The overall mean national difference is 5km (54km for males, 49km for females), but the differences range up to 13km of a mean difference.

The final section of distance analysis below looks at actual road distances from second level school attended to HEI attended rather than the straight line distance from home County to HEI attended above. Road distances are a more accurate measure – however, they are used sparingly here due to missing data for many institutes (no second level school data). The correlation between the two different measures is very high. The main difference is that straight line distances underestimate the actual distance to be travelled. The average straight line distance to HEI attended for all students in this dataset is 52km (median 31km), the average road distance is 63km (median 42km). Therefore, results are largely similar, as illustrated in figure 7.17 below. There is no clear discernible relationship between the distance between second level school attended and HEI attended and non-completion rates. Distances range from less than 1km (schools beside HEIs) to 493km (Cork to Donegal). Rates are shown by quintiles (quintile 1 for the shortest distances, quintile 5 for the longest).

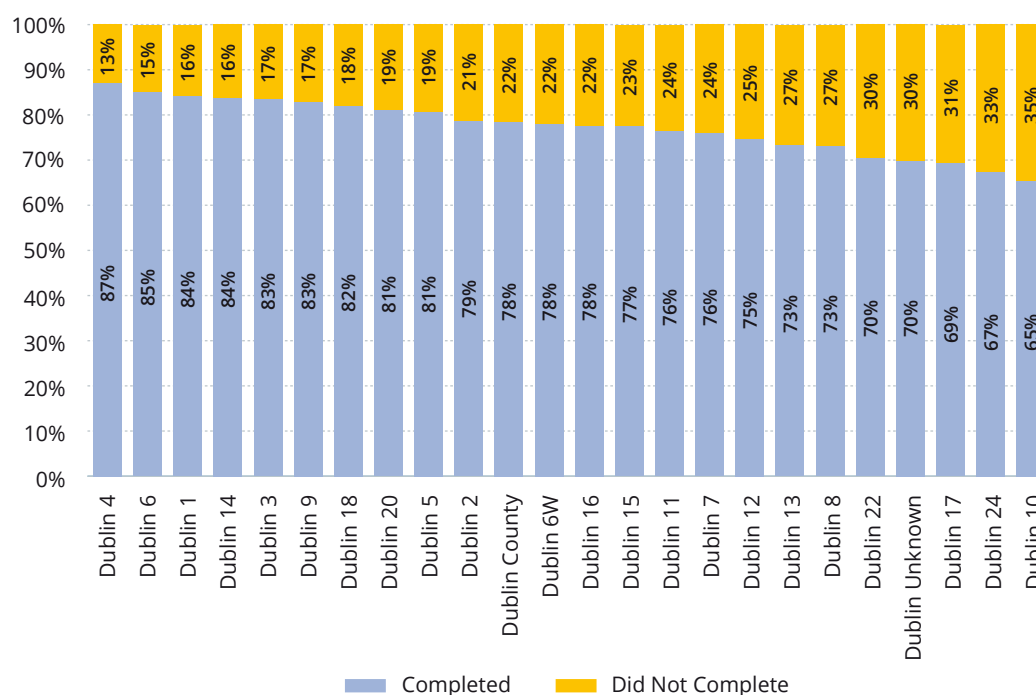
Figure 7.17: Road Distance from 2nd Level School to HEI and Completion Rates



7.3.2 Non-Completion by Dublin Postcode

Of the 34,059 students in the dataset 7,086 are Dublin students (21%). Postcode data (including the non-numerical Dublin County area) are available for 79% of these students. A number of postcodes included in the analysis have small numbers overall including D1, D2, D8, D10, D17 and D20. Therefore, inference should be cautioned.

Figure 7.18: Dublin Students Completion Rates by Dublin Postcode



Students from D4 and D6 have the lowest non-completion rates at 13% and 15% respectively. Students from Dublin 10 and Dublin 24 have the highest non-completion rates at 35% and 33% respectively. Students in this dataset from D4 and D6 are most commonly enrolled in UCD and Trinity College. Students in this dataset from D10 and D24 are most commonly enrolled in IT Tallaght. Over 70% of students from both D4 and D6 achieved over 400 points in their Leaving Certificate. Less than 25% of students in both D10 and D24 achieved over 400 points. The type of second level school attended also varies considerably across these Dublin postcodes. Of those with a known school type, 68% of D4 students and 60% of D6 students attended fee-paying second level schools. 7% of D24 and none of the D10 students attended fee-paying schools. Conversely, 76% of D10 and 21% of D24 students attended DEIS schools compared with 8% of D4 and 5% of D6 students.

7.4 Key Points

- ▶ Students from higher professional and farming backgrounds have the lowest non-completion rates at 16%, students from a semi-skilled socioeconomic background have the highest non-completion rate at 29%.
- ▶ In terms of second level school type, students coming from DEIS schools have a lower completion rate of 65%, compared with 72% for those from standard schools and 76% for those from fee-paying second level schools.
- ▶ Based on the area second level schools are in, students from affluent areas have a non-completion rate of 25% compared with 30% for students from disadvantaged areas.
- ▶ Students from disadvantaged backgrounds perform just as well as those from affluent backgrounds in select high points courses (9% non-completion rate for those from disadvantaged areas compared with 10% for those from affluent areas).
- ▶ For Dublin students, based on postal code, students from Dublin 4 and Dublin 6 have the highest completion rates at 87% and 85% respectively; those from Dublin 24 and Dublin 10 have the lowest completion rates at 67% and 65% respectively.



8 Analysis: Temporal Analysis and Other Graduations/ Enrolments

8 Analysis: Temporal Analysis and Other Graduations/Enrolments

8.1 Introduction

This chapter focusses on three distinct but related topics:

1. Time to degree, i.e. how many years it took to graduate compared to the anticipated length of course in years. 'Degree' in this instance relates to all courses covered in this analysis, certificates, diplomas and degrees.
2. Point of non-continuance, i.e. the proportion of students leaving the system between the census date in first year and the census date in second year compared to the proportion leaving in later years, i.e. first year vs later years non-continuance.
3. Other graduation and enrolment data for initial non-completions, i.e. the proportion of those that did not complete, based upon the main within institute analysis, that graduated in subsequent years from other institutions or enrolled in other institutions with no graduation as of 2016. Please note that PPSN coverage is not complete and is 100% missing for both St. Angela's College and Trinity College. Therefore, not all subsequent enrolments and graduations are captured in this analysis.

8.2 Time to Degree

Figure 8.1 below shows the anticipated length of course for all 34,059 2007/08 new entrants in this analysis. 88% of all new entrants in this analysis started courses in 2007/08 with an anticipated length of either 3 or 4 years. The 1-year courses include some level 6 certificates. The 5 and 6-year courses include medicine, veterinary medicine, dentistry and architecture. NFQ level 6 courses are usually 2 years anticipated length, NFQ level 7 courses are usually 3 years anticipated length and NFQ level 8 courses are usually either 3 or 4 years anticipated length, 4 most commonly.

Figure 8.1: Anticipated Length of Course for New Entrants 2007/08

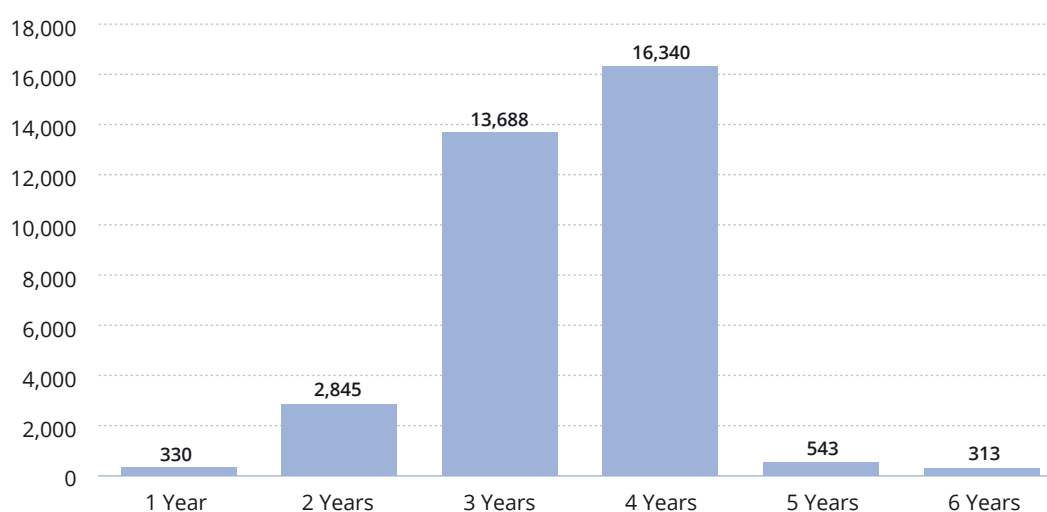


Figure 8.2 below shows the breakdown of the 25,887 2007/08 new entrants that completed, by time to completion compared to anticipated length. Some courses classified as 4 years anticipated length by some higher education institutions are more usually completed in 3 years, e.g. some Bachelor of Arts courses. This provision was adopted to allow for an international year abroad. However, this has the effect of increasing the numbers of those appearing to graduate 1 year early in this analysis. NUI Galway accounts for the majority of students in this group. Some of the other institutions record the anticipated length of such courses as 3 years, resulting in those that do undertake an international year (or taking a 4th year as standard) appearing as graduating late. There are a large number of UCD arts graduates in this group. In addition, those who exited with an award lower than the award they initially enrolled for appear as graduating early. Conversely, in some instances graduates are recorded as receiving a higher qualification than the one they initially enrolled for (and not recorded as graduating from the initial course), resulting in their time to completion appearing as longer than the anticipated length of the course. This is not particularly problematic for institute of technology students moving up NFQ levels as circa 97% of the graduations used for this particular analysis are at the level the student started at. NCAD graduates, although only representing a small proportion of the population here, appear to graduate 3 years late in most instances. This is due to data quality – most 2007/08 NCAD entrants were returned with an anticipated length of course of 1 year instead of the correct 4 years. Nevertheless, based on these data, 71% of all those that completed, completed in the year they were anticipated to complete in (76% including those that graduated early). A further 17% completed 1 year after the year they were anticipated to complete in, thus 93% of those that graduate, do so on time or within 1 year of that. This means that of the 34,059 new entrants analysed in this report, 58% graduated on time and 71% graduated either on time or within one year of that. 76% in total graduated over the time period included here (up to 2016).

Figure 8.2: Actual Time to Completion v Anticipated Length

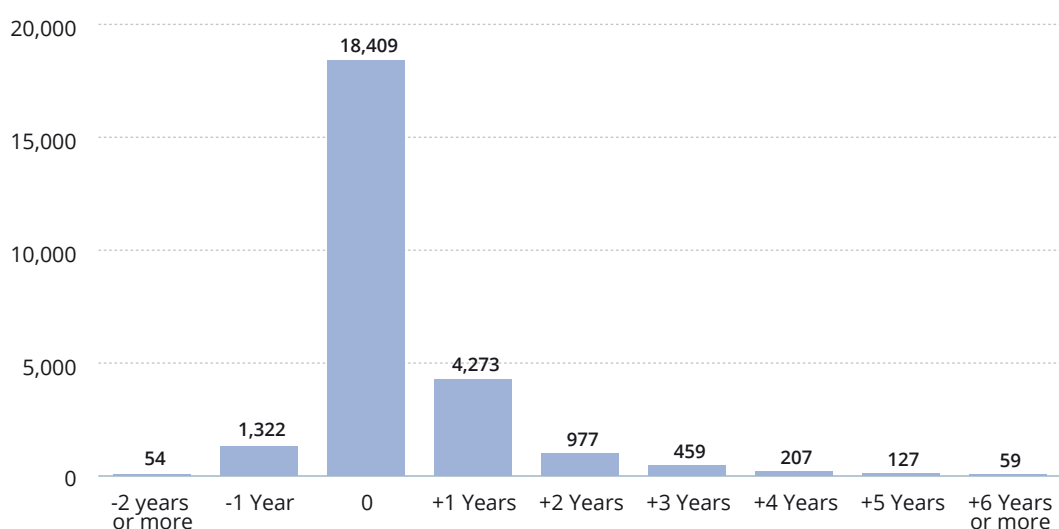


Figure 8.3 below shows the year in which graduations occurred by starting NFQ level (some of these students finished at a different NFQ level as shown earlier). The total 25,887 graduations occurred in 9 separate years of graduations from 2008 to 2016 (data returned in years 2009 to 2017). As expected, level 6/7 graduations occurred most frequently 2 and 3 years after initial enrolment and level 8 graduations occurred most frequently 4 years after initial enrolment. The class of 2008 is not shown as numbers are very small for that year. 92% of level 6/7 graduations occurred 2, 3 or 4 years (class of 2009, 2010 or 2011) after initial enrolment. 94% of level 8 graduations occurred 3, 4 or 5 years (class of 2010, 2011 or 2012) after initial enrolment. A very small proportion of graduations occurred in later years right up to the class of 2016, the final year included in this analysis.

Figure 8.3: Actual Years of Graduation by NFQ Level

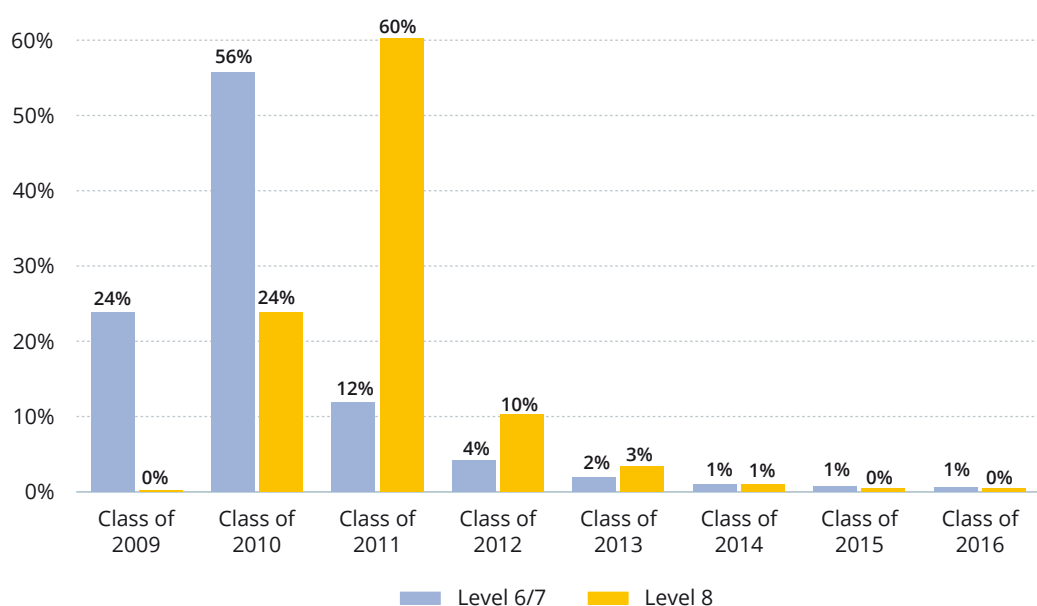


Table 8.1 below shows time to degree data by institute type and institute, both for all 2007/08 new entrants and for only those that actually graduated. There are data quality issues with these data, explained in more detail above, including NCAD anticipated length of course data. The proportion of all 2007/08 new entrants that graduated on time is highest in St. Patrick's College at 90%. The proportion of all 2007/08 new entrants that graduated on time ranges from 51% across the institute of technology sector to 62% across universities and 79% in colleges. The proportion of all 2007/08 new entrants that graduated on time or within 1 year ranges from 60% across the institute of technology sector to 78% across universities and 85% in colleges.

Table 8.1: Time to Degree, by Institute

INSTITUTE TYPE/INSTITUTE	OVERALL COMPLETION RATE	GRADUATED ON TIME (OF ALL NEW ENTRANTS 2007/08)	GRADUATED ON TIME OR WITHIN 1 YEAR (OF ALL NEW ENTRANTS 2007/08)	GRADUATED ON TIME (OF THOSE THAT GRADUATED)	GRADUATED ON TIME OR WITHIN 1 YEAR (OF THOSE THAT GRADUATED)
Colleges	94%	79%	85%	84%	91%
Mary Immaculate College	93%	86%	93%	92%	99%
Mater Dei Institute	92%	86%	92%	93%	100%
National College of Art and Design	92%	5%	5%	6%	6%
St. Angela's College of Home Economics	86%	72%	85%	83%	99%
St. Patrick's College Drumcondra	97%	90%	96%	93%	99%
Institutes of Technology	66%	51%	60%	77%	91%
Athlone IT	72%	59%	66%	82%	93%
Cork IT	67%	47%	59%	70%	88%
Dublin Institute of Technology	70%	58%	65%	82%	92%
Dun Laoghaire Institute of Art, Design and Technology	73%	64%	70%	88%	96%
Dundalk IT	62%	43%	55%	69%	88%
Galway-Mayo IT	65%	48%	58%	74%	90%
IT Blanchardstown	59%	45%	51%	76%	88%
IT Carlow	61%	49%	56%	80%	91%
IT Sligo	67%	53%	63%	80%	94%
IT Tallaght	56%	41%	50%	73%	89%
IT Tralee	73%	61%	68%	84%	93%
Letterkenny IT	61%	43%	54%	71%	89%
Limerick IT	68%	57%	63%	83%	93%
Waterford IT	66%	50%	60%	75%	91%

INSTITUTE TYPE/INSTITUTE	OVERALL COMPLETION RATE	GRADUATED ON TIME (OF ALL NEW ENTRANTS 2007/08)	GRADUATED ON TIME OR WITHIN 1 YEAR (OF ALL NEW ENTRANTS 2007/08)	GRADUATED ON TIME (OF THOSE THAT GRADUATED)	GRADUATED ON TIME OR WITHIN 1 YEAR (OF THOSE THAT GRADUATED)
Universities	83%	62%	78%	75%	95%
Dublin City University	80%	58%	75%	73%	94%
Maynooth University	81%	64%	77%	79%	95%
National University of Ireland, Galway	83%	75%	80%	90%	96%
Trinity College Dublin	85%	73%	82%	86%	97%
University College Cork	84%	70%	79%	83%	94%
University College Dublin	82%	35%	74%	42%	91%
University of Limerick	85%	72%	81%	85%	95%
All Institutes	76%	58%	71%	76%	93%

Table 8.2 below shows the time to degree by NFQ level. The overall rate for all 2007/08 new entrants that graduated on time of 58% varies by level – 45% for level 7, 51% for level 6 and 63% for level 8. The overall rate for all 2007/08 new entrants that graduated on time or within 1 year of 71% varies by level – 55% for level 7, 59% for level 6 and 77% for level 8. These figures align to the overall completion rates – highest at level 8 (82%) and lowest at level 7 (61%), with level 6 slightly higher than level 7 at 63%.

Table 8.2: Time to Degree, by NFQ Level

NFQ LEVEL	OVERALL COMPLETION RATE	GRADUATED ON TIME (OF ALL NEW ENTRANTS 2007/08)	GRADUATED ON TIME OR WITHIN 1 YEAR (OF ALL NEW ENTRANTS 2007/08)	GRADUATED ON TIME (OF THOSE THAT GRADUATED)	GRADUATED ON TIME OR WITHIN 1 YEAR (OF THOSE THAT GRADUATED)
Level 6	63%	51%	59%	81%	92%
Level 7	61%	45%	55%	73%	89%
Level 8	82%	63%	77%	77%	94%
All Levels	76%	58%	71%	76%	93%

Table 8.3 below shows the time to degree by ISCED broad field of study. The highest rate of completion on time (of all 2007/08 new entrants) is in the education field at 83%, the lowest rate is in the field of computing at 37%. These two also occupy the highest and lowest rates of completion (for all 2007/08 new entrants) on time or within 1 year at 90% and 47% respectively. The relatively low rates of completion on time for both humanities and arts and business and law are in part explained by courses that are recorded as 3 years in length but should have been returned as 4 years anticipated length. This is most prevalent for BA degrees – this is evident in the large increase in the rate of completion within 1 year for humanities and arts.

Table 8.3: Time to Degree, by ISCED Broad Field of Study

ISCED BROAD FIELD OF STUDY	OVERALL COMPLETION RATE	GRADUATED ON TIME (OF ALL NEW ENTRANTS 2007/08)	GRADUATED ON TIME OR WITHIN 1 YEAR (OF ALL NEW ENTRANTS 2007/08)	GRADUATED ON TIME (OF THOSE THAT GRADUATED)	GRADUATED ON TIME OR WITHIN 1 YEAR (OF THOSE THAT GRADUATED)
(1) Education	91%	83%	90%	91%	98%
(2) Humanities and Arts	77%	48%	70%	62%	91%
(3a) Social Sciences	80%	63%	76%	79%	95%
(3b) Business and Law	77%	58%	73%	75%	94%
(4a) Science and Mathematics	76%	58%	70%	76%	91%
(4b) Computing	55%	37%	47%	68%	86%
(5) Engineering, Manufacturing and Construction	67%	47%	59%	70%	88%
(6) Agriculture and Veterinary	78%	67%	73%	86%	94%
(7) Health and Welfare	84%	72%	81%	85%	96%
(8) Services	65%	55%	61%	84%	94%
(9) Combined + General	79%	67%	75%	84%	95%
All Fields	76%	58%	71%	76%	93%

8.3 Point of Non-Continuance

The following analysis looks at the proportions of non-completions occurring in first year (technically between the census date in first year and the census date in second year) and the proportions occurring in later years. This analysis is presented by institute type, institute, NFQ level and ISCED broad field of study. The ISCED groupings used here are different to those used elsewhere in the report to align to previous progression analyses conducted by the HEA. Table 8.4 below shows the breakdown of non-completions by first year/other years by institute type and institute for all NFQ levels combined (levels 6,7, and 8 in the institutes of technology and level 8 in the universities and colleges).

Table 8.4: Point of Non-Continuance, by Institute Type and Institute

INSTITUTE TYPE/INSTITUTE – ALL NFQ LEVELS	TOTAL NON-COMPLETION ALL YEARS	1ST YEAR NON-COMPLETION RATE	OTHER YEARS COMBINED NON-COMPLETION RATES	PROPORTION OF ALL NON-COMPLETION IN 1ST YEAR
Colleges				
Mary Immaculate College	7%	5%	2%	74%
Mater Dei Institute	8%	4%	4%	47%
National College of Art and Design	8%	5%	3%	60%
St. Patrick's College Drumcondra	3%	3%	0%	87%
Colleges Total	6%	4%	2%	63%
Institutes of Technology				
Athlone IT	28%	21%	7%	74%
Cork IT	33%	21%	12%	64%
Dublin Institute of Technology	30%	16%	14%	54%
Dun Laoghaire Institute of Art, Design and Technology	27%	16%	11%	59%
Dundalk IT	38%	24%	14%	63%
Galway-Mayo IT	35%	28%	7%	79%
IT Blanchardstown	41%	24%	17%	58%
IT Carlow	39%	24%	15%	62%
IT Sligo	33%	23%	10%	70%
IT Tallaght	44%	30%	14%	68%
IT Tralee	27%	18%	9%	66%
Letterkenny IT	39%	22%	17%	57%
Limerick IT	32%	23%	9%	72%
Waterford IT	34%	22%	12%	65%
Institutes of Technology Total	34%	22%	12%	65%
Universities				
Dublin City University	20%	11%	9%	54%
Maynooth University	19%	10%	9%	52%
National University of Ireland, Galway	17%	9%	8%	54%
Trinity College Dublin	15%	8%	7%	52%
University College Cork	16%	9%	7%	56%
University College Dublin	18%	9%	9%	50%
University of Limerick	15%	9%	6%	59%
Universities Total	17%	9%	8%	53%
All Institutes All NFQ Levels	24%	15%	9%	63%

As can be seen in the analysis above, 63% of non-completion is routed in non-progression from the census date in first year to the census date in second year, i.e. first year non-progression. 65% of non-completions in institutes of technology are routed in first year compared to 53% of non-completions in universities. Almost an equal number of university students leave their course in later years as do in first year, albeit the proportions of non-completions are still substantially smaller than the corresponding proportions in institutes of technology.

The three tables below break down the institute of technology non-completions by NFQ level. Over two-thirds of non-completions at level 6 and level 7 are routed in first year non-progression (68% and 67% respectively). This figure is slightly smaller for level 8 non-completions at 61%. The vast majority of non-completions at levels 6 & 7 in Athlone IT, Galway-Mayo IT and Sligo IT are routed in first year non-progression. DIT and Letterkenny IT non-completions occur proportionately more in later years than is the case in most other institutes of technology.

Table 8.5: Point of Non-Continuance, Institutes of Technology NFQ Level 6

INSTITUTES OF TECHNOLOGY LEVEL 6	TOTAL NON-COMPLETION ALL YEARS	1ST YEAR NON-COMPLETION RATE	OTHER YEARS COMBINED NON-COMPLETION RATES	PROPORTION OF ALL NON-COMPLETION IN 1ST YEAR
Athlone IT	28%	24%	4%	85%
Cork IT	38%	22%	16%	58%
Dublin Institute of Technology	34%	15%	19%	45%
Dun Laoghaire Institute of Art, Design and Technology	30%	19%	11%	63%
Dundalk IT	53%	21%	32%	40%
Galway-Mayo IT	37%	34%	3%	93%
IT Blanchardstown	41%	29%	12%	70%
IT Carlow	40%	28%	12%	71%
IT Sligo	47%	38%	9%	81%
IT Tallaght	43%	31%	12%	71%
IT Tralee	31%	21%	10%	67%
Letterkenny IT	42%	19%	23%	45%
Limerick IT	37%	28%	9%	75%
Waterford IT	42%	26%	16%	62%
All Institutes of Technology Level 6	37%	25%	12%	68%

Table 8.6: Point of Non-Continuance, Institutes of Technology NFQ Level 7

INSTITUTES OF TECHNOLOGY LEVEL 7	TOTAL NON-COMPLETION ALL YEARS	1ST YEAR NON-COMPLETION RATE	OTHER YEARS COMBINED NON-COMPLETION RATES	PROPORTION OF ALL NON-COMPLETION IN 1ST YEAR
Athlone IT	37%	26%	11%	70%
Cork IT	33%	21%	12%	63%
Dublin Institute of Technology	40%	25%	15%	63%
Dun Laoghaire Institute of Art, Design and Technology	41%	24%	17%	58%
Dundalk IT	47%	30%	17%	64%
Galway-Mayo IT	37%	30%	7%	82%
IT Blanchardstown	45%	27%	18%	60%
IT Carlow	44%	26%	18%	59%
IT Sligo	34%	24%	10%	70%
IT Tallaght	47%	33%	14%	70%
IT Tralee	33%	20%	13%	60%
Letterkenny IT	42%	25%	17%	59%
Limerick IT	38%	23%	15%	61%
Waterford IT	38%	22%	16%	58%
All Institutes of Technology Level 7	39%	26%	13%	67%

Table 8.7: Point of Non-Continuance, Institutes of Technology NFQ Level 8

INSTITUTES OF TECHNOLOGY LEVEL 8	TOTAL NON-COMPLETION ALL YEARS	1ST YEAR NON-COMPLETION RATE	OTHER YEARS COMBINED NON-COMPLETION RATES	PROPORTION OF ALL NON-COMPLETION IN 1ST YEAR
Athlone IT	23%	11%	12%	49%
Cork IT	27%	23%	4%	85%
Dublin Institute of Technology	25%	13%	12%	51%
Dun Laoghaire Institute of Art, Design and Technology	23%	14%	9%	61%
Dundalk IT	22%	13%	9%	60%
Galway-Mayo IT	31%	22%	9%	71%
IT Blanchardstown	36%	18%	18%	50%
IT Carlow	30%	18%	12%	60%
IT Sligo	20%	10%	10%	51%
IT Tallaght	39%	25%	14%	64%
IT Tralee	18%	12%	6%	65%
Letterkenny IT	13%	4%	9%	31%
Limerick IT	25%	18%	7%	73%
Waterford IT	29%	21%	8%	71%
All Institutes of Technology Level 8	26%	16%	10%	61%

Table 8.8 below looks at the proportions of non-completions occurring in first year and the proportions occurring in later years, by ISCED field of study, NFQ level and institute type.

Table 8.8: Point of Non-Continuance, by Institute Type, NFQ Level and ISCED Field

INSTITUTE TYPE/NFQ LEVEL/ISCED BROAD FIELD OF STUDY	TOTAL NON-COMPLETION ALL YEARS	1ST YEAR NON-COMPLETION RATE	OTHER YEARS COMBINED NON-COMPLETION RATES	PROPORTION OF ALL NON-COMPLETION IN 1ST YEAR
Colleges	6%	4%	2%	63%
Level 8	6%	4%	2%	63%
Education	3%	2%	1%	58%
Science, Mathematics, Agriculture and Veterinary	3%	0%	3%	0%
Social Science, Business, Law, Arts and Humanities	10%	7%	3%	69%
Institutes of Technology	34%	22%	12%	65%
Level 6	37%	25%	12%	68%
Combined + General	60%	10%	50%	17%
Computing	50%	35%	15%	69%
Construction and Related	45%	30%	15%	67%
Education	38%	23%	15%	61%
Engineering excluding Civil	44%	35%	9%	80%
Health and Welfare	18%	16%	2%	89%
Science, Mathematics, Agriculture and Veterinary	29%	26%	3%	91%
Services	32%	19%	13%	59%
Social Science, Business, Law, Arts and Humanities	36%	22%	14%	62%
Level 7	39%	26%	13%	67%
Computing	57%	36%	21%	64%
Construction and Related	35%	20%	15%	57%
Education	20%	5%	15%	25%
Engineering excluding Civil	46%	27%	19%	59%
Health and Welfare	19%	14%	5%	74%
Science, Mathematics, Agriculture and Veterinary	33%	24%	9%	72%
Services	42%	30%	12%	72%
Social Science, Business, Law, Arts and Humanities	37%	26%	11%	70%
Level 8	26%	16%	10%	61%
Computing	50%	25%	25%	50%
Construction and Related	31%	22%	9%	72%
Education	13%	11%	2%	86%
Engineering excluding Civil	24%	11%	13%	45%

INSTITUTE TYPE/NFQ LEVEL/ISCED BROAD FIELD OF STUDY	TOTAL NON-COMPLETION ALL YEARS	1ST YEAR NON-COMPLETION RATE	OTHER YEARS COMBINED NON-COMPLETION RATES	PROPORTION OF ALL NON-COMPLETION IN 1ST YEAR
Health and Welfare	18%	14%	4%	77%
Science, Mathematics, Agriculture and Veterinary	36%	22%	14%	61%
Services	25%	15%	10%	60%
Social Science, Business, Law, Arts and Humanities	26%	15%	11%	59%
All Levels	34%	22%	12%	65%
Combined + General	60%	15%	45%	25%
Computing	53%	32%	21%	60%
Construction and Related	35%	22%	13%	62%
Education	23%	11%	12%	48%
Engineering excluding Civil	42%	26%	16%	62%
Health and Welfare	18%	14%	4%	77%
Science, Mathematics, Agriculture and Veterinary	33%	24%	9%	72%
Services	36%	25%	11%	69%
Social Science, Business, Law, Arts and Humanities	32%	21%	11%	66%
Universities	17%	9%	8%	53%
Level 8	17%	9%	8%	53%
Combined + General	21%	12%	9%	58%
Computing	29%	16%	13%	55%
Construction and Related	8%	5%	3%	63%
Education	15%	7%	8%	48%
Engineering excluding Civil	17%	9%	8%	53%
Health and Welfare	14%	6%	8%	43%
Science, Mathematics, Agriculture and Veterinary	20%	11%	9%	54%
Services	12%	7%	5%	57%
Social Science, Business, Law, Arts and Humanities	16%	9%	7%	57%
All Institutes All NFQ Levels All Fields of Study	24%	15%	9%	63%

Of note is the relatively high proportion of non-completions in the computing field of study that occur in later years as well as in first year. At level 8, 45% of computing non-completions in universities and 50% of computing non-completions in institutes of technology occur in later years. Table 8.9 below shows a summary of the point of non-continuance by ISCED broad field of study for all at level 8 and for all institutes at all levels.

Table 8.9: Point of Non-Continuance, by ISCED – NFQ Level 8 and All NFQ Levels

ISCED BROAD FIELD OF STUDY	TOTAL NON-COMPLETION ALL YEARS	1ST YEAR NON-COMPLETION RATE	OTHER YEARS COMBINED NON-COMPLETION RATES	PROPORTION OF ALL NON-COMPLETION IN 1ST YEAR
All Institutes – Level 8	18%	11%	7%	60%
Combined + General	21%	12%	9%	58%
Computing	37%	20%	17%	53%
Construction and Related	23%	16%	7%	69%
Education	8%	4%	4%	51%
Engineering excluding Civil	19%	9%	10%	48%
Health and Welfare	15%	8%	7%	52%
Science, Mathematics, Agriculture and Veterinary	21%	11%	10%	52%
Services	24%	15%	9%	63%
Social Science, Business, Law, Arts and Humanities	18%	10%	8%	56%
All Institutes – All NFQ Levels	24%	15%	9%	63%
Combined + General	21%	12%	9%	57%
Computing	45%	27%	18%	60%
Construction and Related	32%	20%	12%	62%
Education	9%	5%	4%	58%
Engineering excluding Civil	33%	20%	13%	61%
Health and Welfare	16%	9%	7%	57%
Science, Mathematics, Agriculture and Veterinary	23%	14%	9%	60%
Services	35%	24%	11%	68%
Social Science, Business, Law, Arts and Humanities	22%	14%	8%	62%

The data above show that non-continuation at level 8 beyond first year is quite prevalent in many fields in comparison to levels 6 and 7. 52% of engineering, 48% of science and 47% of computing non-completions at level 8 are in later years.

8.4 Other Graduation & Enrolment Data for Initial Non-Completions

The following analysis is based on matching PPSN data across the higher education institutes. However, PPSN coverage in 2007/08 was not complete and totally missing for two institutes. All analysis to this point has been based on determining if a student graduated within the institute in which they were enrolled as a new entrant in 2007/08. This analysis looks at the 24% non-completions to determine if they graduated (or enrolled without graduation) from another HEA core-funded institute. Of the 8,172 non-completions in total, 6,932 (85%) have a recorded PPSN allowing for this analysis. The proportion of these 6,932 that subsequently graduated from another institute between 2008 and 2016 and the proportion that enrolled in, but have not yet graduated from, another institute, up to 2016, are shown in the tables below by institute, NFQ level and ISCED broad field of study. Since the main analysis in this

report covers all within institute graduations, subsequent enrolments in the same institute are discarded – these students did not graduate from the institute that they were a new entrant in during 2007/08. Many of the initial non-completions found to have subsequent enrolments and graduations in other institutes have multiple enrolments in other institutes. The numbers presented below only indicate the number of distinct students that have at least one subsequent graduation or one subsequent enrolment without graduation. These two groups are mutually exclusive. The balance of the PPSNs that were included in the search returned no records of subsequent enrolments or graduations. These numbers are likely underestimated as 1. PPSN coverage for the initial non-completions is not complete and 2. Subsequent enrolments/graduations may not have recorded PPSN. Table 8.10 below shows this analysis by institute type and institute.

Table 8.10: Other Graduation/Enrolment Records of Non-Completions, by Institute

INSTITUTE TYPE/INSTITUTE	TOTAL NON-COMPLETION RATE	% OF NON-COMPLETIONS WITH OTHER GRADUATION RECORD	% OF NON-COMPLETIONS WITH OTHER ENROLMENT, BUT NO GRADUATION, RECORD
Colleges	6%	30%	10%
Mary Immaculate College	7%	33%	15%
Mater Dei Institute	8%	71%	14%
National College of Art and Design	8%	31%	15%
St. Patrick's College Drumcondra	3%	33%	5%
Institutes of Technology	34%	14%	9%
Athlone IT	28%	8%	11%
Cork IT	33%	18%	9%
Dublin Institute of Technology	30%	23%	10%
Dun Laoghaire Institute of Art, Design and Technology	27%	17%	10%
Dundalk IT	38%	10%	7%
Galway-Mayo IT	35%	12%	11%
IT Blanchardstown	41%	15%	9%
IT Carlow	39%	12%	8%
IT Sligo	33%	14%	11%
IT Tallaght	44%	9%	5%
IT Tralee	27%	11%	5%
Letterkenny IT	39%	8%	7%
Limerick IT	32%	17%	10%
Waterford IT	34%	12%	9%

INSTITUTE TYPE/INSTITUTE	TOTAL NON-COMPLETION RATE	% OF NON-COMPLETIONS WITH OTHER GRADUATION RECORD	% OF NON-COMPLETIONS WITH OTHER ENROLMENT, BUT NO GRADUATION, RECORD
Universities	17%	23%	11%
Dublin City University	20%	31%	12%
Maynooth University	19%	24%	11%
National University of Ireland, Galway	17%	29%	13%
University College Cork	16%	27%	14%
University College Dublin	18%	23%	11%
University of Limerick	15%	24%	15%
All Institutes	24%	17%	10%

PPSN data for non-completions is not available for St. Angela's College or Trinity College. 17% of non-completions went on to graduate from another institute, 10% enrolled at least once elsewhere, but have not yet graduated. University non-completions were more likely to graduate elsewhere compared to institute of technology non-completions (23% v 14%). DCU non-completions were most likely to go on to graduate elsewhere, having not completed their course in DCU (31%). The proportions of non-completions going on to graduate elsewhere in Athlone IT, IT Tallaght and Letterkenny IT are relatively low at 8%, 9% and 8% respectively.

The two tables below show these data by NFQ level and ISCED broad field of study.

Table 8.11: Other Graduation/Enrolment Records of Non-Completions, by NFQ Level

NFQ LEVEL	TOTAL NON-COMPLETION RATE	% OF NON-COMPLETIONS WITH OTHER GRADUATION RECORD	% OF NON-COMPLETIONS WITH OTHER ENROLMENT, BUT NO GRADUATION, RECORD
Level 6	37%	10%	8%
Level 7	39%	13%	9%
Level 8	18%	22%	10%
All NFQ Levels	24%	17%	10%

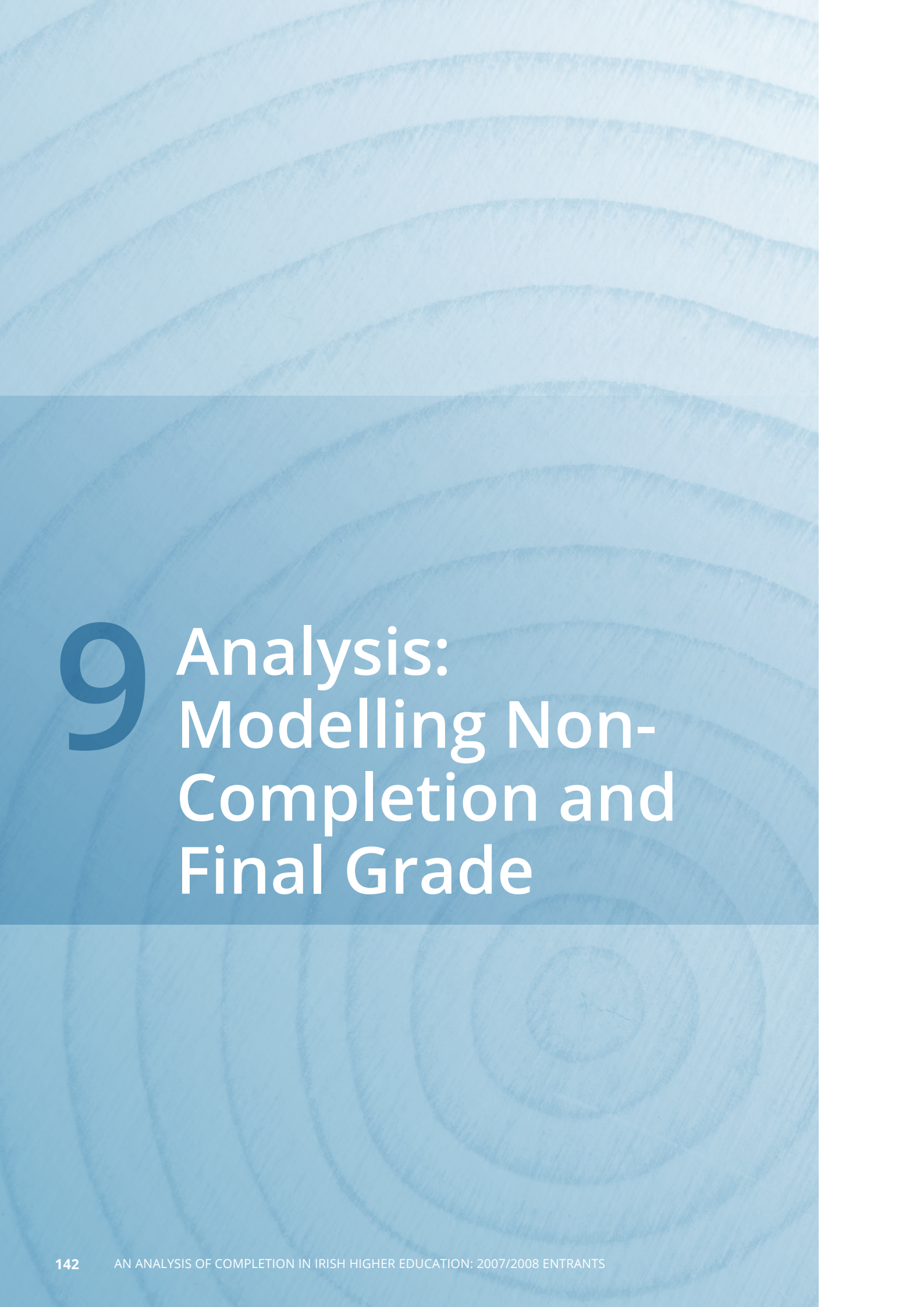
Table 8.12: Other Graduation/Enrolment Records of Non-Completions, by ISCED

ISCED BROAD FIELD OF STUDY	TOTAL NON-COMPLETION RATE	% OF NON-COMPLETIONS WITH OTHER GRADUATION RECORD	% OF NON-COMPLETIONS WITH OTHER ENROLMENT, BUT NO GRADUATION, RECORD
(1) Education	9%	21%	8%
(2) Humanities and Arts	23%	18%	10%
(3a) Social Sciences	20%	20%	6%
(3b) Business and Law	23%	15%	8%
(4a) Science and Mathematics	24%	23%	13%
(4b) Computing	45%	15%	10%
(5) Engineering, Manufacturing and Construction	33%	19%	10%
(6) Agriculture and Veterinary	22%	19%	10%
(7) Health and Welfare	16%	15%	7%
(8) Services	35%	13%	10%
(9) Combined + General	21%	22%	14%
All Fields	24%	17%	10%

Level 8 non-completions were more likely to go on to graduate elsewhere – 22% v 10% for level 6 and 13% for level 7 non-completions. Science non-completions were more likely than students in any other field to go on to graduate elsewhere (23%).

8.5 Key Points

- ▶ 58% of entrants graduated on time, 71% graduated up to one year late and 76% graduated in total.
- ▶ Of the total new entrant cohort in 2007/08, 24% did not complete – 15% of the total did not progress into 2nd year. Therefore, 63% of non-completion is accounted for by 1st year non-progression.
- ▶ A higher proportion of non-completion is accounted for by 1st year non-progression in institutes of technology compared with universities (65% v 53%).
- ▶ Based on available data, 17% of those that did not complete within institute went on to graduate elsewhere. A further 10% enrolled but did not graduate elsewhere.
- ▶ Those who did not complete at level 8 were more likely to go on to graduate elsewhere (22%) compared to level 6 (10%) and level 7 (13%).



9 Analysis: Modelling Non- Completion and Final Grade

9 Analysis: Modelling Non-Completion and Final Grade

9.1 Introduction

This chapter, informed by the descriptive analysis in the preceding chapters, takes a deeper look at non-completion by employing multivariate logistic regression models to dissect the rates across institutes and the factors driving these rates. In addition to models analysing non-completion, similar models are adopted to analyse the final grades of those that did complete. The same explanatory variables are used in both sections. There are a number of variables, described in detail earlier in this report, that would be useful additions to the models presented here but have not been included in the final models due to far from complete data coverage. These include socioeconomic group, grant status, second level school type (DEIS, fee-paying, standard), Leaving Certificate Mathematics and English grades and two variables derived from the second level school attended – the deprivation index score based on the area the school is in and the distance from school to HEI attended. Despite the absence of these variables, the model results below give an interesting insight into the dynamics of non-completion and the final grade achieved.

The outcome variable in both sections is binary, 1 for non-completion in the first set of models and 1 for a first/upper second grade or equivalent (distinction or merit 1) at graduation in the second set of models. The explanatory variables are all categorical:

- ▶ Institute or Institute Type
- ▶ Age Group
- ▶ Gender
- ▶ Domicile (Irish/non-Irish)
- ▶ ISCED Broad Field of Study
- ▶ NFQ Level
- ▶ Leaving Certificate Points (in bands)

The only variable in the above which does not have full data coverage is Leaving Certificate points. However, as previous HEA (2018; 2010) progression research has shown, this is a vital inclusion. That means the dataset is reduced from the total 34,059 observations to 27,965 observations in the non-completion models and to 21,409 in the final grade models, which only cover those that actually graduated. Four institutes are dropped from the analysis completely due to no Leaving Certificate points data returned – DIT, Maynooth University, NCAD and St. Angela's College. The rate of missing Leaving Certificate data for other institutes in the models ranges from 0% to 12% missing, with 6% in total missing when the four institutes above are excluded.

9.2 Non-Completion Models

Table 9.1 below shows the non-completion rates across institute type and institute, before any controls are included (effectively the average prediction without any other covariates).

Table 9.1: Non-Completion Rates by Institute Type and Institute, without Controls

INSTITUTE TYPE/INSTITUTE	NON-COMPLETION RATE
Colleges	6.3%
Mary Immaculate College	6.8%
Mater Dei Institute	8.4%
National College of Art and Design	8.4%
St. Angela's College of Home Economics	13.8%
St. Patrick's College Drumcondra	3.5%
Institutes of Technology	33.7%
Athlone IT	28.3%
Cork IT	32.6%
Dublin Institute of Technology	29.6%
Dun Laoghaire Institute of Art, Design and Technology	27.1%
Dundalk IT	38.2%
Galway-Mayo IT	35.5%
IT Blanchardstown	41.4%
IT Carlow	38.9%
IT Sligo	32.9%
IT Tallaght	44.0%
IT Tralee	27.4%
Letterkenny IT	38.9%
Limerick IT	32.1%
Waterford IT	33.8%
Universities	17.1%
Dublin City University	20.3%
Maynooth University	19.3%
National University of Ireland, Galway	16.5%
Trinity College Dublin	15.4%
University College Cork	16.0%
University College Dublin	18.1%
University of Limerick	15.3%
All Institutes	24.0%

As discussed earlier in the report, rates range from 3.5% in St Pat's Drumcondra to 44% in IT Tallaght. The rate overall for universities is 17.1%, compared to 33.7% in institutes of technology and 6.3% in colleges. The two tables that follow show the results of the non-completion models, one by institute and the other by institute type. The average prediction is the average predicted probability and can be directly compared to the rates above. The average marginal effect is a comparison between each category and the base category within each variable.

Table 9.2: Non-Completion Logistic Regression Model, by Institute

BINARY: NON-COMPLETION = 1		AVERAGE MARGINAL EFFECT	STANDARD ERROR (AME)	AVERAGE PREDICTION
Institute				
Athlone IT		-0.059***	0.010	0.205
Cork IT		-0.034*	0.015	0.230
Dublin City University		base		0.264
Dun Laoghaire Institute of Art, Design and Technology		-0.069***	0.009	0.196
Dundalk IT		-0.008	0.014	0.257
Galway-Mayo IT		-0.021	0.015	0.243
IT Blanchardstown		0.039*	0.016	0.304
IT Carlow		-0.001	0.014	0.263
IT Sligo		-0.055***	0.013	0.209
IT Tallaght		0.002	0.014	0.266
IT Tralee		-0.068***	0.009	0.197
Letterkenny IT		-0.036*	0.017	0.228
Limerick IT		-0.043**	0.013	0.221
Mary Immaculate College		-0.119***	0.010	0.145
Mater Dei Institute		-0.147***	0.011	0.117
National University of Ireland, Galway		-0.056***	0.007	0.208
St. Patrick's College Drumcondra		-0.161***	0.011	0.103
Trinity College Dublin		0.025	0.013	0.289
University College Cork		-0.046***	0.006	0.218
University College Dublin		-0.020**	0.007	0.244
University of Limerick		-0.053***	0.004	0.211
Waterford IT		0.010	0.010	0.274
Age Group				
Under 20		base		0.228
20 – 24		0.051***	0.008	0.280
25+		-0.011	0.017	0.217
Gender				
Female		base		0.220
Male		0.028**	0.010	0.248

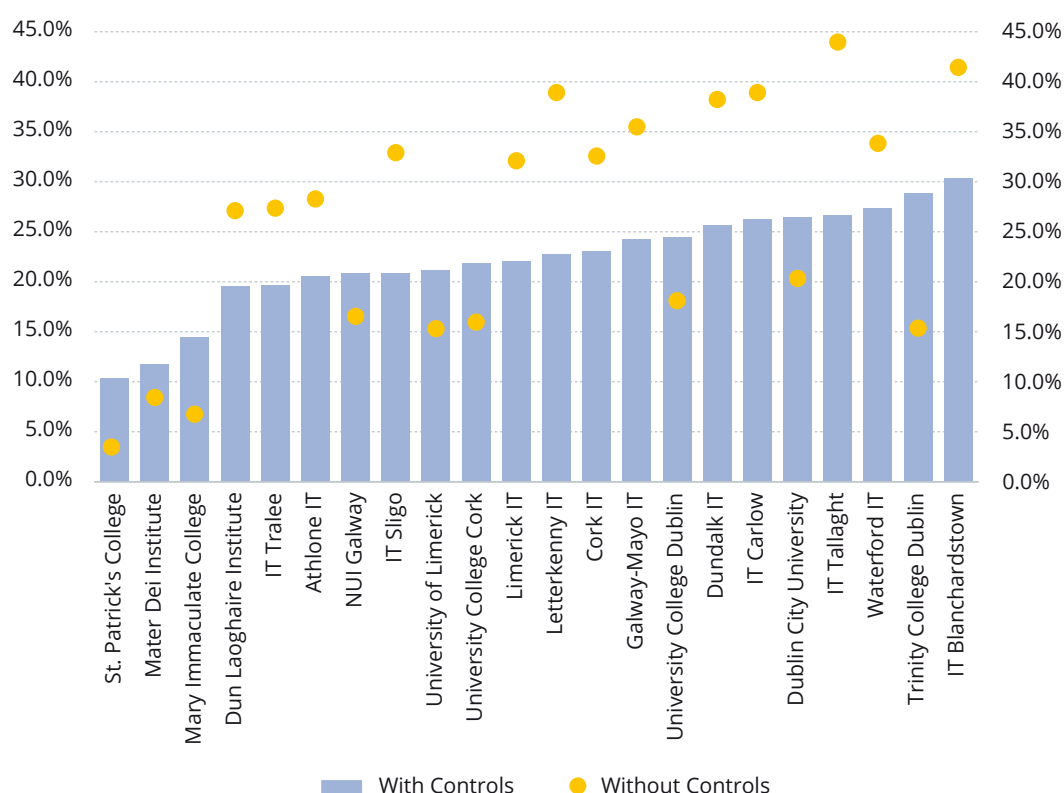
BINARY: NON-COMPLETION = 1		AVERAGE MARGINAL EFFECT	STANDARD ERROR (AME)	AVERAGE PREDICTION
Domicile				
Irish		base		0.235
Non-Irish		-0.028***	0.007	0.207
ISCED Field of Study				
(1) Education		-0.038**	0.017	0.181
(2) Humanities and Arts		0.036	0.024	0.255
(3a) Social Sciences		-0.009	0.018	0.210
(3b) Business and Law		base		0.219
(4a) Science and Mathematics		0.058**	0.018	0.277
(4b) Computing		0.113***	0.023	0.332
(5) Engineering, Manufacturing and Construction		0.035**	0.011	0.254
(6) Agriculture and Veterinary		-0.051**	0.017	0.168
(7) Health and Welfare		-0.059**	0.018	0.160
(8) Services		0.027	0.018	0.246
(9) Combined + General		0.053***	0.015	0.272
NFQ Level				
Level 6		0.004	0.016	0.232
Level 7		0.023	0.017	0.251
Level 8		base		0.227
Leaving Cert. Points				
155 to 200		0.227***	0.032	0.471
205 to 250		0.259***	0.024	0.504
255 to 300		0.144***	0.019	0.389
305 to 350		0.078***	0.012	0.322
355 to 400		base		0.244
405 to 450		-0.085***	0.008	0.159
455 to 500		-0.142***	0.015	0.102
505 to 550		-0.184***	0.015	0.061
555 to 600		-0.142***	0.034	0.102
Other		0.005	0.026	0.249

*** p < .001 ** p < .01 * p < .05

27,965 observations

Results from the model above show that after controlling for age, gender, domicile, ISCED field of study, NFQ level and Leaving Certificate points, the average predicted probabilities across the institutes look substantially different to the headline rates of non-completion. For instance, the non-completion rate in Trinity College is 15.4%, but after the set of controls above are introduced, the average predicted probability of non-completion in Trinity College is 28.9%. Trinity College has in fact the second highest average predicted probability after IT Blanchardstown (30.4%). The predicted probabilities of non-progression for the six universities in the model all show a decrease in their relative position of non-completion probability when compared to the institutes of technology. Although other factors such as gender, ISCED course offerings and NFQ level are partly driving this effect, it is Leaving Certificate points that has the largest effect, i.e. more high points upon entry students into institutes of technology would result in a lower non-completion rate and more low points upon entry students into universities would result in a higher non-completion rate. Figure 9.1 below clearly shows the effect of holding other factors equal on non-completion probabilities across institutes.

Figure 9.1: Non-Completion Average Predicted Probabilities, by Institute



The nine institutes exhibiting higher predicted probabilities after controls are introduced are all the universities and colleges. All institutes of technology in the analysis have lower predicted probabilities after controls are introduced. Nevertheless, some institutes of technology (IT Blanchardstown, Waterford IT and IT Tallaght specifically) still exhibit relatively high predicted probabilities of non-completion after the controls, including Leaving Certificate points, are introduced.

Results from the model above also show that those in the 20-24 age group are most likely to not complete when compared to those both younger (under 20) and older (25+). The average predicted probability of non-completion for those aged between 20-24 is 28% compared to 21.7% for those aged 25+ and 22.8% for those aged under 20.

Males are 2.8 percentage points more likely to not complete compared with females, after controlling for institute, age, domicile, ISCED field of study, NFQ level and Leaving Certificate points.

Non-Irish students are 2.8 percentage points less likely to not complete when compared with Irish students.

Those studying in the computing field are most likely to not complete – average predicted probability of 33.2% compared with, for instance, 16% for those in health and welfare and 18.1% for those in education. Other fields of study exhibiting relatively high predicted probabilities of non-completion include science at 27.7%, arts at 25.5% and engineering at 25.4%.

After the controls are introduced, the differences in non-completion probabilities across the three NFQ levels are not statistically significant. The average predicted probability of non-completion for those at level 8 is still lower than at levels 6 and 7 but the differences are not large. The average predicted probability of non-completion at level 8 is 22.7% compared with 23.2% and 25.1% at levels 6 and 7 respectively.

The effect of Leaving Certificate points on the probability of non-completion is clear. Those entering with lower points, even after controlling for institute, age, gender, domicile, ISCED field of study and NFQ level are more likely to not complete. Specifically, those entering with less than 400 points are much more likely to not complete compared with those entering with over 400 points, in general, with the differences widening the further away from 400 on either side. This is shown in more detail below.

Table 9.3 below shows the results of a similar model with institute type rather than institute included to look at the overall difference between universities, institutes of technology and colleges. The results largely confirm the analysis above by institute, where controlling for the set of student and course characteristics almost removes the difference between universities and institutes of technology. The average predicted probability of non-completion for universities is 23.5% compared with 23.9% for institutes of technology. Colleges still exhibit relatively low average predicted probabilities of non-completion (12.2%). As expected, other results are very similar to the institute model above since institute type is simply an aggregation of institute.

Table 9.3: Non-Completion Logistic Regression Model, by Institute Type

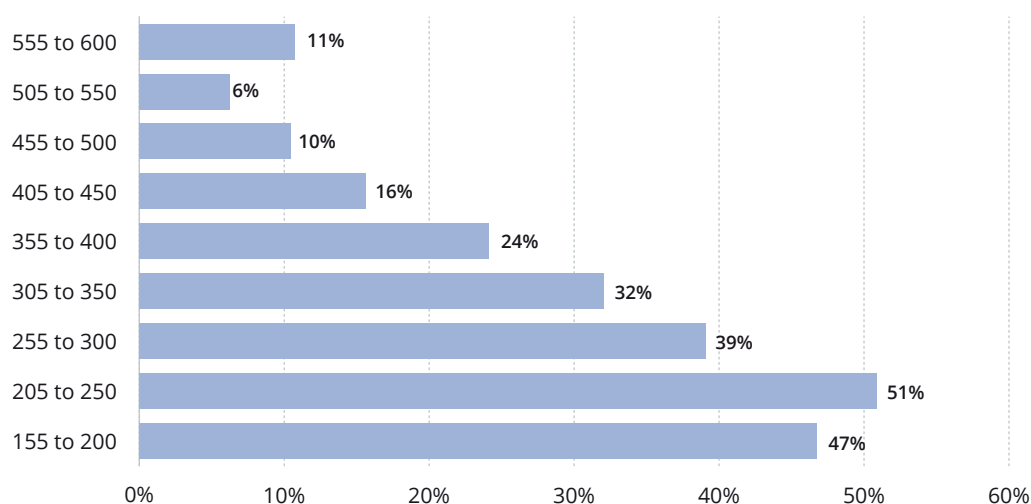
BINARY: NON-COMPLETION = 1	AVERAGE MARGINAL EFFECT	STANDARD ERROR (AME)	AVERAGE PREDICTION
Institute Type			
Colleges	-0.113***	0.016	0.122
Institutes of Technology	0.005*	0.002	0.239
Universities	base		0.235
Age Group			
Under 20	base		0.228
20-24	0.051*	0.023	0.279
25+	-0.009	0.033	0.219
Gender			
Female	base		0.220
Male	0.028***	0.004	0.248
Domicile			
Irish	base		0.235
Non-Irish	-0.028***	0.007	0.207
ISCED Field of Study			
(1) Education	-0.029	0.044	0.191
(2) Humanities and Arts	0.038	0.055	0.258
(3a) Social Sciences	-0.003	0.005	0.217
(3b) Business and Law	base		0.220
(4a) Science and Mathematics	0.057*	0.028	0.277
(4b) Computing	0.114***	0.007	0.334
(5) Engineering, Manufacturing and Construction	0.034**	0.011	0.254
(6) Agriculture and Veterinary	-0.040	0.021	0.180
(7) Health and Welfare	-0.057**	0.021	0.163
(8) Services	0.017**	0.005	0.237
(9) Combined + General	0.028	0.018	0.248
NFQ Level			
Level 6	-0.004	0.010	0.225
Level 7	0.021***	0.005	0.250
Level 8	base		0.229

BINARY: NON-COMPLETION = 1		AVERAGE MARGINAL EFFECT	STANDARD ERROR (AME)	AVERAGE PREDICTION
Leaving Cert. Points				
155 to 200		0.226**	0.070	0.468
205 to 250		0.268***	0.006	0.509
255 to 300		0.150***	0.002	0.391
305 to 350		0.079***	0.010	0.321
355 to 400		base		0.241
405 to 450		-0.085***	0.010	0.156
455 to 500		-0.137***	0.019	0.104
505 to 550		-0.179***	0.016	0.062
555 to 600		-0.134***	0.018	0.108
Other		0.006	0.059	0.248

*** P < .001 ** P < .01 * P < .05 27,965 observations

One again, the effect of Leaving Certificate points upon entry is clear. Those with higher points on entry are more likely to complete their course. Figure 9.2 below illustrates this result from the model above.

Figure 9.2: Non-Completion Average Predictions, by Leaving Cert Points



The average predicted probability of non-completion for those entering with between 505 and 550 points is 6% compared with 51% for those entering with between 205 and 250 points.

The predicted probabilities of non-completion from the institute type model above vary substantially based on the key predictors. The mean predicted probability of non-completion for males entering with between 205 and 250 Leaving Certificate points, studying computing at NFQ level 6/7 or NFQ level 8, is over 70%. At the other end of the scale, the mean predicted probability of non-completion for females entering with between 505 and 550 Leaving Certificate points, studying education at level 8, is only 2%.

9.3 Final Grade Models

A similar analysis to the analysis of non-completion above is presented below for the probability of achieving a 1st/upper 2nd or equivalent upon graduation. A 2.1 is considered an upper second and a distinction or merit 1 are the equivalent grades, the grades applicable to some awards in the institutes of technology. Further details on graduation grade distributions as a whole are available in the chapter on prior academic attainment. As per the non-completion analysis, one model is by institute and the other is by institute type. The same set of explanatory variables are used. The number of observations is lower since those who did not complete their course are not part of the analysis. Table 9.4 below shows the overall proportions of those that achieved a 1st/upper 2nd or equivalent upon graduation by institute type and institute.

Table 9.4: 1st/Upper 2nd or Equivalent Proportions by Institute Type and Institute

INSTITUTE TYPE/INSTITUTE	1ST/UPPER 2ND OR EQUIVALENT %
Colleges	59.9%
Mary Immaculate College	49.3%
Mater Dei Institute	64.5%
National College of Art and Design	65.5%
St. Angela's College of Home Economics	55.4%
St. Patrick's College Drumcondra	70.4%
Institutes of Technology	48.8%
Athlone IT	47.9%
Cork IT	52.0%
Dublin Institute of Technology	58.3%
Dun Laoghaire Institute of Art, Design and Technology	46.1%
Dundalk IT	54.4%
Galway-Mayo IT	45.2%
IT Blanchardstown	21.0%
IT Carlow	48.7%
IT Sligo	45.8%
IT Tallaght	27.1%
IT Tralee	43.8%
Letterkenny IT	42.8%
Limerick IT	40.9%
Waterford IT	51.9%

INSTITUTE TYPE/INSTITUTE	1ST/UPPER 2ND OR EQUIVALENT %
Universities	60.3%
Dublin City University	68.9%
Maynooth University	54.1%
National University of Ireland, Galway	51.9%
Trinity College Dublin	70.3%
University College Cork	64.7%
University College Dublin	61.3%
University of Limerick	47.8%
All Institutes	55.8%

The overall rate of 1st/upper 2nd or equivalent in universities is 60.3%, compared with 48.8% in institutes of technology and 59.9% in colleges. The lowest rates are in IT Blanchardstown (21%) and IT Tallaght (27.1%). Most students graduating from these two institutes do so with a merit 2 or a pass. The highest rates are in St. Pat's Drumcondra (70.4%) and Trinity College (70.3%).

Table 9.5 below shows the results of the model by institute. Note that unlike the non-completion model above, an increase in the average predicted probability here is desirable, as this equates to more high grades. Higher predicted probabilities in the non-completion models were not desirable, indicating higher non-completion.

Table 9.5: 1st/Upper 2nd/Equivalent Logistic Regression Model, by Institute

BINARY: 1ST/UPPER 2ND OR EQUIVALENT = 1	AVERAGE MARGINAL EFFECT	STANDARD ERROR (AME)	AVERAGE PREDICTION
Institute			
Athlone IT	0.020	0.025	0.641
Cork IT	0.060**	0.017	0.680
Dublin City University	base		0.620
Dun Laoghaire Institute of Art, Design and Technology	-0.099***	0.021	0.522
Dundalk IT	0.097***	0.013	0.717
Galway-Mayo IT	0.006	0.016	0.626
IT Blanchardstown	-0.312***	0.023	0.309
IT Carlow	0.020	0.018	0.640
IT Sligo	0.049**	0.018	0.669
IT Tallaght	-0.123***	0.022	0.497
IT Tralee	-0.054*	0.024	0.566
Letterkenny IT	0.031	0.018	0.651
Limerick IT	-0.037	0.024	0.584
Mary Immaculate College	-0.282***	0.021	0.338
Mater Dei Institute	0.020	0.026	0.640
National University of Ireland, Galway	-0.160***	0.021	0.460
St. Patrick's College Drumcondra	-0.115***	0.024	0.505
Trinity College Dublin	-0.077***	0.012	0.544
University College Cork	-0.057***	0.016	0.563
University College Dublin	-0.094***	0.010	0.527
University of Limerick	-0.199***	0.006	0.422
Waterford IT	0.036*	0.014	0.656
Age Group			
Under 20	base		0.542
20-24	0.055***	0.013	0.597
25+	0.119***	0.021	0.661
Gender			
Female	base		0.577
Male	-0.045***	0.012	0.532
Domicile			
Irish	base		0.556
Non-Irish	0.070**	0.023	0.626

BINARY: 1ST/UPPER 2ND OR EQUIVALENT = 1		AVERAGE MARGINAL EFFECT	STANDARD ERROR (AME)	AVERAGE PREDICTION
ISCED Field of Study				
(1) Education		0.029	0.040	0.583
(2) Humanities and Arts		0.013	0.040	0.567
(3a) Social Sciences		0.060	0.042	0.614
(3b) Business and Law		base		0.554
(4a) Science and Mathematics		0.018	0.025	0.572
(4b) Computing		0.043	0.034	0.597
(5) Engineering, Manufacturing and Construction		-0.001	0.036	0.553
(6) Agriculture and Veterinary		0.029	0.061	0.583
(7) Health and Welfare		-0.047	0.042	0.507
(8) Services		-0.022	0.032	0.532
(9) Combined + General		0.027	0.046	0.581
NFQ Level				
Level 6		-0.031	0.045	0.546
Level 7		-0.094***	0.026	0.483
Level 8		base		0.577
Leaving Cert. Points				
155 to 200		-0.094	0.052	0.340
205 to 250		-0.203***	0.031	0.231
255 to 300		-0.148***	0.022	0.286
305 to 350		-0.081***	0.018	0.353
355 to 400		base		0.434
405 to 450		0.137***	0.021	0.571
455 to 500		0.288***	0.032	0.722
505 to 550		0.422***	0.020	0.856
555 to 600		0.335***	0.047	0.769
Other		0.098*	0.042	0.531

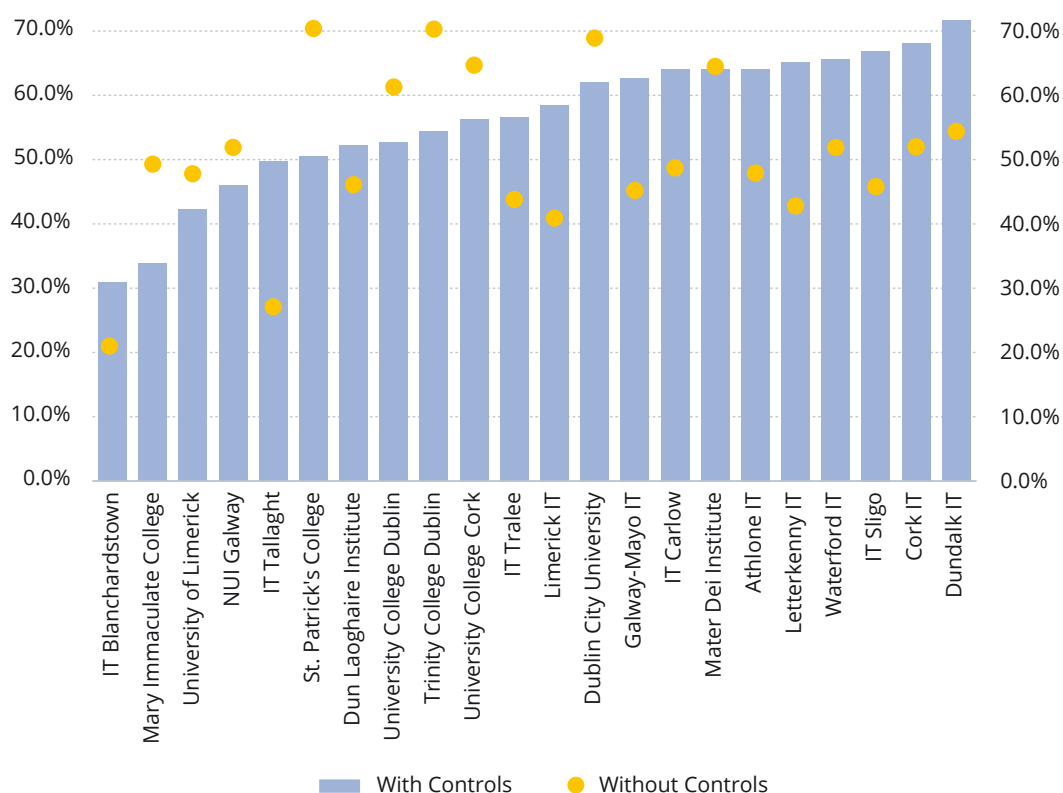
*** P < .001 ** P < .01 * P < .05

21,409 observations

The model results, in a similar vein to the non-completion models, show that, after controlling for age, gender, domicile, ISCED field of study, NFQ level and Leaving Certificate points, the average predicted probabilities of students achieving a 1st/upper 2nd or equivalent across institutes vary considerably when compared to headline rates of the proportions achieving a 1st/upper 2nd or equivalent presented earlier. For instance, after taking the controls into account (particularly Leaving Certificate points), students in Dundalk IT have the highest probability of achieving a 1st/upper 2nd or equivalent – an average predicted probability of 71.7%. In fact, based on actual rates, 54.4% of Dundalk IT students achieved a 1st/upper 2nd

or equivalent. This is due to the student mix in Dundalk IT not having the characteristics associated with achieving a 1st/upper 2nd or equivalent to the extent that some other institutes do (high Leaving Certificate points in particular). The model indicates that if Dundalk IT had many more students with higher points, the proportion achieving a 1st/upper 2nd or equivalent would increase substantially. The reverse is true for Mary Immaculate College. The model results indicate that high Leaving Certificate entry points are driving the rate of those achieving a 1st/upper 2nd or equivalent (49.3%). If Mary Immaculate College had students with entry lower points on average (the full population in this analysis), this rate would be substantially reduced – the average predicted probability for Mary Immaculate College is 33.8%, only IT Blanchardstown at 30.9% is lower. This dynamic is illustrated in figure 9.3 below, showing average predicted probabilities before and after controls are used.

Figure 9.3: 1st/Upper 2nd/Equivalent Average Predicted Probabilities, by Institute



The institutes of technology included in this analysis all have higher average predicted probabilities of achieving a 1st/upper 2nd or equivalent after controls are introduced, particularly Leaving Certificate points. The universities and colleges included in this analysis all have lower average predicted probabilities of achieving a 1st/upper 2nd or equivalent after controls are introduced. However, some institutes of technology still exhibit relatively low average predicted probabilities of achieving a 1st/upper 2nd or equivalent after controls are introduced – IT Blanchardstown and IT Tallaght.

Results from the model show that there is a clear relationship between age and the average predicted probability of achieving a 1st/upper 2nd or equivalent evident. Under 20-year olds are least likely to achieve a 1st/upper 2nd or equivalent (54.2% average prediction). Those over 25 are most likely to achieve a 1st/upper 2nd or equivalent (66.1% average prediction), i.e. those over 25 are almost 12 percentage points more likely to achieve a 1st/upper 2nd or equivalent compared with those under 20.

Males are 4.5 percentage points less likely to achieve a 1st/upper 2nd or equivalent compared with females, even after controlling for institute, age, domicile, ISCED field of study, NFQ level and Leaving Certificate points.

Non-Irish students are 7 percentage points more likely to achieve a 1st/upper 2nd or equivalent compared with Irish students.

Probabilities of achieving a 1st/upper 2nd or equivalent do not vary greatly across ISCED fields of study – average predictions range from around 51% in health and welfare to around 61% in social sciences. The marginal effects (the difference with business and law) are not statistically significant for any field.

NFQ level 8 students are most likely to achieve a 1st/upper 2nd or equivalent (average prediction 57.7%), NFQ level 7 students are least likely to achieve a 1st/upper 2nd or equivalent (average prediction 48.3%).

As with the non-completion analysis, the effect of Leaving Certificate points is strong and clearly evident. In general, higher Leaving Certificate points upon entry is associated with a higher probability of achieving a 1st/upper 2nd or equivalent upon graduation. Those in the 155 to 200 points range, the lowest presented here, appear to have a higher probability of achieving a 1st/upper 2nd or equivalent than the two points bands above them, but numbers in that group in this instance are quite low and the difference between that group and the reference group (355 to 400 points) is not statistically significant.

Table 9.6 below shows the results of a 1st/upper 2nd or equivalent model by institute type.

Table 9.6: 1st/Upper 2nd/Equivalent Logistic Regression Model, by Institute Type

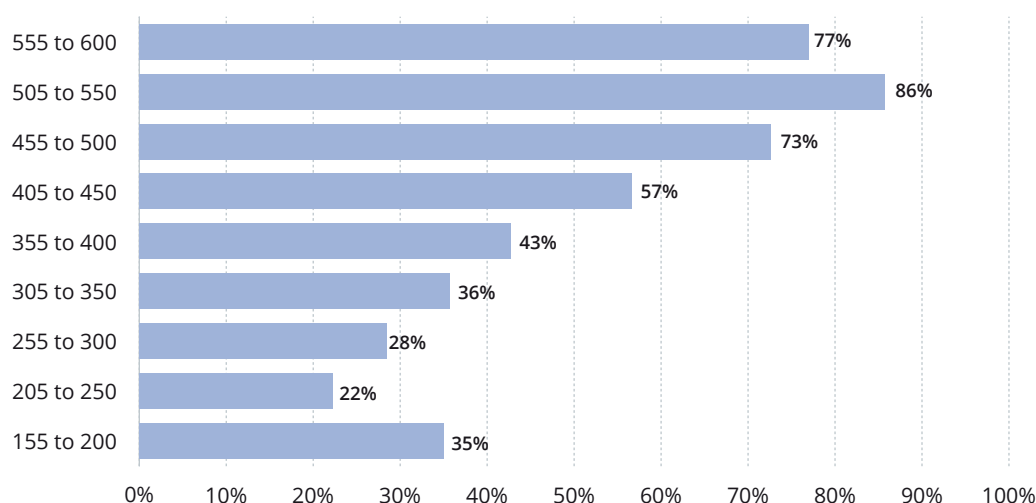
BINARY: 1ST/UPPER 2ND OR EQUIVALENT = 1	AVERAGE MARGINAL EFFECT	STANDARD ERROR (AME)	AVERAGE PREDICTION
Institute Type			
Colleges	-0.086***	0.003	0.440
Institutes of Technology	0.097***	0.010	0.622
Universities	base		0.525
Age Group			
Under 20	base		0.543
20-24	0.051***	0.010	0.594
25+	0.107***	0.018	0.651

BINARY: 1ST/UPPER 2ND OR EQUIVALENT = 1		AVERAGE MARGINAL EFFECT	STANDARD ERROR (AME)	AVERAGE PREDICTION
Gender				
Female		base		0.578
Male		-0.047***	0.007	0.531
Domicile				
Irish		base		0.556
Non-Irish		0.061*	0.029	0.617
ISCED Field of Study				
(1) Education		0.012	0.017	0.565
(2) Humanities and Arts		0.010	0.010	0.563
(3a) Social Sciences		0.042	0.087	0.595
(3b) Business and Law		base		0.553
(4a) Science and Mathematics		0.028	0.027	0.582
(4b) Computing		0.041	0.049	0.595
(5) Engineering, Manufacturing and Construction		0.000	0.033	0.554
(6) Agriculture and Veterinary		-0.007	0.048	0.547
(7) Health and Welfare		-0.026	0.072	0.527
(8) Services		-0.015	0.019	0.538
(9) Combined + General		0.014**	0.005	0.567
NFQ Level				
Level 6		-0.045*	0.018	0.527
Level 7		-0.066***	0.011	0.507
Level 8		base		0.573
Leaving Cert. Points				
155 to 200		-0.077	0.145	0.350
205 to 250		-0.205***	0.043	0.223
255 to 300		-0.142**	0.042	0.285
305 to 350		-0.071	0.036	0.357
355 to 400		base		0.427
405 to 450		0.139***	0.019	0.567
455 to 500		0.299***	0.057	0.726
505 to 550		0.430***	0.046	0.857
555 to 600		0.343***	0.059	0.770
Other		0.107	0.129	0.535

*** P < .001 ** P < .01 * P < .05 21,409 observations

The key result from this model is confirmation of the changing probabilities across institutes after introducing controls, particularly for Leaving Certificate points. The result could be interpreted such that it is less difficult to achieve 1st/upper 2nd or equivalent in an institute of technology than in a university, all things being equal. In fact, the average predicted probability of achieving a 1st/upper 2nd or equivalent is 62.2% in institutes of technology compared with 52.5% in universities. This is in stark contrast to the actual headline rates of those achieving a 1st/upper 2nd or equivalent – 48.8% in institutes of technology and 60.3% in universities. This is simply further evidence that higher points upon entry is the key driver of the probability of achieving a 1st/upper 2nd or equivalent. This is detailed in figure 9.4 below which illustrates the results from the model above.

Figure 9.4: 1st/Upper 2nd/Equivalent Average Predictions, by Leaving Cert Points



As noted earlier, the numbers in the 155 to 200 points group are relatively low and the difference between that group and the 355 to 400 group is not statistically significant. The relationship is clear – higher points upon entry means a higher probability of obtaining a 1st/upper 2nd or equivalent. 86% of those that enter with 505 to 550 points are predicted to achieve 1st/upper 2nd or equivalent compared with 22% of those that enter with 205 to 250 points.

9.4 Key Points

- ▶ After controlling for the set of student, course and institute characteristics in multivariate models, the probability of non-completion for students in institutes of technology is only slightly more than for students in universities (23.9% v 23.5%).
- ▶ Multivariate modelling shows that after controlling for the set of characteristics, particularly Leaving Certificate points, males are 2.8 percentage points more likely to not complete compared with females.
- ▶ Models show that the probability of non-completion varies across field of study from 18% and 19.1% in health and education respectively to 33.4% in computing.
- ▶ Based on multivariate model results, the probability of not completing for students that enter with between 505 and 550 Leaving Certificate points is 6.2% compared with 50.9% for those that enter with between 205 and 250 Leaving Certificate points.
- ▶ The predicted probability of non-completion for males entering with between 205 and 250 Leaving Certificate points, studying computing at NFQ level 6/7 or NFQ level 8, is over 70% compared with 2% for females entering with between 505 and 550 Leaving Certificate points, studying education at level 8.

The background of the page features a series of concentric, hand-drawn style blue circles that create a ripple effect. A solid, medium-blue horizontal band spans the width of the page, positioned behind the main title.

10 Conclusion

10 Conclusion

This report has, for the first time in an Irish context, examined successful participation and completion rates across all HEA-funded higher education institutions. The data reflects whether or not a student who entered higher education in 2007/08 graduated from his or her particular higher education institution by 2016. The findings show that, in total, 76% of 2007/08 new entrants completed their studies over this time frame. In terms of sector, 94% of college, 83% of university and 74% of institute of technology students (at level 8) completed their studies. Completion rates are somewhat lower among level 6/7 students in the institutes of technology, at 62%. Previous national research on university completion has comparable rates to this current study, in also identifying an 83% completion rate (Morgan et al., 2001). Previous studies on the completion rates within the institutes of technology sector have resulted in more mixed findings, with rates of between 70% (for certificate and diploma courses) and 87% (for degree courses) being identified (CODIT, 2006). An ERC (2000) study is more in line with the findings of this report in identifying a completion rate of 57% for certificate, diploma and degree programmes in this sector. It is important to note the potential methodological issues and limitations with these studies to date, and in particular the reliance on retrospective and self-reported survey data.

The findings from multivariate regression models show that after controlling for age, gender, domicile, field of study, NFQ level and Leaving Certificate points, the average predicted probabilities across the institutions are substantially different to the headline rates of non-completion. For instance, while the total non-completion rates in the universities are lower at the outset (17%) when compared to the institutes of technology (34%), after controls are introduced, the average predicted probability of non-completion for students attending the institutes of technology is only slightly higher at 23.9% when compared to students attending universities (23.5%).

As has been shown in previous studies (e.g. HEA, 2018; 2010), gender is an important determinant of non-completion. For example, the findings show that males are 2.8 percentage points more likely to not complete their studies when compared to females, after controlling for individual and institutional level factors. Furthermore, males are 4.5 percentage points less likely than their female peers to achieve a first or upper second class honours degree (or equivalent). This evidence supports the literature around the apparent underachievement of males (e.g. European Commission, 2015) and highlights the need to further examine the gender gap in educational achievement across all sectors.

In terms of nationality, non-Irish students are 2.8 percentage points less likely than Irish students to not complete their studies and are 7 percentage points more likely to achieve a first or upper second class honours degree (or equivalent) than their Irish counterparts, all else being equal. Students who are enrolled on computing courses are least likely to complete their studies. The findings show that such students have a 33.2% predicted probability of non-completion compared to 16% for those studying health and welfare

and 18.1% for those studying education related courses. Other disciplines exhibiting relatively high predicted probabilities of non-completion include science at 27.7%, arts and humanities at 25.5% and engineering at 25.4%.

The most striking finding is the relationship between prior academic achievement and student success. In line with previous Irish studies (e.g. HEA, 2018; 2010), students entering higher education with lower Leaving Certificate points (even after controlling for a range of variables), are more likely to not complete their higher education course when compared to their higher achieving peers. This is reflected in the multivariate regression analysis which shows that the influence of students' gender, socioeconomic background and field of study on non-completion rates is largely mediated through prior educational attainment. For instance, the probability of not completing higher education among students who enter with between 505 and 550 Leaving Certificate points is 6.2% and this compares to 50.9% for those students who enter with between 205 and 250 Leaving Certificate points. To illustrate this further, the analysis shows that the predicted probability of non-completion for males entering with between 205 and 250 Leaving Certificate points, studying computing at NFQ level 6/7 or NFQ level 8, is over 70% and this compares to 2% for females entering with between 505 and 550 Leaving Certificate points, studying education at level 8. While prior academic achievement is a crucial factor in influencing non-completion, it is worth noting the resilience of the majority of students to overcome obstacles and complete their studies. For instance, while only 12% of students attending the institutes of technology enter with more than 400 Leaving Certificate points (compared to 73% of university and 91% of college students), it is worth noting that, despite this, 66% of all students in this sector are successfully completing their studies.

While Ireland has been shown to have relatively high retention rates when compared with many other countries, such as the USA and Australia (e.g. OECD, 2016), there has been an increasing policy emphasis on mapping and understanding patterns and processes of non-completion across all education sectors. This current study further corroborates previous findings which emphasise the importance of the first year experience in higher education (e.g. Blaney and Mulkeen, 2008; Mannan, 2007; Yorke and Longden, 2008). Interestingly, these findings show that non-progression from first to second year accounts for 63% of non-completion across all sectors and levels. Given these findings as well as the many negative national, institutional and personal consequences that result from non-completion of higher education, some recent policy developments in this area are outlined below.

Career Guidance Review

The Department of Education and Skills made a commitment in the National Skills Strategy 2025 (DES, 2016a) and the Action Plan for Education 2016-2019 (DES, 2016b) to commission an independent review of existing career guidance in schools, higher education institutions and colleges of further education in Ireland. The purpose of the review was to ensure the provision of high quality, relevant career guidance support services to all students from post-primary level onwards. The review, which is due to be published in early 2019, includes recommendations on how to improve the existing career guidance tools and career information for these sectors.

Consultation on National Forum Strategy 2019-2021; Data Enabled Student Success Initiative; HEA System Performance Framework 2018-2020

The National Forum for the Enhancement of Teaching and Learning is currently developing its strategy to the end of 2021, with one key strand focusing on enabling student success. The Access Policy section of the Higher Education Authority and the Department of Education and Skills are contributing to the consultation process to align the student success agenda of the forum with the ongoing work as part of the implementation of the National Access Plan for Equity of Access to Higher Education (HEA, 2015) and with the System Performance Framework 2018-2020 (HEA, 2018). For example, objective 4.1 of the National Access Plan centres on addressing non-completion, particularly for those in underrepresented target groups. Arising from this, a working group has been established to oversee work packages relating to student success, including the Data Enabled Student Success Initiative (DESSI). DESSI is a sector-wide initiative that aims to support institutions as they develop effective strategies for realising the benefits of student data as a resource. This initiative offers the opportunity to use data more effectively to support student success. Through the generation of better data, factors around student participation, retention, progression and completion can be further analysed and understood.

Under the System Performance Framework 2018-2020, it is a requirement for all higher education institutions to have in place by 2020 a Student Success Strategy that encompasses a whole of institution approach (HEA, 2018). The HEA is currently working with higher education institutions to agree performance compacts that deliver on the Systems Performance Framework objectives, including the requirement for a Student Success Strategy. Furthermore, there are specific high-level targets which set out to improve completion rates for students from disadvantaged cohorts. Each institution is expected to improve problematic non-progression rates by 10 per cent and to improve non-progression rates in STEM disciplines by a further 10 per cent. Additional collaboration between the HEA and the National Forum for the Enhancement of Teaching and Learning to progress the work surrounding student success will strengthen the teaching and learning agenda within higher education institutions and assist in enabling the mainstreaming of supports.

A Study of Retention in the Institutes of Technology (at Levels 6 and 7)

It is widely recognised from previous research (e.g. HEA, 2018; 2010) that retention is a huge area of concern at levels 6 and 7 in the institutes of technology sector. As a consequence of this, and in order to supplement HEA research in this area, the Technological Higher Education Association (THEA) are currently conducting a longitudinal study of student experiences to further explore the barriers and success factors for student retention in this context.

The HEA Information Technology Investment Fund (ITIF)

The HEA administers the Information Technology Investment Fund (ITIF) allocation to higher education institutions to support initiatives in ICT programme retention and the provision of summer computing camps for second level students. Through the annual funding of approximately €80,000 for universities and €54,000 for institutes of technology, the following supports are commonly provided to improve retention:

- ▶ Learning support centres
- ▶ Clinics/workshops
- ▶ Retention co-ordinators
- ▶ Additional tutorials over the summer and weekends
- ▶ Peer mentoring
- ▶ Group building initiatives
- ▶ Maths learning supports
- ▶ Online Q & A facilities
- ▶ Women in Computing events
- ▶ Industry site visits and guest lecturers

Furthermore, some institutions also hold events for second level schools in their region (for example, 'Maths week' to improve Maths performance amongst students). While the majority of higher education institutions have reported improvements in year one progression since particular initiatives have been introduced, some institutions have expressed the need for additional funding in order to support better student/staff ratios and to retain postgraduate students as active demonstrators or tutors. Additional supports for mature students and for those with learning and physical disabilities have also been highlighted as areas of concern.

Transitions Agenda

Since 2011, the HEA has been working in partnership with key stakeholders to enhance the transition from second level to higher education. The main aims of this reform process were to address problematic predictability in the Leaving Certificate examination, reduce the number of grading-bands used in the state examination and broaden entry routes into higher education. The new grading-scale for the Leaving Certificate examination is in effect since 2017 and the HEA is continually overseeing the broadening of entry-routes into higher education through the process of strategic dialogue with the higher education institutions. In addition, in 2018, a Transitions Reform Sub-Group was established. This group will examine the routes taken when progressing from FET to HE and seek to ensure that progression from FET to HE is done in a consistent and equitable manner.

HEA-Lead Data Improvements

In line with the objectives of DESSI, the HEA is commissioning an audit of the procedures and processes in place within higher education institutions to verify the accuracy of student numbers returned at the annual census date for the student record system. Furthermore, improvements are being sought to increase the validity and accuracy of PPSN data to allow for better tracking of students across institutions. This will allow the HEA to identify if a student leaves one higher education institution and re-enrols in another higher education institution in the same academic year or subsequently enrolls/graduates from another institution. Improved PPSN coverage will also enable the tracking of further education students in their potential transition into higher education.

Summary

This report has provided important insights into the factors influencing non-completion in higher education. The analysis has highlighted the importance of taking account of individual and institutional level factors in assessing the effectiveness of institutions in student retention. As this report has demonstrated, non-completion is a complex issue that is influenced by a multitude of factors. The wide overall differences across institutions are to a large extent reflected in the diversity of student intake across the different sectors, particularly in terms of Leaving Certificate points. While non-completion is not a negative phenomenon for all students, in some cases it may signal an inability to meet the academic requirements of a particular course and therefore, it is crucial to ensure that all students leaving the second level system are fully equipped for higher education in terms of academic preparedness, knowledge and understanding of course content and the requirements of the course. It is also crucial that students who are in need of additional supports upon entry to higher education are identified early and that such provision is delivered in a timely and effective manner in order to enhance student motivation, engagement and performance.

References

- Adamson, G. and McAleavy, G. (2000) 'Withdrawal from vocational courses in colleges of further and higher education in Northern Ireland', *Journal of Vocational Education and Training*, 25(3), pp. 535-53.
- Ahola, S. (2012) 'National Evaluation of Bologna Implementation in Finland: Procedures and outcomes', *Tertiary Education and Management*, 18(3), pp. 237-252.
- Becker, G.S. (1964) *Human Capital. A Theoretical and Empirical Analysis, with Special Reference to Education*. New York: NBER.
- Becker, S.O. (2001) *Why don't Italians finish University? Explaining enrolment behaviour in Italy and Germany*. European University Institute: Department of Economics.
- Beerkens, M., Mägi, E., and Lill, L. (2011) 'University studies as a side job: causes and consequences of massive student employment in Estonia', *Higher Education*, 61(6), pp. 679-691.
- Blaney, C. and Mulkeen, S. (2008) *Student Retention in a Modular World – A Study of Student Retention UCD Entrants 1999-2007*. Dublin: University College Dublin.
- Callaghan, P. (2009) *Trinity College Dublin Report on Retention*. Dublin: TCD.
- Central Statistics Office (2018) *Labour Force Survey*. Dublin: CSO.
- Chen, R., and Desjardins, S. (2008) 'Exploring the effects of financial aid on the gap in student dropout risks by income level', *Research in Higher Education*, 49(1), pp. 1-18.
- Christie, H., Munro, M. and Fisher, T. (2004) 'Leaving university early: Exploring the differences between continuing and non-continuing students', *Studies in Higher Education*, 29(5), pp. 617-636.
- Clarke, J., Burnett, P. and Dart, B. (1994), *Final report for a research project investigating predictors of performance in higher education: Phase I: Literature review and model development*. Brisbane: Tertiary Entrance Procedures Authority, Queensland University of Technology.
- Council of Directors of Institutes of Technology (2006) *Completion rates for students taking full-time programmes of study in Institutes of Technology: A study carried out for the council of directors of Institutes of Technology and The Dublin Institute of Technology*. Dublin: Council of Directors of Institutes of Technology.
- Crawford, C. (2014) *Socio-economic differences in university outcomes in the UK: drop-out, degree completion and degree class*. IFS Working Paper W14/31. University of Warwick and Institute for Fiscal Studies: ESRC.

Cullinane, J., Flannery, D., Walsh, S., and McCoy, S. (2013) 'Distance Effects, Social Class and the Decision to Participate in Higher Education in Ireland', *The Economic and Social Review*, 44(1), pp. 19-51.

Darmody, M. and Smyth, E. (2008) 'Full-time students? Term-time employment among higher education students in Ireland', *Journal of Education and Work*, 21(4), pp. 349-362.

Department of Education and Skills (2016a) *Ireland's National Skills Strategy 2025*. Dublin: DES.

Department of Education and Skills (2016b) *Action Plan for Education 2016-2019*. Dublin: DES.

Department of Education and Training (2017) *Key Findings from the 'Completion Rates of Higher Education Students – Cohort Analysis, 2005-2015' Report*. Australia: Department of Education and Training.

Di Pietro, G., Cutillo, A. (2008) 'Degree flexibility and university drop-out: The Italian Experience', *Economics of Education Review*, 27(5), pp. 546-555.

Eivers, E., Flanagan, R. and Morgan, M. (2002) *Non-Completion in Institutes of Technology: An Investigation of Preparation, Attitudes and Behaviours Among First Year Students*. Dublin: Educational Research Centre.

Educational Research Centre (2000) *A Study of Non-Completion in Institute of Technology Courses: Part One: Quantitative Aspects*. Dublin: Educational Research Centre.

Educational Research Centre (1997) *An investigation of factors associated with non-completion of university courses*. Dublin: Educational Research Centre.

European Commission (2015a) *Dropout and Completion in Higher Education in Europe. Annex 1: Literature Review*. Luxembourg: Publications Office of the European Union.

European Commission (2015b) *Dropout and Completion in Higher Education in Europe. Executive Summary*. Luxembourg: Publications Office of the European Union.

Garrison, D.R. (1985) 'Predicting dropout in adult basic education using interaction effects among school and non-school variables', *Adult Education Quarterly*, 36(1), pp. 25-38.

Georg, W. (2009) 'Individual and institutional factors in the tendency to drop out of higher education: a multilevel analysis using data from the Konstanz Student Survey', *Studies in Higher Education*, 34(6), pp. 647-661.

Glogowska, M., Young, P., and Lockyer, L. (2007) 'Should I go or should I stay? A study of factors influencing students' decisions on early leaving', *Active Learning in Higher Education*, 8(1), pp. 63-67.

Gormley, G. and Murphy, T.B. (2006) 'Analysis of Irish third Level College Applications Data', *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 169(2), pp. 361-379.

Government of Ireland (2006) *National Development Plan 2007-2013: Transforming Ireland: A Better Quality of Life for All*. Dublin: The Stationery Office.

Green, S. and Baird, K. (2009) 'An exploratory, comparative study investigating attrition and retention of student midwives', *Midwifery*, 25(1), pp. 79-87.

Haase, T. and Pratschke, J. (2017) *Higher Education Authority. A Data Plan for Equity of Access to Higher Education*. Dublin: HEA.

Hagedorn, L. S. (2004) 'How to define retention: A New Look at an Old Problem'. In Seidman, A. (Ed.) *College student retention: Formula for success*, pp. 89-105. Westport: Praeger Publishers.

HEA (2018) *A Study of Progression in Irish Higher Education, 2014/15 to 2015/16*. Dublin: HEA.

HEA (2018) *Higher Education System Performance Framework 2018-2020*. Dublin: HEA.

HEA (2015) *National Plan for Equity of Access to Higher Education 2015-2019*. Dublin: HEA.

HEA (2010) *A Study of Progression in Irish Higher Education*. Dublin: HEA.

Healy, M., Carpenter, A. and Lynch, K. (1999) *Non-completion in higher education: A study of first year students in three Institutes of Technology*. Carlow/Dundalk/Tralee: IT Carlow, Dundalk IT., IT Tralee.

HESA (2018) *Non-continuation: UK Performance Indicators 2016/17. Projected Outcomes (Table T5)*. Available online @ <https://www.hesa.ac.uk/news/08-03-2018/non-continuation-tables>.

Heublein, U. (2010) *Ursachen des Studienabbruchs in Bachelor- und in herkömmlichen Studiengängen. Ergebnisse einer bundesweiten Befragung von Exmatrikulierten des Studienjahres 2007/08*. Hannover: HIS.

Heublein, U. (2014) 'Student drop-out from German higher education institutions', *European Journal of Education*, 49(4), pp. 497-513.

Higher Education Academy (2016) *Framework for student access, retention, attainment and progression in higher education*. UK: HEA.

Higher Education Funding Council for England (HEFCE) (2000) *Performance indicators in higher education in the UK*. Bristol: HEFCE.

Hovdhaugen, E. (2013) 'Working while studying: the impact of term-time employment on dropout rates', *Journal of Education and Work*, 28(6), pp. 631-651.

Hovdhaugen, E. (2009) 'Transfer and drop-out: different forms of student departure in Norway', *Studies in Higher Education*, 34(1), pp. 1-17.

Hovdhaugen, E., Kottmann, A. and Thomas, L. (2015) *Dropout and Completion in Higher Education in Europe*. Luxembourg: Publications Office of the European Union.

Hussey, T. and Smith, P. (2010) 'Transitions in higher education', *Innovations in Education and Teaching International*, 47(2), pp. 155-164.

Leone, M. and Tian, R. (2009) 'Push Vs Pull: Factors Influence Student Retention', *American Journal of Economics and Business Administration*, 1(2), pp. 122-132.

Maher, M. and Macallister, H. (2013) 'Retention and attrition of students in higher education: Challenges in modern times to what works', *Higher Education Studies*, 3(2), pp. 62-73.

Mannan, M. A. (2007) 'Student Attrition and Academic and Social Integration: Application of Tinto's Model at the University of Papua New Guinea', *Higher Education*, 53(2), pp. 147-165.

Martinez P. (1995) *Student retention in further and adult education: The evidence*. Staff College, Blagdon.

Mathews, N. and Mulkeen, S. (2002) *Staying the Course? A Study of Student Retention. UCD Entrants 1999-2001*. Dublin: UCD.

McGivney, V. (1996) *Staying or leaving the course: Non-completion and retention of mature students in further and higher education*. Leicester: National Institute of Adult Continuing Education.

McTaggart, B. (2014) 'A study of non-completion in dual sector further education in Northern Ireland', *AISHE-J*, 6(2), pp. 1-18.

Meeuwisse, M., Severiens, S. E. and Born, M. P. (2010) 'Reasons for withdrawal from higher vocational education. A comparison of ethnic minority and majority non-completers', *Studies in Higher Education*, 35(1), pp. 93-111.

Moore, S. (2014) *Inter-Universities Retention Network: A Submission to the OECD Review Team on the Irish Higher Education System in Irish Universities*. Dublin: CHIU.

Morgan, M., Flanagan, R. and Kellaghan, T. (2001) *A Study of Non-Completion in Undergraduate University Courses*. Dublin: Higher Education Authority.

Murphy, R. and Wyness, G. (2016) *CEP Discussion Paper No. 1396. Testing Means-Tested Aid*. London: Centre for Economic Performance.

Naretto, J.A. (1991) *Adult undergraduate student degree completion: The influences of membership in the communities external and internal to the college*. State University of New York at Buffalo: Unpublished doctoral dissertation.

National Forum for the Enhancement of Teaching and Learning in Higher Education (2016) *Reaching Out: Why Students Leave. Briefing Paper 1*. Dublin: National Forum for the Enhancement of Teaching and Learning.

National Forum for the Enhancement of Teaching and Learning in Higher Education (2015) *Why Students Leave: Findings from qualitative research into student non-completion in higher education in Ireland. Focused Research Report No. 4*. Dublin: National Forum for the Enhancement of Teaching and Learning.

Noble, K. and Henderson, R. (2011) 'The Promotion of "Character" and Its Relationship to Retention in Higher Education', *Australian Journal of Teacher Education*, 36(3), pp. 79-91.

Nora, A., Cabrera, A., Hagedorn, L., and Pascarella, E. (1996) 'Differential impacts of academic and social experiences on college-related outcomes across different ethnic and gender groups at four-year institutions', *Research in Higher Education*, 37(4), pp. 427-451.

OECD (2018) *Education at a glance*. Paris: OECD Publishing.

OECD (2017) *OECD Handbook for Internationally Comparative Education Statistics: concepts, standards, definitions and classifications*. Paris: OECD Publishing.

OECD (2016) *Education at a Glance*. Paris: OECD Publishing.

OECD (2013) *Education at a Glance*. Paris: OECD Publishing.

OECD (2010) *Education at a Glance*. Paris: OECD Publishing.

O'Keefe, M., Laven, G. and Burgess, T. (2011) 'Student non-completion of an undergraduate degree: wrong program selection or part of a career plan?', *Higher Education Research & Development*, 30(2), pp. 165-177.

Ozga, J. and Sukhnandan, L. (1998) 'Undergraduate non-completion: Developing an explanatory model', *Higher Education Quarterly*, 52(3), pp. 316-333.

Pascarella, E.T. and Terenzini, P.T. (1991) *How college affects students*. San Francisco: Jossey-Bass.

Quinn, J., Thomas, L., Slack, K., Casey, L., Thexton, W. and Noble, J. (2005) *From life crisis to lifelong learning: Rethinking working-class 'drop out' from higher education*. Staffordshire University: Joseph Rountree Foundation.

Reason, R.D. (2009) 'Student Variables that Predict Retention: Recent Research and New Developments', *NASPA Journal*, 46(3), pp. 482-501.

Reisel, L. and Brekke, I. (2010) 'Minority Dropout in Higher Education: A Comparison of the United States and Norway Using Competing Risk Event History Analysis', *European Sociological Review*, 26(6), pp. 691-712.

Rootman, I. (1972) 'Voluntary withdrawal from a total adult socializing organization: A model', *Sociology of Education*, 45(3), pp. 258-270.

Scholten, M. (2017) *Causes and consequences of higher-education non-completion in Germany*. Mannheim: Doctoral dissertation.

- Scott, D. (2009) 'A closer look at completion in higher education in New Zealand', *Journal of Higher Education Policy and Management*, 31(2), pp. 101-108.
- Scott, D. (2005) 'Retention, Completion and Progression in Tertiary Education in New Zealand', *Journal of Higher Education Policy and Management*, 27(1), pp. 3-17.
- Severiens, S. and Dam, G. (2012) 'Leaving College: A Gender Comparison in Male and Female-Dominated Programs', *Research in Higher Education*, 53(4), pp. 453-470.
- Smith, E. (2015) 'Can higher education compensate for society? Modelling the determinants of academic success at university', *British Journal of Sociology of Education*, 37(7), pp. 970-992.
- Spady, W. G. (1971) 'Dropouts from higher education: Toward an empirical model', *Interchange*, 2(3), pp. 38-62.
- Tilkidjiev, N., Milenkova, V., Nedelcheva, T., Hristiva, S., Petkova, K. and Mileva, N. (2011) *The Successful Roma*. Sofia: Iztok-Zapad.
- Tinto, V. (2006) 'Research and Practice of Student Retention: What Next?', *Journal of College Student Retention: Research, Theory and Practice*, 8(1), pp. 1-19.
- Tinto, V. (1993) *Leaving College: Rethinking the Causes and Cures of Student Attrition* (2nd ed.). Chicago, IL: University of Chicago Press.
- Tinto, V. (1982) 'Limits of Theory and Practice in Student Attrition', *Journal of Higher Education*, 53(6), pp. 687-700.
- Tinto, V. (1975) 'Dropout from Higher Education: A Theoretical Synthesis of Recent Research', *Review of Educational Research*, 45, pp. 89-125.
- Universities New Zealand (2016) *New Zealand's Universities – Key Facts and Stats: summary of information sources*. New Zealand: Universities New Zealand.
- Van Stolk, C., Tiessan, J., Clift, J. and Levitt, R. (2007) *Student Retention in Higher Education Courses: International Comparison*. Santa Monica, CA: RAND Corporation.
- Vossensteyn, J.J., Cremonini, L., Epping, E., Laudel, G. and Leisyte, L. (2013) *International Experiences with Student Financing: tuition fees and student financial support in perspective. Final Report for the Dutch Ministry of Education, Science and Culture*. Enschede: CHEPS.
- Yorke, M. (1999) *Leaving early: Undergraduate non-completion in higher education*. London: Falmer.
- Yorke, M. and Longden, B. (2008) *The first-year experience of higher education in the UK*. York, UK: The Higher Education Academy.

Appendices

Appendix A: Sector, Institute and NFQ Level Student Numbers

Table A1: Full Institute List by Sector, Student Numbers and Completion Status

SECTOR/INSTITUTE	COMPLETED	DID NOT COMPLETE	TOTAL STUDENTS
Colleges	1,550	105	1,655
Mary Immaculate College	635	46	681
Mater Dei Institute	76	7	83
National College of Art and Design	142	13	155
St. Angela's College of Home Economics	112	18	130
St. Patrick's College Drumcondra	585	21	606
Institutes of Technology	10,101	5,137	15,238
Athlone IT	601	237	838
Cork IT	1,230	594	1,824
Dublin Institute of Technology	1,809	762	2,571
Dun Laoghaire Institute of Art, Design and Technology	371	138	509
Dundalk IT	774	479	1,253
Galway-Mayo IT	896	493	1,389
IT Blanchardstown	195	138	333
IT Carlow	579	369	948
IT Sligo	683	335	1,018
IT Tallaght	339	266	605
IT Tralee	377	142	519
Letterkenny IT	474	302	776
Limerick IT	641	303	944
Waterford IT	1,132	579	1,711
Universities	14,236	2,930	17,166
Dublin City University	1,332	340	1,672
Maynooth University	1,254	299	1,553
National University of Ireland, Galway	2,236	443	2,679
Trinity College Dublin	2,094	380	2,474
University College Cork	2,723	517	3,240
University College Dublin	2,987	660	3,647
University of Limerick	1,610	291	1,901
Total	25,887	8,172	34,059

Table A2: Full Institute List by Sector, Student Numbers and Start NFQ Level

SECTOR/INSTITUTE	LEVEL 6	LEVEL 7	LEVEL 8	TOTAL STUDENTS
Colleges			1,655	1,655
Mary Immaculate College			681	681
Mater Dei Institute			83	83
National College of Art and Design			155	155
St. Angela's College of Home Economics			130	130
St. Patrick's College Drumcondra			606	606
Institutes of Technology	2,715	6,934	5,589	15,238
Athlone IT	446	157	235	838
Cork IT	68	1,479	277	1,824
Dublin Institute of Technology	383	538	1,650	2,571
Dun Laoghaire Institute of Art, Design and Technology	53	92	364	509
Dundalk IT	57	747	449	1,253
Galway-Mayo IT	30	1,070	289	1,389
IT Blanchardstown	41	181	111	333
IT Carlow	329	372	247	948
IT Sligo	111	715	192	1,018
IT Tallaght	175	278	152	605
IT Tralee	255	90	174	519
Letterkenny IT	26	666	84	776
Limerick IT	409	140	395	944
Waterford IT	332	409	970	1,711
Universities			17,166	17,166
Dublin City University			1,672	1,672
Maynooth University			1,553	1,553
National University of Ireland, Galway			2,679	2,679
Trinity College Dublin			2,474	2,474
University College Cork			3,240	3,240
University College Dublin			3,647	3,647
University of Limerick			1,901	1,901
Total	2,715	6,934	24,410	34,059

Appendix B: ISCED Field of Study Analysis Detail, by Institute

Table B1: Completion Rates by Sector, NFQ Level and ISCED Field of Study

SECTOR/START NFQ LEVEL/ISCED BROAD FIELD OF STUDY	COMPLETED	DID NOT COMPLETE
Colleges	94%	6%
Level 8		
(1) Education	97%	3%
(2) Humanities and Arts	90%	10%
(4a) Science and Mathematics	97%	3%
(7) Health and Welfare	81%	19%
Institutes of Technology	66%	34%
Level 6		
(1) Education	62%	38%
(2) Humanities and Arts	74%	26%
(3b) Business and Law	63%	37%
(4a) Science and Mathematics	70%	30%
(4b) Computing	50%	50%
(5) Engineering, Manufacturing and Construction	56%	44%
(6) Agriculture and Veterinary	76%	24%
(7) Health and Welfare	82%	18%
(8) Services	68%	32%
(9) Combined + General	40%	60%
Level 7		
(1) Education	80%	20%
(2) Humanities and Arts	67%	33%
(3a) Social Sciences	63%	37%
(3b) Business and Law	61%	39%
(4a) Science and Mathematics	64%	36%
(4b) Computing	43%	57%
(5) Engineering, Manufacturing and Construction	60%	40%
(6) Agriculture and Veterinary	71%	29%
(7) Health and Welfare	81%	19%
(8) Services	58%	42%
Level 8		
(1) Education	87%	13%
(2) Humanities and Arts	76%	24%
(3a) Social Sciences	65%	35%
(3b) Business and Law	75%	25%
(4a) Science and Mathematics	64%	36%
(4b) Computing	50%	50%
(5) Engineering, Manufacturing and Construction	71%	29%
(7) Health and Welfare	82%	18%
(8) Services	75%	25%

SECTOR/START NFQ LEVEL/ISCED BROAD FIELD OF STUDY	COMPLETED	DID NOT COMPLETE
Universities	83%	17%
<i>Level 8</i>		
(1) Education	85%	15%
(2) Humanities and Arts	78%	22%
(3a) Social Sciences	86%	14%
(3b) Business and Law	89%	11%
(4a) Science and Mathematics	79%	21%
(4b) Computing	71%	29%
(5) Engineering, Manufacturing and Construction	85%	15%
(6) Agriculture and Veterinary	83%	17%
(7) Health and Welfare	86%	14%
(8) Services	88%	12%
(9) Combined + General	79%	21%
Total	76%	24%

Table B2 (1-26): Completion Rates by Institute, ISCED Field and NFQ Level

1. ATHLONE IT	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	79%	21%
Level 6	88%	12%
Level 7	80%	20%
Level 8	63%	38%
(3b) Business and Law	70%	30%
Level 6	70%	30%
Level 8	68%	32%
(4a) Science and Mathematics	58%	42%
Level 6	68%	32%
Level 7	14%	86%
Level 8	71%	29%
(4b) Computing	59%	41%
Level 7	59%	41%
(5) Engineering, Manufacturing and Construction	59%	41%
Level 6	58%	42%
Level 7	58%	42%
Level 8	67%	33%
(6) Agriculture and Veterinary	76%	24%
Level 7	76%	24%
(7) Health and Welfare	85%	15%
Level 6	83%	17%
Level 8	86%	14%
(8) Services	59%	41%
Level 6	57%	43%
Level 7	63%	38%
Total	72%	28%

2. CORK IT	COMPLETED	DID NOT COMPLETE
(1) Education	69%	31%
Level 6	69%	31%
(2) Humanities and Arts	74%	26%
Level 7	70%	30%
Level 8	84%	16%
(3b) Business and Law	68%	32%
Level 6	67%	33%
Level 7	66%	34%
Level 8	78%	22%
(4a) Science and Mathematics	75%	25%
Level 7	77%	23%
Level 8	67%	33%
(4b) Computing	53%	47%
Level 6	59%	41%
Level 7	46%	54%
Level 8	60%	40%
(5) Engineering, Manufacturing and Construction	64%	36%
Level 6	45%	55%
Level 7	63%	37%
Level 8	70%	30%
(6) Agriculture and Veterinary	82%	18%
Level 7	82%	18%
(7) Health and Welfare	79%	21%
Level 7	79%	21%
(8) Services	60%	40%
Level 7	60%	40%
Total	67%	33%

3. DUBLIN CITY UNIVERSITY	COMPLETED	DID NOT COMPLETE
(1) Education	78%	22%
(2) Humanities and Arts	81%	19%
(3a) Social Sciences	86%	14%
(3b) Business and Law	84%	16%
(4a) Science and Mathematics	74%	26%
(4b) Computing	51%	49%
(5) Engineering, Manufacturing and Construction	57%	43%
(7) Health and Welfare	86%	14%
(9) Combined + General	0%	100%
Total	80%	20%

4. DUBLIN INSTITUTE OF TECHNOLOGY	COMPLETED	DID NOT COMPLETE
(1) Education	87%	13%
Level 8	87%	13%
(2) Humanities and Arts	73%	27%
Level 6	73%	27%
Level 7	67%	33%
Level 8	73%	27%
(3a) Social Sciences	56%	44%
Level 8	56%	44%
(3b) Business and Law	75%	25%
Level 6	67%	33%
Level 7	75%	25%
Level 8	80%	20%
(4a) Science and Mathematics	63%	37%
Level 7	62%	38%
Level 8	64%	36%
(4b) Computing	39%	61%
Level 8	39%	61%
(5) Engineering, Manufacturing and Construction	67%	33%
Level 6	35%	65%
Level 7	60%	40%
Level 8	75%	25%
(7) Health and Welfare	88%	12%
Level 6	81%	19%
Level 7	100%	0%
Level 8	87%	13%
(8) Services	68%	32%
Level 6	60%	40%
Level 7	48%	52%
Level 8	78%	23%
Total	70%	30%

5. DUN LAOGHAIRE INSTITUTE OF ART, DESIGN AND TECHNOLOGY	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	81%	19%
Level 6	70%	30%
Level 7	80%	20%
Level 8	84%	16%
(3a) Social Sciences	73%	27%
Level 8	73%	27%
(3b) Business and Law	66%	34%
Level 7	50%	50%
Level 8	71%	29%
(4b) Computing	53%	47%
Level 7	51%	49%
Level 8	58%	42%
Total	73%	27%

6. DUNDALK IT	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	61%	39%
Level 7	50%	50%
Level 8	86%	14%
(3a) Social Sciences	46%	54%
Level 7	46%	54%
(3b) Business and Law	62%	38%
Level 6	43%	57%
Level 7	56%	44%
Level 8	76%	24%
(4a) Science and Mathematics	47%	53%
Level 7	47%	53%
(4b) Computing	49%	51%
Level 7	39%	61%
Level 8	64%	36%
(5) Engineering, Manufacturing and Construction	51%	49%
Level 7	49%	51%
Level 8	63%	37%
(6) Agriculture and Veterinary	100%	0%
Level 6	100%	0%
(7) Health and Welfare	83%	17%
Level 7	76%	24%
Level 8	85%	15%
(8) Services	68%	32%
Level 7	68%	32%
(9) Combined + General	40%	60%
Level 6	40%	60%
Total	62%	38%

7. GALWAY-MAYO IT	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	68%	32%
Level 7	69%	31%
Level 8	62%	38%
(3a) Social Sciences	56%	44%
Level 7	56%	44%
(3b) Business and Law	64%	36%
Level 7	63%	37%
Level 8	68%	32%
(4a) Science and Mathematics	56%	44%
Level 7	53%	47%
Level 8	57%	43%
(4b) Computing	53%	47%
Level 6	63%	37%
Level 7	48%	52%
(5) Engineering, Manufacturing and Construction	71%	29%
Level 7	71%	29%
Level 8	72%	28%
(6) Agriculture and Veterinary	74%	26%
Level 7	74%	26%
(7) Health and Welfare	83%	17%
Level 8	83%	17%
(8) Services	48%	52%
Level 7	46%	54%
Level 8	57%	43%
Total	65%	35%

8. IT BLANCHARDSTOWN	COMPLETED	DID NOT COMPLETE
(3a) Social Sciences	73%	27%
Level 7	80%	20%
Level 8	68%	32%
(3b) Business and Law	60%	40%
Level 6	63%	38%
Level 7	43%	57%
Level 8	73%	27%
(4b) Computing	39%	61%
Level 6	53%	47%
Level 7	17%	83%
Level 8	44%	56%
(5) Engineering, Manufacturing and Construction	32%	68%
Level 6	60%	40%
Level 7	28%	72%
Level 8	11%	89%
(6) Agriculture and Veterinary	64%	36%
Level 7	64%	36%
Total	59%	41%

9. IT CARLOW	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	71%	29%
Level 7	71%	29%
Level 8	71%	29%
(3b) Business and Law	64%	36%
Level 6	59%	41%
Level 8	70%	30%
(4a) Science and Mathematics	74%	26%
Level 6	71%	29%
Level 7	92%	8%
Level 8	60%	40%
(4b) Computing	39%	61%
Level 6	33%	67%
Level 7	31%	69%
Level 8	53%	47%
(5) Engineering, Manufacturing and Construction	51%	49%
Level 6	44%	56%
Level 7	52%	48%
(7) Health and Welfare	78%	22%
Level 6	79%	21%
Level 7	67%	33%
Level 8	82%	18%
(8) Services	70%	30%
Level 7	70%	30%
Total	61%	39%

10. IT SLIGO	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	68%	32%
Level 7	68%	33%
Level 8	68%	32%
(3b) Business and Law	64%	36%
Level 6	53%	47%
Level 7	63%	37%
Level 8	88%	12%
(4a) Science and Mathematics	69%	31%
Level 7	58%	42%
Level 8	95%	5%
(4b) Computing	46%	54%
Level 7	46%	54%
Level 8	44%	56%
(5) Engineering, Manufacturing and Construction	60%	40%
Level 6	100%	0%
Level 7	59%	41%
Level 8	74%	26%
(7) Health and Welfare	87%	13%
Level 7	90%	10%
Level 8	83%	17%
(8) Services	70%	30%
Level 7	70%	30%
Total	67%	33%

11. IT TALLAGHT	COMPLETED	DID NOT COMPLETE
(1) Education	68%	32%
Level 6	58%	42%
Level 7	80%	20%
(2) Humanities and Arts	71%	29%
Level 8	71%	29%
(3a) Social Sciences	53%	47%
Level 7	56%	44%
Level 8	43%	57%
(3b) Business and Law	59%	41%
Level 6	64%	36%
Level 7	49%	51%
Level 8	67%	33%
(4a) Science and Mathematics	33%	67%
Level 8	33%	67%
(4b) Computing	55%	45%
Level 6	60%	40%
Level 7	48%	52%
Level 8	68%	32%
(5) Engineering, Manufacturing and Construction	53%	47%
Level 6	49%	51%
Level 7	68%	32%
(7) Health and Welfare	50%	50%
Level 8	50%	50%
(8) Services	30%	70%
Level 7	30%	70%
Total	56%	44%

12. IT TRALEE	COMPLETED	DID NOT COMPLETE
(3a) Social Sciences	85%	15%
Level 7	85%	15%
(3b) Business and Law	73%	27%
Level 6	69%	31%
Level 7	100%	0%
Level 8	77%	23%
(4a) Science and Mathematics	74%	26%
Level 6	69%	31%
Level 8	86%	14%
(4b) Computing	40%	60%
Level 6	53%	47%
Level 7	29%	71%
Level 8	42%	58%
(5) Engineering, Manufacturing and Construction	53%	47%
Level 6	48%	52%
Level 7	80%	20%
(6) Agriculture and Veterinary	80%	20%
Level 6	80%	20%
(7) Health and Welfare	92%	8%
Level 8	92%	8%
(8) Services	82%	18%
Level 6	85%	15%
Level 7	56%	44%
Total	73%	27%

13. LETTERKENNY IT	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	61%	39%
Level 7	61%	39%
(3b) Business and Law	61%	39%
Level 6	100%	0%
Level 7	60%	40%
(4a) Science and Mathematics	53%	47%
Level 7	53%	47%
(4b) Computing	52%	48%
Level 6	54%	46%
Level 7	48%	52%
Level 8	73%	27%
(5) Engineering, Manufacturing and Construction	55%	45%
Level 7	55%	45%
(7) Health and Welfare	89%	11%
Level 7	90%	10%
Level 8	89%	11%
Total	61%	39%

14. LIMERICK IT	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	75%	25%
Level 6	65%	35%
Level 7	77%	23%
Level 8	81%	19%
(3b) Business and Law	66%	34%
Level 6	65%	35%
Level 7	63%	37%
Level 8	87%	13%
(4a) Science and Mathematics	69%	31%
Level 6	69%	31%
(4b) Computing	55%	45%
Level 6	55%	45%
Level 8	55%	45%
(5) Engineering, Manufacturing and Construction	64%	36%
Level 6	62%	38%
Level 7	57%	43%
Level 8	69%	31%
(7) Health and Welfare	87%	13%
Level 8	87%	13%
(8) Services	70%	30%
Level 7	50%	50%
Level 8	73%	27%
Total	68%	32%

15. MARY IMMACULATE COLLEGE	COMPLETED	DID NOT COMPLETE
(1) Education	97%	3%
(2) Humanities and Arts	85%	15%
(4a) Science and Mathematics	97%	3%
Total	93%	7%

16. MATER DEI INSTITUTE	COMPLETED	DID NOT COMPLETE
(1) Education	90%	10%
(2) Humanities and Arts	100%	0%
Total	92%	8%

17. MAYNOOTH UNIVERSITY	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	80%	20%
(3a) Social Sciences	80%	20%
(3b) Business and Law	88%	12%
(4a) Science and Mathematics	77%	23%
(4b) Computing	78%	22%
(5) Engineering, Manufacturing and Construction	79%	21%
(9) Combined + General	80%	20%
Total	81%	19%

18. NATIONAL COLLEGE OF ART AND DESIGN	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	92%	8%
Total	92%	8%

19. NATIONAL UNIVERSITY OF IRELAND GALWAY	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	92%	8%
(3a) Social Sciences	77%	23%
(3b) Business and Law	88%	12%
(4a) Science and Mathematics	73%	27%
(4b) Computing	67%	33%
(5) Engineering, Manufacturing and Construction	88%	12%
(7) Health and Welfare	94%	6%
(8) Services	88%	12%
(9) Combined + General	81%	19%
Total	83%	17%

20. ST. ANGELA'S COLLEGE OF HOME ECONOMICS	COMPLETED	DID NOT COMPLETE
(1) Education	92%	8%
(7) Health and Welfare	81%	19%
Total	86%	14%

21. ST. PATRICK'S COLLEGE DRUMCONDRA	COMPLETED	DID NOT COMPLETE
(1) Education	98%	2%
(2) Humanities and Arts	93%	7%
Total	97%	3%

22. TRINITY COLLEGE DUBLIN	COMPLETED	DID NOT COMPLETE
(1) Education	83%	17%
(2) Humanities and Arts	82%	18%
(3a) Social Sciences	93%	7%
(3b) Business and Law	93%	7%
(4a) Science and Mathematics	87%	13%
(4b) Computing	84%	16%
(5) Engineering, Manufacturing and Construction	86%	14%
(7) Health and Welfare	80%	20%
(9) Combined + General	88%	13%
Total	85%	15%

23. UNIVERSITY COLLEGE CORK	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	83%	17%
(3a) Social Sciences	81%	19%
(3b) Business and Law	91%	9%
(4a) Science and Mathematics	85%	15%
(4b) Computing	82%	18%
(5) Engineering, Manufacturing and Construction	86%	14%
(7) Health and Welfare	90%	10%
(9) Combined + General	77%	23%
Total	84%	16%

24. UNIVERSITY COLLEGE DUBLIN	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	72%	28%
(3a) Social Sciences	91%	9%
(3b) Business and Law	93%	7%
(4a) Science and Mathematics	77%	23%
(4b) Computing	48%	52%
(5) Engineering, Manufacturing and Construction	91%	9%
(6) Agriculture and Veterinary	84%	16%
(7) Health and Welfare	83%	17%
Total	82%	18%

25. UNIVERSITY OF LIMERICK	COMPLETED	DID NOT COMPLETE
(1) Education	90%	10%
(2) Humanities and Arts	80%	20%
(3a) Social Sciences	81%	19%
(3b) Business and Law	88%	12%
(4a) Science and Mathematics	81%	19%
(4b) Computing	72%	28%
(5) Engineering, Manufacturing and Construction	80%	20%
(6) Agriculture and Veterinary	63%	37%
(7) Health and Welfare	93%	7%
Total	85%	15%

26. WATERFORD IT	COMPLETED	DID NOT COMPLETE
(2) Humanities and Arts	71%	29%
Level 8	71%	29%
(3a) Social Sciences	63%	37%
Level 8	63%	37%
(3b) Business and Law	69%	31%
Level 6	64%	36%
Level 8	72%	28%
(4a) Science and Mathematics	53%	47%
Level 8	53%	47%
(4b) Computing	38%	62%
Level 6	36%	64%
Level 7	39%	61%
Level 8	37%	63%
(5) Engineering, Manufacturing and Construction	68%	32%
Level 6	57%	43%
Level 7	67%	33%
Level 8	73%	27%
(6) Agriculture and Veterinary	72%	28%
Level 6	70%	30%
Level 7	73%	27%
(7) Health and Welfare	72%	28%
Level 7	78%	22%
Level 8	71%	29%
(8) Services	55%	45%
Level 6	43%	57%
Level 7	56%	44%
Level 8	67%	33%
Total	66%	34%

Appendix C: Gender Analysis Detail

Table C1: Gender Composition of Students by Sector, NFQ Level and ISCED Field

SECTOR/START NFQ LEVEL/ISCED FIELD OF STUDY	FEMALE	MALE
Colleges	82%	18%
Level 8		
(1) Education	85%	15%
(2) Humanities and Arts	74%	26%
(4a) Science and Mathematics	91%	9%
(7) Health and Welfare	96%	4%
Institutes of Technology	46%	54%
Level 6		
(1) Education	62%	38%
(2) Humanities and Arts	42%	58%
(3b) Business and Law	59%	41%
(4a) Science and Mathematics	66%	34%
(4b) Computing	30%	70%
(5) Engineering, Manufacturing and Construction	8%	92%
(6) Agriculture and Veterinary	2%	98%
(7) Health and Welfare	86%	14%
(8) Services	44%	56%
(9) Combined + General	30%	70%
Level 7		
(1) Education	70%	30%
(2) Humanities and Arts	55%	45%
(3a) Social Sciences	57%	43%
(3b) Business and Law	59%	41%
(4a) Science and Mathematics	57%	43%
(4b) Computing	15%	85%
(5) Engineering, Manufacturing and Construction	12%	88%
(6) Agriculture and Veterinary	30%	70%
(7) Health and Welfare	84%	16%
(8) Services	51%	49%
Level 8		
(1) Education	96%	4%
(2) Humanities and Arts	56%	44%
(3a) Social Sciences	72%	28%
(3b) Business and Law	52%	48%
(4a) Science and Mathematics	43%	57%
(4b) Computing	14%	86%
(5) Engineering, Manufacturing and Construction	16%	84%
(7) Health and Welfare	87%	13%
(8) Services	59%	41%

SECTOR/START NFQ LEVEL/ISCED FIELD OF STUDY	FEMALE	MALE
Universities	57%	43%
Level 8		
(1) Education	60%	40%
(2) Humanities and Arts	59%	41%
(3a) Social Sciences	65%	35%
(3b) Business and Law	52%	48%
(4a) Science and Mathematics	54%	46%
(4b) Computing	18%	82%
(5) Engineering, Manufacturing and Construction	23%	77%
(6) Agriculture and Veterinary	51%	49%
(7) Health and Welfare	80%	20%
(8) Services	51%	49%
(9) Combined + General	60%	40%
Total	53%	47%

Table C2: Male and Female Dominated ISCED Areas (>70% One Gender)

MALE AREAS: ISCED BROAD FIELD/ISCED DETAILED FIELD	FEMALE AREAS: ISCED BROAD FIELD/ISCED DETAILED FIELD
(2) Humanities and Arts	(1) Education
(215) Craft skills	(142) Education science
(226) Philosophy and ethics	(143) Training for pre-school teachers
(4a) Science and Mathematics	(144) Training for teachers at basic levels
(441) Physics	(2) Humanities and Arts
(461) Mathematics	(211) Fine arts
(4b) Computing	(222) Foreign languages
(481) Computer Science	(223) Mother tongue
(482) Computer Use	(3a) Social Sciences
(5) Engineering, Manufacturing and Construction	(310) Combined Social and behavioural science
(500) Combined Engineering, Manufacturing and Construction	(311) Psychology
(520) Combined Engineering & Engineering Trades	(3b) Business and Law
(521) Mechanics and metal work	(346) Secretarial and office work
(522) Electricity and energy	(6) Agriculture and Veterinary
(523) Electronics and automation	(641) Veterinary
(525) Motor vehicles, ships and aircraft	(7) Health and Welfare
(543) Materials (wood, paper, plastic, glass)	(700) Combined Health and Welfare
(580) Combined Architecture and building	(720) Combined Health
(582) Building and civil engineering	(723) Nursing and caring
(6) Agriculture and Veterinary	(725) Medical diagnostic and treatment technology
(621) Crop and livestock production	(726) Therapy and Rehabilitation
(622) Horticulture	(727) Pharmacy
(623) Forestry	(760) Combined Social Services
(8) Services	(761) Child Care and youth services
(840) Transport services	(762) Social work and counselling
(863) Military and defence	(8) Services
(9) Combined + General	(853) Community sanitation services
(010) Basic/broad general programmes*	

Table C3: Completion Rates by Gender and Leaving Cert. Points Upon Entry

GENDER/LEAVING CERTIFICATE POINTS UPON ENTRY	COMPLETED	DID NOT COMPLETE
Female		
155 to 200	65%	35%
205 to 250	49%	51%
255 to 300	63%	37%
305 to 350	71%	29%
355 to 400	78%	22%
405 to 450	87%	13%
455 to 500	91%	9%
505 to 550	95%	5%
555 to 600	91%	9%
Male		
155 to 200	41%	59%
205 to 250	39%	61%
255 to 300	52%	48%
305 to 350	62%	38%
355 to 400	72%	28%
405 to 450	82%	18%
455 to 500	91%	9%
505 to 550	94%	6%
555 to 600	91%	9%

Appendix D: Leaving Certificate Points and Final HE Grade Analysis Detail

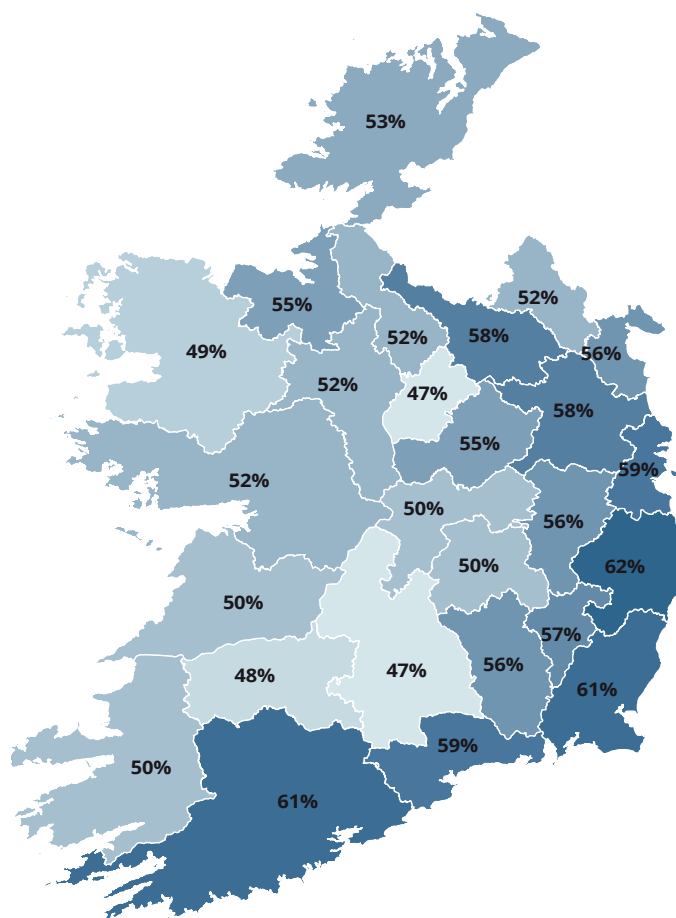
Table D1: Leaving Certificate Points Band by Final HE Grade

FINAL GRADE (READ DOWN COLUMNS)	155 TO 200	205 TO 250	255 TO 300	305 TO 350	355 TO 400	405 TO 450	455 TO 500	505 TO 550	555 TO 600
First Class Honours	8%	1%	1%	3%	4%	7%	12%	25%	36%
Distinction	3%	4%	4%	4%	4%	4%	1%	1%	0%
Second Class Honours Grade 1	18%	1%	5%	17%	27%	41%	55%	58%	38%
Merit 1	10%	17%	19%	14%	8%	3%	1%	0%	0%
Second Class Honours Grade 2	14%	3%	7%	23%	35%	34%	25%	12%	8%
Merit 2	22%	31%	30%	18%	7%	2%	1%	0%	0%
Second Class Honours	2%	0%	0%	0%	0%	1%	0%	1%	6%
Third Class Honours	1%	0%	0%	2%	5%	4%	3%	1%	0%
Other Honours	0%	0%	0%	0%	0%	0%	0%	0%	5%
Pass	22%	42%	33%	19%	9%	4%	2%	1%	6%
Not Specified	0%	1%	0%	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table D2: Final HE Grade Group by Leaving Certificate Points Band

LC POINTS (READ DOWN COLUMNS)	1ST/UPPER 2ND/EQUIVALENT = NO	1ST/UPPER 2ND/EQUIVALENT = YES
155 to 200	3%	1%
205 to 250	5%	1%
255 to 300	10%	4%
305 to 350	18%	9%
355 to 400	24%	15%
405 to 450	20%	19%
455 to 500	13%	24%
505 to 550	4%	18%
555 to 600	4%	9%
Total	100%	100%

Figure D1: Map of 1st/Upper 2nd or Equivalent Proportions by Home County



Appendix E: Irish County and Dublin Postcode Analysis Detail

Table E1: Institute Student Body Composition by Home County, for Irish Students

INSTITUTE/HOME COUNTY	CARLOW	CAVAN	CLARE	CORK	DONEGAL	DUBLIN	GALWAY	KERRY	KILDARE	KILKENNY	LAOIS	LEITRIM	LIMERICK	LONGFORD	LOUTH	MAYO	MEATH	MONAGHAN	OFFALY	ROSCOMMON	SLIGO	TIPPERARY	WATERFORD	WESTMEATH	WEXFORD	WICKLOW
Athlone IT	0%	4%	1%	1%	1%	1%	17%	1%	2%	0%	4%	1%	0%	9%	1%	4%	3%	1%	12%	9%	1%	1%	0%	25%	0%	0%
Cork IT	0%	0%	1%	73%	0%	0%	1%	10%	0%	1%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	4%	3%	0%	1%	0%
Dublin City University	1%	3%	1%	1%	3%	47%	2%	1%	4%	2%	1%	1%	0%	1%	5%	2%	9%	3%	1%	1%	1%	1%	1%	1%	3%	2%
DIT	1%	2%	0%	1%	1%	56%	2%	0%	7%	1%	1%	0%	0%	1%	3%	1%	7%	1%	1%	1%	0%	1%	0%	2%	3%	7%
Dun Laoghaire Institute	1%	1%	1%	2%	0%	56%	1%	1%	2%	2%	1%	0%	0%	0%	0%	2%	4%	1%	0%	1%	0%	1%	1%	1%	5%	13%
Dundalk IT	0%	8%	0%	1%	1%	13%	0%	0%	0%	1%	0%	0%	0%	0%	40%	1%	17%	13%	0%	0%	0%	0%	0%	1%	0%	0%
Galway-Mayo IT	0%	2%	5%	1%	4%	1%	41%	0%	1%	0%	1%	2%	1%	1%	0%	23%	1%	1%	2%	4%	3%	1%	0%	2%	0%	1%
IT Blanchardstown	0%	2%	0%	0%	1%	65%	1%	0%	5%	0%	0%	0%	1%	0%	2%	0%	20%	0%	0%	0%	0%	0%	0%	1%	1%	2%
IT Carlow	23%	1%	1%	2%	1%	5%	1%	0%	16%	7%	9%	1%	0%	0%	0%	1%	3%	0%	2%	0%	1%	2%	1%	1%	14%	7%
IT Sligo	0%	8%	1%	0%	8%	1%	5%	0%	1%	0%	0%	8%	0%	4%	1%	21%	1%	3%	1%	9%	26%	0%	0%	2%	0%	0%
IT Tallaght	0%	0%	0%	0%	0%	86%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	3%
IT Tralee	0%	0%	4%	11%	1%	1%	1%	68%	1%	1%	1%	0%	6%	0%	0%	1%	0%	0%	1%	0%	0%	1%	1%	1%	0%	0%
Letterkenny IT	0%	1%	0%	0%	78%	1%	1%	0%	0%	0%	0%	2%	0%	0%	1%	5%	1%	3%	0%	1%	3%	0%	0%	0%	0%	1%
Limerick IT	0%	1%	20%	5%	0%	0%	6%	5%	0%	0%	1%	0%	42%	0%	0%	2%	1%	0%	2%	1%	0%	12%	1%	0%	0%	0%
Mary Immaculate College	0%	0%	13%	23%	0%	0%	10%	9%	0%	2%	0%	0%	21%	0%	0%	2%	0%	0%	1%	2%	1%	10%	3%	0%	1%	0%
Mater Dei Institute	0%	5%	0%	0%	0%	22%	0%	0%	6%	9%	4%	1%	0%	4%	7%	5%	12%	0%	2%	1%	2%	2%	2%	5%	5%	5%
Maynooth University	1%	2%	0%	1%	3%	31%	1%	1%	22%	2%	2%	1%	0%	1%	4%	1%	10%	2%	2%	1%	2%	1%	1%	3%	2%	2%
NCAD	1%	3%	3%	0%	3%	49%	2%	0%	2%	1%	1%	1%	0%	0%	3%	2%	6%	3%	3%	3%	1%	1%	1%	1%	3%	7%
NUI Galway	1%	1%	7%	1%	7%	2%	39%	1%	2%	0%	2%	2%	2%	1%	0%	12%	1%	1%	3%	5%	4%	2%	0%	4%	0%	0%
St. Angela's College	2%	4%	3%	4%	11%	2%	13%	2%	2%	3%	2%	8%	0%	2%	1%	12%	1%	0%	1%	5%	15%	3%	2%	2%	1%	1%
St. Patrick's College	1%	2%	0%	0%	5%	28%	3%	0%	7%	3%	2%	2%	1%	1%	9%	6%	7%	4%	1%	1%	2%	1%	1%	4%	7%	1%
Trinity College Dublin	1%	1%	1%	3%	3%	51%	2%	1%	7%	1%	1%	1%	1%	1%	2%	1%	5%	1%	2%	1%	1%	2%	1%	1%	3%	6%
University College Cork	0%	0%	3%	59%	0%	1%	1%	11%	0%	3%	1%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	7%	6%	0%	1%	0%

INSTITUTE/HOME COUNTY	WICKLOW	WEXFORD	WESTMEATH	WATERFORD	TIPPERARY	SLIGO	ROSCOMMON	OFFALY	MONAGHAN	MEATH	MAYO	LOUTH	LONGFORD	LIMERICK	LEITRIM	LAOIS	KILKENNY	KILDARE	KERRY	GALWAY	DUBLIN	DONEGAL	CORK	CLARE	CAVAN	CARLOW
University College Dublin																										
University of Limerick																										
Waterford IT																										
All Institutes																										

Table E2: Institute Destination of Irish Students by Home County

INSTITUTE/HOME COUNTY	ALL COUNTIES	WICKLOW	WEXFORD	WESTMEATH	WATERFORD	TIPPERARY	SLIGO	ROSCOMMON	OFFALY	MONAGHAN	MEATH	MAYO	LOUTH	LONGFORD	LIMERICK	LEITRIM	LAOIS	KILKENNY	KILDARE	KERRY	GALWAY	DUBLIN	DONEGAL	CORK	CLARE	CAVAN	CARLOW
Athlone IT																											
Cork IT																											
Dublin City University																											
DIT																											
Dun Laoghaire Institute																											
Dundalk IT																											
Galway-Mayo IT																											
IT Blanchardstown																											
IT Carlow																											
IT Sligo																											
IT Tallaght																											
IT Tralee																											
Letterkenny IT																											
Limerick IT																											
Mary Immaculate College																											

INSTITUTE/HOME COUNTY	CARLOW	CAVAN	CLARE	CORK	DONEGAL	DUBLIN	GALWAY	KERRY	KILDARE	KILKENNY	LAOIS	LEITRIM	LIMERICK	LONGFORD	LOUTH	MAYO	MEATH	MONAGHAN	OFFALY	ROSCOMMON	SLIGO	TIPPERARY	WATERFORD	WESTMEATH	WEXFORD	WICKLOW	ALL COUNTIES
Mater Dei Institute	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Maynooth University	3%	4%	1%	0%	4%	7%	1%	1%	26%	3%	5%	5%	0%	4%	6%	2%	13%	8%	7%	2%	4%	1%	1%	8%	4%	4%	5%
NCAD	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	0%	0%	0%	0%	1%	1%	0%
NUI Galway	3%	4%	17%	1%	13%	1%	41%	2%	3%	1%	10%	14%	3%	10%	1%	22%	2%	3%	13%	21%	16%	4%	1%	16%	1%	1%	7%
St. Angela's College	1%	1%	0%	0%	1%	0%	1%	0%	0%	1%	0%	4%	0%	1%	0%	1%	0%	0%	0%	1%	3%	0%	0%	0%	0%	0%	0%
St. Patrick's College	2%	3%	0%	0%	3%	2%	1%	0%	3%	3%	3%	4%	0%	2%	6%	3%	3%	5%	1%	2%	2%	0%	0%	3%	4%	1%	2%
Trinity College Dublin	5%	5%	2%	1%	4%	16%	2%	2%	11%	4%	4%	4%	2%	7%	5%	2%	9%	4%	7%	3%	3%	4%	3%	5%	6%	14%	7%
University College Cork	1%	0%	9%	46%	1%	0%	1%	27%	1%	11%	3%	0%	11%	0%	1%	1%	1%	0%	1%	1%	0%	20%	21%	0%	4%	1%	10%
University College Dublin	8%	11%	1%	2%	8%	23%	3%	2%	8%	11%	14%	5%	2%	9%	7%	6%	9%	12%	9%	7%	6%	6%	3%	8%	14%	24%	10%
University of Limerick	3%	1%	21%	6%	1%	0%	6%	11%	3%	8%	6%	4%	33%	6%	1%	5%	1%	0%	9%	4%	1%	16%	6%	3%	5%	1%	6%
Waterford IT	12%	0%	2%	2%	0%	0%	1%	1%	4%	30%	10%	0%	3%	0%	1%	0%	1%	0%	4%	1%	0%	18%	51%	1%	28%	8%	5%

Table E3: Institute Destination of Dublin Students by Postal Code

INSTITUTE/DUBLIN POSTAL CODE	D1	D2	D3	D4	D5	D6	D6W	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D20	D22	D24	DUBLIN COUNTY
Athlone IT	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	1%	0%	0%
Cork IT	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Dublin City University	16%	7%	29%	3%	38%	8%	6%	26%	11%	43%	10%	33%	8%	31%	3%	18%	4%	38%	2%	3%	4%	5%	12%
Dun Laoghaire Institute	2%	0%	2%	6%	5%	4%	3%	3%	4%	2%	2%	3%	2%	10%	6%	2%	5%	4%	9%	3%	2%	4%	7%
Dundalk IT	0%	0%	3%	1%	3%	0%	0%	1%	0%	2%	2%	2%	1%	3%	0%	2%	1%	4%	0%	3%	2%	1%	6%
Galway-Mayo IT	0%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
IT Blanchardstown	2%	0%	1%	1%	5%	1%	2%	9%	2%	5%	2%	15%	2%	3%	0%	17%	1%	15%	0%	2%	2%	1%	3%
IT Carlow	0%	0%	1%	0%	1%	0%	1%	2%	1%	0%	2%	0%	1%	1%	0%	1%	1%	0%	1%	0%	2%	1%	1%
IT Sligo	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
IT Tallaght	2%	7%	1%	1%	1%	3%	16%	2%	9%	1%	37%	1%	33%	2%	7%	3%	17%	4%	3%	14%	38%	46%	2%

INSTITUTE/DUBLIN POSTAL CODE	D1	D2	D3	D4	D5	D6	D6W	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D20	D22	D24	DUBLIN COUNTY
IT Tralee	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Letterkenny IT	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Limerick IT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mary Immaculate College	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mater Dei Institute	0%	0%	0%	0%	2%	0%	1%	1%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Maynooth University	9%	14%	6%	2%	5%	2%	1%	20%	9%	7%	17%	12%	11%	4%	1%	27%	3%	12%	1%	30%	21%	10%	7%
NCAD	0%	0%	1%	2%	3%	2%	2%	1%	4%	1%	0%	2%	1%	1%	3%	0%	2%	0%	1%	0%	1%	0%	1%
NUI Galway	41%	0%	0%	1%	1%	1%	1%	1%	0%	1%	0%	1%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%
St. Angela's College	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Patrick's College	2%	0%	3%	1%	8%	1%	3%	3%	2%	8%	0%	6%	1%	4%	1%	3%	3%	8%	0%	3%	0%	2%	3%
Trinity College Dublin	14%	43%	24%	22%	17%	30%	21%	23%	34%	17%	15%	15%	19%	24%	19%	17%	21%	4%	23%	22%	15%	10%	20%
University College Cork	0%	0%	0%	1%	0%	1%	1%	0%	1%	0%	0%	0%	1%	1%	0%	0%	1%	0%	0%	2%	0%	0%	1%
University College Dublin	9%	21%	29%	58%	12%	45%	41%	8%	18%	10%	12%	9%	18%	17%	56%	9%	38%	8%	57%	16%	12%	16%	34%
University of Limerick	0%	0%	1%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Waterford IT	0%	0%	0%	0%	2%	0%	0%	1%	0%	0%	2%	0%	1%	1%	0%	0%	1%	0%	0%	2%	0%	1%	1%

Appendix F: Select High Entry Points (SHEP) Courses

Table F1: Full List of SHEP Courses

INSTITUTE/COURSE NAME
Cork IT
Bachelor of Science Biomedical Science
Dublin City University
B.Sc Physical Education and Biology
BSc in Financial + Actuarial Mathematics
Dublin Institute of Technology
Bachelor of Architecture
BSc in Biomedical Sciences
BSc in Optometry
Human Nutrition and Dietetics
Mary Immaculate College, Limerick
Education and Psychology
Maynooth University
Arts (Psychology)
Psychology (Science)
Theoretical Physics + Mathematics
National University of Ireland, Galway
B.Sc. Degree (Occupational Therapy)
Bachelor of Arts Degree (Psychology)
Bachelor of Civil Law
Bachelor of Corporate Law
Bachelor of Science (Biomedical Science)
Bachelor of Science (Speech and Language Therapy)
M.B., B.CH., B.A.O. Degree
Trinity College Dublin
Bachelor in Dental Technology
Business Studies and a Language
Clinical Speech and Language Studies
Dental Science
Economic and Social Studies
Engineering with Management
European Studies
History and Political Science
Human Genetics
Human Nutrition and Dietetics
Law
Law and French
Law and German
Management Science and Information Systems Studies

INSTITUTE/COURSE NAME
Mathematics
Medicine (5-year)
Occupational Therapy
Pharmacy
Philosophy and Political Science
Physiotherapy
Psychology
Radiation Therapy
Theoretical Physics
Two Subject Moderatorship (with Economics, English, History, Mathematics or Psychology)
University College Cork
BA (Applied Psychology)
BCL
BSc (Architecture)
BSc (Finance)
BSc (Mathematical Sciences) Year 1
BSc (Nutritional Sciences)
BSc (Occupational Therapy)
BSc (Speech and Language Therapy)
BSc Nursing (Children's and General (Integrated))
Dentistry
Law and French
Law and German
Law and Irish
Medicine
Pharmacy
University College Dublin
Actuarial & Financial Studies
Architectural Science
BBL – Business
BCL/Maitrise
BComm International – Business
Biomed Health & Life Sc Single Mj
Civil Law
Civil Law with French Law
Economics and Finance
Engineering Omnibus
Law Major/History Minor
Law Major/Philosophy Minor
Law Major/Politics Minor
Law Major/Economics Minor
Medicine

INSTITUTE/COURSE NAME
Neurosciences Single Major
Physiotherapy
Psychology Single Major
Radiography
Science – Omnibus Stage 1
Veterinary Medicine
University of Limerick
Law and Accounting
Law and European Studies
Physical Education
Physiotherapy
Psychology and Sociology

Appendix G: Predicted Probabilities of Non-Completion

Table G1: Predicted Probabilities of Non-Completion

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Female	All LC Points	All NFQs	All ISCEDs	0.19
Female	155 to 200	All NFQs	All ISCEDs	0.40
Female	155 to 200	Level 6/7	All ISCEDs	0.47
Female	155 to 200	Level 6/7	(1) Education	0.49
Female	155 to 200	Level 6/7	(2) Humanities and Arts	0.51
Female	155 to 200	Level 6/7	(3b) Business and Law	0.45
Female	155 to 200	Level 6/7	(4a) Science and Mathematics	0.52
Female	155 to 200	Level 6/7	(4b) Computing	0.63
Female	155 to 200	Level 6/7	(5) Engineering, Manufac. and Const.	0.49
Female	155 to 200	Level 6/7	(6) Agriculture and Veterinary	0.40
Female	155 to 200	Level 6/7	(7) Health and Welfare	0.40
Female	155 to 200	Level 6/7	(8) Services	0.49
Female	155 to 200	Level 8	All ISCEDs	0.33
Female	155 to 200	Level 8	(4b) Computing	0.62
Female	155 to 200	Level 8	(7) Health and Welfare	0.33
Female	205 to 250	All NFQs	All ISCEDs	0.52
Female	205 to 250	Level 6/7	All ISCEDs	0.52
Female	205 to 250	Level 6/7	(1) Education	0.46
Female	205 to 250	Level 6/7	(2) Humanities and Arts	0.58
Female	205 to 250	Level 6/7	(3a) Social Sciences	0.51
Female	205 to 250	Level 6/7	(3b) Business and Law	0.49
Female	205 to 250	Level 6/7	(4a) Science and Mathematics	0.59
Female	205 to 250	Level 6/7	(4b) Computing	0.65
Female	205 to 250	Level 6/7	(5) Engineering, Manufac. and Const.	0.55
Female	205 to 250	Level 6/7	(6) Agriculture and Veterinary	0.51
Female	205 to 250	Level 6/7	(7) Health and Welfare	0.40
Female	205 to 250	Level 6/7	(8) Services	0.54
Female	205 to 250	Level 8	All ISCEDs	0.45
Female	205 to 250	Level 8	(3a) Social Sciences	0.54
Female	205 to 250	Level 8	(3b) Business and Law	0.51
Female	205 to 250	Level 8	(4b) Computing	0.63
Female	205 to 250	Level 8	(7) Health and Welfare	0.37
Female	255 to 300	All NFQs	All ISCEDs	0.38
Female	255 to 300	Level 6/7	All ISCEDs	0.39
Female	255 to 300	Level 6/7	(1) Education	0.34
Female	255 to 300	Level 6/7	(2) Humanities and Arts	0.45
Female	255 to 300	Level 6/7	(3a) Social Sciences	0.38
Female	255 to 300	Level 6/7	(3b) Business and Law	0.37

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Female	255 to 300	Level 6/7	(4a) Science and Mathematics	0.47
Female	255 to 300	Level 6/7	(4b) Computing	0.54
Female	255 to 300	Level 6/7	(5) Engineering, Manufac. and Const.	0.44
Female	255 to 300	Level 6/7	(6) Agriculture and Veterinary	0.31
Female	255 to 300	Level 6/7	(7) Health and Welfare	0.29
Female	255 to 300	Level 6/7	(8) Services	0.41
Female	255 to 300	Level 8	All ISCEDs	0.35
Female	255 to 300	Level 8	(1) Education	0.30
Female	255 to 300	Level 8	(2) Humanities and Arts	0.42
Female	255 to 300	Level 8	(3a) Social Sciences	0.36
Female	255 to 300	Level 8	(3b) Business and Law	0.36
Female	255 to 300	Level 8	(4a) Science and Mathematics	0.43
Female	255 to 300	Level 8	(4b) Computing	0.52
Female	255 to 300	Level 8	(5) Engineering, Manufac. and Const.	0.40
Female	255 to 300	Level 8	(6) Agriculture and Veterinary	0.29
Female	255 to 300	Level 8	(7) Health and Welfare	0.28
Female	255 to 300	Level 8	(8) Services	0.38
Female	305 to 350	All NFQs	All ISCEDs	0.29
Female	305 to 350	Level 6/7	All ISCEDs	0.31
Female	305 to 350	Level 6/7	(1) Education	0.25
Female	305 to 350	Level 6/7	(2) Humanities and Arts	0.38
Female	305 to 350	Level 6/7	(3a) Social Sciences	0.32
Female	305 to 350	Level 6/7	(3b) Business and Law	0.31
Female	305 to 350	Level 6/7	(4a) Science and Mathematics	0.38
Female	305 to 350	Level 6/7	(4b) Computing	0.45
Female	305 to 350	Level 6/7	(5) Engineering, Manufac. and Const.	0.36
Female	305 to 350	Level 6/7	(6) Agriculture and Veterinary	0.32
Female	305 to 350	Level 6/7	(7) Health and Welfare	0.24
Female	305 to 350	Level 6/7	(8) Services	0.34
Female	305 to 350	Level 8	All ISCEDs	0.27
Female	305 to 350	Level 8	(1) Education	0.25
Female	305 to 350	Level 8	(2) Humanities and Arts	0.34
Female	305 to 350	Level 8	(3a) Social Sciences	0.29
Female	305 to 350	Level 8	(3b) Business and Law	0.29
Female	305 to 350	Level 8	(4a) Science and Mathematics	0.36
Female	305 to 350	Level 8	(4b) Computing	0.44
Female	305 to 350	Level 8	(5) Engineering, Manufac. and Const.	0.34
Female	305 to 350	Level 8	(6) Agriculture and Veterinary	0.23
Female	305 to 350	Level 8	(7) Health and Welfare	0.22
Female	305 to 350	Level 8	(8) Services	0.31
Female	305 to 350	Level 8	(9) Combined + General	0.32
Female	355 to 400	All NFQs	All ISCEDs	0.22

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Female	355 to 400	Level 6/7	All ISCEDs	0.24
Female	355 to 400	Level 6/7	(1) Education	0.20
Female	355 to 400	Level 6/7	(2) Humanities and Arts	0.29
Female	355 to 400	Level 6/7	(3a) Social Sciences	0.24
Female	355 to 400	Level 6/7	(3b) Business and Law	0.23
Female	355 to 400	Level 6/7	(4a) Science and Mathematics	0.32
Female	355 to 400	Level 6/7	(4b) Computing	0.36
Female	355 to 400	Level 6/7	(5) Engineering, Manufac. and Const.	0.28
Female	355 to 400	Level 6/7	(6) Agriculture and Veterinary	0.20
Female	355 to 400	Level 6/7	(7) Health and Welfare	0.17
Female	355 to 400	Level 6/7	(8) Services	0.25
Female	355 to 400	Level 8	All ISCEDs	0.21
Female	355 to 400	Level 8	(1) Education	0.12
Female	355 to 400	Level 8	(2) Humanities and Arts	0.24
Female	355 to 400	Level 8	(3a) Social Sciences	0.21
Female	355 to 400	Level 8	(3b) Business and Law	0.21
Female	355 to 400	Level 8	(4a) Science and Mathematics	0.27
Female	355 to 400	Level 8	(4b) Computing	0.35
Female	355 to 400	Level 8	(5) Engineering, Manufac. and Const.	0.25
Female	355 to 400	Level 8	(6) Agriculture and Veterinary	0.17
Female	355 to 400	Level 8	(7) Health and Welfare	0.15
Female	355 to 400	Level 8	(8) Services	0.23
Female	355 to 400	Level 8	(9) Combined + General	0.24
Female	405 to 450	All NFQs	All ISCEDs	0.13
Female	405 to 450	Level 6/7	All ISCEDs	0.16
Female	405 to 450	Level 6/7	(2) Humanities and Arts	0.18
Female	405 to 450	Level 6/7	(3a) Social Sciences	0.15
Female	405 to 450	Level 6/7	(3b) Business and Law	0.15
Female	405 to 450	Level 6/7	(4a) Science and Mathematics	0.20
Female	405 to 450	Level 6/7	(4b) Computing	0.26
Female	405 to 450	Level 6/7	(5) Engineering, Manufac. and Const.	0.18
Female	405 to 450	Level 6/7	(6) Agriculture and Veterinary	0.14
Female	405 to 450	Level 6/7	(7) Health and Welfare	0.10
Female	405 to 450	Level 6/7	(8) Services	0.15
Female	405 to 450	Level 8	All ISCEDs	0.13
Female	405 to 450	Level 8	(1) Education	0.08
Female	405 to 450	Level 8	(2) Humanities and Arts	0.13
Female	405 to 450	Level 8	(3a) Social Sciences	0.13
Female	405 to 450	Level 8	(3b) Business and Law	0.13
Female	405 to 450	Level 8	(4a) Science and Mathematics	0.17
Female	405 to 450	Level 8	(4b) Computing	0.22
Female	405 to 450	Level 8	(5) Engineering, Manufac. and Const.	0.16

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Female	405 to 450	Level 8	(6) Agriculture and Veterinary	0.10
Female	405 to 450	Level 8	(7) Health and Welfare	0.09
Female	405 to 450	Level 8	(8) Services	0.14
Female	405 to 450	Level 8	(9) Combined + General	0.15
Female	455 to 500	All NFQs	All ISCEDs	0.08
Female	455 to 500	Level 6/7	All ISCEDs	0.10
Female	455 to 500	Level 6/7	(1) Education	0.07
Female	455 to 500	Level 6/7	(2) Humanities and Arts	0.14
Female	455 to 500	Level 6/7	(3b) Business and Law	0.10
Female	455 to 500	Level 6/7	(4a) Science and Mathematics	0.14
Female	455 to 500	Level 6/7	(4b) Computing	0.16
Female	455 to 500	Level 6/7	(5) Engineering, Manufac. and Const.	0.13
Female	455 to 500	Level 6/7	(6) Agriculture and Veterinary	0.08
Female	455 to 500	Level 6/7	(7) Health and Welfare	0.06
Female	455 to 500	Level 6/7	(8) Services	0.11
Female	455 to 500	Level 8	All ISCEDs	0.08
Female	455 to 500	Level 8	(1) Education	0.04
Female	455 to 500	Level 8	(2) Humanities and Arts	0.10
Female	455 to 500	Level 8	(3a) Social Sciences	0.08
Female	455 to 500	Level 8	(3b) Business and Law	0.09
Female	455 to 500	Level 8	(4a) Science and Mathematics	0.12
Female	455 to 500	Level 8	(4b) Computing	0.16
Female	455 to 500	Level 8	(5) Engineering, Manufac. and Const.	0.10
Female	455 to 500	Level 8	(6) Agriculture and Veterinary	0.07
Female	455 to 500	Level 8	(7) Health and Welfare	0.06
Female	455 to 500	Level 8	(8) Services	0.09
Female	455 to 500	Level 8	(9) Combined + General	0.10
Female	505 to 550	All NFQs	All ISCEDs	0.05
Female	505 to 550	Level 6/7	All ISCEDs	0.07
Female	505 to 550	Level 6/7	(2) Humanities and Arts	0.07
Female	505 to 550	Level 6/7	(3a) Social Sciences	0.05
Female	505 to 550	Level 6/7	(3b) Business and Law	0.06
Female	505 to 550	Level 6/7	(4a) Science and Mathematics	0.08
Female	505 to 550	Level 6/7	(7) Health and Welfare	0.04
Female	505 to 550	Level 8	All ISCEDs	0.05
Female	505 to 550	Level 8	(1) Education	0.02
Female	505 to 550	Level 8	(2) Humanities and Arts	0.06
Female	505 to 550	Level 8	(3a) Social Sciences	0.05
Female	505 to 550	Level 8	(3b) Business and Law	0.05
Female	505 to 550	Level 8	(4a) Science and Mathematics	0.07
Female	505 to 550	Level 8	(4b) Computing	0.09
Female	505 to 550	Level 8	(5) Engineering, Manufac. and Const.	0.06

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Female	505 to 550	Level 8	(6) Agriculture and Veterinary	0.04
Female	505 to 550	Level 8	(7) Health and Welfare	0.03
Female	505 to 550	Level 8	(9) Combined + General	0.06
Female	555 to 600	All NFQs	All ISCEDs	0.08
Female	555 to 600	Level 6/7	All ISCEDs	0.13
Female	555 to 600	Level 6/7	(2) Humanities and Arts	0.13
Female	555 to 600	Level 6/7	(4a) Science and Mathematics	0.13
Female	555 to 600	Level 8	All ISCEDs	0.08
Female	555 to 600	Level 8	(1) Education	0.04
Female	555 to 600	Level 8	(2) Humanities and Arts	0.11
Female	555 to 600	Level 8	(3a) Social Sciences	0.08
Female	555 to 600	Level 8	(3b) Business and Law	0.09
Female	555 to 600	Level 8	(4a) Science and Mathematics	0.11
Female	555 to 600	Level 8	(4b) Computing	0.15
Female	555 to 600	Level 8	(5) Engineering, Manufac. and Const.	0.10
Female	555 to 600	Level 8	(6) Agriculture and Veterinary	0.07
Female	555 to 600	Level 8	(7) Health and Welfare	0.06
Female	555 to 600	Level 8	(9) Combined + General	0.10
Female	Other	All NFQs	All ISCEDs	0.22
Female	Other	Level 6/7	All ISCEDs	0.25
Female	Other	Level 6/7	(1) Education	0.17
Female	Other	Level 6/7	(2) Humanities and Arts	0.30
Female	Other	Level 6/7	(3a) Social Sciences	0.23
Female	Other	Level 6/7	(3b) Business and Law	0.23
Female	Other	Level 6/7	(4a) Science and Mathematics	0.30
Female	Other	Level 6/7	(4b) Computing	0.35
Female	Other	Level 6/7	(5) Engineering, Manufac. and Const.	0.27
Female	Other	Level 6/7	(6) Agriculture and Veterinary	0.19
Female	Other	Level 6/7	(7) Health and Welfare	0.17
Female	Other	Level 6/7	(8) Services	0.26
Female	Other	Level 8	All ISCEDs	0.20
Female	Other	Level 8	(1) Education	0.14
Female	Other	Level 8	(2) Humanities and Arts	0.25
Female	Other	Level 8	(3a) Social Sciences	0.21
Female	Other	Level 8	(3b) Business and Law	0.21
Female	Other	Level 8	(4a) Science and Mathematics	0.28
Female	Other	Level 8	(4b) Computing	0.36
Female	Other	Level 8	(5) Engineering, Manufac. and Const.	0.25
Female	Other	Level 8	(6) Agriculture and Veterinary	0.17
Female	Other	Level 8	(7) Health and Welfare	0.16
Female	Other	Level 8	(8) Services	0.24
Female	Other	Level 8	(9) Combined + General	0.25

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Male	All LC Points	All NFQs	All ISCEDs	0.29
Male	155 to 200	All NFQs	All ISCEDs	0.54
Male	155 to 200	Level 6/7	All ISCEDs	0.56
Male	155 to 200	Level 6/7	(1) Education	0.46
Male	155 to 200	Level 6/7	(2) Humanities and Arts	0.57
Male	155 to 200	Level 6/7	(3a) Social Sciences	0.50
Male	155 to 200	Level 6/7	(3b) Business and Law	0.50
Male	155 to 200	Level 6/7	(4a) Science and Mathematics	0.58
Male	155 to 200	Level 6/7	(4b) Computing	0.68
Male	155 to 200	Level 6/7	(5) Engineering, Manufac. and Const.	0.55
Male	155 to 200	Level 6/7	(6) Agriculture and Veterinary	0.45
Male	155 to 200	Level 6/7	(7) Health and Welfare	0.48
Male	155 to 200	Level 6/7	(8) Services	0.55
Male	155 to 200	Level 8	All ISCEDs	0.38
Male	155 to 200	Level 8	(7) Health and Welfare	0.38
Male	205 to 250	All NFQs	All ISCEDs	0.60
Male	205 to 250	Level 6/7	All ISCEDs	0.60
Male	205 to 250	Level 6/7	(1) Education	0.51
Male	205 to 250	Level 6/7	(2) Humanities and Arts	0.63
Male	205 to 250	Level 6/7	(3a) Social Sciences	0.56
Male	205 to 250	Level 6/7	(3b) Business and Law	0.55
Male	205 to 250	Level 6/7	(4a) Science and Mathematics	0.64
Male	205 to 250	Level 6/7	(4b) Computing	0.70
Male	205 to 250	Level 6/7	(5) Engineering, Manufac. and Const.	0.60
Male	205 to 250	Level 6/7	(6) Agriculture and Veterinary	0.49
Male	205 to 250	Level 6/7	(7) Health and Welfare	0.45
Male	205 to 250	Level 6/7	(8) Services	0.59
Male	205 to 250	Level 8	All ISCEDs	0.60
Male	205 to 250	Level 8	(3a) Social Sciences	0.55
Male	205 to 250	Level 8	(3b) Business and Law	0.53
Male	205 to 250	Level 8	(4a) Science and Mathematics	0.60
Male	205 to 250	Level 8	(4b) Computing	0.71
Male	205 to 250	Level 8	(5) Engineering, Manufac. and Const.	0.57
Male	205 to 250	Level 8	(7) Health and Welfare	0.39
Male	255 to 300	All NFQs	All ISCEDs	0.47
Male	255 to 300	Level 6/7	All ISCEDs	0.47
Male	255 to 300	Level 6/7	(1) Education	0.34
Male	255 to 300	Level 6/7	(2) Humanities and Arts	0.48
Male	255 to 300	Level 6/7	(3a) Social Sciences	0.43
Male	255 to 300	Level 6/7	(3b) Business and Law	0.43
Male	255 to 300	Level 6/7	(4a) Science and Mathematics	0.52
Male	255 to 300	Level 6/7	(4b) Computing	0.59

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Male	255 to 300	Level 6/7	(5) Engineering, Manufac. and Const.	0.48
Male	255 to 300	Level 6/7	(6) Agriculture and Veterinary	0.37
Male	255 to 300	Level 6/7	(7) Health and Welfare	0.33
Male	255 to 300	Level 6/7	(8) Services	0.46
Male	255 to 300	Level 8	All ISCEDs	0.45
Male	255 to 300	Level 8	(2) Humanities and Arts	0.47
Male	255 to 300	Level 8	(3a) Social Sciences	0.39
Male	255 to 300	Level 8	(3b) Business and Law	0.40
Male	255 to 300	Level 8	(4a) Science and Mathematics	0.48
Male	255 to 300	Level 8	(4b) Computing	0.57
Male	255 to 300	Level 8	(5) Engineering, Manufac. and Const.	0.44
Male	255 to 300	Level 8	(6) Agriculture and Veterinary	0.32
Male	255 to 300	Level 8	(7) Health and Welfare	0.32
Male	255 to 300	Level 8	(8) Services	0.42
Male	305 to 350	All NFQs	All ISCEDs	0.38
Male	305 to 350	Level 6/7	All ISCEDs	0.40
Male	305 to 350	Level 6/7	(1) Education	0.30
Male	305 to 350	Level 6/7	(2) Humanities and Arts	0.41
Male	305 to 350	Level 6/7	(3a) Social Sciences	0.36
Male	305 to 350	Level 6/7	(3b) Business and Law	0.36
Male	305 to 350	Level 6/7	(4a) Science and Mathematics	0.43
Male	305 to 350	Level 6/7	(4b) Computing	0.52
Male	305 to 350	Level 6/7	(5) Engineering, Manufac. and Const.	0.40
Male	305 to 350	Level 6/7	(6) Agriculture and Veterinary	0.29
Male	305 to 350	Level 6/7	(7) Health and Welfare	0.27
Male	305 to 350	Level 6/7	(8) Services	0.38
Male	305 to 350	Level 8	All ISCEDs	0.37
Male	305 to 350	Level 8	(1) Education	0.30
Male	305 to 350	Level 8	(2) Humanities and Arts	0.38
Male	305 to 350	Level 8	(3a) Social Sciences	0.32
Male	305 to 350	Level 8	(3b) Business and Law	0.33
Male	305 to 350	Level 8	(4a) Science and Mathematics	0.40
Male	305 to 350	Level 8	(4b) Computing	0.48
Male	305 to 350	Level 8	(5) Engineering, Manufac. and Const.	0.37
Male	305 to 350	Level 8	(6) Agriculture and Veterinary	0.27
Male	305 to 350	Level 8	(7) Health and Welfare	0.25
Male	305 to 350	Level 8	(8) Services	0.35
Male	305 to 350	Level 8	(9) Combined + General	0.36
Male	355 to 400	All NFQs	All ISCEDs	0.29
Male	355 to 400	Level 6/7	All ISCEDs	0.31
Male	355 to 400	Level 6/7	(1) Education	0.26
Male	355 to 400	Level 6/7	(2) Humanities and Arts	0.34

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Male	355 to 400	Level 6/7	(3a) Social Sciences	0.27
Male	355 to 400	Level 6/7	(3b) Business and Law	0.27
Male	355 to 400	Level 6/7	(4a) Science and Mathematics	0.35
Male	355 to 400	Level 6/7	(4b) Computing	0.44
Male	355 to 400	Level 6/7	(5) Engineering, Manufac. and Const.	0.31
Male	355 to 400	Level 6/7	(6) Agriculture and Veterinary	0.23
Male	355 to 400	Level 6/7	(7) Health and Welfare	0.21
Male	355 to 400	Level 6/7	(8) Services	0.30
Male	355 to 400	Level 8	All ISCEDs	0.28
Male	355 to 400	Level 8	(1) Education	0.18
Male	355 to 400	Level 8	(2) Humanities and Arts	0.28
Male	355 to 400	Level 8	(3a) Social Sciences	0.25
Male	355 to 400	Level 8	(3b) Business and Law	0.24
Male	355 to 400	Level 8	(4a) Science and Mathematics	0.31
Male	355 to 400	Level 8	(4b) Computing	0.38
Male	355 to 400	Level 8	(5) Engineering, Manufac. and Const.	0.28
Male	355 to 400	Level 8	(6) Agriculture and Veterinary	0.19
Male	355 to 400	Level 8	(7) Health and Welfare	0.18
Male	355 to 400	Level 8	(8) Services	0.26
Male	355 to 400	Level 8	(9) Combined + General	0.27
Male	405 to 450	All NFQs	All ISCEDs	0.18
Male	405 to 450	Level 6/7	All ISCEDs	0.20
Male	405 to 450	Level 6/7	(2) Humanities and Arts	0.25
Male	405 to 450	Level 6/7	(3a) Social Sciences	0.17
Male	405 to 450	Level 6/7	(3b) Business and Law	0.18
Male	405 to 450	Level 6/7	(4a) Science and Mathematics	0.23
Male	405 to 450	Level 6/7	(4b) Computing	0.31
Male	405 to 450	Level 6/7	(5) Engineering, Manufac. and Const.	0.21
Male	405 to 450	Level 6/7	(6) Agriculture and Veterinary	0.13
Male	405 to 450	Level 6/7	(7) Health and Welfare	0.11
Male	405 to 450	Level 6/7	(8) Services	0.18
Male	405 to 450	Level 8	All ISCEDs	0.17
Male	405 to 450	Level 8	(1) Education	0.12
Male	405 to 450	Level 8	(2) Humanities and Arts	0.17
Male	405 to 450	Level 8	(3a) Social Sciences	0.15
Male	405 to 450	Level 8	(3b) Business and Law	0.15
Male	405 to 450	Level 8	(4a) Science and Mathematics	0.20
Male	405 to 450	Level 8	(4b) Computing	0.26
Male	405 to 450	Level 8	(5) Engineering, Manufac. and Const.	0.18
Male	405 to 450	Level 8	(6) Agriculture and Veterinary	0.12
Male	405 to 450	Level 8	(7) Health and Welfare	0.11
Male	405 to 450	Level 8	(8) Services	0.17

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Male	405 to 450	Level 8	(9) Combined + General	0.18
Male	455 to 500	All NFQs	All ISCEDs	0.11
Male	455 to 500	Level 6/7	All ISCEDs	0.14
Male	455 to 500	Level 6/7	(2) Humanities and Arts	0.18
Male	455 to 500	Level 6/7	(3b) Business and Law	0.11
Male	455 to 500	Level 6/7	(4a) Science and Mathematics	0.15
Male	455 to 500	Level 6/7	(4b) Computing	0.19
Male	455 to 500	Level 6/7	(5) Engineering, Manufac. and Const.	0.14
Male	455 to 500	Level 6/7	(7) Health and Welfare	0.08
Male	455 to 500	Level 6/7	(8) Services	0.14
Male	455 to 500	Level 8	All ISCEDs	0.11
Male	455 to 500	Level 8	(1) Education	0.06
Male	455 to 500	Level 8	(2) Humanities and Arts	0.12
Male	455 to 500	Level 8	(3a) Social Sciences	0.10
Male	455 to 500	Level 8	(3b) Business and Law	0.10
Male	455 to 500	Level 8	(4a) Science and Mathematics	0.13
Male	455 to 500	Level 8	(4b) Computing	0.18
Male	455 to 500	Level 8	(5) Engineering, Manufac. and Const.	0.12
Male	455 to 500	Level 8	(6) Agriculture and Veterinary	0.08
Male	455 to 500	Level 8	(7) Health and Welfare	0.07
Male	455 to 500	Level 8	(8) Services	0.15
Male	455 to 500	Level 8	(9) Combined + General	0.12
Male	505 to 550	All NFQs	All ISCEDs	0.07
Male	505 to 550	Level 6/7	All ISCEDs	0.09
Male	505 to 550	Level 6/7	(2) Humanities and Arts	0.09
Male	505 to 550	Level 6/7	(3b) Business and Law	0.09
Male	505 to 550	Level 6/7	(4a) Science and Mathematics	0.09
Male	505 to 550	Level 6/7	(4b) Computing	0.13
Male	505 to 550	Level 6/7	(5) Engineering, Manufac. and Const.	0.07
Male	505 to 550	Level 6/7	(6) Agriculture and Veterinary	0.05
Male	505 to 550	Level 8	All ISCEDs	0.07
Male	505 to 550	Level 8	(1) Education	0.03
Male	505 to 550	Level 8	(2) Humanities and Arts	0.07
Male	505 to 550	Level 8	(3a) Social Sciences	0.06
Male	505 to 550	Level 8	(3b) Business and Law	0.06
Male	505 to 550	Level 8	(4a) Science and Mathematics	0.08
Male	505 to 550	Level 8	(4b) Computing	0.11
Male	505 to 550	Level 8	(5) Engineering, Manufac. and Const.	0.07
Male	505 to 550	Level 8	(6) Agriculture and Veterinary	0.05
Male	505 to 550	Level 8	(7) Health and Welfare	0.04
Male	505 to 550	Level 8	(9) Combined + General	0.07
Male	555 to 600	All NFQs	All ISCEDs	0.10

GENDER	LC POINTS	NFQ LEVEL	ISCED	PROBABILITY OF NON-COMPLETION
Male	555 to 600	Level 6/7	All ISCEDs	0.18
Male	555 to 600	Level 6/7	(2) Humanities and Arts	0.17
Male	555 to 600	Level 6/7	(4b) Computing	0.19
Male	555 to 600	Level 8	All ISCEDs	0.10
Male	555 to 600	Level 8	(1) Education	0.06
Male	555 to 600	Level 8	(2) Humanities and Arts	0.12
Male	555 to 600	Level 8	(3a) Social Sciences	0.10
Male	555 to 600	Level 8	(3b) Business and Law	0.10
Male	555 to 600	Level 8	(4a) Science and Mathematics	0.14
Male	555 to 600	Level 8	(4b) Computing	0.18
Male	555 to 600	Level 8	(5) Engineering, Manufac. and Const.	0.12
Male	555 to 600	Level 8	(6) Agriculture and Veterinary	0.08
Male	555 to 600	Level 8	(7) Health and Welfare	0.07
Male	555 to 600	Level 8	(9) Combined + General	0.12
Male	Other	All NFQs	All ISCEDs	0.29
Male	Other	Level 6/7	All ISCEDs	0.31
Male	Other	Level 6/7	(1) Education	0.26
Male	Other	Level 6/7	(2) Humanities and Arts	0.34
Male	Other	Level 6/7	(3a) Social Sciences	0.27
Male	Other	Level 6/7	(3b) Business and Law	0.27
Male	Other	Level 6/7	(4a) Science and Mathematics	0.33
Male	Other	Level 6/7	(4b) Computing	0.41
Male	Other	Level 6/7	(5) Engineering, Manufac. and Const.	0.31
Male	Other	Level 6/7	(6) Agriculture and Veterinary	0.21
Male	Other	Level 6/7	(7) Health and Welfare	0.19
Male	Other	Level 6/7	(8) Services	0.30
Male	Other	Level 8	All ISCEDs	0.27
Male	Other	Level 8	(1) Education	0.17
Male	Other	Level 8	(2) Humanities and Arts	0.29
Male	Other	Level 8	(3a) Social Sciences	0.24
Male	Other	Level 8	(3b) Business and Law	0.25
Male	Other	Level 8	(4a) Science and Mathematics	0.31
Male	Other	Level 8	(4b) Computing	0.39
Male	Other	Level 8	(5) Engineering, Manufac. and Const.	0.29
Male	Other	Level 8	(6) Agriculture and Veterinary	0.19
Male	Other	Level 8	(7) Health and Welfare	0.18
Male	Other	Level 8	(8) Services	0.29
Male	Other	Level 8	(9) Combined + General	0.29

Figure G1: Probability of Non-Completion by LC Points (Adjusted Predictions)

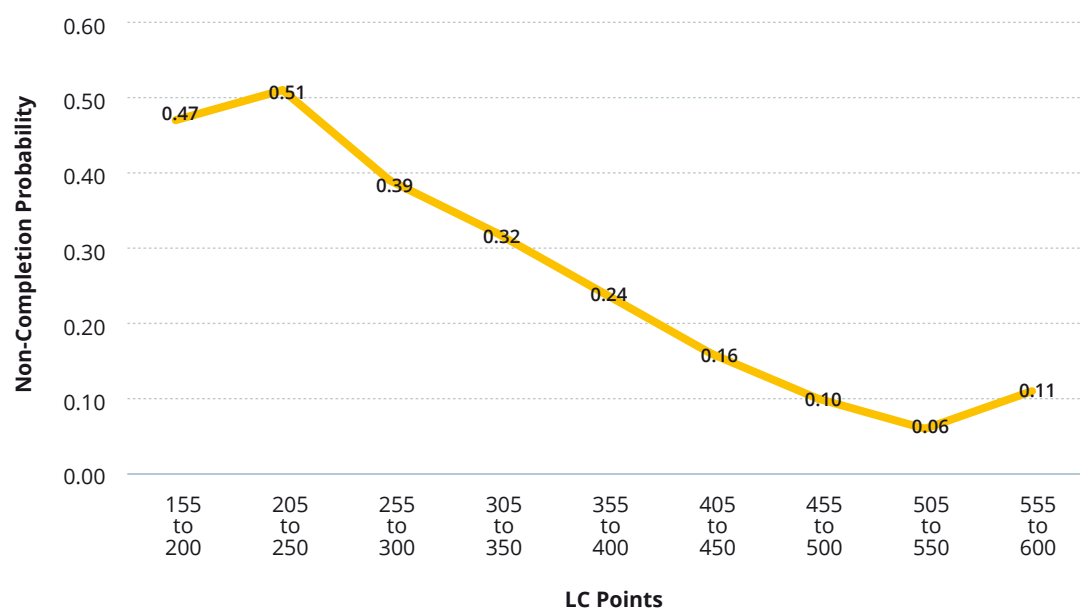


Figure G2: Probability of Non-Completion by LC Points/Gender (Interacted)

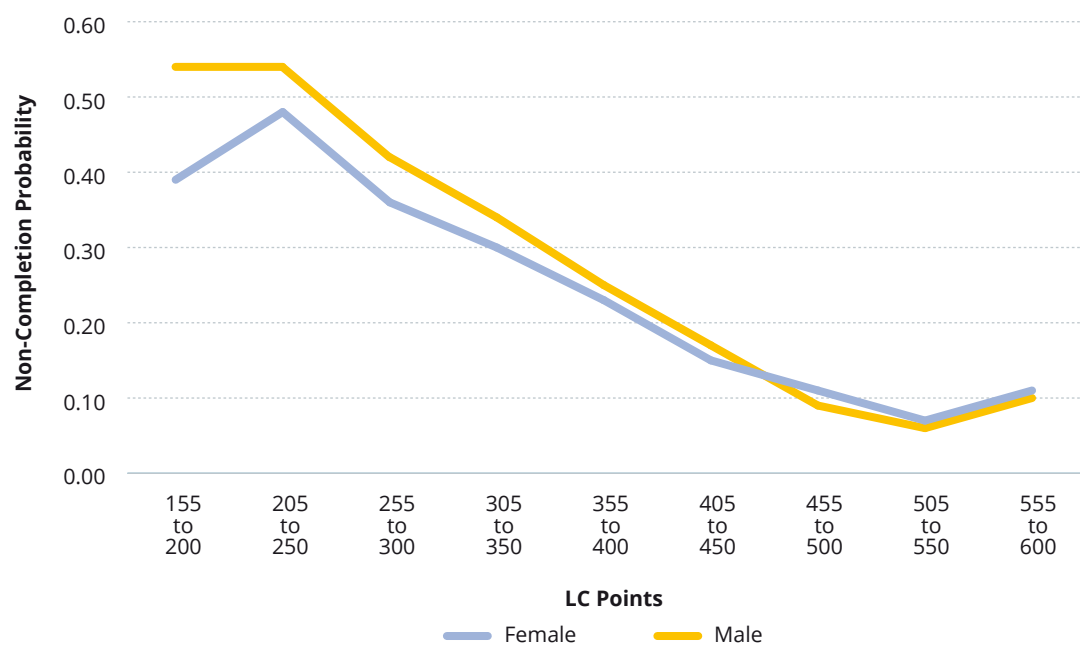


Figure G3: Probability of Non-Completion by LC Points/Deprivation (Interacted)

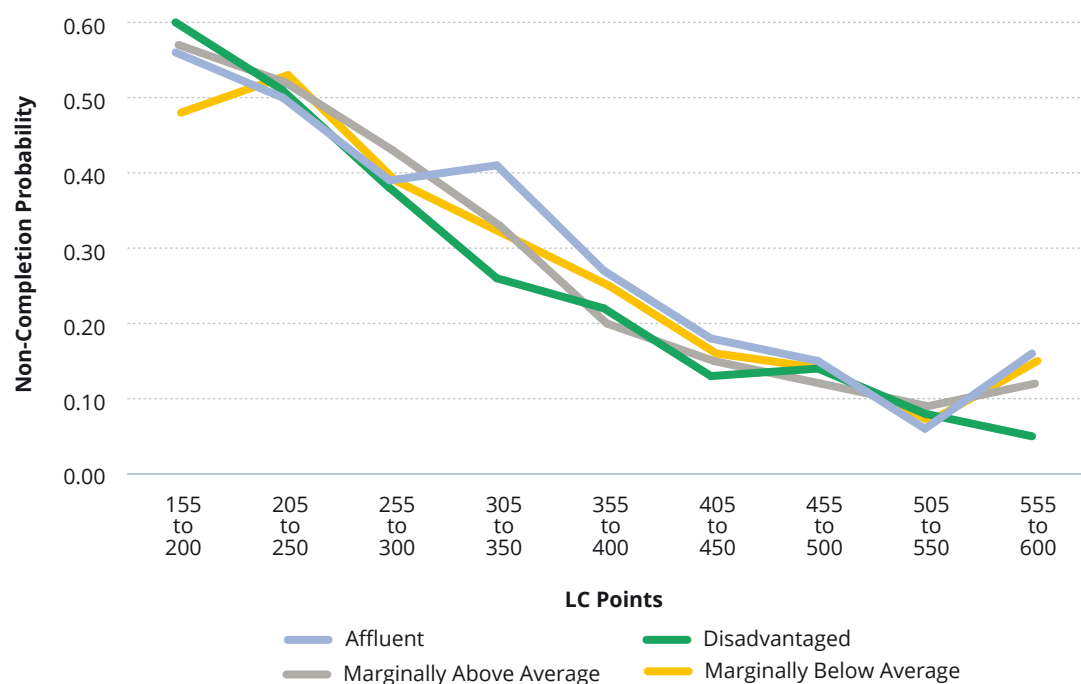


Figure G4: Probability of Non-Completion by LC Points/School Type (Interacted)

