Viewforth Consulting Ltd

The economic impact of Northern Ireland's FE Sector on the economy

Report to the Department for Employment and Learning

Final Report

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Viewforth Consulting Ltd

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Acknowledgements

Thanks are due to the staff in all of the colleges who provided key data on college finance, staffing and student numbers. *Colleges Northern Ireland* , the umbrella body for the colleges, provided the team with considerable help and assistance in both the collection and intepretation of college data. Particular thanks are due to Celine McCartan of South West College, Karen Lennon and Gerry Campbell of Colleges Northern Ireland. Thanks are also due to staff of the Department for Employment and Learning (DEL) , particularly John Kerr, for helpful comments in the course of the study.

Summary of Overall Economic Impact Results

This study analyses the impact of Northern Ireland's 6 regional Further Education (FE) Colleges on the Northern Ireland Economy.

Key results include:

- Total income of the NI FE Sector (all 6 Colleges) was £254 million in 2013/14, with total expenditure of £261 million.
- The 6 regional FE colleges provided 4074 fulltime equivalent (fte) jobs across a range of occupations and skill levels.
- Through the effects of their expenditure a further 3627 full time equivalent jobs were generated in other industries outside the colleges, with most (2762 fte jobs) in Northern Ireland.
- The Sector's own output was £254 million. Through knock-on effects the Colleges generated an additional £364 million in other industries throughout the UK, with the majority (£241 million) in Northern Ireland.
- The Sector's own GVA amounted to £167 million. £118 million was also generated in other NI industries, making a total contribution to NI GVA of £285 million. This was equivalent to nearly 0.9% of all 2013 Northern Ireland GVA.
- Nearly 130,000 people studied at Northern Ireland's 6 regional FE colleges in 2013/14.
- Around 83% of students were taking further education courses, including in essential skills, 9% were taking higher education courses and the remaining 8% studying on other courses such as recreational and leisure classes.
- Most (95%) were from Northern Ireland with 5% of students coming from outside Northern Ireland. This included 3% from the Republic of Ireland and 2% from elsewhere.
- The expenditure of students from outside Northern Ireland is an injection into the Northern Ireland economy and also generated output, jobs and GVA.
- The impact of relevant Non-NI students was modelled and the student expenditure generated £29.8 million of output in Northern Ireland, creating 303 fte jobs and generated £14.1 million of NI GVA.
- Together with the expenditure of their students from outside NI, the 6 regional FE Colleges generated £524 million of output in Northern Ireland and 7139 fte jobs

in Northern Ireland. Total NI GVA generated came to nearly £300 million. The employment generated was equivalent to around 0.9% of all 2013 NI workforce jobs. GVA generated was equivalent to around 0.92% of all 2003 NI GVA.

- The impact was strongest in the areas where College Campuses were located. However all parts of NI shared in the expenditure impact of the 6 regional FE colleges, with impact flowing across council boundaries.

Introduction

This study provides an analysis of the impact of Northern Ireland's 6 regional Further Education (FE) colleges on the Northern Ireland economy. It was commissioned by the Department for Employment and Learning.

The report's primary aim was to assess the economic impact of Northern Ireland's Further Education colleges as businesses and the FE sector as an industry - in terms of the jobs, output and GVA generated. This report is divided into five main sections.

- Section One gives a background to Northern Ireland's FE Sector.
- Section Two presents the results of the analysis of the economic impact of Northern Ireland's 6 regional FE colleges on Northern Ireland as a whole, as well as impact accruing further afield in the rest of the UK.
- Section Three considers the overall college student profile and includes modelled analysis of the expenditure of college students from outside Northern Ireland.
- Section Four provides an overall summary of the combined impact of the 6 regional FE colleges together with that of Non-NI students.
- Section Five presents some conclusions and reflections.

Appendix One presents an additional analysis of the distribution of the modelled impact across Northern Ireland. Appendix Two gives details on the methodology, model and other data sources used in this study, with Appendix Three giving additional References for the study.

In charts throughout the report, percentages are rounded for presentation purposes.

1. Northern Ireland's Regional FE Colleges

Northern Ireland's six regional FE Colleges are recognised as having an important role to play in the economy through their provision of the education and skills training essential for a skilled workforce. The current consultation on the development of a Further Education Strategy for Northern Ireland[1] has highlighted the further education sector as a 'key economic driver for Northern Ireland' and that the sector is essential to the delivery of many government education and training objectives including the new apprenticeships and Youth Training systems as well as expansion of access to higher level education.

The six regional FE Colleges, formed in the last decade through mergers of a previous 16 smaller colleges, have a broad reach and presence in communities across Northern Ireland. They make up the FE sector, comprising:

- Belfast Metropolitan College
- Northern Regional College
- North West Regional College
- South Eastern Regional College
- Southern Regional College
- South West College

The colleges are recognised as the statutory providers of further education and training in Northern Ireland and in 2010 were formally classified as Non Departmental Public Bodies (NDPBs.) Each college covers a broad geographical area with a number of different campuses, enabling local access to courses and training. The colleges provide a wide range of different levels and types of skills training important in supporting economic development in Northern Ireland. They are core to driving up the overall skills and attainment levels of the population, which is important for the future in the attraction of new businesses to Northern Ireland as well as in supporting existing businesses to develop and grow.

College educational and course provision ranges from addressing basic skills needs through to further qualifications and vocational skills training and to both sub-degree and degree level provision. The colleges are also active in working with local employers, providing in-house training and tailored courses to meet specific business needs.

[1] Consultation Document on the Development of a New Further Education Strategy for Northern Ireland. (DEL 2015)

The colleges are also important players in the promotion of social inclusion, providing education to disadvantaged groups and enabling all citizens, including those who may originally have left school with few qualifications, to have access to opportunities to improve their skills and improve their life chances.

As well as having a pivotal role in supporting longer term economic development, the colleges also play another role of economic importance in their local communities – as significant employers and relatively large enterprises in and of themselves. Colleges are active players in local communities, providing employment and stimulating economic activity. While many local businesses have a keen interest in the work of the Colleges in skills training and educational provision, businesses also benefit from the trade the FE colleges bring, through the expenditure of the colleges and their students in their local areas.

The role of the FE colleges as enterprises in themselves, and the FE sector as an industry, is the focus of the current study.

2. The economic impact of the NI FE Sector on Northern Ireland

The study examined the FE sector in Northern Ireland as an industry and the impact generated by the sector's expenditure during the college academic and financial year 2013-14. Key economic aspects of the sector were examined and modelled analysis was undertaken of the impact of sector's expenditure and its generation of output, employment and contribution to GDP. The study covered all six Northern Ireland Colleges who are the recognised statutory providers of further education and training in Northern Ireland.[2]

Institutional income and expenditure data was provided by the colleges through the umbrella body for the FE sector, *Colleges NI*. The most recent data available was for the academic and financial year 2013/14 and therefore this was the 'snapshot' year that was analysed.

[2] i.e Belfast Metropolitan College, Northern Regional College North West Regional College, South Eastern Regional College, Southern Regional College, South West College

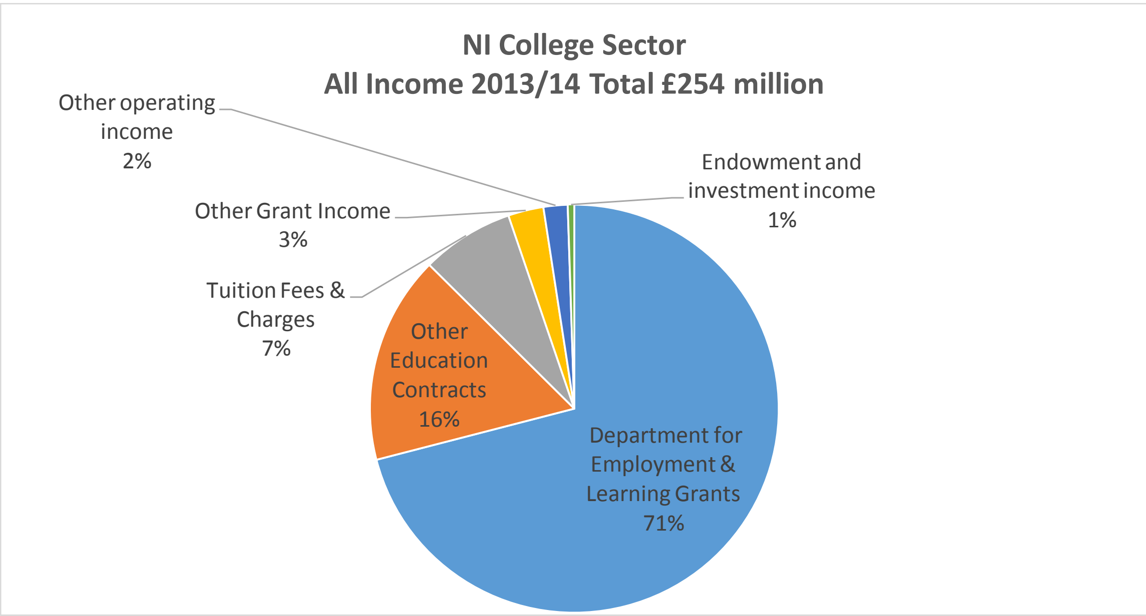
The core analysis used a two-stage approach to the estimation of the economic impact of Northern Ireland's FE Sector. The impact of the Northern Ireland FE colleges on the UK economy was modelled, using a purpose-designed economic model of the UK. Analysis was then undertaken, using a Location Quotient approach, to estimate the share of Northern Ireland FE sector impact on the UK likely to have accrued to Northern Ireland.

The model used was a 'Type II' input-output model based on data derived from the UK Input-Output tables and related Office of National Statistics data. The model had been specifically designed to analyse tertiary education impact and was updated in 2013 to undertake a UK wide study of higher education for Universities UK along with studies of the nine regions of England.[3] It has also been used for a study of higher education in Northern Ireland [4] as well as studies of individual institutions. Further details on methodology are available in Appendix Two.

Key Findings

- ### FE College Revenue

Figure 1: Northern Ireland FE Sector income 2013/14



Source: College Financial data for 2013/14

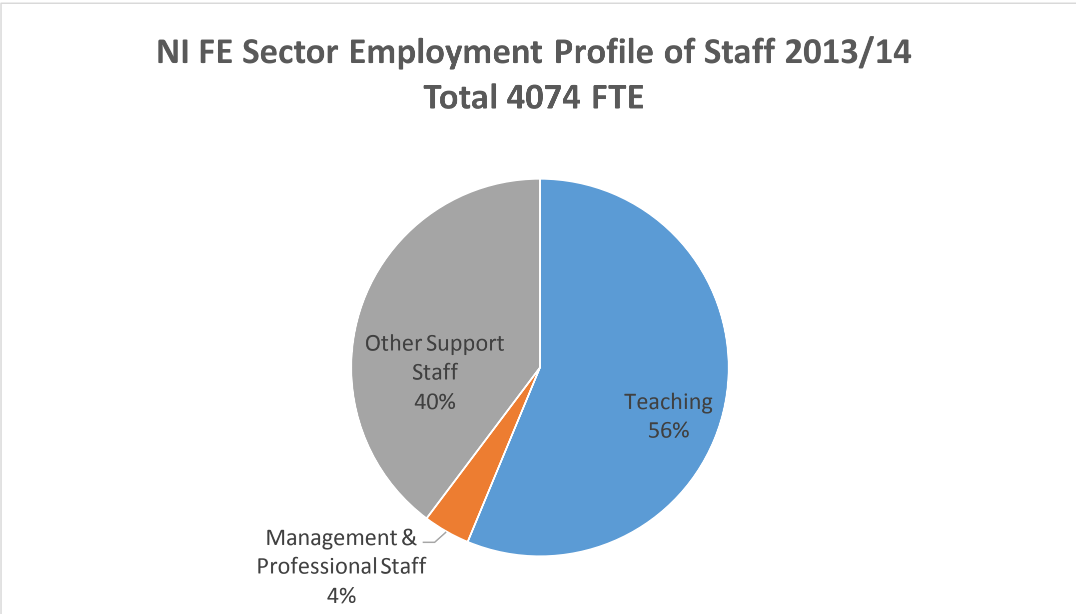
[3] The economic impact of UK higher education institutions (Fifth report) and The economic impact of higher education institutions in the English Regions , Universities UK (April 2014)
http://www.universitiesuk.ac.uk/events/Pages/economic_growth.aspx?utm_source=event&utm_medium=carousel+&utm_campaign=EconomicGrowth
[4] The economic impact of higher education on the Northern Ireland economy (DEL 2015)
http://www.delni.gov.uk/the-economic-impact-of-higher-education-on-the-northern-ireland-economy-2015.pdf

The Northern Ireland FE sector had a total income in the study year of £254 million. The majority of income received was for teaching and training provision with income from DEL Grants, Tuition Fees and Other Education Contracts, making up nearly 94 % of the total. 3% of income was earned from the delivery of other services (e.g. residence and catering/conference business.)

- ## Employment in the FE Colleges

The Colleges provided 4074 full time equivalent jobs directly in the colleges. This includes teaching staff, support staff and management staff. The profile of FE sector employment is shown in Figure 2.

Figure 2. Employment Profile



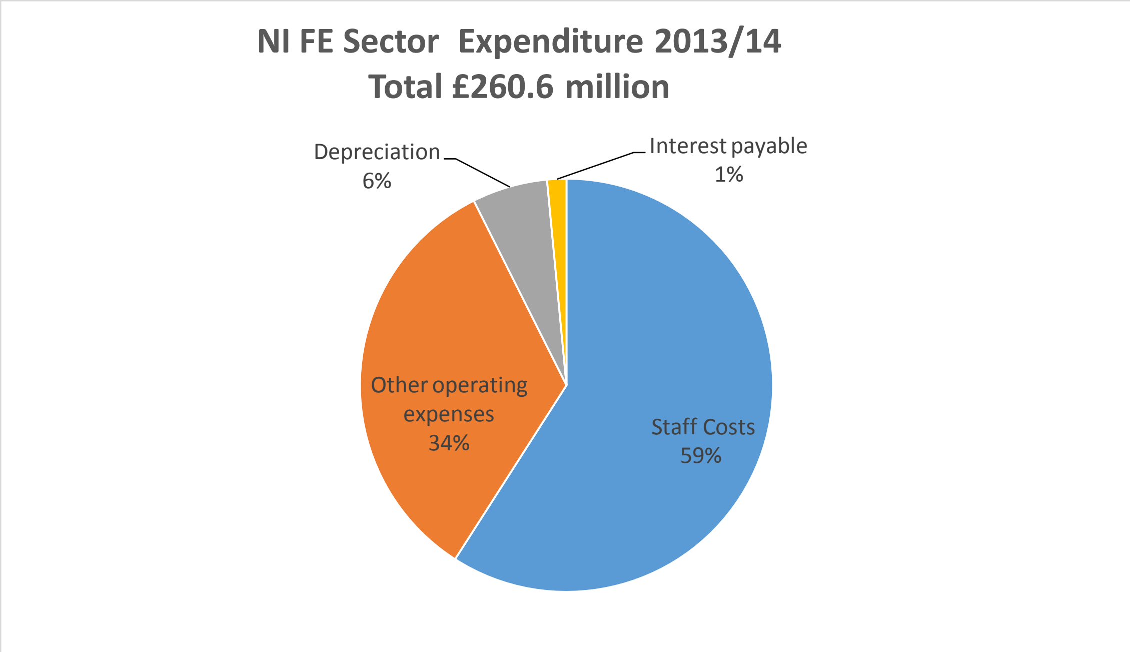
Source: Colleges NI

While it would be expected for the colleges to have a high proportion of teaching staff, colleges also employ a wide range of other support staff. The colleges have physical premises and buildings to maintain, requiring cleaners and care takers. They need administrative and secretarial support as well as other staff such as Lab technicians and IT support. This is important for the communities in which the colleges are based, as they each provide a wide range of employment locally, across many skill levels.

• Expenditure of the FE sector

In 2013/14 the Northern Ireland FE sector spent a total of £261 million. The nature of the FE college business as learning and skill providers inevitably means they are labour intensive organisations and so the majority of expenditure related to staffing.

Figure 3: Expenditure of NI FE Sector



Source: College Financial data for 2013/14

The expenditure of the colleges generated economic activity in other sectors of the economy through secondary or 'knock-on' effects.

These 'knock-on' or multiplier effects are generally recognised as comprising two types of economic interaction:

- indirect effects: Colleges purchase goods and services from a range of suppliers (from books and stationery to legal services, laboratory equipment to catering supplies) in order to support their own activity, thereby stimulating activity within those industries. The suppliers also have to make purchases in order to fulfil College orders, and those suppliers in turn make other purchases, rippling through the economy.
- induced effects: Colleges pay wages and salaries to their employees, who in turn spend their salaries on housing, food and other consumer goods and services. This creates wage income for employees in other businesses, who also spend their income and so on, creating a ripple effect throughout the economy as a whole.

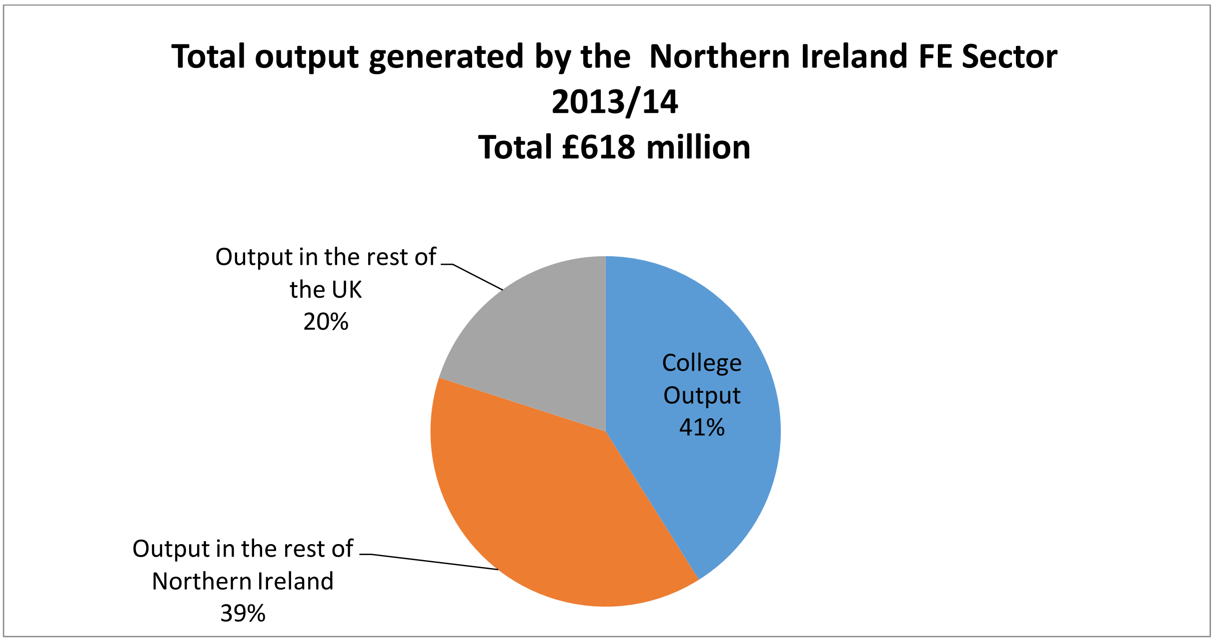
Staff expenditure will tend to follow a different pattern from institutional expenditure, being more consumer oriented, but while staff expenditure will have a higher proportion of expenditure on imported consumer goods and goods from elsewhere in the UK (e.g. through online shopping), there will still be a reliance on many local goods and services – such as cafes, pubs, restaurants, fast food outlets, taxi services or personal services such as hairdressing etc. The 'snapshot' analysis of the impact of expenditure will reflect the composition of those linkages.

In this study, the impact of Northern Ireland FE college expenditure on the UK as a whole was modelled and then analysis made of the proportion of that impact accruing to Northern Ireland. This took into account the business and industry structure of Northern Ireland as well as consideration of purchases that are most likely to be more locally-based, for instance the goods and services of local pubs and coffee shops, grocery stores and personal services such as hairdressers.

• Output generated by FE Sector expenditure

The six regional FE colleges' own output[5] was £254 million. Through secondary or 'knock-on' effects the colleges generated an additional £ 364 million in other industries across the UK, with the majority (£241 million) accruing to Northern Ireland industries. This made a total of £618 million in output generated across the UK, as shown in Figure 4.

Figure 4: Total output generated by FE Sector expenditure



Source: Viewforth Consulting economic modelling system analysis

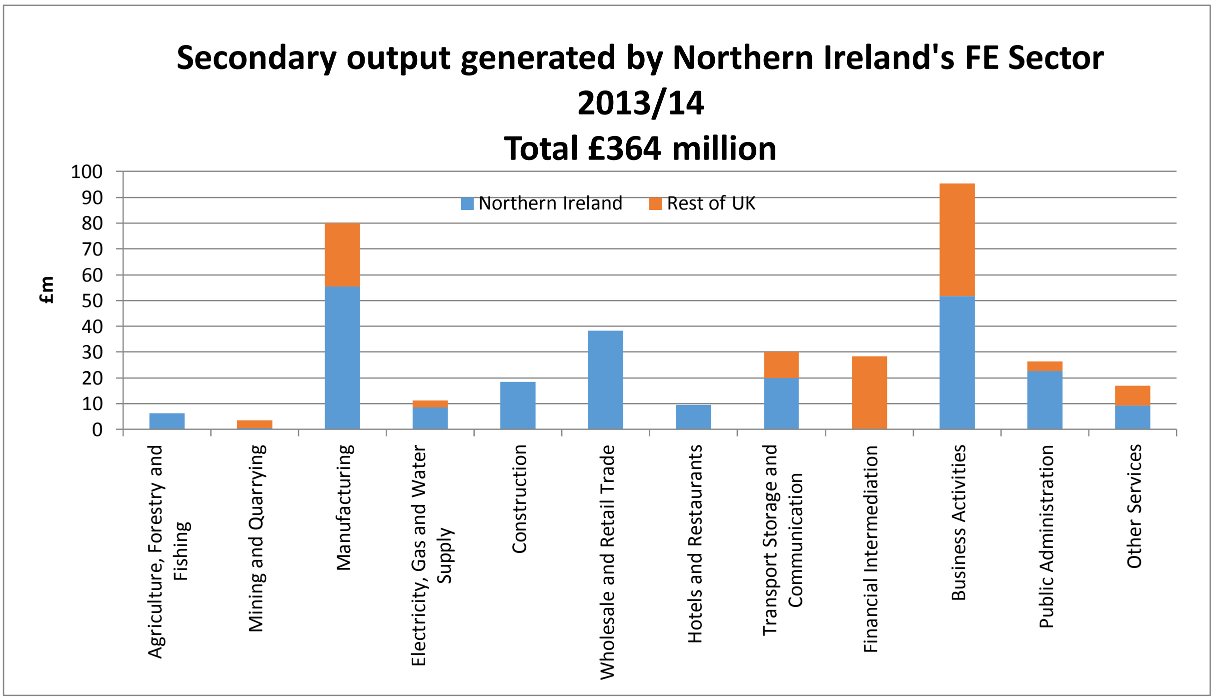
[5] The college output is equivalent to their income or 'turnover'.

- Output multipliers

This gives a regional output multiplier of 1.97(with a UK output multiplier of 2.44.) In other words, for every £1 million of college output, a further £1.44 million of output was generated in other UK Industries, of which £0.97 million was in industries located in Northern Ireland.

Figure 5 shows the industries in which the output was generated. There is an emphasis on manufacturing, wholesale and retail, and business activities. The spread of impact reflects the types of goods and services bought by the colleges and their staff – as well as from whom they are bought and how their own suppliers subsequently purchase goods and services. College Office equipment may be bought direct from a manufacturer, for instance, or through a wholesaler. They may contract for legal services from a local firm of solicitors. College staff expenditure will tend to be more oriented towards consumer goods and services, many of these from local companies and shops. Figure 5 shows the majority of secondary impact being generated in Northern Ireland, including all construction impact, wholesale and retail and hotels and restaurant impact.

Figure 5: Secondary output generated by the FE Sector



Source: Viewforth Consulting economic modelling system analysis[6]

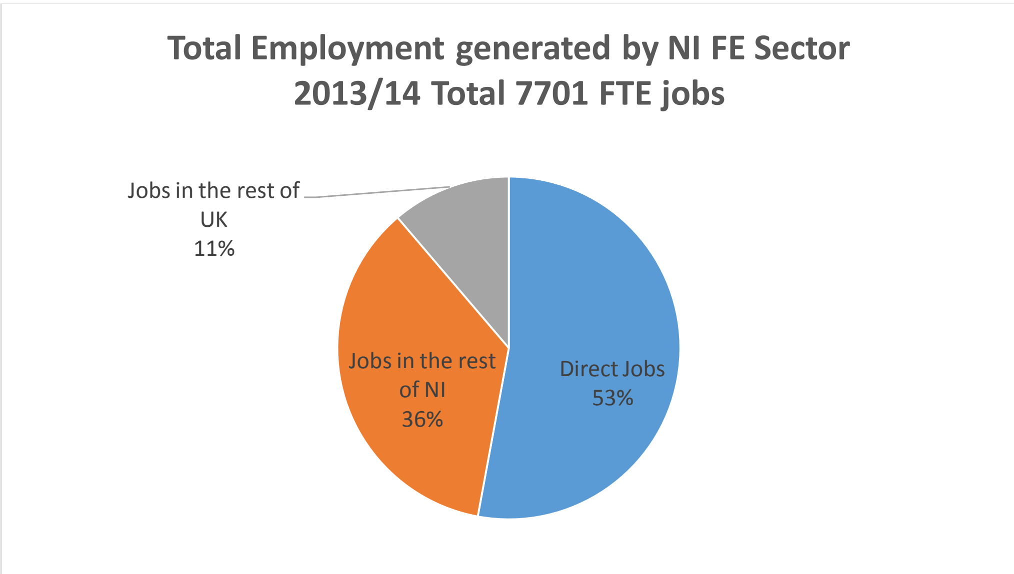
[6] The economic modelling system is currently based on SOC 2000 and SIC2003 so these were used for 1 digit presentation of results

- ## Employment generated

In addition to providing 4074 full time equivalent (fte) jobs directly in the colleges, college expenditure generated additional jobs in other parts of the economy.

A further 3627 jobs were generated in other industries by the college expenditures, with 2762 of these located in Northern Ireland industries. Including their own employment therefore, this meant that overall 7,701 UK jobs were dependent on the colleges, with 6,836 of these in Northern Ireland.

Figure 6: Total employment generated by Northern Ireland FE Sector



Source: Viewforth Consulting economic modelling system analysis

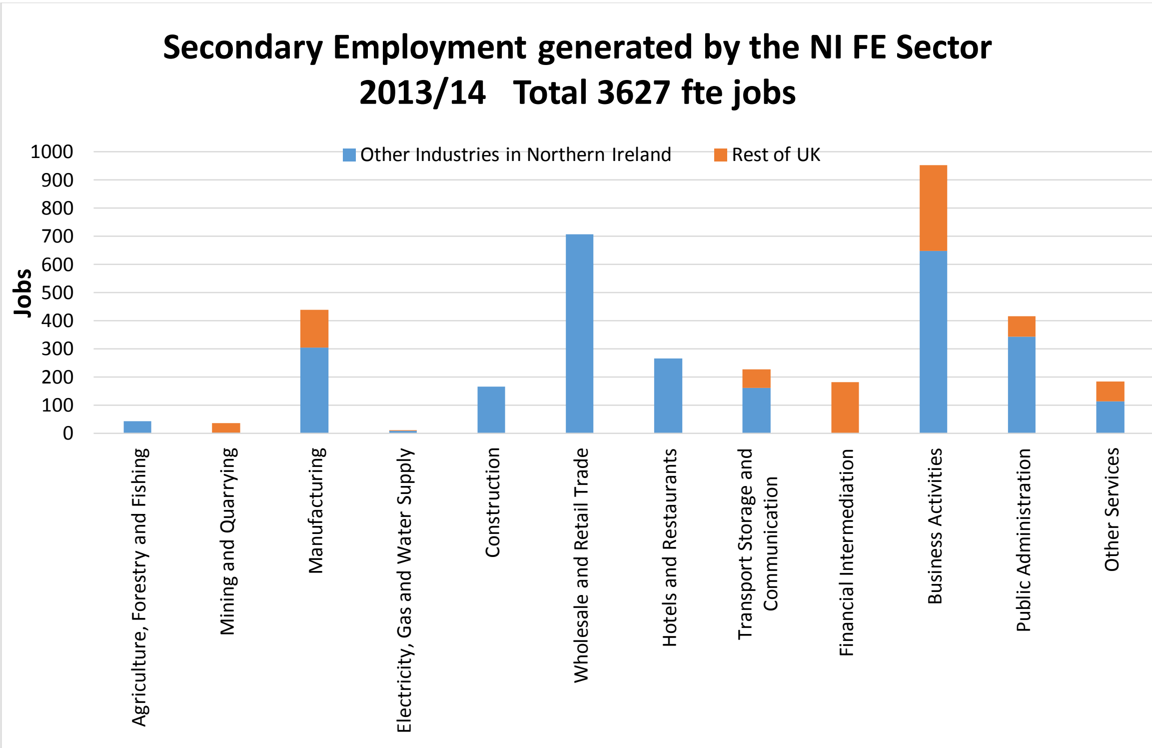
- Employment multipliers

The employment generated indicates an overall UK Type II employment multiplier of 1.89 and Northern Ireland multiplier of 1.68. In other words, for every 100 jobs inside the FE colleges, a further 89 jobs were created outside the colleges in other UK industries, 68 of which were in Northern Ireland.

Employment was generated across a range of industries. This is shown in Figure 7 below. The pattern of employment impact has an emphasis on wholesale and retail, and business activities. This because of a combination of two major factors – that NI FE colleges had a relatively high output impact in these areas and also that these industries tend to be relatively labour intensive.

Every £1m of college output generated 30.3 fte jobs: 16 in the colleges, 10.9 in the rest of Northern Ireland and 3.4 in the rest of the UK.

Figure 7: Secondary employment generated by Northern Ireland FE Sector



Source: Viewforth Consulting economic modelling system analysis

The importance of the FE Sector to the Northern Ireland economy can be seen by the generation of gross output and employment. However another key measure of the sector's contribution to the economy is the GVA generated. GVA or 'Gross Value Added' is a measure of the value created by the sector – GVA is the industry level measure of GDP (O). GDP (O) is a production measure of the net change in wealth or prosperity in the economy as a whole over the year. The FE sector's direct GVA amounted to £166.6 million and through secondary or 'knock-on' effects it generated a further £178.9 million of GVA in other industries across the UK, of which £118.2 million was in Northern Ireland.

- ## Total GVA generated

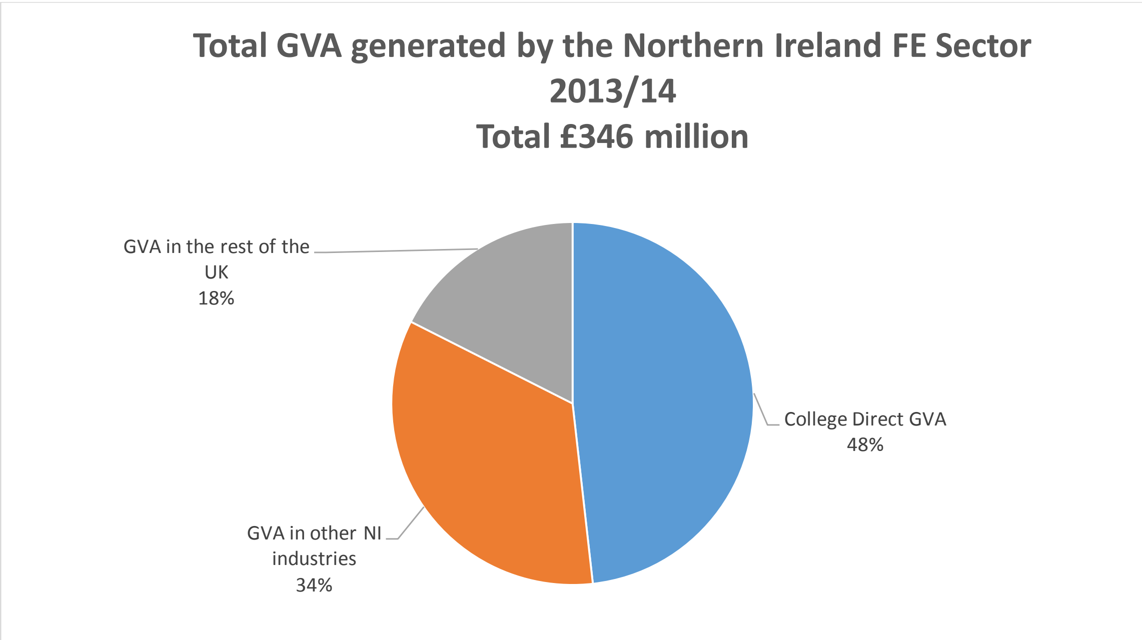
Figure 8 shows the total GVA generated by the FE Sector, which amounted to nearly £346 million (the FE Sector Direct GVA of £166.6 million plus the £178.91 million secondary GVA in other UK industries.) The Northern Ireland GVA share amounted to nearly £285 million (made up of the £166.6 million of Direct GVA plus the Northern Ireland share of secondary GVA, which came to £118.2 million) £285 million was equivalent to nearly

0.9% of all 2013 Northern Ireland GVA.[7]

- GVA multipliers

The GVA multipliers were calculated as a UK GVA multiplier of 2.07 and regional GVA multiplier of 1.71.

Figure 8: Total GVA generated by the Northern Ireland FE Sector



Source: Viewforth Consulting economic modelling system analysis

3. Students in Northern Ireland's 6 Regional FE Colleges

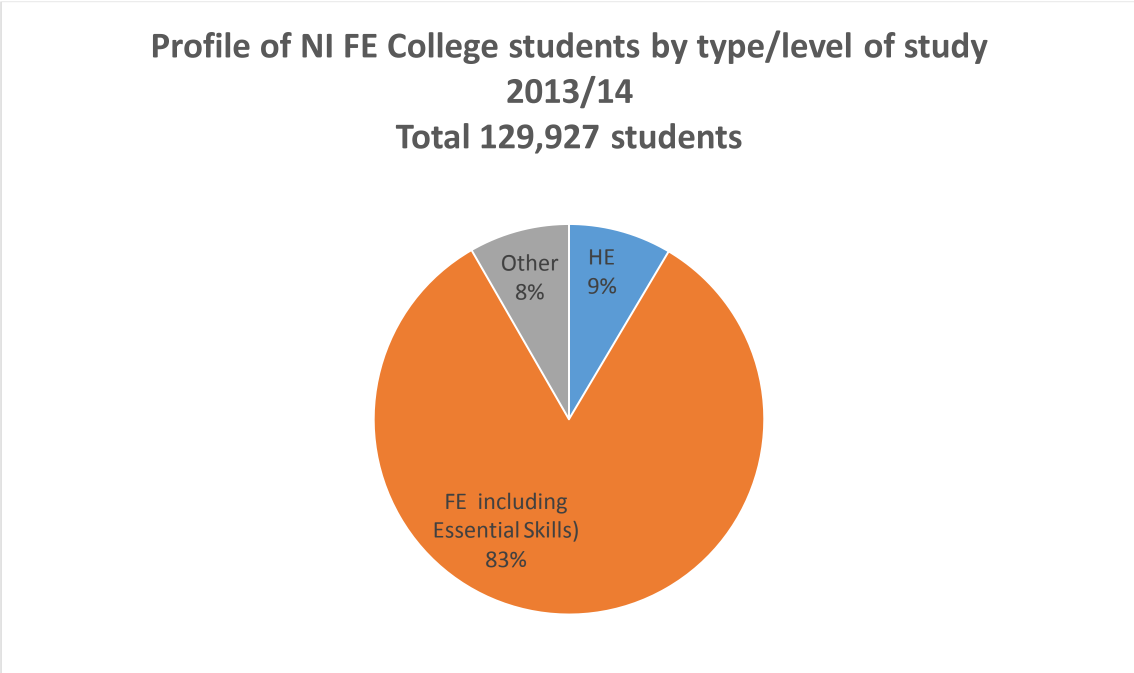
- Northern Ireland Student Profile

The six Northern Ireland regional FE colleges provide a very wide range of courses and training – full-time and part-time. They attract a large number of students - in 2013/14 129,725 students [8]were registered at FE colleges in Northern Ireland. [9] The vast majority of

[7] 2013 NI GVA amounted to c.£32.8 billion (ONS 2014)
[8] This is the number of actual students and not 'enrolments'. Students may enrol on more than one course (hence 'enrolments' will be higher.)
[9] Source: College Data for 2013/14

students 83%) are taking further education courses , including Essentials Skills courses and those leading to a specific academic or vocational qualification.

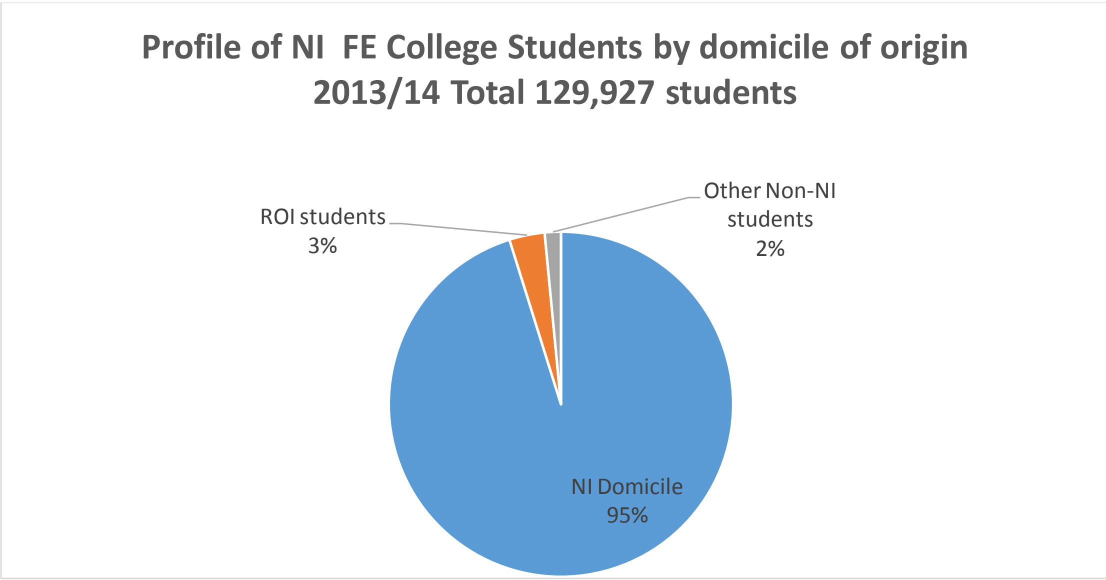
Figure 9: Profile of NI FE College students by level of study



Source: College Data 2013/14

Figure 9 also shows that 9% of students were studying for a higher level qualification and another 8% were undertaking other kinds of study including recreational and leisure classes.

Figure 10: Profile of students at Northern Ireland 6 regional FE Colleges by domicile of origin



Source: College Data 2013/14

Figure 10 shows that the majority (95%) of those studying in Northern Ireland's FE colleges are from Northern Ireland itself. In the colleges near the border areas, such North West Regional College, there is a significant minority of students from the Republic of Ireland, with many traveling or commuting to college from their homes in the Republic of Ireland. In total 6278 students were identified as being from outside Northern Ireland, 4305 of whom were from the Republic of Ireland and 1,973 from elsewhere. Around 85 % of the Republic of Ireland students were thought to be commuting.

Figure 11: Other Non-NI and non ROI students by domicile of origin

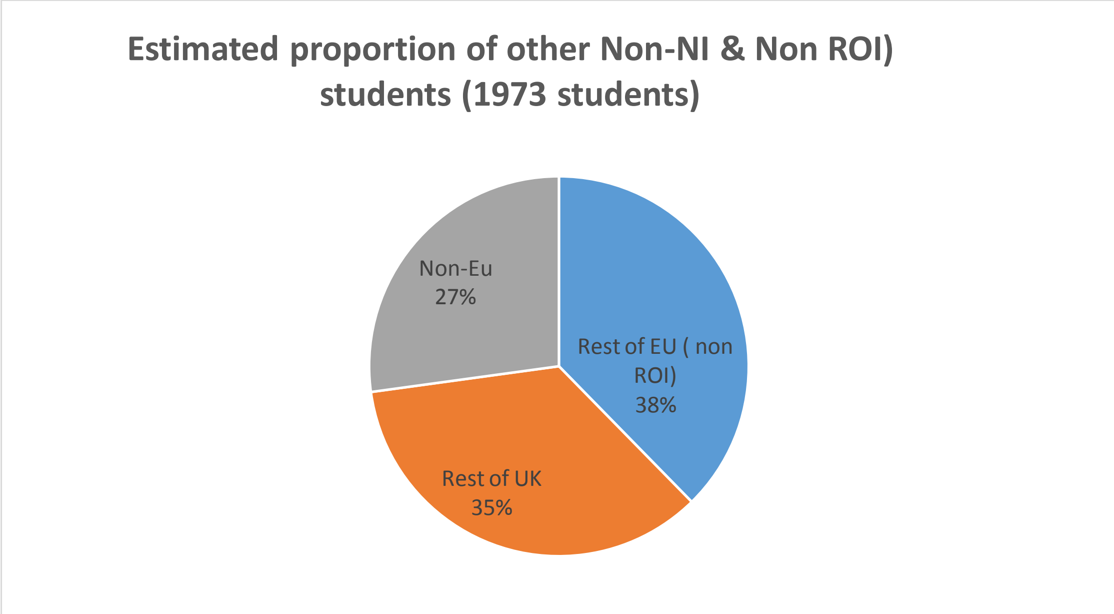


Figure 11 shows the other types of Non-NI students . Of the students from elsewhere, analysis of college data available suggests that around 38%(or c.743 students) came from other EU (non-ROI) countries, 35% (c.694) from other parts of the UK and 27% (around 536 students) from non-EU countries. [10]

- Impact of student off-campus expenditure

Student expenditure can be important to the economy, particularly in the areas immediately surrounding a college (local shops and cafes for example may rely a lot on student trade.) This is especially the case if the colleges have attracted students into the area to study (and so their expenditure can be seen as an injection into the local economy.)

However one of the important features of Northern Ireland's FE Sector contribution to Northern Ireland is precisely its strength in provision of educational opportunities for local students who would not otherwise take up further study – helping to increase the local community skills base. This is vitally important for the longer term economic development of the area but also means that much of the student personal expenditure in an area would arguably have been spent there anyway as the students are predominantly local people.

[10] This is an estimate of the broad split of these groups based on College data provided – there were different definitions and interpretations of domicile or origin (and not all students would have provided this information) and so it was not possible to exactly identify these groups of students

Therefore in considering any additional impact of student expenditure, the analysis only considered the expenditure of students who were identified as:

- from outside Northern Ireland
- living in Northern Ireland, rather than commuting from the Republic of Ireland

Only the off-campus personal expenditure of these students was counted as representing an additional injection into the Northern Ireland economy.

From discussion with Colleges NI , and using the definition from the bullet points above, 2629 students were identified as being who are from outside NI and whose expenditure cold be considered as additional to the Northern Ireland economy The 2629 students includes around 656 Republic of Ireland students, together with the 1973 students from the rest of the UK, from other EU countries and Non-EU countries.

These students may pay fees to the colleges (the impact of which is captured within the college impact.) However they also spend money in the local areas – on food, accommodation, clothes and entertainment.

We estimated the off-campus expenditure of the Non-NI students and modelled its additional impact. .[11] The results are shown in Table 1 below. We modelled the additional student expenditure the results for impact of off-campus student expenditure and the results are shown in shown in Table 1 below.

[11] We assumed their spending pattern would be similar to HE undergraduates and drew on the most recent Department for Business and Innovation student expenditure survey, uprated by the CPI. This gave an average expenditure in the year per student of £10,837 and total expenditure estimate of £28.5 million.

Table 1: Additional economic impact on Northern Ireland of the off-campus expenditure of students from outside Northern Ireland.

Output impact (Northern Ireland)	Impact on the rest of the UK	Total impact
£29.81m	£15.05m	£44.86m
Jobs generated in Northern Ireland	Jobs generated elsewhere in the UK	Total jobs generated
303 fte	77 fte	380 fte
GVA generated in Northern Ireland	GVA generated elsewhere in the UK	Total GVA generated
£14.41m	£6.38m	£20.79m

Source: Viewforth Consulting economic modelling system analysis

4. Summary: the combined economic impact of the 6 regional FE Colleges and their Non-NI students

Tables 2, 3 and 4 show the results for the combined impact of the 6 regional FE colleges and the Non-NI students together. These results show that the FE sector as a whole makes a significant impact on the economy generating over £524 million of output in Northern Ireland, generating around 7139 fte jobs and contributing £300 million to NI GVA. 7,139 fte jobs is equivalent to around 0.9 % of 2013 Northern Ireland employment[12] and £300 million GVA makes up around 0.92 % of 2013 NI GVA.[13]

[12] NOMIS for 2013 (843,000 workforce jobs)
[13] ONS 2014

Table 2: Summary of total Output generated 2013/14 (the FE Colleges and non-NI students together)

	Direct (£ million)	Knock-on' Impact on UK £m	Of Which Accruing to the Region £m	Total UK Impact (Direct & 'Knock-on' £m	Total Impact on the Region (Direct & 'Knock-on') £m
Colleges	253.96	364.32	240.53	618.28	494.49
Plus Non-NI Students	0.0	44.86	29.81	44.86	29.81
Total Combined Impact	253.96	409.18	270.34	663.14	524.3

Source: Viewforth Consulting economic modelling system analysis

Table 3: Summary of total employment generated 2013/14 (FE Colleges together with Non-NI students)

	Direct Employment (FTEs)	Knock-on' Impact on UK (FTE)	Of Which Accruing to the Region (FTE)	Total UK Impact (Direct & 'Knock-on' (FTE)	Total Impact on the Region (Direct & 'Knock-on') (FTE)
Colleges	4074	3627	2762	7701	6836
Plus Non NI students	0.0	380	303	380	303
Total Combined Impact	4074	4007	3065	8081	7139

Source: Viewforth Consulting economic modelling system analysis

Table 4 : Summary of contribution to Northern Ireland GVA 2013/14
(FE Colleges and Non-NI students together)

	Direct (£ million)	Secondary (NI)	Total
Colleges	166.6	118.2	284.8
Plus NON NI students	0.0	14.41	14.41
Total Combined Impact	166.6	132.61	299.21

Source: Viewforth Consulting economic modelling system analysis

5. Conclusions

This report presents an analysis of the economic impact of Northern Ireland's 6 regional FE Colleges as businesses generating economic activity, jobs and output and contributing to GDP. The analysis has shown that the FE sector is an important part of Northern Ireland's economic infrastructure in itself, with the FE Colleges providing education and skill opportunities to nearly 130,000 people across Northern Ireland. The development of the local skills base is important for the attraction and retention of business and investment in the Northern Ireland, as the current consultation on the future strategy for Further Education in Northern Ireland highlights.[14]

The 6 regional FE colleges are important local employers - the employment generated by the colleges and their students – directly and through their spending - is equivalent to around 0.9 % of all Northern Ireland employment. With colleges and their campuses located across Northern Ireland, they are 'embedded' in local communities and their local role as employers and generators of economic activity may be particularly important at a more local level.

Policy decisions affecting the sector, particularly in terms of its expansion or contraction or with financial implications for college income and expenditure will not affect only the FE colleges but will also have a 'knock-on' effect on the other Northern Ireland businesses that depend on the colleges for trade.

[14] Consultation Document on the Development of a New Further Education Strategy for Northern Ireland. (DEL 2015)

Appendices

Appendix One: Regional Distribution of Impact

In addition to the core modelling of FE college impact on Northern Ireland, analysis was undertaken to estimate the distribution of the impact of the 6 regional FE cclleges across Northern Ireland. This is the first time this has been done for Northern Ireland and it analysed how the impact of the 6 colleges flowed across the 11 new (2014) Local District Council areas. A Northern Ireland specific 'gravity-model was constructed, which combined mass (attraction) variables with distance (repulsion) variables to estimate likely flows of impact. In this case the mass variables included measures of all jobs in the different areas and the distance variables related to the average travelling time (by road) from the main college campuses across the 11 district council areas.   Each college's impact flow was separately modelled and then combined to give an overall picture of the distribution across Northern Ireland. The impact observed in any one area therefore includes 'spillovers' from other areas – that is to say the impact, for example, in Fermanagh and Omagh District is not solely attributable to the impact of South West College but also includes impact flowing from other areas. Areas with larger concentrations of employment and population will tend to attract more of the impact, but the effect is diluted the further the distance from the 'source' of impact.

The location of the six regional FE colleges do not correspond exactly with the areas of the 11 District Councils – with some colleges having sites (for example the South Eastern Regional College with campuses in Lisburn and Downpatrick) in different Council areas. In all cases the direct impact of the colleges (in terms of direct output, jobs and GVA) was attributed to the Council district where the 'main' college Campus was located. [15]

The total impact (Colleges plus Non NI students) was modelled and the results for Output, Jobs and GVA distribution are shown in Figures 12,13 and 14 below.

[15] These were taken to be: BMC- Belfast (Belfast), NRC – Ballymena(Mid and East Antrim); NWRC – Derry (Derry and Strabane); SERC – Lisburn (Lisburn & Castlereagh); SRC- Newry (Newry, Mourne & Down); SWC – Omagh (Fermanagh and Omagh)

Figure 12: Distribution of output impact across Northern Ireland

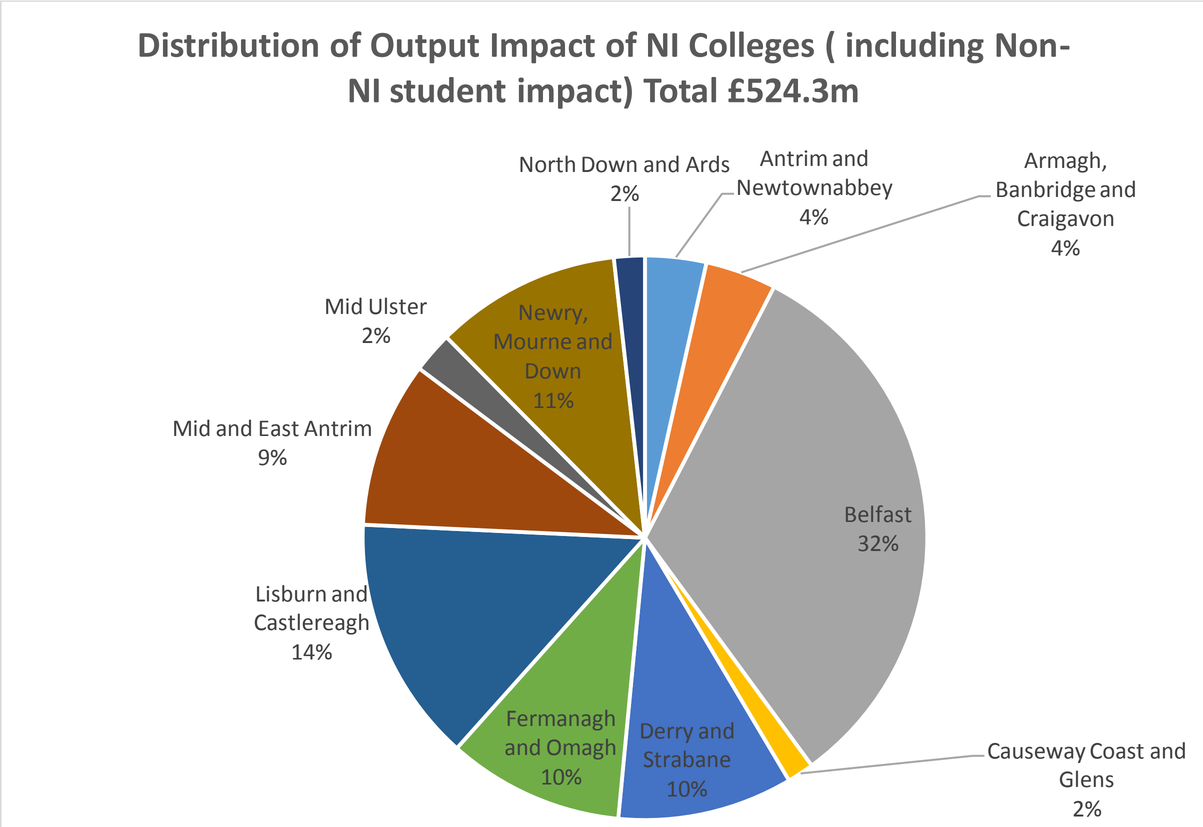


Figure 12 shows the distribution of output impact flowing from the colleges across Northern Ireland. The biggest proportion of impact (32%) occurs in Belfast which is not surprising given both the dominance of Belfast in the Northern Ireland economy but also that the Belfast Metropolitan College is one of the largest colleges and most of *its* impact will accrue to Belfast. However Figure 12 also makes clear that the FE sector impacts right across Northern Ireland .

Figure 13: Distribution of employment impact across Northern Ireland

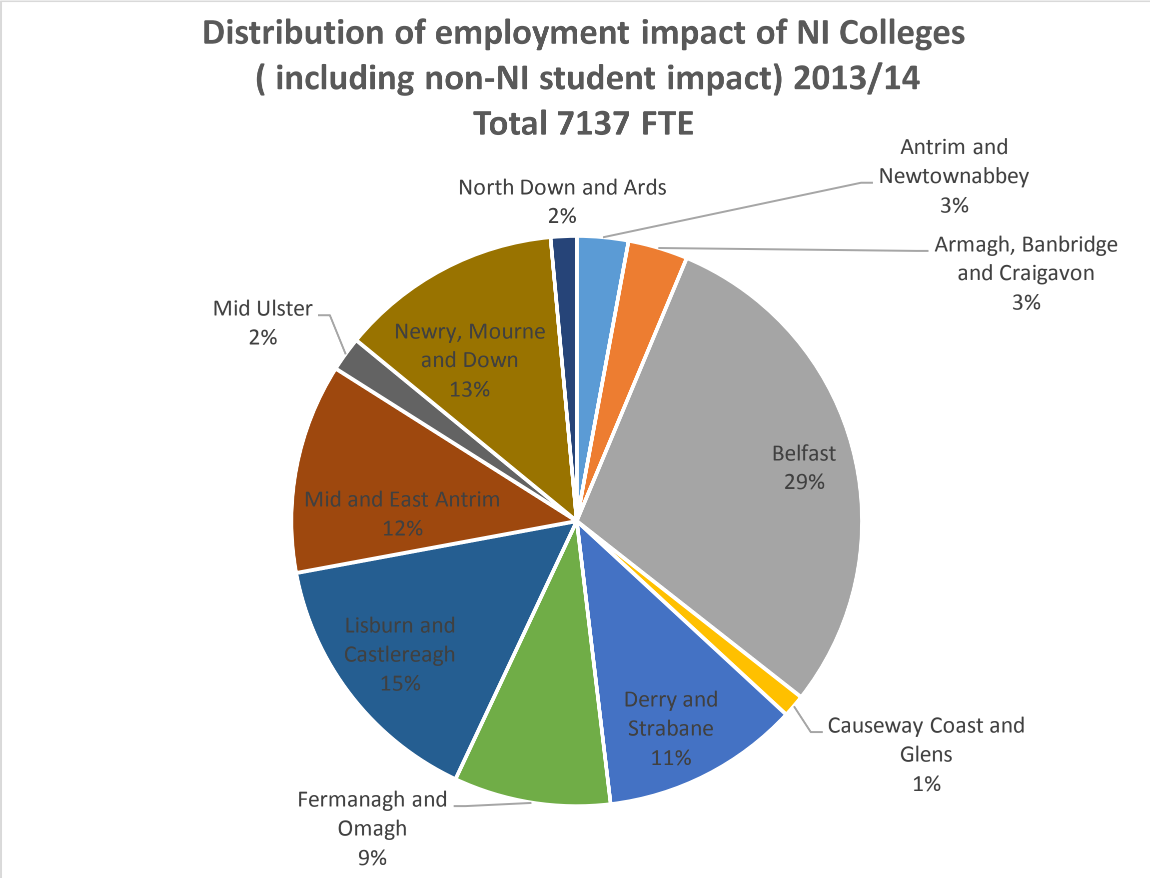


Figure 13 shows the distribution of employment impact. While there is a broadly similar pattern to the output impact distribution, slightly more employment impact occurs outside Belfast – with 71% of employment impact being in other parts of Northern Ireland compared to 68% of output impact.

Figure 14: Distribution of GVA impact across Northern Ireland

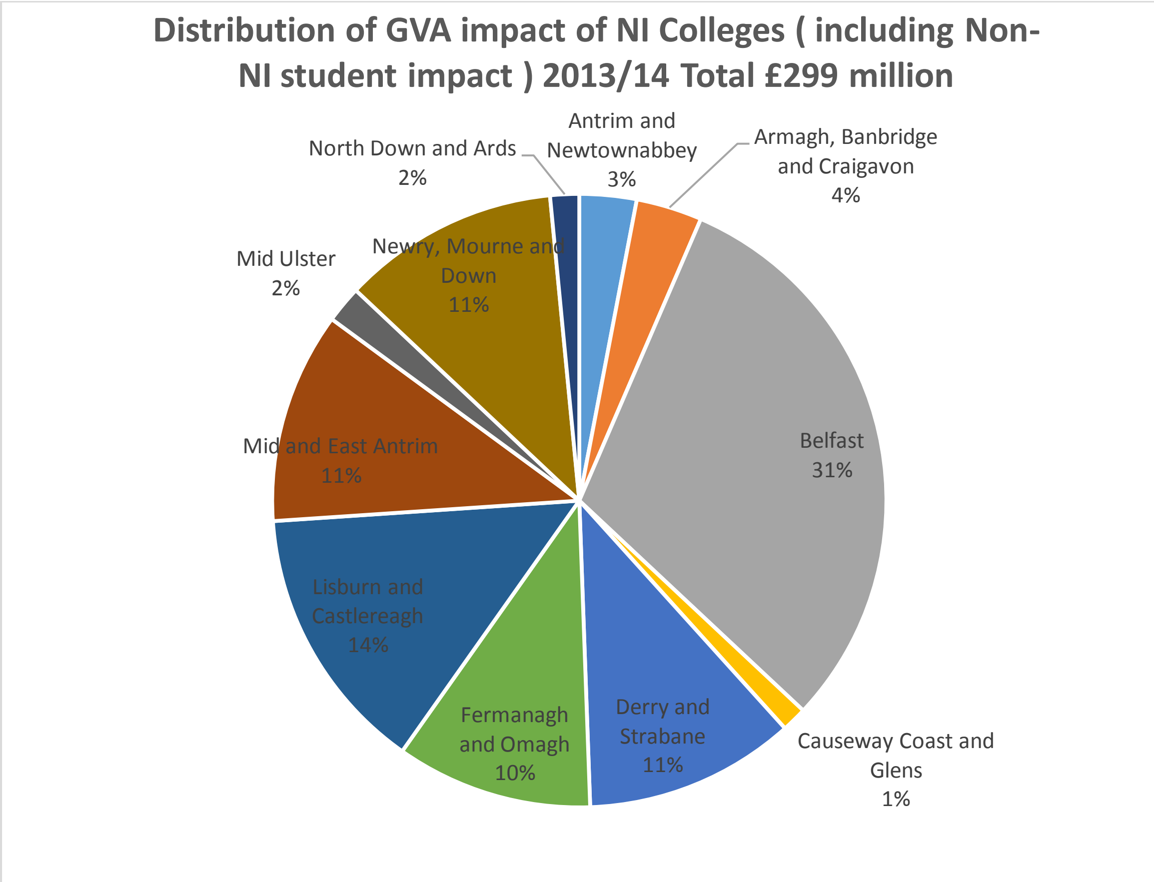


Figure 14 shows the distribution of GVA impact. The pattern of GVA distribution is closer to that of output distribution, but clearly shows impact occurring across Northern Ireland.

Appendix Two Methodology and Data Sources

The primary focus of the study was the FE sector in Northern Ireland as an industry and the impact generated by the sector activity during the academic and financial year 2013-14. The FE Sector included the 6 regional FE colleges.

The core study utilised a two -stage approach to the estimation of the economic impact of the higher education sector. The impact of the NI FE colleges on the UK economy was modelled, using a purpose-designed economic model of the UK. Analysis was then undertaken, using a Location Quotient approach, to estimate the share of the institutional impact on the UK likely to have accrued to Northern Ireland

The model used was a 'Type II' input-output model based on actual UK data derived from the UK Input-Output Tables (Office of National Statistics) together with Labour Force Survey and Annual Business Inquiry data and the 2008 UK Bluebook. The modelling system has been updated in 2013 to reflect productivity increases and related economic changes. Additional data sources include the Producers' Prices Index, ONS Regional Accounts and Local Area Data from the ONS including the Business Register and Employment Survey and other regional labour market data from nomisweb.co.uk. The core modelling system is based on SOC 2000 and SIC 2003 classifications and this has been used for the 1 digit aggregate presentation of results. The modelling system used was purpose-designed for UK tertiary education institutions . The technical specification for the model is included in *The impact of universities on the UK economy* Kelly, McNicoll & White Universities UK 2014.

The additional analysis presented in Appendix One used a 'gravity-modelling 'approach to the tracing of impact flow across Northern Ireland. A Northern –Ireland specific gravity model was constructed which combined mass and distance variables(in this case industry employment data together with travelling times from main college locations to the administrative centres of the 11 Council areas.) Each college's impact flow was separately modelled and then combined to give an overall picture of the distribution across Northern Ireland.

Other data sources

The college data used was provided by the colleges, through the umbrella body for the sector, *Colleges NI*. This included data on finance, staffing and students.

Student Expenditure estimates (for Non-NI students) were made drawing on the most recent survey undertaken by the Department of Business, Innovation and Skills (BIS) (for 2011/12) and uprated using the CPI.

NI industry employment data (for development of gravity-modelling variables) was taken from NISRA (2013 data) and travel times based on the road travel time estimates in the 'distancesfrom' website.(http://www.distancesfrom.com/)

Appendix Three: Additional References and Bibliography

Department for Business, Innovation and Skills (2013) *Student Income and Expenditure Survey 2011/12* Research Paper Number 115

Department for Employment and Learning *The economic impact of Higher Education on the Northern Ireland Economy* (2015)

Department for Employment and Learning *Further Education Means Business* (2004)

Department for Employment and Learning *Consultation document on the development of a new Further Education Strategy for Northern Ireland (2015)*

Nomisweb < www.nomisweb.co.uk >

Northern Ireland Statistics and Research Agency

Northern Ireland Statistics and Research Agency: Quarterly Employment Survey 2013 < http://www.nisra.gov.uk/ >

Universities UK *The impact of universities on the UK economy* Kelly, U., McNicoll, I and White, J (2014)

Universities UK *The economic impact of higher education institutions in the English Regions* Kelly, U., McNicoll, I and White, J (2014)