

Research Bulletin 19/9 | Northern Ireland's International Competitiveness – Education, Skills and Employability

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Summary

Competitiveness remains the international benchmark against which small advanced economies (SAE) are measured. Northern Ireland's draft Industrial Strategy aims to put Northern Ireland in the top three most competitive small advanced economies by 2030. In order to deliver against this target, enhancing education, skills and employability is highlighted as a key pillar within the strategy.

The most recent data available shows that Northern Ireland (NI) is lagging behind the SAE group in terms of tertiary education attainment levels, while the percentage of the population not in education, employment or training (NEET) exceeds that of the SAE group average. Encouragingly, the percentage of graduates in science, technology, engineering and mathematics (STEM) subjects has been increasing with Northern Ireland outperforming seven other SAEs on this measure. However, overall, Northern Ireland's performance across the three indicators lies within the lower/mid-range and therefore more work will be needed to meet the draft Industrial Strategy's ambitious target.

Introduction

The draft Industrial Strategy for Northern Irelandⁱ states that 'turning Northern Ireland into a leading, internationally competitive economy is essential if we are to deliver the economic outcomes that we want for our people'. The strategy highlights the importance of an economy built on talent, which delivers excellence and relevance in education and skills.

This research bulletin provides an assessment of NI's international competitive position on a range of education, skills and employability indicators, establishing NI's relative position against 16 other Small Advanced Economies (SAEs) - which are used as benchmarks based on their size and competitiveness rankings. The following indicators will be examined:

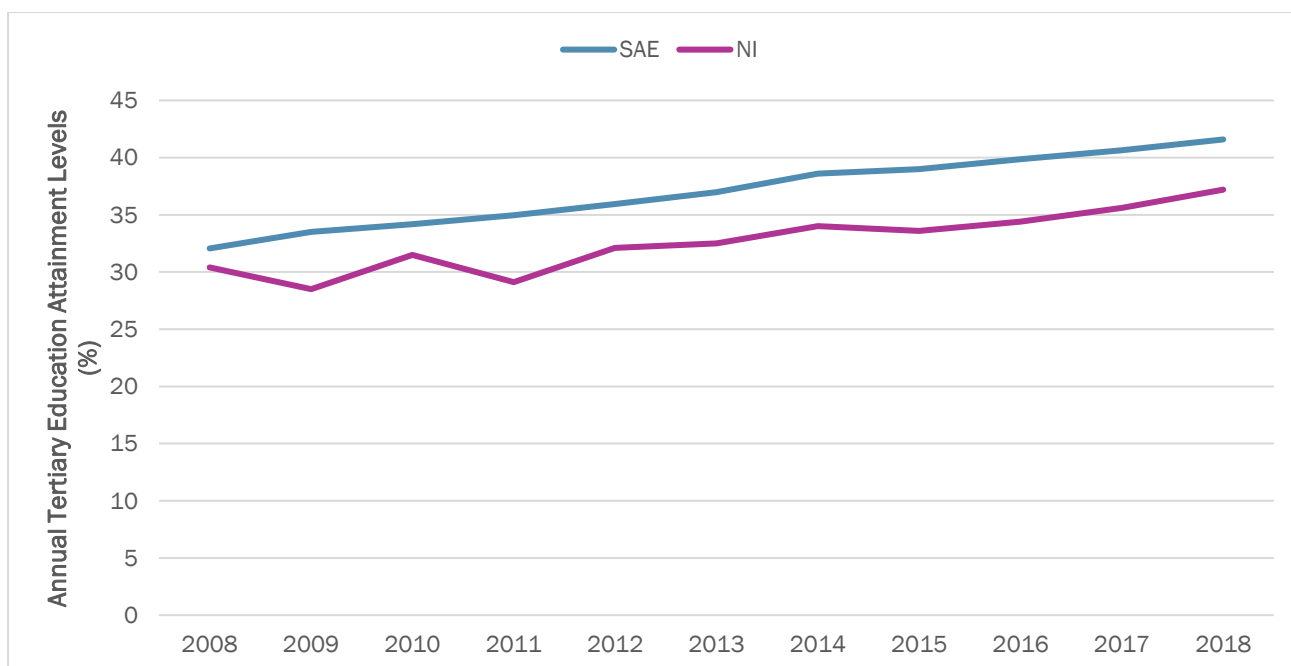
- Tertiary Education Attainment Levels;
- Graduates in STEM Subjects; and
- Youth Population Not in Education, Employment or Training (NEET).

The importance of improving the skills and employability of those in, and those wishing to join, the workforce is also reflected in the Draft Programme for Government Framework 2016-21ⁱⁱ.

Tertiary Education Attainment

Tertiary education refers to any type of education pursued beyond the secondary education level, with tertiary education attainment defined by the OECD as those having completed the highest level of educationⁱⁱⁱ. Tertiary education attainment is an important indicator to gauge how well an economy is performing in terms of supplying a highly educated workforce. Figure 1 illustrates annual tertiary education attainment levels as a percentage of population, from 2008-2018 for NI, compared with the SAE group average.

Figure 1: Tertiary Education Attainment Levels as a % of population 2008-2018



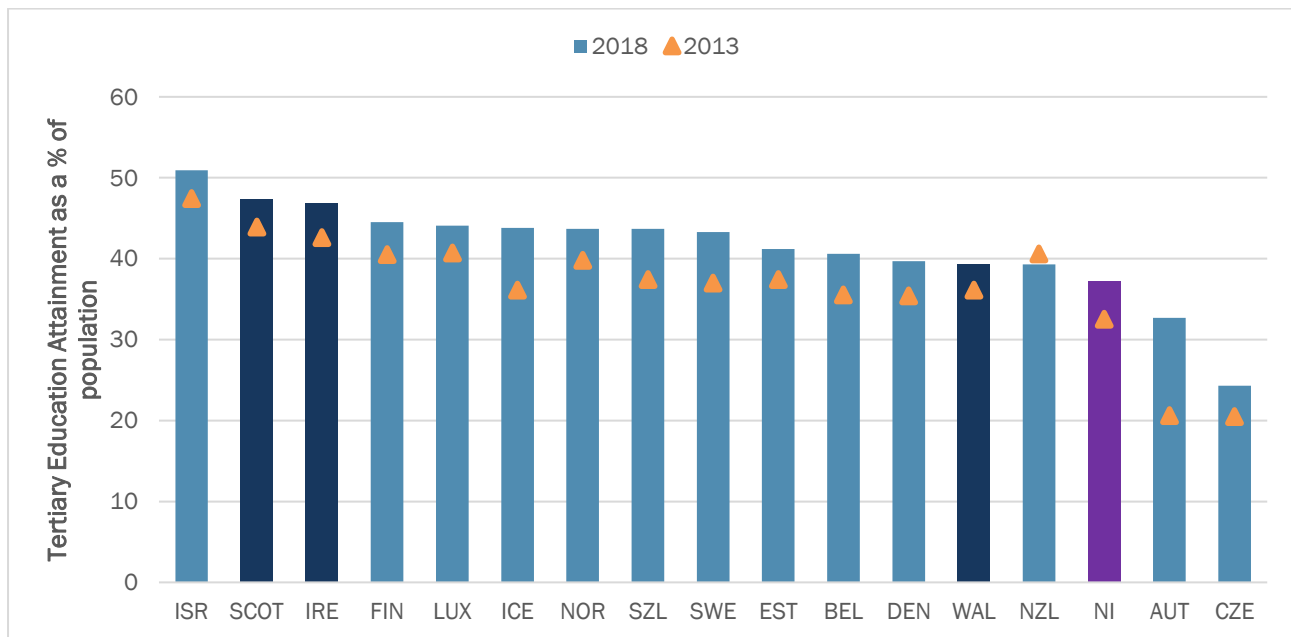
Source: Eurostat, OECD

The SAE group average has grown from 32.1% in 2008 to 41.6% in 2018. As Figure 1 indicates, the percentage of the population achieving tertiary education in NI has lagged behind the SAE average throughout the time series.

However, NI has seen a consistent increase in its attainment level since 2011, reaching 37.2% in 2018. This followed a period of fluctuation during the height of the global recession (2008-2011), and can be attributed to the NI Government's vision of creating "a more accessible higher education sector", as set out in a 2012 report, *Graduating to Success*^{iv}.

Nevertheless, as NI has lagged behind the SAE group average throughout the period, it therefore occupies a low rank on this metric (15th) when compared to the 16 other economies considered as reflected in Figure 2. This is a position that remains unchanged since 2013.

Figure 2: Tertiary Education Attainment Levels - Rankings



Source: Eurostat, OECD

Across the SAE group, Israel attained the highest level of tertiary education as a percentage of population in 2018, retaining their ranking from 2013. Factors which help explain Israel’s continued high performance on this indicator include:

- Compulsory education starts at just 3 years old in Israel;
- The country also emphasises the early stages of early childhood education and care (ECEC), with 47% of children under 2 enrolled in an ECEC service in 2017, compared to 24% on average across OECD countries^v.

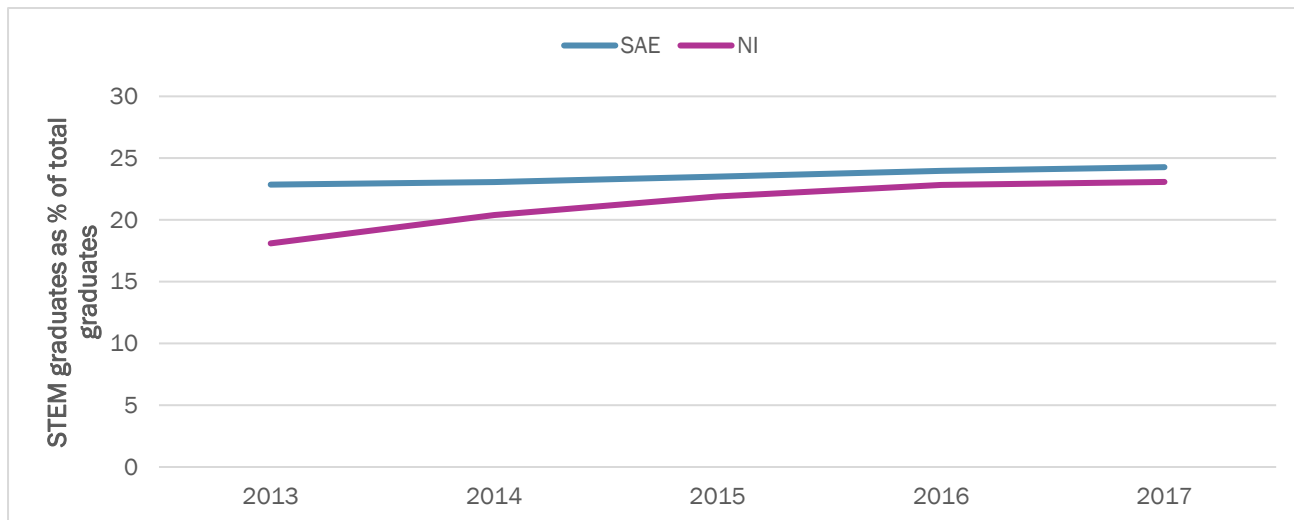
All economies analysed witnessed growth in tertiary education levels from 2013 to 2018 with the exception of New Zealand. Research has indicated that, in New Zealand, apprentices earn more, buy houses and contribute to KiwiSaver (a voluntary, work-based savings initiative) earlier than those that have completed tertiary level education^{vi}, suggesting that a preference to pursue a career in trade jobs may be responsible for the decline.

STEM Subjects

Both the NI Executive’s ‘Programme for Government^{vii}’ and the skills strategy for NI, ‘Success through Skills – Transforming Futures^{viii}’, recognised that the future success of the NI economy would require increased numbers of skilled workers with science, technology, engineering and mathematics (STEM) qualifications. A 2016 report titled ‘Jobs of the Future’ indicates that, in the UK alone, jobs in science, research, engineering and technology will rise at double the rate of other occupations between 2016 and 2023^{ix}. Furthermore, the NI Skills Barometer 2019^x highlights that, across the 2018-2028 period, STEM related subjects will be in most demand reflecting the anticipated growth in the ICT, professional services and advanced manufacturing sectors. This section will illustrate the percentage of total

graduates in tertiary education that have completed a STEM subject. Figure 3 highlights the NI results from 2013 to 2017, and compares this with the average across the SAE group analysed.

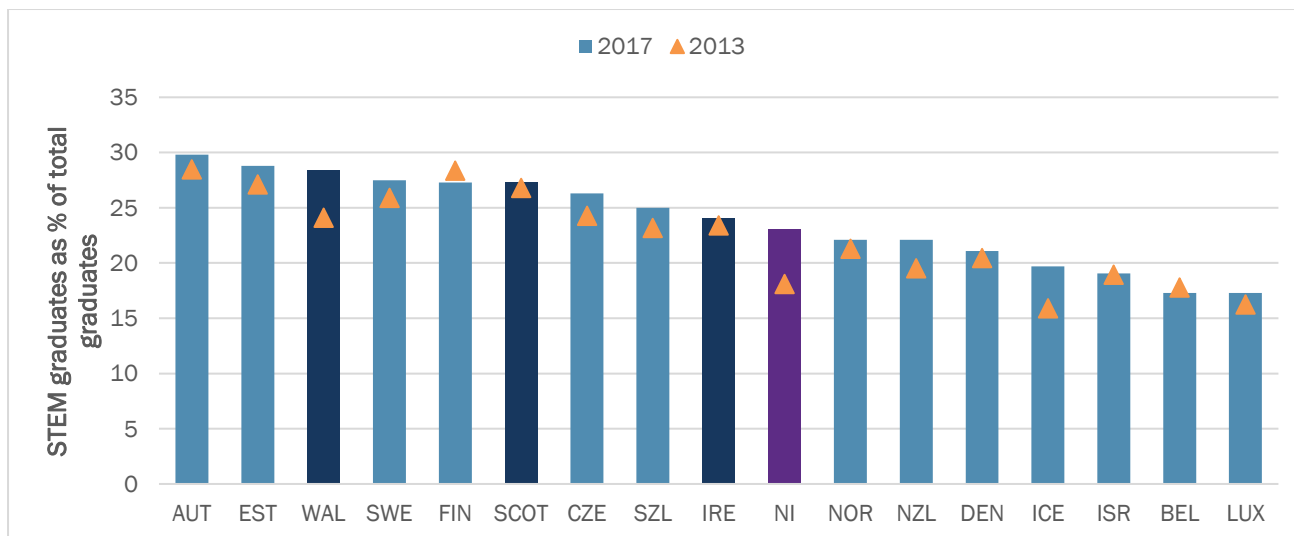
Figure 3: Graduates in STEM as a % of total graduates 2013-2017



Source: HESA, OECD, UNESCO

Although still lagging behind the SAE group average of 24.3% in 2017, NI has closed the gap over the 2013 to 2017 period and improved on its ranking position of 14th in 2013, having taken over Norway, New Zealand, Denmark and Israel to rank 10th in 2017 (Figure 4).

Figure 4: Graduates in STEM - Rankings



Source: HESA, OECD, UNESCO

Over the period from 2013 to 2017, only Finland and Belgium saw their proportion of STEM subject graduates decline, resulting in the overall SAE group average increase from 22.9% to 24.3%, as seen in Figure 3.

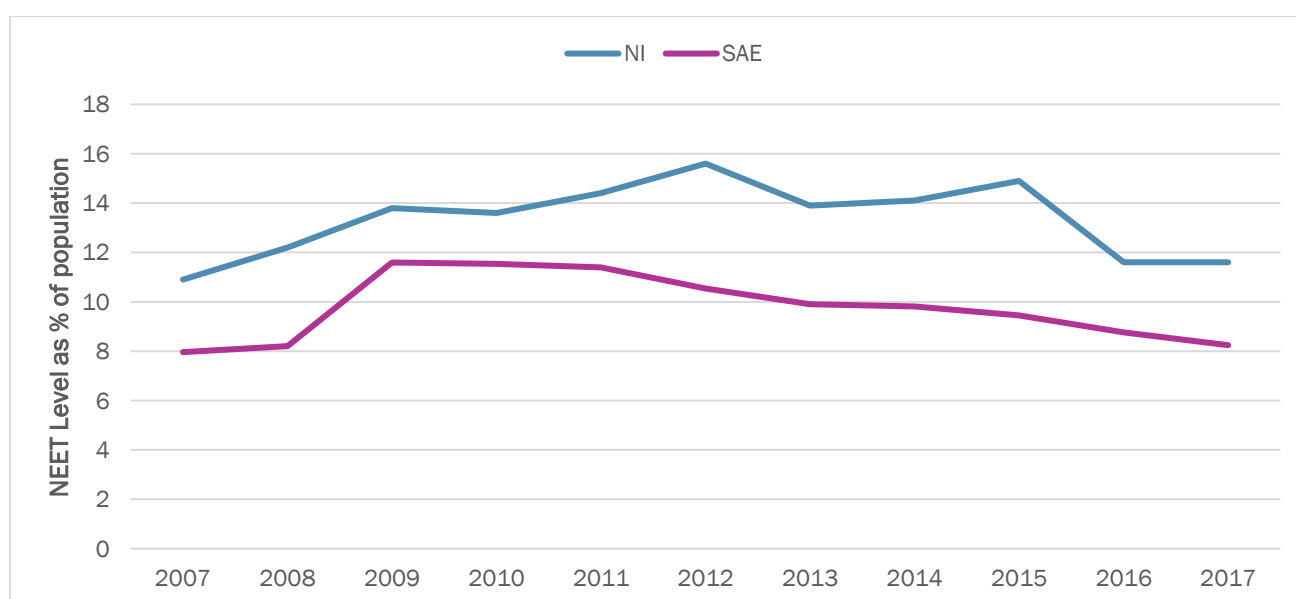
Austria has outperformed all of its SAE competitors across the entire 2013 to 2017 period, with STEM education considered a priority at national level. Austria’s approach to STEM education issues is delivered through its main STEM initiative at national level – IMST (Innovation Makes Schools Top^{xi}). This initiative is complemented by the Ministry for Education and Women’s efit21 initiative as well as the more recent initiative, Sparkling Science^{xii}, established by the Ministry of Science, Research and Economy^{xiii}.

Encouragingly, the largest increase in percentage terms across the period was seen in NI, which saw 23.1% of all its graduates in 2017 achieve STEM subjects, up from 18.1% in 2013. It is important that NI continues to improve on these results – the draft Industrial Strategy for NI notes that NI must ensure it has the necessary skills pipeline to meet business needs now and in the future. The following sectors are expected to witness a significant increase in demand in the NI economy, and skilled employees must be available to satisfy this growth; ICT, creative and digital media, agri-food sector, business and financial services, advanced manufacturing and engineering, renewable energies and recycling, and health and life sciences^{xiv}.

Youth Population Not in Education, Employment or Training

This section of the bulletin will compare the percentage of NI’s youth population (from 16-24 years old) that are not in education, employment or training (NEET), with the other 16 members of the SAE group analysed. A person is considered to be in education or training if; they are enrolled on an education course and are still attending or waiting for term to (re)start; they are doing an apprenticeship; they are on a government-supported employment or training programme; they are working or studying towards a qualification; they have had job-related training or education in the last four weeks^{xv}.

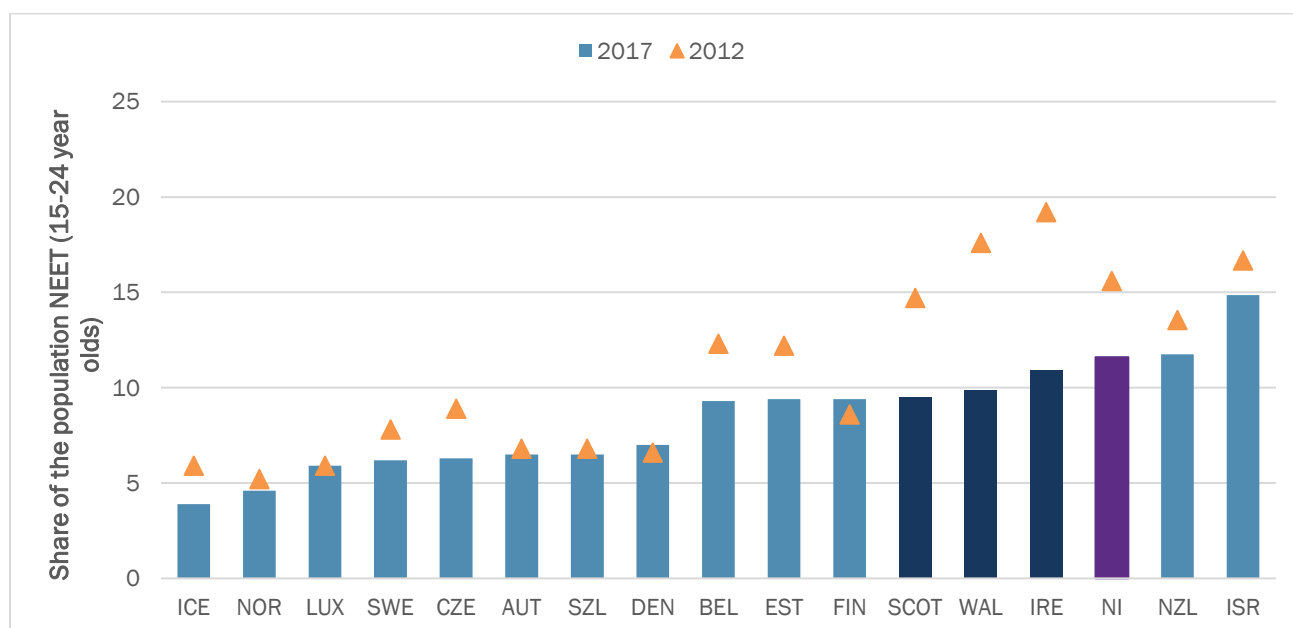
Figure 5: Percentage of youth population not in education, employment or training, 2007-2017



Source: Eurostat, World Bank

Figure 5 indicates that, in 2007, 8% of the youth population across the SAE group were NEET, rising to 11.6% by 2009 as a result of the global recession. However, this has since been followed by a period of continued improvement across the group, with 2017's figure of 8.2% approaching pre-recession levels. NI has lagged behind the SAE group for this indicator throughout the period, with 11.6% of the youth population NEET in 2017. Encouragingly, however, the NEET figure in NI appears to be on a more downward trend since 2012 (falling from 15.6% in 2012 to 11.6% in 2017), aided in part by 'Pathways to Success^{xvi}', the NI Government's strategy to prevent exclusion and promote participation amongst young people that are NEET, or at risk of becoming so. Figure 6 demonstrates how the economies across the SAE group have evolved in this indicator over the 2012 to 2017 period.

Figure 6: Percentage of youth population NEET in SAEs - Rankings



Source: Eurostat, World Bank

Despite the NEET proportion of youth population falling in NI, NI has seen its rank in this indicator slip from 14th to 15th. This is in part due to NI's underperformance – for instance, 2017 data from the Northern Ireland Statistics and Research Agency (NISRA) indicates that 16.6% of NI residents had no qualifications, compared to 8% of all UK residents^{xvii}. Further, the NI economic inactivity rate, which illustrates the proportion of people aged from 16 to 64 who are not working and not seeking or available to work, stood at 26.4% during the June to August 2019 period, above the UK rate of 21%^{xviii}. Elsewhere however, the performance of competing economies has also contributed to NI's position in 2017:

- Wales has seen its NEET proportion of youth population fall from 17.6% in 2012 to 9.9% in 2017 as a result of the Welsh Government's strategic approach to reducing the proportion of young people who are NEET, as set out in the Youth Engagement and Progression Framework^{xix}, the Prosperity for All: Economic Action Plan^{xx}, and the Child Poverty Strategy^{xxi}.

- Ireland has also overtaken NI in the rankings, with its NEET proportion of youth population falling from 19.2% to 10.9%. The Youth Employment Support Scheme^{xxii}, introduced in October 2018, will support further improvement for young jobseekers in Ireland.

Iceland is the top ranking economy for this indicator, with only 3.9% of its youth population NEET in 2017. Like other countries, Iceland has set the goal to substantially reduce the proportion of youth not in employment, education or training by 2020^{xxiii}.

Conclusion

Northern Ireland’s performance across the indicators discussed within this Research Bulletin Article varies (Table 1), however each indicates that in order to meet the draft Industrial Strategy’s target of being in the top three most competitive economies by 2030, improvement is needed. NI lags behind most SAEs, ranking in the bottom three economies over the past five years in terms of tertiary education attainment. Encouragingly, the percentage of graduates in STEM subjects has been increasing as NI narrows the gap on the SAE group. While NI has lowered the percentage of its youth population not in employment, education or training, particular cause for concern is the fact that NI has been performing below the SAE group average and this gap has widened in recent years due to NI’s continuing underperformance on education, and economic inactivity rates, as well as the performance of competing economies.

Table 1: Northern Ireland performance against Small Advanced Economies

Measure	Most Recent Position Rank	Five Year Rank
Tertiary Education Attainment	15 th	15 th
Graduates in STEM subjects	10 th	14 th
Not in Education, Employment or Training (NEET)	15 th	14 th

Data has highlighted continued improvement in all indicators for the SAE group in recent years. It will be important to investigate the strategies and performance of those economies performing strongly in each indicator in order to identify any lessons to be learnt which can be applied to NI.

This research bulletin has focused on three different indicators however other potential indicators could conceivably include PISA rankings^{xxiv}, public spending on education as a percentage of GDP and university rankings, which DfE will continue to take forward in order to draw a clearer picture of competitiveness across this pillar.

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- i <https://www.economy-ni.gov.uk/sites/default/files/consultations/economy/industrial-strategy-ni-consultation-document.pdf>
- ii <https://www.northernireland.gov.uk/sites/default/files/consultations/newnigov/draft-pfg-framework-2016-21.pdf>
- iii <https://data.oecd.org/eduatt/population-with-tertiary-education.htm>
- iv <https://www.economy-ni.gov.uk/sites/default/files/publications/del/graduating-to-success-he-strategy-for-ni.pdf>
- v <http://gpseducation.oecd.org/CountryProfile?primaryCountry=ISR&treshold=10&topic=EO>
- vi https://www.itf.org.nz/sites/default/files/publications/BERL%20final%20report%20to%20ITF_0.pdf
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- x <https://www.economy-ni.gov.uk/publications/northern-ireland-skills-barometer-2019-update>
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- xiii <http://files.eun.org/scientix/Observatory/ComparativeAnalysis2015/Kearney-2016-NationalMeasures-30-countries-2015-Report.pdf>
- xiv <https://www.nidirect.gov.uk/articles/skills-demand>
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- xvii <https://www.nisra.gov.uk/statistics/uk-national-wellbeing-measures-northern-ireland-data/education-and-skills>
- xviii <https://www.nisra.gov.uk/system/files/statistics/labour-market-report-october-2019.PDF>
- xix <https://gov.wales/youth-engagement-and-progression-framework-implementation-plan>
- xx <https://gov.wales/prosperity-all-economic-action-plan>
- xxi <https://gov.wales/child-poverty-strategy-wales-report>
- xxii <https://www.gov.ie/en/service/4774e4-youth-employment-support-scheme/>
- xxiii See target 8.6 at: <https://www.un.org/sustainabledevelopment/economic-growth/>
- xxiv <https://www.bbc.co.uk/news/uk-northern-ireland-50637050>