**Supplementary Online Material**

**Appendix 1**

HEIs invited to participate in survey:

* Universities
  + Dublin City University
  + Maynooth University
  + NUI Galway
  + Royal College of Surgeons in Ireland
  + Trinity College Dublin
  + University College Cork
  + University College Dublin
  + University of Limerick
* Institutes of Technology
  + Athlone IT
  + Cork IT
  + Dublin IT
  + Dundalk IT
  + Galway-Mayo IT
  + Institute of Art, Design + Technology, Dún Laoghaire
  + IT Blanchardstown
  + IT Carlow
  + IT Sligo
  + IT Tallaght
  + IT Tralee
  + Letterkenny IT
  + Limerick IT
  + Waterford IT
* Other Colleges
  + Marino Institute of Education
  + Mary Immaculate College
  + National College of Art and Design
  + St. Angela’s College

**Appendix 2**

Figure A2.1: Mean DASS Depression Scores by Personal, Higher Education, and Socioeconomic Characteristics

|  |  |
| --- | --- |
|  |  |
| **(a) Age** | **(b) Gender** |
|  |  |
| **(c) Sexual Orientation** | **(d) Born in Ireland** |

|  |  |
| --- | --- |
|  |  |
| **(e) Enrolment Type** | **(f) Year of Study** |
|  |  |
| **(g) HEI Type** | **(h) HEI** |

|  |  |
| --- | --- |
|  |  |
| **(i) Social Class** | **(j) Make Ends Meet** |

Source: Analysis of data from Walsh *et al.* (2020).

Note: Different vertical axis scales have been used for different characteristics to aid within-characteristic comparisons. Thus, cross-characteristic comparisons should be undertaken with caution.

Figure A2.2: Mean DASS Anxiety Scores by Personal, Higher Education, and Socioeconomic Characteristics

|  |  |
| --- | --- |
|  |  |
| **(a) Age** | **(b) Gender** |
|  |  |
| **(c) Sexual Orientation** | **(d) Born in Ireland** |

|  |  |
| --- | --- |
|  |  |
| **(e) Enrolment Type** | **(f) Year of Study** |
|  |  |
| **(g) HEI Type** | **(h) HEI** |

|  |  |
| --- | --- |
|  |  |
| **(i) Social Class** | **(j) Make Ends Meet** |

Source: Analysis of data from Walsh *et al.* (2020).

Note: Different vertical axis scales have been used for different characteristics to aid within-characteristic comparisons. Thus, cross-characteristic comparisons should be undertaken with caution.

Figure A2.3: Mean DASS Stress Scores by Personal, Higher Education, and Socioeconomic Characteristics

|  |  |
| --- | --- |
|  |  |
| **(a) Age** | **(b) Gender** |
|  |  |
| **(c) Sexual Orientation** | **(d) Born in Ireland** |

|  |  |
| --- | --- |
|  |  |
| **(e) Enrolment Type** | **(f) Year of Study** |
|  |  |
| **(g) HEI Type** | **(h) HEI** |

|  |  |
| --- | --- |
|  |  |
| **(i) Social Class** | **(j) Make Ends Meet** |

Source: Analysis of data from Walsh *et al.* (2020).

Note: Different vertical axis scales have been used for different characteristics to aid within-characteristic comparisons. Thus, cross-characteristic comparisons should be undertaken with caution.

Table A2.1: Mean DASS Scores for Depression by Personal, Higher Education, and Socioeconomic Characteristics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **95% CI for Mean** | |
|  |  | **N** | **Mean** | **SD** | **SE** | **Lower Bound** | **Upper Bound** |
| *Age* | 18-19 years  20-22 years  23-29 years  30+ years | 1,197  2,139  1,112  753 | 11.94  12.07  12.09  9.89 | 10.75  10.60  10.81  9.89 | 0.31  0.23  0.32  0.36 | 11.33  11.62  11.45  9.18 | 12.55  12.52  12.72  10.61 |
| *Gender* | Female  Male  Transgender or gender non-conforming | 3,249  1,920  32 | 12.42  10.44  18.75 | 10.86  10.03  11.66 | 0.19  0.23  2.06 | 12.04  10.00  14.55 | 12.79  10.89  22.95 |
| *Sexual Orientation* | Straight/heterosexual  Gay, lesbian, bisexual or unsure | 4,466  735 | 11.06  15.76 | 10.30  11.59 | 0.15  0.43 | 10.76  14.92 | 11.37  16.60 |
| *Born in Ireland* | Born outside Ireland  Born in Ireland | 1,482  3,719 | 11.67  11.75 | 10.53  10.66 | 0.27  0.17 | 11.13  11.41 | 12.20  12.09 |
| *Enrolment Type* | Undergraduate  Postgraduate  PhD | 4,225  713  263 | 12.09  10.26  9.87 | 10.78  9.86  9.50 | 0.17  0.37  0.59 | 11.76  9.54  8.72 | 12.41  10.99  11.02 |
| *Year of Study* | 1st year  2nd year  3rd year  4th year + | 1,963  1,306  1,063  869 | 11.56  12.08  11.39  11.99 | 10.72  10.59  10.33  10.79 | 0.24  0.29  0.32  0.37 | 11.09  11.50  10.77  11.27 | 12.03  12.65  12.02  12.70 |
| *Institution Type* | Institute of Technology  University | 1,857  3,344 | 12.55  11.27 | 11.06  10.34 | 0.26  0.18 | 12.05  10.92 | 13.05  11.62 |
| *Social Class* | Higher or lower professional  Intermediate/technical  Self-employed or farmer  Service & sales or unskilled | 2,471  615  974  1,141 | 11.17  12.53  11.13  13.02 | 10.44  11.02  10.11  11.07 | 0.21  0.44  0.32  0.33 | 10.75  11.65  10.49  12.38 | 11.58  13.40  11.76  13.67 |
| *Make Ends Meet* | Make ends meet very easily  Make ends meet easily  Make ends meet fairly easily  Make ends meet with some difficulty  Make ends meet with difficulty  Make ends meet with great difficulty | 282  1,317  544  1,841  805  412 | 8.95  9.98  9.81  11.66  14.02  17.56 | 10.07  9.88  9.59  10.35  10.97  12.04 | 0.60  0.27  0.41  0.24  0.39  0.59 | 7.77  9.45  9.00  11.19  13.26  16.39 | 10.13  10.52  10.62  12.13  14.78  18.72 |
| Overall |  | 5,201 | 11.73 | 10.62 | 0.15 | 11.44 | 12.02 |

Source: Analysis of data from Walsh *et al.* (2020).

Note: N = number of observations; SD = standard deviation; SE = standard error; CI = confidence interval.

Table A2.2: Mean DASS Scores for Anxiety by Personal, Higher Education, and Socioeconomic Characteristics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **95% CI for Mean** | |
|  |  | **N** | **Mean** | **SD** | **SE** | **Lower Bound** | **Upper Bound** |
| *Age* | 18-19 years  20-22 years  23-29 years  30+ years | 1,197  2,139  1,112  753 | 9.18  9.27  9.08  6.72 | 8.72  8.87  8.69  7.80 | 0.25  0.19  0.26  0.28 | 8.69  8.89  8.57  6.16 | 9.68  9.64  9.60  7.27 |
| *Gender* | Female  Male  Transgender or gender non-conforming | 3,249  1,920  32 | 9.71  7.24  16.00 | 9.06  7.71  10.40 | 0.16  0.18  1.84 | 9.40  6.89  12.25 | 10.03  7.58  19.76 |
| *Sexual Orientation* | Straight/heterosexual  Gay, lesbian, bisexual or unsure | 4,466  735 | 8.34  11.87 | 8.41  9.70 | 0.13  0.36 | 8.09  11.17 | 8.59  12.57 |
| *Born in Ireland* | Born outside Ireland  Born in Ireland | 1,482  3,719 | 8.65  8.92 | 8.49  8.77 | 0.22  0.14 | 8.21  8.63 | 9.08  9.20 |
| *Enrolment Type* | Undergraduate  Postgraduate  PhD | 4,225  713  263 | 9.22  7.33  6.84 | 8.89  7.62  7.48 | 0.14  0.29  0.46 | 8.95  6.77  5.93 | 9.49  7.89  7.74 |
| *Year of Study* | 1st year  2nd year  3rd year  4th year + | 1,963  1,306  1,063  869 | 8.77  8.95  8.99  8.63 | 8.70  8.64  8.89  8.52 | 0.20  0.24  0.27  0.29 | 8.39  8.48  8.46  8.06 | 9.16  9.42  9.53  9.20 |
| *Institution Type* | Institute of Technology  University | 1,857  3,344 | 9.97  8.82 | 9.39  8.22 | 0.22  0.14 | 9.54  7.93 | 10.39  8.49 |
| *Social Class* | Higher or lower professional  Intermediate/technical  Self-employed or farmer  Service & sales or unskilled | 2,471  615  974  1,141 | 8.30  9.57  8.19  10.16 | 8.33  9.25  8.28  9.32 | 0.17  0.37  0.27  0.28 | 7.98  8.83  7.67  9.62 | 8.63  10.30  8.71  10.70 |
| *Make Ends Meet* | Make ends meet very easily  Make ends meet easily  Make ends meet fairly easily  Make ends meet with some difficulty  Make ends meet with difficulty  Make ends meet with great difficulty | 282  1,317  544  1,841  805  412 | 5.62  7.55  6.88  8.74  11.06  13.87 | 7.36  7.82  7.09  8.43  9.49  10.49 | 0.44  0.22  0.30  0.20  0.33  0.52 | 4.76  7.12  6.28  8.35  10.41  12.85 | 6.49  7.97  7.47  9.12  11.72  14.88 |
| Overall |  | 5,201 | 8.84 | 8.69 | 0.12 | 8.60 | 9.07 |

Source: Analysis of data from Walsh *et al.* (2020).

Note: N = number of observations; SD = standard deviation; SE = standard error; CI = confidence interval.

Table A2.3: Mean DASS Scores for Stress by Personal, Higher Education, and Socioeconomic Characteristics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **95% CI for Mean** | |
|  |  | **N** | **Mean** | **SD** | **SE** | **Lower Bound** | **Upper Bound** |
| *Age* | 18-19 years  20-22 years  23-29 years  30+ years | 1,197  2,139  1,112  753 | 13.42  14.14  14.52  12.19 | 9.92  10.04  9.68  8.97 | 0.29  0.22  0.29  0.33 | 12.85  13.71  13.95  11.55 | 13.98  14.57  15.09  12.83 |
| *Gender* | Female  Male  Transgender or gender non-conforming | 3,249  1,920  32 | 15.03  11.55  19.13 | 9.93  9.18  9.86 | 0.17  0.21  1.74 | 14.69  11.14  15.57 | 15.38  11.96  22.68 |
| *Sexual Orientation* | Straight/heterosexual  Gay, lesbian, bisexual or unsure | 4,466  735 | 13.14  17.61 | 9.63  10.02 | 0.14  0.37 | 12.86  16.88 | 13.42  18.33 |
| *Born in Ireland* | Born outside Ireland  Born in Ireland | 1,482  3,719 | 13.18  14.01 | 9.61  9.89 | 0.25  0.16 | 12.69  13.69 | 13.66  14.33 |
| *Enrolment Type* | Undergraduate  Postgraduate  PhD | 4,225  713  263 | 14.01  12.84  12.48 | 9.99  8.94  8.92 | 0.15  0.33  0.55 | 13.71  12.18  11.40 | 14.31  13.50  13.56 |
| *Year of Study* | 1st year  2nd year  3rd year  4th year + | 1,963  1,306  1,063  869 | 13.38  14.08  13.68  14.33 | 9.71  9.91  9.91  9.75 | 0.22  0.27  0.30  0.33 | 12.95  13.53  13.08  13.68 | 13.81  14.61  14.27  14.98 |
| *Institution Type* | Institute of Technology  University | 1,857  3,344 | 14.36  13.45 | 10.18  9.59 | 0.24  0.17 | 13.89  13.12 | 14.82  13.77 |
| *Social Class* | Higher or lower professional  Intermediate/technical  Self-employed or farmer  Service & sales or unskilled | 2,471  615  974  1,141 | 13.38  14.13  13.24  14.87 | 9.73  9.82  9.46  10.19 | 0.20  0.40  0.30  0.30 | 13.00  13.35  12.65  15.28 | 13.77  14.91  13.84  15.47 |
| *Make Ends Meet* | Make ends meet very easily  Make ends meet easily  Make ends meet fairly easily  Make ends meet with some difficulty  Make ends meet with difficulty  Make ends meet with great difficulty | 282  1,317  544  1,841  805  412 | 11.02  12.13  11.99  13.64  16.20  19.10 | 9.34  9.43  9.04  9.47  9.89  10.73 | 0.56  0.26  0.39  0.22  0.35  0.53 | 9.93  11.62  11.23  13.21  15.52  18.06 | 12.12  12.64  12.75  14.07  16.89  20.14 |
| Overall |  | 5,201 | 13.77 | 9.81 | 0.14 | 13.51 | 14.04 |

Source: Analysis of data from Walsh *et al.* (2020).

Note: N = number of observations; SD = standard deviation; SE = standard error; CI = confidence interval.

**Appendix 3**

Given missing data for some variables for some observations in our full sample, it was necessary to drop a number of survey respondents to form our final analysis sample. In particular, participants were dropped if they had any missing data at all. A series of Chi-square and Kruskal-Wallis tests revealed no statistical differences between those dropped on the basis of completion time and those included, when compared across observable characteristics such as age, gender, sexual orientation, born in Ireland, enrolment type, year of study, and HEI type. We also dropped 429 respondents who had missing data on the variables used in our analysis. Based on similar statistical tests we found that this group were slightly more likely to be older, born outside Ireland, studying in an IT, or a postgraduate (including PhD) student. However, they were similar on the basis of all the other variables considered.

**Appendix 4**

Overall, the final estimation sample is broadly representative of the higher education sector in Ireland and closely aligned on characteristics such as institution type and level of study – see Table A4.1. Nonetheless, it is somewhat over-represented by female and older students and, since respondents self-selected into the survey, sample selection bias may be an issue. Therefore, an analysis using a re-weighted sample was also undertaken as a robustness check. Specifically, this entailed using a manual iterative approach to calculate post-stratification weights based on the sample and national proportions (in higher education) across gender, HEI type, social class, enrolment types, and age groups – details of the reweighted sample are also provided in Table A4.1. Overall, the results of this sensitivity analysis did not lead to any significant changes in our main findings and conclusions.

Table A4.1: Representativeness of Estimation Sample

|  |  |  |  |
| --- | --- | --- | --- |
|  | **National (%)** | **Sample (%)** | **Reweighted Sample (%)** |
| *Institution Type* |  |  |  |
| University | 59.37 | 64.30 | 59.11 |
| Institute of Technology | 40.63 | 35.70 | 40.89 |
|  |  |  |  |
| *Level of Study* |  |  |  |
| Undergraduate | 81.59 | 81.23 | 81.75 |
| Postgraduate (including PhD) | 18.41 | 18.77 | 18.25 |
|  |  |  |  |
| *Gender* |  |  |  |
| Female | 51.87 | 62.47 | 52.05 |
| Male | 48.13 | 36.92 | 47.27 |
| Transgender | . | 0.62 | 0.68 |
|  |  |  |  |
| *Age of Respondent* |  |  |  |
| 18 years | 10.14 | 6.88 | 8.16 |
| 19 years | 17.87 | 16.13 | 19.70 |
| 20 years | 18.31 | 15.73 | 16.06 |
| 21 years | 15.50 | 14.77 | 15.63 |
| 22 years | 10.26 | 10.63 | 12.20 |
| 23-29 years | 18.16 | 21.38 | 18.17 |
| 30+ years | 9.75 | 14.48 | 10.08 |

Source: Analysis of data from Walsh *et al.* (2020). National percentages are taken from HEA (2017a; 2017b; 2017c).